



Jasper County, Illinois Hazard Mitigation Plan

ABSTRACT

This Hazard Mitigation Plan was developed with the fundamental goal of informing State and local leaders of the risks and impacts natural hazard events could have on Jasper County, Illinois and further examine how to best lessen the adverse impacts that these hazard events can have on the local community.

Prepared By:  South Central Illinois
Regional Planning &
Development Commission



FEMA

IEMA

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Acknowledgements

This Hazard Mitigation Plan (HMP) is intended to provide guidance to Jasper County, Illinois and the municipalities within, in their efforts to minimize the impacts of natural hazard events on critical community infrastructure and other community assets. The HMP will serve as a working document with the fundamental goal of mitigating the risks associated with the hazard events reviewed within.

Jasper County Hazard Mitigation Plan Steering Committee Membership

Ben Bland, Jasper County, Illinois, Engineer

Mark Bolander, Newton, Illinois, Mayor

Luke Eastin, South Central Illinois Regional Planning & Development Commission, Planner

Angela Ferenbacher, Jasper County, Illinois, Board Member

Ed Francis, Jasper County, Illinois, Deputy Sherriff

Mike Hall, Jasper County, Illinois, Board Member

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Sandra Zumbahlen, Jasper County, Illinois Health Department, Director

Section 1: Hazard Mitigation Planning Process

1.1– Introduction

Hazard Mitigation can be defined as actions taken to help reduce or eliminate the long-term risks that are associated with and often caused by natural hazard events or disasters. These risks can include the loss of human life and irreparable damage to critical community infrastructure and facilities. The Illinois Emergency Management Agency (IEMA), an Illinois Department operating under the Federal Emergency Management Agency (FEMA), has made reducing the impacts of hazards on local communities one of its primary goals. To achieve this overarching goal, local strategic hazard mitigation planning and the subsequent implementation of those plans and policies is essential.

The local HMP is a requirement of the Federal Disaster Mitigation Act approved 2000. The development of a local government HMP, approved by FEMA, is necessary and required in order to maintain eligibility for certain federal disaster assistance and hazard mitigation funding programs. For those communities within the National Flood Insurance Program (NFIP), the adoption of a local HMP is required to be eligible for future mitigation funds in the event they are required and requested.

Regulations from the Federal Disaster Mitigation Act stress that members of the planning team (Hazard Mitigation Plan Steering Committee) must be active participants in the planning process. The Jasper County members, shown on the previous page, were actively involved in the following planning process components, including:

- Attendance at regular planning meetings
- Providing valuable local information and data
- Reviewing drafts of the Hazard Mitigation Plan
- Coordinating and participating in the public input process
- Coordinating the formal adoption of the Hazard Mitigation Plan by the County and its qualifying Municipalities

1.2 – Planning Process

The Jasper County Board is the governing body with the primary responsibility for implementing the HMP recommendations throughout the unincorporated areas of the County of Jasper. The individual city councils or village boards will have the same responsibility within their respective incorporated jurisdictions. The County of Jasper, City of Newton and Village of Sainte Marie recognize that community involvement is an essential step in the development of a HMP, and each of these entities have, to the best of their ability, involved their local communities in the HMP planning process to help ensure that the final approved HMP reflects each community's values, interests and needs. Public Involvement was solicited at public meetings and through media outlets and reports.

The Jasper County Board, in cooperation with the South Central Illinois Regional Planning and Development Commission (SCIRPDC), the county's regional planning partner, appointed a Hazard Mitigation Plan Steering Committee to assist with the development of this HMP. This Committee consists of representatives from each participating community along with the County. More specifically, membership included representation from the local fire protection district, local law enforcement agency, Jasper County Board, local business community, City of Newton, Village of Ste. Marie, local electric co-op, local water co-op, community school district, local health department, and several other stakeholders that reside in the county.

The development of the HMP was led by SCIRPDC staff members in close cooperation with local representatives. The structure of the Hazard Mitigation Plan Steering Committee was developed with the goal of obtaining the most public input as possible. Each committee member kept their respective communities informed on the status of HMP development at their respective scheduled board meetings. All meetings were open to the public and were further discussed during monthly SCIRPDC governing board meetings. Each entity was represented by at least one stakeholder at each Hazard Mitigation Plan Steering Committee meeting.

The initial Jasper County HMP meeting was held on August 8, 2019. This, along with all other Hazard Mitigation Steering Committee Meetings, was held at the Jasper County Office Building at 204 W. Washington Street in Newton, Illinois. At the initial meeting James Patrick, SCIRPDC Executive Director, provided a thorough review of the HMP planning process and further discussed the importance of the HMP to each entity. The Hazard Mitigation Plan Steering Committee then established future committee meeting dates and an overall schedule for the development of the Jasper County HMP.

Subsequent Hazard Mitigation Plan Steering Committee meetings to discuss HMP development and ascertain critical information and data utilized for the HMP were completed on September 12th, 2019, September 30th, 2019, November 14th, 2019 and January 9th, 2020. These meetings were approximately one to two hours in length.

1.3 – Community Involvement

Significant efforts were made by the Jasper County Hazard Mitigation Plan Steering Committee to solicit public input during the process of HMP development. Each committee meeting was advertised to the public through local media outlets with dedicated time during each meeting to allow for members of the public to comment or discuss the HMP with the Steering Committee members. Representatives from the neighboring counties of Effingham, Clay, Richland, Crawford, Clark and Cumberland were made aware of and invited to attend committee meetings as well as provide input into the development of the HMP. The counties of Effingham and Clay received monthly updates at SCIRPDC governing board meetings of the status of the HMP and were invited to participate in the planning process through those meetings. The HMP Steering Committee invited the counties of Richland, Crawford, Clark and Cumberland to participate in the planning process through mailings to each County Board and phone calls. Ultimately, Jasper County, the City of Newton and the Village of Ste. Marie were the only principal participants in the development of the HMP.

1.4 – Review of Existing Plans & Data Collection

Jasper County and the local communities within utilized a variety of planning documents to aid in the development of the HMP. This included local comprehensive planning documents, established zoning procedures, building codes, as well as the previously established HMP approved in February of 2011 by the cooperating entities. Additionally, the Hazard Mitigation Plan Steering Committee recognized several sources from which to draw technical data and reports to aid in the development of the HMP. A complete list of technical data and reports utilized in the development of this HMP can be found in Appendix A at the end of this document.

1.5 – Jurisdiction Representation

Below is an illustration of the incorporated communities included in this multi-jurisdiction plan.

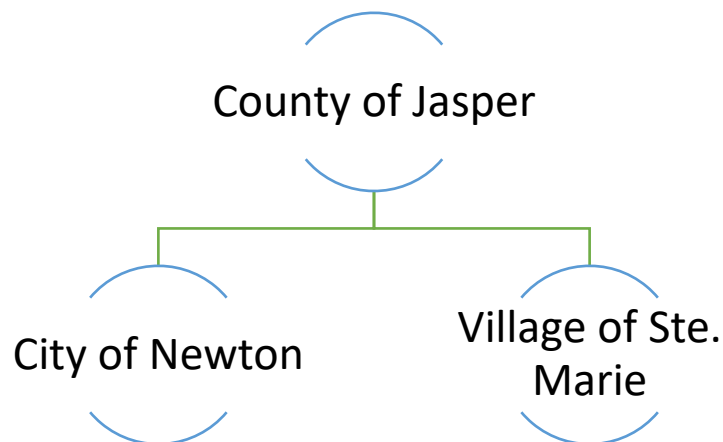


Figure 1-1: Jurisdictional Representation

Section 2: Community Profile

2.1 – Community Introduction

Every locale through the United States is partly defined by their connections to surrounding communities. These connections include natural resources, like local lakes and waterways, as well as developed resources, such as the regional transportation system, established to increase regional movement of goods and services throughout the region. In order to accurately assess the risks that natural hazard events may pose Jasper County; it is first imperative to examine the area’s social and economic features. This data review and analysis will provide valuable context for hazard risk assessment and mitigation planning.

2.1.1 – Background

The County of Jasper, predominantly rural in nature, was formed in 1831 out of Clay and Crawford Counties. It is bordered by Cumberland and Clark County to the North, Crawford County to the East, Clay and Richland County to the South, and Effingham County to the West. The County was named in honor of Sgt. William Jasper, a Revolutionary War hero from South Carolina. According to the U.S. Census Bureau the county has a total area of 498 square miles, of which 3.6 square miles is water. The Jasper County seat is the City of Newton, a participating jurisdiction in this HMP. The City of Newton is centrally located in the county and also serves as the population center for the county. There are an additional six Villages located within the County, including the Village of Ste. Marie, the third locale participating in this HMP. Furthermore, Jasper County is divided into eleven townships, which include numerous unincorporated communities.

Jasper County has two Illinois highways serving as the main means of transportation in and out of the county. The first is Illinois Route 33 running from Beecher City in Effingham County to the east through all of Jasper County ending at Lawrenceville in Lawrence County to the southeast of Jasper County. The second is Illinois Route 130, which runs from Grayville in Edwards County to the South, traveling north through Jasper County until reaching Interstate 74 in Urbana located in Champaign County. Jasper County has both Interstates 70 and 57 to the northwest and west of the County border respectively. There is also one major railroad that runs through central Jasper County and the City of Newton owned by the Indiana Railroad Company.

The following pages include illustrative maps of Jasper County, the City of Newton and the Village of Ste. Marie.

State of Illinois

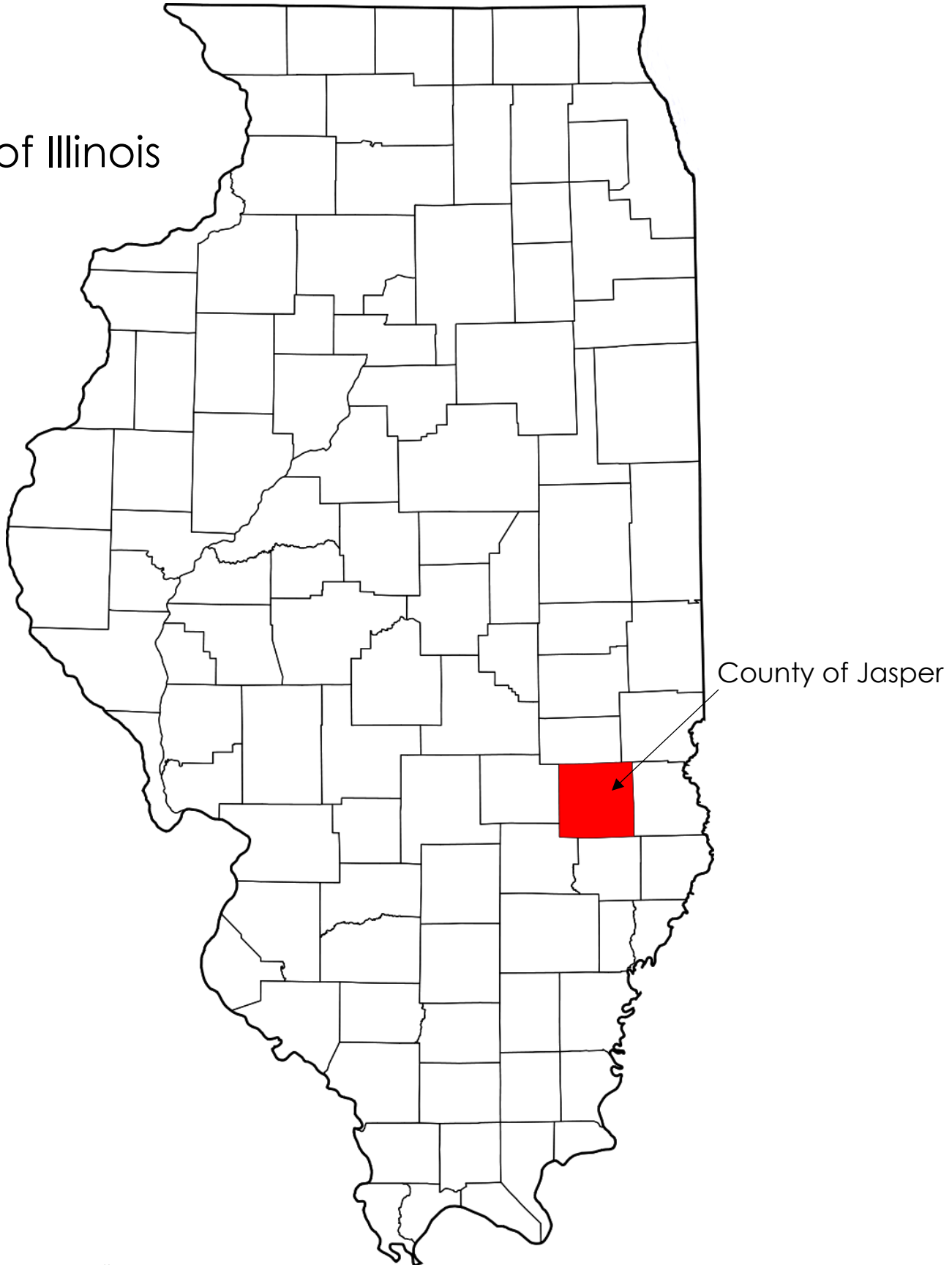


Figure 2-1: Jasper County, Illinois

County of Jasper

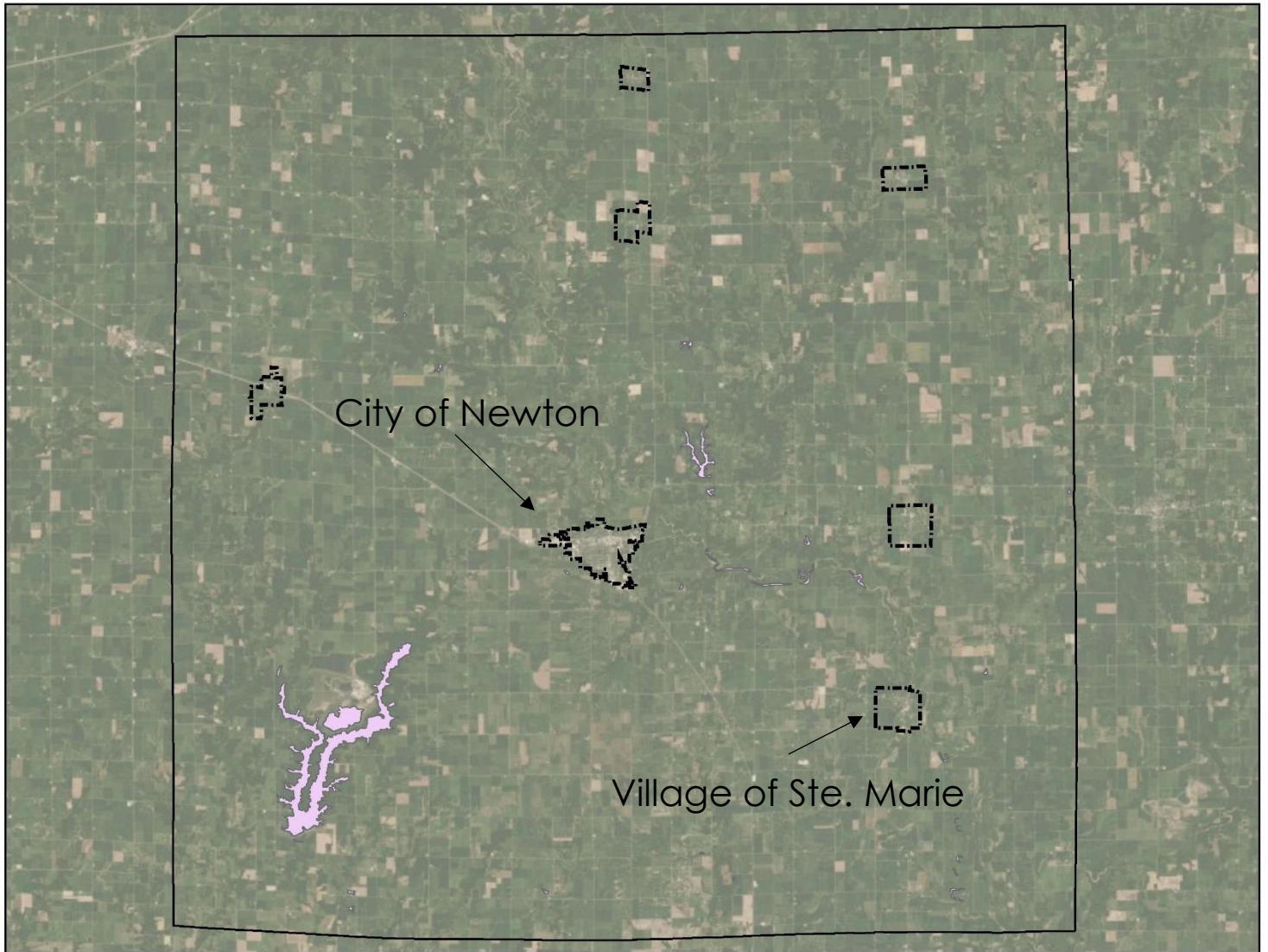


Figure 2-2: Jasper County, Illinois GIS

City of Newton

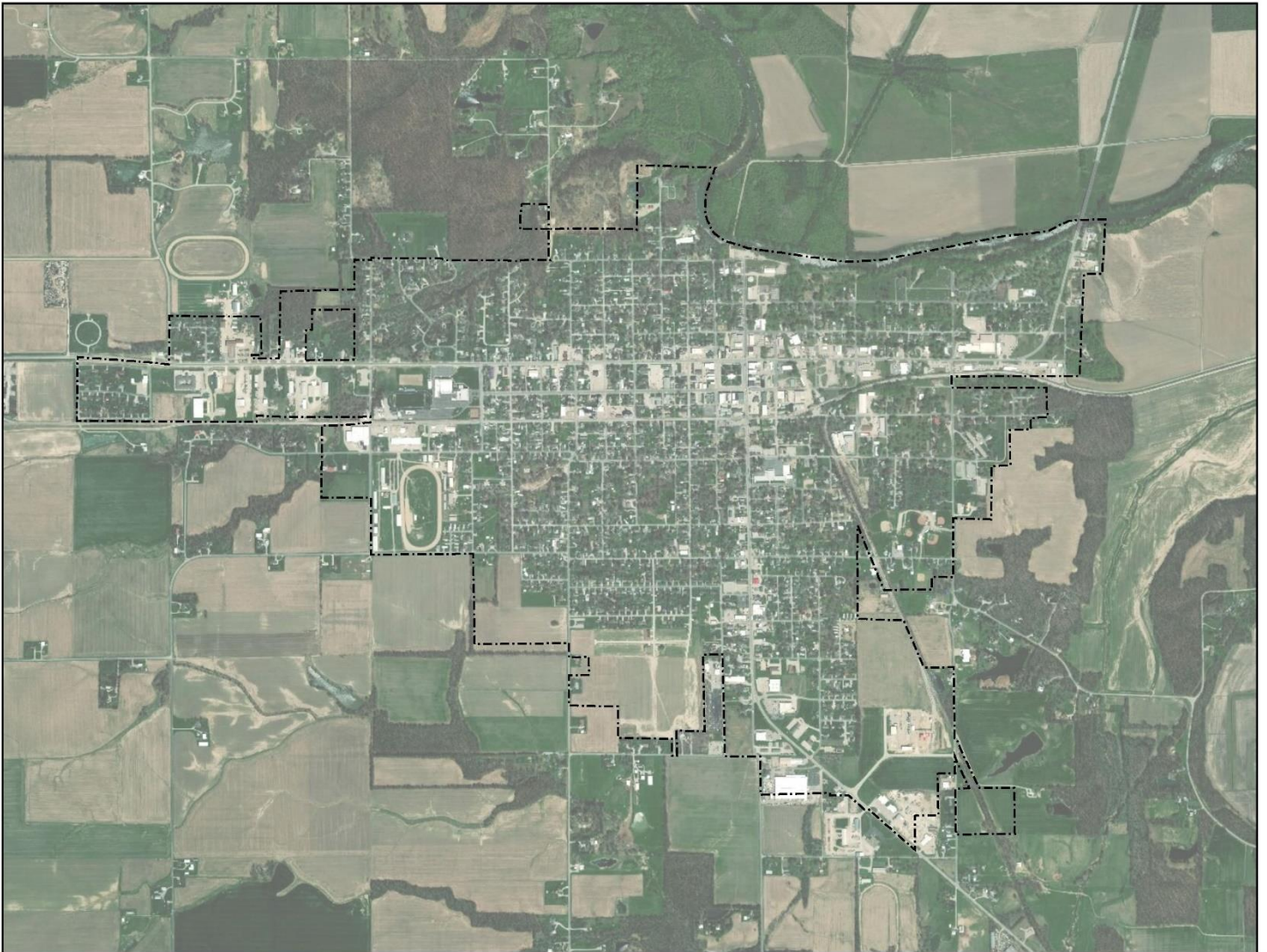


Figure 2-3: City of Newton

Village of Ste. Marie



Figure 2-4: Village of Ste. Marie

2.2 – Population and Demographics

According to most recent data from Esri Business Analyst Online, the 2018 population of Jasper County is approximately 9,611, including 3,656 occupied housing units and a total of 4,333 housing units. Additionally, the City of Newton had a population of 2,766 in 2018, including 1,157 occupied housing units and 1,409 total housing units. Lastly, the Village of Ste. Marie had a 2018 population of 240, with an estimated 120 occupied housing units and 147 total housing units. The graphs below show the population trend for each of the abovementioned entities from 2010-2018.

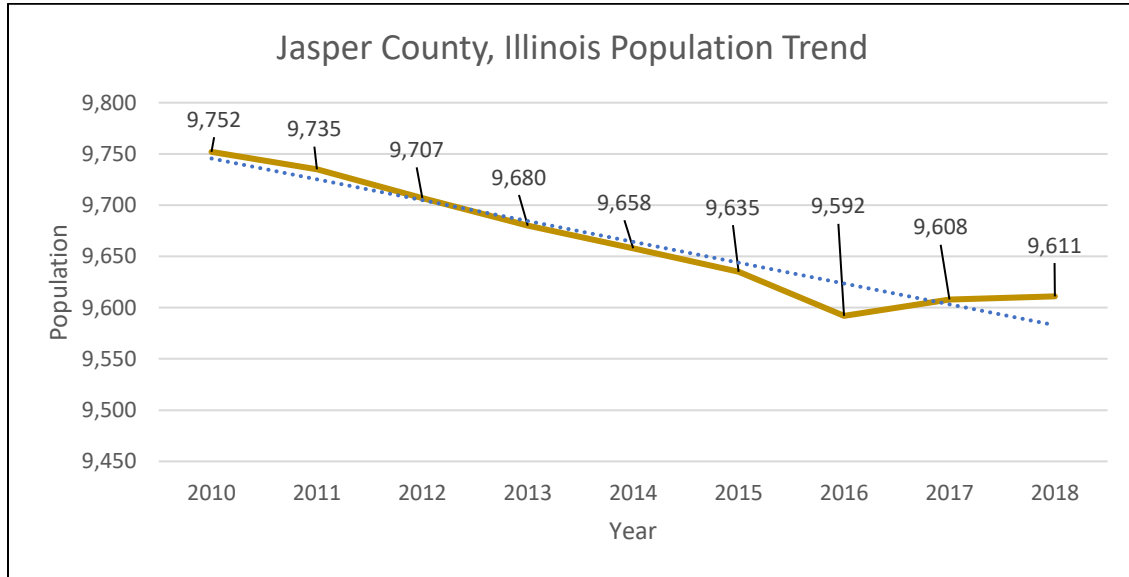


Figure 2-5: Jasper County Population

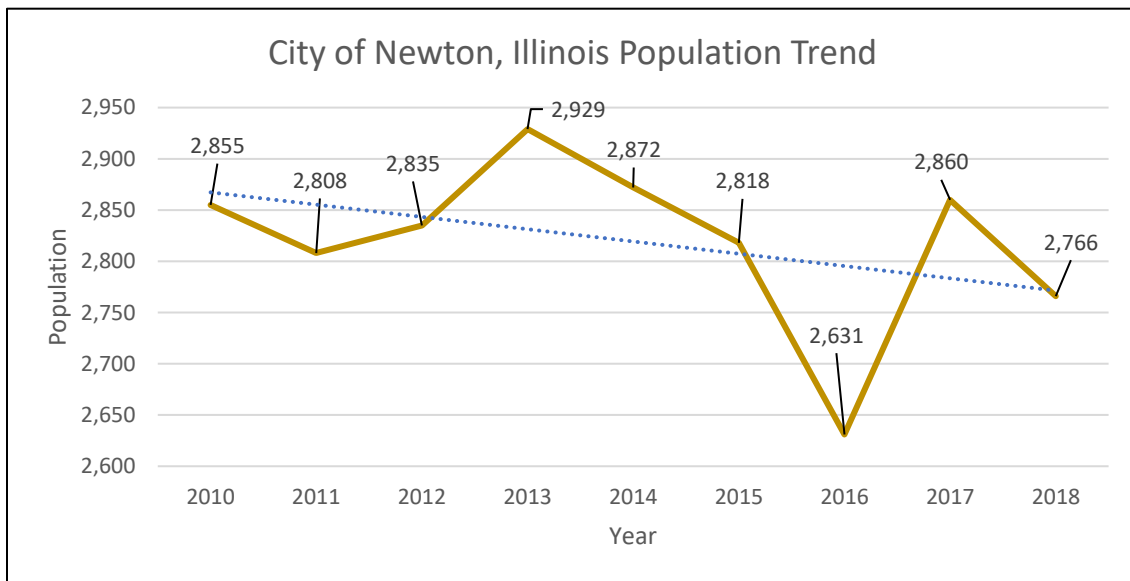


Figure 2-6: Newton Population

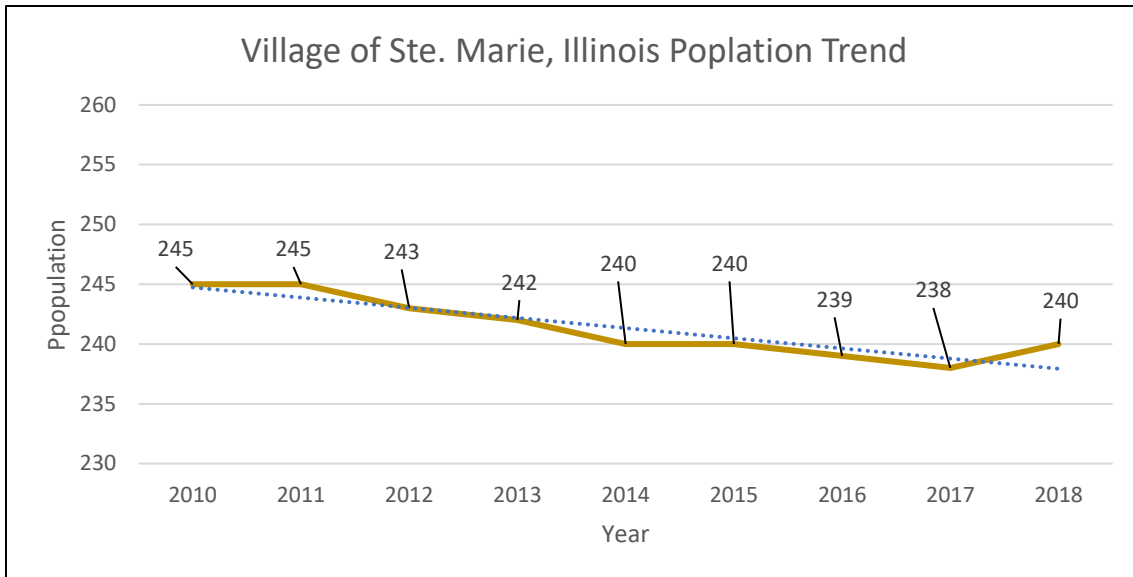


Figure 2-7: Ste. Marie Population

Jasper County, and the communities within, have shown a slow but steady population decrease over the last several decades. The population trend data above shows that this declining movement is continuing and expected to continue into the near future. Furthermore, the overall population density of the County of Jasper is quite small relative to many counties across the State of Illinois with an average of 19 individuals per square mile². The density of total housing units across the county indicates an average of 9 housing units per square mile².

The community population age composition is an additional factor that is important to consider. A population age assessment is a requirement when assessing hazards and the risks they pose to a community or region. For example, a predominantly elderly community will require much more direct assistance during natural hazard events than would a predominantly middle age community. In Jasper County, approximately 2,211 (23%) people are under the age of 18, 5,574 (58%) people are between ages 18-64, and 1,865 (19%) are 65 years old or older.

Now turning to the diversity and racial makeup of the County, approximately 9,340 (97.2%) of the residents are white, 141 (1.47%) are of Hispanic or Latino descent, 78 (0.81%) are two or more races, 38 (0.40%) are Black or African American, 6 identify as American Indian or Alaska Natives, 6 identify as some other race and 1 individual identifies as Asian. Most recent U.S. Census Bureau data also suggests that 1.73% of the population are foreign-born. Additionally, approximately 98.5% of the population are U.S. citizens, leaving 1.5% of the population as non-U.S. citizens.

2.3 – Area Housing

Jasper County housing units include predominantly detached housing units. Detached housing units are defined as land containing only one structure that is not attached to another dwelling. Specifically, 3,654 (84.3%) of the housing units are detached. The second largest housing unit, by structure, are mobile homes with 500 (11.5%) being located within Jasper County.

In terms of the age of the housing units within Jasper County, 960 (22%) of the housing units were built in 1939 or earlier, 730 (16.8%) were built between 1970-1979, 475 (11.0%) were built between 1990-1999, 453 (10.5%) were built between 2000-2009, and 423 (9.8%) were built between 1960 and 1969. The median year that a housing unit structure was built in Jasper County is 1972. The table below provides a housing summary of each HMP participating entity.

Table 2-1: Community Housing Summary

	Total Housing Units	Occupied Housing Units	Vacant Housing Units	Renter Occupied Units	Median Year Built	Average Value w/ Mortgage	Average Value w/o Mortgage	Predominant Housing Unit Structure Type
Jasper County	4,333	3,656	677	643	1972	\$170,548	\$143,989	1, detached
Newton	1,409	1,157	252	430	1966	\$87,376	\$69,690	1, detached
Sainte Marie	147	120	27	12	1971	\$70,220	\$85,469	1, detached

As shown in the table above, the most common housing unit structure among all three HMP entities are detached housing units. While numerous multi-family residences are located throughout Jasper County, they are predominantly located with the City of Newton and are relatively small in number in comparison with single-family units. Within the City of Newton there are 37 (2.6%) attached housing units including 2 dwellings, 60 (4.3%) attached housing units including 3-4 dwellings, 8 (0.6%) attached housing units including 10-19 dwellings and 47 (3.3%) attached housing units including 20-49 dwellings.

Each entity also shares similar housing unit vacancy rates with Jasper County’s residential vacancy rate at 15.6%, the City of Newton at 17.8%, and the Village of Ste. Marie at 18.3%. Jasper County does have a substantially higher average home value (both mortgaged and non-mortgaged) than the two participating municipalities, however, this can be explained by the large presence of farmers or other agriculturalists who often reside outside of the corporate limits of area municipalities.

2.4 – Business and Employment

Jasper County has a total of 414 businesses that include 2,726 employees. The graph below illustrates the businesses by NAICS code that employ over 200 within Jasper County. The largest employment hub is the Jasper County Community Unit School District, which employs over 300 people within Jasper County. The second largest NAICS industry is Public Administration which includes municipal and county positions, local law enforcement, fire protection, legal counsel, among others.

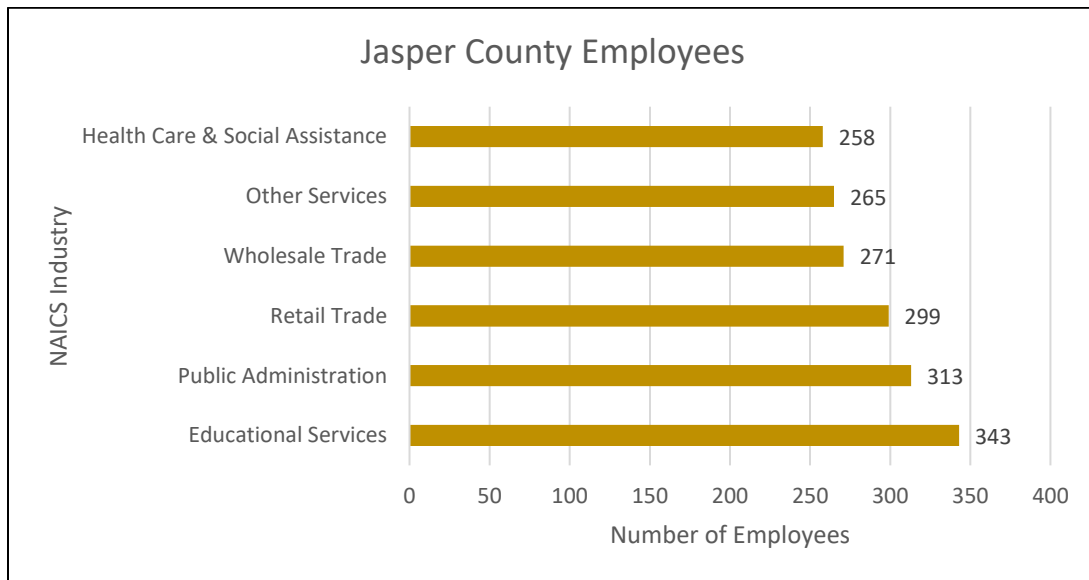


Figure 2-8: Jasper County Employees

The county has a total employed population of 4,763. A brief glance at the total employed population (4,763) and the total number of employees working for businesses located within the County (2,726), it becomes clear that a large number of individuals commute to neighboring counties for work. Nearby employment hubs such as the City of Effingham to the west and Lawrenceville to the east are both communities that many of these commuters travel to each day. Commuting pattern estimates suggest that 16% percent of the Jasper County employed population, approximately 762 travel over seven hours each week for work. Those employed persons who reside closer to neighboring counties, but exit the County for work each weekday, would not be included in this percentage.

In addition, it is important to note that one of Jasper County's largest industry clusters, as found in a recent industry cluster analysis performed by SCIRPDC, the local regional planning commission, is agriculture or agribusiness. This cluster, alongside oil and gas extraction, are performing at substantially greater levels in Jasper County than both Illinois and the United States. As noted in the County's 2011 Hazard Mitigation Plan, over 232,000 acres of Jasper County is utilized for cropland production of wheat, soybeans, corn and hay. One of the biggest factors explaining the success of the agricultural cluster specifically, is the rich soil developed in part from the area's natural resources.

2.5 – Rivers and Lakes

Jasper County also has numerous streams, creeks, and small rivers. Most of these streams and creeks are tributaries of the two most notable rivers within Jasper County, the Embarras River and North Folk Embarras River. A complete table of the Jasper County streams and creeks is shown on the following page. The most notable river in the county is the Embarras River, a 195-mile-long tributary of the Wabash River beginning near Champaign, Illinois and flowing southward into Jasper County then turning southeast and ultimately joining the Wabash River approximately 6 miles southwest of Vincennes, Indiana. The Embarras River nearly adjoins the City of Newton’s northern corporate limits border and continues southeast passing through the Village of Ste. Marie. This river drains a watershed around 1,566,450 acres, including a large portion of Jasper County. A map illustrating the Embarras River, with its watershed highlighted, can be found on the page 15.

Another notable river located within Jasper County is a major tributary to the Embarras River, the North Folk Embarras River. This 64-mile-long stream originates in Edgar County to the north, flows south through Clark and Crawford counties and into Jasper County. The North Folk Embarras River’s confluence with the Embarras River is located only a few miles southeast of the Village of Ste. Marie.

Additional small creeks within Jasper County not noted on the table on the following page include, Weather Creek, Wolf Creek, Big Muddy Creek, Limestone Creek, Webster Branch Stream, Island Creek, West Crooked Creek, East Crooked Creek, West Fork Wetweather Creek, East Fork Wetweather Creek and Hurricane Creek.

Numerous watersheds, land areas that channel rainfall and snowmelt to rivers, streams and creeks, are located within the County of Jasper. The two major watersheds are the Embarras River watershed and the Little Wabash River Watershed. As noted previously, the Embarras River watershed is approximately 1,566,450 acres including the northeast portion of Jasper County, while the Little Wabash River Watershed is approximately 515,000 acres and covers the southwest portion of Jasper County.

Table 2-2: Jasper County Rivers, Streams and Creeks

Waterway	Description	Location
Embarras River	Major Tributary of the Wabash River	Flows through the center of Jasper County, near Newton and Ste. Marie
Range Creek	Tributary of the Embarras River	Flows northwest of the Village of Hidalgo
Hill Creek	Tributary of the Embarras River	Flows north of unincorporated Gila
Mint Creek	Tributary of the Embarras River	Flows northwest of the City of Newton
Turkey Creek	Tributary of the Embarras River	Flows northwest of the City of Newton
Pond Grove Creek	Tributary of the Embarras River	Flows south of the Village of Ste. Marie
Crooked Creek	Tributary of the Embarras River	Flows east of the Sam Parr State Park
North Folk Embarras River	Major Tributary of the Embarras River	Flows along eastern border of Jasper County, confluence near Ste. Marie
Panther Creek	Major Tributary of the North Folk Embarras River	Flows east of unincorporated Advance
Sam Branch Stream	Tributary of the N. Folk Embarras River	Flows east of unincorporated Hunt City
Hickory Creek	Tributary of the N. Folk Embarras River	Flows east of the Village of Willow Hill
Fox River	Tributary of the Little Wabash River	Flows in the southern portion of Jasper County near West Liberty
Richland Creek	Tributary of the Fox River	Flows in the southern portion of Jasper County near West Liberty

Embarras River Map

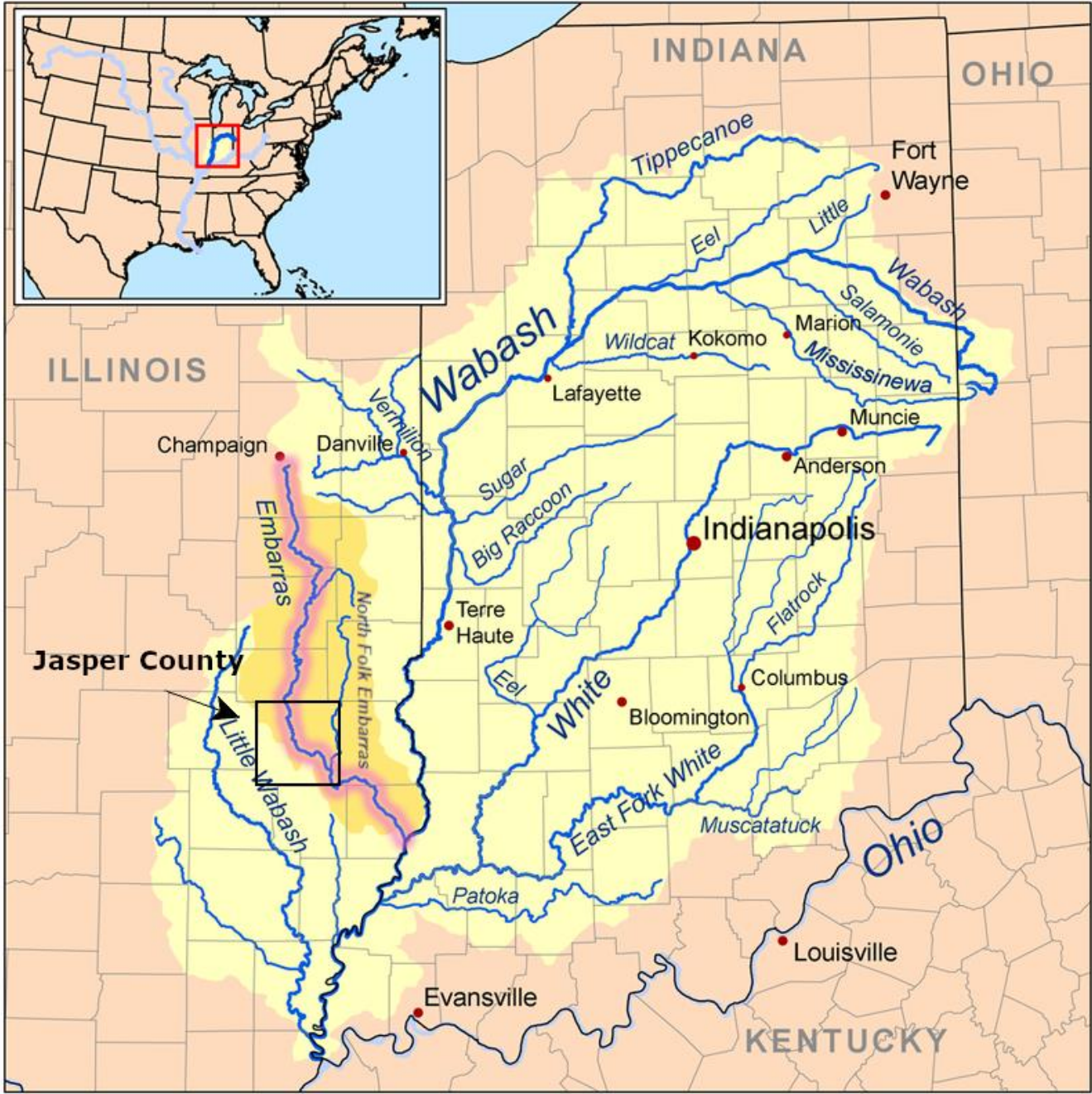


Figure 2-9: Embarras River Map

In addition to the numerous rivers, streams, creeks, and watersheds located in Jasper County, it is also home to several lakes. Newton Lake is located approximately 6 miles southwest of the City of Newton and has a surface area of 1,750 acres (shown right). The average depth of Newton Lake is 16 feet with a maximum depth of 40 feet. It further includes about 52 miles of shoreline and a watershed of 30,720 acres. Recreational fishing, boating and picnicking activities are common on and around Newton Lake. In 2019 alone, 73 different fishing tournaments occurred where over 2,000 largemouth bass were caught.



Figure 2-10: Newton Lake

A smaller, but still widely used lake is Sam Parr Lake, located in the Sam Parr State Fish and Wildlife Area (shown below). The Sam Parr Lake, 2.7 miles northwest of the City of Newton, has a surface area of approximately 180 acres with an average depth of 10 feet and a maximum depth of 28 feet. The lake has a shoreline of 9.5 miles and a total watershed of 3,950 acres. As is the case with Newton Lake, Sam Parr Lake is also widely utilized for recreation activities such as fishing, boating,

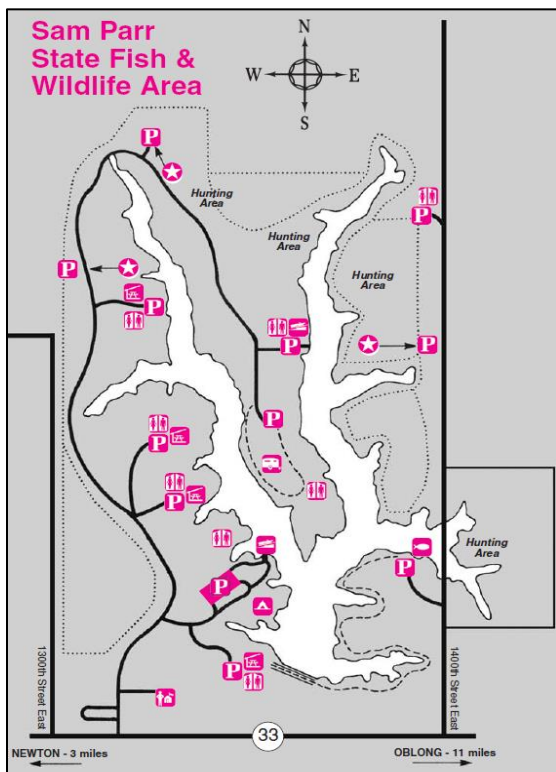


Figure 2-11: Sam Parr Lake

picnicking and camping. A map of Sam Parr Lake area is shown to the left.

There are two other lakes located in Jasper County that, although small in comparison to Newton Lake and Sam Parr Lake, should be noted. They include both Lake Jasper, located just south of Sam Parr Lake, and Berry Lake, located south of the unincorporated community of Shamrock.

2.6 – Climate

Considering the climate of the communities within the HMP is also critical as certain climate conditions can indicate an increased likelihood of certain natural hazard events occurring in the area. Excessive amounts of precipitation, flooding, in low-lying areas is one of the most common and the most damaging natural hazard in the State of Illinois. There has been a steady trend of increased precipitation annually in Illinois since the 1940s. In Illinois, precipitation has been the root cause for approximately \$257 million in property and crop damage annually since 1983. This is the third highest across the nation during this same time frame.

While large amounts of property and crop damage come from Illinois flooding, deaths from extreme heat and cold far exceed loss of life from other hazards such as flooding, tornadoes, lightning, etc. One of the deadliest temperature related hazards in Illinois' history is the 1995 heat wave which took the lives of 753 Illinoisans. Most of the individuals who lost their life from the deadly extreme heat hazard event were poor or elderly residents of Chicago, Illinois.

Looking at Jasper County specifically, the following two graphs illustrate the average temperature and precipitation by month in Jasper County from the year 2000-2019. Data was retrieved from the National Climatic Data Center.

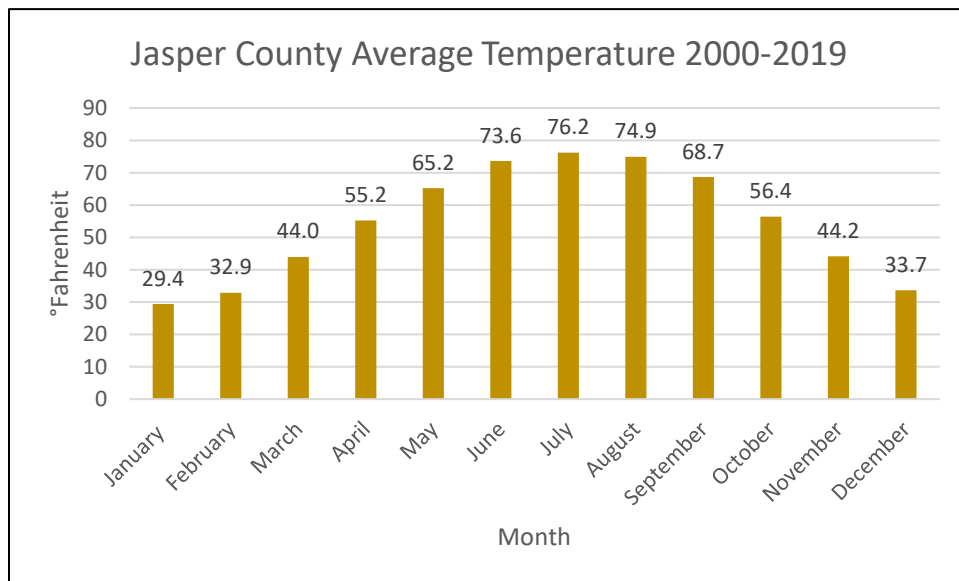


Figure 2-12: Jasper County Temperature

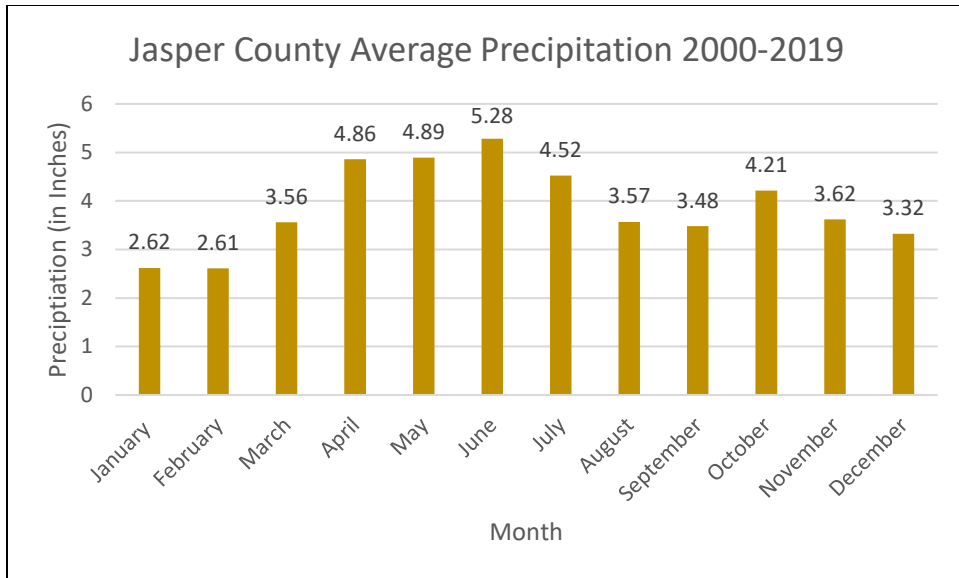


Figure 2-13: Jasper County Precipitation

Jasper County climate would be considered typical and similar to other south-central Illinois counties. The coldest temperatures on average occur in January of each year, while the warmest occur in July. The average annual temperature from 2000-2019 for Jasper County is 54.5 °F. The annual average total precipitation for Jasper County over the last 20 years is 46.54 inches.

2.7 – Land Use & Topography

Jasper County is located in the eastern portion of the Springfield Plain physiographic sub-division of the Till Plains Section. The Springfield Plain is distinguished by its flatness and shallow entrenchment of drainage. Upland prairies are predominantly flat and the valleys within the county can be quite shallow.

Agricultural land cover is the predominant land use within Jasper County. While the success of the agricultural business industry cluster is evident within Jasper County, as mentioned in a previous section, this is not the central reason for the large agricultural land cover across Jasper County. Rather, the current land cover exists in large volumes most notably due to the lack of major urban development. Not only has major urban development not occurred throughout a majority of Jasper County, but it is highly unlikely to occur in the foreseeable future. This is due to numerous reasons, demographic composition and place location being two central reasons.

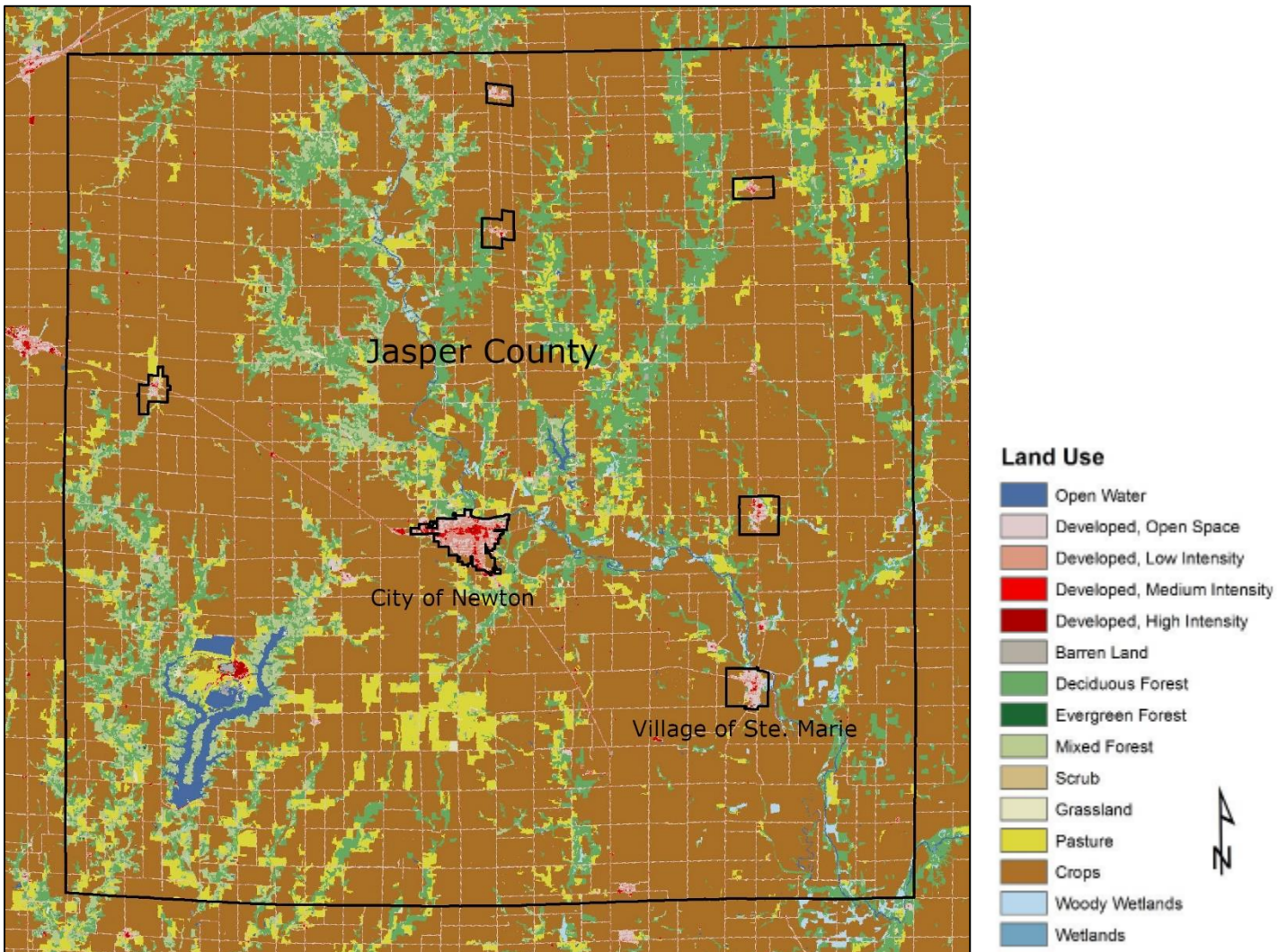


Figure 2-14: Jasper County Land Use

Section 3: Risk Assessment

3.1 – Purpose of Risk Assessment

The definitive goal of hazard mitigation is to reduce the impact that future hazards have on the local community including, loss of life, property damage, local and regional economic disruption, and the expenditure of funds, both private and public, for recovery. In order to achieve sound mitigation, an accurate risk assessment is required. This risk assessment includes both the identification of potential hazards and quantifying potential loss resulting from the hazard. This assessment consists of three different components, (1) hazard identification, (2) vulnerability assessment, and (3) risk analysis. The risk assessment being completed in this section aligns closely with the first two steps of FEMA's Threat and Hazard Identification and Risk Assessment (THIRA) process. Those first two steps include, (1) identifying threats and hazards to the community being examined, and (2) providing context to those threats, local, regional, and/or national context. The third and final step in the THIRA process, establishing local capability targets, will be utilized in the mitigation strategy section of this HMP.

3.2 – Hazard Introduction & Identification

Natural hazards have the potential to directly impact local citizens, property, the environment, as well as the local economy of Jasper County. Common hazards such as flooding, tornadoes, severe thunderstorms, severe winter storms, and earthquakes could expose Jasper County residents and businesses to both the financial and emotional costs of recovering from a disaster. Risks associated with hazards increase as more people inhabit areas that could potentially be affected by a hazard event. Natural hazards are not just something that could happen, but rather they are inevitable. It is the size and scope of natural hazards that must be adequately prepared for. This inevitability creates the need to develop strategies, coordinate area resources and increase public awareness to lower risks associated with future hazard occurrences. This HMP is an essential tool for local officials, stakeholders and the general public of Jasper County to help address the impacts of future disasters.

In order to better identify hazards that may affect Jasper County presently and in the future the Hazard Mitigation Plan Steering Committee considered and identified technical documents and historical information to assist in the planning process and incorporated information utilized in the previous 2011 Jasper County HMP. As noted in section 1.4, all technical documents and data utilized is listed in Appendix A of this HMP.

3.2.1 – FEMA Declared Illinois Disasters

From 1953-2019 the State of Illinois had 61 disaster declarations confirmed by FEMA. These declarations allow states to gain access to FEMA funds for public assistance. The table below displays these disasters by category. Thirty-eight of the total 61 disaster declarations occurred between the months of March and June, a common timeframe in the Midwest for severe storms to occur. The year 2008 saw the most disaster declarations in the State of Illinois since 1953 with a total of four, they included severe storms, flooding, and record snow falls.

Table 3-1: Illinois FEMA Disaster Declarations 1953-2019

	Severe Storms	Flood	Tornado	Winter Storm	Hurricane
State of Illinois	25	16	10	9	1

3.2.2 – FEMA Declared Jasper County Disasters

Of the 61 disaster declarations for the State of Illinois from 1953-2019 shown above, the County of Jasper was included in seven of the declarations. The table below displays information about each of these disaster declarations.

Table 3-2: Jasper County FEMA Disaster Declarations 1953-2019

Declaration Number	Date	Description	*Total FEMA Public Assistance
871	6/22/1990	Severe Storms, Tornadoes & Flooding	\$0.00
1112	5/6/1996	Severe Storms and Flooding	\$0.00
1416	5/21/2002	Severe Storms, Tornadoes & Flooding	\$31,185,670.64
3230	9/7/2005	Hurricane Katrina Evacuation	\$8,911,995.45
1771	6/24/2008	Severe Storms and Flooding	\$63,431,923.12
1960	4/17/2011	Severe Winter Storm	\$48,259,660.62
4157	11/26/2013	Severe Storms, Straight-Line Winds & Tornadoes	\$2,858,538.97

**Total FEMA Public Assistance Dollars obligated for Disaster Declaration (Entire Disaster Area) – Includes Grants, Emergency Work, Permanent Work, and Household Assistance*

3.2.3 – National Climatic Data Center Meteorological Hazards Summary

To further assist in planning for future hazardous events, historical storm event data from the National Climatic Data Center (NCDC) was collected and analyzed. This data provides an overview of each reported meteorological event reported in Jasper County from 1950-2019 including the type of event and any losses associated with the event including loss of life, personal injury and financial damage.

The NCDC database of meteorological events included a reported 257 events over the past 70 years in Jasper County. Table 3-3 summarizes the meteorological events or hazards as reported. Figure 3-1 illustrates the relative frequency of each meteorological hazard and figures 3-2 through 3-5 summarize the amount of property and crop damage associated with each hazard category in Jasper County.

Table 3-3: NCDC Hazard Events Summary – Jasper County

Hazards	Time Period		Number of Events	*Total Damage	Deaths	Injuries
	Start Date	End Date				
Severe Thunderstorms	1957	2018	151	\$2,239,500	0	4
Flood	1996	2018	47	\$530,000	0	0
Winter Weather	1996	2019	28	\$600,000	0	2
Tornado	1957	2013	14	\$892,500	0	7
Extreme Heat	1998	2012	11	\$0.00	0	0
Drought	2007	2012	6	\$33,900,000	0	0

**Combination of Crop Damage & Property Damage; Crop Damage (1) \$33.9 Million – Drought, (2) \$280k – Flood; Remainder is property damage*

Within Jasper County, the most common hazard event over the last seven decades has been severe thunderstorms, including over \$2 million dollars in damages and four injuries. The most financially costly hazard event is drought. In 2012, Jasper County had extreme drought conditions causing an estimated \$34 million dollars in crop damage. The total damage caused by these 257 events included \$38.162 million dollars to property and crops, including injuries being sustained by 13 people and fortunately zero deaths.

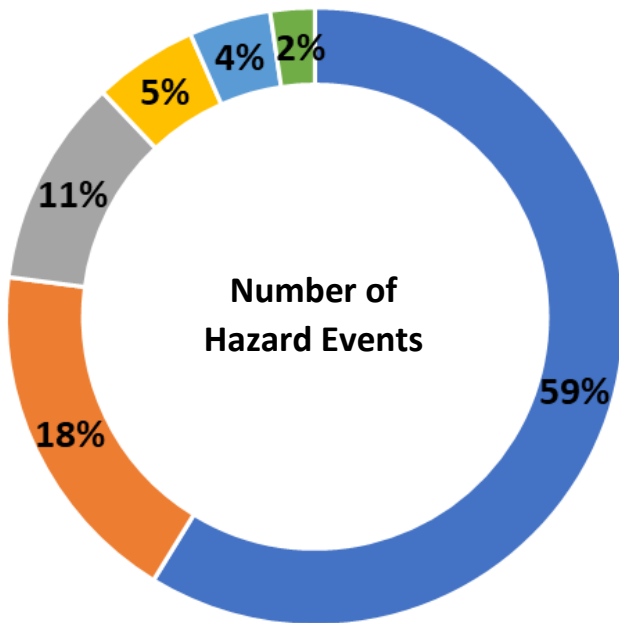


Figure 3-1: Distribution of Hazard Events

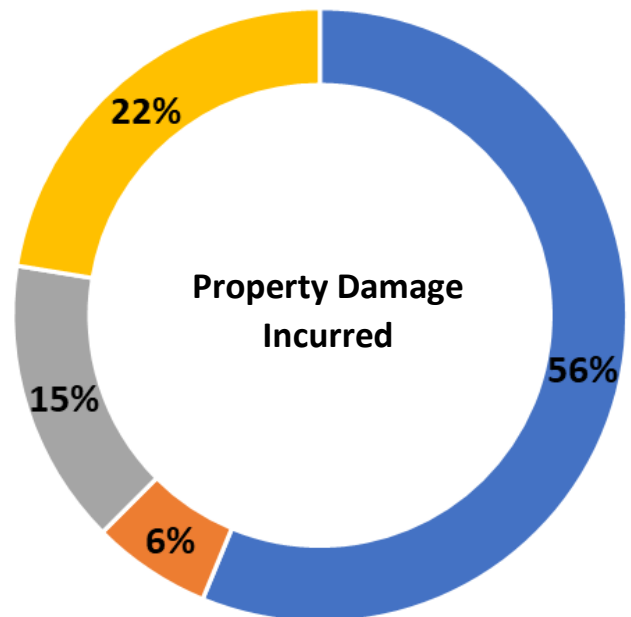


Figure 3-2: Distribution of Property Damage by Hazard

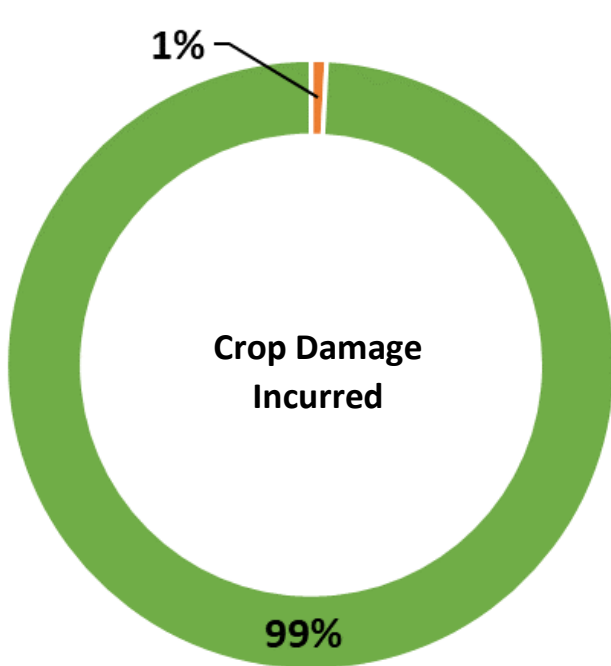


Figure 3-3: Distribution of Crop Damage by Hazard

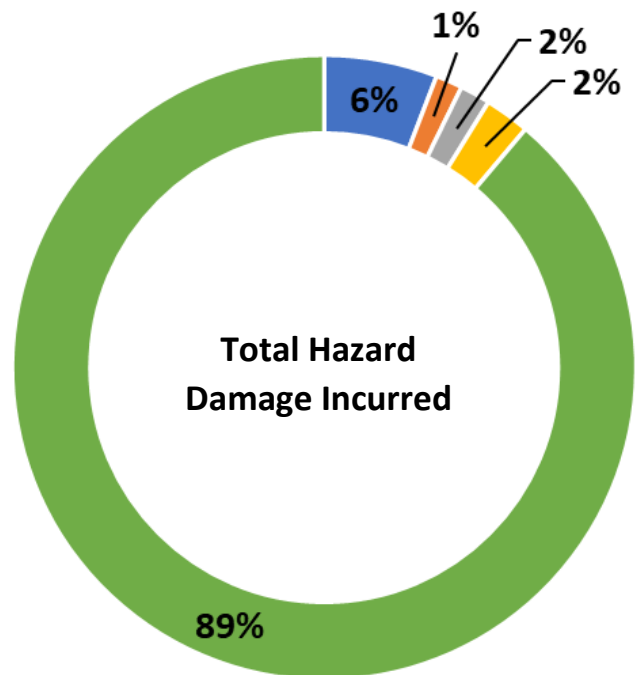


Figure 3-4: Distribution of Total Damage by Hazard

■ Severe Thunderstorms ■ Flood ■ Winter Weather ■ Tornado ■ Extreme Heat ■ Drought

Figures 3-1 through 3-4 clearly illustrate that severe thunderstorms are the most common hazard event within Jasper County for decades and also the costliest in terms of property damage (\$2,239,500). Interestingly, while substantial drought is the least common weather event in recent years for Jasper County, it is by far the most financially destructive hazard experienced in Jasper County for decades. So, although extreme drought is very uncommon, its impacts on the local economy through crop damage can be devastating. Overall, Jasper County’s total financial damages from hazards between 1950-2019 was \$38,162,000, total property damage was \$3,982,000 and total crop damage amounted to \$34,180,000.

3.2.4 – Hazard Ranking Methods

Utilizing input from the Jasper County Hazard Mitigation Plan Steering Committee, existing plans and national datasets the committee chose to update the 2011 HMP by ranking the potential hazards that could impact the County and participating municipalities within. While the 2011 HMP listed, defined and examined natural hazards that have potential for significant impact on the county and municipalities, these hazards were not prioritized by risk. In this updated plan, the hazards identified by the Hazard Mitigation Committee are ranked using a Risk Priority Index (RPI). The utilization of a RPI to quantify hazard event risks has been completed in many HMP’s throughout Illinois and across the country.

The RPI allows Jasper County to quantify the risks associated with each potential hazard and furthermore prioritize strategies of mitigation for those hazards that are considered to be higher risk. Using historical hazards data and present local conditions, the Hazard Mitigation Committee is able to estimate both the probability and magnitude of potential hazard events. The RPI is a direct product of the probability of a hazard event occurring and the magnitude or severity of the potential hazard event. Below are three tables, (1) table 3-4 provides a simple summary of the identified hazards to Jasper County and its HMP partner municipalities, (2) table 3-5 displays the hazard probability ranking system utilized, and (3) table 3-6 illustrates the methodology of the Hazard Mitigation Planning Committee’s hazard severity/magnitude ranking.

Table 3-4: Jasper County Hazard List

Drought
Severe Thunderstorms
Flood
Tornadoes
Extreme Heat
Winter Storm
Earthquake
Mine Subsidence

Table 3-5: Hazard Probability Ranking Methodology

Probability	Description
4 – Highly Likely	The hazard event is probable in the next calendar year This hazard event has occurred, generally, once every 1-2 years
3 – Likely	This hazard event has a 10-50% chance of occurring any given year This hazard event is probable within the next 10 years This hazard event has occurred, generally, once every 3-10 years
2 – Possible	This hazard event has a 2-10% chance of occurring any given year This hazard event is probable within the next 50 years This hazard event has occurred, generally, once every 10-50 years
1 – Unlikely	This hazard event has a 0.5-2% chance of occurring any given year This hazard event is probable within the next 200 years This hazard event has occurred, generally, once every 50-200 years

Table 3-6: Hazard Severity/Magnitude Scale Methodology

Severity/Magnitude	Description
8 – Catastrophic	Multiple fatalities Shutdown of facilities for 30 days or more More than 50% of property is severely damaged
4 – Critical	Injuries from hazard event result in permanent disability Shutdown of facilities for at least 14 days More than 25% of property is severely damaged
2 – Limited	Injuries from hazard event do not result in permanent disability Shutdown of facilities for more than seven days More than 10% of property is severely damaged
1 – Negligible	Injuries from hazard event are treatable with general first aid Shutdown of facilities for 24 hours or less Less than 10% of property is severely damaged

3.2.5 – Jasper County Hazard Event Risk Priority Index

Table 3-7 provides insights into the Hazard Mitigation Planning Committee’s RPI. This probability and severity/magnitude findings come from analysis of hazard event historical data for Jasper County and utilizing previous 2011 Jasper County HMP findings to project future hazard potential. The ultimate RPI is the product of probability and severity/magnitude (i.e. Drought RPI = Drought Probability x Drought Severity/Magnitude). A larger RPI number equates to greater hazard event risk. The potential hazard events were then ranked from 1-8, with 1 being the greatest risk and 8 being the least risk.

Table 3-7: Jasper County Hazard Risk Priority Index (RPI)

Hazard Event	Probability	Severity/Magnitude	RPI	RPI Rank
Severe Thunderstorms	4	4	16	1
Tornadoes	3	5	15	2
Earthquake	2	7	14	3
Winter Storm	3	3	9	4 (tied)
Extreme Heat	3	3	9	4 (tied)
Flood	2	4	8	6
Drought	2	3	6	7
Mine Subsidence	1	2	2	8

3.2.6 – Illinois Hazard Mitigation Plan Ranking

In 2018 the State of Illinois, through the Illinois Emergency Management Agency (IEMA) approved an updated State Hazard Mitigation Plan. This Illinois HMP established hazard event rankings for each of the 102 Illinois counties ranging from very low risk to severe risk for seven of the eight hazard events considered in this Jasper County HMP. Below is a table illustrating the State of Illinois’ assessment of Jasper County hazard event risk.

Table 3-8: Illinois Hazard Event Ranking for Jasper County

Hazard Event	Jasper County Risk Ranking
Severe Thunderstorms	Severe Risk
Tornadoes	Medium Risk
Earthquake	Medium Risk
Winter Storm	High Risk
Extreme Heat	Medium Risk
Flood	Low Risk
Drought	Low Risk

3.3 – Asset Inventory

With the hazard events identified and ranked based on the likelihood of occurrence and their corresponding severity or magnitude, it now becomes necessary to review the inventory of local assets in Jasper County and assess the potential impacts of each hazard event on local assets. The Jasper County Hazard Mitigation Plan Steering Committee looked and inventoried county assets during initial planning meetings. Appendix B illustrates the essential facilities located in Jasper County as identified by the Hazard Mitigation Planning Committee. These essential facilities include, local law enforcement, fire departments, health care facilities, departments of public health, critical utility organizations, etc.

Another important piece of the local asset inventory process is determining the total value of property located within Jasper County. This information will allow the Jasper County Hazard Mitigation Plan Committee to quantitatively assess the risk of potential hazard events financially. The table below provides a summary of the property value for Jasper County, the City of Newton and the Village of Ste. Marie.

Table 3-9: Jasper County Property Value

Property Type	Jasper County	City of Newton	Village of Ste. Marie
Residential	\$47,824,986	\$19,557,780	\$1,949,470
Agricultural	\$92,198,420	\$146,070	\$222,180
Commercial	\$9,472,663	\$5,999,048	\$413,915
Industrial	\$37,461,269	\$1,201,320	\$105,6765
Total	\$189,752,449	\$27,026,884	\$2,691,330

To help further evaluate Jasper County assets and determine potential hazard event risk, an inventory of local business and residential structures was developed. While identifying each and every individual structure within the entire location or area rather difficult, the inventory shown on table 3-10 below provides a fairly accurate basis from which to project risk. Due to data availability, table 3-10 assumes that each place of business and residence is one structure located on a single parcel of property. While inevitably there will be some margin of error with this assumption, this provides a necessary baseline to develop quantitative projections. This data was gathered from Esri Business Analyst Online.

Table 3-10: Jasper County Property Type Summary

Property Type	Jasper County	City of Newton	Village of Ste. Marie
Residential Units	4,345	1,409	147
Occupied Residential Units	3,940	1,157	120
Agricultural Businesses	47	6	0
Commercial Businesses	355	224	12
Industrial Businesses	12	7	3
Total Businesses	414	237	15

In summary, the most vulnerable assets in the region would include most notably occupied residential units and property utilized for agricultural purposes. Due to the continually aging housing stock throughout Jasper County these homes will be at high risk for potential hazard events. The median age of all residential units in Jasper County is approximately 50 years. Homes built in the 1970's were not built to with the same building standards as today and therefore pose additional safety concerns during hazard events. Specific issues that could occur are breaks in older galvanized steel water pipes or weakened concrete slab foundations from decades of soil erosion.

Another vital asset to the Jasper County Region that has significant vulnerabilities to potential hazard events is agricultural land. The success of the agricultural industry in the region is vital to the economic growth of Jasper County and historically flood and tornado hazard events have impacted this sector of the region's economy more than any other. Farm owners should utilize modern farm drainage systems to help prevent some the economic impacts from hazard events.

3.4 – Hazard Event Risk Analysis

The final step in the risk assessment of potential hazard events is performing risk analysis. The fundamental goal of hazard event risk analysis is to quantify the risk of hazard event scenarios to the population and infrastructure of the community. Risk analysis was performed for each hazard identified by the Jasper County Hazard Mitigation Plan Steering Committee and ranked via the Risk Priority Index (RPI) discussed in Section 3.2.4 and 3.2.5. This analysis consists of utilizing historical records of hazard events, local knowledge and utilizing Hazus-MH findings from the 2011 Jasper County HMP. Combining these three data points to create hazard event assessments and projections will provide for more accurate findings than utilizing only a singular risk analysis tool.

3.4.1 – Severe Thunderstorms

Risk Identification

In this Jasper County HMP, severe thunderstorms are interpreted as including hazard events classified as severe storms, high wind, lightning and hail. In the State of Illinois thunderstorms occur from the collision of warm air moving north from the Gulf of Mexico and colder air moving east from the Rocky Mountains. These storms can bring heavy rainfall, strong winds, hail, lightning and, on the rare occasion, a tornado. Thunderstorms are usually about 15 miles in diameter and can produce heavy rainfall to a single location anywhere from 30 minutes to an hour. There are an estimated 100,000 thunderstorms each year with only about 10% of these storms ultimately classified as severe. These severe thunderstorms include hail at least one inch in diameter, winds of 58 miles per hour or higher, or ultimately produce a tornado hazard event.

The Jasper County HMP has ranked severe thunderstorms as the top priority hazard event through the RPI. According to the 2018 Illinois HMP hazard event ranking, the potential threat of severe thunderstorms for Jasper County is considered to be a severe risk, the highest risk level on the state’s scale. Since 1950, Jasper County has seen 151 severe thunderstorm events causing \$2,239,500 in total property damage and 4 injuries. Five of these severe thunderstorm events were declared a federal disaster by FEMA. Table 3-11 provides a detailed summary of potential loss associated with severe thunderstorms in Jasper County.

Table 3-11: Severe Thunderstorms Loss Estimation

Hazard Event	# of Severe Storm Events	Total Loss	*Average Loss	**Annual Probability of Event	***Estimated Annual Loss
Severe Thunderstorms	151	\$2,239,500	\$14,831	218.84%	\$32,478

* Average Loss = Total Loss / # of events

** Annual Probability = # of events / time period (i.e. 151 / 69)

*** Annual Loss = Average loss multiplied by Annual Probability

Historical Occurrence

According to National Climatic Data Center, the most damaging thunderstorm in Jasper County occurred in April of 1994. Storm wind speeds increased well over the 58-mph severe thunderstorm threshold and caused over \$500,00 in total property damage. In the City of Newton, multiple trees and power lines were blown down as a result of the high winds, as well as several reports of substantial roof damage to local businesses and residential units.

Geographic Location

The entire county has the same risk for the potential occurrence of a severe thunderstorm. They can occur at any location within the county and can cause serious property damage on rare occasions.

Local Vulnerability

With the geographic location in mind, the entire county population and all buildings are vulnerable to a severe thunderstorm. This includes all essential facilities, residential units, commercial businesses and industrial businesses. Impacts to these essential facilities and buildings can include structural failure, flying damaging debris from high wind velocity, roof damage and broken windows from high winds or hail, fires caused by lightning, and overall loss of building functionality. Although rare and normally minor, personal injury can occur from thunderstorms.

Local infrastructure could be impacted by severe thunderstorms substantially as well. Infrastructure such as roadways utility lines, railroads and bridges are all vulnerable to severe storm impacts. These impacts could include broken or impassable roadways, broken or failed utility lines, or impassable railroads or bridges. Damaged or blocked roadways and bridges would cause substantial risk to motorists, while broken or failed utility lines could lead to loss of power for local business and residents.

Hazard Extent

The full extent of potential thunderstorms varies upon each individual storm occurrence. Some thunderstorms may have extreme winds and substantial hail stones that pose an imminent threat to property and local residents, while others may exhibit these conditions on a smaller scale posing little to no threat.

Financial Loss

As illustrated in Table 3-11, Jasper County has incurred about \$2.24 million dollars in damages related to severe thunderstorms since 1950. While most severe thunderstorms will cause little to no damage, in significant cases (i.e. 1994 Newton thunderstorm) these hazard events can cause up to \$500,000 in property damages. While no record of crop damage was recorded from thunderstorms in Jasper County, the high winds often associated with severe thunderstorms have the capability of causing substantial agricultural damage depending on the extent and time of year the hazard event takes place. Based historical property damage analysis, the estimated annual loss from severe thunderstorm hazard events is \$32,478.

Future Asset Vulnerability

Since the entire county is vulnerable to severe thunderstorm hazard events currently, all future development in the county will continue to be vulnerable to severe thunderstorm events.

Future Community Development

In order to best protect current and future development across the county, local officials should enhance storm preparedness to address the safety of county residents and property. One suggestion would be for the county to build all new structures with more sturdy construction and strengthen existing structures through rehabilitation to lessen the potential impacts of severe storms. Another potential area of mitigation is to ensure that the current storm siren capacity reaches all residents of Jasper County. If storm siren capacity does not cover Jasper County from border to border, consider the purchase and installation of additional storm sirens to warn the affected community of approaching storms.

3.4.2 – Tornadoes

Risk Identification

Tornadoes are rapidly rotating columns of air that is in contact with both the surface of the Earth and a cumulonimbus cloud, or in rare cases, the base of a cumulus cloud, and almost always spawned from severe storms. From 1991-2015, Illinois ranked 6th among all states for the most tornado occurrences with an annual average of 54 tornadoes, as show below in figure 3-5.

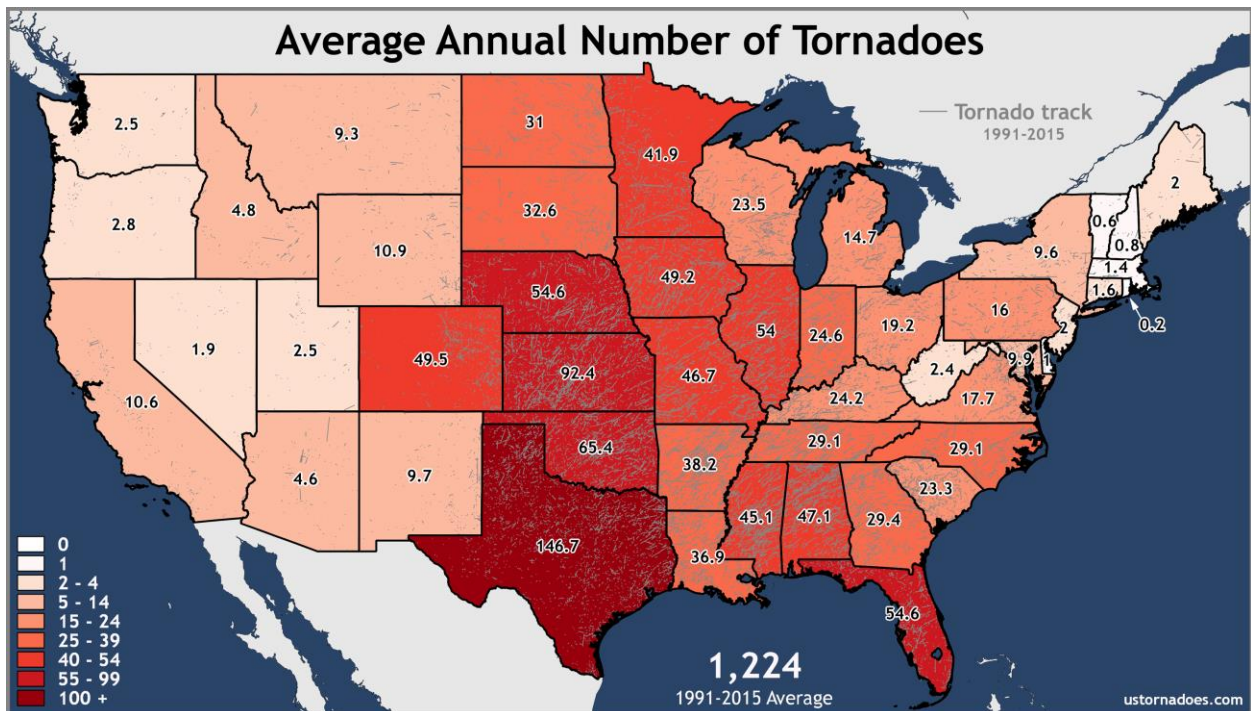


Figure 3-5: U.S. Average Annual Tornadoes

Tornadoes are ranked utilizing the Enhanced Fujita Scale (EF scale), which became operational in 2007. This scale assigns a tornado a rating based on estimated wind speeds and the damage they cause. The EF scale replaced the previous Fujita Scale to reflect better examinations of tornado damage surveys done after the tornado hazard event. It is important to note that the rating given a tornado is an estimate and not a precise measurement. Table 3-12 below provides a summary of the EF scale from an EF0, defined as minor damage, to an EF5, defined as total destruction. Each increase in the EF scale includes damages from the previous EF level.

Table 3-12: Enhanced Fujita Scale Summary

Category	Wind Speeds	Estimated Damage
EF0	65-85 mph	Minor Damage – Tornadoes with little to no damage
EF1	86-110 mph	Moderate Damage – Torn roofs, shifted foundations, windows broken, mobile homes severely damaged
EF2	111-135 mph	Considerable Damage – Trees, light-object missiles generated, cars lifted off of the ground
EF3	136-165 mph	Severe Damage – Entire Stories of homes destroyed, severe damage to large buildings, structures badly damaged
EF4	166-200 mph	Extreme Damage – Whole frame houses leveled, cars lifted and other heavy objects thrown, small missiles generated
EF5	200+ mph	Total Destruction – Strong framed houses leveled, steel-reinforced structures damaged, tall buildings collapse

The Jasper County HMP has ranked tornadoes as the second priority hazard event through the RPI. According to the 2018 Illinois HMP hazard event ranking, the potential threat of tornadoes for Jasper County is considered to be a medium risk. While this is a relatively low ranking, potential damages from tornadoes can be extreme, and therefore mitigation measures should be taken when at all possible. Since 1950, Jasper County has seen 14 tornado hazard events causing \$892,500 in total property damage and 7 injuries. Two of these tornado events were declared a federal disaster by FEMA. Table 3-13 provides a detailed summary of potential loss associated with tornado hazard events in Jasper County.

Table 3-13: Tornado Hazard Event Loss Estimation

Hazard Event	# of Tornado Events	Total Loss	*Average Loss	**Annual Probability of Event	***Estimated Annual Loss
Tornadoes	14	\$892,500	\$63,750	20.29%	\$12,935

* Average Loss = Total Loss / # of events

** Annual Probability = # of events / time period (i.e. 14 / 69)

*** Annual Loss = Average loss multiplied by Annual Probability

Historical Occurrence

According to National Climatic Data Center, the most damaging tornado hazard event in Jasper County occurred in June of 1990. Estimated at F4 on the Fujita Scale, this tornado brought wind speeds of 207-260 mph and caused over \$250,000 in property damage and injured six people in unincorporated Jasper County. This tornado touched down on the north edge of Newton Lake and ultimately demolished nine homes and damaged several others across its path. The south side of Hunt City also saw buildings receive significant structural damage from this F4 tornado hazard event. While data showed that \$250,000 in property damage occurred, based on witness accounts of the damage of the tornado, a much higher property loss of \$500 to \$700 thousand dollars is quite possible. FEMA ultimately declared this tornado hazard event a federally recognized disaster.

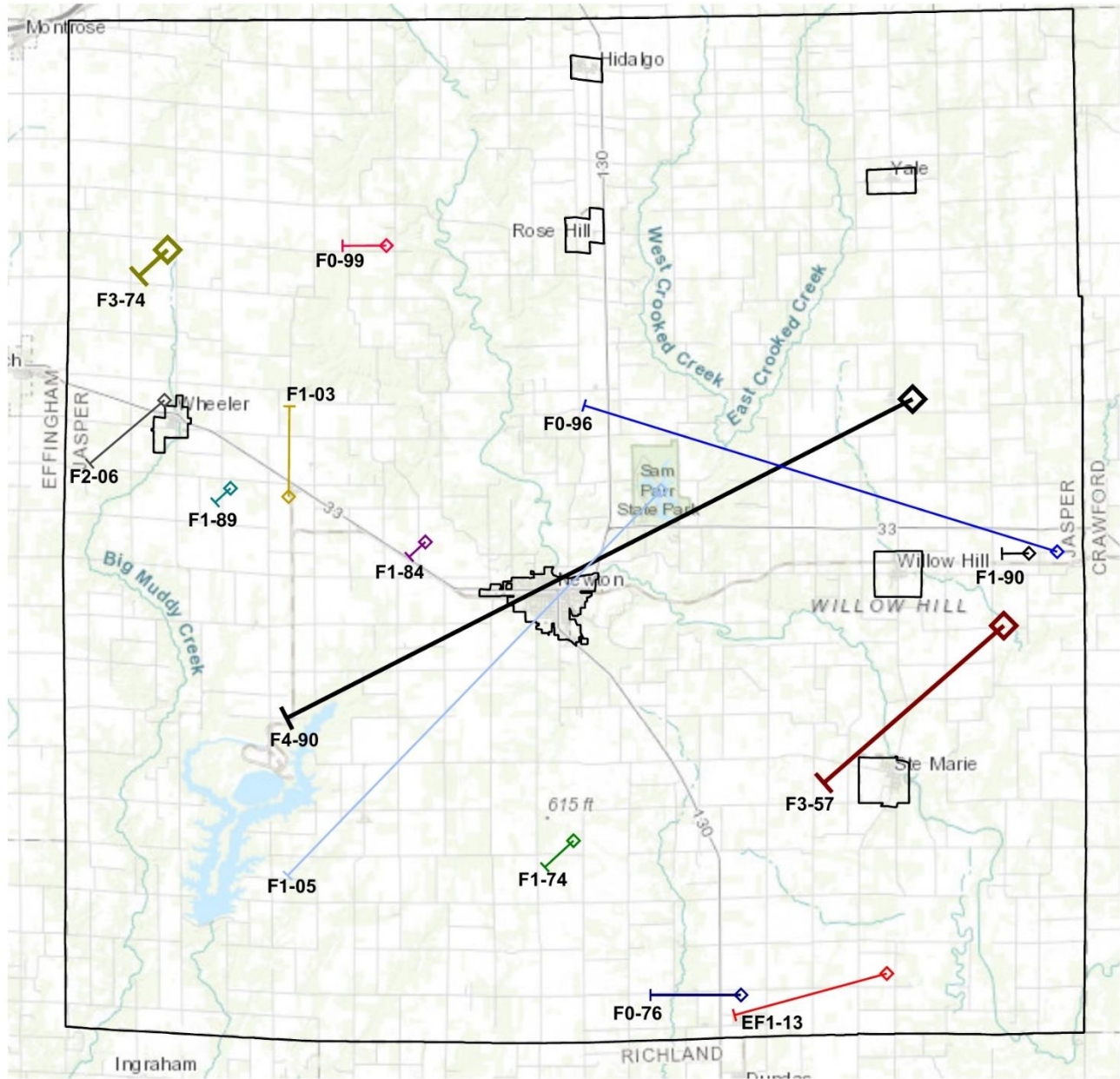
Table 3-14 on the following page provides a summary of tornado hazard events that have occurred in Jasper County.

Table 3-14: Historical Tornado Events in Jasper County

Date	Location	Scale	Deaths	Injuries	Property Damage
12/18/1957	County	F3	0	0	\$25,000
5/30/1974	County	F1	0	0	\$2,500
8/10/1974	County	F2	0	0	\$25,000
3/20/1976	County	F0	0	0	\$25,000
4/12/1984	County	F1	0	1	\$250,000
5/19/1989	County	F1	0	0	\$25,000
6/2/1990	County	F4	0	6	\$250,000
6/2/1990	County	F1	0	0	\$25,000
5/8/1996	Falmouth	F0	0	0	\$0.00
6/1/1999	Rose Hill	F0	0	0	\$0.00
5/10/2003	Wheeler	F1	0	0	\$15,000
11/15/2005	Newton	F1	0	0	\$0.00
4/16/2006	Wheeler	F2	0	0	\$0.00
11/17/2013	West Liberty	EF1	0	0	\$250,000
Totals	14 Hazard Events		0 Deaths	7 Injuries	\$892,500

Figure 3-6, located on the next page, provides further illustration of each of the 14 historical tornadoes location within Jasper County noted above. Each tornado is labeled with the Fujita or Enhanced Fujita scale rating followed by the year the tornado touched down.

Figure 3-6: Jasper County Tornadoes 1950-2019



Tornado Beginning Point Tornado End Point F0 Tornado Fujita Scale Rating 76 Year of Tornado Touch Down

Geographic Location

Tornado hazard events can occur anywhere within Jasper County, therefore the entire county as the same risk of tornado occurrence. While the risk of tornado occurrence is the same across all of Jasper County, it goes without saying that the potential loss and damage from a tornado differs substantially depending on its location. Tornado hazard events crossing population centers, such as a municipality, will create a greater risk for substantial property damage and personal injury or death.

Local Vulnerability

With the geographic location in mind, the entire county population and all buildings are vulnerable to a tornado hazard event. This includes all essential facilities, residential units, commercial businesses and industrial businesses. Since tornado hazard event almost always arise from a severe storm, all local vulnerabilities discussed in Section 3.4.1 would be of concern with tornado hazard events also. While most tornadoes that touch down have an EF rating of 0 or 1, property damage, even if relatively minor, should be expected to occur from any tornado hazard events.

Areas of greatest concern and risk are population centers, most notably municipalities that contain subdivisions, mobile home parks, business centers and industrial parks. Structures that were developed without modern zoning and building codes, mobile homes, and aging buildings are the most at risk for substantial damage from a tornado hazard event. Implementing mitigation measures that protect community assets from high rated tornado hazard events such as EF4 and EF5 tornadoes is difficult due to the extreme conditions these particular hazard events have. Even modern, built to code, steel frame structures are at risk for significant damage during those events. However, mitigation measures can be implemented to limit exposure to lower rated tornado hazard events. Area residents are also at significant risk of severe injury or death from tornado hazard events if proper safety measures are not taken.

Essential facilities (listed in Appendix B) are also significantly vulnerable to tornado hazard events. These types of impacts can include structural failure, damaging flying debris, roof damage or broken windows from hail or high wind speeds and total loss of facility functionality.

Critical local infrastructure can be substantially damaged from tornado hazard events. The type of impacts these hazard events can have on local infrastructure include broken, failed, or impassable roadways, broken or failed utility lines, railway failure from broken or impassable rail lines, or broken or impassable bridges. Damage to this infrastructure can cause loss of power, gas leaks, risk to traveling motorists, loss of access to water, etc.

Hazard Extent

Within Jasper County, tornado hazard events typically move from the southwest to the east or northeast across the county, however other tracks are possible and have been witnessed in Jasper County such as west to east and northwest to southeast. The actual extent of the hazard event is dependent upon the scale and size of the tornado as well as its path through the county.

Financial Loss

As illustrated in Table 3-13, Jasper County has incurred about \$892,500 dollars in damages related to tornado hazard events since 1950. Based historical property damage analysis, the estimated annual loss from tornado hazard events is \$12,935. This estimated annual loss is relatively low because tornado hazard events are somewhat uncommon occurrences within Jasper County, with only an annual probability of occurrence of 20.29%. More importantly, the average estimated loss per tornado hazard event is \$63,750. In the rare but possible situation were a tornado hazard event rated EF4 or EF5 touches down in Jasper County, estimated property damage would be in excess of \$500,000. If the EF4 or EF5 tornado's path is through a population center such as the City of Newton, property damage can be in excess of \$1 million depending on the exact location.

Future Asset Vulnerability

The entire population and all buildings are at risk because tornado hazard events can occur anywhere within Jasper County, at any time. Therefore, any future development in terms of new construction of buildings or infrastructure will also be at risk.

Future Community Development

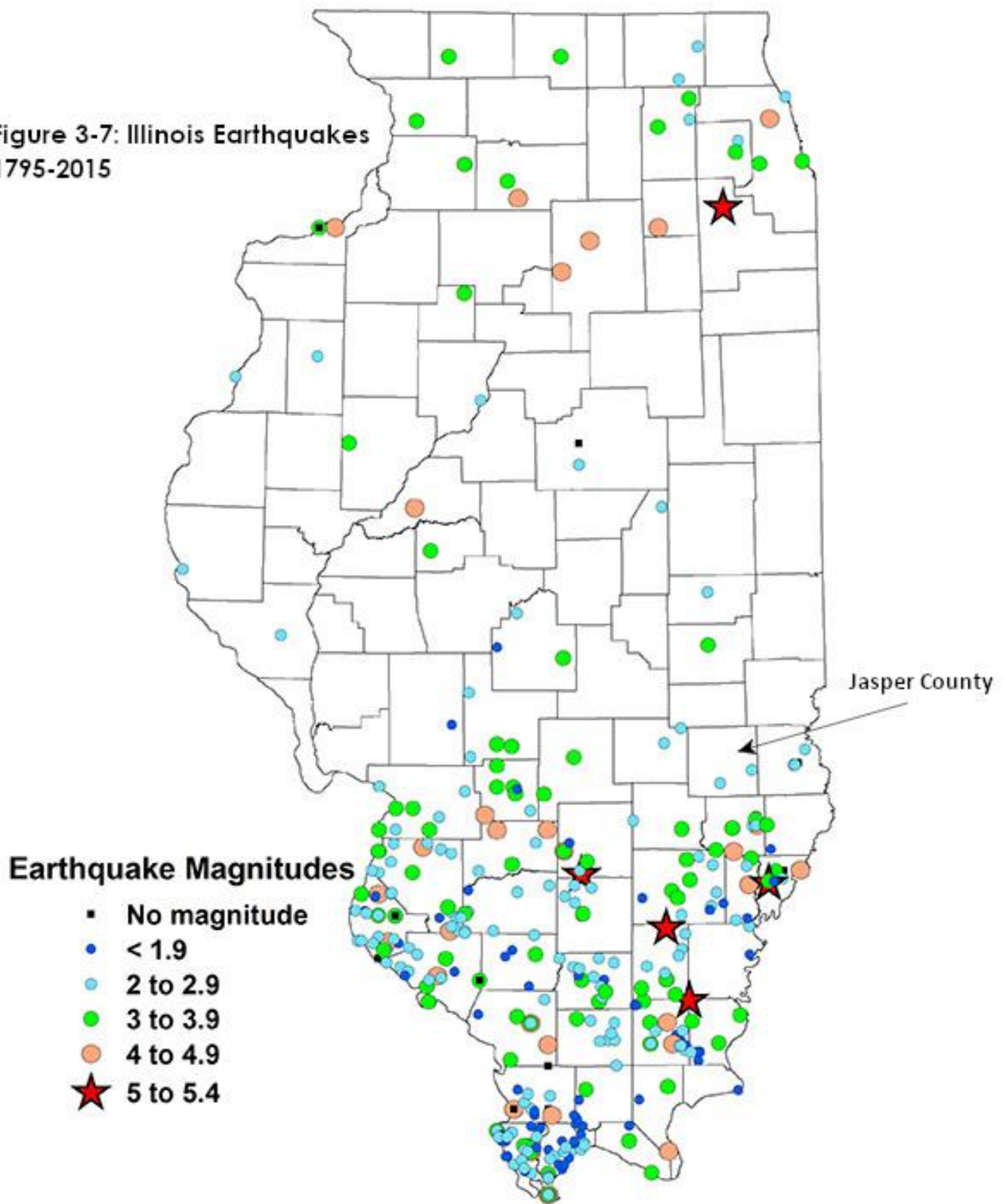
In order to best protect current and future development across the county, local officials should enhance tornado preparedness to address the safety of county residents and property. One suggestion would be for the county to build all new structures with more sturdy construction and strengthen existing structures through rehabilitation to lessen the potential impacts of severe storms. Another potential area of mitigation is to ensure that the current storm siren capacity reaches all residents of Jasper County. If storm siren capacity does not cover Jasper County from border to border, consider the purchase and installation of additional storm sirens to warn the affected community of approaching storms.

3.4.3 – Earthquakes

Risk Identification

An earthquake is the shaking of the earth caused by the energy release when large blocks of rock slip past one another in the earth's crust. These 50-60-mile-thick plates move slowly and continuously over the interior of the earth. After the initial seismic event, tremors or aftershocks can occur for an extended period of time often causing in additional structural damage to buildings, public facilities and infrastructure, as well as additional injuries or even death. Earthquake hazard events occur most often at tectonic plate boundaries; however, some earthquakes have been known to occur in the middle of these plates. The two seismic zones that create the most risk for Illinois and Jasper County, are the New Madrid and Wabash Valley Seismic Zones. Figure 3-7 provides an illustration of all earthquakes in the State of Illinois from 1795 through 2015.

Figure 3-7: Illinois Earthquakes
1795-2015



Since 1795 there have been about 200 earthquakes in Illinois, but only nine of these earthquakes were strong enough to even cause minor damage. The largest earthquake recorded in the Illinois occurred in November of 1968 and measured 5.4 on the Richter scale. The last damaging earthquake in Illinois occurred in June of 1987 near Olney, Illinois. This quake measured 5.0 on the Richter scale and was felt in parts of 16 states. This earthquake caused minor damage in Richland and Lawrence Counties.

The Richter scale, also known as the Richter magnitude scale, is a measure of the strength of earthquakes. Table 3-15 provides a summary of the Richter Scale.

Table 3-15: Richter Magnitude Scale Summary

Magnitude	Description	*Mercalli Intensity	General Earthquake Effects
1.0-1.9	Micro	I	Not felt or rarely felt
2.0-2.9	Minor	I to II	Felt slightly, no damage
3.0-3.9	Minor	III to IV	Often felt, rarely causes damage, shaking noticeable
4.0-4.9	Light	IV to VI	Felt by most, minimal damage, noticeable shaking
5.0-5.9	Moderate	VI to VII	Felt by everyone, damage of varying severity to poorly constructed buildings
6.0-6.9	Strong	VIII to X	Felt in wider areas, damage to well-built structures, severe damage to poorly constructed buildings; strong violent shaking
7.0-7.9	Major	X +	Felt across great distances, damage to most buildings, some partially or completely collapse
8.0-8.9	Great	X +	Felt in large regions, major damage to buildings, structures likely to be destroyed, heavy damage to sturdy buildings
9.0 +	Great	X +	At or near total destruction, severe damage or collapse of all buildings, heavy damage and shaking extends to distant locations, permanent topography changes

* The Mercalli Intensity scale is a seismic intensity scale used for measuring the intensity of shaking produced by an earthquake

The Jasper County HMP has ranked earthquake hazard events as the third priority hazard event through the RPI. According to the 2018 Illinois HMP hazard event ranking, the potential threat of earthquakes for Jasper County is considered to be a medium risk. While this is a relatively low ranking, potential damages from earthquakes can range from minor to extreme, and therefore mitigation measures should be taken when at all possible.

As noted previously there are two seismic zones that pose a potential earthquake threat to Jasper County, the New Madrid Seismic Zone and the Wabash Valley Seismic Zone. Figure 3-8 (right) shows a general illustration of the location of each of these seismic zones. The New Madrid Seismic Zone is about 40 miles wide and 150 miles long extending from southeastern Missouri, northeastern Arkansas, western Tennessee, western Kentucky, and southern Illinois. The Wabash Valley Seismic Zone stretches about 90 miles from Mount Vernon, Illinois to near Evansville, Indiana.

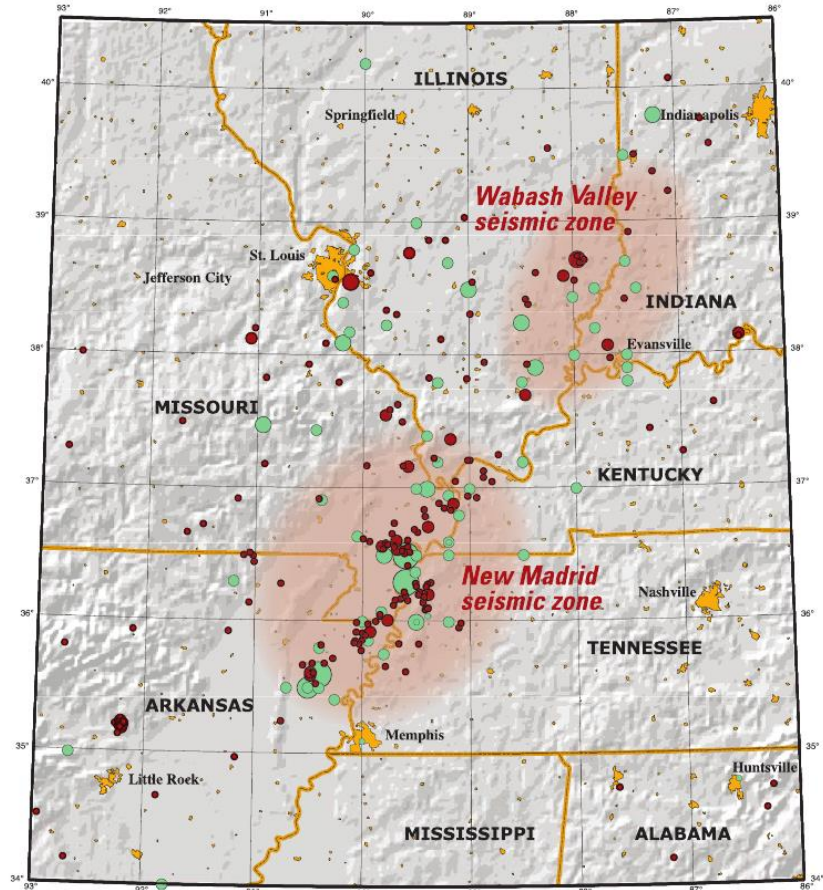


Figure 3-8: New Madrid and Wabash Valley Seismic Zones

Historical Occurrence

While there is no specific record of any earthquakes beginning in Jasper County, the Illinois Department of Natural Resources, Geological Survey has indicated two earthquake events appeared to occur in Jasper County measuring on the Richter Scale between 2.0 and 2.9. Additional data about these minor earthquakes is not easily attainable, most likely due to their relatively small scale which resulting in little impact on the County.

The most significant occurrence of earthquakes in Illinois is three large events from 1811-1812 (up to magnitude 7.5 on the Richter scale) which caused severe damage to the area. Damage from the aftershocks associated with these earthquakes was reported up to 1,000 miles away from the original quake.

Geographic Location

Jasper County is situated in a region that is susceptible to earthquake hazard events. As discussed briefly, there are two minor earthquake epicenters that were recorded to be in Jasper County, although detailed information about these apparent earthquake events is not available. Due to the size of these apparent earthquakes (between 2.0-2.9 on the Richter magnitude scale), the activity is likely to be associated with the Wabash Valley Seismic System.

Determining the probability of an earthquake has been a problem that scientists have been attempting to solve for decades. Figure 3-9 below, provided by the United States Geological Survey, illustrates earthquake risk given as maximum ground accelerations (PGA) with a 2% probability of being exceeded within 50 years. In other words, this map shows that Jasper County has a 2% chance of experiencing an earthquake of 5.0-5.9 Richter magnitude with a Mercalli Intensity of VII in a 50-year window.

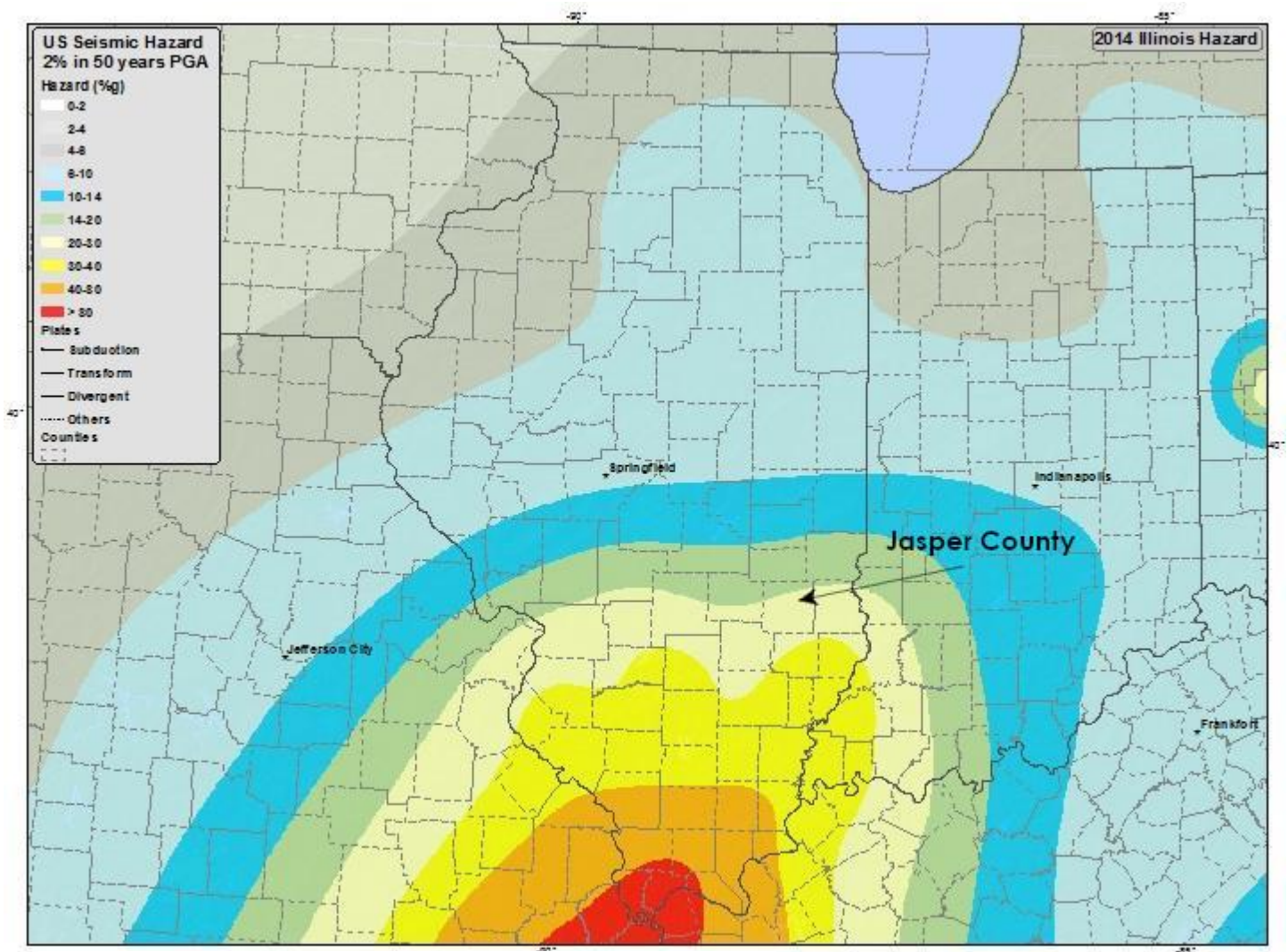


Figure 3-9: USGS Illinois Earthquake Probability

Local Vulnerability

Earthquake hazard events could impact the entire county equally, therefore all buildings, structures, infrastructure, and the whole population are vulnerable to earthquake hazard events. While the likelihood of an earthquake hazard event with the epicenter being located in Jasper County is unlikely, both the State of Illinois and the American Geosciences Institute give Jasper County an elevated earthquake risk ranking.

Shown right is a map, completed by the American Geosciences Institute showing the New Madrid Seismic Zone area by Risk Level. Jasper County is considered as high risk for being impacted from a New Madrid Seismic Zone quake. Additionally, according to the 2018 report, Jasper County has not yet implemented Seismic-Resistant Building codes.

Hazus data utilized in the 2011 Jasper County HMP to project possible earthquake scenarios was reviewed during the creation of this 2020 update and are still considered to be accurate since there has been little to no change in development in the vast majority of Jasper County. Table 3-16 on the following page illustrates expected damages that would occur throughout Jasper County in the event of a 6.0 Richter magnitude, Mercalli Intensity VIII earthquake occurring within the Wabash Valley Seismic Zone in the present day.

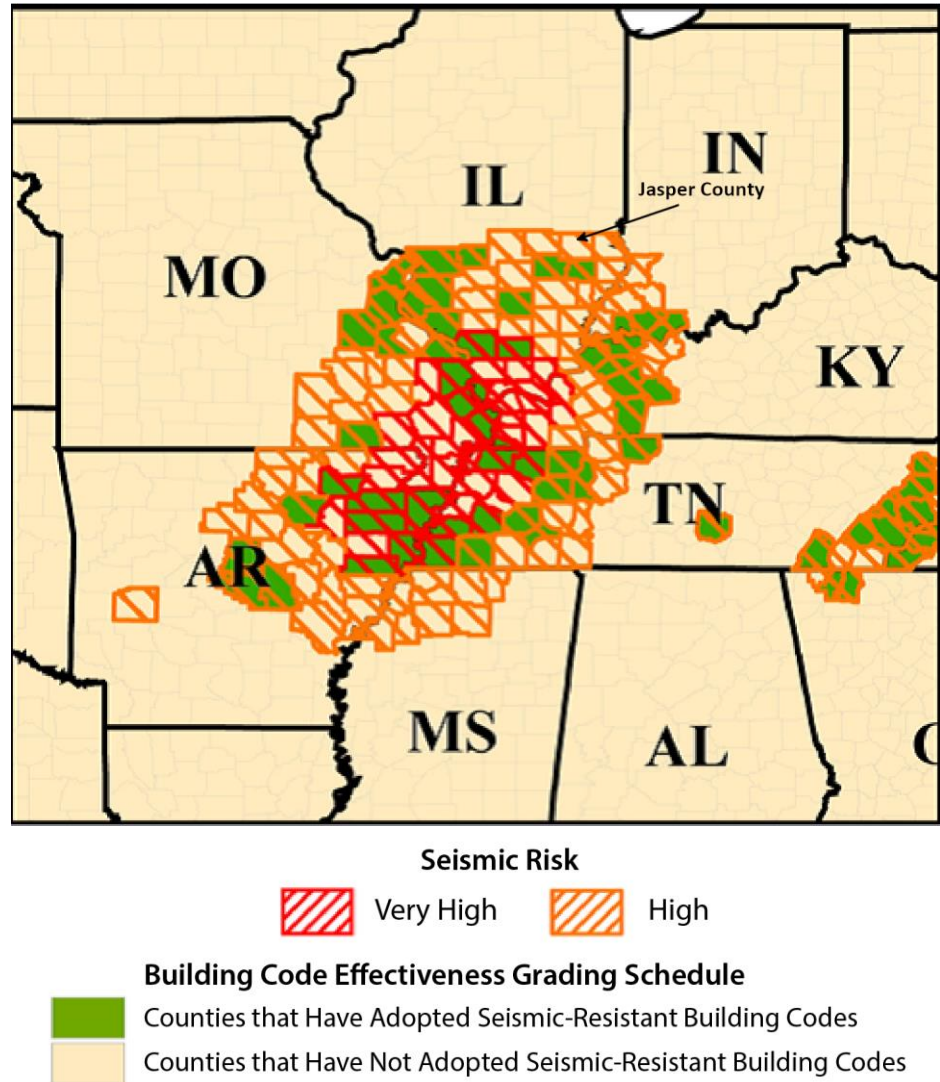


Figure 3-10: New Madrid Seismic Zone Risk & Building Code Rating

Table 3-16: 6.0 Richter Magnitude Scenario in the Wabash Valley Seismic Zone – Damages

Property Type	Slight Damage	Moderate Damage	Extensive Damage	Total Destruction
Agricultural	13	6	1	0
Residential	238	78	10	1
Commercial	17	7	1	
Industrial	5	2	0	0
Essential Facility	2	0	0	0
Total	275	93	11	1

In the 6.0 Richter Magnitude scenario it would be expected that over 300 buildings would have at least minor damage. One household would be displaced following the total destruction of their home. Building related losses, including business interruption would exceed \$3 million dollars. Local utility damage would likely occur causing leaks in the potable water system and creating significant electricity disturbances among residential units. However, it is not likely that any households would be without water or electricity for any extended period of time, if at all.

Hazard Extent

Earthquake hazard events are possible anywhere in Jasper County. While the chance of an earthquake epicenter being located in Jasper County is low, relative to a majority of Illinois counties, Jasper County is of higher risk for this hazard event. The actual extent of the hazard itself depends solely on its scope and size, but the likelihood of a significant earthquake (i.e. 5.0-5.9 Richter magnitude) is at 2% over a 50-year window, as has been previously discussed.

Financial Loss

Estimating financial loss of an earthquake hazard event is completely dependent on the size and location of the hazard event. The closer the epicenter is to Jasper County, the higher the expected damages would likely be. The larger the magnitude of the earthquake hazard event that touches Jasper County, the more damage it would likely cause. As described above, a 6.0 Richter magnitude earthquake in Jasper County would yield property damage over \$3 million dollars.

Future Asset Vulnerability

The entire population and all buildings are at risk because earthquake hazard events that affect any part of the county would likely affect the entire county. Therefore, any future development in terms of new construction of buildings or infrastructure will also be at risk to potential earthquake hazard events.

Future Community Development

In order to best protect current and future development across the county, local officials should examine adopting and implementing Seismic-Resistant Building Codes. More information about Seismic-Resistant Building Codes can be found on the FEMA website or retrieved by other county or municipalities that have already implemented these building codes.

3.4.4 – Winter Storms

Risk Identification

A winter storm is a hazard event that consists of various forms of precipitation and weather conditions that only occur at low temperatures. Weather conditions associated with winter storms may include heavy snow, sleet, freezing rain, blizzards, ice storms, extremely low temperatures, etc. All of these weather conditions create human health risks, such as frostbite or hypothermia, motorist risks, such as icy roadways or snow blocked roadways, and can cause property damage or disrupt normal economic activity. Below are descriptions of the most common conditions associated with winter storm hazard events.

Blizzards are considered to the most dangerous type of weather condition associated with winter storms. Blizzard weather conditions contain falling or blowing snow with wind speeds in excess of 35 mph and reduce visibility to less than one-quarter mile making any form of travel extremely dangerous and nearly impossible. The impacts from this weather event include power outages, loss of communication, and, as previously noted, transportation difficulties.

Another very dangerous weather condition associated with severe winter weather are ice storms. Ice storms occur when moisture falls and freezes immediately upon impact, accumulating to a thickness of one-quarter inch or more. These storms can cause severe damage to trees and power lines, resulting in widespread and often extend power outages. All forms of transportation will also have severe difficulty during and following an ice storm event occurrence.

Extreme temperatures that drop to 0°F or below can increase the likelihood of human risk during severe winter events. Frostbite and hypothermia are two common risks associated with these low temperatures, with hypothermia being extremely dangerous, sometimes resulting in death if not treated immediately. Increased winds during these severe cold events can enhance the cold air's effects on the human body. These winds will lower the wind chill factor and as a result decrease the amount of time it takes for frostbite or hypothermia to affect a person's body.



Wind Chill Chart

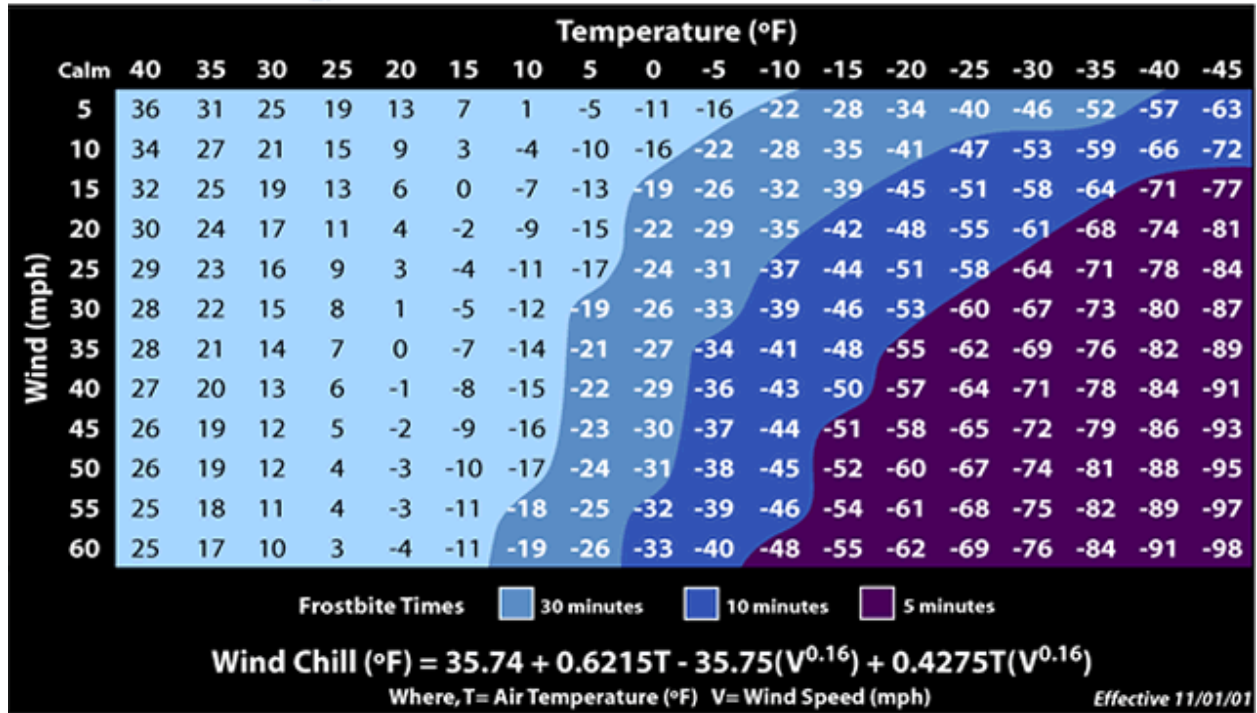


Figure 3-11: NOAA Wind Chill Chart

Figure 3-11 above provides an illustration of the amount of time it takes for frostbite to affect a person outdoors during a severe cold event.

The Jasper County HMP has ranked winter storm hazard events as the fourth priority hazard event through the RPI. According to the 2018 Illinois HMP hazard event ranking, the potential threat of winter storms for Jasper County is considered to be a high risk. All 102 counties within the State of Illinois are considered to be at least high risk from winter storm hazard events, with a shortlist of counties at severe risk. The table below shows average loss estimation for winter storm events in Jasper County.

Table 3-17: Winter Storm Event Loss Estimation

Hazard Event	# of Winter Storm Events	Total Loss	*Average Loss	**Annual Probability of Event	***Estimated Annual Loss
Winter Storm Events	28	\$600,000	\$21,429	40.58%	\$8,696

* Average Loss = Total Loss / # of events

** Annual Probability = # of events / time period (i.e. 28 / 69)

*** Annual Loss = Average loss multiplied by Annual Probability

Historical Occurrence

According to National Climatic Data Center, the most damaging winter storm hazard event in Jasper County occurred in February of 2011. Freezing rain was the primary form of precipitation during this storm event. Ice accumulation on the ground in Jasper County was measured between one-quarter and one-half inch of ice. This heavy glaze of ice downed numerous trees and tree branches which resulted in power outages across the county and icy roadways led to several traffic accidents. Ultimately, this storm caused over \$600,000 in total property damage within Jasper County.

Jasper County has had several instances with heavy snowfall creating severe transportation difficulties and direct obstruction to normal daily life and business activities. The 1-day snowfall extreme took place in the City of Newton in February of 1914 which saw 10.7 inches of snowfall. The 2-day and 3-day extremes both took place in March of 1996 in the City Newton. These two extremes were measured at 12.5 inches of snowfall.

In January of 1996, A winter storm that dumped eight inches of snow across central Illinois and included northwest winds from 30-40 mph created near whiteout conditions. This whiteout made travel extremely hazardous and caused the closure of several roads. In Jasper County there was an automobile accident caused by the whiteout that severely injured two individuals.

Geographic Location

Severe winter storm events normally occur on a regional basis and therefore a winter storm event is likely to occur throughout all of Jasper County simultaneously.

Local Vulnerability

With the geographic location in mind, the entire county population and all buildings are vulnerable to a winter storm hazard event. This includes all essential facilities, residential units, commercial businesses and industrial businesses. Impacts to these essential facilities and buildings can include loss of electricity or gas from broken or damaged utility lines, broken or frozen water pipes, and roof collapse from heavy snowfall.

In the event of a winter storm local businesses and industries will have difficulty operating normally. The movement of goods and services during a severe winter storm is extremely hazardous due to icy roadways or impassable roadways due to heavy snow accumulation. Consumers are less likely to visit local businesses during winter storm events due to the difficulties of traveling.

Infrastructure could be impacted by winter storm hazard event as well. Infrastructure such as roadways, utility lines, railroads and bridges are all vulnerable to severe storm impacts. These impacts could include broken or impassable roadways, broken or failed utility lines, or impassable railroads or bridges. Damaged or blocked roadways and bridges would cause substantial risk to motorists, while broken or failed utility lines could lead to loss of power for local business and residents.

Hazard Extent

The extent of winter storm hazards has varied in terms of location, temperature, and precipitation type and amount. These winter storm hazard events can occur anywhere within Jasper County and vary in the type of weather conditions present.

Financial Loss

According to National Climatic Data, as shown in Table 3-17, Jasper County has incurred approximately \$600,000 in damages relating to winter storms since 1950. All of this damage occurred during one winter storm event, so the while average loss per event and average annual loss can be calculated, significant property damage is unlikely to occur during every winter storm event. However, local officials and stakeholders should be prepared for the possibility of incurring significant damages from extreme winter storm events.

Future Asset Vulnerability

Any and all new development in the county will remain vulnerable to these winter storm hazard events.

Future Community Development

All future development will be at risk from winter storm events. Ensuring that all necessary building codes are complied with can, to a degree, decrease the amount the property damage associated with these events. The rehabilitation of homes with aging roofs can prevent heavy snow from causing roof cave ins. Additionally, outreach programs about the dangers of winter hazards and early warning systems notifying the public of incoming severe winter weather can decrease the number of potential injuries associated with winter storm events.

3.4.5 – Extreme Heat

Risk Identification

Extreme heat is defined as temperatures that exceed the average high for the area by 10°F or more and last for several weeks. While unusually high temperatures do occur during the winter months on occasion, this study will focus on extreme temperatures during the summer months. Extreme heat during the summer months causes substantial human risks.

One of the human risks associated with extreme heat is heat and sun stroke. These are life-threatening conditions where the victim's temperature control system, which produces sweat to cool off the body, stops working. The body's temperature can rise so high that brain damage and death may result if the body is not cooled off quickly enough.

A second dangerous risk that can occur from extreme heat is heat exhaustion. This typically occurs when individuals partake in vigorous exercise or manual labor activities in hot, humid places where substantial body fluid is lost through heavy sweating. Blood flow to the skin increases and therefore less blood is

flowing to other vital organs, resulting in a mild form of shock. If left untreated, the condition will worsen and could result in heat or sun stroke.

Heat cramps are another risk resulting from exposure to extreme heat, and although less dangerous than heat exhaustion or heat stroke, these muscular pains and spasms are a first signal that the human body is having trouble dealing with the heat.

Figure 3-12 illustrates the likelihood of heat disorders (i.e. heat cramps, heat exhaustion, heat stroke) with prolonged exposure to, or strenuous activity in, particular extreme heat conditions. The measure utilized is the heat index, which is number, in degrees Fahrenheit, which estimates how hot it feels when relative humidity is added to the actual air temperature. In general, it can be said that exposure to full sunshine can increase the heat index value by 15°F.

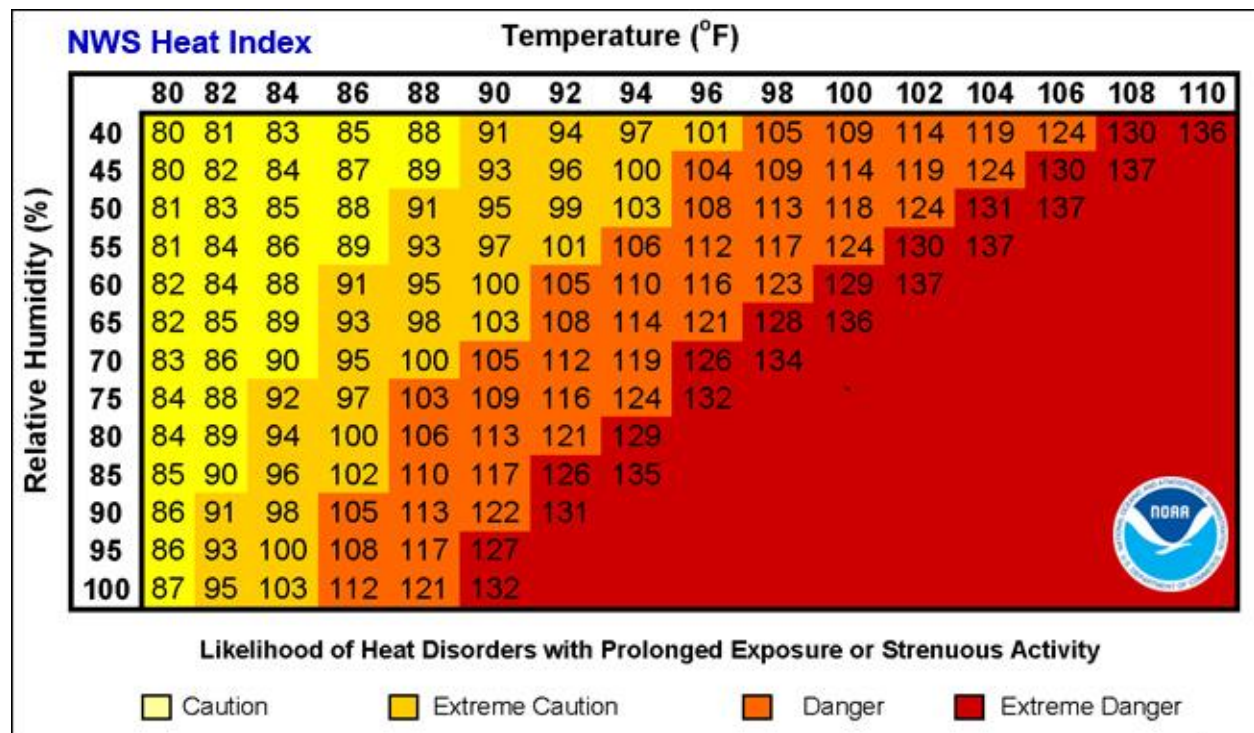


Figure 3-12: NOAA Heat Index Chart

The Jasper County HMP has ranked extreme heat hazard events as the fourth priority hazard event through the RPI, tied with winter storm hazard events. According to the 2018 Illinois HMP hazard event ranking, the potential threat of extreme heat events for Jasper County is considered to be a medium risk. Table 3-18 provides a summary of heat disorder risk to vulnerable populations depending on the heat index value. The population that is most at risk during extreme heat events include, young children, the elderly, those who are currently sick, overweight, or have alcohol problems. Men in general are at higher risk to extreme heat because they sweat more than women and therefore become more quickly dehydrated.

Table 3-18: Heat Index/Heat Disorders Summary

Classification	Heat Index	Possible Heat Disorders for Higher Risk Groups
Extreme Danger	125° or higher	Heat stroke highly likely
Danger	103° - 124°	Heat stroke/heat cramps or heat exhaustion likely
Extreme Caution	90° - 103°	Heat cramps or heat exhaustion likely
Caution	80° - 90°	Fatigue possible with prolonged exposure or physical activity

Historical Occurrence

Since 1998, Jasper County has had 11 extreme heat hazard events, all of which took place during the months of June, July or August. Both in July of 1997 and July of 2005 Jasper County had heat indexes that rose to approximately 115°F. No injuries or deaths were reported from Jasper County during these events or any other extreme heat event, however numerous injuries and several deaths did occur in the region during these widespread extreme heat events.

Geographic Location

Extreme heat events can occur anywhere within Jasper County, and are more likely in the summer months of June, July and August.

Local Vulnerability

Extreme heat is capable of affecting every area of Jasper County and therefore is a potential threat to the entire county. While no deaths or significant injuries due to extreme heat have been reported in Jasper County, the potential for injury or death to occur will always be a possibility. According to FEMA, approximately 175 Americans lose their life each year from extreme heat hazard events. As noted previously the most vulnerable in the Jasper County population include, young children, the elderly, men in general due to excess sweating and dehydration, those who are currently sick, overweight, or have alcohol problems.

Other potential impacts from extreme heat include water shortages, fire as a result of drought conditions (drought will be discussed in depth as a separate hazard event risk later in this HMP), and residents who are in need of medical care from the heat conditions.

Common potential infrastructure threats from extreme hazard events include the buckling of roadways or bridges, and fire. Utility lines and all buildings within Jasper County are considered to be at risk from fire due to ongoing hot, dry conditions which create an environment conducive to fire.

Hazard Extent

The extent of extreme heat events is completely dependent upon magnitude (i.e. heat index level) and duration of the heat. The longer the duration of extreme heat event, the higher risk to the area population.

Financial Loss

Financial loss from extreme heat is normally related to crop damage from drought which will be discussed in a later section of this HMP. However, buckling of roadways or bridges from prolonged heat can create substantial repairs being required. The exact value of this loss is dependent solely on the buckling event and is difficult to predict with no historical representation of a loss of this kind occurring in Jasper County. Potential fires could cause partial or total destruction of buildings if proper safety measures and precautions are not fully taken.

Future Asset Vulnerability

Any and all new development in the county will remain vulnerable to these extreme hazard events.

Future Community Development

All future development will be at risk from extreme heat events. Local officials should address extreme heat hazards by ensuring the public is educated on the health indicators that lead to a heat disorder (i.e. heat exhaustion, heat stroke). Additionally, local officials can provide the public with tips for staying cool during these events such as installing temporary window reflectors to direct heat back outside, staying indoors rather than venturing outside, and avoiding strenuous outdoor workouts during the warmest part of the day.

3.4.6 – Flood

Risk Identification

Other than fires, the most common hazard in the United States is flooding with thousands of varying types of flooding occurring each year. Flood hazard events can occur during any time of the year, excess rainfall can flood local municipal roadways and melting snow or ice near streams, rivers or lakes can cause excess water that then accumulates and overflows onto adjacent lands not normally covered by water.

This HMP is classifying floods into two specific categories: Flash Floods or Riverine Floods.

Flash floods normally occur in the upper parts of drainage basins and are characterized by intense rainfall over relatively short periods of time. This type of flooding will occur with little to no warning for the affected area and can often result in significant damage. Flash floods can snap trees, bring down structures, easily carry large boulders or other structures.

Generally, the damage caused from flash floods are localized to a specific community rather than larger regional area. While flash floods can occur during any time of the year, they are most common in the spring and summer in Illinois.

The second type of floods are commonly referred to as riverine floods. Riverine floods are flood hazard events that occur on or adjacent to large rivers. Unlike flash floods which occur without warning and over short periods of time, riverine floods are of relatively long duration and occur over much larger areas. This type of flooding normally occurs during the spring or summer months.

The Jasper County HMP has ranked flood hazard events as the sixth priority hazard event through the RPI. Table 3-19 below illustrates the flooding loss estimations for Jasper County.

Table 3-19: Flood Event Loss Estimation

Hazard Event	# of Flood Events	Total Loss	*Average Loss	**Annual Probability of Event	***Estimated Annual Loss
Flood Events	47	\$530,000	\$11,277	68.12%	\$7,682

* Average Loss = Total Loss / # of events

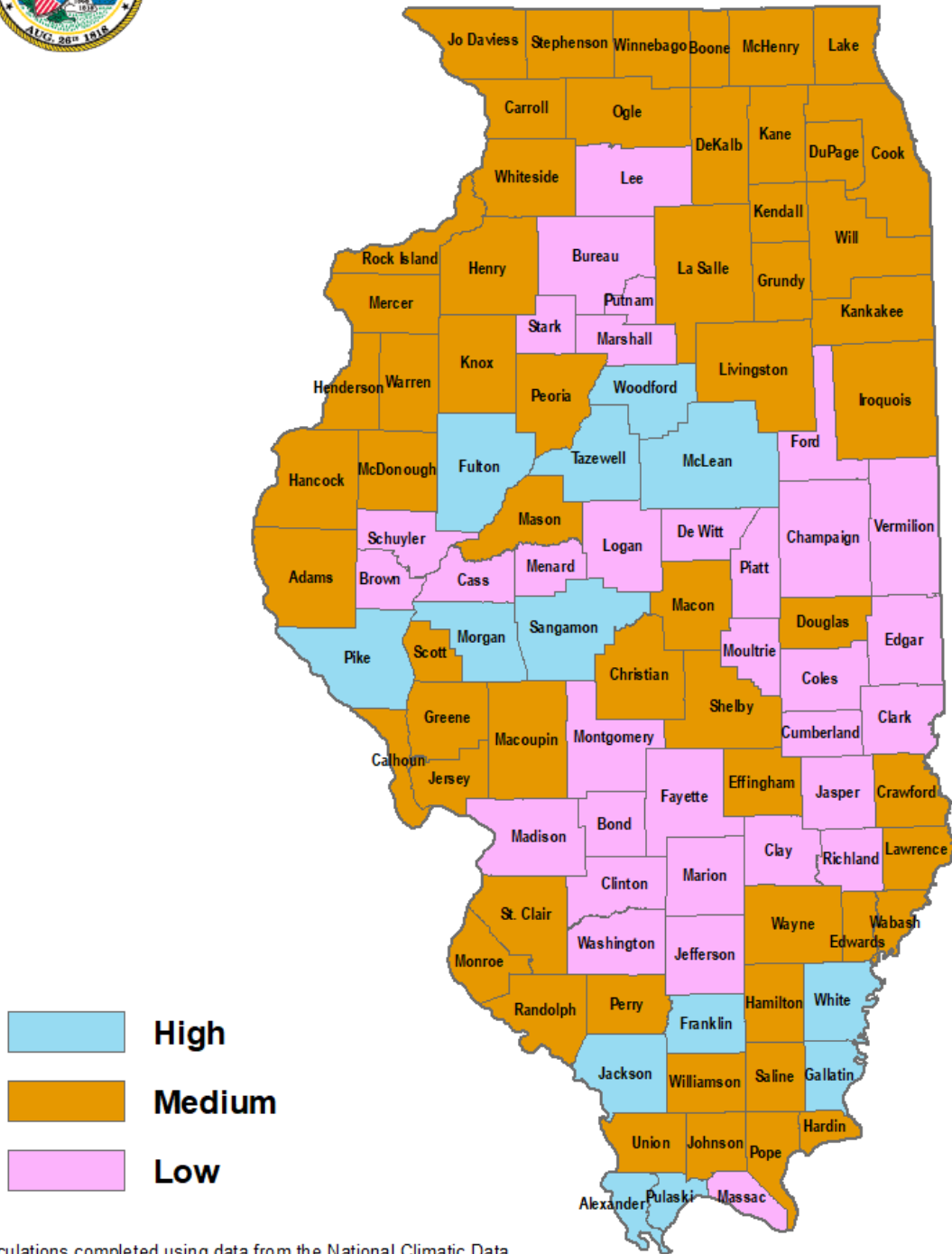
** Annual Probability = # of events / time period (i.e. 47 / 69)

*** Annual Loss = Average loss multiplied by Annual Probability

The figure on the following page displays the flood hazard rating for each of Illinois’ 102 counties. According to the 2018 State of Illinois HMP, Jasper County is currently at low risk to flood hazards. It should be noted that this is most likely due to the rural nature of Jasper County. Illinois flood rating assessments will consider flood exposure and estimated financial losses from flood hazards to rate each county. Since Jasper County’s total population is under 10,000 and predominantly rural, estimated property damages from flood scenarios would display much lower significant losses when compared to most Illinois counties.



IEMA Illinois Natural Hazard Mitigation Plan Flood Hazard Rating by County



Calculations completed using data from the National Climatic Data Center and Spatial Hazard Events and Losses Database for the United States. Data was obtained on a National Weather Service Zone by county basis*

Figure 3-13: Illinois Flood Hazard Rating

Historical Occurrence

Since 1996 Jasper County has had flood hazard events 47 times according to National Climatic Data, four of which were FEMA declared disasters. Arguably, the most significant flooding event in Jasper County in recent decades was in June of 2008. Heavy rainfall in the amounts of five to 10 inches occurred and caused the Embarras River to rise to an all-time record state of 28.01 feet. This created widespread flooding impacting a few homes causing \$60,000 in property damage. The more significant damage occurred near Ste. Marie, Illinois where approximately \$280,000 in crop damage occurred. Jasper County was declared a disaster area by FEMA due to this flooding event.

Another notable flooding event- occurred in January of 2005 in the City of Newton. A large downpour of rainfall caused extreme flooding, so much so that Illinois Route 33 was flooded and had flowing water across the roadway. This event ultimately caused \$140,000 in property damages.

Geographic Location

Flash flooding of low-lying areas of Jasper County can occur any time of year, but often occurs between mid-summer and early winter, as these are common times of year for large amounts of precipitation in south-central Illinois. Riverine flooding in Illinois normally occurs in either the spring or summer and is result of excessive rainfall, or during the winter months, the combination of rainfall and melting snow.

The primary source of riverine flooding in Jasper County are incorporated or unincorporated areas near the Embarras River. This river, as noted previously in this HMP, runs southeast through Jasper County, and borders the corporate limits of both the City of Newton and the Village of Ste. Marie. North Folk Embarras River, a major tributary to the Embarras River, also poses a hazard to most all of the eastern border of Jasper County, and the Village of Ste. Marie. The North Folk Embarras meets the Embarras just north of the Village of Ste. Marie.

The geographic location of flash flooding is more difficult to specify. Flash flooding can occur in any low-lying throughout all of Jasper County. Most of the damaging flash floods over the past several decades have occurred in unincorporated portions of the county. With that said, there is also a history of substantial flash flooding events within the corporate limits of City of Newton.

Local Vulnerability

Flood hazard events are a risk to every structure within Jasper County, especially those structures that are located in low-lying areas. The areas at most risk with Jasper County are those included within the FEMA 100-year flood plain designation. Approximately 14% of the county is designated as a 100-year floodplain. The floodplain follows closely both the Embarras River and the North Folk Embarras River. A map of the 100 year-flood plain for Jasper County is shown on the following page.

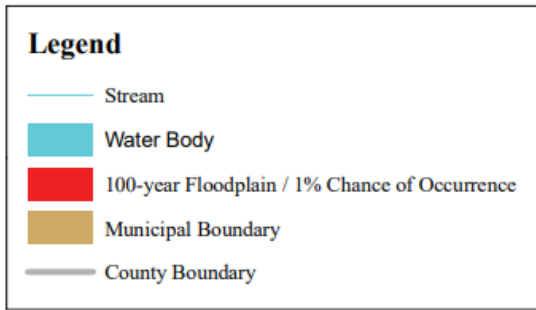
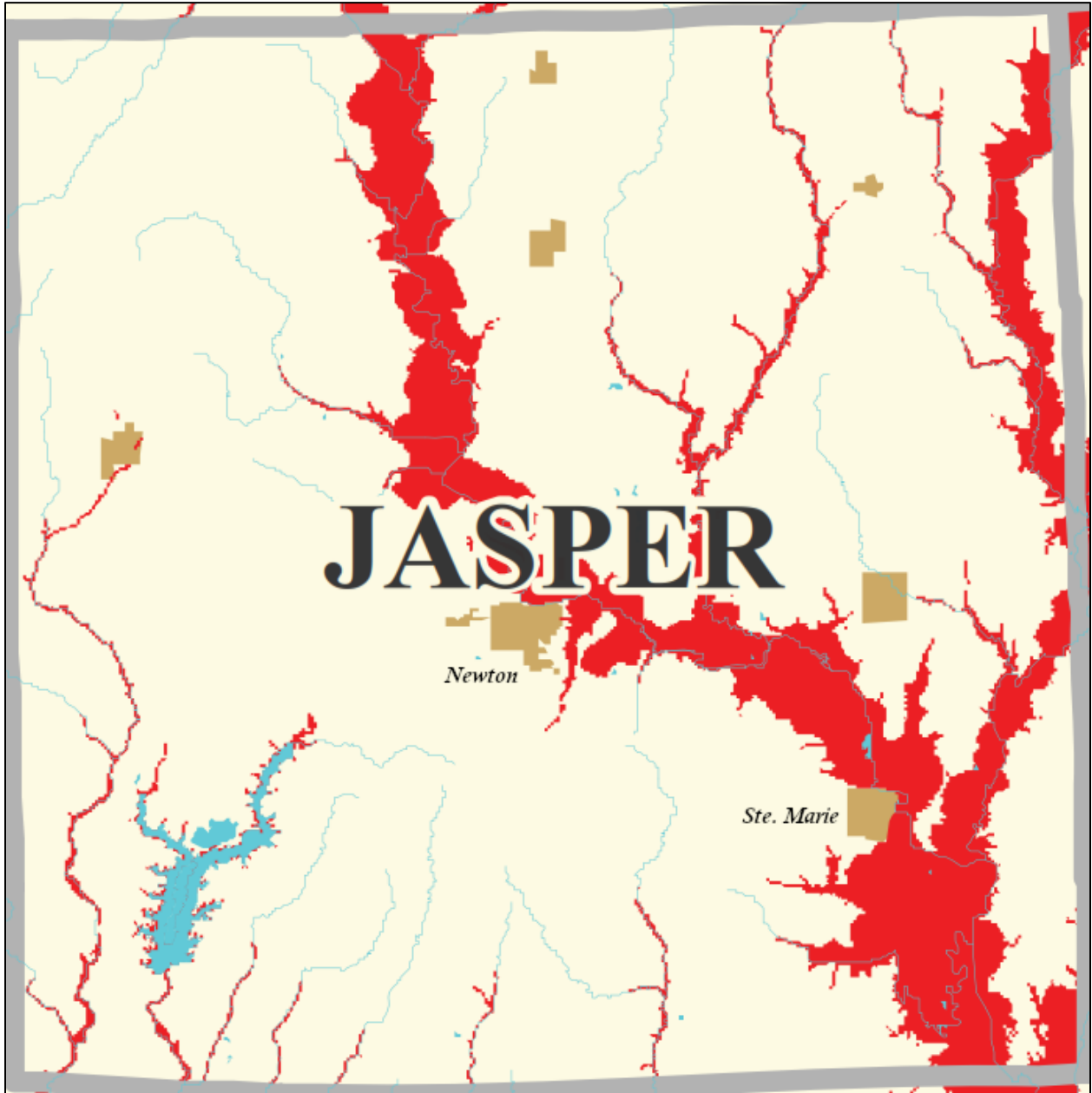


Figure 3-14: Jasper County 100-year Floodplain

In the event of a 100-year flood in Jasper County, while most damage will occur in unincorporated areas of the county, and a majority of the damage would ultimately be crop damage, both the City of Newton and the Village of Ste. Marie would incur flooding damage within their corporate limits.

Both the Newton Water Treatment Plant and Ste. Marie Waste Water Facility are in or bordering the 100-year flood plain and could be damaged from a 100-year flood. While a 100-year flood scenario estimated by Hazus in the previous 2011 HMP does not indicate damage to the Newton Water Treatment Plant, the close proximity to the floodplain should initiate proper preparations.

Hazard Extent

All floodplains within Jasper County are susceptible to flooding, however the floodplain of most concern is the previously mentioned 100-year floodplain which is defined as areas within the county that have a 1% chance of flooding in a given year. With that said, flash floods from heavy rainfall can occur and cause minor to significant flood damage during any time of the year.

Financial Loss

Financial loss associated with flooding can vary depending on type of flood and location of the flood hazard event. Flooding in unincorporated portions of the county will cause less property damage than flood hazard events located in or around population centers such as the City of Newton and the Village of Ste. Marie.

The 2018 Illinois HMP estimated flood losses within the 100-year floodplain for all 102 Illinois counties. Figure 3-15, located on the following page estimates that Jasper County would see losses of \$10 to \$20 million dollars associated with a 100-year flood hazard event.

The 2011 Hazus 100-year flood scenario for Jasper County estimated that residential, commercial and industrial losses would total to \$10.38 million, adjusting for inflation this would be \$11.83 million in the year 2020. These findings fall in line when the 2018 Illinois HMP assessment of Jasper County flood loss. More specifically, and adjusted from 2011 to 2020 dollars, the total residential property loss would be about \$9.6 million, commercial property loss would equate to a total of \$1.47 million, and industrial property would incur approximately \$786,000 in damages.

This flood hazard event scenario also indicated that approximately 170 households would be displaced, mostly located in unincorporated portions of the county. Seven Jasper County bridges would sustain damage, but still remain useable.

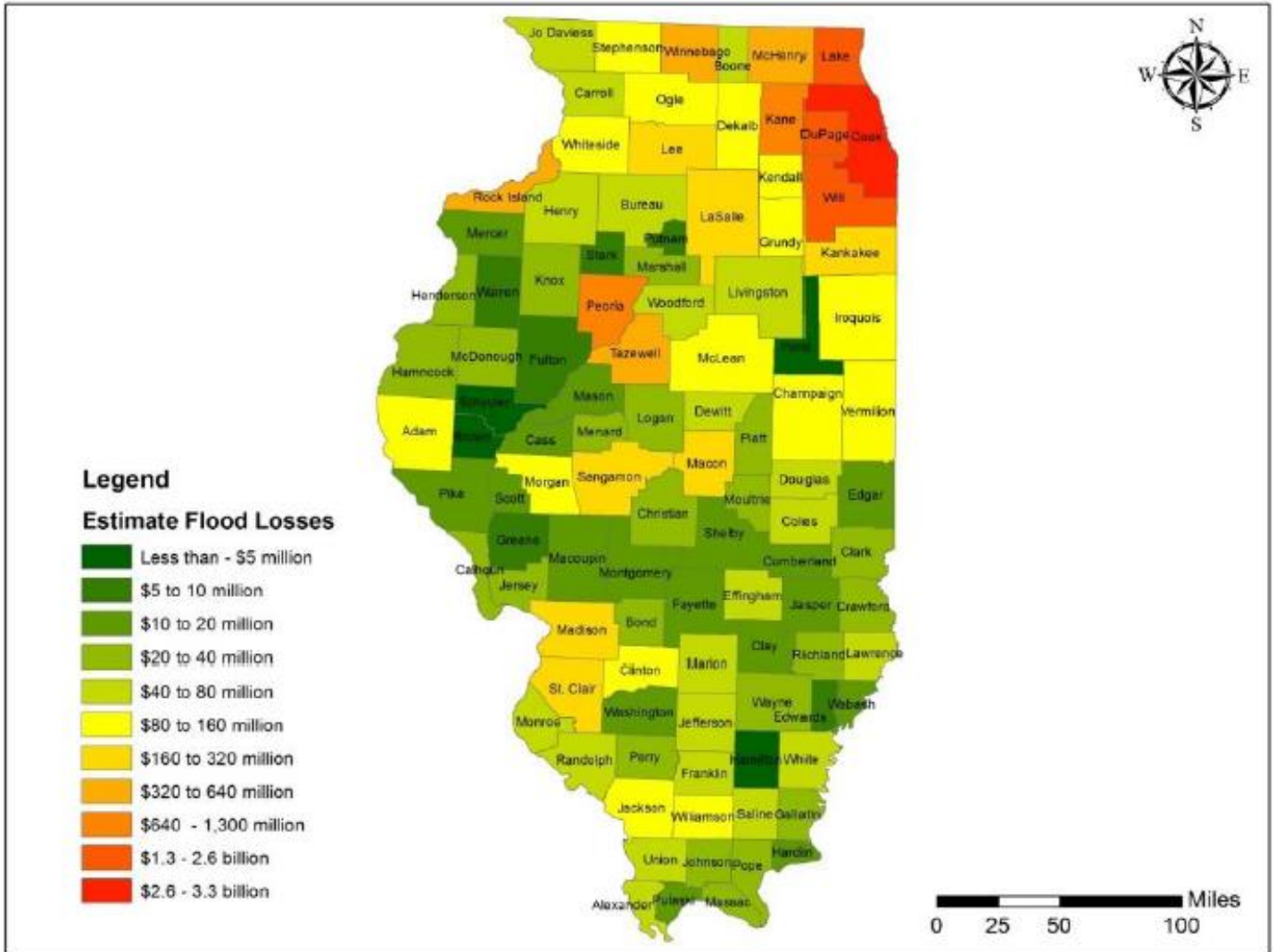


Figure 3-15: County Flood Loss Estimations

Future Asset Vulnerability

Flood hazard events can affect almost every structure within Jasper County. Therefore, all current and future buildings and infrastructure are vulnerable to flooding. Any future construction within the 100-year floodplain should only occur if deemed necessary and should proceed with the lowest floor elevation at or above the 100-year floodplain elevation along with ensuring compliance to all other floodplain standards.

Future Community Development

For local officials and developers throughout Jasper County, reducing the development in the 100-year floodplain is crucial to reducing flood-related damages. Ensuring storm drainage and sewer systems are adequately maintained and upgraded throughout the county is essential to prevent residential, commercial and industrial flooding and drainage issues. The City of Newton, the Village of Ste. Marie

and Jasper County are participants in the National Flood Insurance Program (NFIP). Jasper County has adopted a floodplain ordinance and measures are being taken to enforce this ordinance and ensure the protection of personal life and property. Each of the participating HMP entities monitor floodplain development and this needs to continue to be a top priority to reduce risk. All remaining incorporated and unincorporated entities within Jasper County should consider either becoming a participant in the NFIP or, at the very least, adopting local ordinances addressing floodplain development and putting in place a significant enforcement mechanism.

3.4.7 – Drought

Risk Identification

Drought can be generally characterized as a sustained period of time with below average water or moisture supply. The duration and degree of participation deficiency to the affected area both play a vital role in determining the severity of the drought hazard event. While drought is a normal and recurrent feature of climate in Illinois and Jasper County, it can have substantial impacts on the quality and quantity of crops, livestock and other agricultural assets. Drought conditions are often accompanied by extreme heat hazard events, which was discussed at length in a previous section (3.4.5). The impacts of extreme heat events can occur simultaneously with drought hazard events.

The U.S. Drought Monitor (USDM) established a numeric drought classification, similar to the Fujita Scale for tornadoes. This scale was developed to allow scientific study of drought hazard events to have a simple measure of severity, while providing for a foundation from which to compare past, present and future droughts. This scale is composed of four different levels, described below on table 3-20.

Table 3-20: USDM Drought Classification

Category	Description
D0	Short-term dryness typical with the onset of a drought
D1	Damage to crops, pastures expected; fire risk high; well levels are low
D2	Damage to crops, pastures likely; fire risk very high; water shortages common
D3	Major damage to crops, pastures; fire risk is extreme; widespread water shortages
D4	Exceptional and widespread crop damage, pasture damage, fire risk, and water shortages that result in water emergencies

Table 3-21 illustrates drought hazard event loss estimations based on historical Jasper County occurrences.

Table 3-21: Drought Event Loss Estimation

Hazard Event	# of Drought Events	Total Loss	*Average Loss	**Annual Probability of Event	***Estimated Annual Loss
Drought Events	6	\$33,900,000	\$5,650,000	8.70%	\$491,550

* Average Loss = Total Loss / # of events

** Annual Probability = # of events / time period (i.e. 6 / 69)

*** Annual Loss = Average loss multiplied by Annual Probability

Historical Occurrence

The most significant drought hazard event concluded in September of 2012. Extreme D3 to D4 drought conditions, measured using the U.S. Drought Monitor’s Intensity Scale, had been persistent across central and southeast Illinois since June of that year. Total crops losses across the affected region was estimated at \$1.2 billion and Jasper County had a total corn crop damage estimated at \$33.9 million. Jasper County has had five other drought hazard events since 2007, however these events did not ultimately cause any specified damages.

Geographic Location

Drought hazard events are regional in nature and normally affect multiple counties. Almost every area of the United States is vulnerable to the risk of a drought hazard event.

Local Vulnerability

Drought is a potential threat across the entire county and ultimately makes the entire population vulnerable to drought hazard events. The most imminent danger to the population of the county associated with drought conditions is normally extreme heat. The risks of overexposure to extreme heat was discussed at length in Section 3.4.5.

Depending on the severity of the drought hazard event, water shortages can lead to water emergencies and other health crises. For those residents of Jasper County that rely on well water, extreme D4 or D5 drought conditions can cause the near total loss of well water supply and lead to a lack of drinking water for those residents. Additionally, and as evidenced by the 2012 Jasper County drought, substantial agricultural loss is also possible under severe D3-D5 drought hazard events.

During severe drought conditions, the fire risk increases dramatically. Fires associated with drought conditions can damage or completely destroy local structures and infrastructure. In addition, since Jasper County relies heavily on the agricultural economic sector, significant and prolonged drought can cause economic activity downturns and decrease the production and distribution of crops and livestock.

Hazard Extent

The extent of droughts varies on the magnitude (USDM intensity scale) and duration of the hazard event. The longer the duration and the larger the intensity of the drought, the more likely substantial property or crop damage will occur.

Financial Loss

As noted in table 3-21, the 2012 regional drought in central and southeast Illinois caused almost \$34 million in corn crop damages within Jasper County. While general measurements were calculated based on this hazard event occurrence, these annual and average estimations are not reliable expectations since they are based solely on one hazard event in the past 70 years. The ultimate financial loss implications from a drought hazard event can range from zero to millions of dollars depending on the hazard extent. Due to this fact, it is difficult to assess accurately the expected financial loss from drought events.

Future Asset Vulnerability

All future development will continue to be vulnerable to drought hazard events. Due to the rurality of Jasper County, water shortages that occur due to densely populated areas is not a vulnerability factor. What makes the rural nature of Jasper County more vulnerable is the agricultural sector. Crop and livestock farmers can be impacted greatly from severe and prolonged drought conditions.

Future Community Development

Since all future development will be vulnerable to drought hazard events, local officials should ensure they are educating the public on the potential risks associated with severe and prolonged drought. While droughts cannot be eliminated, reducing the common risks associated with drought hazard events with mitigation measures can be implemented. Local officials and stakeholders should be prepared and have strategic plans to overcome prolonged water supply shortages that may come from ongoing drought conditions.

3.4.8 – Mine Subsidence

Risk Identification

The final hazard event risk Jasper County has ranked in its priority index is mine subsidence. Mine subsidence is lateral or vertical ground movement caused by a failure initiated at the mine level of man-made underground mines. There are two types of mine subsidence that occur in Illinois, Pit subsidence and Sag subsidence. Figures 3-16 and 3-17 provide illustrations of each of these two types of mine subsidence.

Pit subsidence creates a bell-shaped hole, 6-8 feet deep and 2-40 feet across. This hole is created with the mine roof collapses. The mine is normally a shallow mine, less than 100 feet deep and the ground movement associated with Pit subsidence is swift and sudden. An illustration of Pit subsidence can be seen here (right).

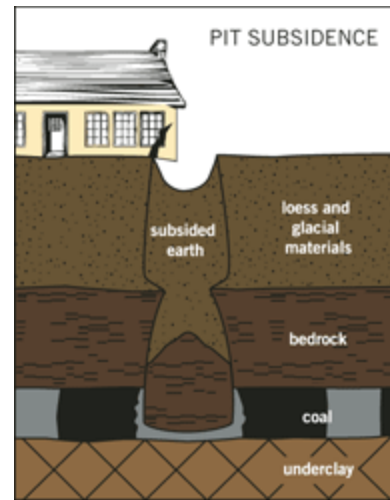


Figure 3-16: Pit Subsidence

Sag subsidence is the most common type of mine subsidence. The hole will appear as a gentle depression in the ground and can spread over an area as large as several acres. The initial signs of Sag subsidence may appear suddenly within a few hours or a couple of days. More gradual movement may occur for years or even decades after the first sign of subsidence. Often times damage associated with Sag subsidence is dismissed quickly as normal wear and tear.

This type of subsidence can occur over any size mine and is caused by coal pillars, initially constructed to support the mine roof, within the mine collapsing or completely disintegrating. An illustration of Sag subsidence can be seen here (left).

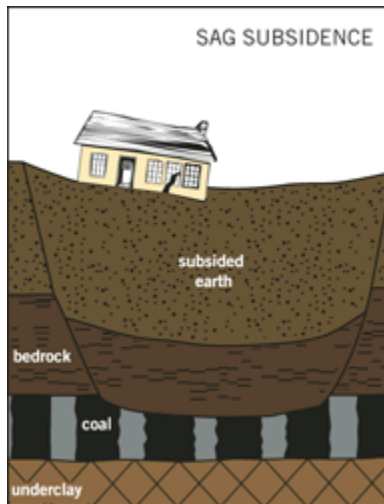


Figure 3-17: Sag Subsidence

Illustrations and information provided by the Illinois Mine Subsidence Insurance Fund (IMSIF)

According to the Illinois 2018 HMP, about 840,000 acres of land have been undermined for coal and other minerals in Illinois. Approximately 201,000 acres of that land has been developed is in close proximity to those mines, according to the Illinois State Geological Survey (ISGS).

From 1999 to 2017 there were over 1,300 confirmed mine subsidence insurance claims. St. Clair County (538 claims), Sangamon County (261 claims) and Madison County (193 claims) are the three top Illinois counties for the most insurance claims associated with mine subsidence over this time period. The total claim amount for all mine subsidence claims during this time period is \$158,039,727.

Historical Occurrence

There has been no historical occurrence of mine subsidence in Jasper County. However, due to concern of mine subsidence among local officials and stakeholders from the Hazard Mitigation Plan Steering Committee, this hazard was chosen for inclusion and prioritized as a potential hazard risk.

Geographic Location

Mine subsidence events will occur only on areas of Jasper County that has had a history of undermining. Table 3-22 and figure 3-18 describes and illustrate the mines located within Jasper County. Data and information come from the ISGS.

Table 3-22: Jasper County Mine Directory

ISGS Index #	Mine Name	Mine Type	Location (TWP, RGE, SEC)
2508	Jourdan	UG (Underground)	(Near Rose Hill Quadrangle)
2509	Brush Creek	N/A	6N – 9E – 13
2510	Jourdan & Brown	Shaft	6N – 10E – 5
2511	Brush Creek	Shaft	6N – 10E – 6
2544	N/A	Shaft	6N – 11E – 7
2761	N/A	Strip	6N – 10E – 1
4230	N/A	Drift	6N – 10E – 6
4699	N/A	Shaft	7N – 9E – 27
6849	N/A	N/A	6N – 10E – 7
6855	N/A	Slope	6N – 10E – 6
6856	N/A	N/A	6N – 10E – 6
6857	N/A	Shaft	6N – 10E – 7
6858	N/A	N/A	6N – 10E – 6

Jasper County Mines

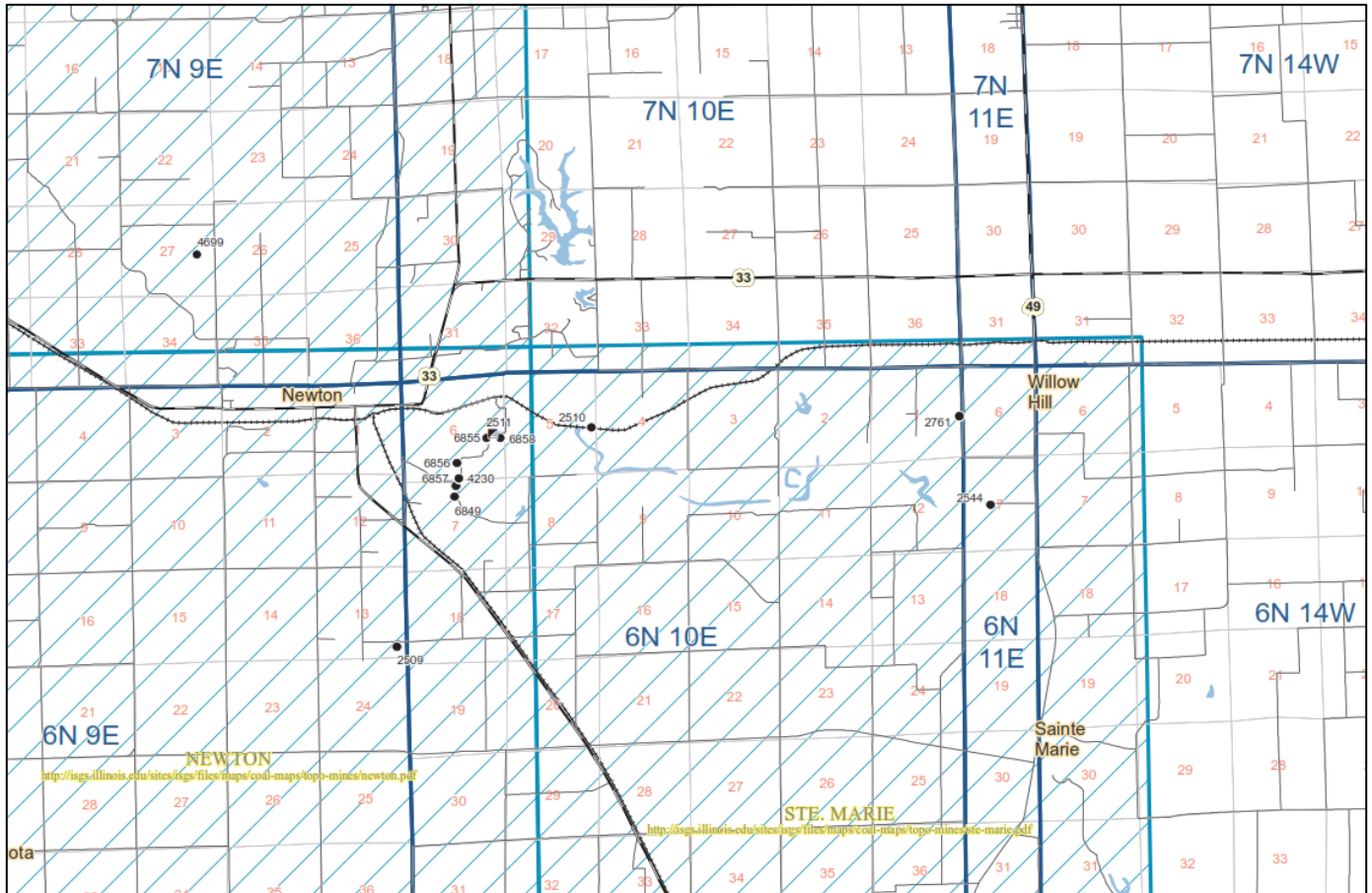


Figure 3-18: Jasper County Mines (ISGS Map)

Of the thirteen mines that have been identified in Jasper County, one that may be critically important in terms of mine subsidence is the Jourdan underground mine, ISGS index # 2508. The exact location of this particular underground mine was never obtained. It is however been found to be located somewhere in the Rose Hill Quadrangle, map located on the following page.

This underground mine could be a significant mine subsidence hazard to the affected area. The mine is estimated to be approximately 5-9 acres in size and was in operation by different owners from 1899-1935. Approximately 21,000 tons of materials were mined during over its 30 plus years of operation.

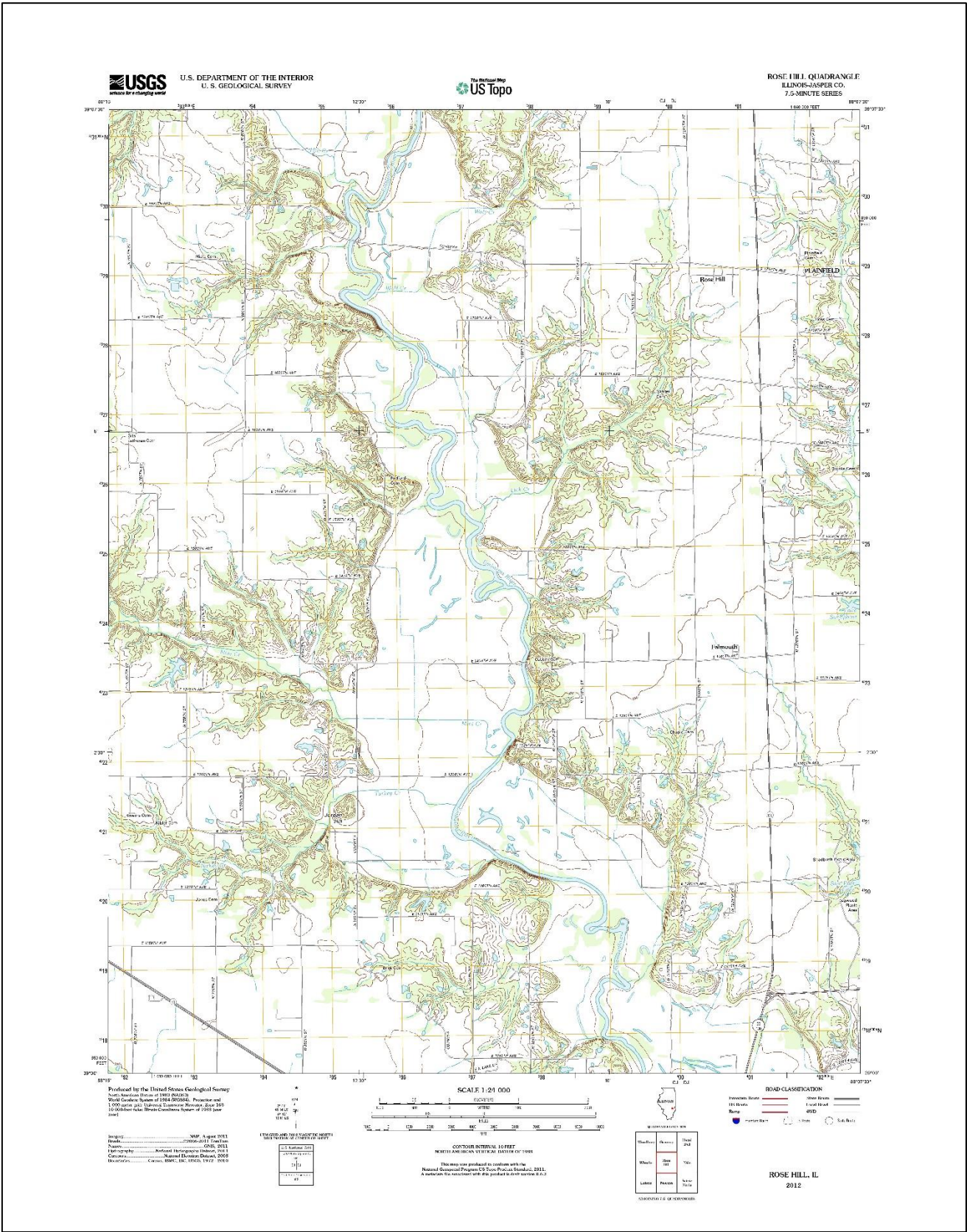


Figure 3-19: Rose Hill Quadrangle

Local Vulnerability

Mine Subsidence hazard events are not widespread events. They occur at a specific location above the underground mine and normally are a few feet to several acres in length. All buildings and households that are developed above a previously active underground mine would be considered vulnerable to these hazard events. Damage can vary from minor cracks to severe structural failure depending on the stage of the subsidence.

Hazard Extent

The extent of mine subsidence varies on the magnitude and duration of the hazard event. Pit subsidence occurs quickly and ends abruptly. Sag subsidence can last for years to over a decade.

Financial Loss

While there have been no claims or reports of mine subsidence in Jasper County, utilizing information from mine subsidence across Illinois may help to further understand potential financial loss due to this hazard event. The total mine subsidence insurance claim payments that have been made from 1999-2017 equate to \$158,039,727. When this total is multiplied by the number of claims during this time period (1330), the average claim payment for loss associated with mine subsidence is Illinois in the past two decades is \$118,826.86. In sum, the average amount of loss associated with a single mine subsidence event in Illinois is \$118,826.86.

Future Asset Vulnerability

All future development that occurs above previously active underground mines will continue to be vulnerable to mine subsidence hazard events.

Future Community Development

All future development should understand the potential for unexpected damages caused by mine subsidence if the development is occurring above a previously active underground mine. Local officials, stakeholders, building inspectors, construction workers, etc. should ensure they understand the basic signs of mine subsidence and be aware of developed land areas that reside above a known underground mine.

3.4.9 – Influenza Pandemic

The Centers for Disease Control and Prevention (CDC) define an Influenza Pandemic as a new type of influenza virus that is different from current and normal seasonal influenza viruses. This virus can spread easily from person to person in an effective and sustained manner. Most people will have little to no immunity from the virus because of no previous exposure to the strain. Influenza Pandemics have the potential to cause a major impact on the general public, including all residents and visitors of Jasper County, Illinois.

This HMP recommends the utilization of the Illinois Department of Public Health’s Illinois Pandemic Influenza Preparedness and Response Plan to address a potential outbreak in Illinois.

Section 4: Mitigation Strategies

4.1 – Mitigation Introduction

The central goal of mitigation is to reduce the impacts of future hazard events, including property damage, disruption to the local economy, and the amount of funds necessary to assist with hazard recovery. The Jasper County Hazard Mitigation Plan Steering Committee (shown in Acknowledgements) worked to identify existing hazard mitigation polices, establish mitigation goals and create a comprehensive list of mitigation strategies for the County of Jasper, the City of Newton and the Village of Ste. Marie. The implementation of these mitigation strategies will undoubtedly aid in reducing the potential loses identified in the risk assessment of this HMP (section 3).

4.2 – Jurisdictional Mitigation Authority

The County of Jasper, the City of Newton and the Village of Ste. Marie each have certain authorities over their corresponding jurisdictions that allow for numerous mitigation activities to take place. These authorities include the ability to enact zoning and land use plans to control the physical development of land located in areas that may be prone to hazards. The City of Newton has utilized both of these authorities to try to ensure that 100-year flood areas of the City are carefully monitored. Even more specifically, the City of Newton has approved a flood plain code to prevent unwise developments in 100-year flood areas.

Jasper County hazard preparation and mitigation efforts began with the establishment of the Jasper County Emergency Management Agency (JCEMA). Funding for this agency is provided annually from the Jasper County Board, alongside partial grant funding from FEMA. This agency serves the county and it's locales by aiding in the preparation for and mitigation of jurisdictional natural disasters and hazards. Agency staff work with local officials and stakeholders to ensure necessary plans are in place to respond effectively to area hazard events.

The Village of Ste. Marie is a small rural community with a population of only about 250 people. With that said, a significant portion of the eastern portion of the community is located in a FEMA Zone AE floodway due to the relative location of the Embarras River. The Village employs their Village President and public works employees to work with the JCEMA to efficiently plan for and respond to hazard events, most notably flooding events, that can occur in the floodway within the Ste. Marie.

4.3 – National Flood Insurance Program

In 1968, the United States Congress established the National Flood Insurance Program (NFIP) to help provide a means for property owners to protect themselves from unexpected flood hazard events. This program offers flood insurance to homeowners, renters and businesses if their community is a participant in the NFIP.

In Jasper County, both the City of Newton and the Village of Ste. Marie participate in the NFIP. Incorporated communities in Jasper County that do not currently participate in the NFIP include the Villages of Hidalgo, Rose Hill, Wheeler, Willow Hill and Yale. Jasper County will continue to reach out to the non-participatory incorporated communities regarding the benefits NFIP partnership provides.

Jasper County, the City of Newton and the Village of Ste. Marie do not have any NFIP severe repetitive loss properties or NFIP repetitive loss properties located in their jurisdictions to their knowledge. With that being said, these entities do utilize staff time and management resources to monitor all proposed developments in FEMA 100-year flood plain areas. As noted in Section 4.2, the City of Newton has specifically established a flood plain code to ensure eliminate unwise development in flood plain areas and to further enforce these policies.

4.4 – Mitigation Goals

The risk assessment section of this HMP identified several hazard events that pose a risk to Jasper County and the jurisdictions within. While hazard elimination cannot be accomplished, the entire county can work towards the goal of reducing the risks associated with these hazards through mitigation steps. The Jasper County Hazard Mitigation Plan Steering Committee established three broad mitigation goals to create a vision the county would like to achieve through mitigation action planning and implementation.

Goal 1: Protect the life of residents and value of property in Jasper County from the impacts and effects of natural hazard events.

Goal 2: Protect existing and future infrastructure, including Jasper County essential facilities, from the impacts and effects of natural hazard events.

Goal 3: Increase public awareness of natural hazard events and incorporate natural hazard mitigation in local government plans and regulations.

4.5 – Multi-Jurisdictional Mitigation Strategy

Following the review of the risk assessment, the Jasper County Hazard Mitigation Plan Steering Committee was tasked with identifying practical mitigation activities to be undertaken by the participating local jurisdictions. The jurisdictions with mitigation activities include each participating local entity along with the county health department and local community school district. Each local jurisdiction has specific mitigation activities for their respective community, while other mitigation activities cover all of the participating jurisdictions. These mitigation activities or mitigation action steps are organized under the goal the action is intended to achieve and illustrated on table 4-1. Each mitigation activity was given a code for ease of reference and prioritization. This coding system is shown on the following page.

Mitigation Action Code System

G1 = Goal One

G2 = Goal Two

G3 = Goal Three

The letter following the goal coding (i.e. G1-**A**) is inserted for the delineation of each mitigation activity from one another.

Table 4-1: Jasper County’s Multi-Jurisdictional Mitigation Strategy

Code	Mitigation Action	Jurisdictions Involved
G1-A	Establish/Construct an emergency operations center for planning and carrying out county-wide disaster response	All Jurisdictions
G1-B	Establish/Construct community storm shelter	City of Newton
G1-C	Prepare and establish county office buildings as a storm shelter during hazard events	Jasper County
G1-D	Construct emergency equipment storage building/storm shelter	Jasper County
G1-E	Designate and publicize city cooling centers for potential extreme heat events	City of Newton
G1-F	Install early warning storm siren system	Village of Ste. Marie
G1-G	Seek funding for and establish weather radio distribution day for county residents	All Jurisdictions
G1-H	Marquee or electronic sign displaying hazard related information	Jasper Co. Health Dept.
G1-I	Require/ensure all residents have 911 addresses displayed properly	Jasper County
G1-J	Purchase emergency generator for Newton Community HS and Grade School for storm shelter preparedness	Jasper Co. School Dist.
G1-K	Purchase backup generator for the City of Newton	City of Newton
G1-L	Develop method to ensure adequate water supply in the event of a drought hazard	All Jurisdictions
G1-M	Establish location of all shut-in elderly/special needs residents – special assistance required during hazard event	All Jurisdictions
G2-A	Tree trimming for protection of power lines	All Jurisdictions
G2-B	Bury power lines to essential facilities	All Jurisdictions

Code	Mitigation Action	Jurisdictions Involved
G2-C	Upgrade local water distribution system	Village of Ste. Marie
G2-D	Evaluate mitigation measures to remove waste water treatment facility out of the 100-year floodplain	Village of Ste. Marie
G2-E	Purchase airboat to be used for flood damage assessment/rescue	Jasper County
G2-F	Assessment of township bridges for flood risk	Jasper County
G2-G	Develop critical infrastructure assessment mechanism to ensure proper maintenance is planned for and completed	All Jurisdictions
G2-H	Purchase and application of anti-icing/de-icing substances to road surfaces prior to imminent ice storms	All Jurisdictions
G2-I	Construction of retention ponds	City of Newton
G2-J	Develop and establish protocol to address abandoned buildings potentially susceptible to hazard events	Jasper County
G3-A	Inventory all structures located in the floodplain and low-lying elevation areas	All Jurisdictions
G3-B	Develop a Land Use Plan	Jasper County
G3-C	Adopt the most recent building codes	Jasper County
G3-D	Review local programs, ordinances, plans to determine how they can better address natural hazard event impact	City of Newton
G3-E	Participate in the NFIP community rating system (CRS) for reduced flood insurance	Jasper County
G3-F	Create and distribute hazard event informational/educational materials for residents of Jasper County	Jasper Co. Health Dept.
G3-G	Provide adult educational opportunities pertaining to natural hazard event safety	Jasper Co. Health Dept.
G3-H	Promote this HMP and other useful hazard event/hazard mitigation links for the public on jurisdictional websites	All Jurisdictions

Code	Mitigation Action	Jurisdictions Involved
G3-I	Expand volunteer programs for checking on citizens with handicaps/special needs or those who are isolated	Jasper Co. & Newton
G3-J	Educate local businesses on methods to protect their employees during natural hazard events	All Jurisdictions
G3-K	Develop a plan for unincorporated areas that have large clusters of residents to respond effectively to hazard events	Jasper County
G3-L	Develop county-wide educational system for NFIP building codes, enforcement and restrictions	Jasper County

4.6 – Multi-Jurisdictional Mitigation Strategy Prioritization

Implementation of the mitigation strategy is critical to the overall success of the entire HMP. With that in mind, it is important to prioritize the mitigation activities and decide which activities should be undertaken first. It should also be noted that some mitigation activities may occur prior to others for many reasons, including but not limited to, financial, engineering, environmental, permitting, and site control issues. Nevertheless, establishing a priority list will allow the jurisdictions to begin working on completing mitigation activities upon approval of this HMP.

Prior to any mitigation action or activity is completed, a cost/benefit analysis will need to be completed by the implementing agency to ensure it has the capacity, whether it be financial capacity or staffing capacity, to complete the project. In many cases, grant funding from the federal or state government may be available for particular projects. The implementing jurisdictions can reach out to an area consulting firm such as a regional planning commission to see if grant funding may be available for particular projects.

Table 4-2 on the following page displays the priority ranking for each mitigation activity described in table 4-1. For each participating jurisdiction a rating of high, medium or low was given to the mitigation activity. Additionally, each activity within the multi-jurisdictional mitigation strategy was determined to be most related to particular natural hazard events identified within the risk assessment of this HMP. Lastly, each priority requires a source of funding. The possible funding source for each mitigation activity is also provided, determined to be local, state, federal or a combination of two or more of these sources. The priority level, hazard events and funding source categories were coded for efficiency. The code system used for priority ranking and natural hazard events is shown below.

Mitigation Prioritization Code System

Priority Level

High (H) = Completion within 1-3 years

Medium (M) = Completion within 3-5 years

Low (L) = Completion in 5+ years

Funding Source

Local Funding = L

State Funding = S

Federal Funding = F

Related Hazard Event

Severe Thunderstorm = ST

Tornado = T

Earthquake = E

Extreme Heat = EH

Winter Storm = WS

Drought = D

Flood = F

Mine Subsidence = MS

Related to all hazard events = All

Table 4-2: Multi-Jurisdictional Mitigation Strategy Prioritization

Priority Ranking

Code	Jasper County	City of Newton	Village of Ste. Marie	Jasper Co. School Dist.	Jasper Co. Health Dept.	Related Hazard Event	Funding Source
G1-A	H	H	H	-	-	All	L, S, F
G1-B	-	H	-	-	-	All	L, S
G1-C	H	-	-	-	-	All	L
G1-D	M	-	-	-	-	All	L, S
G1-E	-	M	-	-	-	EH	L
G1-F	-	-	H	-	-	ST, T, WS	L, S
G1-G	H	H	H	-	-	ST, T, WS	L, S, F
G1-H	-	-	-	-	M	All	L
G1-I	L	-	-	-	-	All	L
G1-J	-	-	-	L	-	All	L, S, F
G1-K	-	M	-	-	-	All	L, S, F
G1-L	M	M	M	-	-	D	L
G1-M	H	H	H	-	-	All	L
G2-A	H	H	H	-	-	ST, T, WS	L
G2-B	L	M	L	-	-	ST, T, WS	L
G2-C	-	-	H	-	-	EH, D	L, S, F
G2-D	-	-	M	-	-	F	L, F
G2-E	L	-	-	-	-	F	L, S
G2-F	M	-	-	-	-	F	L
G2-G	M	H	M	-	-	All	L
G2-H	H	H	H	-	-	WS	L

Table 4-2: Multi-Jurisdictional Mitigation Strategy Prioritization

Priority Ranking

Code	Jasper County	City of Newton	Village of Ste. Marie	Jasper Co. School Dist.	Jasper Co. Health Dept.	Related Hazard Event	Funding Source
G2-I	-	L	-	-	-	F	L, S, F
G2-J	L	-	-	-	-	All	L
G3-A	M	M	M	-	-	F	L
G3-B	M	-	-	-	-	All	L
G3-C	H	-	-	-	-	ST, T, E, WS, F, MS	L
G3-D	-	M	-	-	-	All	L
G3-E	M	-	-	-	-	F	L
G3-F	-	-	-	-	H	All	L
G3-G	-	-	-	-	H	All	L
G3-H	M	M	M	M	M	All	L
G3-I	M	M	-	-	-	All	L
G3-J	M	M	M	-	-	All	L
G3-K	H	-	-	-	-	All	L
G3-L	L	-	-	-	-	F	L

4.7 – Mitigation Strategy Funding Sources

In order to complete action steps and implement the Hazard Mitigation Strategy described in the previous pages it is vital that these mitigation actions can be adequately funded. A summary of possible mitigation funding resources for the action steps outlined in the previous section is provided in the table below.

Table 4-3: Hazard Mitigation Funding Sources

Mitigation Actions	Program Name	Program Description
Infrastructure Projects	FMA. (FEMA)	Federal funds to reduce or eliminate the risk of repetitive flood damage to buildings
	ITEP (IDOT)	State funding for storm water management, and other transportation improvements
	NDSP (FEMA)	National Dam Safety Program
	Greening America (EPA)	Financial aid for sustainable community infrastructure development and design strategies
Community Planning & Housing	CDBG (IL DCEO)	Funding can be used for Water/Sewer/Housing Rehabilitation Efforts
	CDBG-Mitigation (HUD)	Funding to mitigate future hazards in areas impacted by recent disasters
	Housing Preservation (USDA)	Grants for the repair of low-income housing
	Flood Plain Mgmt. (USACE)	Funding to aid in planning guidance for floodplain management
Economic Recovery	CDBG (IL DCEO)	Funding can be used for businesses to expand, as well as create/retain jobs
	Disaster Recovery (EDA)	Federal funding to support economic recovery and resilience in the face of disasters
	Tree Assist. Program (USDA)	Grant funding utilized for nursery tree growers to replant or rehabilitate eligible trees, bushes, etc. damaged from disasters
Natural Resources	Floodplain Initiative (USDA)	Provides farmers/landowners with initiatives to achieve farming and conservation goals.
	Sustainable Comm. (HUD)	Funding to aid regional planning efforts for sustainability
	Drought Assistance (USDA)	Funding to aid communities following drought hazard events

Section 5: Plan Implementation and Maintenance

5.1 – Plan Implementation

During the planning process the Jasper County Hazard Mitigation Plan Steering Committee identified potential natural hazard events, developed mitigation goals, actions and created a mitigation strategy for the moving these mitigation actions forward over the next several years. This work, with this HMP as the product, was completed with the central intention of incorporating the multi-jurisdictional mitigation strategy into continued planning efforts in each participating jurisdiction. Important implementing agencies critical to the success of the mitigation strategy developed within this HMP include Jasper County, the Jasper County Emergency Management Agency, the Jasper County Health Department, the Jasper County School District, the City of Newton, and the Village of Ste. Marie. Federal and state assistance, both technical and financial assistance, will likely be required for a number of the identified action steps to be completed.

Keeping the area residents abreast of the HMP is another critical factor to the successful implementation of this plan. Public comments will be accepted by the Jasper County Steering Committee on a rolling basis and discussed as they arrive. Continued and increased education efforts for hazard mitigation will be an ongoing effort of Jasper County and participating jurisdictions. Upon adoption and approval, a copy of this HMP will be maintained in each participating jurisdiction, including the Jasper County Emergency Management Agency, and made easily accessible for public review.

5.2 – Evaluation and Update of the HMP

Throughout the next five-year planning cycle, the Jasper County Hazard Mitigation Committee will reconvene to evaluate progress of the HMP and update the plan on an annual basis to account for mitigation strategy changes. While formal meetings of the entire Committee will not be a regular occurrence, its members will have weekly conversations and stand readily available to discuss the mitigation strategies outlined in this HMP. Specifically, the Jasper County Hazard Mitigation Committee will review the progress of the plan’s mitigation goals or action steps during the five-year planning cycle and adjust these action steps to fit the needs of the participating communities. Successful implementation of the outlined action steps will indicate hazard mitigation progress, while the failure to achieve these mitigation goals will indicate a need to prioritize these mitigation goals above other local projects if possible. Additionally, updates to the risk assessment portion of the HMP may also be required during this five-year planning cycle due to new data or information regarding specific hazard events.

Updates and modifications to portions of this HMP during the five-year planning process will require a public notice and a meeting prior to submitting revision to the participating jurisdictions for approval. These updates will occur as deemed necessary by consent of each participating jurisdiction.

5.3 – 2011 Jasper County HMP Updates

Since the approval of the 2011 Jasper County HMP there has been no significant construction developments that have impacted the participating jurisdiction's overall vulnerability to natural hazards. Each participating jurisdiction indicates projections of a declining population, which decreases the overall risk of natural hazards on human life. However, each jurisdiction also sees projected increases in the number of individuals over the age of 65. This development creates the need for participating entities to pay particular attention to the safety of the elderly, disabled, and shut-ins within each jurisdiction during natural hazard events.

The priorities of the 2011 Jasper County HMP predominantly remain the same in this 2020 update of the HMP. One significant change is the inclusion of the new Risk Priority Index (RPI) to better delineate those hazard events that need to be focused on by participating entities based on the number of historical occurrences and severity of the specific hazard event. The foundational three mitigation goals remain nearly identical to that of the 2011 HMP.

In terms of the specific mitigation actions outlined in the 2011 HMP relative to those in 2020, most of the mitigation activities planned remain similar in nature. Mitigation activities that have not fully been completed continue to be included as part of the updated action plan of activities. Table 5.1 on the following pages outlines each 2011 HMP Mitigation Action and the status of that particular action step.

Table 5-1: 2011 Mitigation Action Evaluation

Mitigation Action	Status
Construct Ramp to Firehouse basement	Completed
Elevate 1800 E. Co. Rd. 9 – North of Village of Sainte Marie	No longer relevant
Evaluate Burl Ives Bridge – IDOT assistance needed	Evaluation ongoing
Road, Bridge, Culvert work in South Muddy Township/Laws Creek area	Completed
Construction New Building for a Generator	No longer Relevant
Lightning Awareness Signs	Completed
Distribution of weather radios to residents	Partial completion/included in updated plan
Purchase repeaters for portable radios	Completed
Construct a 911 facility/emergency operations center	Included in updated plan
Construct an emergency equipment building/community storm shelter	Included in updated plan
Purchase new road closed/high water signs	Completed
Become an NWS storm ready community	No longer a top priority
Tree trimming for protection of power lines	Completed & including in updated plan
Evaluation Township Bridges	Completed
Update/elevate township bridges as needed	No longer a top priority

Acquire repeatedly flooded properties/structures	No longer relevant
Update the flood map – FEMA & Army Corps of Engineers	Updating process ongoing, not included in updated plan as a top priority
Apply anti-icing substance to roads prior to ice storm	Completed and included in updated plan
Develop a Land Use Plan	Included in updated plan
Participate in CRS	Included in updated plan
Develop disaster response plans for unincorporated areas with clusters of residents	Included in updated plan
Purchase an airboat for flood rescue	Included in updated plan
Develop Disaster Plan Database	Ongoing, but not included as top priority in updated plan
Create Education System for NFIP building codes, enforcement, and restrictions	Ongoing & included in updated plan
Educate businesses on disaster preparedness	Ongoing & included in updated plan
Adult education regarding natural hazards safety	Ongoing & included in updated plan
Education of Mine Subsidence	Ongoing, but not included as top priority in updated plan
Distribution of education material regarding extreme temperature	Completed
Distribution of education material regarding water purification	Completed
Expand Relationship between levee districts and Army Corps of Engineers	Completed
Utilize 911 Alert Now system	Ongoing, but not included as top priority in updated plan

Volunteer programs for neighborhood checks	Ongoing & included in updated plan
Utilize County buildings for storm shelters	Completed
Ensure 911 addresses are displayed on all buildings	Ongoing & included in updated plan
Ensure existing road signs are correct	Completed
Monitor infrastructure conditions	Ongoing & included in updated plan
Inventory of structures in flood plain or other low-lying areas prone to flooding	Ongoing & included in updated plan
Purchase portable marquee sign	Included in updated plan
Telephone on hold messaging system	Completed
Education to caregivers for special needs residences	Ongoing & included in updated plan
Generator for Schools	Included in updated plan
Construction of storm shelters	Included in updated plan
Purchase a backup generator – City of Newton	Completed
Construct retention ponds	Included in updated plan
Ensure water is available during a drought	Included in updated plan
Designate Cooling Centers	Ongoing & included in updated plan
Include Mitigation in comprehensive planning	Completed
Evaluate Waste Water System – Village of St. Marie	Ongoing, but not included as top priority in updated plan

Section 6: Appendix

6.1 – Appendix A – Technical Documents & Data

American Geosciences Institute

- *Earthquake Hazards near the New Madrid Fault Zone*

Environmental Systems Research Institute (Esri)

- *Business Analyst Online*

Federal Emergency Management Agency (FEMA)

- *Data Visualization: Disaster Declarations for States and Counties*
- *National Flood Insurance Program*
- *2018 Threat and Hazard Identification and Risk Assessment (THIRA) and Stakeholder Preparedness Review (SPR) Guide*
- *2013 Local Mitigation Planning Handbook*
- *2001 Identifying Hazards and Estimating Losses*

Illinois Department of Natural Resources (IDNR)

- *Water Resources*
- *Earthquake Occurrence in Illinois*
- *Earthquakes in Illinois 1795-2015*
- *100-year Floodplain*

Illinois Department of Public Health (IDPH)

- *Pandemic Preparedness and Response Plan*

Illinois Emergency Management Agency (IEMA)

- *2018 Illinois Natural Hazard Mitigation Plan*

Illinois Environmental Protection Agency (IEPA)

- *2018 303d Listed Waters and Watershed Maps*

Illinois State Geological Survey (ISGS)

- *Jasper County Mines*

Jasper County

- *Property Assessment Data*
- *2011 Hazard Mitigation Plan*

Multi-Resolution Land Characteristics Consortium (MRLC)

- *National Land Cover Database*

National Association of Realtors

- *Median Home Value*

NOAA National Climate Data Center

- *Climate Data*
- *Wind Chill Chart*

United States Census Bureau

- *American Community Survey 2014-2018*

U.S. Drought Monitor (USDM)

- *Drought Intensity Scale*

U.S. Geological Survey (USGS)

- *Richter magnitude scale*
- *New Madrid and Wabash Valley Seismic Zones*

United States Tornadoes

- *Average Annual Tornadoes 1991-2015 Map*

6.2 – Appendix B – Jasper County Essential Facilities Inventory

Essential Facilities Inventory

Facility	Category	Address
Jasper County Sheriff	Law Enforcement	106 East Morgan St. Newton, Illinois 62448
Newton Police Department	Law Enforcement	108 N. Van Buren St. Newton, Illinois 62448
Crooked Creek FD	Fire Department	124 E. Harrison St. Hidalgo, Illinois 62432
Wade Community FPD	Fire Department	104 N. 1 st Ave. Newton, Illinois 62448
Yale Volunteer FD	Fire Department	109 South Range St. Yale, Illinois 62481
Jasper County Ambulance	Ambulance Service	204 W. Jourdan St. Newton, Illinois 62448
Jasper County EMA	Alert System	106 E. Morgan St. Newton, Illinois 62448
CodeRED	Alert System	106 E. Morgan St. Newton, Illinois 62448
Illinois Public Health Mutual Aid	Alert System	106 E. Edwards St. Newton, Illinois 62448
Jasper County Health Dept.	Health Care	106 E. Edwards St. Newton, Illinois 62448
Sarah Bush Lincoln	Health Care	910 S. Van Buren St. Newton, Illinois 62448
Springfield Clinic, LLP	Health Care	507 W. Washington St. Newton, Illinois 62448
Jasper County Junior High	Jasper County Schools	1104 W. Jourdan St. Newton, Illinois 62448
Jasper County Head Start	Jasper County Schools	1306 Fairground Ave. Newton, Illinois 62448
Newton Community High School	Jasper County Schools	201 West End Ave. Newton, Illinois 62448
Newton Elementary School	Jasper County Schools	100 E. Maxwell St. Newton, Illinois 62448
St. Thomas Junior High	Jasper County Schools	306 W. Jourdan St. Newton, Illinois 62448
Ste. Maire Elementary School	Jasper County Schools	311 Franklin St. Ste. Marie, Illinois 62459
Truant Alternative Education	Jasper County Schools	213 S. Cumberland St. Willow Hill, Illinois 62480

Essential Facilities Inventory cont.

Facility	Category	Address
Norris Electric Coop.	Utilities	8543 N. Hwy. 130 Newton, Illinois 62448
Vistra Energy	Utilities	6725 N. 500 th St. Newton, Illinois 62448
Hidalgo Waste Water Dept.	Utilities	123 Harrison St. Hidalgo, Illinois 62432
Newton Electric Department	Utilities	404B N. Van Buren St. Newton, Illinois 62448
Newton Waste Water Dept.	Utilities	105A E. Marion St. Newton, Illinois 62448
Newton Street Department	Utilities	405 N. Van Buren St. Newton, Illinois, 62448
Newton Water Department	Utilities	405A N. Van Buren St. Newton, Illinois, 62448
Ste. Marie Waste Water Dept.	Utilities	105 S. Range St. Ste. Marie, Illinois 62459
Willow Hill Waste Water Dept.	Utilities	103 S. Cumberland St. Willow Hill, Illinois 62480
Yale Waste Water Dept.	Utilities	PO Box 131 Yale, Illinois 62481
Jasper County Transportation	Public Transportation	207 S. Hutton Dr. Newton, Illinois 62448
Wad it Up Party Busses	Public Transportation	406 Martin St. Newton, Illinois 62448
WIKK The Eagle 103.5	Radio Station	103 Museum Dr. Newton, Illinois 62448
Jasper County Comm. Center	Community Center	1401 Clayton Ave. Newton, Illinois 62448
St. Thomas Parish Center	Community Center	404 W. Jourdan St. Newton, Illinois 62448
Crooked Creek Township	Township/Hwy. Dept.	18241 Illinois 130 Hidalgo, Illinois 62432
Fox Township	Township/Hwy. Dept.	14251 E. 560 th Ave. Newton, Illinois 62448
Grandville Township	Township/Hwy. Dept.	17547 E. 1900 th Ave. Yale, Illinois 62481
Grove Township	Township/Hwy. Dept.	5992 E. 1800 th Ave. Montrose, Illinois 62445
Hunt City Township	Township/Hwy. Dept.	13876 N. 1525 th St. Newton, Illinois 62448
North Muddy Township	Township/Hwy. Dept.	13279 N. Elm St. Wheeler, Illinois 62479

Essential Facilities Inventory cont.

Facility	Category	Address
South Muddy Township	Township/Hwy. Dept.	2728 E. 300 th Ave. Newton, Illinois 62448
Wade Township	Township/Hwy. Dept.	1008 E. Jourdan St. Newton, Illinois 62448
Willow Hill Township	Township/Hwy. Dept.	101 S. Cumberland St. Willow Hill, Illinois 62480
Jasper County Highway Dept.	Township/Hwy. Dept.	12871 E. State Hwy. 33 Newton, Illinois 62448

This listing of essential Jasper County facilities does not include essential facilities located outside of Jasper County that are still seen as essential. The only exception is the Grove Township building, located just outside of the northwest County border in Montrose, Illinois despite being a township of Jasper. Other vital facilities include, but are not limited to, EJ Water Cooperative located in Dieterich, Illinois; Central Illinois Public Transit in Effingham, Illinois; Wabash Communications located in Louisville, Illinois; Regional Office of Education, located in Olney, Illinois 62450; among others.

6.3 – Appendix C – Jasper County Hazard Mitigation Steering Committee Minutes

MINUTES

Jasper County Illinois Disaster Mitigation and Recovery Plan

August 8, 2019

The first meeting of the Disaster Mitigation and Preparedness Planning process was held August 8, 2019 at the Jasper County Illinois Annex board meeting room from 10:00 AM until 11:00 AM.

Attending:

1. James Patrick, South Central Illinois Regional Planning and Development Commission, SCIRPDC
2. Ron Heltsley, Jasper County Board Chairman
3. Angela Fehrenbacher, Jasper County Board
4. Jason Warfel, Jasper County Board
5. Mike Hall, Jasper County Board
6. Ed Francis, Jasper EMA Director
7. Mark Bolander, Mayor of City of Newton
8. Ken Larimore, Jasper County Board assistant

10:00 AM-Meeting called to order

James Patrick described the process of obtaining a grant from Illinois EMA (IEMA) to write the updated Disaster Mitigation and Preparedness Plan as required by the State. The Disaster Mitigation and Preparedness Plan is required to be updated every 5 years. These meetings are part of the process of applying for the State Grant that will assist in paying for the cost of the plan update. The grant is due January 31 and it is expected that the grants will be awarded by May 1. The county has authorized SCIRPDC to write the grant and update the Disaster Mitigation and Preparedness Plan.

Ken Larimore described the process they went through to write the original Disaster Mitigation and Preparedness Plan that was approved February 2011. The process took months to obtain a grant to prepare the plan and then write the Disaster Mitigation and Preparedness Plan. Special software had to be purchased to run scenarios of various disaster possibilities. A lot of great data was also obtained that documented the statistics of different disasters.

The February 2011 plan can be viewed at:

https://www2.illinois.gov/iema/Mitigation/documents/CountyPlans/plan_Jasper_County.pdf

General discussion followed with questions and answers.

11:00 AM-Meeting Adjourned

Next meeting: September 12, 2019 at 5:30 prior to the regular monthly board meeting.

MINUTES

Jasper County Illinois Disaster Mitigation and Recovery Plan

September 12, 2019

The second meeting of the Disaster Mitigation and Preparedness Planning process was held September 12, 2019 at the Jasper County Illinois Annex board meeting room from 5:30 PM until 6:30 PM. Attending: See Attachment 1
5:00 PM-Meeting called to order

James Patrick, Executive Director, South Central Illinois Regional Planning and Development Commission. James presented the following handouts and PowerPoints. The attachments identify the documents presented. The documents will be updated by SCIRPDC and available at the next meeting.

Attachment 2: Document describes the State of Illinois 4 step planning process

Attachment 3: PowerPoint presentation going into detail on SCIRPDC tasks.

Attachment 4: Jasper County Asset Identification. This process required feedback and input from all those attending and representing the numerous governments, agencies and businesses in Jasper County.

Ken Larimore updated those that did not attend the first meeting and described the process they went through to write the original Disaster Mitigation and Preparedness Plan that was approved February 2011.

The February 2011 plan can be viewed at:

https://www2.illinois.gov/iema/Mitigation/documents/CountyPlans/plan_Jasper_County.pdf

General discussion followed with questions and answers.

6:23 PM-Meeting Adjourned

Next meeting: September 30, 2019, at 5:00 prior to the regular monthly board meeting.

Jasper County Hazard Mitigation Plan

Name	Municipality/Agency	Phone	Email
ED FRANCIS	JASPER EMA	618-793-2441	
RON HELTSLEY	JASPER BOARD	68-763-3757	
Doug Long	Jasper EMA	618-554-2285	
JACK THOMPSON	SEE MAIRIE	618-455-3579	
Greg Lindemann	Wide Fire	618-783-3387	
Tamara Phillips	Norris Electric	618-354-0033	tphillips@norriselectric.com
Davis Hess	Norris Electric	618-783-8765	dhess@norriselectric.com
Mark Belander	City of Newton	618-783-8777	mbe@newtonil.gov
Amber Volk	City of Newton	618-783-3109	amv@newtonil.gov
Chris Parr	JCCU #1 Silok	618-783-3023	cparr@jccu1.org
Mike Hall	Jasper Board	618-783-8685	
Ken Larimore	Jasper	217-343-2797	kenlarimore@hotmail.com
Jason Worrel	Jasper Board	618-562-5822	jworr@jasperil.gov
B. Bland	County Engineer	618-783-2915	bbland@jasperil.gov
Ron Swick	County Board	618-783-5588	
Don Swingle	ET Wite	217-254-5511	dswingle@eiswater.com
Wesley Schmitt	Jasper Co Board	217-221-5306	wesley@jasperil.gov

Attachment 2

Local governments engage in hazard mitigation planning to identify risks and vulnerabilities associated with natural disasters, and develop long-term strategies for protecting people and property from future hazard events.

This page describes the general process to develop or update a hazard mitigation plan. The mitigation planning process is slightly different for state, tribal, and local governments, but regardless of the plan type, there are four core steps in completing a hazard mitigation plan or plan update.



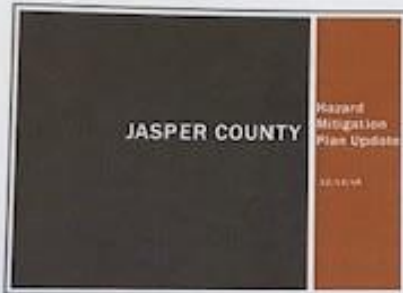
1. Organize the Planning Process and Resources – At the start, local government should focus on assembling the resources needed for a successful mitigation planning process. This includes securing technical expertise, defining the planning area, and identifying key individuals, agencies, neighboring jurisdictions, businesses, and/or other stakeholders to participate in the process. The planning process for local governments must include opportunities for the public to comment on the plan.

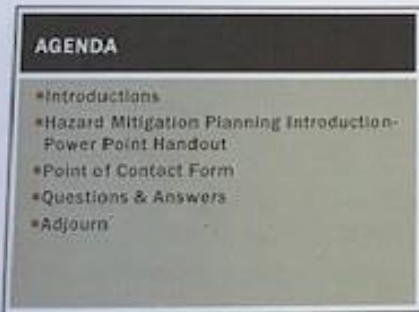
2. Assess Risks – Next, the state, tribe, or local government needs to identify the characteristics and potential consequences of hazards. It is important to understand what geographic areas each hazard might impact and what people, property, or other assets might be vulnerable.

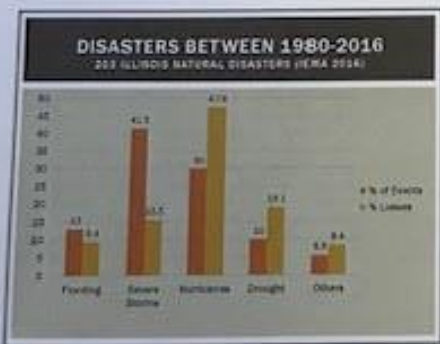
3. Develop a Mitigation Strategy – The state, tribe, or local government then sets priorities and develops long-term strategies for avoiding or minimizing the undesired effects of disasters. The mitigation strategy addresses how the mitigation actions will be implemented and administered.

4. Adopt and Implement the Plan – Once FEMA has received the adoption from the governing body and approved the plan, the state, tribe, or local government can bring the mitigation plan to life in a variety of ways, ranging from implementing specific mitigation projects to changing aspects of day-to-day organizational operations. To ensure success, the plan must remain a relevant, living document through routine maintenance. The state, tribe, or local government needs to conduct periodic evaluations to assess changing risks and priorities and make revisions as needed.

Attachment 3..







Attachment 4.
**Jasper County Disaster Mitigation Plan
 Asset Identification**

Police Departments	Address Phone	Phone
Jasper County Sheriff's	106 East Morgan	618-783-3057
Newton Police Department	108 N. Van Buren	618-783-8478

Fire Departments	Address Phone	Phone
Wade Community FPD	104 N. 1 st Ave. Newton, IL 62448	618-783-3887
Yale Volunteer FD	109 South Range Street	628-793-2415

Mutual Alarm Agreements	Address	Phone

Ambulance Services	Address	Phone
Jasper County Ambulance	204 W. Jourdan Newton, IL 62448	618-783-8651

Primary Health Care Facilities	Address	Phone
Jasper County Health Dept.	106 East Edwards Street Newton, IL 62448	618-783-4436
Sarah Bush Lincoln	910 South Van Buren Newton, IL 62448	618-783-5070
Newton Clinic	500 South Scott Street Newton, IL 62448	618-783-2144

Newton

Utilities	Address	Phone
City Electric Dept.	404B N. Van Buren St. Newton, IL 62448	618-783-3139
City Wastewater	105A E. Marion St. Newton, IL 62448	618-783-2715
City Water Dept.	404A N. Van Buren St. Newton, IL 62448	618-783-2711
City Street Dept.	405 N. Van Buren St. Newton, IL 62448	618-783-8511

Norris
EJ
Amerau
East IL Gas at Ste Marie
Vistra / Dynegy

MINUTES

Jasper County Illinois Disaster Mitigation and Recovery Plan

September 30,2019

The third meeting of the Disaster Mitigation and Preparedness Planning process was held September 30, 2019 at the Jasper County Illinois Annex board meeting room from 5:00 PM until 6:00 PM. Attending:

1. James Patrick, SCIRPDC
2. Ron Heltsley, Jasper County Board Chairman
3. Angela Fehrenbacher, Jasper County Board
4. Jason Warfel, Jasper County Board
5. Mike Hall, Jasper County Board
6. Ed Francis, Jasper EMA Director
7. Mark Bolander, Mayor of City of Newton
8. Ken Larimore, Jasper County Board assistant
9. Denise Pless, Norris Electric
10. Dean Swingler, EJ Water Cooperative
11. Amber Volk, Jasper County Economic Development
12. Jack Thompson, Business Owner, Village of Ste. Marie
13. Chris Parr, Jasper County School District

5:00 PM-Meeting called to order

James Patrick, Executive Director, South Central Illinois Regional Planning and Development Commission. James presented population and demographic information that will be utilized in the HMP for Jasper County, the City of Newton and the Village of Ste. Marie. James also introduced early data findings related to natural hazard events that have occurred since 1950. This data was attained from the National Climatic Data Center. There was some discussion of particular hazard events that have occurred amongst attendees.

James introduced the numerous hazards that could be included in the Jasper County HMP. After a brief discussion of the information provided, the committee chose to continue to focus on the same hazards as were examined in the 2011 plan.

James discussed the concept of a Risk Priority Index (RPI) and how the planning team would like to prioritize each hazard on the basis of probability and severity. These measures would be based on historical data.

James discussed the need to review the 2011 HMP goals and begin to consider what goals and objectives should be included in the updated HMP. After some general discussion, the meeting was adjourned.

5:58 PM-Meeting Adjourned

Next meeting: November 9, 2019, at 5:00 prior to the regular monthly board meeting.

MINUTES

Jasper County Illinois Disaster Mitigation and Recovery Plan

November 9, 2019

The Fourth meeting of the Disaster Mitigation and Preparedness Planning process was held September 30, 2019 at the Jasper County Illinois Annex board meeting room from 5:00 PM until 6:00

PM. Attending:

1. James Patrick, SCIRPDC
2. Ron Heltsley, Jasper County Board Chairman
3. Angela Fehrenbacher, Jasper County Board
4. Jason Warfel, Jasper County Board
5. Mike Hall, Jasper County Board
6. Ed Francis, Jasper EMA Director
7. Ken Larimore, Jasper County Board assistant
8. Denise Pless, Norris Electric
9. Dean Swingler, EJ Water Cooperative
10. Amber Volk, Jasper County Economic Development
11. Sandra Zumbahlen, Jasper County Health Department
12. Ron Swick, Jasper County Board

5:00 PM-Meeting called to order

James Patrick, Executive Director, South Central Illinois Regional Planning and Development Commission. James provided the committee with data and findings for each hazard event considered in the HMP. Some general discussion occurred. James then provided the Risk Priority Index (RPI) of the hazards and asked if there were any comments or questions. There was some brief questions and answers.

The committee as a whole discussed the mitigation goals and objectives of the 2011 HMP plan and after some discussion a list of essential goals and specific actions were written down. Committee members agreed to provide James with more information on these mitigation activities over the next few weeks for inclusion in the HMP.

5:43 PM-Meeting Adjourned

Next meeting: January 9th, 2020, at 5:00 prior to the regular monthly board meeting.

MINUTES

Jasper County Illinois Disaster Mitigation and Recovery Plan

January 9, 2020

The fifth meeting of the Disaster Mitigation and Preparedness Planning process was held January 2020 at the Jasper County Illinois Annex board meeting room from 5:00 PM until 6:00 PM.

Attending:

1. James Patrick, SCIRPDC
2. Ron Heltsley, Jasper County Board Chairman
3. Angela Fehrenbacher, Jasper County Board
4. Jason Warfel, Jasper County Board
5. Mike Hall, Jasper County Board
6. Ed Francis, Jasper EMA Director
7. Ken Larimore, Jasper County Board assistant
8. Denise Pless, Norris Electric
9. Dean Swingler, EJ Water Cooperative
10. Amber Volk, Jasper County Economic Development
11. Sandra Zumbahlen, Jasper County Health Department
12. Ron Swick, Jasper County Board
13. Mark Bolander, City of Newton Mayor
14. Jack Thompson, Business Owner, Village of Ste. Marie
15. Tamara Phillips, Norris Electric
16. Chris Parr, Jasper County School District
17. Ben Bland, Jasper County Engineer

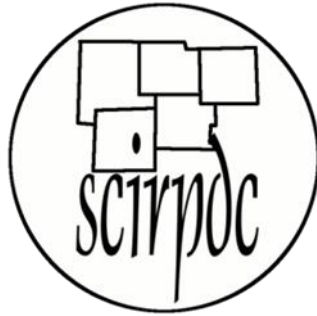
5:00 PM-Meeting called to order

James Patrick, Executive Director, South Central Illinois Regional Planning and Development Commission. James provided an overview of the drafted Jasper County HMP and asked for questions or comments from the committee. Some discussion and small required changes were discussed.

The committee as a whole discussed the proposed mitigation goals and objectives of the 2020 HMP plan that have been collected from members of the committee. Each mitigation activity was presented as being related to one the specific three mitigation goals established. An overview of each activity was discussed, including the local entities responsible for implementation the mitigation activities.

After final drafting of the HMP by SCIRPDC, the committee agreed to receive an electronic version for review prior to submittal to IEMA.

6:03 PM-Meeting Adjourned



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SCIRPDC Contributing Staff:

Luke Eastin, Planner/Grant Administrator, Author
James Patrick, Executive Director, Contributing Author

Special Thanks to the City of Newton, the Village of Ste. Marie, Jasper County, and the Illinois Emergency Management Association (IEMA) for their assistance in the development of this document

Funded in Part by:



Illinois Emergency Management Agency

SCIRPDC, 2021