Piatt County Multi-Jurisdictional All Hazards Mitigation Plan Update

Piatt County, Illinois

Draft

Participants:

Piatt County
Bement, Village of
Bement Community Unit School District #5
Cisco, Village of
Cisco Fire Protection District
Hammond, Village of
Kirby Medical Center
Mansfield, Village of
Mid Piatt Fire Protection District
Monticello, City of
Monticello Fire & Rescue
Monticello Township
Willow Branch Township

December 2022

The five year update of this Plan must be completed on or before (date).

PIATT COUNTY MULTI-JURISDICTIONAL ALL HAZARDS MITIGATION PLAN

PIATT COUNTY, ILLINOIS

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Researched and written for the Piatt County Multi-Jurisdictional
All Hazards Mitigation Planning Committee
by American Environmental Corporation

1.0 INTRODUCTION

Each year natural hazards (i.e., severe thunderstorms, tornadoes, severe winter storms, flooding, etc.) cause damage to property and threaten the lives and health of the residents of Piatt County. Since 1968, Piatt County has been included in six federally-declared disasters. **Figure I-1** identifies each declaration including the year the disaster was declared and the type of natural hazard that triggered the declaration. The natural hazard(s) recognized as contributing to the declaration for Piatt County is identified in bold.

Figure I-1
Federal Disaster Declarations: Piatt County

Declaration #	Year	Natural Hazard(s) Covered by Declaration
242	1968	tornadoes; ***severe storms; flooding***
860	1990	***severe ice storm***
1025	1994	***severe storms; flooding***
1416	2002	severe storms; tornadoes; ***flooding***
1681	2007	***severe winter storm***
4489	2020	***COVID-19 pandemic***

In the last 10 years alone (2012 – 2021), there have been 59 heavy rain events, 44 excessive heat events, 32 riverine flood events, 31 thunderstorms with damaging winds, 25 flash flood events, 25 extreme cold events, 13 severe winter storms, 7 severe storms with hail one inch in diameter or greater, 6 tornadoes, and 2 droughts verified in the County.

While natural hazards cannot be avoided, their impacts can be reduced through effective hazard mitigation planning. This prevention-related concept of emergency management often receives the least amount of attention, yet it is one of the most important steps in creating a hazard-resistant community.

What is hazard mitigation planning?

Hazard mitigation planning is the process of determining how to reduce or eliminate the loss of life and property damage resulting from natural and man-made hazards. This process helps the County and participating jurisdictions reduce their risk from these hazards by identifying vulnerabilities and developing mitigation actions to lessen and sometimes even eliminate the effects of a hazard. The results of this process are documented in an all hazards mitigation plan.

Why update an all hazards mitigation plan?

By updating and adopting an all hazards mitigation plan, participating jurisdictions become eligible to apply for and receive federal hazard mitigation funds to implement mitigation actions identified in the plan. These funds can help provide local government entities with the opportunity to complete mitigation projects and activities that would not otherwise be financially possible.

The federal hazard mitigation funds are made available through the Disaster Mitigation Act of 2000, an amendment to the Robert T. Stafford Disaster Relief and Emergency Assistance Act, which provides federal aid for mitigation projects, but only if the local government entity has a Federal Emergency Management Agency (FEMA) approved hazard mitigation plan.

How is this plan different from other emergency plans?

An all hazards mitigation plan is aimed at identifying projects and activities that can be conducted prior to a natural or man-made disaster, unlike other emergency plans which provide direction on how to respond to a disaster after it occurs. This is the first time that Piatt County has updated its hazard mitigation plan since the original plan was prepared in 2014. This update describes in detail the actions that can be taken to help reduce or eliminate damages caused by specific types of natural and man-made hazards.

1.1 PARTICIPATING JURISDICTIONS

Recognizing the benefits of having an all hazards mitigation plan, the Piatt County Board authorized the update of the Piatt County Multi-Jurisdictional All Hazards Mitigation Plan (hereto referred to as the Plan). The County then invited all the local government entities within Piatt County to participate. **Figure I-2** identifies the participating jurisdictions represented in the Plan update who sought Plan approval.

Figure I-2
Participating Jurisdictions Represented in the Plan

- Bement, Village of
- Bement CUSD #5
- Cisco, Village of
- Cisco Fire Protection District
- Hammond, Village of
- Kirby Medical Center
- Mansfield, Village of
- Mid Piatt Fire Protection District
- Monticello, City of
- Monticello Fire & Rescue
- Monticello Township
- Piatt County
- Willow Branch Township

While a portion of Atwood is located in Piatt County, the Village chose to participate in the Douglas County Hazard Mitigation Plan, which was updated in 2019. Therefore, Atwood's risk and/or vulnerability is not discussed in this Plan.

1.2 COUNTY PROFILE

Piatt County is located in east-central Illinois and covers approximately 439 square miles. **Figure I-3** provides a location map of the County and the participating municipalities while **Figures I-4** identifies the boundaries of the census tracts located in the County. **Figures I-5, I-6** and **I-7** identify the boundaries of the Piatt County townships, school districts, and fire protection districts. A map was unavailable for Kirby Medical Center.

The County is bounded to the north by McLean County, to the east by Champaign and Douglas Counties, to the south by Moultrie County, and to the west by Macon and DeWitt Counties. The City of Monticello is the county seat. The topography is gently rolling with stream terraces adjacent to the broad floodplains along the major streams and rivers.

The County is situated in the eastern portion of the glaciated Bloomington Ridged Plain in the Till Plains Section of the Central Lowland Province. Soils are characterized by a series of end moraines and ground moraines. Most areas are well-drained for crops grown in this area. The Sangamon River watershed encompasses the entirety of the County.

Figure I-3
Location Map

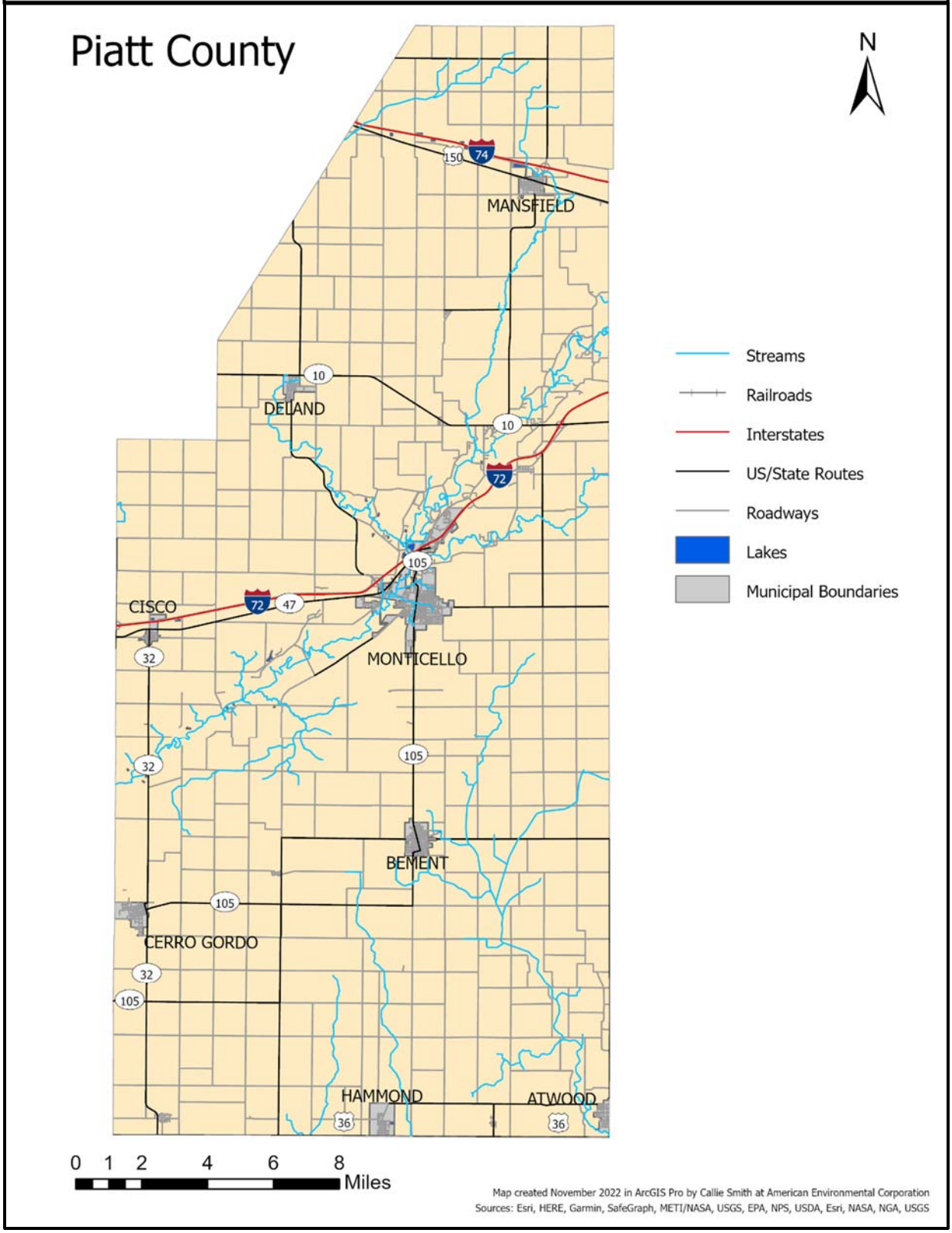


Figure I-4
Piatt County 2010 Census Trat Map

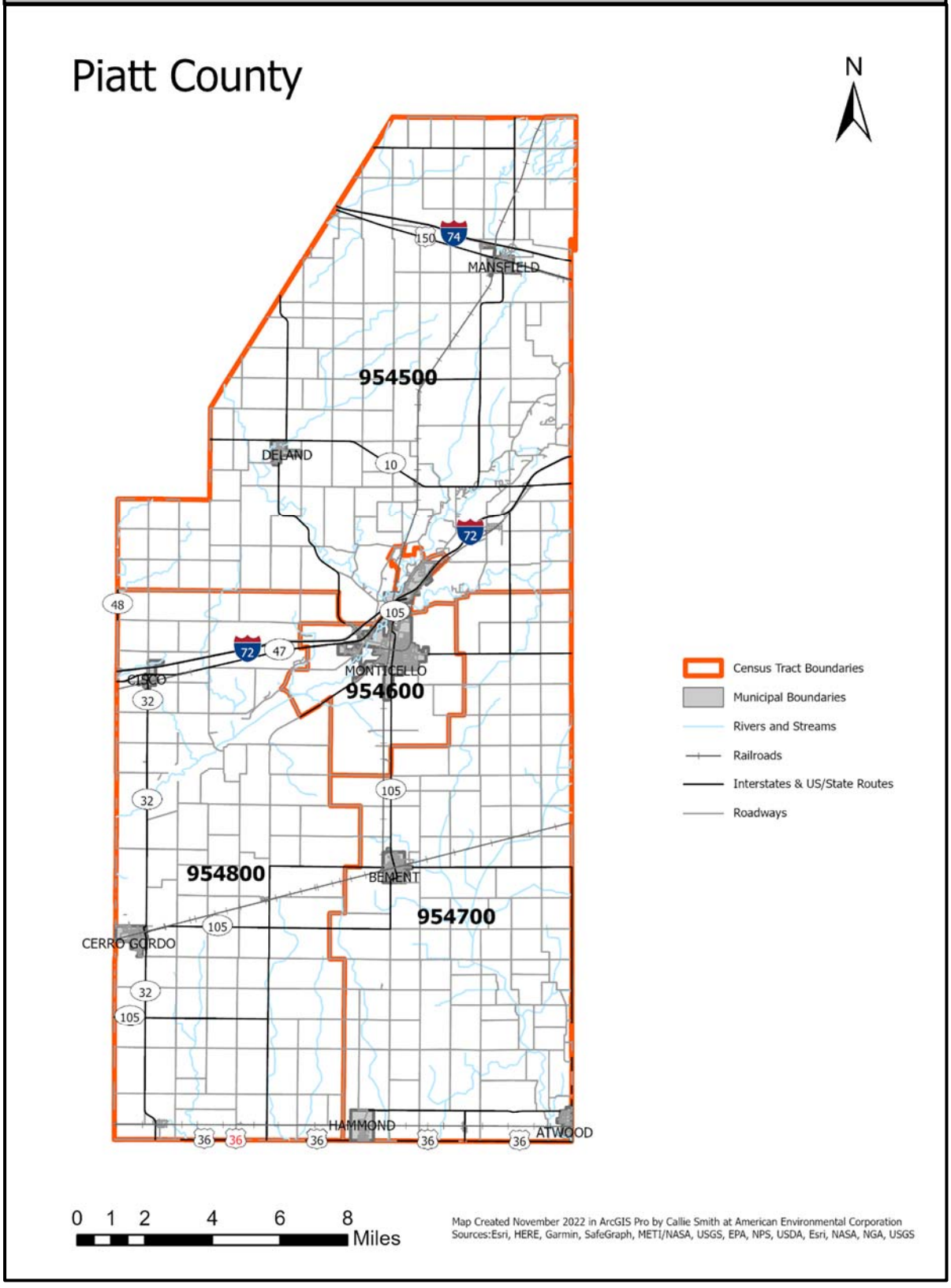


Figure I-5
Township Boundary Map

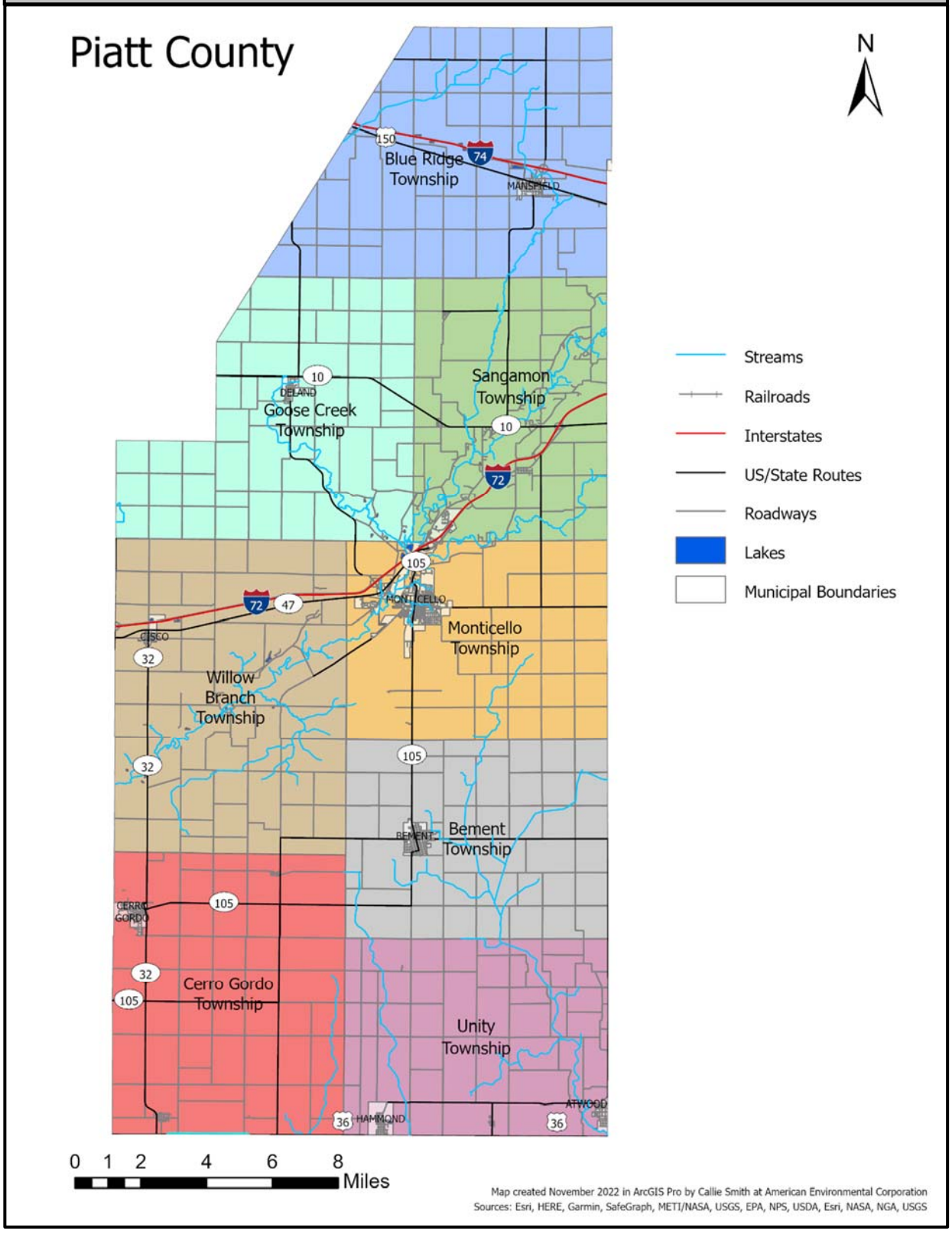


Figure I-6
School District Boundary Map

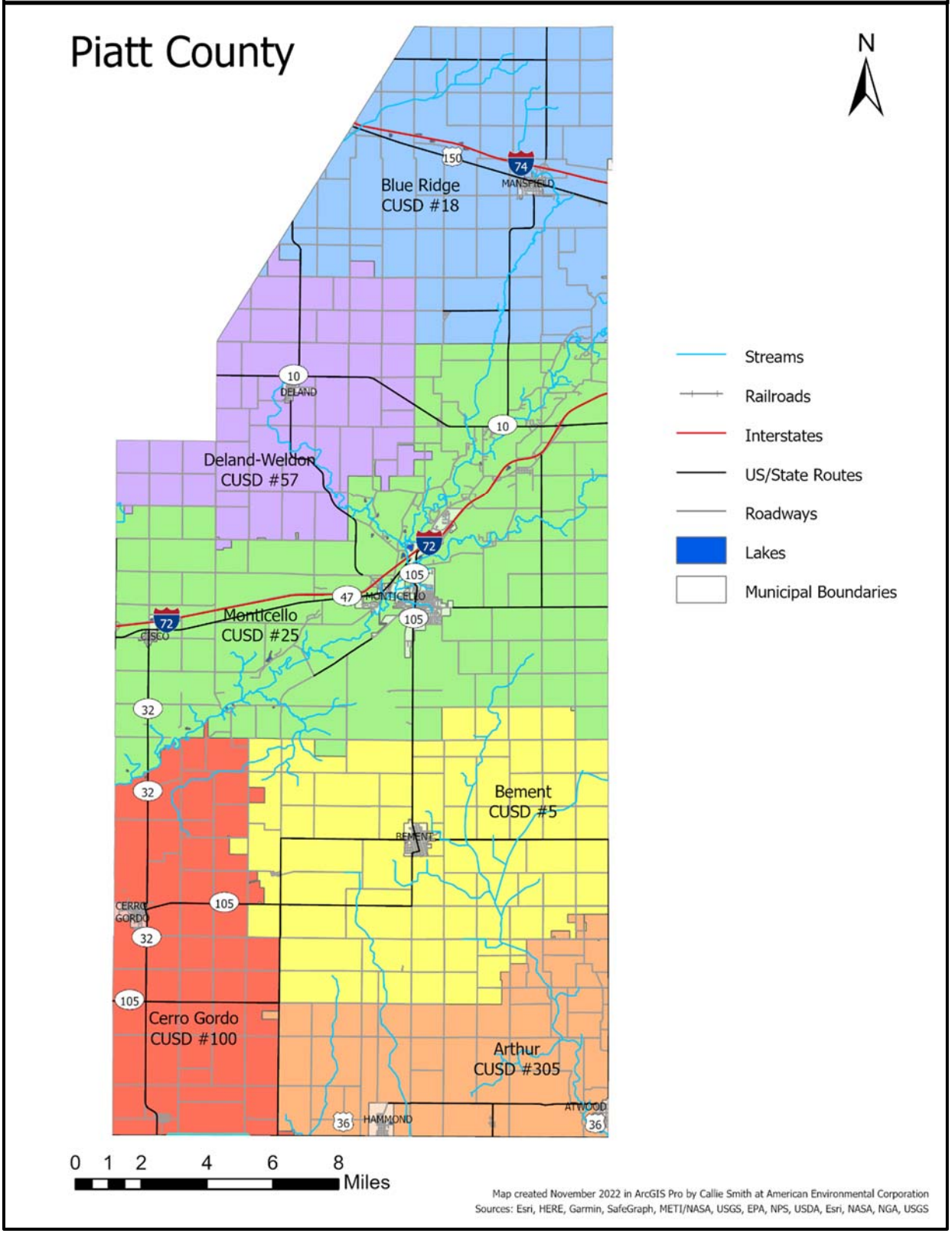
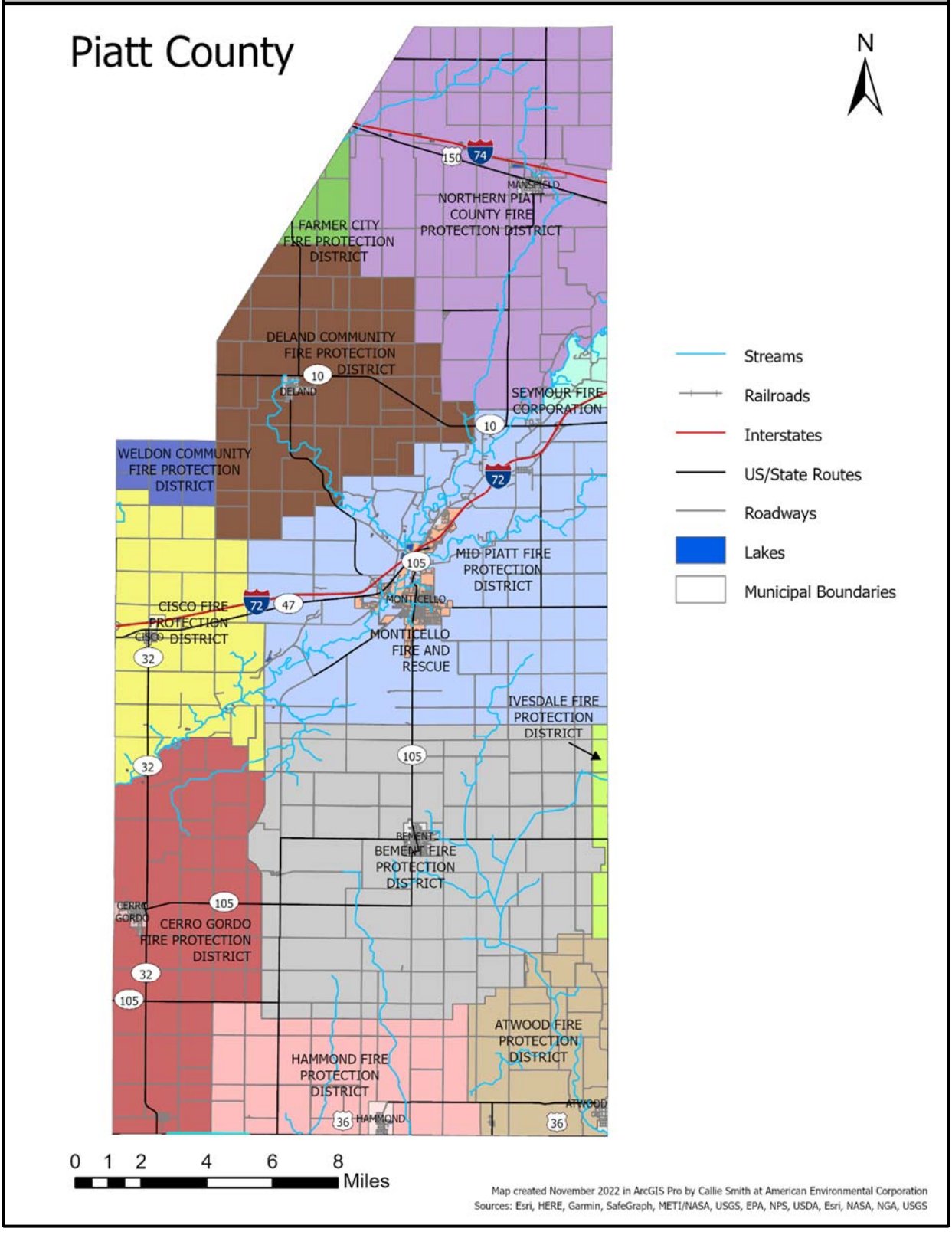


Figure I-7
Fire Protection District Boundary Map



Agriculture is a leading industry in Piatt County. According to the 2017 Census of Agriculture, there were 422 farms in Piatt County occupying approximately 93.2% (256,012 acres) of the total land area in the County. In comparison, there were 426 farms occupying 94.3% (259,048 acres) of the total land area in the County in 2012. The major crops include corn and soybeans while the major livestock includes cattle and chickens. The County ranks 31st in the State for crop cash receipts.

According to the Illinois Department of Commerce and Economic Opportunity, the largest employment sectors in Piatt County are health care/social assistance, manufacturing, and educational services followed by retail trade and construction. Leading employers include Kirby Medical Center, Monticello Community Unit School District #25, Central Illinois Manufacturing, Piatt County Nursing Home, and County Market according to the Champaign County Regional Planning Commission's Employer and Business Services Profile for Piatt County.

Figure I-8, located at the end of this section, provides demographic data on the County and each of the participating municipalities along with information on housing units and assessed values. The assessed values are for all residential structures and associated buildings (including farm homes and buildings associated with the main residence.) The assessed value of a residence in Warren County is approximately one-third of the market value.

Figure I-9, also located at the end of this section, provides additional demographic information by census tract along with the CDC/ATSDR Social Vulnerability Index (SVI) and overall level of vulnerability. The SVI is a database that uses U.S. Census Bureau American Community Survey data to rank census tracts and counties on 16 social factors within four themes: Socioeconomic Status, Household Characteristics, Racial & Ethnic Minority Status, and Housing Type & Transportation. The goal of the SVI is to help emergency response planners and public health officials identify, map, and plan support for communities that will most likely need support before, during, and after a public health emergency.

The rankings generated by the SVI describe a county's or census tract's relative vulnerability among all other U.S. counties and census tracts. Rankings are based on percentiles ranging from 0 to 1, with higher values indicating greater vulnerability. Each ranking is assigned to one of four levels of vulnerability: Low (0 – 0.2499), Low to Medium (0.2500 – 0.4999), Medium to High (0.5000 – 0.7499), and High (0.7500 – 1). The SVI currently uses 2010 census tract information. In 2010, there were four census tracts in Piatt County. All of the census tracts in Piatt County have a "Low" or "Low to Medium" overall SVI ranking while the County as a whole has a "Low" overall SVI.

Figures I-10 and **I-11** provide basic demographic information about the size and populations served by the participating school districts and fire protection districts.

1.3 LAND USE AND DEVELOPMENT TRENDS

Population growth and economic development are two major factors that trigger changes in land use. Piatt County is almost entirely rural with a population that has seen a decrease between 1900 and 2010 from 17,706 to 16,729. Between 2010 and 2020 the population decreased by 2.0% from

16,729 to 16,401. During that same time period, Bement and Cisco experienced decreases in their populations, while Hammond, Mansfield, and Monticello increased slightly.

Figure I-10
Demographic Data by Participating School District

Participating School District	Number of Schools in District	Estimated Population Served	Area Served (Sq. Miles) (2020)	Communities / Unincorp. Areas Served in Piatt County
Bement CUSD #5	3	1,800	92	Bement, Milmine, & Ivesdale

Source: Capability Assessment Worksheets – School Districts.

Figure I-11
Demographic Data by Participating Fire Protection Districts

Participating School District	Number of Fire Stations	Estimated Population Served	Area Served (Sq. Miles) (2020)	Communities / Unincorp. Areas Served in Piatt County
Cisco Fire Protection District	1	450	84	Cisco & Armsworth Estates
Mid Piatt Fire Protection District	2	5,000	96	White Heath, Indian Ridge, Sand Lake, & Paradise Acres
Monticello Fire & Rescue	1	6,000	3.8	Monticello

Source: Capability Assessment Worksheets – Fire Protection Districts.

Land use in Piatt County is primarily agricultural. As discussed in the previous section, approximately 93.2% of the land within the County is used for farming practices. Agriculture is and will continue to be a leading industry within the County and a mainstay of the County's economy.

According to Callie Jo McFarland, the Monticello Director of Community Development, there are no significant changes in development on the horizon for the City with the exception of a minor amount of agricultural land annexation on the margins of the community which will require a zoning change from agricultural to residential.

In terms of development withing the County, the Good Creek Wind Farm has been proposed north of Monticello on approximately 20,000 acres of open farmland consisting of up to 50 wind turbines. Public Hearings before the Piatt County Zoning Board of Appeals were set to begin November 15, 2022. Gail Jones, chair of the Piatt County Board's Economic Development Committee, confirmed that a decision regarding the wind farm north of Monticello is forthcoming; however, there is no other concrete land use or development changes proposed in the near future.

Substantial changes in land use (from forested and agricultural land to residential, commercial, and industrial) are not anticipated within the County in the immediate future. No sizeable increases in commercial or industrial developments are expected within the next five years.

Figure I-8
2016-2020 Demographic Data by Participating Jurisdiction

Participating Jurisdiction	Population (2016-2020)	Projected Population (2030)	Total Area (Sq. Miles) (2020)	Number of Housing Units (2016-2020)	Percent Race								Income			Total Assessed Value of Housing Units (2022)
					White (alone)	Black or African American (alone)	Asian (alone)	Hispanic or Latino (of any race)	American Indian & Alaska Native (alone)	Native Hawaiian & Other Pacific Islander (alone)	Some other Race (alone)	Two or more Races	% of People whose Income is below the Poverty Line	Per Capita Income	Economically Disadvantaged Rural Community*	
Piatt County (Total)	16,412	16,028	439.188	7,435	96.8%	1.1%	0.5%	1.4%	0.02%	0.0%	0.2%	1.3%	5.7%	$26,185	---	$321,876,497
Piatt County (Unincorp.)	4,974	4,856	431.417	2,116	99.1%	0.2%	0.0%	0.3%	0.0%	0.0%	0.0%	0.8%	1.0%	---	---	$117,667,655
Bement	1,490	1,456	0.808	710	95.8%	2.9%	0.0%	0.7%	0.0%	0.0%	0.0%	1.3%	7.3%	$26,722	Yes	$19,076,466
Cisco	284	277	0.366	126	96.1%	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%	3.5%	7.4%	$28,439	No	$3,524,148
Hammond	530	518	0.756	303	98.9%	0.0%	0.0%	0.4%	0.2%	0.0%	0.0%	0.9%	9.2%	$27,108	Yes	$4,752,792
Mansfield	1,006	983	0.528	499	98.5%	0.0%	0.0%	5.6%	0.0%	0.0%	0.0%	1.5%	3.8%	$31,208	No	$15,323,357
Monticello	5,816	5,682	3.802	2,610	94.4%	1.7%	1.6%	1.9%	0.0%	0.0%	0.6%	1.7%	8.4%	$33,845	No	$133,386,956
Monticello Township	5,902	5,766	48.050	2,653	95.1%	1.7%	1.6%	2.0%	0.03%	0.0%	0.0%	1.6%	8.3%	$34,399	No	$133,890,947
Willow Branch Township	893	872	67.326	350	97.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	2.8%	2.4%	$38,889	No	$22,050,573
Illinois	12,770,631	12,790,000	55,513.18	5,373,385	61.3%	14.0%	5.4%	17.1%	0.1%	0.02%	0.2%	1.9%	14.2%	$37,306	---	---
US	329,569,308	---	3,533,038	138,432,751	69.8%	12.5%	5.6%	18.0%	0.8%	0.2%	5.1%	5.1%	12.8%	$35,384	---	---

* For the purposes of FEMA's Hazard Mitigation Assistance grant programs administered by the Illinois Emergency Management Agency, an Economically Disadvantaged Rural Community is defined in Illinois as a community of 3,000 or fewer individuals whose residents have an average per capita annual income not exceeding 80 percent of the U.S. per capita income based on best available data.

Sources: Piatt County Chief County Assessment Officer.
Illinois Department Public Health, Population Projections – Illinois, Chicago and Illinois Counties by Age and Sex: July 1, 2015 to July 1, 2030 (2019 Edition).
U. S. Census Bureau, American Community Survey, 5-Year Data Profile.

Figure I-9
2016-2020 Demographic Data by Census Tract

Census Tract	Incorporated Municipalities Located in Census Tract	Population (2016-2020)	Total Area (Sq. Miles) (2010)	Number of Housing Units (2016-2020)	Percent Race								Income	Social Vulnerability Index	
					White (alone)	Black or African American (alone)	Asian (alone)	Hispanic or Latino (of any race)	American Indian & Alaska Native (alone)	Native Hawaiian & Other Pacific Islander (alone)	Some other Race (alone)	Two or more Races	% of People whose Income is below the Poverty Line	Overall SVI Ranking	Level of Vulnerability
954500	DeLand, Mansfield	4,310	168.041	1,938	98.2%	0.9%	0.0%	1.9%	0.0%	0.0%	0.0%	0.9%	2.1%	0.0838	Low
954600	Monticello	6,266	25.267	2,782	94.8%	1.6%	1.5%	1.9%	0.0%	0.0%	0.6%	1.5%	7.8%	0.2940	Low-Medium
954700	Atwood, Bement, Hammond	3,042	115.433	1,539	97.6%	1.4%	0.0%	0.5%	0.0%	0.0%	0.0%	1.0%	6.7%	0.3258	Low-Medium
954800	Cerro Gordo, Cisco	2,794	130.721	1,176	97.9%	0.0%	0.0%	0.6%	0.0%	0.0%	0.0%	2.0%	5.6%	0.1766	Low
Piatt County	---	16,412	439.188	7,435	96.8%	1.1%	0.5%	1.4%	0.02%	0.0%	0.2%	1.3%	5.7%	0.0045	Low

Sources: CDC/ATSDR Social Vulnerability Index.
U.S. Census Bureau, American Community Survey, 5-Year Data Profile.

2.0 PLANNING PROCESS

The Piatt County Multi-Jurisdictional All Hazards Mitigation Plan (the Plan) was updated through the Piatt County Multi-Jurisdictional All Hazards Mitigation Planning Committee (Planning Committee). The Plan was prepared to comply with the Disaster Mitigation Act of 2000 and incorporates the nine recommended tasks for developing or updating a local hazard mitigation plan as outlined in Federal Emergency Management Agency's (FEMA) *Local Mitigation Planning Handbook*. **Figure PP-1** provides a brief description of the process utilized to prepare this Plan.

Figure PP-1
Description of Planning Process

Tasks	Description
Task One: Organize the Committee	The Planning Committee was formed with broad representation and specific expertise to assist the County and the Consultant in updating the Plan.
Task Two: Public Involvement	Early and ongoing public involvement activities were conducted throughout the Plan's development to ensure the public was given every opportunity to participate and provide input.
Task Three: Coordination	Agencies and organizations were contacted to identify plans and activities currently being implemented that impact or might potentially impact hazard mitigation activities.
Task Four: Risk Assessment & Vulnerability Analyses	The Consultant identified and profiled the natural and man-made hazards that have impacted the County and conducted vulnerability analyses to evaluate the risk to each participating jurisdiction.
Task Five: Goal Setting	After reviewing existing plans and completing the risk assessment, the Consultant assisted the Planning Committee in updating the goals and objectives for the Plan.
Task Six: Mitigation Strategy & Activities	The participating jurisdictions were asked to identify mitigation actions that had been started and/or completed since the original Plan was adopted. In addition, they were also asked to identify any new mitigation actions based on the results of the risk assessment. The new mitigation actions were then analyzed, categorized, and prioritized.
Task Seven: Draft Plan	The draft Plan update summarized the results of Tasks One through Six. In addition, it described the responsibilities to monitor, evaluate and update the Plan. The draft Plan update was reviewed by the participants and a public forum was held to give the public an additional opportunity to provide input. Comments received were incorporated into the draft Plan update and submitted to the Illinois Emergency Management Agency (IEMA) and FEMA for review and approval.
Task Eight: Finalize Plan & Adoption	Comments received from IEMA and FEMA were incorporated into the final Plan update. The final Plan update was then submitted to the County and participating jurisdictions for adoption. The Plan will be reviewed periodically and updated again in five years.

The Plan update and development was led at the staff level by Rob Bross, the Piatt County Emergency Management Agency (EMA) Director. American Environmental Corp. (AEC) an environmental consulting firm, with experience in hazard mitigation, risk assessment and public involvement, was employed to guide the County and participating jurisdictions through the planning process.

Participation in the planning process, especially by the County and local government representatives, was crucial to the development of the Plan update. To ensure that all participating jurisdictions took part in the planning process, participation requirements were established. Each participating jurisdiction agreed to satisfy the following requirements in order to be included in the Plan update. All of the participating jurisdictions met the participation requirements.

- Attend at least one Planning Committee meeting.
- Complete a capability assessment identifying existing capabilities and resources (i.e., plans, policies, ordinances studies, reports, maps, etc.) available to accomplish hazard mitigation.
- Identify/submit a list of critical infrastructure and facilities.
- Review the risk assessment and provide additional information on events and damages when available.
- Participate in the update of the mitigation goals and project prioritization methodology.
- Submit a list of mitigation actions started and/or completed since the adoption of the original Plan.
- Identify and submit a list of new mitigation actions.
- Review and comment on the draft Plan update.
- Formally adopt the Plan update.
- Where applicable, incorporate the Plan update into existing planning efforts.
- Participate in the Plan update maintenance.

2.1 PLANNING COMMITTEE

As previously mentioned, at the start of the planning process, the Piatt County Multi-Jurisdictional All Mitigation Planning Committee was formed to update the hazard mitigation plan. The Planning Committee included representatives from each participating jurisdiction, as well as agriculture, education, emergency services, and healthcare.

Figure PP-2 details the entities represented on the Planning Committee and the individuals who attended on their behalf. The Planning Committee was chaired by the Piatt County EMA.

Additional technical expertise was provided by the staff at the Illinois Emergency Management Agency and the Illinois Department of Natural Resources Office of Water Resources.

Mission Statement

Over the course of the first two meetings, the Planning Committee developed a mission statement that described their objectives for the Plan update.

"The mission of the Piatt County Multi-Jurisdictional All Hazards Mitigation Planning Committee is to develop a mitigation plan that:

1) documents the risks associated with the natural and man-made hazards that impact the County and

2) identifies projects and activities that mitigate the risk to structures, facilities, and systems that provide support to the County, its residents, and economy, as well as community lifelines that enable the continuous operation of critical government and business functions."

Figure PP-2
Piatt County Planning Committee Member Attendance Record

Representing	Name	Title	11/30/2021	3/22/2022	6/14/2022	9/13/2022	12/13/2022
American Environmental Corporation	Bostwick-Campbell, Andrea	EMS Manager	X	X	X	X	
American Environmental Corporation	Krug, Zachary	Environmental Specialist	X				
American Environmental Corporation	Runkle, Ken	Risk Assessor / Env. Toxicologist		X	X	X	
American Environmental Corporation	Smith, Callie	Environmental Analyst				X	
Atwood, Village of	Bross, Rob	Police Chief	X	X	X	X	
Bement CUSD #5	Greenwood, Sheila	Superintendent		X			
Bement CUSD #5	Vogt, Mary	Superintendent		X		X	
Bement, Village of	Corum, Chad	Public Works Supervisor			X		
Bement, Village of	Tieman, Patrick	Village President	X	X		X	
Blue Ridge CUSD #18	Stanifer, Hillary	Superintendent	X				
Cisco Fire Protection District	Rupkey, John	Fire Captain	X	X	X		
Cisco Fire Protection District	Wilhelm, Matt	Fire Chief		X	X	X	
Cisco, Village of	Wilhelm, Matt	Representative			X	X	
Hammond, Village of	Ball, Debbie	Village Clerk		X	X	X	
Kirby Ambulance	Leynes, Aaron	Lead Paramedic				X	
Kirby Medical Center	Alexander, Crystal	Director of Ambulance Services / Emergency Preparedness				X	
Mansfield, Village of	Bartley, Jessica	Board Trustee			X	X	
Mid-Piatt Fire Protection District	Winder, Doug	Assistant Chief	X	X		X	
Monticello CUSD #25	Sheehan, Dan	Assistant Principal / Athletic Director				X	
Monticello Fire & Rescue	Sheehan, Dan	Lieutenant				X	
Monticello Fire & Rescue	Kownacki, Adam	Captain	X				
Monticello Fire & Rescue	Rupkey, John	Fire Chief	X	X	X		
Monticello Township	Sprinkle, Alan	Highway Commissioner			X	X	
Monticello Township	Wilson, Tamara	Supervisor			X	X	
Monticello, City of	Baker, Brett	Public Works Director	X	X		X	
Monticello, City of	Carter, John	Police Chief	X			X	
Monticello, City of	Summers, Terry	City Administrator	X	X		X	
Piatt County - 911	Furman, Tim	911 Director	X	X			
Piatt County - Board	Spencer, Ray	Chair	X	X	X	X	
Piatt County - Board	Jones, Gail	Member				X	
Piatt County - EMA	Bross, Rob	Director	X	X	X	X	
Piatt County - Highway Department	Lawrence, Michael	Engineering Technician	X	X	X	X	
Piatt County - Highway Department	Seibring, Eric	County Engineer	X	X	X	X	
Piatt County - Maintenance	Winder, Doug	Supervisor of Maintenance	X	X		X	
Piatt County - Nursing Home	Brock, Suzanne	Safety Coordinator / Administrative Assistant	X		X	X	
Piatt County - Nursing Home	Porter, Scott	Executive Director	X	X	X	X	
Piatt County - Zoning	Nusbaum, Keri	Zoning Officer / County Board Secretary	X	X	X	X	
Piatt County Farm Bureau	Milton, Baley	Manager	X	X			
Piatt County Journal-Republican	Barlow, Kevin	Editor			X	X	
Piatt County Soil & Water Conservation District	Cooley, Jonah	Resource Conservationist	X				
Willow Branch Township	Wilhelm, Matt	Highway Commissioner		X	X	X	

Planning Committee Meetings

The Planning Committee met five times between November 2021 and December 2022. **Figure PP-2** identifies the representatives present at each meeting. **Appendices A** and **B** contain copies of the attendance sheets and meeting minutes for each meeting. The purpose of each meeting, including the topics discussed, is provided below.

First Planning Committee Meeting – November 30, 2021

The purpose of this meeting was to explain the planning process to the Planning Committee members and give them a brief overview of the planning process including what mitigation is, what a hazards mitigation plan is and why the Plan needs to be updated. A discussion regarding the hazards to be included in the Plan update was conducted.

Information needed from each participant was discussed and representatives for the County and the participating jurisdictions were asked to complete the forms entitled "Capability Assessment Worksheet," "Critical Facilities & Infrastructure," "Identification of Severe Weather Shelters" and "Drinking Water Supply Worksheet" and return them at the next meeting.

Committee members were then asked to identify any recent or historic natural or man-made hazard events that have impacted the County and participants. A "Hazard Events Questionnaire" was distributed during the meeting to solicit information on hazard events. Community participation was also discussed. The County and participating jurisdictions were asked to make information available on the planning process at their offices and in the communities. A "Citizen Questionnaire," was also distributed electronically to Committee Members prior to the meeting for distribution to their constituents to gauge the public's perception about the hazards that impact the County. Finally, drafts of a mission statement and updated mitigation goals were presented for review.

Second Planning Committee Meeting – March 22, 2022

At the second Planning Committee meeting portions of the updated natural and man-made hazard risk assessment section were presented for review. Following the review of the risk assessment, the Planning Committee members participated in an exercise to calculate the Risk Priority Index (RPI) for the County and participating jurisdictions. The RPI can assist participants in determining which hazards present the highest risks and therefore which ones to focus on when formulating mitigation projects and activities. The Planning Committee then reviewed and discussed the draft mission statement and updated mitigation goals and finalized both with no changes.

Next, mitigation actions were defined, and examples were discussed. Committee members were asked to identify any mitigation projects and activities their jurisdictions had started and/or completed since the original Plan was completed in 2012. Ideas for new potential mitigation projects and activities were presented. Representatives for the County and the participating jurisdictions were asked to complete the forms entitled "Existing Mitigation Project/Activity Status" and "New Hazard Mitigation Projects" and return them at the next meeting.

Third Planning Committee Meeting – June 14, 2022

The purpose of the third Planning Committee meeting was to discuss the vulnerability analysis for select natural hazards and the preliminary results of the RPI exercise. The Planning Committee members then discussed vulnerable community assets and completed the form entitled "Critical Facilities Vulnerability Survey" which will be used in the vulnerability analyses.

The concept of community lifelines was also discussed. Community lifelines enable the continuous operation of critical government and business functions essential to human health and

safety or economic security. While the concept was developed to support emergency response and planning, FEMA has begun applying it to all phases of emergency management, including mitigation. Community lifelines will be included in most project descriptions to create a clear connection to the concept.

Next, an explanation of what a mitigation action prioritization methodology is and how it fits into the Mitigation Strategy was provided. The Planning Committee reviewed the updated mitigation project prioritization methodology and approved it with no changes. Finally, a discussion on how the mitigation projects and activities identified by the participating jurisdictions will be presented in the Plan update was provided. Participants were encouraged to provide their mitigation project lists prior to the 4th meeting when draft lists will be distributed for review.

Fourth Planning Committee Meeting – September 13, 2022

At the fourth Planning Committee meeting, Committee members reviewed the draft jurisdiction-specific mitigation action tables which identified and prioritized the new and existing mitigation projects and activities provided by the participants. Members were given the opportunity to add additional projects and activities to their tables. The sections outlining the mitigation strategy, plan maintenance and adoption were also reviewed.

The public forum and adoption process were then discussed, and a date for the public forum was set. Finally, the plan maintenance and update requirements were discussed. The Plan update will be monitored and evaluated on an annual basis by a Plan Maintenance Subcommittee which will be made up of the participating jurisdictions and key members of the Planning Committee. The Plan must be reviewed, revised, and resubmitted to IEMA and FEMA at least once every five years.

Fifth Planning Committee Meeting – December 13, 2022

At this Planning Committee meeting the public was provided an opportunity to ask questions and provide comments on the draft Plan update.

2.2 PUBLIC INVOLVEMENT

To engage the public in the planning process, a comprehensive public involvement strategy was developed. The strategy was structured to engage the public in a two-way dialogue, encouraging the exchange of information throughout the planning process. A mix of public involvement techniques and practices were utilized to:

- disseminate information;
- identify additional useful information about natural hazard occurrences and impacts;
- assure that interested residents would be involved throughout the Plan update's development; and
- cultivate ownership of the Plan update, thus increasing the likelihood of adoption by the participating jurisdictions.

The dialogue with the public followed proven risk communication principles to help assure clarity and avoid overstating or understating the impacts posed by the natural and man-made hazards

identified in the Plan update. The following public involvement techniques and practices were applied to give the public an opportunity to access information and participate in the dialogue at their level of interest and availability.

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The dialogue with the public followed proven risk communication principles to help assure clarity and avoid overstating or understating the impacts posed by the natural and man-made hazards identified in the Plan update. The following public involvement techniques and practices were applied to give the public an opportunity to access information and participate in the dialogue at their level of interest and availability.

Citizen Questionnaire

A citizen questionnaire was developed to gather facts and gauge public perceptions about natural hazards that affect Piatt County. The questionnaire was distributed electronically to the Planning Committee members who were encouraged to make it available to their residents. A copy of the questionnaire and social media posts related to the questionnaire are contained in **Appendix C**.

A total of 12 questionnaires were completed and returned to the Planning Committee. Questionnaires were completed by residents in each participating jurisdiction, with the exception of Cisco. These responses provide useful information to decision makers as they determine how best to disseminate information on natural hazards and safeguard the public. Additionally, these responses identify the types of projects and activities the public is most likely to support. The following provides a summary of the results.

- Respondents felt that severe winter storms were the most frequently encountered natural hazard in Piatt County followed by severe summer storms. However, compiled weather records indicate that severe summer storms are, in fact, the most frequently occurring natural hazard followed by severe winter storms.
- The most effective means of communication identified by respondents to disseminate information about natural hazards were social media and the Internet, followed by television, radio, and fact sheet/brochures disseminated via fire departments/law enforcement, municipal government, and the public health department.

- In terms of the most needed mitigation projects and activities, the following categories received the strongest support:
  - maintain roadway passages during snowstorms and heavy rains (58%);
  - retrofit critical infrastructure (58%);
  - maintain power during storms by burying power lines, trimming trees and/or purchasing backup generators (50%);
  - flood and drainage protection (50%); and
  - identify residents with special needs in order to provide assistance during a natural hazard event (50%).

FAQ Fact Sheet

A "Frequently Asked Questions" fact sheet was disseminated to help explain what an all hazards mitigation plan is and briefly described the planning process. The fact sheet was made available at the participating jurisdictions. A copy of the fact sheet is contained in **Appendix D**.

Press Releases

Press releases were prepared and submitted to the Piatt County Journal Republican and the News Gazette prior to each Planning Committee meeting. The releases announced the purpose of the meetings and how the public could become involved in the Plan update's development. Copies of the releases and any news articles published can be found in **Appendix E**.

Planning Committee Meetings

All of the meetings conducted by the Planning Committee were open to the public and publicized in advance to encourage public participation. At the end of each meeting, time was set aside for public comment. In addition, Committee members were available throughout the planning process to talk with residents and local government officials and were responsible for relaying any concerns and questions voiced by the public to the Planning Committee.

Public Forum

The final meeting of the Planning Committee, held on December 13, 2022 was conducted as an open-house public forum. The open-house format was chosen for this forum instead of a hearing to provide greater flexibility for residents who wished to participate. Residents were able to come and go at any time during the forum, reducing conflicts with business, family, and social obligations.

In conjunction the public forum, the draft Plan update was made available for review and comment on the Piatt County website. A two-page handout summarizing the planning process and a link to a comment survey that could be used to provide feedback on the draft Plan update were also posted on the website.

At the forum, residents could review a draft of the Plan update; meet with representatives from the County, the participating jurisdictions, and the Consultant; ask any questions; and provide comments on the draft Plan update. Individuals attending the public forum were provided with a two-page handout summarizing the planning process and a comment sheet that could be used to provide feedback on the draft Plan update. **Appendices F** and **G** contain copies of these materials.

Public Comment Period

After the public forum, the draft Plan update was made available for public review and comment through December 30, 2022 at the Piatt County Courthouse and on the County's website. A two-page handout summarizing the planning process and a link to a comment survey that could be used to provide feedback on the draft Plan update were also posted on the website. **Appendix G** contains a copy of the online comment survey. Residents were encouraged to submit their comments electronically, by mail or through representatives of the Planning Committee.

Results of Public Involvement

The public involvement strategy implemented during the planning process created a dialogue among participants and interested residents, which resulted in many benefits, a few of which are highlighted below.

- *Acquired additional information about natural hazards*. Verifiable hazard event and damage information was obtained from participants that presents a clearer assessment of the extent and magnitude of natural hazards that have impacted the County. This information included details about thunderstorms with damaging winds, severe winter storms, and tornadoes not available from state and federal databases.
- *Increased awareness of the impacts associated with natural hazard events within the County*. Understanding how mitigation actions can reduce risk to life and property helped generate ***over 90 new mitigation projects and activities*** at the local level that had not been previously identified in any other planning process.

2.3 PARTICIPATION OPPORTUNITIES FOR INTERESTED PARTIES

Businesses, schools, not-for-profit organizations, neighboring counties, and other interested parties were provided multiple opportunities to participate in the planning process. Wide-reaching applications were combined with direct, person-to-person contacts to identify anyone who might have an interest or possess information which could be helpful in updating the Plan.

Agricultural Community

Representatives from the agricultural community were invited to serve on the Planning Committee through the Piatt County Farm Bureau and Piatt County Soil & Water Conservation District. The Farm Bureau Manager served as a technical partner on the Planning Committee and provided input into the planning process. .

Education

While all seven school districts serving Piatt County were invited to serve on the Planning Committee and provide input into the planning process, only Bement Community Unit School District (CUSD) #5 and Blue Ridge CUSD #18 participated. Bement CUSD #5 chose to be included as participating jurisdiction in the Plan update.

Healthcare

Input was sought from the healthcare community. Representatives from Kirby Medical Center attended the Planning Committee meetings, provided input into the planning process, and chose to be included as a participating jurisdiction in the Plan update.

Not-for-Profit & Other Organizations
The fire departments/fire protection districts and townships in Piatt County were contacted and invited to participate in the Plan update. Representatives from the Cisco Fire Protection District, Monticello Fire & Rescue, Mid Piatt Fire Protection District, Monticello Township, and Will Branch Township served on the Planning Committee and chose to be included as participating jurisdictions in the Plan update.

Neighboring Counties
A memo was sent to EMA/ESDA coordinators in the neighboring counties inviting them to participate in the mitigation planning process. The counties contacted included Champaign, DeWitt, Douglas, Macon, McLean, and Moultrie counties. **Appendix H** contains a copy of the invitation memo.

2.4 IDENTIFICATION OF EXISTING CAPABILITIES

Each participating jurisdiction has a unique set of capabilities and resources available to accomplish hazard mitigation and reduce long-term vulnerabilities to hazard events. In order to identify these existing capabilities and resources, a Capability Assessment was conducted. The Capability Assessment helps determine the ability of the participating jurisdictions to implement the Mitigation Strategy and to identify potential opportunities for establishing or enhancing specific mitigation policies, program, or projects. It is important to try and establish which goals and actions are feasible based on an understanding of the organizational capacity of those entities tasked with their implementation. This assessment is designed to provide a general overview of the key capabilities in place for each participating jurisdiction along with their potential effect of loss reduction.

In order to catalog the existing capabilities of each participant, Capability Assessment Worksheets were distributed to each of the participating jurisdictions at the first Planning Committee meeting on November 30, 2021. The worksheets requested information on four primary types of capabilities: planning and regulatory; administrative; and technical; financial; and education and outreach. The following provides a brief description of each capability type.

Planning & Regulatory Capabilities: Planning and regulatory capabilities are based on the implementation of existing plans, policies, codes, ordinances, resolutions, local laws, and programs that prevent or reduce the impacts of hazards and guide and manage growth and development.

Administrative & Technical Capabilities: Administrative and technical capabilities are based on the available staff and personnel resources as well as their related skills and tools that can be used to develop and implement mitigation actions, policies, and programs.

Financial Capabilities: Financial capabilities include those resources a jurisdiction has access to or is eligible to use to implement mitigation actions, polices, and programs.

Education & Outreach Capabilities: Education and outreach capabilities include programs and methods already in place that could be used to support implementation of mitigation actions and communicate hazard-related information.

Figures PP-3 through **PP-14** summarize the results of the Capability Assessment by participating jurisdiction type (i.e., county/municipalities, townships, schools, fire protection districts, healthcare facilities, etc.) A capability level of "Limited", "Moderate" or "High" was assigned by capability type to each participating jurisdiction based on the number of available capabilities and resources as well as the jurisdiction's size/area served. **Figure PP-15** summarizes the individual capability levels by capability type and provides an overall capability ranking for each participant.

This assessment provides a consolidated inventory of existing plans, ordinances, programs, and resources in place. Whenever applicable, these existing capabilities were reviewed and incorporated into the Plan.

Highlights from the Capability Assessment include:

- Only the County and Monticello have comprehensive/land use plans in place.
- While the County and all of the participating municipalities have zoning ordinances, only Cisco, Hammond and Monticello have building codes in place.
- Only the County has a continuity of operations plan in place.

Piatt County, Monticello, Monticello Township, Willow Branch Township, Bement CUSD #5, Cisco FPD, Monticello Fire & Rescue, Mid Piatt FPD, and Kirby Medical Center are fortunate to have the resources and abilities to potentially expand on and improve the existing policies and programs identified. A majority of the participating municipalities have limited resources and abilities to expand on and improve the existing policies and programs identified. The lack of legal authority and policies/programs currently in place, especially with regards to building codes and zoning ordinances, hamper these participants' abilities to expand and strengthen existing policies and programs.

This is due to a general resistance from many residents towards these types of regulations, which has resulted in an unwillingness by local officials to implement such policies. Their fiscal and staffing situations are also extremely limited, bordering on inadequate in most cases. These local government officials are part-time and lack the technical expertise and funds to expand or implement new programs and policies.

Overcoming these limitations will require time and a range of actions including, but not limited to improved general awareness of natural hazards and the potential benefits that may come from the development of new standards in terms of hazard loss prevention and the identification of resources available to expand and improve existing policies and programs should the opportunity arise.

Figure PP-3
County / Municipalities – Planning & Regulatory Capabilities

Capability Type	County/Municipality					
	Piatt County	Bement	Cisco	Hammond	Mansfield	Monticello
Plans, Policies, Codes & Ordinances						
Comprehensive/Master Land Use Plan	X					X
Continuity of Operations Plan	X					
Stormwater Management Plan		X				X
Transportation Plan	X					
Economic Development Plan						
Emergency Operations Plan	X		X			X
Disaster Recovery Plan						
Threat & Hazard Identification Risk Assessment (THIRA) - County Only	X					
Infrastructure Maps		X	X	X		X
Building Codes			X	X		X
Floodplain Ordinance	X		X		X	X
Stormwater Ordinance	X	X				X
Zoning Ordinance	X	X	X	X	X	X
Subdivision Ordinance				X	X	X
Historic Preservation Ordinance						X
Private Sewage Disposal System Ordinance - County Only	X					
Manufactured/Mobile Home Tie Down Ordinance		X	X	X	X	X
National Incident Management System (NIMS) Adoption	X	X				X
National Flood Insurance Program (NFIP) Participation	X		X		X	X
Community Rating System (CRS) Participation						
Level of Capability	**M**	**L**	**L**	**L**	**L**	**M/H**

An "X" indicates that the item is currently in place and being implemented.
Level of Capacity: "L" = Limited; "M" = Moderate; "H" High

Figure PP-4
County / Municipalities – Administrative & Technical Capabilities

Capability Type	County/Municipality					
	Piatt County	Bement	Cisco	Hammond	Mansfield	Monticello
Adminstrative & Technical						
Zoning Board	X	X		X		X
Public Utility Board						
Planning Commission						X
Mutual Aid Agreements	X			X	X	X
Administrator/Manager		X	X		X	X
Building Inspector/Officer				X		X
Community/Economic Development Planner						X
Emergency Manager	X				X	
Engineer/Construction Project Manager	X					X
GIS Coordinator	X					X
Grant Administrator/Writer						X
Fire Chief - Municipalities Only		X			X	X
Floodplain Administrator	X					X
Police Chief - Municipalities Only						X
Public Works/Streets Director - Municipalities Only		X		X	X	X
Water Superintendent - Municipalities Only			X	X	X	X
Zoning Officer/Administrator	X	X		X		X
Solid Waste Director - County Only						
Level of Capability	**M**	**L**	**L**	**L**	**L**	**H**

An "X" indicates the presence of staff with specified knowledge or skills.
Level of Capacity: "L" = Limited; "M" = Moderate; "H" High

Figure PP-5
County / Municipalities – Financial / Education & Outreach Capabilities

Capability Type	County/Municipality					
	Piatt County	Bement	Cisco	Hammond	Mansfield	Monticello
Financial						
Roadway/Bridge Improvement Plan - County Only	X					
Capital Improvements Program						X
Tax Levies for Special Purposes	X			X		X
Motor Fuel Tax	X	X	X	X	X	X
General Obligation Bonds and/or Special Tax Bonds	X			X		X
Utility Fees (Stormwater, Sewer, Water, Gas or Electric Service)			X	X	X	X
Impact Fees - New Development						X
Federal Funding Programs (Non-FEMA)	X	X			X	X
Level of Capability	**M**	**L**	**L**	**L/M**	**L**	**H**
Education & Outreach						
StormReady Certification						
Natural Disaster/Safety-Related School Programs						
Ongoing Public Education or Information Programs (Fire Safety, Household Preparedness, Responsible Water Use)					X	X
Seasonal Outreach	X					
Local Citizen Groups/Non-Profit Organizations (Emergency Preparedness, Access & Functional Needs Populations)	X					
Public-Private Partnership Initiatives Addressing Disaster-Related Issues						
Level of Capability	**L**	**L**	**L**	**L**	**L**	**L**

An "X" indicates a given resource is locally available for mitigation purposes.
Level of Capacity: "L" = Limited; "M" = Moderate; "H" High

Figure PP-6
Townships – Planning & Regulatory / Administrative & Technical Capabilities

Capability Type	Township	
	Monticello	Willow Branch
Plans, Policies, Codes & Ordinances		
Comprehensive/Master Land Use Plan	X	X
Stormwater Management Plan		
Open Space/Recreational Area Plan		
Building Codes	X	X
Stormwater Ordinance		
Zoning Ordinance	X	X
Subdivision Ordinance	X	X
Private Sewage Disposal System Ordinance	X	X
Manufactured/Mobile Home Tie Down Ordinance	X	X
Steep Slope Ordinance		
Mined Areas/Developed Over Mined Areas Ordinance		
Road Weight Restriction Ordinance	X	X
Nuisance Weed, Grass & Tree Ordinance	X	X
National Incident Management System (NIMS) Adoption		X
Level of Capability	**M**	**M**
Adminstrative & Technical		
Zoning Board	X	X
Public Utility Board		
Planning Commission		
Mutual Aid Agreements	X	X
Assessor	X	X
Clerk	X	X
Collector		
Highway/Road District Commissioner	X	X
Supervisor	X	X
Level of Capability	**M**	**M**

An "X" indicates that the item is currently in place and being implemented or the presence of staff with specified knowledge or skills.
Level of Capacity: "L" = Limited; "M" = Moderate; "H" High

Figure PP-7
Townships – Financial / Education & Outreach Capabilities

Capability Type	Township	
	Monticello	Willow Branch
Financial		
Capital Improvements Program		
Roadway/Bridge Improvement Plan		
Tax Levies for Special Purposes		X
Motor Fuel Tax	X	X
General Obligation Bonds and/or Special Tax Bonds		
Utility Fees (Stormwater, Sewer, Water, Gas or Electric Service)		
Impact Fees - New Development		
Federal Funding Programs (Non-FEMA)		
Level of Capability	**L**	**L**
Education & Outreach		
StormReady Certification		
Natural Disaster/Safety-Related School Programs		
Ongoing Public Education or Information Programs (Fire Safety, Household Preparedness, Responsible Water Use)		
Seasonal Outreach		
Local Citizen Groups/Non-Profit Organizations (Emergency Preparedness, Access & Functional Needs Populations)		
Public-Private Partnership Initiatives Addressing Disaster-Related Issues		
Level of Capability	**L**	**L**

An "X" indicates a given resource is locally available for mitigation purposes.
Level of Capacity: "L" = Limited; "M" = Moderate; "H" High

Figure PP-8
Schools – Planning & Regulatory / Administrative & Technical Capabilities

Capability Type	School District
	Bement CUSD #5
Plans & Policies	
Comprehensive/Master Facilities Plan	
Continuity of Operations Plan	
Strategic Plan	
Emergency/Crisis Response Plan	X
National Incident Management System (NIMS) Adoption	
Level of Capability	**L**
Adminstrative & Technical	
Board of Education	X
Mutual Aid Agreements	X
Superintendent	X
Principal(s)	X
Chief Financial Officer/Finance Director	
Food Services Supervisor	X
Grant Writer	
Health Care Supervisor	X
IT Director/Specialist	X
Maintenance Manager	X
Communications Director	
Operations Manager	
Safety & Security Director	
Transportation Director	
Level of Capability	**M**

An "X" indicates that the item is currently in place and being implemented or the presence of staff with specified knowledge or skills.
Level of Capacity: "L" = Limited; "M" = Moderate; "H" High

Figure PP-9
Schools – Financial / Education & Outreach Capabilities

Capability Type	School District
	Bement CUSD #5
Financial	
Capital Improvements Program	
Tax Levies for Special Purposes	X
General Obligation Bonds and/or Special Tax Bonds	X
Federal Funding Programs (Non-FEMA)	X
Level of Capability	**M**
Education & Outreach	
StormReady Certification	
Natural Disaster/Safety-Related School Programs	X
Ongoing Public Education or Information Programs (Fire Safety, Household Preparedness, Responsible Water Use)	X
Seasonal Outreach	
Public-Private Partnership Initiatives Addressing Disaster-Related Issues	
Level of Capability	**L**

An "X" indicates a given resource is locally available for mitigation purposes.
Level of Capacity: "L" = Limited; "M" = Moderate; "H" High

Figure PP-10
Fire Protection Districts – Planning & Regulatory Capabilities

Capability Type	Fire Protection District		
	Cisco FPD	Monticello Fire and Rescue	Mid-Piatt FPD
Plans, Policies, Codes, Ordinances, Resolutions & Technical Documents			
Standard Operating Procedures/Guidelines for Structural Fire Fighting (NFPA 1700)	X	X	X
Standard Operating Procedures for Operations at Technical Search & Rescue Incidents (NFPA 1670)			
Pre-Incident Planning (NFPA 1620)	X	X	X
Fire Prevention Codes	X	X	
Burn Ordinance		X	X
National Incident Management System (NIMS) Adoption	X	X	X
Incident Command System (ICS) Adoption	X	X	X
Building Inspections		X	
Tier II Reports			X
County Emergency Operations Plan			X
Safety Data Sheets		X	X
Pipeline Maps	X		X
Hazardous Materials Facilities Maps			X
Water Supply Systems Maps	X	X	
Impassable Roads & Bridges Maps			
Evacuation Zones Maps			
Community & Special Residential Areas Maps (i.e., manufactured home parks, subdivisions, recreational communities)			X
Level of Capability	**M**	**M**	**M**

An "X" indicates that the item is currently in place and being implemented.
Level of Capacity: "L" = Limited; "M" = Moderate; "H" High

Figure PP-11
Fire Protection Districts –
Administrative & Technical Capabilities

Capability Type	Fire Protection District		
	Cisco FPD	Monticello Fire and Rescue	Mid-Piatt FPD
Adminstrative & Technical			
Board of Trustees	X		X
Board of Fire Commissioners			
Mutual Aid Box Alarm System (MABAS)	X	X	X
Mutual Aid Agreements	X	X	X
Hazardous Materials Response Team			
Water Rescue/Dive Team			X
Technical Rescue Team			
Fire Chief	X	X	X
Deputy Fire Chief	X	X	X
Administrative Assistant			
Financial/Business Manager			
Inspector			
Public Education Director/Officer			X
Telecom Director			
Training Coordinator	X	X	X
Level of Capability	**M**	**L**	**M**

An "X" indicates the presence of staff with specified knowledge or skills.
Level of Capacity: "L" = Limited; "M" = Moderate; "H" High

Figure PP-12
Fire Protection Districts –
Financial / Education & Outreach Capabilities

Capability Type	Fire Protection District		
	Cisco FPD	Monticello Fire and Rescue	Mid-Piatt FPD
Financial			
Capital Improvements Program		X	X
Tax Levies for Special Purposes	X	X	X
General Obligation Bonds and/or Special Tax Bonds		X	X
Federal Funding Programs (Non-FEMA)		X	X
Level of Capability	**L**	**H**	**H**
Education & Outreach			
Natural Disaster/Safety-Related School Programs	X	X	X
Ongoing Public Education or Information Programs (Fire Safety, Household Preparedness, Responsible Water Use)	X	X	X
Seasonal Outreach	X		X
Public-Private Partnership Initiatives Addressing Disaster-Related Issues	X		X
Level of Capability	**H**	**M**	**H**

An "X" indicates a given resource is locally available for mitigation purposes.
Level of Capacity: "L" = Limited; "M" = Moderate; "H" High

Figure PP-13
Healthcare Facilities – Planning & Regulatory / Administrative & Technical Capabilities

Capability Type	Healthcare
	Kirby Medical Center
Plans, Policies, Codes, Ordinances & Resolutions	
Continuity of Operations Plan	X
Strategic Plan	X
Facilities Plan	
Emergency Preparedness Plan	X
Medical Disaster Preparedness & Response Plan	X
Community Health Needs Assessment (CHNA)	X
Severe Weather Plan	X
National Incident Management System (NIMS) Adoption	X
Level of Capability	**H**
Administrative & Technical	
Board of Directors	X
Patient Advisory Board	X
Mutual Aid Agreements	X
Chief Executive Officer	X
Chief Medical Officer	X
Chief Financial Officer	X
Chief Development Officer	
Chief Nursing Officer	X
Communications Director	
EMS Director	X
ER Director	X
Grant Writer	
IT Director/GIS Specialist	X
Maintenance Manager	X
Rehab & Long-Term Care Director	
Safety Officer	X
Level of Capability	**H**

An "X" indicates that the item is currently in place and being implemented or the presence of staff with specified knowledge or skills.
Level of Capacity: "L" = Limited; "M" = Moderate; "H" High

Figure PP-14
Healthcare Facilities – Financial / Education & Outreach Capabilities

Capability Type	Healthcare
	Kirby Medical Center
Financial	
Capital Improvements Program	X
Tax Levies for Special Purposes	
General Obligation Bonds and/or Special Tax Bonds	
Federal Funding Programs (Non-FEMA)	X
Level of Capability	**M**
Education & Outreach	
StormReady Certification	
Natural Disaster/Safety-Related School Programs	
Ongoing Public Education or Information Programs (Fire Safety, Household Preparedness, Responsible Water Use)	
Seasonal Outreach	
Local Citizen Groups/Non-Profit Organizations (Emergency Preparedness, Access & Functional Needs Populations)	
Public-Private Partnership Initiatives Addressing Disaster-Related Issues	X
Level of Capability	**L**

An "X" indicates a given resource is locally available for mitigation purposes.
Level of Capacity: "L" = Limited; "M" = Moderate; "H" High

Figure PP-15
Capability Rankings by Participating Jurisdiction

Capability Type	County/Municipalities						Township		Schools	Fire Protection Districts			Health
	Piatt County	Bement	Cisco	Hammond	Mansfield	Monticello	Monticello	Willow Branch	Bement CUSD #5	Cisco FPD	Monticello Fire and Rescue	Mid-Piatt FPD	Kirby Medical Center
Planning & Regulatory	M	L	L	L	L	M/H	M	M	L	M	M	M	H
Administrative & Technical	M	L	L	L	L	H	M	M	M	M	L	M	H
Financial	M	L	L	L/M	L	H	L	L	M	L	H	H	M
Education & Outreach	L	L	L	L	L	L	L	L	L	H	M	H	L
Overall Capability	**M**	**L**	**L**	**L**	**L**	**M/H**	**L/M**	**L/M**	**L/M**	**M**	**M**	**M/H**	**M/H**

Level of Capacity: "L" = Limited; "M" = Moderate; "H" High

3.0 RISK ASSESSMENT

Risk assessment is the process of evaluating the vulnerability of people, buildings, and infrastructure in order to estimate the potential loss of life, personal injury, economic injury, and property damage resulting from natural and man-made hazards. This section summarizes the results of the risk assessment conducted on the natural and man-made hazards in Piatt County. The information contained in this section was gathered by evaluating local, state, and federal records from the last 20 to 70 years.

This risk assessment identifies the natural and man-made hazards deemed most important to the Planning Committee and includes a profile of each hazard that identifies past occurrences, the severity or extent of the events, and the likelihood of future occurrences. It also provides a vulnerability analysis that identifies the impacts to public health and property, evaluates the assets of the participating jurisdictions (i.e., residential buildings, critical facilities, and infrastructure), and estimates the potential impacts each natural hazard would have on the health and safety of the residents as well as buildings, critical facilities, and infrastructure. Where applicable, the differences in vulnerability between participating jurisdictions are described.

The subsequent sections provide detailed information on each of the selected natural hazards. The sections are color coded and ordered by the frequency with which the natural hazard has previously occurred within the County. Each natural hazard section contains three subsections: hazard identification, hazard profile, and hazard vulnerability.

Hazard Selection

One of the responsibilities of the Planning Committee was to review the natural and man-made hazards detailed in the original Plan and decide if additional hazards should be included in the Plan update. Over the course of the first two meetings, the Planning Committee members discussed their experiences with natural and man-made hazard events and reviewed information on various hazards. After discussing the information provided, the Planning Committee chose not to add any additional natural hazards (i.e., landslides, etc.) to this Plan update.

The following identifies the hazards included in the Plan update:

- severe storms (thunderstorms, hail, lighting & heavy rain)
- severe winter storms (snow & ice)
- floods
- excessive heat
- extreme cold
- tornadoes
- drought
- earthquakes
- man-made hazards including:
  - hazardous substances (generation, transportation & storage/handling)
  - waste disposal
  - hazardous materials incidents
  - waste remediation
  - nuclear incidents
  - terrorism

The Planning Committee chose not to include the following hazards in the Plan: landslides, land/mine subsidence, dam failures, and levee failures. A review of the USGS Landslide Inventory did not identify any landslide events within the County nor were any identified in the Illinois State Geological Survey's (ISGS) *Landslide Inventory of Illinois*. Discussions with the Planning Committee did not reveal any recent occurrences of landslides.

In Illinois land subsidence generally occurs in areas where mining has been conducted. According to ISGS's *ILMINES* mapper, no underground or surface mining has occurred in the County. Karst refers to landforms underlain by limestone that has been dissolved, producing characteristic landscapes such as sinkholes. Mapping prepared by the ISGS shows no karst geologic characteristics present in Piatt County.

A review of the U.S. Army Corps of Engineers' National Inventory of Dams identified one "Low" hazard classified dam located on an unnamed tributary of the Sangamon River southwest of Monticello in Piatt County. This dam does not have a reservoir that is immense in size nor is it located in a densely populated area. According to the Stanford University's National Performance of Dams Incident Database, there are no known recorded dam failures associated with this dam.

According to the U.S. Army Corps of Engineers' National Levee Database, there is one small, locally-constructed, locally-operated and maintained levee located south of Cisco along the Sangamon River in Piatt County. This levee has not been screened for a USACE Risk Classification Rating and no information was available on the number of individuals or buildings protected by the levee. Discussions with the Planning Committee did not reveal any levee failures associated with this levee.

Based on the information provided, the Committee did not consider these hazards warranted inclusion in the Plan update.

Risk Priority Index

After reviewing the preliminary results of the risk assessment at the second meeting, Planning Committee members and the participating jurisdictions were asked to complete a Risk Priority Index (RPI) exercise for the hazards that have the potential to impact the County and participating jurisdictions. The RPI provides quantitative guidance for ranking the hazards and offers participants with another tool to determine which hazards present the highest risk and therefore which ones to focus on when formulating mitigation actions.

Each hazard was scored on three categories: 1) frequency, 2) impacts on life and health, and 3) impacts on property and infrastructure. A scoring system was developed that assigned specific factors to values of High, Moderate, or Low for each category. For those hazards that were not applicable to a particular jurisdiction, a value of "NA" was assigned to each category. The assigned values were then given a point ranking of 3 (High), 2 (Moderate), or 1 (Low). The higher the point value, the greater the risk associated with that hazard. **Figure R-1**, located at the end of this section, identifies the factors and values/point values associated with each category. Participants were asked to score the selected hazards based on the perspective of the entity they represented on the Planning Committee.

The Consultant took the point values assigned to each category and averaged the remaining results and came up with an overall value for each category. The values for each category were then added together to calculate an RPI score for each hazard. A ranking was then assigned to each hazard based on the RPI score. **Figure R-2**, located at the end of this section, provides the hazard rankings for the participating jurisdictions. RPI scores were not generated for Monticello Township.

Figure R-3 provides a side-by-side comparison of how the hazards ranked between the RPI exercise conducted for the original Plan in 2012 and the exercise conducted for the Plan update for the County each of the original participating municipalities. RPIs were not generated in 2012 for any of the special districts. The top hazards for the County in 2012 were severe storms and severe winter storms/extreme cold, followed by floods. In 2022, the top hazards were tornadoes, followed by thunderstorms with damaging winds and severe winter storms.

FEMA's National Risk Index

The National Risk Index (NRI) is an online mapping and data-based interface that helps illustrate a community's risk to 18 identified natural hazards. The natural hazards identified by the NRI and included in this Plan are cold wave, drought, earthquake, hail, heat wave, ice storm, lightning, riverine flooding, strong wind, tornado, and winter weather. The NRI leverages available source data for natural hazard and community risk facts, such as social vulnerability and community resilience, to develop a baseline relative risk measurement for each county and census tract in the U.S. The goal is to help individuals better understand the natural hazard risk of their communities.

In the NRI, risk is defined as the potential for negative impacts as a result of a natural hazard. The risk equation behind the NRI includes three components: a natural hazards component (expected annual loss), a consequence enhancing component (social vulnerability), and a consequence reduction component (community resilience). Social vulnerability represents the susceptibility of social groups to the adverse impacts of natural hazards. Community resilience represents the ability of a community to prepare for anticipated natural hazards, adapt to changing conditions, and withstand and recover rapidly from disruptions.

The scores and ratings generated by the NRI describe a county's or census tract's relative position among all other U.S. counties and census tracts for a given component. Scores can range from 0 (the lowest possible value) to 100 (the highest possible value). For every score there is assigned one of five qualitative ratings: "Very Low", "Relatively Low", "Relatively Moderate", "Relatively High", and "Very High." Because all ratings are relative, there are no specific numeric values that determine the rating.

In order to provide the participating jurisdictions and public with additional information on the natural hazards included in the Plan, **Figure R-4** located at the end of this section, presents the overall NRI scores and ratings for each census tract as well as for the County and State as a whole. The NRI currently uses 2010 census tract information. In 2010, there were four census tracts in Piatt County. All of the census tracts have Risk Index and Social Vulnerability ratings of "Relatively Low" or "Relatively Moderate".

Figure R-5, located at the end of this section, provides the NRI scores and ratings by hazard type for each census tract as well as the County. Hazard ratings of "Relatively High" and "Very High" are highlighted in yellow by census tract. The hazards with the highest relative rating include severe storms, severe winter storms, excessive heat, extreme cold, and tornadoes.

Critical Facilities & Infrastructure

Critical facilities and infrastructure are structures, institutions, and systems that are critical for life safety and economic viability and necessary for a community's response to and recovery from emergencies. The loss of function of any of these assets can intensify the severity of the impacts and speed of recovery associated a hazard event. Critical facilities and infrastructure may include, but are not limited to, the following:

- ***Essential Facilities***: Facilities essential to the health and welfare of the whole population including hospitals and other medical facilities, police and fire stations, emergency operations centers, evacuation shelters, and schools.
- ***Government Facilities***: Facilities associated with the continued operations of government services such as courthouses, city/village halls, township buildings, and highway/maintenance centers.
- ***Infrastructure Systems***: Infrastructure associated with drinking water, wastewater, transportation (roads, railways, waterways), communication systems, electric power, natural gas, and oil.
- ***Housing Facilities***: Facilities that serve populations that have access and function needs such as nursing homes, skilled and memory care facilities, residential group homes, and day care centers.
- ***High Potential Loss Facilities***: Facilities that would have an impact or high loss associated with them if their functionality is compromised such as nuclear power plants, dams, levees, military installations, and facilities housing industrial or hazardous materials.
- ***Gathering Places***: Facilities such as parks, libraries, community centers, and churches.

As part of the planning process each participating jurisdiction completed a questionnaire identifying the critical facilities and infrastructure located within their jurisdiction, both publicly and privately-owned. **Figure R-6**, located at the end of this section, identifies the number of critical facilities and infrastructure located in each participating jurisdiction for select categories. Identifying these assets makes local leaders more aware of the critical facilities and infrastructure located within their jurisdictions and helps them make informed choices on how to better protect these key resources.

While considered a "local government entity" for planning purposes, Monticello Township, Willow Branch Township, Bement Community Unit School District (CUSD) #5, Cisco Fire Protection District (FPD), Monticello Fire & Rescue, Mid Piatt FPD, and Kirby Medical Center do not have an extensive inventory of assets in which to consider when conducting the risk assessment.

Since the assets for these local government entities are located within a participating municipality, with the exception of Mid Piatt FPD, and are a subset of these municipalities' critical facilities, their risk is considered to be the same or similar to the risk experienced by the municipalities for

those hazards that either impact the entire planning area or can occur at any location within the planning area (i.e., severe storms, severe winter storms, etc.). For those hazards where the risk to the CUSD, fire departments, and medical center varies from the risk facing the municipalities, a separate narrative assessment will be provided under the appropriate hazard's vulnerability subsection.

The critical facilities for Mid Piatt FPD are located in unincorporated Piatt County. Their risk is considered to be the same or similar to the risk experienced by the County for those hazards that either impact the entire planning area or can occur at any location within the planning area (i.e., severe storms, severe winter storms, etc.) For those hazards where the risk to the FPD's critical facilities varies from the risk facing the planning area (i.e., the County), a separate narrative assessment will be provided under the appropriate hazard's vulnerability subsection.

Critical Facilities Vulnerability Survey

The participating jurisdictions were also asked to complete a Critical Facilities Vulnerability Survey at the third meeting to assist in the preparation of an overall summary of each jurisdiction's vulnerability to the studied hazards. The Survey asked participants to describe their jurisdiction's greatest vulnerability. This information is summarized under the appropriate hazard's vulnerability subsection.

Figure R-1
Risk Priority Index Scoring System

Category	Factors	Value	Point Value
Hazard Frequency	An event is likely to occur in the next 1 to 3 years.	High	3
	An event is possible in the next 3 to 10 years.	Moderate	2
	An event is unlikely to occur within the next 10 years.	Low	1
Impacts on Life & Health	While fatalities are unlikely, injuries, some requiring hospitalization, may occur during the event.	High	3
	Minor injuries not requiring hospitalization may occur during the event.	Moderate	2
	Injuries or fatalities are unlikely to occur during the event.	Low	1
Impacts on Property & Infrastructure	- Substantial property damage is likely to occur including damage to infrastructure and critical facilities. AND/OR - Loss of access/operations at infrastructure and critical facilities (i.e., road & school closures, loss of power to drinking water/wastewater treatment facilities, municipal buildings, etc.) is anticipated for a period of time (i.e., a day or more).	High	3
	- Some minor property damage is anticipated (i.e., shingles & siding torn off homes, windows broken, etc.) but no significant damage to infrastructure or critical facilities is anticipated. AND/OR - Loss of access/operations to infrastructure and critical facilities is anticipated but only for a short period of time (i.e., up to a couple hours).	Moderate	2
	- Property damage is likely to be negligible and no loss of access/operations is anticipated at any infrastructure/critical facilities during the event.	Low	1

Figure R-2
Risk Priority Index Hazard Ranking by Participating Jurisdiction
(Sheet 1 of 2)

Hazard	Hazard Ranking by Participating Jurisdiction					
	Piatt County	Atwood	Bement	Hammond	Mansfield	Monticello
Drought	12	3/4/5/6/7/8/9/10	8/9/10	3/4/5/6/7	6/7/8/9/10/11/12/13/14	7/8/9/10
Earthquakes	11	11	11/12/13/14	11/12/13/14	6/7/8/9/10/11/12/13/14	12/13
Excessive Heat	9/10	3/4/5/6/7/8/9/10	5	3/4/5/6/7	6/7/8/9/10/11/12/13/14	**1/2/3**
Extreme Cold	6/7	3/4/5/6/7/8/9/10	8/9/10	**1/2**	6/7/8/9/10/11/12/13/14	4/5/6
Floods	5	3/4/5/6/7/8/9/10	8/9/10	8	**1/2/3**	7/8/9/10
Hail	4	3/4/5/6/7/8/9/10	**1/2/3**	3/4/5/6/7	6/7/8/9/10/11/12/13/14	**1/2/3**
HazMat Incidents: Transportation	8	12/13/14	11/12/13/14	11/12/13/14	**1/2/3**	14
HazMat Incidents: Fixed Facility	14	12/13/14	11/12/13/14	11/12/13/14	6/7/8/9/10/11/12/13/14	12/13
Heavy Rain	6/7	3/4/5/6/7/8/9/10	**1/2/3**	3/4/5/6/7	4/5	7/8/9/10
Lightning	9/10	12/13/14	**1/2/3**	9/10	6/7/8/9/10/11/12/13/14	7/8/9/10
Terrorism	13	3/4/5/6/7/8/9/10	11/12/13/14	11/12/13/14	6/7/8/9/10/11/12/13/14	11
Thunderstorms w/ Damaging Winds	2	3/4/5/6/7/8/9/10	4	3/4/5/6/7	**1/2/3**	4/5/6
Tornadoes	**1**	**1/2**	6/7	9/10	6/7/8/9/10/11/12/13/14	**1/2/3**
Winter Storms	3	**1/2**	6/7	**1/2**	4/5	4/5/6

Figure R-2
Risk Priority Index Hazard Ranking by Participating Jurisdiction
(Sheet 2 of 2)

Hazard		Hazard Ranking by Participating Jurisdiction				
	Willow Branch Township	Bement CUSD #5	Cisco FPD	Monticello Fire & Rescue	Mid Piatt FPD	Kirby Medical Center
Drought	11/12/13	**1/2/3**	11/12/13	9/10/11	13/14	8/9/10
Earthquakes	6/7/8/9/10	14	6/7/8/9/10	5/6/7/8	11/12	2/3/4/5/6/7
Excessive Heat	**1**	**1/2/3**	**1**	2/3/4	6/7/8/9/10	**1**
Extreme Cold	3/4/5	4	3/4/5	5/6/7/8	**1/2/3/4/5**	8/9/10
Floods	6/7/8/9/10	10	6/7/8/9/10	9/10/11	11/12	11/12/13/14
Hail	6/7/8/9/10	7/8/9	6/7/8/9/10	5/6/7/8	13/14	11/12/13/14
HazMat Incidents: Transportation	3/4/5	7/8/9	3/4/5	13/14	6/7/8/9/10	8/9/10
HazMat Incidents: Fixed Facility	11/12/13	13	11/12/13	12	6/7/8/9/10	2/3/4/5/6/7
Heavy Rain	11/12/13	7/8/9	11/12/13	9/10/11	**1/2/3/4/5**	11/12/13/14
Lightning	6/7/8/9/10	11/12	6/7/8/9/10	5/6/7/8	6/7/8/9/10	2/3/4/5/6/7
Terrorism	14	11/12	14	13/14	6/7/8/9/10	2/3/4/5/6/7
Thunderstorms w/ Damaging Winds	3/4/5	5/6	3/4/5	2/3/4	**1/2/3/4/5**	2/3/4/5/6/7
Tornadoes	2	5/6	2	**1**	**1/2/3/4/5**	2/3/4/5/6/7
Winter Storms	6/7/8/9/10	**1/2/3**	6/7/8/9/10	2/3/4	**1/2/3/4/5**	11/12/13/14

Figure R-3
Comparison of 2012 & 2022 Risk Priority Index Hazard Rankings by Participating Jurisdiction

Hazard	Hazard Ranking by Participating Jurisdiction											
	Piatt County		Bement		Cisco		Hammond		Mansfield		Monticello	
	2012	2022	2012	2022	2012	2022	2012	2022	2012	2022	2012	2022
Drought	4	12	5	3/4/5/6/7/8/9/10	4	8/9/10	5/6	3/4/5/6/7	5	6/7/8/9/10/11/12/13/14	6	7/8/9/10
Earthquakes	7	11	7	11	5/6/7	11/12/13/14	7	11/12/13/14	7	6/7/8/9/10/11/12/13/14	7	12/13
Excessive Heat	4	9/10	5	3/4/5/6/7/8/9/10	4	5	5/6	3/4/5/6/7	5	6/7/8/9/10/11/12/13/14	6	**1/2/3**
Extreme Cold	**1/2**	6/7	**1/2**	3/4/5/6/7/8/9/10	**1/2**	8/9/10	**1/2**	**1/2**	**1/2**	6/7/8/9/10/11/12/13/14	**1/2/3/4/5**	4/5/6
Floods	3	5	6	3/4/5/6/7/8/9/10	5/6/7	8/9/10	5/6	8	6	**1/2/3**	**1/2/3/4/5**	7/8/9/10
Hail	**1/2**	4	**1/2**	3/4/5/6/7/8/9/10	**1/2**	**1/2/3**	**1/2**	3/4/5/6/7	**1/2**	6/7/8/9/10/11/12/13/14	**1/2/3/4/5**	**1/2/3**
HazMat Incidents: Fixed Facility	6	8	4	12/13/14	5/6/7	11/12/13/14	4	11/12/13/14	4	**1/2/3**	**1/2/3/4/5**	14
HazMat Incidents: Transportation	6	14	4	12/13/14	5/6/7	11/12/13/14	4	11/12/13/14	4	6/7/8/9/10/11/12/13/14	**1/2/3/4/5**	12/13
Heavy Rain	n/a	6/7	n/a	3/4/5/6/7/8/9/10	n/a	**1/2/3**	n/a	3/4/5/6/7	n/a	4/5	n/a	7/8/9/10
Lightning	**1/2**	9/10	**1/2**	12/13/14	**1/2**	**1/2/3**	**1/2**	9/10	**1/2**	6/7/8/9/10/11/12/13/14	**1/2/3/4/5**	7/8/9/10
Terrorism	n/a	13	n/a	3/4/5/6/7/8/9/10	n/a	11/12/13/14	n/a	11/12/13/14	n/a	6/7/8/9/10/11/12/13/14	n/a	11
Thunderstorms w/ Damaging Winds	**1/2**	2	**1/2**	3/4/5/6/7/8/9/10	**1/2**	4	**1/2**	3/4/5/6/7	**1/2**	**1/2/3**	**1/2/3/4/5**	4/5/6
Tornadoes	5	**1**	3	**1/2**	3	6/7	3	9/10	3	6/7/8/9/10/11/12/13/14	**1/2/3/4/5**	**1/2/3**
Severe Winter Storms	**1/2**	3	**1/2**	**1/2**	**1/2**	6/7	**1/2**	**1/2**	**1/2**	4/5	**1/2/3/4/5**	4/5/6

Figure R-4
National Risk Index Overall Scores/Ratings by Census Tract

Census Tract No.	Incorporated Municiplity Located in	Risk Index Score	Risk Index Rating	Social Vulnerability Score	Social Vulnerability Rating	Community Resilience Score	Community Resilience Rating
954500	De Land, Mansfield	20.78	Relatively Moderate	28.64	Relatively Low	*	*
954600	Monticello	19.65	Relatively Moderate	31.02	Relatively Low	*	*
954700	Atwood, Bement, Hammond	20.85	Relatively Moderate	31.55	Relatively Moderate	*	*
954800	Cerro Gordo, Cisco	19.13	Relatively Moderate	29.66	Relatively Low	*	*
Piatt County	---	4.93	Very Low	22.59	Very Low	58.95	Very High
Illinois	---	9.87	---	35.15	---	56.70	---
National	---	10.60	---	38.35	---	54.59	---

* Community Resilience scores are only available at the county level.

Figure R-5
NRI Hazard Scores/Ratings by Hazard by Census Tract
(Sheet 1 of 2)

Census Tract No.	Incorporated Municiplity Located in Census Tract	Severe Storms						Severe Winter Storms			
		Hail Score	Hail Rating	Lightning Score	Lightning Rating	Strong Wind Score	Stong Wind Rating	Ice Storm Score	Ice Storm Rating	Winter Weather Score	Winter Weather Rating
954500	De Land, Mansfield	12.37	RL	21.84	RM	38.23	RH	16.26	RL	18.19	RH
954600	Monticello	14.99	RM	26.35	RM	45.87	VH	19.61	RM	21.81	RH
954700	Atwood, Bement, Hammond	12.25	RL	21.67	RM	38.88	RH	16.38	RL	18.15	RH
954800	Cerro Gordo, Cisco	11.10	RL	20.15	RM	34.71	RH	14.90	RL	16.02	RM
Piatt County	---	4.19	VL	5.12	VL	7.90	VL	5.17	VL	8.27	VL

Rating Abbreviations: NR = No Rating; VL = Very Low; RL = Relatively Low; RM = Relatively Moderate; RH = Relatively High; VH = Very High

Figure R-5
NRI Hazard Scores/Ratings by Hazard by Census Tract
(Sheet 2 of 2)

Census Tract No.	Incorporated Municiplity Located in Census Tract	Riverine Floods		Excessive Heat		Extreme Cold		Tornadoes		Drought		Earthquakes	
		Score	Rating	Score	Rating	Score	Rating	Score	Rating	Score	Rating	Score	Rating
954500	De Land, Mansfield	12.82	RM	31.99	RH	22.63	RH	35.05	RM	16.29	RM	9.51	RL
954600	Monticello	12.29	RM	36.21	RH	23.88	RH	42.40	RH	8.59	RL	13.46	RL
954700	Atwood, Bement, Hammond	12.58	RM	31.93	RH	22.52	RH	34.33	RM	16.03	RM	14.28	RL
954800	Cerro Gordo, Cisco	9.38	RL	28.47	RH	20.45	RH	30.88	RM	15.50	RM	10.82	RL
Piatt County	---	3.51	VL	6.78	RL	13.25	RL	8.12	VL	9.08	RL	1.89	VL

Rating Abbreviations: NR = No Rating; VL = Very Low; RL = Relatively Low; RM = Relatively Moderate; RH = Relatively High; VH = Very High

Figure R-6
Critical Facilities & Infrastructure by Jurisdiction

Participating Jurisdiction	Critical Facilities				Critical Infrastructure						
	Government[1]	Emergency Protection[2]	Medical & Healthcare[3]	Schools	Drinking Water[4]	Wastewater Treatment[5]	Rail Lines	Bridges	Interstates US/State Routes & Key Roads	Power Plants	Comm. Systems
Piatt County	9	13	6	---	1	--	4	2	11	---	1
Bement	8	---	1	3	2	3	1	---	1	---	---
Cisco	6	2	---	1	2	---	1	---	4	---	---
Hammond	2	1	---	---	2	4	1	---	2	---	---
Mansfield	4	3	---	1	4	---	1	---	2	---	---
Monticello	3	3	7	4	3	3	2	3	9	---	---
Monticello Township	6	6	4	3	---	---	---	2	4	---	---
Willow Branch Township	4	2	---	1	---	---	1	29	8	---	---
Bement CUSD #5	---	---	---	3	---	---	---	---	---	---	---
Cisco Fire Protection District	5	2	---	1	1	---	1	2	4	---	---
Monticello Fire & Rescue	---	1	---	---	---	---	---	---	---	---	---
Mid Piatt Fire Protection District	3	2	---	1	2	---	3	11	5	---	---
Kirby Medical Center	---	1	3	---	---	---	---	---	---	---	---

[1] Government includes: courthouses, city/village halls, township buildings, highway/road maintenance centers, libraries, etc.
[2] Emergency Protection includes: sheriff's department, police, fire, ambulance, emergency operations centers, jail/correctional facilities, and evacuation shelters.
[3] Medical & Healthcare includes: public health departments, hospitals, urgent/prompt care and medical clinics, nursing homes, skilled nursing facilities, memory care facilities, residential group homes, etc.
[4] Drinking Water includes: drinking water treatment plants, drinking water wells, and water storage towers/tanks.
[5] Wastewater Treatment includes: wastewater treatment plants and lift stations.
--- Indicates the jurisdiction does not own/maintain any critical facilities within that category.

3.1 SEVERE STORMS (THUNDERSTORMS, HAIL, LIGHTNING & HEAVY RAIN)

HAZARD IDENTIFICATION

What is the definition of a severe storm?

The National Oceanic and Atmospheric Administration's (NOAA) National Weather Service (NWS) defines a "severe storm" as any thunderstorm that produces one or more of the following:

- winds with gust of 50 knots (58 mph) or greater;
- hail that is at least one inch in diameter (quarter size) or larger; and/or
- a tornado.

While severe storms are capable of producing deadly lightning and heavy rain that may lead to flash flooding, the NWS does not use lightning/either to define a severe storm. However, a discussion of both lightning and heavy rain is included in this section because both are capable of causing extensive damage. For the purposes of this report, tornadoes and flooding are categorized as separate hazards and are not discussed under severe storms.

What is a thunderstorm?

A thunderstorm is a rain shower accompanied by lightning and thunder. An average thunderstorm is approximately 15 miles in diameter, affecting a relatively small area when compared to winter storms or hurricanes, and lasts an average of 30 minutes. Thunderstorms can bring heavy rain, damaging winds, hail, lightning, and tornadoes.

There are four basic types of thunderstorms: single-cell, multi-cell, squall line, and supercell. The following provides a brief description of each.

Single-cell Thunderstorm

Single cell storms are small, weak storms that only last about ½ hour to an hour and are not usually considered severe. They are typically driven by heating on a summer afternoon. Occasionally a single cell storm will become severe, but only briefly. When this happens, it is called a pulse severe storm.

Multi-cell Thunderstorm

Multi-cell storms are the most common type of thunderstorms. A multi-cell storm is organized in clusters of at least two to four short-lived cells. Each cell usually lasts 30 to 60 minutes while the system as whole may persist for many hours. Multi-cell storms may produce hail, strong winds, brief tornadoes, and/or flooding.

Squall Line

A Squall line is a group of storms arranged in a line, often accompanied by "squalls" of high wind and heavy rain. The line of storms can be continuous or there can be gaps and breaks in the line. Squall lines tend to pass quickly and can be hundreds of miles long but are typically only 10 to 20 miles wide. A "bow echo" is a radar signature of a squall line that "bows out" as winds fall behind the line and circulation develops on either end.

Supercell Thunderstorm

Supercell storms are long-lived (greater than one hour) and highly organized storms that feed off a rising current of air (an updraft). The main characteristic that sets a supercell storm apart from other thunderstorm types is the presence of rotation in the updraft. The rotating updraft of a supercell (called a mesocyclone when visible on radar) helps a supercell storm produce extreme weather events. Supercell storms are potentially the most dangerous storm type and have been observed to generate the vast majority of large and violet tornadoes, as well as downburst winds and large hail.

Despite their size, all thunderstorms are dangerous and capable of threatening life and property. Of the estimated 100,000 thunderstorms that occur each year in the U.S., roughly 10% are classified as severe.

What kinds of damaging winds are produced by a thunderstorm?

Aside from tornadoes, thunderstorms can produce straight-line winds. A straight-line wind is defined as any wind produced by a thunderstorm that is not associated with rotation. There are several types of straight-line winds including downdrafts, downbursts, microbursts, gust fronts and derechos.

Damage from straight-line winds is more common than damage from tornadoes and accounts for most thunderstorm wind damage. Straight-line wind speeds can exceed 87 knots (100 mph), produce a damage pathway extending for hundreds of miles and can cause damage equivalent to a strong tornado.

The NWS measures a storm's wind speed in knots or nautical miles. A wind speed of one knot is equal to approximately 1.15 miles per hour. **Figure SS-1** shows conversions from knots to miles per hour for various wind speeds.

Figure SS-1
Wind Speed Conversions

Knots (kts)	Miles Per Hour (mph)	Knots (kts)	Miles Per Hour (mph)
50 kts	58 mph	60 kts	69 mph
52 kts	60 mph	65 kts	75 mph
55 kts	63 mph	70 kts	81 mph
58 kts	67 mph	80 kts	92 mph

What is hail?

Hail is precipitation in the form of spherical or irregular-shaped pellets of ice that occur within a thunderstorm when strong rising currents of air (updrafts) carry raindrops upward into extremely cold areas of the atmosphere where they freeze into ice.

Hailstones grow by colliding with supercooled water drops. The supercooled water drops freeze on contact with ice crystals, frozen rain drops, dust, etc. Thunderstorms with strong updrafts continue lifting the hailstones to the top of the cloud where they encounter more supercooled water and continue to grow. Eventually the updraft can no longer support the weight of the hail, or the updraft weakens, and the hail falls to the ground.

In the U.S., hail causes more than $1 billion in damages to property and crops annually. Hail has been known to cause injuries, although it rarely causes fatalities or serious injury.

How is the severity of a hail event measured?

The severity or magnitude of a hail event is measured in terms of the size (diameter) of the hailstones. The hail size is estimated by comparing it to known objects. **Figure SS-2** provides descriptions for various hail sizes.

Figure SS-2
Hail Size Descriptions

Hail Diameter (inches)	Description	Hail Diameter (inches)	Description
0.25 in.	pea	1.75 in.	golf ball
0.50 in.	marble/mothball	2.50 in.	tennis ball
0.75 in.	penny	2.75 in.	baseball
0.88 in.	nickel	3.00 in.	teacup
1.00 in.	quarter	4.00 in.	grapefruit
1.50 in.	ping pong ball	4.50 in.	softball

Source: NOAA, National Severe Storm Laboratory.

Hail size can vary widely. Hailstones may be as small as 0.25 inches in diameter (pea-sized) or, under extreme circumstances, as large as 4.50 inches in diameter (softball-sized). Typically hail that is one (1) inch in diameter (quarter-sized) or larger is considered severe.

The severity of a hail event can also be measured or rated using the TORRO Hailstorm Intensity Scale. This scale was developed in 1986 by the Tornado and Storm Research Organisation of the United Kingdom. It measures the intensity or damage potential of a hail event based on several factors including: maximum hailstone size, distribution, shape and texture, numbers, fall speed and strength of the accompanying winds.

The Hailstorm Intensity Scale identifies ten different categories of hail intensity, H0 through H10. **Figure SS-3** gives a brief description of each category. This scale is unique because it recognizes that, while the maximum hailstone size is the most important parameter relating to structural damage, size alone is insufficient to accurately categorize the intensity and damage potential of a hail event.

It should be noted that the typical damage impacts associated with each intensity category reflect the building materials predominately used in the United Kingdom. These descriptions may need to be modified for use in other countries to take into account the differences in building materials typically used (i.e., whether roofing materials are predominately shingle, slate, or concrete, etc.).

What is lightning?

Lightning, a component of all thunderstorms, is a visible electrical discharge that results from the buildup of charged particles within storm clouds. It can occur from cloud-to-ground, cloud-to-cloud, within a cloud or cloud-to-air. The air near a lightning strike is heated to approximately

50,000°F (hotter than the surface of the sun). The rapid heating and cooling of the air near the lightning strike causes a shock wave that produces thunder.

Figure SS-3
TORRO Hailstorm Intensity Scale

Intensity Category		Typical Hail Diameter		Description	Typical Damage Impacts
		millimeters (approx.)*	inches (approx.)*		
H0	Hard Hail	5 mm	0.2"	pea	no damage
H1	Potentially Damaging	5-15 mm	0.2" – 0.6"	pea / mothball	slight general damage to plants, crops
H2	Significant	10-20 mm	0.4" – 0.8"	mothball / penny	significant damage to fruit, crops, vegetation
H3	Severe	20-30 mm	0.8" – 1.2"	nickel / quarter	severe damage to fruit and crops, damage to glass and plastic structures, paint and wood scored
H4	Severe	25-40 mm	1.0" – 1.6"	half dollar / ping pong ball	widespread glass damage, vehicle bodywork damage
H5	Destructive	30-50 mm	1.2" – 2.0"	golf ball	wholesale destruction of glass, damage to tiled roofs, significant risk of injuries
H6	Destructive	40-60 mm	1.6" – 2.4"	golf ball / egg	bodywork of grounded aircraft dented; brick walls pitted
H7	Destructive	50-75 mm	2.0" – 3.0"	egg / tennis ball	severe roof damage, risk of serious injuries
H8	Destructive	60-90 mm	2.4" – 3.5"	tennis ball / teacup	severe damage to aircraft bodywork
H9	Super Hailstorms	75-100 mm	3.0" – 4.0"	teacup / grapefruit	extensive structural damage, risk of severe or even fatal injuries to persons caught in the open
H10	Super Hailstorms	> 100 mm	> 4.0"	softball	extensive structural damage, risk of severe or even fatal injuries to persons caught in the open

* Approximate range since other factors (i.e., number and density of hailstones, hail fall speed and surface wind speed) affect severity.

Source: Tornado and Storm Research Organisation, TORRO Hailstorm Intensity Scale Table.

Lightning on average causes 60 fatalities and 400 injuries annually in the U.S. Most fatalities and injuries occur when people are caught outdoors in the summer months during the afternoons and evenings. In addition, lightning can cause structure and forest fires. Many of the wildfires in the western U.S. and Alaska are started by lightning. According to the NWS lightning strikes cost more than $1 billion in insured losses each year.

Are alerts issued for severe storms?

Yes. The NWS Weather Forecast Office in Lincoln, Illinois is responsible for issuing ***severe thunderstorm watches*** and ***warnings*** for Piatt County depending on the weather conditions. The following provides a brief description of each type of alert.

- **Watch.** A severe thunderstorm watch is issued when severe thunderstorms are possible in or near the watch area. Individuals should stay alert for the latest weather information and be prepared to take shelter.
- **Warning.** A severe thunderstorm warning is issued when severe weather has been reported by spotters or indicated by radar. Warnings indicate imminent danger to life and property for those who are in the path of the storm and individuals should seek safe shelter.

HAZARD PROFILE

The following identifies past occurrences of severe storms; details the severity or extent of each event (if known); identifies the locations potentially affected; and estimates the likelihood of future occurrences.

When have severe storms occurred previously? What is the extent of these previous severe storms?

Tables 1, 2, 3, and 4, located in **Appendix I,** summarize the previous occurrences as well as the extent or magnitude of severe storm events recorded in Piatt County. Severe storm events are separated into four categories: thunderstorms with damaging winds, hail, lightning, and heavy rain. In Piatt County, severe storms are the most frequently occurring natural hazard.

Thunderstorms with Damaging Winds

NOAA's Storm Events Database was used to document 100 reported occurrences of thunderstorms with damaging winds in Piatt County between 1961 and 2021. Of the 100 occurrences, 71 had reported wind speeds of 50 knots or greater. There were 29 occurrences, however, where the wind speed was not recorded. Included in the 100 thunderstorms with damaging winds events is one event that contributed to a federal disaster declaration for Piatt County.

Severe Storms Fast Facts – Occurrences

Number of recorded Thunderstorms with Damaging Winds (1961 – 2021): ***100***

Number of recorded Severe Hail Events (1981 – 2021): ***24***

Number recorded of Lightning Strike Events (2009 – 2021): ***1***

Number of Heavy Rain Events (2000 – 2021): ***134***

Highest Recorded Wind Speed: ***70 knots (May 25, 2011)***

Largest Hail Recorded: ***4 inches (August 26, 2000)***

Most Likely Month for Thunderstorms with Damaging Winds to Occur: ***May***

Most Likely Month for Severe Hail to Occur: ***May***

Most Likely Month for Heavy Rain to Occur: ***June***

The highest wind speed recorded in Piatt County occurred east of Cisco on May 25, 2011 when winds reached 70 knots (81 mph) during a thunderstorm event. Thunderstorms with damaging winds have been *recorded* in every participating jurisdiction within the County on multiple occasions.

Of the 100 events, 61 (61%) took place in April, May, and June, making this the peak period for thunderstorms with damaging winds in Piatt County. Of those 61 events, 25 (41%) occurred during May, making this the peak month for thunderstorms with damaging winds. Of the 100 occurrences, 82% of all thunderstorms with damaging winds occurred during the p.m. hours.

Hail

NOAA's Storm Events Database was used to document 24 reported occurrences of severe storms with hail one (1) inch in diameter or greater in Piatt County between 1981 and 2021. Of the 24

occurrences, 14 produced hailstones 1.50 inches or larger in diameter. The largest hail stones documented in Piatt County measured 4.00 inches in diameter (grapefruit-sized) and fell on August 26, 2000 in Bement and near Milmine and Pierson Station. Hail one (1) inch in diameter or greater has been *recorded* in every participating jurisdiction on at least one occasion.

Figure SS-4
Thunderstorms with Damaging Winds by Month
1961 – 2021

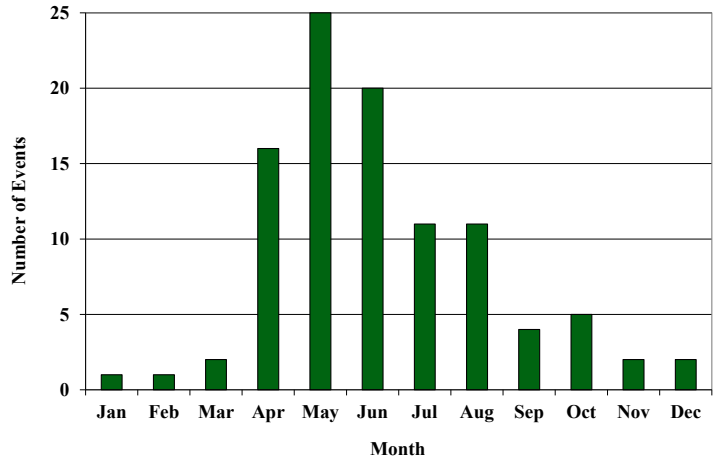
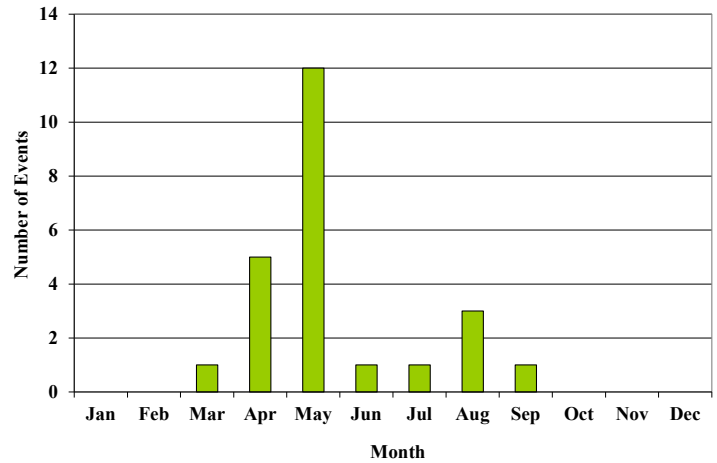


Figure SS-5 charts the reported occurrences of hail by month. Of the 24 occurrences, 17 (71%) took place in April and May, making this the peak period for hail in Piatt County. Of these 17 events, 12 (71%) occurred during May, making this the peak month for hail events. All of the reported occurrences began during the p.m. hours.

Figure SS-5
Hail Events by Month
1981 – 2021

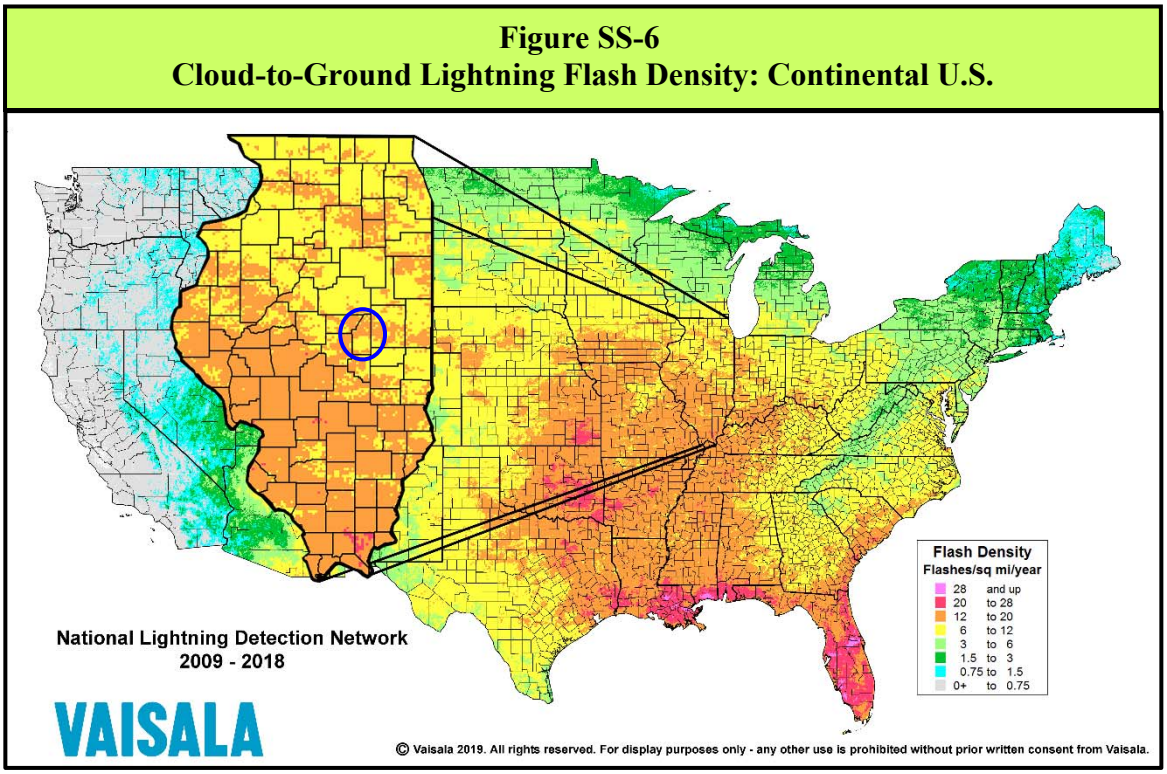


Lightning

While lightning strike events occur regularly across east-central Illinois, NOAA's Storm Events Database and Committee Member records only identified one recorded occurrence of a lightning strike in Piatt County between 2009 and 2021. The data limitations are almost certainly due to the rural nature of the County. On May 15, 2009, lightning struck a utility pole on the east side of Monticello damaging the electrical systems and appliances in several homes.

According to data from Vaisala's National Lightning Detection Network, Piatt County averaged 6 to 20 cloud-to-ground lightning flashes per square mile annually between 2009 and 2018. **Figure SS-6** illustrates the cloud-to-ground lightning flash density (number of cloud-to-ground flashes per square mile per year) by county for the continental U.S. In comparison, Illinois averaged 12.7 cloud-to-ground lightning flashes per square mile from 2009 to 2018, ranking it eighth in the Country for lightning flash density.

Figure SS-6
Cloud-to-Ground Lightning Flash Density: Continental U.S.

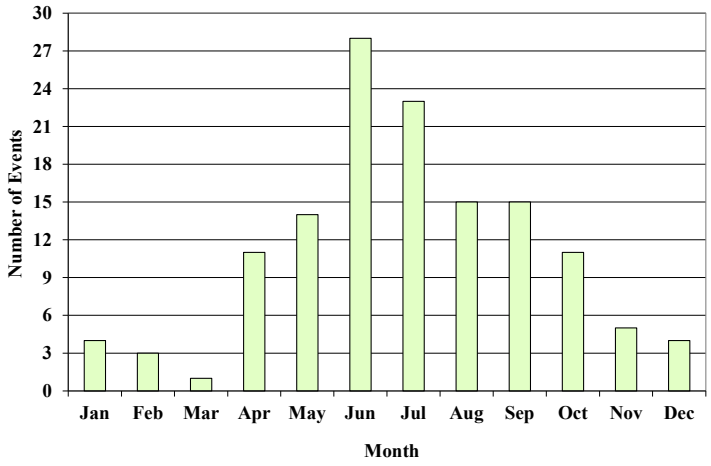


Heavy Rain

NOAA's Storm Events Database, Midwestern Regional Climate Center's cli-MATE database and National Weather Service's COOP data records were used to document 134 heavy rain events for Piatt County between 2000 and 2021. Of the 134 occurrences, 19 events (14%) produced three inches or more of rain.

Figure SS-7 charts the reported occurrences of heavy rain by month. Of the 134 events, 51 (38%) took place in June and July making this the peak period for heavy rain in Piatt County. Of these 51 events, 28 (55%) occurred during June, making this the peak month for heavy rains. Of the 43 events with recorded times, 58% started during in the p.m. hours.

Figure SS-7
Heavy Rain Events by Month
2000 - 2021



What locations are affected by severe storms?

Severe storms affect the entire County. A single severe storm event will generally extend across the entire County and affect multiple locations. The *2018 Illinois Natural Hazard Mitigation Plan* prepared by the Illinois Emergency Management Agency (IEMA) classifies Piatt County's hazard rating for severe storms as "severe." (IEMA's overall hazard rating system has five levels: very low, low, medium, high, and severe.)

What is the probability of future severe storm events occurring?

Thunderstorms with Damaging Winds

Piatt County has had 100 verified occurrences of thunderstorms with damaging winds between 1961 and 2021. With 100 occurrences over the past 61 years, Piatt County should expect to experience at least one thunderstorm with damaging winds in any given year. There were 14 years over the last 61 years where multiple (three or more) thunderstorms with damaging winds occurred. This indicates that the probability that multiple thunderstorms with damaging winds may occur during any given year within the County is 23%.

Hail

There have been 24 verified occurrences of hail one (1) inch in diameter or greater between 1981 and 2021. With 24 occurrences over the past 41 years, the probability or likelihood that a severe storm with damaging heal will occur in the County in any given year is 58.5%. There were 5 years over the last 41 years where two or more hail events occurred. This indicates that the probability that more than one severe storm with damaging hail may occur during any given year within the County is 12.2%.

Heavy Rain

Piatt County has had 134 heavy rain events between 2000 and 2021. With 134 occurrences over the past 22 years, the County should expect to experience approximately six heavy rain events each year.

HAZARD VULNERABILITY

The following describes the vulnerability to participating jurisdictions, identifies the impacts on public health and property (if known) and estimates the potential impacts on public health and safety as well as buildings, infrastructure, and critical facilities from severe storms.

Are the participating jurisdictions vulnerable to severe storms?

Yes. All of Piatt County is vulnerable to the dangers presented by severe storms due to the topography of the region and its location in relation to the movement of weather fronts across east-central Illinois. Since 2012, Piatt County has recorded 59 verified heavy rain event, 31 thunderstorms with damaging winds, and seven severe storms with hail one (1) inch in diameter or greater.

Figure SS-8 details the number thunderstorms with damaging winds and hail events that were recorded in or near each participating municipality while **Figure SS-9** details the number of thunderstorms with damaging winds and hail events that were recorded in or near unincorporated areas of Piatt County. The one verified lightning strike event occurred in Monticello.

Figure SS-8
Verified Severe Storm Events by Participating Municipality

Participating Municipality	Number of Events	
	Thunderstorm & High Wind	Severe Hail
Bement[1]	16	3
Cisco[2,6]	17	5
Hammond	7	2
Mansfield	10	1
Monticello[3,5,7]	24	5

[1] Bement CUSD #5
[2] Cisco FPD
[3] Monticello F&R
[4] Mid Piatt FPD
[5] Monticello Township
[6] Willow Branch Township
[7] Kirby Medical Center

Figure SS-9
Verified Severe Storm Events in Unincorporated Piatt County

Unincorporated Area	Number of Events	
	Thunderstorm & High Wind	Severe Hail
Galesville	3	0
LaPlace	2	1
Lodge	1	1
Milmine[1]	4	1
Pierson Station	2	1
White Heath[4]	6	3

Of the participating municipalities, Monticello has had more recorded occurrences of thunderstorms with damaging winds than any of the other municipalities and is tied with Cisco for the greatest number of recorded hail events. The difference in the number of recorded events is likely due to the relative size of the municipalities, as well as the fact that there are NWS COOP observation stations located in the Monticello area.

Do any of the participating jurisdictions consider severe storms to be among their community's greatest vulnerabilities?

Yes. Based on responses to a Critical Facilities Vulnerability Survey distributed to the participating jurisdictions, the following respondents considered severe storms to be among their jurisdiction's greatest vulnerabilities.

- *Piatt County:* The Piatt County Nursing Home is vulnerable to power outages caused by severe storms which could adversely impact patient care since the facility does not currently have an emergency backup generator. Communication towers in the County have been struck by lightning in the past making it difficult to dispatch first responders.
- *Bement*: The village wastewater treatment plant, as well as the wastewater lift stations, currently do not have back-up generators and are vulnerable to power outages caused by severe storms. If power is down for an extended period of time, wastewater will backup and could flood homes in low-lying areas. Heavy rain events have overwhelmed the stormwater system in the Village causing extensive flooding. The Village suffered a failure of a 24-inch storm main in July 2021 that caused a large sinkhole under the Norfolk Southern rail line and flooded about one-fifth of the Village. The system lacks manholes and access point needed to perform preventative maintenance. In addition, the wastewater treatment plant shows large increases in water volume during heavy rain events due to infiltration. The Village has had discussions regarding video reconnaissance to identify problem areas in order to address the issue.
- *Bement CUSD #5*: Power outages caused by severe storms have led to the loss of thousands of dollars of food when the freezers were without power. In addition, power outages also stop the boiler from running which could cause frozen pipes if the temperatures are low.
- *Cisco*: The trees in the Village have not been trimmed. During severe storms, high winds have the potential to down trees and tree limbs which could in turn down power lines impacting critical services to residents. If the water tower is struck and damaged by lightning, there is no backup water supply for the Village. The emergency backup generator at the Village's designated warming/cooling center is vulnerable to power outages caused by severe storms.
- *Hammond*: Heavy rain causes flooding at intersections within the Village impeding travel. The emergency backup generator at the water plant has to be turned on manually during power outages, such as those caused by severe storms, in order to maintain service to residents.
- *Kirby Medical Center*: A lightning strike in June 2022 caused $25,000 in damage the alarm system and small generator on the KMC Active Building. Straight-line winds could cause structural damage to our facilities.
- *Mansfield*: High winds associated with severe storms have occurred more frequently causing damage to properties within the Village.
- *Mid Piatt Fire Protection District*: During severe storms, high winds have the potential to down trees and power lines blocking roads and impeding travel and response times to residents in need. Heavy rains flood the main road through White Heath impeding travel and response times. Flooding impacts river roads within the district affecting response times and, in some areas, making response impossible.
- *Monticello*: Severe storms can down power lines causing outages that impact critical services to residents.
- *Monticello Fire & Rescue*: Lightning strikes and high winds associated with severe storms have the potential to down power lines which can block roads impacting travel and response

times. Communications can be affected by severe storms if power lines are downed, or critical infrastructure is damaged.

- *Monticello Township*: Heavy rain events cause flooding of low lying township roads impeding travel. Severe storms can impede travel when debris and power lines are downed on township roads. Cultural resources, such as cemeteries, have sustained damage to head stones and trees as the result of severe storms.
- *Willow Branch Township*: Many arterial roads have multiple trees that are prone to come down on township roads during severe storms impacting travel and causing damage to the roads.

What impacts resulted from the recorded severe storms?

Severe storms as a whole have caused an estimated $2,780,500 in recorded property damages and $75,000 in crop damages. The following provides a breakdown of impacts by category.

Thunderstorms with Damaging Winds

Data obtained from NOAA's Storm Events Database indicates that between 1961 and 2021, 45 of the 100 thunderstorms with damaging winds caused $2,465,000 in property damages and $60,000 in crop damages. Damage information was either unavailable or none was recorded for the remaining 55 reported occurrences.

NOAA's Storm Events Database documented one injury as the result of a thunderstorm with damaging wind event. On July 13, 2004, high winds blew a semi-truck off of Interstate 74 near Mansfield injuring the driver.

Severe Storms Fast Facts – Impacts/Risk

Thunderstorms with Damaging Winds Impacts:
- Total Property Damage (45 events): ***$2,465,000***
- Total Crop Damage (1 event): ***$60,000***
- Injuries (1 event): ***1***
- Fatalities: ***n/a***

Severe Hail Impacts:
- Total Property Damage (1 event): ***$255,000***
- Total Crop Damage (1 event): ***$15,000***
- Injuries: ***n/a***
- Fatalities: ***n/a***

Lightning Strike Impacts:
- Total Property Damage (1 event): ***$60,000***
- Total Crop Damage: ***n/a***
- Injuries: ***n/a***
- Fatalities: ***n/a***

Heavy Rain Impacts:
- Total Property Damage: ***n/a***
- Total Crop Damage: ***n/a***
- Injuries: ***n/a***
- Fatalities: ***n/a***

Severe Storms Risk/Vulnerability:
- Public Health & Safety: ***Low***
- Buildings/Infrastructure/Critical Facilities: ***Medium***

Hail

Data obtained from NOAA's Storm Events Database indicate that between 1981 and 2021, two of the 24 hail events caused $255,000 in property damages and $15,000 in crop damage. Damage information was either unavailable or none was recorded for the remaining 22 events.

No injuries or fatalities were reported as a result of any of the recorded hail events.

Lightning

Data obtained from NOAA's Storm Events Database indicate that on May 15, 2009, a lightning strike caused $60,000 in property damage to several homes in Monticello. No injuries or fatalities were reported as a result of this lightning strike event.

Heavy Rain

Damage information was either unavailable or none was recorded for the 134 heavy rain events between 2000 and 2021. No injuries or fatalities were reported as a result of any of the heavy rain events.

What other impacts can result from severe storms?

In Piatt County, the greatest risk to health and safety from severe storms is vehicle accidents. Hazardous driving conditions resulting from severe storms (i.e., wet pavement, poor visibility, high winds, etc.) can contribute to accidents that result in injuries and fatalities. Traffic accident data assembled by the Illinois Department of Transportation from 2015 through 2019 indicates that wet road surface conditions were present for 10.5% to 16.6% of all crashes recorded annually in the County.

While other circumstances cause wet road surface conditions (i.e., melting snow, condensation, light showers, etc.), law enforcement officials agree that hazardous driving conditions caused by severe storms add to the number of crashes. **Figure SS-10** provides a breakdown by year of the number of crashes and corresponding injuries and fatalities that occurred when wet road surface conditions were present.

Figure SS-10
Severe Weather Crash Data for Piatt County

Year	Total # of Crashes	Presence of Wet Road Surface Conditions		
		# of Crashes	# of Injuries	# of Fatalities
2015	242	30	14	0
2016	228	24	7	1
2017	232	26	10	0
2018	219	30	10	0
2019	235	39	16	0
Total:	**1,156**	**149**	**57**	**1**

Source: Illinois Department of Transportation.

What is the level of risk/vulnerability to public health and safety from severe storms?

For Piatt County, the level of risk or vulnerability posed by severe storms to public health and safety is considered to be ***low***. This assessment is based on the fact that despite their relative frequency, the number of injuries and fatalities is low. In addition, Kirby Medical Center in Monticello is equipped to provide medical care to persons injured during a severe storm, as are hospitals in Champaign (Champaign County), Clinton (DeWitt County), Decatur (Macon County), and Bloomington-Normal (McLean County).

Are existing buildings, infrastructure, and critical facilities vulnerable to severe storms?

Yes. All existing buildings, infrastructure and critical facilities located in Piatt County and the participating jurisdictions are vulnerable to damage from severe storms. Structural damage to buildings is a relatively common occurrence with severe storms. Damage to roofs, siding, awnings, and windows can occur from hail, flying and falling debris and high winds. Lightning strikes can damage electrical components and equipment (i.e., appliances, computers etc.) and can

cause fires that consume buildings. If the roof is compromised or windows are broken, rain can cause additional damage to the structure and contents of a building.

Infrastructure and critical facilities tend to be just as vulnerable to severe storm damage as buildings. The infrastructure and critical facilities that are the most vulnerable to severe storms are related to power distribution and communications. High winds, lightning and flying and falling debris have the potential to cause damage to communication and power lines; power substations; transformers and poles; and communication antennas and towers.

The damage inflicted by severe storms often leads to disruptions in communication and creates power outages. Depending on the damage, it can take anywhere from several hours to several days to restore service. Power outages and disruptions in communications can impair vital services, particularly when backup power generators are not available. Three of the participating jurisdictions acknowledged the need for emergency backup generators to allow continued operation of critical facilities such as lift stations, warming/cooling centers, and schools.

According to the Critical Facilities Vulnerability Survey completed by the participants, all participating jurisdictions that operate drinking water and wastewater facilities have a backup generator for these facilities, with the exception of the wastewater facility in Bement. Bement, Mansfield, and Monticello have backup generators at their administrative buildings, but Cisco and Hammond do not.

In addition to affecting power distribution and communications, debris and flooding from severe storms can block state and local roads hampering travel. When transportation is disrupted, emergency and medical services are delayed, rescue efforts are hindered, and government services can be affected.

Based on the frequency with which severe storms occur in Piatt County, the amount of property damage previously reported and the potential for disruptions to power distribution and communication; the risk or vulnerability to buildings, infrastructure and critical facilities from severe storms is ***medium***.

Are future buildings, infrastructure, and critical facilities vulnerable to severe storms?

Yes and No. While Cisco and Monticello have building codes in place that will likely help lessen the vulnerability of new buildings and critical facilities to damage from severe storms, the County and the three remaining participating municipalities do not.

In addition, infrastructure such as new communication and power lines will continue to be vulnerable to severe storms as long as they are located above ground. High winds, lightning and flying and falling debris can disrupt power and communication. Steps to bury all new lines would eliminate the vulnerability, but this action would be cost prohibitive in most areas.

What are the potential dollar losses to vulnerable structures from severe storms?

Unlike other natural hazards, such as tornadoes, there are no standard loss estimation models or methodologies for severe storms. With only 48 of the 259 recorded events listing property damage numbers for all categories of severe storms, there is no way to accurately estimate future potential

dollar losses. However, according to the Piatt County Chief County Assessment Officer the total equalized assessed values of buildings in the planning area is $373,307,756. Since all of the structures in the planning area are vulnerable to damage, this total represents the countywide property exposure to severe storm events.

3.2 FLOODS

HAZARD IDENTIFICATION

What is the definition of a flood?

The Federal Emergency Management Agency (FEMA) defines a "flood" as a general or temporary condition where two or more acres of normally dry land or two or more properties are inundated by:

- overflow of inland or tidal waters;
- unusual and rapid accumulation or runoff of surface waters from any source;
- mudflows; or
- a sudden collapse or subsidence of shoreline land.

The severity of a flooding event is determined by a combination of topography and physiography, ground cover, precipitation and weather patterns and recent soil moisture conditions. On average, flooding causes more than $5 billion in damages each year in the U.S. Floods cause utility damage and outages, infrastructure damage (both to transportation and communication systems), structural damage to buildings, crop loss, decreased land values and impede travel.

What types of flooding occur in the County?

There are two main types of flooding that affect Piatt County: general flooding and flash flooding. General flooding can be broken down into two categories: riverine flooding and shallow flooding. The following provides a brief description of each type.

General Flooding – Riverine Flooding

Riverine flooding occurs when the water in a river or stream gradually rises and overflows its banks. This type of flooding affects low lying areas near rivers, streams, lakes, and reservoirs and generally occurs when:

- persistent storm systems enter the area and remain for extended periods of time,
- winter and spring rains combine with melting snow to fill river basins with more water than the river or stream can handle,
- ice jams create natural dams which block normal water flow, and
- torrential rains from tropical systems make landfall.

General Flooding – Shallow Flooding

Shallow flooding occurs in flat areas where there are no clearly defined channels (i.e., rivers and streams) and water cannot easily drain away. There two main types of shallow flooding: sheet flow and ponding. If the surface runoff cannot find a channel, it may flow out over a large area at a somewhat uniform depth in what's called sheet flow. In other cases, the runoff may collect in depressions and low-lying areas where it cannot drain out, creating a ponding effect. Ponding floodwaters do not move or flow away, they remain in the temporary ponds until the water can infiltrate the soil, evaporate, or are pumped out.

Flash Floods

Flash flooding occurs when there is a rapid rise of water along a stream or low-lying area. This type of flooding generally occurs within six hours of a significant rain event and is usually produced when heavy localized precipitation falls over an area in a short amount of time. Considered the most dangerous type of flood event, flash floods happen quickly with little or no warning. Typically, there is no time for the excess water to soak into the ground nor are the storm sewers able to handle the sheer volume of water. As a result, streams overflow their banks and low-lying (such as underpasses, basements etc.) areas can rapidly fill with water.

Flash floods are very strong and can tear out trees, destroy buildings and bridges and roll boulders the size of cars. Flash flood-producing rains can also weaken soil and trigger debris flows that damage homes, roads, and property. A vehicle caught in swiftly moving water can be swept away in a matter of seconds. Twelve inches of water can float a car or small SUV and 18 inches of water can carry away large vehicles.

What is a base flood?

A base flood refers to any flood having a 1% chance of occurring in any given year. It is also known as the 100-year flood or the one percent annual chance flood. The base flood is the national standard used by the National Flood Insurance Program (NFIP) and the State of Illinois for the purposes of requiring the purchase of flood insurance and regulating new development.

Many individuals misinterpret the term "100-year flood". This term is used to describe the risk of future flooding; it does not mean that it will occur once every 100 years. Statistically speaking, a 100-year flood has a 1/100 (1%) chance of occurring in any given year. In reality, a 100-year flood could occur two times in the same year or two years in a row, especially if there are other contributing factors such as unusual changes in weather conditions, stream channelization or changes in land use (i.e., open space land developed for housing or paved parking lots). It is also possible not to have a 100-year flood event over the course of 100 years.

While the base flood is the standard most commonly used for floodplain management and regulatory purposes in the U.S., the 500-year flood is the national standard for protecting critical facilities, such as hospitals and power plants. A 500-year flood has a 1/500 (0.2%) chance of occurring in any given year.

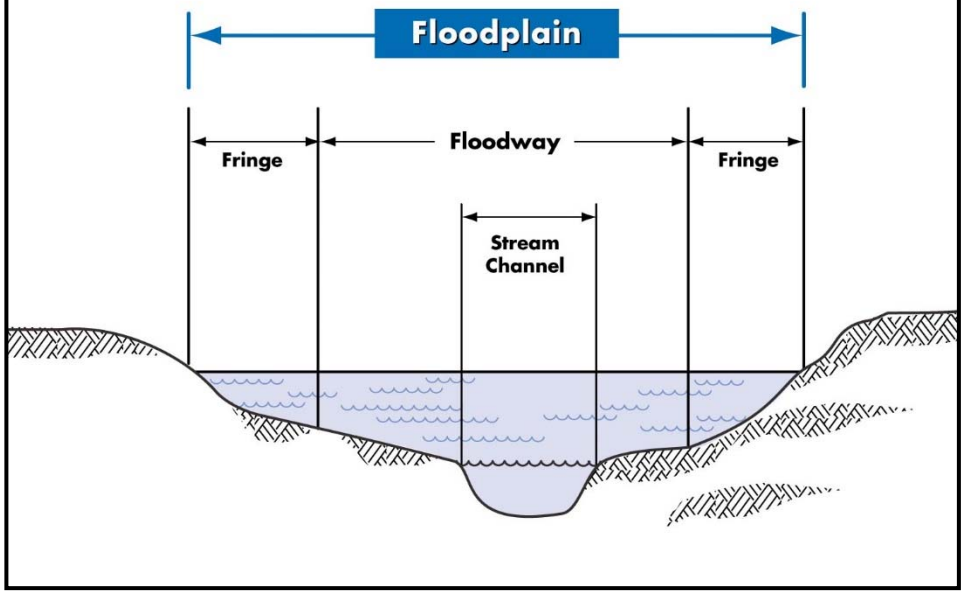
What is a floodplain?

The general definition of a floodplain is any land area susceptible to being inundated or flooded by water from any source (i.e., river, stream, lake, estuary, etc.). This general definition differs slightly from the regulatory definition of a floodplain.

A regulatory or base floodplain is defined as the land area that is covered by the floodwaters of the base flood. This land area is subject to a 1% chance of flooding in any given year. The base floodplain is also known as the 100-year floodplain or a Special Flood Hazard Area (SFHA). It is this second definition that is generally most familiar to people and the one that is used by the NFIP and the State of Illinois.

A base floodplain is divided into two parts: the floodway and the flood fringe. **Figure F-1** illustrates the various components of a base floodplain.

Figure F-1
Floodplain Illustration



Source: Illinois Department of Natural Resources, Quick Guide to Floodplain Management.

The floodway is the channel of a river or stream and the adjacent floodplain that is required to store and convey the base flood without increasing the water surface elevation. Typically, the floodway is the most hazardous portion of the floodplain because it carries the bulk of the base flood downstream and is usually the area where water is deepest and is moving the fastest. Floodplain regulations prohibit construction within the floodway that results in an increase in the floodwater's depth and velocity.

The flood fringe is the remaining area of the base floodplain, outside of the floodway, that is subject to shallow inundation and low velocity flows. In general, the flood fringe plays a relatively insignificant role in storing and discharging floodwaters. The flood fringe can be quite wide on large streams and quite small or nonexistent on small streams. Development within the flood fringe is typically allowed via permit if it will not significantly increase the floodwater's depth or velocity and the development is elevated above or otherwise protected to the base flood elevation.

What is a Special Flood Hazard Area?

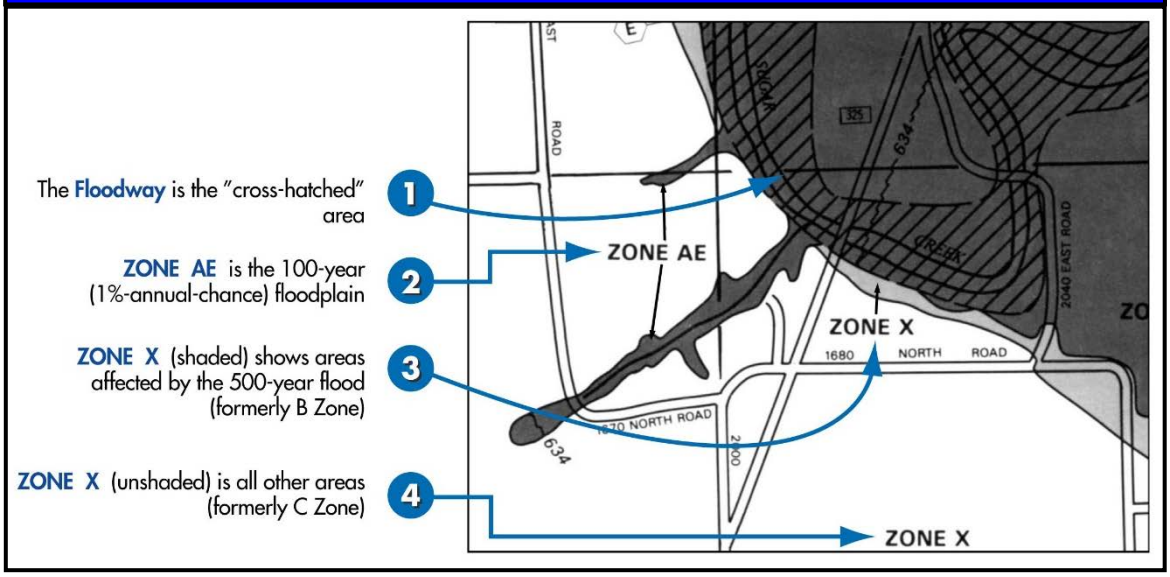
A Special Flood Hazard Area (SFHA) is the base floodplain. As discussed previously, this is the land area that is covered by the floodwaters of the base flood and has a 1% chance of flooding in any given year. The term SFHA is most commonly used when referring to the based floodplain on the Flood Insurance Rate Maps (FIRM) produced by FEMA. The SFHA is the area where floodplain regulations must be enforced by a community as a condition of participation in the NFIP and the area where mandatory flood insurance purchase requirements apply. SFHA are delineated

on the FIRMs and may be designated as Zones A, AE, A1-30, AO, AH, AR, and A99 depending on the amount of flood data available, the severity of the flood hazard or the age of the flood map.

What are Flood Insurance Rate Maps?

Flood Insurance Rate Maps (FIRMs) are maps that identify both the SFHA and the risk premium zones applicable to a community. These maps are produced by FEMA in association with the NFIP for floodplain management and insurance purposes. Digital versions of these maps are referred to as DFIRMs. **Figure F-2** shows an example of a FIRM.

Figure F-2
Example of a Flood Insurance Rate Map (FIRM)



Source: Illinois Department of Natural Resources, Quick Guide to Floodplain Management.

A FIRM will generally show a community's base flood elevations, flood zones and floodplain boundaries. The information presented on a FIRM is based on historic, meteorological, hydrologic, and hydraulic data as well as open-space conditions, flood-control projects, and development. ***These maps only define flooding that occurs when a creek or river becomes overwhelmed. They do not define overland flooding that occurs when an area receives extraordinarily intense rainfall and storm sewers, and roadside ditches are unable to handle the surface runoff.***

What are flood zones?

Flood zones are geographic areas that FEMA has defined according to varying levels of flood risk and type of flooding. These zones are depicted on a community's FIRM. The following provides a brief description of each flood zone.

- **Zone A.** Zone A, also known as the Special Flood Hazard Area (SFHA) or base floodplain, is defined as the floodplain area that has a 1% chance of flooding in any given year. There are multiple Zone A designations, including Zones A, AO, AH, A1-30, AE, AR or A99. Land areas located within Zone A are considered high-risk flood areas.

During a 30-year period, the length of many mortgages, there is at least a 1 in 4 chance that flooding will occur in a SFHA. The purchase of flood insurance is mandatory for all buildings in SFHAs receiving federal or federally-related financial assistance.

- **Zone X (shaded).** Zone X (shaded), formerly known as Zone B, is defined as the floodplain area between the limits of the base flood (Zone A) and the 500-year flood. Land areas located within Zone X (shaded) are affected by the 500-year flood and are considered at a moderate risk for flooding.

  Zone X (shaded) is also used to designate base floodplains of lesser hazards, such as areas protected by levees from 100-year flood, shallow flooding areas with average depths of less than one foot or drainage areas less than one square mile. While flood insurance is not federally required in Zone X (shaded), it is recommended for all property owners and renters.

- **Zone X (unshaded).** Zone X (unshaded), formerly known as Zone C, is defined as all other land areas outside of Zone A and Zone X (shaded). Land areas located in Zone X (unshaded) are considered to have a low or minimal risk of flooding. While flood insurance is not federally required in Zone X (unshaded), it is recommended for all property owners and renters.

What is a Repetitive Loss Structure or Property?

FEMA defines a "repetitive loss structure" as a National Flood Insurance Program-insured structure that has received two or more flood insurance claim payments of more than $1,000 each within any 10-year period since 1978. These structures/properties account for approximately one-fourth of all National Flood Insurance Program (NFIP) insurance claim payments since 1978.

Currently, repetitive loss properties make up about 2% of all NFIP policies, and account for approximately $9 billion in claims or approximately 16% of the total claims paid over the history of the Program. These structures not only increase the NFIP's annual losses, but they also drain funds needed to prepare for catastrophic events. As a result, FEMA and the NFIP are working with states and local governments to mitigate these properties.

What is floodplain management?

Floodplain management is the administration of an overall community program of corrective and preventative measures to reduce flood damage. These measures take a variety of forms and generally include zoning, subdivision or building requirements, special-purpose floodplain ordinances, flood control projects, education, and planning. Where floodplain development is permitted, floodplain management provides a framework that minimizes the risk to life and property from floods by maintaining a floodplain's natural function. Floodplain management is a key component of the National Flood Insurance Program.

What is the National Flood Insurance Program?

The National Flood Insurance Program (NFIP) is a federal program, administered by FEMA, that:

- mitigates future flood losses nationwide through community-enforced building and zoning ordinances; and

- provides access to affordable, federally-backed insurance protection against losses from flooding to property owners in participating communities.

It is designed to provide an insurance alternative to disaster assistance to meet escalating costs of repairing damage to buildings and their contents due to flooding. The U.S. Congress established the NFIP on August 1, 1968 with the passage of the National Flood Insurance Act of 1968. This Program has been broadened and modified several times over the years, most recently with the passage of the Flood Insurance Reform Act of 2004.

Prior to the creation of the NFIP, the national response to flood disasters was generally limited to constructing flood-control projects such as dams, levees, sea-walls, etc. and providing disaster relief to flood victims. While flood-control projects were able to initially reduce losses, their gains were offset by unwise and uncontrolled development practices within floodplains. In light of the continued increase in flood losses and the escalating costs of disaster relief to taxpayers, the U.S. Congress created the NFIP. The intent was to reduce future flood damage through community floodplain management ordinances and provide protection for property owners against potential losses through an insurance mechanism that requires a premium to be paid for protection.

Participation in the NFIP is voluntary and based on an agreement between local communities and the federal government. If a community agrees to adopt and enforce a floodplain management ordinance to reduce future flood risks to new construction in a SFHA (base floodplain), then the government will make flood insurance available within the community as a financial protection against flood losses.

If a community chooses not to participate in the NFIP or a participating community decides not to adopt new floodplain management regulations or amend its existing regulations to reference new flood hazard data provided by FEMA, then the following sanctions will apply.

- Property owners will not be able to purchase NFIP flood insurance policies and existing policies will not be renewed.
- Federal disaster assistance will not be provided to repair or reconstruct insurable buildings located in identified flood hazard areas for presidentially-declared disasters that occur as a result of flooding.
- Federal mortgage insurance and loan guarantees, such as those written by the Federal Housing Administration and the Department of Veteran Affairs, will not be provided for acquisition or construction purposes within an identified flood hazard area. Federally-insured or regulated lending institutions, such as banks and credit unions, are allowed to make conventional loans for insurable buildings in identified flood hazard areas of non-participating communities. However, the lender must notify applicants that the property is in an identified flood hazard area and that it is not eligible for federal disaster assistance.
- Federal grants or loans for development will not be available in identified flood hazard areas under programs administered by federal agencies such as the Environmental Protection Agency, Small Business Administration and the Department of Housing and Urban Development.

What is the NFIP's Community Rating System?

The NFIP's Community Rating System (CRS) is a voluntary program developed by FEMA to provide incentives (in the form of flood insurance premium discounts) for NFIP participating communities that have gone beyond the minimum NFIP floodplain management requirements to develop extra measures to provide protection from flooding. CRS discounts on flood insurance premiums range from 5% up to 45%. The discounts provide an incentive for communities to implement new flood protection activities that can help save lives and property when a flood occurs.

Are alerts issued for flooding?

Yes. The National Weather Service Weather Forecast Office in Lincoln, Illinois is responsible for issuing ***flood watches*** and ***warnings*** for Piatt County depending on the weather conditions. The following provides a brief description of each type of alert.

- **Flood Watches.** A flood watch is issued when flooding or flash flooding is possible. It does not mean that flooding will occur, just that conditions are favorable. Individuals need to be prepared.
- **Flood Advisories.** A flood advisory is issued when flooding may cause significant inconvenience but is not expected to be to pose an immediate threat to life and/or property. Individuals need to be aware.
- **Warnings.** Warnings indicate a serious threat to life and/or property.
  - **Flood Warning**. A flood warning is issued when flooding is occurring or will occur soon and is expected to last for several days or weeks.
  - **Flash Flood Warning.** A flash flood warning is issued when flash flooding is occurring or is imminent. Flash flooding occurs very quickly so individuals are advised to take action immediately.

HAZARD PROFILE

The following identifies past occurrences of floods; details the severity or extent of each event (if known); identifies the locations potentially affected; and estimates the likelihood of future occurrences.

When has flooding occurred previously? What is the extent of these previous floods?

Tables 5 and **6**, located in **Appendix I**, summarize the previous occurrences as well as the extent or magnitude of flood events recorded in Piatt County. The flood events are separated into two categories: general floods (riverine and shallow/overland) and flash floods.

General Floods

NOAA's Storm Events Database, NWS's Advanced Hydrologic Prediction Service, and the U.S. Army Corps of Engineers' river gauge data records were used to document 83 occurrences of general flooding in Piatt County between 1990 and 2021. Included in the general flood events is one event that contributed to a federally-declared disaster for Piatt County.

Based on historical gauge data, the record setting Sangamon River flood in this area occurred on April 13, 1994 when the Sangamon River crested at 19.06 feet at Monticello. The second and third highest crests at this location occurred in 2008 and 2015 respectively.

Flood Fast Facts – Occurrences

Number of General Floods Reported (1990 – 2021): ***83***

Number of Flash Floods Reported (1990 – 2021): ***55***

Most Likely Month for General Floods to Occur: ***June***

Most Likely Month for Flash Floods to Occur: ***June***

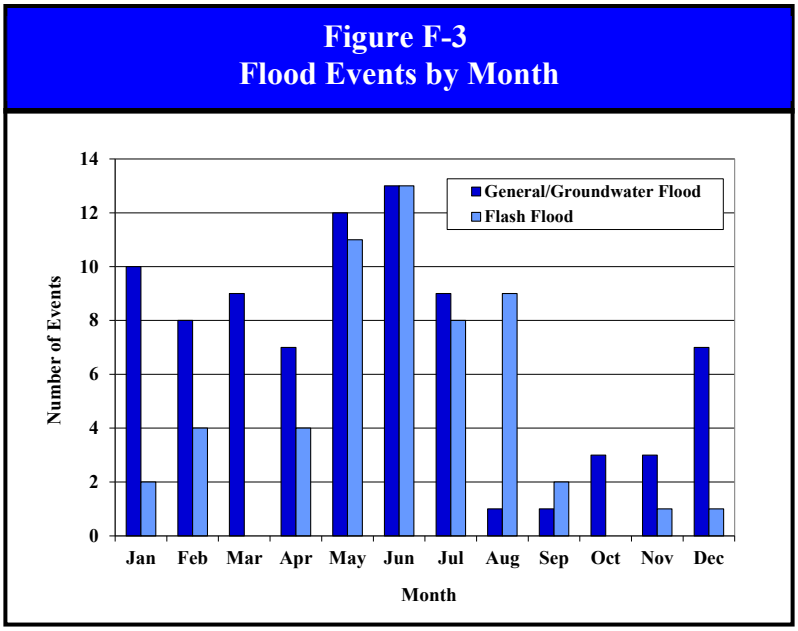
Number of Federal Disaster Declarations Related to General and Flash Flooding: ***2***

Flash Floods

NOAA's Storm Events Database and Iowa State University's National Weather Service Watch, Warning, and Advisories database were used to document 55 reported occurrences of flash flooding in Piatt County between 1990 and 2021. Included in the 55 flash flood events is one event that contributed to a federally-declared disaster in Piatt County.

Figure F-3 charts the reported occurrences of flooding by month. Of the 83 general flood events, 25 (30%) began in May, June, and July making these the peak period for general flooding. Of those 34 events, 13 (38%) began during June making this the peak month for general flooding. There were 12 events that spanned two or more months; however, for illustration purposes only the month the event started in is graphed.

Figure F-3
Flood Events by Month



In comparison, 24 of the 55 flash flood events (44%) took place between May and June making this the peak period for flash floods. Of the 24 events, 13 (54%) occurred in June making this the peak month for flash flooding. Of the flash flood events with recorded times, approximately 52% began during the p.m. hours.

What locations are affected by floods?

While specific locations are affected by general flooding, most areas of the County can be impacted by overland and flash flooding because of the topography and seasonally high water table of the area. In Piatt County, approximately 5.7% of the area in County is designated as being within the base floodplain and susceptible to riverine floods. The *2018 Illinois Natural Hazard Mitigation Plan* classifies Piatt County's hazard rating for floods as "low."

Figure F-4 identifies the floodplains in Piatt County as well as the participating jurisdictions. This map is based on the Piatt County DFRIMs that became effective June 16, 2011. While a large portion of the area prone to riverine flooding is in unincorporated portions of the County, Mansfield and Monticello are also susceptible to riverine flooding because of their proximity to floodplains. **Appendix J** contains maps identifying the floodplains located in each of the participating municipalities.

Figure F-5 identifies the bodies of water within or immediately adjacent to participating jurisdictions that are known to cause flooding or have the potential to flood. Water bodies with Special Flood Hazard Areas located within a participating jurisdiction (as identified on the DFIRMs) are identified in bold.

Figure F-5
Bodies of Water Subject to Flooding

Participating Jurisdiction	Water Bodies
Bement	**Unnamed Tributary Lake Fork**
Cisco	Unnamed Tributary of Friends Creek
Hammond	---
Mansfield	**Madden Creek**
Monticello	**Camp Creek, Sangamon River, Unnamed Tributaries of Sangamon River**
Unincorporated Piatt County	Blue Ridge Special Creek, **Camp Creek, Ditch Number 3, Ditch Number 4, Friends Creek, Goose Creek, Hammond Mutual Ditch,** Kankakee Drainage Ditch, **Lake Fork Special Ditch, Madden Creek, Sangamon River,** South Branch Salt Creek, Wildcat Creek, **Willow Branch Creek,** Wolf Run Ditch, **Unity Ditch Number 3,** Unnamed Tributary of Friends Creek, **Unnamed Tributaries of Lake Fork Special Ditch,** Unnamed Tributary of Okaw River, **Unnamed Tributary of Sangamon River**

Source: FEMA's DFIRMs.

Municipal, Township, and County officials have reported overland flood issues outside of the base floodplain in most of the participating municipalities and many unincorporated portions of the County. This overland flooding is known to impair travel.

What jurisdictions within the County take part in the NFIP?

Participating Jurisdictions

Piatt County, Cisco, Mansfield, and Monticello participate in the NFIP. **Figure F-6** ***provides information on each NFIP-participating jurisdiction,*** including the date each participant joined, the date of their current effective FIRM and the year of their most recently adopted floodplain zoning ordinance. Bement and Hammond have no identified flood hazard boundaries within their corporate limits and do not wish to participate in the NFIP at this time.

Figure F-4
Floodplain Areas in Piatt County

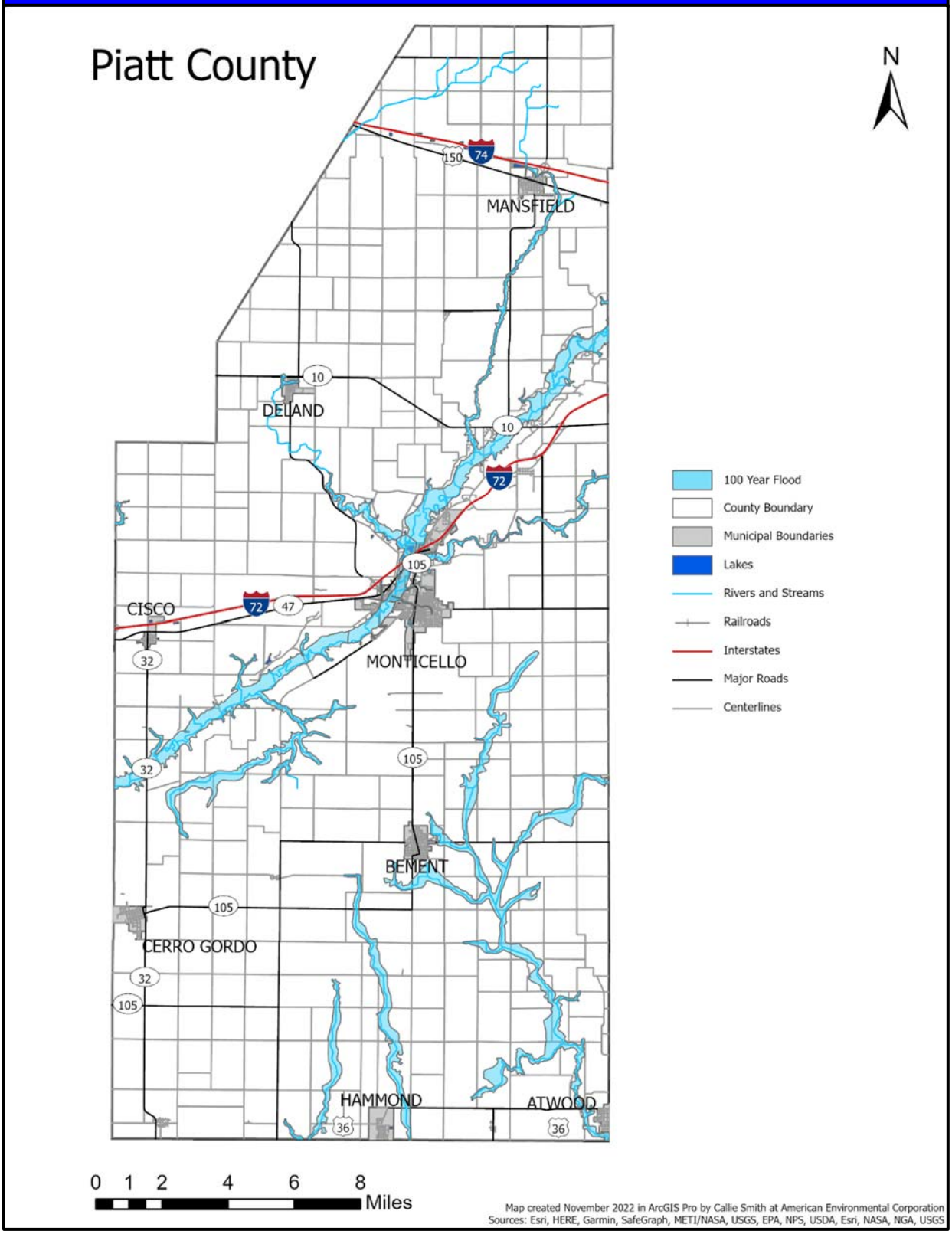


Figure F-6 NFIP Participating Jurisdictions				
Participating Jurisdictions	**Participation Date**	**Current Effective FIRM Date**	**CRS Participation**	**Most Recently Adopted Floodplain Zoning Ordinance**
Piatt County	09/01/1986	06/16/2011	No	2011
Cisco	06/16/2011	06/16/2011 (NSFHA*)	No	2011
Mansfield	06/16/2011	06/16/2011	No	2011
Monticello	05/15/1991	06/16/2011	No	2011

* No Special Flood Hazard Areas

Sources: FEMA, Community Status Book Report: Illinois.
FEMA, National Flood Insurance Program Insurance Manual.

Non-Participating Jurisdictions

Figure F-7 provides information on those incorporated municipalities within the County that chose not to participate in the planning process but take part in the NFIP. Cerro Gordo has no identified flood hazard boundaries within its corporate limits and has chosen not to participate in the Program.

Figure F-7 Non-Participating Jurisdiction NFIP Status				
Participating Jurisdictions	**Participation Date**	**Current Effective FIRM Date**	**CRS Participation**	**Most Recently Adopted Floodplain Zoning Ordinance**
DeLand	09/04/1987	06/16/2011	No	2011

Sources: FEMA, Community Status Book Report: Illinois.
FEMA, National Flood Insurance Program Insurance Manual.

Jurisdictions that participate in the NFIP are expected to adopt and enforce floodplain management regulations. In Piatt County, all the NFIP-participating jurisdictions have adopted floodplain ordinance and as a result, are in compliance with NFIP requirements. This ordinance goes above and beyond NFIP minimum standards and has much more restrictive floodway regulations. As a result, all of the NFIP-participating jurisdictions are in compliance with NFIP requirements.

Participating jurisdictions will continue to comply with the NFIP by implementing mitigation projects and activities that enforce this ordinance to reduce future flood risks to new construction within the SFHA. At this time no new construction is planned within the base floodplain. Continued compliance with NFIP requirements is addressed in the Mitigation Action Tables of the participating jurisdictions found in Section 4.7.

What is the probability of future flood events occurring?

General Floods

Piatt County has had 83 verified occurrences of general flooding between 1990 and 2021. With 83 occurrences over the past 32 years, the County should expect at least two general flood events in any given year. There were 22 years over the past 32 years where two or more general flood

events occurred. This indicates that the probability or likelihood that more than one general flood event may occur during any given year within the County is 68.8%.

Flash Floods

There have been 55 verified flash flood events between 1990 and 2021. With 55 occurrences over the past 32 years, the County should expect at least one flash flood event in any given year. There were 16 years over the past 32 years where two or more flash flood events occurred. This indicates that the probability that more than one flash flood event may occur during any given year within the County is approximately 50%.

HAZARD VULNERABILITY

The following describes the vulnerability to participating jurisdictions, identifies the impacts on public health and property (if known) and estimates the potential impacts on public health and safety as well as buildings, infrastructure, and critical facilities from floods.

Several factors including topography, precipitation, and an abundance of rivers and streams make Illinois especially vulnerable to flooding. According to the Illinois State Water Survey's Climate Atlas of Illinois, since the 1940s Illinois climate records have shown an increase in heavy precipitation, which has led to increased flood peaks on Illinois rivers.

Are the participating jurisdictions vulnerable to flooding?

Yes. Piatt County and the participating jurisdictions are vulnerable to the dangers presented by flooding. Precipitation levels and topography are factors that cumulatively make virtually the entire County susceptible to some form of flooding. Flooding occurs along the floodplains of all the rivers, streams, and creeks within the County as well as outside of the floodplains in low-lying areas where drainage problems occur. Since 2012, Piatt County has experienced 32 general flood events and 25 flash flood events.

Of the 55 flash flood events, 51 have impacted either a large portion or the entire County and were not location specific. Of the four remaining events, one took place in Monticello, one took place in DeLand, one took place in LaPlace, and one took place in White Heath and unincorporated Lodge.

Vulnerability to flooding can change depending on several factors, including land use. As land used primarily for agricultural and open space purposes is converted for residential and commercial/industrial uses, the number of buildings and impervious surfaces (i.e., parking lots, roads, sidewalks, etc.) increases. As the number of buildings and impervious surfaces increases, so too does the potential for flash flooding. Rather than infiltrating the ground slowly, rain and snowmelt that falls on impervious surfaces runs off and fills ditches and storm drains quickly creating drainage problems and flooding.

As described in Section 1.3 Land Use and Development Trends, substantial changes in land use (from forested, open, and agricultural land to residential, commercial, and industrial) are not anticipated within the County in the immediate future. No substantial increases in residential or commercial/industrial developments are expected within the next five years.

Do any of the participating jurisdictions consider flooding to be among their community's greatest vulnerabilities?

Yes. Based on responses to a Critical Facilities Vulnerability Survey distributed to the participating jurisdictions, the following respondents considered flooding to be among their jurisdiction's greatest vulnerabilities.

- *Piatt County:* Flood events can cause structural damage to roadways and bridges, which has the potential to adversely impact travel.
- *Hammond*: Heavy rain causes flooding at intersections within the Village impeding travel.
- *Mansfield*: The Village sits low and experiences street flooding as well as residential property flooding that damages homes, structures, and land conditions.
- *Monticello*: The City experiences flooding with stormwater runoff impacting several areas of town differently depending on the severity, frequency, and flood stage of the Sangamon River.
- *Mid Piatt Fire Protection District*: Heavy rains flood the main road through White Heath impeding travel and response times. Flooding impacts river roads within the district affecting response times and, in some areas, making response impossible.
- *Monticello Township*: Heavy rain events cause flooding of low lying township roads impeding travel and requiring road and bridge repairs.
- *Willow Branch Township*: Hog Chute Bridge over the Sangamon River and roads leading to the bridge have flooded in the past impeding travel. This is the main arterial bridge through the township. Flooding has also washed out culverts in the township.

What impacts resulted from the recorded floods?

Floods as a whole have caused a *minimum* of $1.5 million in property damages. The following provides a breakdown by category.

In comparison, the State of Illinois has averaged an estimated $257 million annually in property damage losses, making flooding the single most financially damaging natural hazard in Illinois.

Flood Fast Facts – Impacts/Risk

General Flood Impacts:
- Total Property Damage: ***n/a***
- Total Crop Damage: ***n/a***
- Injuries: ***n/a***
- Fatalities: ***n/a***

Flash Flood Impacts:
- Total Property Damage (2 events): ***$1,510,000***
- Total Crop Damage: ***n/a***
- Injuries: ***n/a***
- Fatalities: ***n/a***

Flood Risk/Vulnerability to:
- Public Health & Safety – General Flooding: ***Low***
- Public Health & Safety – Flash Flooding: ***Medium***
- Buildings/Infrastructure/Critical Facilities: ***Medium to High***

General Floods

Damage information was either unavailable or none was recorded for any of the reported general flood occurrences and no injuries or fatalities were reported.

Flash Floods

Data obtained from NOAA's Storm Events Database indicates that between 1990 and 2021, two of the 55 flash flood events caused $1,510,000 in property damages. Damage information was either unavailable or none was recorded for the remaining 53 reported occurrences. No injuries or fatalities were reported as a result of any of the recorded events.

What other impacts can result from flooding?

One of the primary threats from flooding is drowning. Nearly half of all flash flood fatalities occur in vehicles as they are swept downstream. Most of these fatalities take place when people drive into flooded roadway dips and low drainage areas. It only takes two feet of water to carry away most vehicles.

Floodwaters also pose biological and chemical risks to public health. Flooding can force untreated sewage to mix with floodwaters. The polluted floodwaters then transport the biological contaminants into buildings and basements and onto streets and public areas. If left untreated, the floodwaters can serve as breeding grounds for bacteria and other disease-causing agents. Even if floodwaters are not contaminated with biological material, basements and buildings that are not properly cleaned can grow mold and mildew, which can pose a health hazard, especially for small children, the elderly, and those with specific allergies.

Flooding can also cause chemical contaminants such as gasoline and oil to enter the floodwaters if underground storage tanks or pipelines crack and begin leaking during a flood event. Depending on the time of year, floodwaters also may carry away agricultural chemicals that have been applied to farm fields.

Structural damage, such as cracks forming in a foundation, can also result from flooding. In most cases, however, the structural damage sustained during a flood occurs to the flooring, drywall, and wood framing. In addition to structural damage, a flood can also cause serious damage to a building's content.

Infrastructure and critical facilities are also vulnerable to flooding. Roadways, culverts, and bridges can be weakened by floodwaters and have been known to collapse under the weight of a vehicle. Buried power and communication lines are also vulnerable to flooding. Water can infiltrate lines and cause disruptions in power and communication.

What is the level of vulnerability to public health and safety from floods?

While both general and flash floods occur on a regular basis within the County, the number of injuries and fatalities is low. In terms of the risk or vulnerability to public health and safety from *general floods*, the risk is seen as ***low***. However, almost half of the recorded flood events were the result of flash flooding. Since there is very little warning associated with flash flooding the risk to public health and safety from *flash floods* is elevated to ***medium***.

Are there any repetitive loss structures/properties within Piatt County?

Yes. According to information obtained from IEMA, there is one repetitive loss structure located in Mansfield. As described previously, FEMA defines a "repetitive loss structure" as an NFIP-insured structure that has received two or more flood insurance claim payments of more than $1,000 each within any 10-year period since 1978.

Figure F-8 identifies the repetitive flood loss structures by participating jurisdiction and provides the total flood insurance claim payments. The exact location and/or address of the insured structures are not included in this Plan to protect the owners' privacy. According to IEMA, there

have been 123 flood insurance claim payments totaling $1,768,195.65 for the 30 repetitive flood loss structures.

Figure F-8
Repetitive Flood Loss Structures

Participating Jurisdiction	Structure Type	Number of Structures	Number of Claim Payments	Flood Insurance Claim Payments		Total Flood Insurance Claim Payments
				Structure	Content	
Mansfield	Single Family	1	2	$71,665.39	$50,000.00	$121,665.39

Source: Illinois Emergency Management Agency

Are existing buildings, infrastructure, and critical facilities vulnerable to flooding?

Yes. **Figure F-9** identifies the *estimated number* of existing structures by participating jurisdiction located within a floodplain. These counts were prepared by the Consultant using FEMA's National Flood Hazard Layer and building footprints prepared by the Illinois State Water Survey. **Figure F-10** identifies the *estimated number* of existing structures by township located within the base floodplain. It should be noted that while the identified structures are located in a floodplain, the actual number impacted may differ during an actual flood event.

Figure F-9
Existing Buildings, Infrastructure and Critical Facilities Located in a Floodplain by Municipality

Participating Jurisdiction	Residential Houses	Residential Garages	Businesses (Commercial/ Industrial)	Miscellaneous (Barns, Sheds, Silos)	Infrastructure/ Critical Facilities
Bement[1]	---	---	---	---	1
Cisco[2,6]	---	---	---	---	---
Hammond	---	---	---	---	---
Mansfield	6	---	---	---	---
Monticello[3,5,7]	43	4	23	1	4
Unincorp. Carroll County	53	14	2	48	*

[1] Bement CUSD #5
[2] Cisco FPD
[3] Monticello F&R
[4] Mid Piatt FPD
[5] Monticello Township
[6] Willow Branch Township
[7] Kirby Medical Center

* No specific infrastructure/critical facilities, aside from roads and bridges, were identified for Unincorporated Piatt County.

Aside from key roads and bridges and buried power and communication lines, the following provides a description those jurisdictions that have specific infrastructure/critical facilities located within or adjacent to a floodplain.

- *Bement*: The Village's wastewater treatment facility is located in the base floodplain on an unnamed tributary of Lake Fork.
- *Monticello*: Portions of the City's wastewater treatment facility, the Monticello Community Center, the Arbor Rose Memory Care Home, and the DeWitt-Piatt Bi-County Health Department are located in the base floodplain of unnamed tributaries of the Sangamon River.

Figure F-10
Existing Buildings, Infrastructure and Critical Facilities Located in a Floodplain by Township

Participating Jurisdiction	Residential Houses	Residential Garages	Businesses (Commercial/ Industrial)	Miscellaneous (Barns, Sheds, Silos)	Infrastructure/ Critical Facilities
Bement [1]	5	2	---	12	1
Blue Ridge	6	---	---	---	---
Cerro Gordo [1,7]	---	---	---	---	---
Goose Creek [2,4]	6	3	1	9	---
Monticello [1,3,4,5,7]	45	6	23	5	4
Sangamon [4]	31	3	---	5	---
Unity [1,7]	6	3	1	11	1
Willow Branch [1,2,4,6]	3	1	---	7	---

[1] Bement CUSD #5
[2] Cisco FPD
[3] Monticello F&R
[4] Mid Piatt FPD
[5] Monticello Township
[6] Willow Branch Township
[7] Kirby Medical Center

While only 5.7% of the land area in Piatt County lies within the base floodplain and is susceptible to riverine flooding, ***almost the entire County is vulnerable to flash flooding***. As a result, ***a majority of the buildings, infrastructure and critical facilities that may be impacted by flooding are located outside of the base floodplain and are not easily identifiable.***

The risk or vulnerability of existing buildings, infrastructure, and critical facilities to all forms of flooding is considered to be ***medium to high*** based on: (a) the frequency and severity of recorded flood events within the County; (b) the fact that most of the County is vulnerable to flash flooding; and (c) a majority of the buildings, infrastructure and critical facilities that may be impacted are located outside of the base floodplain.

Are future buildings, infrastructure, and critical facilities vulnerable to flooding?

The answer to this question depends on the type of flooding being discussed.

Riverine Flooding

In terms of riverine flooding, the vulnerability of future buildings, infrastructure and critical facilities located within NFIP-participating jurisdictions is low as long as the existing floodplain ordinances are enforced. Enforcement of the floodplain ordinance is the mechanism that ensures that new structures either are not built in flood-prone areas or are elevated or protected to the base flood elevation.

Flash Flooding

In terms of flash flooding, all future buildings, infrastructure, and critical facilities are still vulnerable depending on the amount of precipitation that is received, the topography and any land use changes undertaken within the participating jurisdictions.

What are the potential dollar losses to vulnerable structures from flooding?

An estimate of the potential dollar losses to vulnerable *residential structures* located within the *participating municipalities and townships* can be calculated if several assumptions are made.

These assumptions represent a probable scenario based on the reported occurrences of flooding in Piatt County.

The purpose of providing an estimate is to help residents and local officials make informed decisions about how they can better protect themselves and their communities. These estimates are meant to provide a ***general idea*** of the magnitude of the potential damage that could occur from a flood event in each of the participating municipalities.

Assumptions

To calculate the overall potential dollar losses to vulnerable residential structures from a flood, a set of decisions/assumptions must be made regarding:

- type of flood event;
- scope of the flood event;
- number of potentially-damaged housing units;
- value of the potentially-damaged housing units; and
- percent damage sustained by the potentially-damaged housing units (i.e., damage scenario.)

The following provides a detailed discussion of each decision/assumption.

Type of Flood Event. The first step towards calculating the potential dollar losses to vulnerable residential structures is to determine the type of flood event that will be used for this scenario. While the County has experienced all forms of flooding, riverine floods have occurred with greater regularity in the County. In addition, identifying residential structures vulnerable to flash flooding is problematic because most are located outside of the base floodplain and the number of structures impacted can change with each event depending on the amount of precipitation received, the topography and the land use of the area.

Assumption #1

A riverine flood event will impact vulnerable residential structures.

Therefore, a riverine flood event will be used since it is (a) relatively easy to identify vulnerable residential structures within each participating jurisdiction (i.e., those structures located within the base floodplain or Special Flood Hazard Areas of any river, stream, or creek); and (b) the number of structures impacted is generally the same from event to event.

Scope of the Flood Event. To establish the number of vulnerable residential structures (potentially-damaged housing units), the scope of the riverine flood event must first be determined. In this scenario, the scope refers to the number of rivers, streams and creeks that overflow their banks and the degree of flooding experienced along base floodplains for each river, stream, and creek.

Assumption #2

All base floodplains will flood and experience the same degree of flooding.

Generally speaking, a riverine flood event only affects one or two rivers or streams at a time depending on the cause of the event (i.e., precipitation, snow melt, ice jam, etc.) and usually does

not produce the same degree of flooding along the entire length of the river, stream, or creek. However, for this scenario, it was decided that:

- ❖ all rivers, streams, and creeks with base floodplains would overflow their banks, and
- ❖ the base floodplains of each river, stream, and/or creek would experience the same degree of flooding.

This assumption results in the following conditions for each municipality:

- ➢ Bement, Cisco, and Hammond would not experience any residential flooding since there are no river, stream, or creek base floodplains located within their municipal limits; and
- ➢ *Mansfield*: Madden Creek would overflow its banks and flood small portion on the north side of the Village;
- ➢ *Monticello*: Camp Creek and the Sangamon River and its unnamed tributaries would overflood their banks and flood small areas within the City; and
- ➢ *Monticello & Willow Branch Townships*: All the rivers, streams and creeks would overflow their banks and flood portions of the townships.

Number of Potentially-Damaged Housing Units. Since this scenario assumes that all the base floodplains will experience the same degree of flooding, the number of existing residential structures located within the base floodplain(s) can be used to determine the number of potentially-damaged housing units. **Figures F-9** and **F-10** identify the total number of existing residential structures located within the base floodplains(s) of each participating jurisdiction. These counts were prepared by the Consultant.

Assumption #3

The number of existing residential structures located within the base floodplain(s) in each municipality will be used to determine the number of potentially-damaged housing units.

Value of Potentially-Damaged Housing Units. Now that the number of potentially-damaged housing units has been determined, the monetary value of the units must be calculated. Typically, when damage estimates are prepared after a natural disaster such as a flood, they are based on the market value of the structure. Since it would be impractical to determine the individual market value of each potentially-damaged housing unit, the average market value for a residential structure will be used.

Assumption #4

The average market value for a residential structure will be used to determine the value of potentially-damaged housing units.

To determine the average market value, the average assessed value must first be calculated. The average assessed value is determined by taking the total assessed value of residential buildings within a jurisdiction and dividing that number by the total number of housing units within the jurisdiction. The average market value is then determined by taking the averaged assessed value and multiplying that number by three (the assessed value of a structure in Piatt County is approximately one-third of the market value). **Figure F-11** provides a sample calculation. The total assessed value is based on 2022 tax assessment information provided by the Piatt County Chief County Assessment Officer. **Figures F-12** and **Figure F-13** provide the average assessed value and average market value for each participating municipality and township.

Figure F-11
Sample Calculation of Average Assessed Value & Average Market Value – Mansfield

Average Assessed Value

Total Assessed Value of Residential Buildings in the Jurisdiction÷ Total Housing Units in the Jurisdiction = Average Assessed Value

Mansfield: $15,323,357 ÷ 499 housing units = $30,708.13

Average Market Value

Average Assessed Value x 3 = Average Market Value
(Rounded to the Nearest Dollar)

Mansfield: $30,708.13 x 3 = $92,124.39
($92,124)

Figure F-12
Average Market Value of Housing Units by Participating Municipality

Participating Jurisdiction	Total Assessed Value of Residential Buildings (2022)	Total Housing Units (2016-2020)	Average Assessed Values	Average Market Value (2022)
Bement	$19,076,466	710	$26,868	$80,604
Cisco[2]	$3,524,148	126	$27,969	$83,907
Hammond	$4,752,792	303	$15,686	$47,058
Mansfield	$15,323,357	499	$30,708	$92,124
Monticello[3]	$133,386,956	2,610	$51,106	$153,318

[2] Cisco FPD [3] Monticello F&R [4] Mid Piatt FPD

Figure F-13
Average Market Value of Housing Units by Township

Participating Jurisdiction	Total Assessed Value of Residential Buildings (2022)	Total Housing Units (2016-2020)	Average Assessed Values	Average Market Value (2022)
Bement	$21,389,036	807	$26,504	$79,513
Blue Ridge	$22,800,052	678	$33,628	$100,885
Cerro Gordo	$23,540,603	843	$27,925	$83,774
Goose Creek [2,4]	$10,934,292	406	$26,932	$80,795
Monticello [3,4]	$133,890,947	2,653	$50,468	$151,403
Sangamon [4]	$70,912,742	982	$72,213	$216,638
Unity	$16,358,252	716	$22,847	$68,540
Willow Branch [2,4]	$22,050,573	350	$63,002	$189,005

[2] Cisco FPD [3] Monticello F&R [4] Mid Piatt FPD

Damage Scenario. The final decision that must be made to calculate potential dollar losses is to determine the percent damage sustained by the structure and the structure's contents during the flood event. In order to determine the percent damage using FEMA's flood loss estimation tables, assumptions must be made regarding (a) the type of residential structure flooded (i.e., manufactured home, one story home without a basement, one- or two-story home with a basement, etc.) and (b) the flood depth. **Figure F-14** calculates the percent loss to a structure and its contents for different scenarios based on flood depth and structure type.

Assumption #5

The potentially-damaged housing units are one or two-story homes with basements and the flood depth is two feet.
Structural Damage = 20%
Content Damage = 30%

Figure F-14
FEMA Flood Loss Estimation Tables

Flood Building Loss Estimation Table

Flood Depth (feet)	One Story No Basement (% Building Damage)	Two Story No Basement (% Building damage)	One or Two Story With Basement (% Building damage)	Manufactured Home (% Building damage)
-2	0	0	4	0
-1	0	0	8	0
0	9	5	11	8
1	14	9	15	44
2	22	13	20	63
3	27	18	23	73
4	29	20	28	78
5	30	22	33	80
6	40	24	38	81
7	43	26	44	82
8	44	29	49	82
>8	45	33	51	82

Flood Content Loss Estimation Table

Flood Depth (feet)	One Story No Basement (% Contents Damage)	Two Story No Basement (% Contents damage)	One or Two Story With Basement (% Contents damage)	Manufactured Home (% Contents damage)
-2	0	0	6	0
-1	0	0	12	0
0	13.5	7.5	16.5	12
1	21	13.5	22.5	66
2	33	19.5	30	90
3	40.5	27	34.5	90
4	43.5	30	42	90
5	45	33	49.5	90
6	60	36	57	90
7	64.5	39	66	90
8	66	43.5	73.5	90
>8	67.5	49.5	76.5	90

Source: FEMA, Understanding Your Risks: Identifying Hazards and Estimating Losses

For this scenario it is assumed that the potentially-damaged housing units are one- or two-story homes with basements and the flood depth is two feet. With these assumptions the expected percent damage sustained by the ***structure*** is estimated to be 20% and the expected percent damage sustained by the structure's ***contents*** is estimated to be 30%.

Potential Dollar Losses

Now that all of the decisions/assumptions have been made, the potential dollar losses can be calculated. First, the potential dollar losses to the ***structure*** of the potentially-damaged housing units must be determined. This is done by taking the average market value for a residential structure and multiplying that by the percent damage 20% to get the average structural damage per unit. Next the average structural damage per unit is multiplied by the number of potentially-damaged housing units. **Figure F-15** provides a sample calculation.

Figure F-15
***Structure:* Potential Dollar Loss Sample Calculation – Mansfield**

Average Market Value of a Housing Unit with the Jurisdiction x Percent Damage = Average Structural Damage per Housing Unit

Mansfield: $92,124 x 20% = $18,424.80 per housing unit

Average Structural Damage x Number of Potentially-Damaged Housing Units within the Jurisdiction = *Structure* Potential Dollar Losses (Rounded to the Nearest Dollar)

Mansfield: $18,424.80 per housing unit x 6 housing units = $110,548.80

($110,549)

Next, the potential dollar losses to the ***content*** of the potentially-damaged housing units must be determined. Based on FEMA guidance, the value of a residential housing unit's content is approximately 50% of its market value. Therefore, start by taking one-half the average market value for a residential structure and multiply that by the percent damage 30% to get the average content damage per unit. Then take the average content damage per unit and multiply that by the number of potentially-damaged housing units. **Figure F-16** provides a sample calculation.

Figure F-16
***Content:* Potential Dollar Loss Sample Calculation – Mansfield**

½ (Average Market Value of a Housing Unit with the Jurisdiction) x Percent Damage = Average Content Damage per Housing Unit

Mansfield: ½ ($92,124) x 30% = $13,818.60 per housing unit

Average Content Damage per Housing Unit x Number of Potentially-Damaged Housing Units within the Jurisdiction = *Content* Potential Dollar Losses (Rounded to the Nearest Dollar)

Mansfield: $13,818.60 per housing unit x 6 housing unit = $82,911.60

($82,912)

Finally, the ***total potential dollar losses*** may be calculated by adding together the potential dollar losses to the structure and the content. **Figures F-17 and F-18** provide a breakdown of the total potential dollar losses by participating municipality and township.

This assessment illustrates the *potential residential dollar losses* that should be considered when participating jurisdictions are deciding which mitigation projects to pursue. Potential dollar losses caused by riverine flooding to vulnerable residences within the participating municipalities would be expected to ***range from $193,461 in Mansfield to $2,307,436 in Monticello***. There are three participating municipalities in this scenario who do not have any residences considered vulnerable to riverine flooding. For the participating townships, potential dollar losses caused by riverine flooding to vulnerable residences would be expected to ***range from $139,148 in Bement Township to $2,384,597 in Monticello Township***.

Figure F-17
Estimated Potential Dollar Losses to Potentially-Damaged Housing Units from a Riverine Flood Event by Participating Municipality

Participating Jurisdiction	Average Market Value (2022)	Potentially-Damaged Housing Units	Potential Dollar Losses		Total Potential Dollar Losses (Rounded to the Nearest Dollar)
			Structure	Content	
Bement	$80,604	0	$ 0	$ 0	$ 0
Cisco[2]	$83,907	0	$ 0	$ 0	$ 0
Hammond	$47,058	0	$ 0	$ 0	$ 0
Mansfield	$92,124	6	$110,549	$82,912	$193,461
Monticello[3]	$153,318	43	$1,318,535	$988,901	$2,307,436

[2] Cisco FPD [3] Monticello F&R [4] Mid Piatt FPD

Figure F-18
Estimated Potential Dollar Losses to Potentially-Damaged Housing Units from a Riverine Flood Event by Township

Participating Jurisdiction	Average Market Value (2022)	Potentially-Damaged Housing Units	Potential Dollar Losses		Total Potential Dollar Losses (Rounded to the Nearest Dollar)
			Structure	Content	
Bement	$79,513	5	$79,513	$59,635	$139,148
Blue Ridge	$100,885	6	$121,062	$90,797	$211,859
Cerro Gordo	$83,774	0	$ 0	$ 0	$ 0
Goose Creek [2,4]	$80,795	6	$96,954	$72,716	$169,670
Monticello [3,4]	$151,403	45	$1,362,627	$1,021,970	$2,384,597
Sangamon [4]	$216,638	31	$1,343,156	$1,007,367	$2,350,523
Unity	$68,540	6	$82,248	$61,686	$143,934
Willow Branch [2,4]	$189,005	3	$113,403	$85,052	$198,455

[2] Cisco FPD [3] Monticello F&R [4] Mid Piatt FPD

Vulnerability of Infrastructure/Critical Facilities

The calculations presented above are meant to provide the reader with a sense of the scope or magnitude of a large riverine flood event in dollars. These calculations do not include the physical damages sustained by businesses or other infrastructure and critical facilities.

In terms of businesses, the impacts from a flood event can be physical and/or monetary. Monetary impacts can include loss of sales revenue either through temporary closure or loss of critical services (i.e., power, drinking water, and sewer). Depending on the magnitude of the flood event, the damage sustained by infrastructure and critical facilities can be extensive in nature and expensive to repair. As a result, ***the cumulative monetary impacts to businesses and infrastructure can exceed the cumulative monetary impacts to residences.*** While average dollar amounts cannot be supplied for these items at this time, they should be taken into account when discussing the overall impacts that a large-scale riverine flood event could have on the participating jurisdictions.

In terms of specific infrastructure vulnerability, Bement's wastewater treatment facility is located in the base floodplain of an unnamed tributary of Lake Fork while Monticello's wastewater treatment facility, the Monticello Community Center and the DeWitt-Piatt Bi-County Health Department are located in the based floodplain of unnamed tributaries of the Sangamon River. No other above-ground infrastructure within the participating jurisdictions, other than key roads and bridges, were identified as being vulnerable to riverine flooding.

Considerations

While the potential dollar loss scenario was only for a riverine flood event, the participating jurisdictions have been made aware through the planning process of the impacts that can result from flash flood events. Piatt County has experienced multiple events over the last 20 years as have adjoining and nearby counties. These events illustrate the need for officials to consider the overall monetary impacts of all forms of flooding on their communities. All participants should carefully consider the types of activities and projects that can be taken to minimize their vulnerability.

3.3 EXCESSIVE HEAT

HAZARD IDENTIFICATION

What is the definition of excessive heat?

Excessive heat is generally characterized by a prolonged period of summertime weather that is substantially hotter and more humid than the average for a location at that time of year. Excessive heat criteria typically shift by location and time of year. As a result, reliable fixed absolute criteria are not generally specified (i.e., a summer day with a maximum temperature of at least 90°F).

Excessive heat events are usually a result of both high temperatures and high relative humidity. (Relative humidity refers to the amount of moisture in the air.) The higher the relative humidity or the more moisture in the air, the less likely that evaporation will take place. This becomes significant when high relative humidity is coupled with soaring temperatures.

On hot days, the human body relies on the evaporation of perspiration or sweat to cool and regulate the body's internal temperature. Sweating does nothing to cool the body unless the water is removed by evaporation. When the relative humidity is high, then the evaporation process is hindered, robbing the body of its ability to cool itself.

Excessive heat is a leading cause of weather-related fatalities in the U.S. According to the Centers for Disease Control and Prevention, a total of 7,415 people died from heat-related illnesses between 1999 and 2010, an average of 618 fatalities a year.

What is the Heat Index?

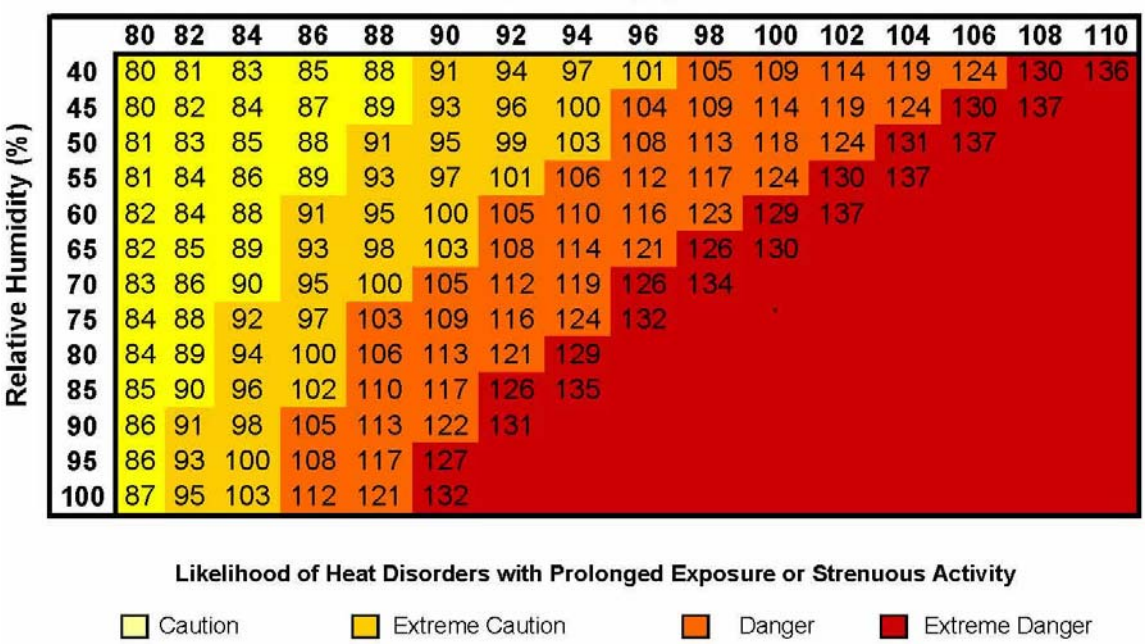
In an effort to raise the public's awareness of the hazards of excessive heat, the National Weather Service (NWS) devised the "Heat Index". The Heat Index, sometimes referred to as the "apparent temperature", is a measure of how hot it feels when relative humidity is added to the actual air temperature. **Figure EH-1** shows the Heat Index as it corresponds to various air temperatures and relative humidity.

As an example, if the air temperature is 96°F and the relative humidity is 65%, then the Heat Index would be 121°F. It should be noted that the Heat Index values were devised for shady, light wind conditions. Exposure to full sunshine can increase Heat Index values by up to 15°F. Also, strong winds, particularly with very hot, very dry air, can be extremely hazardous. When the Heat Index reaches 105°F or greater, there is an increased likelihood that continued exposure and/or physical activity will lead to individuals developing severe heat disorders.

What are heat disorders?

Heat disorders are a group of illnesses caused by prolonged exposure to hot temperatures and are characterized by the body's inability to shed excess heat. These disorders develop when the heat gain exceeds the level the body can remove or if the body cannot compensate for fluids and salt lost through perspiration. In either case the body loses its ability to regulate its internal temperature. All heat disorders share one common feature: the individual has been overexposed to heat, or over exercised for their age and physical condition on a hot day. The following describes the symptoms associated with the different heat disorders.

Figure EH-1
Heat Index



Source: NOAA, National Weather Service.

- **Heat Rash.** Heat rash is a skin irritation caused by excessive sweating during hot, humid weather and is characterized by red clusters of small blisters on the skin. It usually occurs on the neck, chest, groin or in elbow creases.
- **Sunburn.** Sunburn is characterized by redness and pain of skin exposed too long to the sun without proper protection. In severe cases it can cause swelling, blisters, fever, and headaches and can significantly retard the skin's ability to shed excess heat.
- **Heat Cramps.** Heat cramps are characterized by heavy sweating and muscle pains or spasms, usually in the abdomen, arms, or legs that during intense exercise. The loss of fluid through perspiration leaves the body dehydrated resulting in muscle cramps. This is usually the first sign that the body is experiencing trouble dealing with heat.
- **Heat Exhaustion.** Heat exhaustion is characterized by heavy sweating, muscle cramps, tiredness, weakness, dizziness, headache, nausea or vomiting and faintness. Breathing may become rapid and shallow and the pulse thready (weak). The skin may appear cool, moist, and pale. If not treated, heat exhaustion may progress to heat stroke.
- **Heat Stroke (Sunstroke).** Heat stroke is a life-threatening condition characterized by a high body temperature (106°F or higher). The skin appears to be red, hot, and dry with very little perspiration present. Other symptoms include a rapid and strong pulse, throbbing headache, dizziness, nausea, and confusion. There is a possibility that the individual will become unconsciousness. If the body is not cooled quickly, then brain damage and death may result.

Studies indicate that, all things being equal, the severity of heat disorders tend to increase with age. Heat cramps in a 17-year-old may be heat exhaustion in someone 40 and heat stroke in a person over 60. Elderly persons, small children, chronic invalids, those on certain medications and persons with weight or alcohol problems are particularly susceptible to heat reactions.

Figure EH-2 below indicates the heat index at which individuals, particularly those in higher risk groups, might experience heat-related disorders. Generally, when the heat index is expected to exceed 105°F, the NWS will initiate excessive heat alert procedures.

Figure EH-2
Relationship between Heat Index and Heat Disorders

Heat Index (°F)	Heat Disorders
80°F – 90°F	Fatigue is possible with prolonged exposure and/or physical activity
90°F – 105°F	Heat cramps, heat exhaustion and heat stroke possible with prolonged exposure and/or physical activity
105°F – 130°F	Heat cramps, heat exhaustion and heat stroke likely; heat stroke possible with prolonged exposure and/or physical activity
130°F or Higher	Heat stroke highly likely with continued exposure

Source: NOAA, Heat Wave: A Major Summer Killer.

What is an excessive heat alert?

An excessive heat alert is an advisory or warning issued by the NWS when the Heat Index is expected to have a significant impact on public safety. The expected severity of the heat determines the type of alert issued. There are four types of alerts that can be issued for an excessive heat event. The following provides a brief description of each type of alert based on the ***excessive heat advisory/warning criteria*** established by NWS Weather Forecast Office in Lincoln, Illinois. The Lincoln Office is responsible for issuing alerts for Piatt County.

- **Outlook.** An excessive heat outlook is issued when the potential exists for an excessive heat event to develop over the next three (3) to seven (7) days.
- **Watch.** An excessive heat watch is issued when conditions are favorable for an excessive heat event to occur within the next 24 to 72 hours.
- **Advisory.** An excessive heat advisory is issued within 12 hours of the onset of extremely dangerous heat conditions when the maximum heat index temperature is expected to be 100°F or higher for at least two (2) days and the nighttime air temperatures will not drop below 75°F.
- **Warning.** An excessive heat warning is issued within 12 hours of the onset of extremely dangerous heat conditions when the maximum heat index temperature is expected to be 105°F or higher for at least two (2) days and the nighttime air temperatures will not drop below 75°F.

HAZARD PROFILE

The following identifies past occurrences of excessive heat, details the severity or extent of each event (if known); identifies the locations potentially affected and estimates the likelihood of future occurrences.

When have excessive heat events occurred previously? What is the extent of these events?

Excessive Heat Fast Facts – Occurrences

Number of Regional Excessive Heat Events Reported (1995 – 2021): ***108***

Hottest Temperature Extrapolated for the County: ***109°F to 113°F (July 14, 1954)***

Most Likely Month for Excessive Heat Events to Occur: ***July***

Table 7, located in **Appendix I**, summarizes the previous occurrences as well as the extent or magnitude of regional excessive heat events extrapolated for Piatt County. NOAA's Storm Events Database, Iowa State University's National Weather Service Watch, Warning, and Advisories database, Midwestern Regional Climate Center's cli-MATE database, and NWS's COOP data records were used to extrapolate 108 occurrences of excessive heat in Piatt County between 1995 and 2021.

According to the Midwestern Regional Climate Center, temperature records were only kept during the late 1800s to early 1900s for the weather recording stations in Piatt County. As a result, temperature records from the Champaign COOP Observation Station in Champaign County, the Decatur COOP Observation Station in Macon County, and the Tuscola COOP Observation Station in Douglas County were used to extrapolate excessive events in Piatt County. Based on the available records, the hottest recorded temperatures from Champaign, Decatur, and Tuscola all occurred on July 14, 1954 and were between 109°F and 113°F.

Figure EH-3 charts the reported occurrences of excessive heat by month. Of the 108 events, 44 (41%) either began or took place in July making this the peak month for excessive heat events in Piatt County. There were eight events that spanned two months; however, for illustration purposes only the month the event started is graphed.

What locations are affected by excessive heat?

Excessive heat affects the entire County. Excessive heat events, like extreme cold and severe winter storms, generally extend across an entire region affecting multiple counties. The *2018 Illinois Natural Hazard Mitigation Plan* classifies Piatt County's hazard rating for excessive heat as "medium."

Do any of the participating jurisdictions have designated cooling centers?

Yes. Seven of the 12 participating jurisdictions have designated cooling centers. A "designated" cooling center is identified as any facility that has been *formally* identified by the jurisdiction (through emergency planning, resolution, Memorandum of Agreement, etc.) as a location available for use by residents of the jurisdiction during excessive heat events.

Figure EH-3
Excessive Heat by Month
1995– 2021

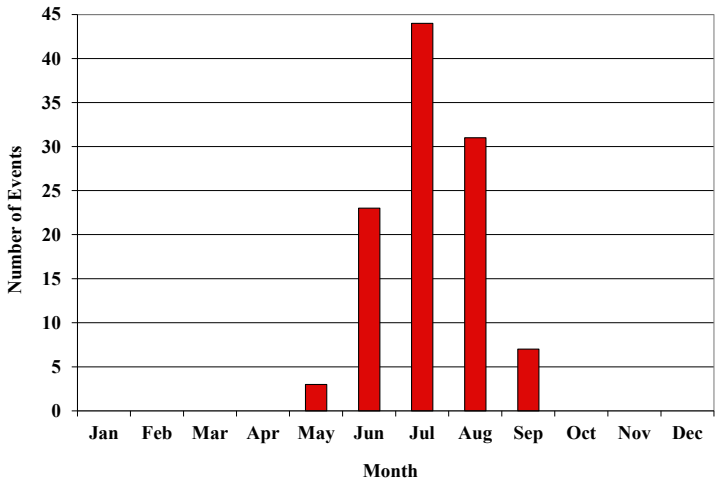


Figure EH-4 identifies the location of each cooling center by jurisdiction. At this time Hammond, Mansfield, Mid-Piatt FPD, Monticello Fire & Rescue, and Bement CUSD #5 do not have any cooling centers designated. In addition, there are no State of Illinois-designated cooling centers in Piatt County.

Figure EH-4
Designated Cooling Centers by Participating Jurisdiction

Name/Address	Name/Address
Bement	*Monticello/Monticello Township*
Village Hall, 148 W. Bodman St.	Monticello Community Building, 201 N. State St.
Cisco/Cisco Fire Protection District	*Willow Branch Township*
Cisco Area Economic Development Corp., 325 N. Main St., Cisco	Cisco Area Economic Development Corp., 325 N. Main St., Cisco
Kirby Medical Center	
Monticello Community Building, 201 N. State St., Monticello	

What is the probability of future excessive heat events occurring?

The region, including Piatt County, has experienced 108 verified occurrences of excessive heat between 1995 and 2021. With 108 occurrences over the past 27 years, Piatt County should expect to experience approximately four excessive heat events a year. There were 20 years over the last 27 years where multiple (three or more) excessive heat events occurred. This indicates that the probability that multiple excessive heat events may occur during any given year within the County is 74.1%.

HAZARD VULNERABILITY

The following describes the vulnerability to participating jurisdictions, identifies the impacts on public health and property (if known) and estimates the potential impacts on public health and safety as well as buildings, infrastructure, and critical facilities from excessive heat.

Are the participating jurisdictions vulnerable to excessive heat?

Yes. All of Piatt County, including the participating jurisdictions, is vulnerable to the dangers presented by excessive heat. Since 2012, the region, including Piatt County, has experienced 44 excessive heat events.

Do any of the participating jurisdictions consider excessive heat to be among their community's greatest vulnerabilities?

Yes. Based on responses to a Critical Facilities Vulnerability Survey distributed to the participating jurisdictions, Piatt County and Hammond considered excessive heat to be among their community's greatest vulnerabilities.

- *Piatt County:* The Piatt County Nursing Home is vulnerable to power outages caused by brownouts/blackouts associated with excessive heat events which could adversely impact patient care since the facility does not currently have an emergency backup generator.
- *Hammond*: The Village does not have any designated cooling centers for use by area residents.

What impacts resulted from the recorded excessive heat events?

Damage information was either unavailable or none was recorded for any of the excessive heat events. No injuries or fatalities related to excessive heat events have been recorded. In comparison, Illinois averages 74 heat-related fatalities annually according to the Illinois State Water Survey's Climate Atlas of Illinois.

Excessive Heat Fast Facts – Impacts/Risk

Excessive Heat Impacts:
- Total Property Damage: ***n/a***
- Total Crop Damage: ***n/a***
- Fatalities: ***n/a***
- Injuries: ***n/a***

Excessive Heat Risk/Vulnerability:
- Public Health & Safety – General Population: ***Low***
- Public Health & Safety – Sensitive Populations: ***Medium***
- Buildings/Infrastructure/Critical Facilities: ***Low***

Although injuries or fatalities were not reported as a result of the regional excessive heat events impacting Piatt County, this does not mean they didn't occur; it simply means that excessive heat was not identified as the primary cause. This is especially true for fatalities. Usually, heat is not listed as the primary cause of death, but rather an underlying cause. The excessive heat events with recorded heat indices were sufficiently high to produce heat cramps or heat exhaustion with the possibility of heat stroke in cases of prolonged exposure or physical activity.

What other impacts can result from excessive heat events?

Other impacts of excessive heat include road buckling, power outages, stress on livestock, early school dismissals and school closings. In addition, excessive heat events can also lead to an increase in water usage and may result in municipalities imposing water use restrictions. In Piatt

County, excessive heat has the ability to impact those residents in unincorporated areas who rely on shallow private wells for their drinking water.

What is the level of vulnerability to public health and safety from excessive heat?

Even if injuries and fatalities due to excessive heat were under reported in Piatt County, the level of risk or vulnerability posed by excessive heat to the public health and safety of the *general population* is considered to be ***low***. This assessment is based on the fact that several of the participating municipalities have designated cooling centers and the County does not have many large urban areas where living conditions (such as older, poorly-ventilated high rise buildings and low-income neighborhoods) tend to contribute to heat-related injuries and fatalities.

The level of risk or vulnerability posed by excessive heat to the public health and safety of *sensitive populations* is considered to be ***medium***. Sensitive populations such as older adults (those 75 years of age and older) and small children (those younger than 5 years of age) are more susceptible to heat-related reactions and therefore their risk is elevated. **Figure EH-5** identifies the percent of sensitive populations by participating municipality and the County based on the U.S. Census Bureau's 2016-2020 American Community Survey data.

Figure EH-5
Sensitive Populations by Participating Jurisdictions

Participating Jurisdiction	% of Population 75 year of age & Older	% of Population Younger than 5 years of age	Total % of Sensitive Population
Bement	5.9%	2.8%	8.7%
Cisco	9.1%	9.1%	18.2%
Hammond	12.0%	3.5%	15.5%
Mansfield	4.5%	6.0%	10.5%
Monticello	9.0%	6.2%	15.2%
Unincorp. Piatt County	8.6%	5.0%	13.6%
Piatt County	8.3%	6.0%	14.3%
State of Illinois	6.6%	5.9%	12.5%

Source: U.S. Census Bureau.

In addition, individuals with chronic conditions, those on certain medications, and persons with weight or alcohol problems are also considered sensitive populations. However, demographic information is not available for these segments of the population.

Are existing buildings, infrastructure, and critical facilities vulnerable to excessive heat?

No. In general, existing buildings, infrastructure and critical facilities located in the County and the participating jurisdictions are not vulnerable to excessive heat. The primary concern is for the health and safety of those living in the County (including all of the municipalities).

While buildings do not typically sustain damage from excessive heat, in rare cases infrastructure and critical facilities may be directly or indirectly damaged. While uncommon, excessive heat has been known to contribute to damage caused to roadways within Piatt County. The combination of excessive heat and vehicle loads has caused pavement cracking and buckling.

Excessive heat has also been known to indirectly contribute to disruptions in the electrical grid. When the temperatures rise, the demand for energy also rises in order to operate air conditioners, fans, and other devices. This increase in demand places stress on the electrical grid components, increasing the likelihood of power outages. While not common in Piatt County, there is the potential for this to occur. The potential may increase over the next two decades if new power sources are not built to replace the state's aging nuclear power facilities that are expected to be decommissioned.

In general, the risk or vulnerability to buildings, infrastructure and critical facilities from excessive heat is considered ***low***, even taking into consideration the potential for damage to roadways and disruptions to the electrical grid.

Are future buildings, infrastructure, and critical facilities vulnerable to excessive heat?

No. Future buildings, infrastructure and critical facilities within the County and participating jurisdictions are no more vulnerable to excessive heat events than the existing building, infrastructure, and critical facilities. As discussed above, buildings do not typically sustain damage from excessive heat. Infrastructure and critical facilities may, in rare cases, be damaged by excessive heat, but very little can be done to prevent this.

What are the potential dollar losses to vulnerable structures from excessive heat?

Unlike other natural hazards there are no standard loss estimation models or methodologies for excessive heat. With none of the recorded events listing property damage figures, there is no way to accurately estimate future potential dollar losses from excessive heat. Since excessive heat typically does not cause structure damage, it is unlikely that future dollar losses will be extreme. The primary concern associated with excessive heat is the health and safety of those living in the County and municipalities, especially sensitive populations such as the elderly, infants, young children, and those with medical conditions.

3.4 SEVERE WINTER STORMS

HAZARD IDENTIFICATION

What is the definition of a severe winter storm?

A severe winter storm can range from moderate snow over a few hours to significant accumulations of sleet and/or ice to blizzard conditions with blinding, wind-driven snow that last several days. The amount of snow or ice, air temperature, wind speed and event duration all influence the severity and type of severe winter storm that results. In general, there are three types of severe winter storms: blizzards, heavy snowstorms, and ice storms. The following provides a brief description of each type as defined by the National Weather Service (NWS).

- **Blizzards.** Blizzards are characterized by strong winds of at least 35 miles per hour and are accompanied by considerable falling and/or blowing snow that reduces visibility to ¼ mile or less. Blizzards are the most dangerous of all winter storms.
- **Heavy Snowstorms.** Heavy snowstorms are generally defined as producing snowfall accumulations of four inches or more in 12 hours or less or six inches or more in 24 hours or less.
- **Ice Storms.** An ice storm occurs when substantial accumulations of ice, generally ¼ inch or more, build up on the ground, trees, and utility lines as a result of freezing rain.

What is snow?

Snow is precipitation in the form of ice crystals. These ice crystals are formed directly from the freezing of water vapor in wintertime clouds. As the ice crystals fall toward the ground, they cling to each other creating snowflakes. Snow will only fall if the temperature remains at or below 32°F from the cloud base to the ground.

What is sleet?

Sleet is precipitation in the form of ice pellets. These ice pellets are composed of frozen or partially frozen rain drops or refrozen partially melted snowflakes. Sleet typically forms in winter storms when snowflakes partially melt while falling through a thin layer of warm air. The partially melted snowflakes then refreeze and form ice pellets as they fall through the colder air mass closer to the ground. Sleet usually bounces after hitting the ground or other hard surfaces and does not stick to objects.

What is freezing rain?

Freezing rain is precipitation that falls in the form of a liquid (i.e., rain drops), but freezes into a glaze of ice upon contact with the ground or other hard surfaces. This occurs when snowflakes descend into a warmer layer of air and melt completely. When the rain drops that result from this melting fall through another thin layer of freezing air just above the surface they become "supercooled", but they do not have time to refreeze before reaching the ground. However, because the raindrops are "supercooled", they instantly refreeze upon contact with anything that is at or below 32°F (i.e., the ground, trees, utility lines, etc.).

Are alerts issued for severe winter storms?

Yes. The NWS Weather Forecast Office in Lincoln, Illinois is responsible for issuing ***winter storm watches*** and ***warnings*** for Piatt County depending on the weather conditions. The following provides a brief description of each type of alert.

- **Watch.** The following watches are issued in advance of a storm and indicate the potential for significant winter weather within the next day or two.
  - **Winter Storm Watch**. A winter storm watch is issued when conditions are favorable for the development of a hazardous winter weather event which has the potential to threaten life or property.
  - **Blizzard Watch**. A blizzard watch is issued when conditions are favorable for the development of blizzard conditions:
    - sustained winds or at least 35 mph and
    - reduced visibility of ¼ mile or less.
- **Advisories.** Winter advisories are issued for winter weather events that pose a significant inconvenience, especially to motorist, but should not be life-threatening if caution is exercised. The following advisories are generally issued 12 to 36 hours prior to an event.
  - **Freezing Rain Advisory.** A freezing rain advisory is issued when ice accumulations of up to ¼ inch are expected.
  - **Winter Weather Advisory.** A winter weather advisory is issued for one or more of the following:
    - snow accumulations of 3 to 5 inches in 12 hours or less;
    - sleet accumulations up to ¼ inch;
    - freezing rain in combination with sleet and/or snow; or
    - blowing and/or drifting snow.
- **Warnings.** The following winter weather warnings are issued when severe winter weather conditions are expected to cause a significant impact to life or property and make travel difficult to impossible. Individuals are advised to avoid travel and stay indoors.
  - **Blizzard Warning.** A blizzard warning is issued when reduced visibility of less than ¼ mile due to falling and/or blowing snow and strong winds of at least 35 mph or greater are expected for at least three hours.
  - **Ice Storm Warning.** An ice storm warning is issued when ice accumulations of ¼ inch or greater are expected, resulting in hazardous travel conditions, tree damage and extended power outages.
  - **Winter Storm Warning.** A winter storm warning is issued when there is one or more of the following expected:
    - heavy snow accumulations of at least 6 inches in 12 hours or at least 8 inches in 24 hours; or
    - sleet accumulations of at least ½ inch.

HAZARD PROFILE

The following identifies past occurrences of severe winter storms; details the severity or extent of each event (if known); identifies the locations potentially affected; and estimates the likelihood of future occurrences.

When have severe winter storms occurred previously? What is the extent of these previous severe winter storm?
Table 8, located in **Appendix I**, summarize the previous occurrences as well as the extent or magnitude of severe winter storms (snow & ice) recorded in Piatt County.

Severe Winter Storms

Severe Winter Storm Fast Facts – Occurrences

Number of Severe Winter Storm Events Reported (1950 -2021): ***100***
Maximum 24-Hour Snow Accumulation: ***13.5 inches (March 24, 2013)***
Most Likely Month for Severe Winter Storms to Occur: ***January***

NOAA's Storm Events Database, Midwestern Regional Climate Center's cli-MATE database, and NWS's COOP data records were used to document 100 reported occurrences of severe winter storms (snow, ice and/or a combination of both) in Piatt County between 1950 and 2021. Of the 100 recorded occurrences there were 78 heavy snowstorms or blizzards; 17 combination events (freezing rain, sleet, ice and/or snow); and 5 ice or sleet storms. Included in the 100 severe winter storms are two events that contributed to two separate federal disaster declarations in Piatt County.

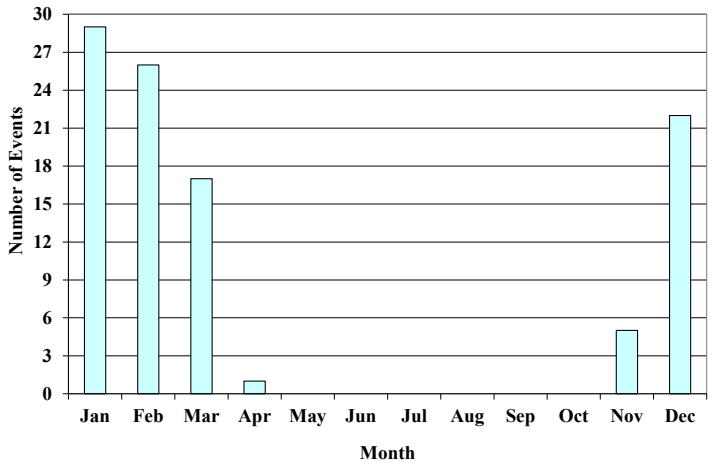
Figure SWS-1 charts the reported occurrences of severe winter storms by month. Of the 100 events, 77 (77%) took place in in December, January, and February making this the peak period for severe winter storms. Of these 77 events, 29 (38%) occurred during January, making this the peak month for severe winter storms. There were two events that spanned two months; however, for illustration purposes only the month when the event started is graphed. Of the severe winter storm events with recorded times, 61% began during the p.m. hours.

According to the NWS's COOP data records, the maximum 24-hour snow accumulation in Piatt County is 13.5 inches, which occurred on March 24, 2013 northeast of Monticello.

What locations are affected by severe winter storms?
Severe winter storms affect the entire County. All communities in Piatt County have been affected by severe winter storms. Severe winter storms generally extend across the entire County and affect multiple locations. The *2018 Illinois Natural Hazard Mitigation Plan* prepared by IEMA classifies Piatt County's hazard rating for severe winter storms as "high."

What is the probability of future severe winter storms occurring?
Piatt County has had 100 verified occurrences of severe winter storms between 1950 and 2021. With 100 occurrences over the past 72 years, Piatt County should expect at least one severe winter storm in any given year. There were 27 years over the past 72 years where two or more severe winter storms occurred. This indicates the probability that more than one severe winter storm may occur during any given year within the County is 37.5%.

Figure SWS-1
Severe Winter Storms by Month
1950 – 2021



HAZARD VULNERABILITY

The following describes the vulnerability to participating jurisdictions, identifies the impacts on public health and property (if known) and estimates the potential impacts on public health and safety as well as buildings, infrastructure, and critical facilities from severe winter storms.

Are the participating jurisdictions vulnerable to severe winter storms?

Yes. All of Piatt County, including the participating jurisdictions, is vulnerable to the dangers presented by severe winter storms. Since 2012, Piatt County has experienced 13 severe winter storms.

Severe winter storms have immobilized portions of the County, blocking roads; downing power lines, trees, and branches; causing power outages and property damage; and contributing to vehicle accidents. In addition, the County, township, and municipalities must budget for snow removal and de-icing of roads and bridges as well as for roadway repairs.

Do Any of the participating jurisdictions consider severe winter storms to be among their community's greatest vulnerabilities?

Yes. Based on responses to a Critical Facilities Vulnerability Survey distributed to the participating jurisdictions, the following respondents considers severe winter storms to be among their community's greatest vulnerabilities.

- *Piatt County:* The Piatt County Nursing Home is vulnerable to power outages caused by severe winter storms which could adversely impact patient care since the facility does not currently have an emergency backup generator.
- *Bement:* The village wastewater treatment plant, as well as the wastewater lift stations, currently do not have back-up generators and are vulnerable to power outages caused by severe

winter storms. If power is down for an extended period of time, wastewater will backup and could flood homes in low-lying areas.

- *Cisco*: The trees in the Village have not been trimmed. During severe winter storms, high winds have the potential to down trees and tree limbs which could in turn down power lines impacting critical services to residents. The emergency backup generator at the Village's designated warming/cooling center is vulnerable to power outages caused by severe winter storms.
- *Hammond*: The emergency backup generator at the water plant has to be turned on manually during power outages, such as those caused by severe winter storms, in order to maintain service to residents.
- *Monticello*: Severe winter storms can down power lines causing outages that impact critical services to residents.
- *Bement CUSD #5*: Power outages caused by severe winter storms have led to the loss of food when the freezers were without power. In addition, power outages also stop the boiler from running which could cause frozen pipes if the temperatures are low.
- *Mid Piatt Fire Protection District*: During severe winter storms, high winds have the potential to down trees and power lines blocking roads and impeding travel and response times to residents in need.
- *Monticello Fire & Rescue*: Severe winter storms have the potential to down power lines which can block roads and impact travel and response times.
- *Monticello Township*: Severe winter storms can impede travel when snow and ice buildup or debris and power lines are downed on township roads.
- *Willow Branch Township*: Many arterial roads have multiple trees that are prone to come down on township roads during severe winter storms impacting travel and causing damage to the roads.

What impacts resulted from the recorded severe winter storms?

Data obtained from NOAA's Storm Events Database and the Illinois Emergency Management Agency's public assistance figures indicates that between 1950 and 2021, two of the 100 severe winter storms caused $435,551 in property damages. Property damage information was either unavailable or none was recorded for the remaining 98 reported occurrences.

Severe Winter Storms Fast Facts – Impacts/Risk

Severe Winter Storm (Snow & Ice) Impacts:
- Total Property Damage (2 events): ***$435,551***
- Injuries: ***n/a***
- Fatalities: ***n/a***

Severe Winter Storm Risk/Vulnerability:
- Public Health & Safety: ***Low to Medium***
- Buildings/Infrastructure/Critical Facilities: ***Medium***

In comparison, the State of Illinois has averaged $102 million annually in winter storm losses according to the Illinois State Water Survey's Climate Atlas of Illinois, ranking winter storms second only to flooding in terms of economic loss in the State. While behind floods in terms of the amount of property damage caused, severe winter storms have a greater ability to immobilize larger areas, with rural areas being particularly vulnerable.

NOAA's Storm Events Database did not report any injuries or fatalities associated with the recorded severe winter storm events.

What other impacts can result from severe winter storms?

In Piatt County, vehicle accidents are the largest risk to health and safety from severe winter storms. Hazardous driving conditions (i.e., reduced visibility, icy road conditions, strong winds, etc.) contribute to the increase in accidents that result in injuries and fatalities.

Traffic accident data assembled by the Illinois Department of Transportation from 2015 through 2019 indicates that treacherous road conditions caused by snow/slush and ice were present for 10.5% to 13.6% of all crashes recorded annually in the County. **Figure SWS-2** provides a breakdown by year of the number of crashes and corresponding injuries and fatalities that occurred when treacherous road conditions caused by snow and ice were present.

Figure SWS-2
Severe Winter Weather Crash Data for Piatt County

Year	Total # of Crashes	Presence of Treacherous Road Conditions caused by Snow/slush and Ice		
		# of Crashes	# of Injuries	# of Fatalities
2015	242	29	5	0
2016	228	24	10	0
2017	232	25	8	0
2018	219	25	3	0
2019	235	32	7	0
Total:	**1,156**	**135**	**33**	**0**

Source: Illinois Department of Transportation.

Persons who are outdoors during and immediately following severe winter storms can experience other health and safety problems. Frostbite to hands, feet, ears and nose and hypothermia are common injuries. Treacherous walking conditions also lead to falls which can result in serious injuries, including fractures and broken bones, especially in the elderly. Over exertion from shoveling driveways and walks can lead to life-threatening conditions such as heart attacks in middle-aged and older adults who are susceptible.

What is the level of risk/vulnerability to public health and safety from severe winter storms?

While severe winter storms occur regularly in Piatt County, the number of injuries and fatalities is relatively low. Taking into consideration the potential for hazardous driving conditions; snow-removal related injuries; and power outages that could leave individuals vulnerable to hypothermia, the risk to public health and safety from severe winter storms is seen as ***low*** to ***medium***.

Are existing buildings, infrastructure, and critical facilities vulnerable to severe winter storms?

Yes. All existing buildings, infrastructure, and critical facilities located in Piatt County and the participating jurisdictions are vulnerable to damage from severe winter storms.

Structural damage to buildings caused by severe winter storms (snow and ice) is very rare but can occur particularly to flat rooftops. Information gathered from Piatt County residents indicates that snow and ice accumulations on communication and power lines as well as key roads presents the greatest vulnerability to infrastructure and critical facilities within the County. Snow and ice accumulations on lines often lead to disruptions in communications and create power outages. Depending on the damage, it can take anywhere from several hours to several days to restore service.

In addition to affecting communication and power lines, snow and ice accumulations on state and local roads hampers travel and can cause dangerous driving conditions. Blowing and drifting snow can lead to road closures and increases the risk of automobile accidents. Even small accumulations of ice can be extremely dangerous to motorists since bridges and overpasses freeze before other surfaces.

When transportation is disrupted, schools close, emergency and medical services are delayed, some businesses close, and government services can be affected. When a severe winter storm hits there is also an increase in cost to the County, township, and municipalities for snow removal and de-icing. Road resurfacing and pothole repairs are additional costs incurred each year as a result of severe winter storms.

Based on the frequency with which severe winter storms have occurred in Piatt County; the damages described; the amount of property damage previously reported; and the potential for disruptions to power distribution and communication; the risk or vulnerability to buildings, infrastructure and critical facilities from severe winter storms is ***medium***.

Are future buildings, infrastructure, and critical facilities vulnerable to severe winter storms?

Yes. While Cisco and Monticello have building codes in place that will likely help lessen the vulnerability of new buildings and critical facilities to damage from severe storms, the County and the three remaining participating municipalities do not.

In addition, infrastructure such as new communication and power lines will continue to be vulnerable to severe winter storms, especially to ice accumulations, as long as they are located above ground. Rural areas of the County have experienced extended periods without power due to severe winter storms. Steps to bury all new lines would eliminate the vulnerability, but this action would be cost prohibitive in most areas. In terms of new roads and bridges, there is very little that can be done to reduce or eliminate their vulnerability to severe winter storms.

What are the potential dollar losses to vulnerable structures from severe winter storms?

Unlike other natural hazards, such as tornadoes, there are no standard loss estimation models or methodologies for severe winter storms. Since only two of the 100 recorded events listing property damage numbers for severe winter storms, it is difficult to accurately estimate future potential dollar losses. However, according to the Piatt County Chief County Assessment Officer the total equalized assessed values of buildings in the planning area is $373,307,756. Since all of the structures in the planning area are vulnerable to damage, this total represents the countywide property exposure to severe winter storms.

3.5 EXTREME COLD

HAZARD IDENTIFICATION

What is the definition of extreme cold?

Extreme cold is generally characterized by temperatures well below what is considered normal for an area during the winter months and is often accompanied or is left in the wake of a severe winter storm. Extreme cold criteria vary from region to region. As a result, reliable fixed absolute criteria are not generally specified (i.e., a winter day with a maximum temperature of 0°F).

Whenever the temperature drops below normal and the wind speeds increase, heat can leave the body more rapidly. This can lead to dangerous situations for susceptible individuals, such as those without shelter or who are stranded, or those who live in a home that is poorly insulated or without heat.

Extreme cold is a leading cause of weather-related fatalities in Illinois. According to a 2020 study published by the University of Illinois Chicago, 1,935 individuals died from cold-related illnesses between 2011 and 2018. This is 94% of all temperature-related fatalities recorded in the State during that time period.

Extreme cold can also cause infrastructure damage, especially to residential water pipes and water distribution lines and mains. According to State Farm, in 2020 Illinois was once again the national leader in losses related to frozen pipes.

What is wind chill?

Wind chill, or wind chill factor, is a measure of the rate of heat loss from exposed skin resulting from the combined effects of wind and temperature. As the wind increases, heat is carried away from the body at a faster rate, driving down both the skin temperature and eventually the internal body temperature.

The unit of measurement used to describe the wind chill factor is known as the wind chill temperature. The wind chill temperature is calculated using a formula. **Figure EC-1** identifies the formula and calculates the wind chill temperatures for certain air temperatures and wind speeds.

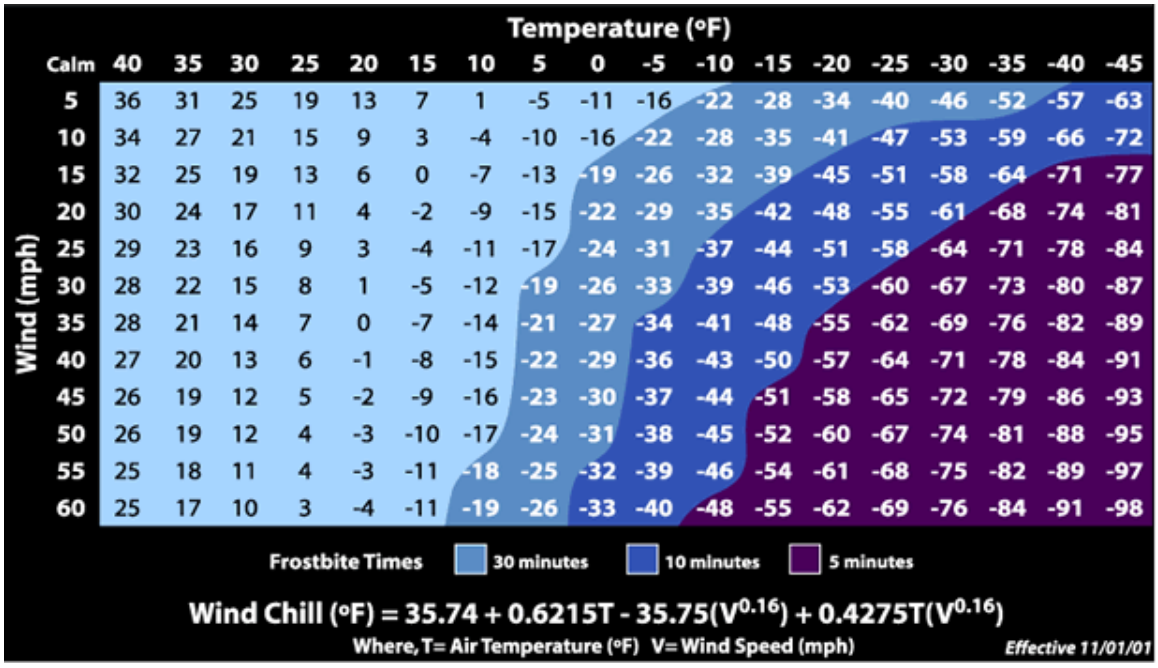
As an example, if the air temperature is 5°F and the wind speed is 20 miles per hour, then the wind chill temperature would be -15°F. The wind chill temperature is only defined for air temperatures at or below 50°F and wind speeds above three miles per hour. In addition, the wind chill temperature does not take into consideration the effects of bright sunlight which may increase the wind chill temperature by 10°F to 18°F.

Use of the current Wind Chill Temperature (WCT) index was implemented by the NWS on November 1, 2001. The new WCT index was designed to more accurately calculate how cold air feels on human skin. The new index uses advances in science, technology, and computer modeling to provide an accurate, understandable, and useful formula for calculating the dangers from winter

winds and freezing temperatures. The former index was based on research done in 1945 by Antarctic researchers Siple and Passel.

Exposure to extreme wind chills can be life threatening. As wind chills edge toward -19°F and below, there is an increased likelihood that exposure will lead to individuals developing cold-related illnesses.

Figure EC-1
Wind Chill Chart



Source: NOAA, National Weather Service.

What cold-related illnesses are associated with extreme cold?

Frostbite and hypothermia are both cold-related illnesses that can result when individuals are exposed to dangerously low temperatures and wind chills. The following provides a brief description of the symptoms associated with each.

- **Frostbite.** During exposure to extremely cold weather the body reduces circulation to the extremities (i.e., feet, hands, nose, cheeks, ears, etc.) in order to maintain its core temperature. If the extremities are exposed, then this reduction in circulation coupled with the cold temperatures can cause the tissue to freeze.

  Frostbite is characterized by a loss of feeling and a white or pale appearance. At a wind chill of -19°F, exposed skin can freeze in as little as 30 minutes. Seek medical attention immediately if frostbite is suspected. It can permanently damage tissue and in severe cases can lead to amputation.

- **Hypothermia.** Hypothermia occurs when the body's temperature begins to fall because it is losing heat faster than it can produce it. If an individual's body temperature falls below 95°F, then hypothermia has set in, and immediate medical attention should be sought.

  Hypothermia is characterized by uncontrollable shivering, memory loss, disorientation, incoherence, slurred speech, drowsiness, and exhaustion. Left untreated, hypothermia will lead to death. Hypothermia occurs most commonly at very cold temperatures but can occur at cool temperatures (above 40°F) if an individual isn't properly clothed or becomes chilled.

What is a wind chill alert?

A wind chill alert is an advisory or warning issued by the NWS when the wind chill is expected to have a significant impact on public safety. The expected severity of cold temperatures and wind speed determines the type of alert issued. There are three types of alerts that can be issued for an extreme cold event. The following provides a brief description of each type of alert based on the ***wind chill criteria*** established by the NWS Weather Forecast Office in Lincoln, Illinois. The Lincoln Office is responsible for issuing alerts for Piatt County.

Yes. The NWS Weather Forecast Office in Lincoln, Illinois is responsible for issuing ***wind chill advisories*** and ***warnings*** for Piatt County depending on the weather conditions. The following provides a brief description of each type of alert.

- **Wind Chill Watch.** A wind chill watch may be issued if conditions are favorable for wind chill temperatures to meet or exceed warning criteria but are not occurring or imminent.
- **Wind Chill Advisory.** A wind chill advisory is issued when wind chill values are expected to be between -15°F and -24°F.
- **Wind Chill Warning.** A wind chill warning is issued when wind chill values are expected to be -25°F or below.

HAZARD PROFILE

The following identifies past occurrences of extreme cold events; details the severity or extent of each event (if known); identifies the locations potentially affected; and estimates the likelihood of future occurrences.

When have extreme cold events occurred previously? What is the extent of these events?

Table 9, located in **Appendix I**, summarize the previous occurrences as well as the extent or magnitude of regional extreme cold events extrapolated for Piatt County. NOAA's Storm Events Database, Iowa State University's National Weather Service Watch, Warning, and Advisories database Midwestern Regional Climate Center's cli-MATE database, and

Extreme Cold Fast Facts – Occurrences

Number of Regional Extreme Cold Events Reported (1995 - 2021): ***50***

Coldest Temperature Extrapolated for the County: ***-26°F*** (December 22, 1989)

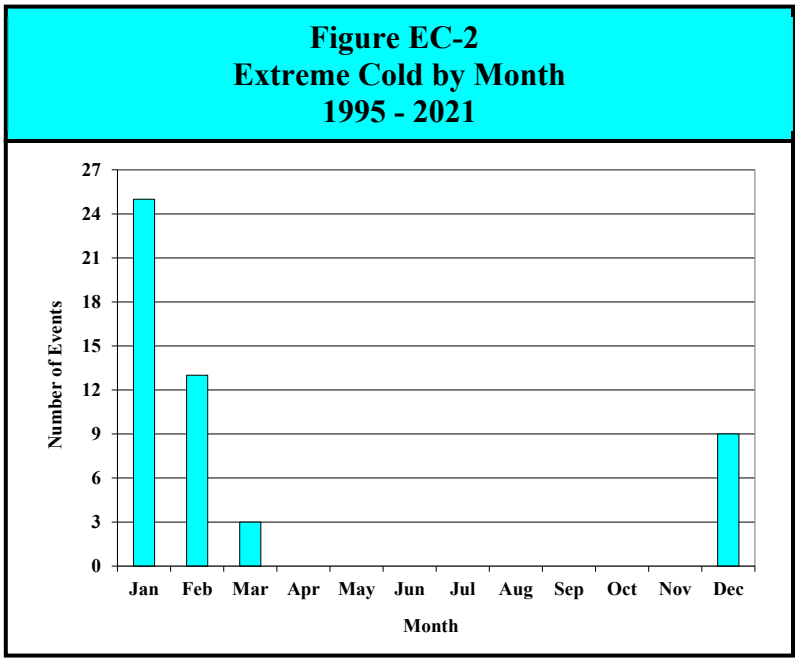
Most Likely Months for Extreme Cold Events to Occur: ***January***

NWS's COOP data were used to extrapolate 50 occurrences of extreme cold in Piatt County between 1995 and 2021.

According to the Midwestern Regional Climate Center, temperature records were only kept during the late 1800s to early 1900s for weather recording stations in Piatt County. As a result, temperature records from the Champaign COOP Observation Station in Champaign County, the Decatur COOP Observation Station in Macon County, and the Tuscola COOP Observation Station in Douglas County were used to extrapolate the coldest days in Piatt County. Based on the available records, the coldest recorded temperature from Champaign and Decatur was -25°F on February 13, 1905. The coldest recorded temperature from Tuscola was -26°F on December 22, 1989.

Figure EC-2 charts the reported occurrences of extreme cold by month. Of the 50 events, 25 (50%) either began or took place in January, making this the peak month for extreme cold events. There was one event that spanned two months; however, for illustration purposes only the month the event started in is graphed. Of the three events with recorded times, all began in the a.m. hours.

Figure EC-2
Extreme Cold by Month
1995 - 2021



What locations are affected by extreme cold?
Extreme cold affects the entire County. Extreme cold, like excessive heat and severe winter storms, generally extends across an entire region affecting multiple counties.

Do any of the participating jurisdictions have designated warming centers?
Yes. Eight of the 12 participating jurisdictions have designated warming centers. A "designated" warming center is identified as any facility that has been *formally* identified by the jurisdiction (through emergency planning, resolution, Memorandum of Agreement, etc.) as a location available for use by residents during severe winter storms and extreme cold events.

Figure EC-3 identifies the location of each warming center by jurisdiction. At this time Hammond, Mid Piatt FPD, Monticello Fire & Rescue, and Bement CUSD #5 do not have any warming centers designated. In addition, there are no State of Illinois-designated warming centers in Piatt County.

Figure EC-3
Designated Warming Centers by Participating Jurisdiction

Name/Address	Name/Address
Bement	*Mansfield*
Village Hall, 148 W. Bodman St.	United Methodist Church, 200 East St.
Cisco/Cisco Fire Protection District	*Monticello/Monticello Township*
Cisco Area Economic Development Corp., 325 N. Main St., Cisco	Monticello Community Building, 201 N. State St., Monticello
Kirby Medical Center	*Willow Branch Township*
Monticello Community Building, 201 N. State St., Monticello	Cisco Area Economic Development Corp., 325 N. Main St., Cisco

What is the probability of future extreme cold events occurring?

The region, including Piatt County, has experienced 50 verified occurrences of extreme cold between 1995 and 2021. With 50 occurrences over the past 27 years, Piatt County should expect to experience approximately two extreme cold events in any given year. There were 15 years over the last 27 years where multiple (two or more) extreme cold events occurred. This indicates that the probability that multiple extreme cold events may occur during any given year within the County is 55.5%.

HAZARD VULNERABILITY

The following describes the vulnerability to participating jurisdictions, identifies the impacts on public health and property (if known) and estimates the potential impacts on public health and safety as well as buildings, infrastructure, and critical facilities from extreme cold.

Are the participating jurisdictions vulnerable to extreme cold?

Yes. All of Piatt County, including the participating jurisdictions, is vulnerable to the dangers presented by extreme cold. Since 2012, the region, including Piatt County, has experienced 25 extreme cold events.

Do Any of the participating jurisdictions consider extreme cold to be among their community's greatest vulnerabilities?

Yes. Based on responses to a Critical Facilities Vulnerability Survey distributed to the participating jurisdictions, Hammond considers extreme cold to be among their community's greatest vulnerabilities. The Village does not have any designated warming centers for use by area residents.

What impacts resulted from the recorded extreme cold events?

Damage information was either unavailable or none was recorded, and no injuries or fatalities were reported as a result of any of the extreme cold events. In comparison, the State of Illinois averages 18 cold-related fatalities annually according to the Illinois State Water Survey's Climate Atlas of Illinois.

Extreme Cold Fast Facts – Impacts/Risk

Extreme Cold Impacts:
- Total Property Damage: ***n/a***
- Injuries: ***n/a***
- Fatalities: ***n/a***

Extreme Cold Risk/Vulnerability:
- Public Health & Safety: ***Low to Medium***
- Buildings/Infrastructure/Critical Facilities: ***Low***

What other impacts can result from extreme cold events?

Other impacts of extreme cold include early school dismissals and school closing, power outages and frozen and ruptured water pipes and water mains. Individuals who are outdoors during and immediately following extreme cold events can experience health and safety problems. Frostbite to hands, feet, ears and nose and hypothermia are common injuries.

What is the level of risk/vulnerability to public health and safety from severe winter storms and extreme cold?

For Piatt County, the level of risk or vulnerability posed by extreme cold to public health and safety is considered to be ***low to medium.*** This assessment is based on the fact that while extreme cold events occur regularly, the number of injuries and fatalities reported is low and all but four of the participating municipalities, fire protection districts, and school districts have designated warming centers.

Are existing buildings, infrastructure, and critical facilities vulnerable to extreme cold?

Yes. All existing buildings, infrastructure and critical facilities located in Piatt County and the participating jurisdictions are vulnerable to damage from extreme cold. Individual water pipes and distribution lines and mains are especially susceptible to freezing during extreme cold events. This freezing can lead to cracks or ruptures in the pipes in buildings as well as in buried service lines and mains. As a result, flooding can occur as well as disruptions in service. Since most buried service lines and water mains are located under local streets and roads, fixing a break requires portions of the street or road to be blocked off, excavated, and eventually repaired. These activities can be costly and must be carried out under less than ideal working conditions.

Based on the frequency with which extreme cold events have occurred in Piatt County; the damages described; the amount of property damage previously reported; and the potential for disruptions to power distribution and communication; the risk or vulnerability to buildings, infrastructure and critical facilities from extreme cold events is ***low***.

Are future buildings, infrastructure, and critical facilities vulnerable to extreme cold?

Yes. While Cisco and Monticello have building codes in place that will likely help lessen the vulnerability of new buildings and critical facilities to damage from extreme cold, the County and the three remaining participating municipalities do not. Infrastructure such as residential water pipes will continue to be vulnerable as long as they are located in areas such as outside walls, attics and crawl spaces that do not contain proper insulation.

What are the potential dollar losses to vulnerable structures from extreme cold?

Unlike other natural hazards, such as tornadoes, there are no standard loss estimation models or methodologies for extreme cold events. With none of the recorded events listing property damage figures, there is no way to accurately estimate future potential dollar losses from extreme cold. However, according to the Piatt County Chief County Assessment Officer the total equalized assessed values of buildings in the planning area is $373,307,756. Since all of the structures in the planning area are vulnerable to damage, this total represents the countywide property exposure to extreme cold.

3.6 TORNADOES

HAZARD IDENTIFICATION

What is the definition of a tornado?

A tornado is a narrow violently rotating column of air, often visible as a funnel-shaped cloud that extends from the base of a thunderstorm cloud formation to the ground. The most violent tornadoes can have wind speeds of more than 300 miles per hour and can create damage paths in excess of one mile wide and 50 miles long.

Not all tornadoes have a visible funnel cloud. Some may appear nearly transparent until dust and debris are picked up or a cloud forms within the funnel. Generally, tornadoes move from southwest to northeast, but they have been known to travel in any direction, even backtracking. A typical tornado travels at around 10 to 20 mile per hour, but this may vary from almost stationary to 60 miles per hour. Tornadoes can occur at any time of the year and happen at any time of the day or night, although most occur between 4 p.m. and 9 p.m.

About 1,200 tornadoes hit the U.S. yearly, with an average 52 tornadoes occurring annually in Illinois. The destruction caused by a tornado may range from light to catastrophic depending on the intensity, size, and duration of the storm. Tornadoes cause crop and property damage, power outages, environmental degradation, injuries, and fatalities. Tornadoes are known to blow roofs off buildings, flip vehicles and demolish homes. Typically, tornadoes cause the greatest damage to structures of light construction, such as residential homes. On average, tornadoes cause 60 to 65 facilities and 1,500 injuries in the U.S. annually.

How are tornadoes rated?

Originally tornadoes were rated using the Fujita Scale (F-Scale), which related the degree of damage caused by a tornado to the intensity of the tornado's wind speed. The Scale identified six categories of damage, F0 through F5. **Figure T-1** gives a brief description of each category.

Use of the original Fujita Scale was discontinued on February 1, 2007 in favor of the Enhanced Fujita Scale. The original scale had several flaws including basing a tornado's intensity and damages on wind speeds that were never scientifically tested and proven. It also did not take into consideration that a multitude of factors (i.e., structure construction, wind direction and duration, flying debris, etc.) affect the damage caused by a tornado. In addition, the process of rating the damage itself was based on the judgment of the damage assessor. In many cases, meteorologists and engineers highly experienced in damage survey techniques often came up with different F-scale ratings for the same damage.

The Enhanced Fujita Scale (EF-Scale) was created to remedy the flaws in the original scale. It continues to use the F0 through F5 categories, but it incorporates 28 different damage indicators (mainly various building types, towers/poles, and trees) as calibrated by engineers and meteorologists. For each damage indicator there are eight degrees of damage ranging from barely visible damage to complete destruction of the damage indicator. The wind speeds assigned to each category are estimates, not measurements, based on the damage assessment. **Figure T-1** identifies the Enhanced Fujita Scale.

Figure T-1 Fujita & Enhanced Fujita Tornado Measurement Scales				
F-Scale		**EF-Scale**		**Description**
Category	**Wind Speed (mph)**	**Category**	**Wind Speed (mph)**	
F0	40 – 72	EF0	65 – 85	Light damage – some damage to chimneys; branches broken off trees; shallow-rooted trees pushed over; damage to sign boards
F1	73 – 112	EF1	86 – 110	Moderate damage – peels surface off roofs; mobile homes pushed off foundations or overturned; moving autos blown off roads
F2	113 – 157	EF2	111 – 135	Considerable damage – roofs torn off frame houses; mobile homes demolished; boxcars overturned; large trees snapped or uprooted; light-object missiles generated; cars lifted off ground
F3	158 – 207	EF3	136 – 165	Severe damage – roofs and some walls torn off well-constructed houses; trains overturned; most trees in forest uprooted; heavy cars lifted off ground and thrown
F4	208 – 260	EF4	166 – 200	Devastating damage – well-constructed houses leveled; structures with weak foundations blown away some distance; cars thrown, and large missiles generated
F5	261 – 318	EF5	Over 200	Incredible damage – strong frame houses lifted off foundations and swept away; automobile-sized missiles fly through the air in excess of 100 yards; trees debarked; incredible phenomena will occur

Source: NOAA, Storm Prediction Center.

The idea behind the EF-Scale is that a tornado scale needs to take into account the typical strengths and weaknesses of different types of construction, instead of applying a "one size fits all" approach. This is due to the fact that the same wind speed can cause different degrees of damage to different kinds of structures. In a real-life application, the degree of damage to each of the 28 indicators can be mapped together to create a comprehensive damage analysis. As with the original scale, the EF-Scale rates the tornado as a whole based on the most intense damage within the tornado's path.

While the EF-Scale is currently in use, ***the historical data presented in this report is based on the original F-Scale***. None of the tornadoes rated before February 1, 2007 will be re-evaluated using the EF-Scale.

Are alerts issued for tornadoes?

Yes. The National Weather Service Weather Forecast Office in Lincoln, Illinois is responsible for issuing ***tornado watches*** and ***warnings*** for Piatt County depending on the weather conditions. The following provides a brief description of each type of alert.

- **Watch.** A tornado watch is issued when tornadoes are possible in the area. Individuals need to be alert and prepared. Watches are typically large, covering numerous counties or even states.

- **Warning.** A tornado warning is issued when a tornado has been sighted or indicated by weather radar. Warnings indicate imminent danger to life and property for those who are in the path of the tornado. Individuals should see shelter immediately. Typically, warnings encompass a much smaller area, such as a city or small county.

HAZARD PROFILE

The following identifies past occurrences of tornadoes; details the severity or extent of each event (if known); identifies the locations potentially affected; and estimates the likelihood of future occurrences.

When have tornadoes occurred previously? What is the extent of these previous tornadoes?

Table 10, located in **Appendix I**, summarizes the previous occurrences as well as the extent or magnitude of tornado events recorded in Piatt County. NOAA's Storm Events Database, Storm Data Publications, and Storm Prediction Center have documented 37 occurrences of tornadoes in Piatt County between 1950 and 2021. In comparison, there have been 2,745 tornadoes statewide between 1950 and 2021 according to NOAA's Storm Prediction Center.

Tornado Fast Facts – Occurrences

Number of Tornadoes Reported (1950 – 2021): ***37***

Highest F-Scale Rating Recorded: ***F4 (March 20, 1976)***

Most Likely Month for Tornadoes to Occur: ***April & June***

Average Length of a Tornado: ***2.38 miles***

Average Width of a Tornado: ***76.7 yards***

Average Damage Pathway of a Tornado: ***0.1 sq. mi.***

Longest Tornado Path in the County: ***17.2 miles (March 20, 1976)***

Widest Tornado Path in the County: ***800 yards (March 20, 1976)***

Figure T-2 charts the reported occurrences of tornadoes by magnitude. Of the 37 reported occurrences there were: 1 – F4, 1 – F3, 4 – F2s, 10 – F1s, 12 – F0s, 1 – EF1s, 6 – EF0s, and 2 – EF unknown.

Figure T-2
Tornadoes by Magnitude
1950 – 2021

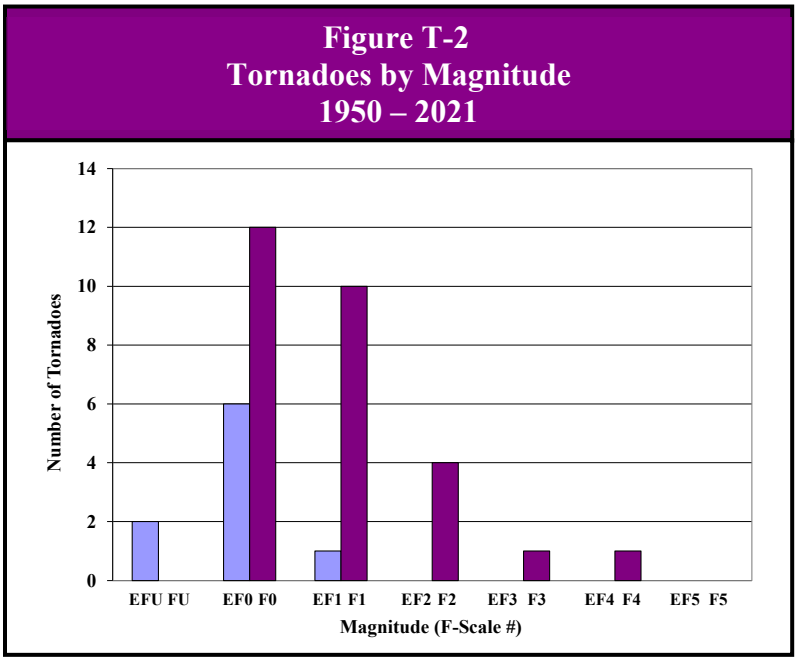
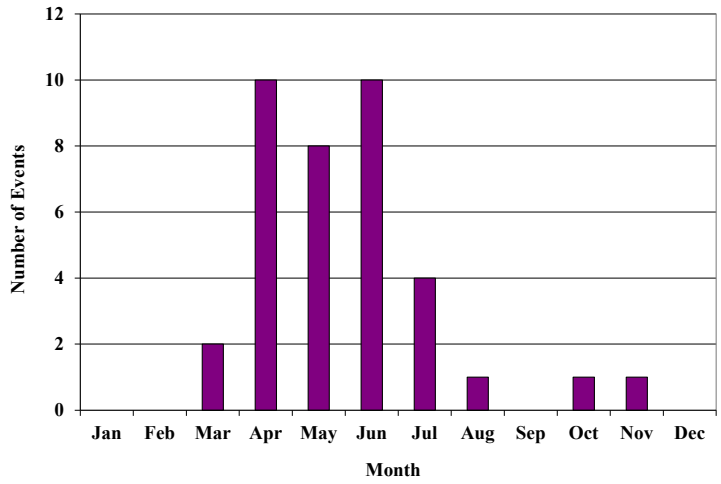


Figure T-3 charts the reported tornadoes by month. Of the 37 events, 28 (76%) took place in April, May, and June making this the peak period for tornadoes in Piatt County. Of those 28 events, 10 (36%) occurred during April and 10 (36%) occurred during June, making these the peak months for tornadoes. In comparison, 1,720 of the 2,745 tornadoes (63%) recorded in Illinois from 1950 through 2021 took place in April, May, and June.

Figure T-3
Tornadoes by Month
1950 – 2021



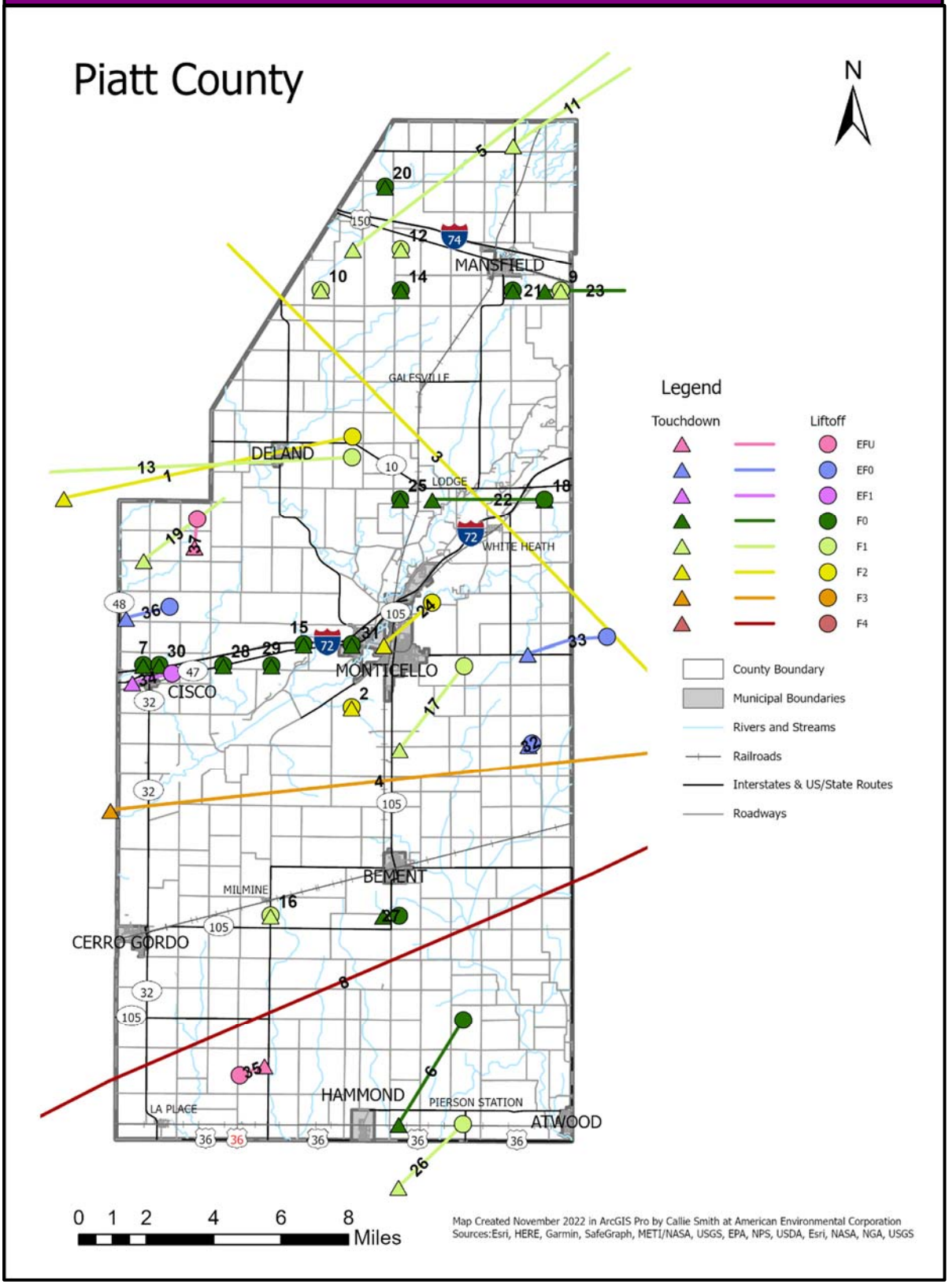
Approximately 92% of all tornadoes in the County occurred during the p.m. hours, with approximately 84% taking place between 1 p.m. and 8 p.m. In comparison, approximately 72% of all Illinois tornadoes occur between 1 p.m. and 8 p.m.

The tornadoes that have impacted Piatt County have varied from 0.1 miles (176 yards) to 17.2 miles in length and from 10 yards to 800 yards in width. The average length of a tornado in Piatt County is 2.38 miles and the average width is 76.7 yards (0.044 miles).

Figures T-4 shows the pathway of each reported tornado. Records indicate that most of these tornadoes generally moved from southwest to northeast across the County. Unlike other natural hazards (i.e., severe winter storms, drought, and excessive heat), tornadoes impact a relatively small area. Typically, the area impacted by a tornado is less than four square miles. In Piatt County, the average damage pathway or area impacted by a tornado is 0.1 square miles.

The longest and widest tornado recorded in Piatt County occurred on March 20, 1976. This F4 tornado, measuring 800 yards in width and 17.2 miles in length, touched down in Macon County southeast of Long Creek and traveled northeastward through Piatt County and Champaign County before lifting off northwest of Danville in Vermillion County. This tornado was on the ground for a total of 63.7 miles. The damage pathway of this tornado covered approximately 29.0 square miles, with 7.8 square miles occurring in Piatt County.

Figure T-4
Tornado Pathways in Piatt County



What locations are affected by tornadoes?

Tornadoes have the potential to affect the entire County. Of the five participating municipalities, two have had reported occurrences of tornadoes within their corporate limits. The *2018 Illinois Natural Hazard Mitigation Plan* prepared by IEMA classifies Piatt County's hazard rating for tornadoes as "medium."

What is the probability of future tornadoes occurring?

Piatt County has had 37 verified occurrences of tornadoes between 1950 and 2021. With 37 tornadoes over the past 72 years, the probability or likelihood that a tornado will touchdown somewhere in the County in any given year is 51.4%. There were seven years over the last 72 years where more than one tornado occurred. This indicates that the probability that more than one tornado may occur during any given year within the County is 9.7%.

HAZARD VULNERABILITY

The following describes the vulnerability to participating jurisdictions, identifies the impacts on public health and property (if known) and estimates the potential impacts on public health and safety as well as buildings, infrastructure, and critical facilities from tornadoes.

Are the participating jurisdictions vulnerable to tornadoes?

Yes. All of Piatt County, including the participating jurisdictions, is vulnerable to the dangers presented by tornadoes. Since 2012, six tornadoes have been recorded in Piatt County.

Of the participating municipalities, Cisco and Monticello have had a tornado touch down or pass through their municipal boundaries. **Figure T-5** lists the verified tornadoes that have touched down in or near or passed through each participating municipality.

Figure T-5
Verified Tornadoes In or Near Participating Municipalities

Participating Municipality	Number of Verified Tornadoes	Year	
		Touched Down/Passed Through Municipality	Touched Down/Passed Near Municipality
Bement[1]	2	---	1963, 1976
Cisco[2,6]	8	1974, 2019	1974, 1999, 2006, 2006, 2019, 2021
Hammond	2	---	1974, 2020
Mansfield	8	---	1974, 1981, 1985, 1986, 1991, 1999, 1999, 2000
Monticello[3,5,7]	10	1959, 2001	1959, 1993, 1996, 2001, 2006, 2006, 2012, 2015

[1] Bement CUSD #5
[2] Cisco FPD
[3] Monticello F&R
[4] Mid Piatt FPD
[5] Monticello Township
[6] Willow Branch Township
[7] Kirby Medical Center

In terms of unincorporated areas vulnerable to tornadoes, Lodge, Pierson Station, and White Health have each had three tornadoes touch down in or near their vicinity. **Figure T-6** details the verified tornadoes that have touched down in or near unincorporated areas in Piatt County.

Figure T-6
Verified Tornadoes In or Near Unincorporated Areas of Piatt County

Unincorporated Area	Number of Verified Tornadoes	Year	
		Touched Down/Passed ***Through*** Unincorporated Area	Touched Down/Passed ***Near*** Unincorporated Area
Galesville	2	1960	1981
LaPlace	2	---	1976, 2020
Lodge	3	2000	2000, 2003
Milmine[1]	2	1996	1996
Pierson Station	3	2005	1974, 2005
White Heath[4]	3	---	1960, 1997, 2000

[1] Bement CUSD #5
[2] Cisco FPD
[3] Monticello F&R
[4] Mid Piatt FPD
[5] Monticello Township
[6] Willow Branch Township
[7] Kirby Medical Center

Do Any of the participating jurisdictions consider tornadoes to be among their community's greatest vulnerabilities?

Yes. Based on responses to a Critical Facilities Vulnerability Survey distributed to the participating jurisdictions, the following respondents consider tornadoes to be among their community's greatest vulnerabilities.

- *Piatt County:* The Piatt County Nursing Home is vulnerable to structural damage from tornadoes. In 2006, the Nursing Home sustained extensive physical damage from a tornado. The Nursing Home is also vulnerable to power outages caused by tornadoes which could adversely impact patient care since the facility does not currently have an emergency backup generator.
- *Cisco*: The trees in the Village have not been trimmed. During a tornado, high winds have the potential to down trees and tree limbs which could in turn down power lines impacting critical services to residents.
- *Kirby Medical Center*: A tornado could cause structural damage to our facilities.
- *Cisco Fire Protection District*: If a tornado impacted the Cisco, it would impact our ability to provide emergency response services. The emergency backup generator that serves the Fire Station and the Village's designated warming/cooling center is vulnerable to power outages. The generator failed when the Village was impacted by an EF1 tornado, and the Fire Station was without power for multiple days.
- *Monticello Fire & Rescue*: Tornadoes have the potential to down power lines which can impact travel and response times.

What impacts resulted from the recorded tornadoes?

Data obtained from NOAA's Storm Events Database, Storm Data Publications and Storm Prediction Center and Committee Member records indicate that between 1950 and 2021, 13 of the 37 tornadoes caused $7.4 million in property damages and $4,000 in crop damages. Three of the tornadoes had property damage totals of at least $1 million. Property damage information was either unavailable or none was recorded for the remaining 25 reported occurrences.

NOAA's Storm Events Database documented 14 injuries and 1 fatality as a result of four tornado events. Detailed information was not available for any of these events. In comparison, Illinois averages roughly four tornado fatalities annually; however, this number varies widely from year to year.

Tornado Fast Facts – Impacts/Risk

Tornado Impacts:

- Total Property Damage (12 events): ***$7,407,500***
- Total Crop Damage: (1 event) ***$4,000***
- Injuries (4 events): ***14***
- Fatalities: (1 event) ***1***

Tornado Risk/Vulnerability:

- Public Health & Safety – Rural Areas: ***Low to Medium***
- Public Health & Safety – Municipalities: ***High***
- Buildings/Infrastructure/Critical Facilities – Rural Areas: ***Low to Medium***
- Buildings/Infrastructure/Critical Facilities – Municipalities/Populated Unincorp. Areas: ***High***

What other impacts can result from tornadoes?

In addition to causing damage to buildings and properties, tornadoes can damage infrastructure and critical facilities such as roads, bridges, railroad tracks, drinking water treatment facilities, water towers, communication towers, antennae, power substations, transformers, and poles. Depending on the damage done to the infrastructure and critical facilities, indirect impacts on individuals could range from inconvenient (i.e., adverse travel) to life-altering (i.e., loss of utilities for extended periods of time).

What is the level of risk/vulnerability to public health and safety from tornadoes?

According to the 2018 Illinois Natural Hazard Mitigation Plan, Piatt County ***ranks 41st among all 102 counties in Illinois in terms of tornado frequency***. This fact alone suggests that the overall risk posed by tornadoes to public health and safety is medium to low. While frequency is important, other factors must be examined when assessing vulnerability including population distribution and density, the ratings and pathways of previously recorded tornadoes, the presence of high-risk living accommodations (such as high-rise buildings, mobile homes, etc.) and adequate access to health care for those injured following a tornado.

In terms of adequate access to health care, Kirby Medical Center in Monticello are equipped to provide care to persons injured by a tornado assuming that they are not directly impacted. In addition, there are hospitals in Champaign (Champaign County), Decatur (Macon County), Clinton (DeWitt County), and Bloomington-Normal (McLean County) that are equipped to provide care and have sufficient capacity for the influx of additional patients from one or more counties.

Piatt County

For Piatt County, including the townships and fire protection districts, the level of risk or vulnerability posed by tornadoes to public health and safety is considered to be ***low to medium.*** This assessment is based on the fact that tornadoes do not occur frequently in the County and a large majority of the tornadoes that have impacted the County have touched down in rural areas away from concentrated populations. This has contributed to a relatively low number of injuries and fatalities. In addition, the County is not densely populated and there is not a large number of high-risk living accommodations present.

Participating Municipalities

In general, if a tornado were to touch down or pass through any of the participating municipalities the risk to the public health and safety would be considered ***high***. This is based on the fact that four of the five of the participating jurisdictions are small in size (less than one square mile) and have relatively dense and evenly distributed populations within their municipal boundaries. As a result, if a tornado were to touch down anywhere within the corporate limits of these municipalities it will have a greater likelihood of causing injuries or even fatalities.

Do any participating jurisdictions have community safe rooms?

Yes. Bement identified the Bement United Methodist Church as a community safe room while the Cisco Fire Protection District identified the Fire Station as a community safe room. As a result, if a tornado were to touch down or pass through any of the population centers in the County, then there would be a greater likelihood of injuries and fatalities due to the lack of structures specifically designed and constructed to provide life-safety protection. Each jurisdiction should consider whether the potential impacts to public health and safety from a tornado are considered great enough to warrant the consideration of community safe rooms as a mitigation action.

Are existing buildings, infrastructure, and critical facilities vulnerable to tornadoes?

Yes. All existing buildings, infrastructure, and critical facilities located within the County and participating municipalities are vulnerable to tornado damage. Buildings, infrastructure, and critical facilities located in the path of a tornado usually suffer extensive damage, if not complete destruction.

While some buildings adjacent to a tornado's path may remain standing with little or no damage, all are vulnerable to damage from flying debris. It is common for flying debris to cause damage to roofs, siding, and windows. In addition, mobile homes, homes on crawlspaces, and buildings with large spans (i.e., schools, barns, airport hangers, factories, etc.) are more likely to suffer damage. Most workplaces and many residential units do not provide sufficient protection from tornadoes.

The damages sustained by infrastructure and critical facilities during a tornado are similar to those experienced during a severe storm. There is a high probability that power, communication, and transportation will be disrupted in and around the affected area.

Assessing the Vulnerability of Existing Residential Structures

One way to assess the vulnerability of existing residential structures is to estimate the number of housing units that may be potentially damaged if a tornado were to touch down or pass through any of the participating municipalities or the County. In order to accomplish this, a set of decisions/assumptions must be made regarding:

- the size (area impacted) by the tornado;
- the method used to estimate the area impacted by the tornado within each jurisdiction; and
- the method used to estimate the number of potentially-damaged housing units.

The following provides a brief discussion of each decision/assumption.

Assumption #1: Size of Tornado. To calculate the number of existing residential structures vulnerable to a tornado, the size (area impacted) by the tornado must first be determined. There are several scenarios that can be used to calculate the size, including the worst case and the average. For this analysis, the area impacted by an average-sized tornado in Piatt County will be used since it has a higher probability of recurring. In Piatt County, the area impacted by an average-sized tornado is 0.1 square miles. This average is based on more than 70 years of data.

Assumption #1

Size of Tornado = 0.1 sq. miles

Assumption #2: Method for Estimating the Area Impacted. Next, a method for determining the area within each jurisdiction impacted by the average-sized tornado needs to be chosen. There are several methods that can be used including creating an outline of the area impacted by the average-sized tornado and overlaying it on a map of each jurisdiction (most notably the municipalities) to see if any portion of the area falls outside of the corporate limits (which would require additional calculations) or just assume that the entire area of the average-sized tornado falls within the limits of each jurisdiction. For this discussion, it is assumed that the entire area of the average-sized tornado will fall within the limits of the participating jurisdictions.

Assumption #2

The entire area impacted by the average-sized tornado falls within the limits of each participating jurisdiction.

This method is quicker, easier, and more likely to produce consistent results when the Plan is updated again. There is, however, a greater likelihood that the number of potentially-damaged housing units will be overestimated for those municipalities that have irregular shaped boundaries or occupy less than one square mile.

Assumption #3: Method for Estimating Potentially-Damaged Housing Units. With the size of the tornado selected and a method for estimating the area impacted chosen, a decision must be made on an approach for estimating the number of potentially-damaged housing units. There are several methods that can be used including overlaying the average-sized tornado on a map of each jurisdiction and counting the impacted housing units or calculating the average housing unit density to estimate the number of potentially-damaged housing units.

Assumption #3

The average housing unit density for each municipality will be used to determine the number of potentially-damaged housing units.

For this analysis, the average housing unit density will be used since it provides a realistic perspective on potential residential damages without conducting extensive counts. Using the average housing unit density also allows future updates to the Plan to be easily recalculated and provides an exact comparison to previous estimates.

Calculating Average Housing Unit Density

The average housing unit density can be calculated by taking the number of housing units in a jurisdiction and dividing that by the land area within the jurisdiction. **Figure T-7** provides a sample calculation.

Figure T-7
Calculation of Average Housing Unit Density – Piatt County

Total Housing Units in the Jurisdiction ÷ Land Area within the Jurisdiction = Average Housing Unit Density
(Rounded Up to the Nearest Whole Number)

Piatt County: 7,435 housing units ÷ 439.482 sq. miles = 16.918 housing units/sq. mile
(17 housing units)

Figure T-8 provides a breakdown of housing unit densities by participating municipality as well as for the unincorporated areas of the County and the County as a whole.

Figure T-8
Average Housing Unit Density by Participating Jurisdiction

Participating Jurisdiction	Township Location	Total Housing Units (2016-2020)	Mobile Homes (2016-2020)	Land Area (Sq. Miles) (2010)	Average Housing Unit Density (Units/Sq. Mi.) (Raw)
Bement[1]	Bement	710	11	0.808	---
Cisco[2,6]	Willow Branch	126	11	0.366	---
Hammond	Unity	303	2	0.756	---
Mansfield	Blue Ridge	499	28	0.528	---
Monticello[3,5,7]	Monticello	2,610	31	3.802	686.481
Unincorp. County		1,848	89	431.417	4.284
County		7,435	227	439.482	16.918

[1] Bement CUSD #5
[2] Cisco FPD
[3] Monticello F&R
[4] Mid Piatt FPD
[5] Monticello Township
[6] Willow Branch Township
[7] Kirby Medical Center

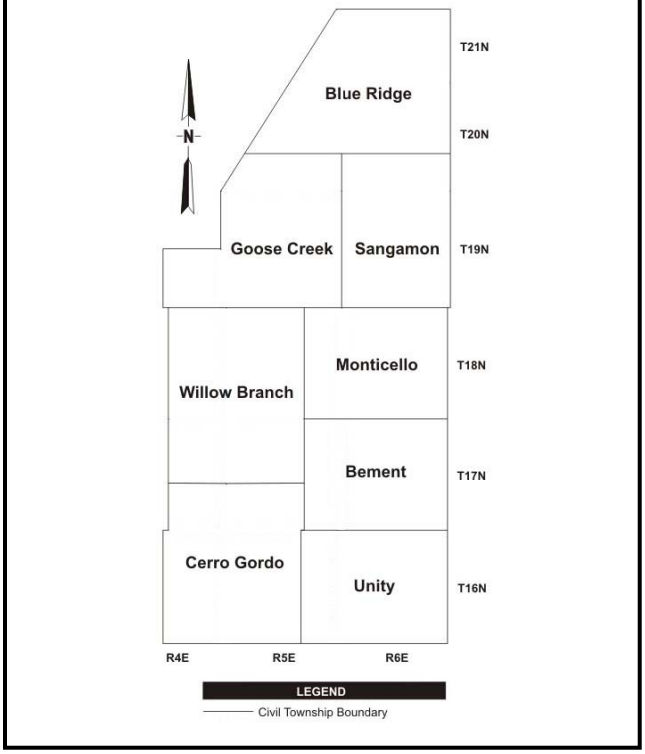
Source: U.S. Census Bureau.

While the average housing unit density provides an adequate assessment of the number of housing units in areas where the housing density is fairly constant, such as municipalities, it does not provide a realistic assessment for those counties with large, sparsely populated rural areas such as Piatt County.

In Piatt County, as well as many other Central Illinois counties, there are pronounced differences in housing unit densities. Approximately 71% of all housing units are located in four of the County's eight townships (Bement, Cerro Gordo, Monticello, and Sangamon) while approximately 63% of all mobile homes are located in four of the County's eight townships (Cerro Gordo, Goose Creek, Monticello, and Unity).

Figure T-9 identifies the township boundaries. Tornado damage to buildings (especially mobile homes), infrastructure and critical facilities in these more densely populated townships is likely to be greater than in the rest of the County.

Figure T-9
Township Boundaries Piatt County



Source: Illinois Secretary of State

This substantial difference in density skews the average *county* housing unit density in Piatt County and is readily apparent when compared to the average housing unit densities for each of the townships within the County. **Figure T-10** provides a breakdown of housing unit densities by township and illustrates the differences between the various townships and the County as a whole.

For six of the eight townships, the *average county* housing unit density is greater (in some cases considerably greater) than the *average township* housing unit densities. However, the *average county* housing unit density is considerably less than the housing unit densities for one of the two most populated townships.

Estimating the Number of Potentially-Damaged Housing Units

Before an estimate of the number of potentially-damaged housing units can be calculated for the participating municipalities, an additional factor needs to be taken into consideration: the presence of commercial/industrial developments and/or large tracts of undeveloped land. Occasionally villages and cities will annex large tracts of undeveloped land or have commercial/industrial parks/developments located within their corporate limits. In many cases these large tracts of land include very few residential structures. Consequently, including these tracts of land in the calculations to determine the number of potentially-damaged housing units skews the results, especially for very small municipalities. Therefore, to provide a more realistic assessment of the

number of potentially-damaged housing units, these areas need to be subtracted from the land area figures obtained from the U.S. Census Bureau.

Figure T-10
Average Housing Unit Density by Township

Township	Incorporated Municipalities Located in Township	Total Housing Units (2016-2020)	Mobile Homes (2016-2020)	Land Area (Sq. Miles) (2010)	Average Housing Unit Density (Units/Sq. Mi.) (Raw)
Bement [1]	Bement	807	16	48.317	16.702
Blue Ridge	Mansfield	678	28	63.653	10.652
Cerro Gordo [1,7]	Cerro Gordo	843	42	60.260	13.989
Goose Creek [2,4]	De Land	406	37	56.303	7.211
Monticello [1,3,4,5]	Monticello	2,653	31	48.050	55.213
Sangamon [4]		982	20	47.182	20.813
Unity [1,7]	Atwood, Hammond	716	34	48.109	14.883
Willow Branch [1,2,4]	Cisco	350	19	67.326	5.199
Townships - 4 most populated		5,285	109	204	25.931
Townships - 4 least populated		2,150	118	235	9.134

[1] Bement CUSD #5 [3] Monticello F&R [5] Kirby Medical Center
[2] Cisco FPD [4] Mid Piatt FPD

Source: U.S. Census Bureau.

In Piatt County, almost all of the municipalities have large commercial/industrial and/or undeveloped land areas within their municipal boundaries. These areas account for approximately one-third to three-fourths of the land area in these municipalities. If these areas are subtracted from the U.S. Census Bureau land area figures, then the remaining land areas have fairly consistent housing unit densities and contain a majority of the housing units. **Figure T-11** provides a breakdown of the refined land area figures for select municipalities. These refined land area figures will be used to update the average housing unit density calculations for these municipalities.

Figure T-11
Refined Land Area Figures for Participating Municipalities with Large Tracts of Commercial/Industrial and Undeveloped Land Areas

Participating Jurisdiction	Land Area (Sq. Miles) (2010)	Estimated Open Land Area & Commercial/ Industrial Tracts (Sq. Miles)	Refined Land Area (Sq. Miles)
Bement	0.808	0.190	0.618
Cisco	0.366	0.226	0.140
Hammond	0.756	0.545	0.211
Mansfield	0.528	0.170	0.358
Monticello	3.802	1.680	2.122

With updated average housing unit densities calculated it is relatively simple to provide an estimate of the number of existing potentially-damaged housing units. This can be done by multiplying the average housing unit density by the area impacted by the average-sized Piatt County tornado. **Figure T-12** provides a sample calculation.

Figure T-12
Sample Calculation of Potentially-Damaged Housing Units – Piatt County

Average Housing Unit Density x Area Impacted by the Average-Sized Piatt County Tornado = Potentially-Damaged Housing Units
(Rounded Up to the Nearest Whole Number)

Piatt County: 16.918 housing units/sq. mile x 0.1 sq. miles = 1.69 housing units
(2 housing units)

For those municipalities that cover less than one square mile, the average housing unit density cannot be used to calculate the number of potentially-damaged housing units. The average housing unit density assumes that the land area within the municipality is at least one square mile and as a result distorts the number of potentially-damaged housing units for very small municipalities.

To calculate the number of potentially-damaged housing units for these municipalities, the area impacted by the averaged-sized Piatt County tornado is divided by the land area within the municipality to get the impacted land area. The impacted land area is then multiplied by the total number of housing units within the municipality to get the number of potentially-damaged housing units. **Figure T-13** provides a sample calculation.

Figure T-13
Sample Calculation of Potentially-Damaged Housing Units for Municipalities Covering Less Than One Square Mile – Bement

Area Impacted by the Average-Sized Piatt County Tornado ÷ Land Area within the Jurisdiction x Total Housing Units in the Jurisdiction = Potentially-Damaged Housing Units
(Rounded Up to the Nearest Whole Number)

Bement: 0.1 sq. mile ÷ 0.618 sq. miles x 710 housing units = 114.89
(115 housing units)

Figures T-14 and **T-15** provide a breakdown of the number of potentially-damaged housing units by participating municipality as well as by township and for the unincorporated areas of the County and the County as a whole. It is important to note that for the most densely populated township, the estimated number of potentially-damaged housing units would only be reached if a tornado's pathway included the major municipality within the township. If the tornado remained in the rural portion of the township, then the number of potentially-damaged housing units would be considerably lower.

Figure T-14
Estimated Number of Housing Units by Participating Jurisdiction Potentially Damaged by a Tornado

Participating Jurisdiction	Total Housing Units (2016-2020)	Land Area/Refined Land Area (Sq. Miles) (2010)	Average Housing Unit Density (Units/Sq. Mi.) (Raw)	Potentially-Damaged Housing Units (Units/0.1 Sq. Mi.) (Raw)	Potentially-Damaged Housing Units (Units/0.1 Sq. Mi.) (Rounded Up)
Bement[1]	710	0.618	---	114.89	115
Cisco[2,6]	126	0.140	---	90.00	90
Hammond	303	0.211	---	143.60	144
Mansfield	499	0.358	---	139.39	140
Monticello[3,5,7]	2,610	2.122	1,229.972	123.00	123
Unincorp. County	1,848	431.417	4.284	0.43	1
County	7,435	439.482	16.918	1.69	2

[1] Bement CUSD #5
[2] Cisco FPD
[3] Monticello F&R
[4] Mid Piatt FPD
[5] Monticello Township
[6] Willow Branch Township
[7] Kirby Medical Center

Figure T-15
Estimated Number of Housing Units by Township Potentially Damaged by a Tornado

Township	Total Housing Units (2016-2020)	Land Area (Sq. Miles) (2010)	Average Housing Unit Density (Units/Sq. Mi.) (Raw)	Potentially-Damaged Housing Units (Units/0.1 Sq. Mi.) (Raw)	Potentially-Damaged Housing Units (Units/0.1 Sq. Mi.) (Rounded Up)
Bement [1]	807	48.317	16.702	1.67	2
Blue Ridge	678	63.653	10.652	1.07	2
Cerro Gordo [1,7]	843	60.260	13.989	1.40	2
Goose Creek [2,4]	406	56.303	7.211	0.72	1
Monticello [1,3,4,5]	2,653	48.050	55.213	5.52	6
Sangamon [4]	982	47.182	20.813	2.08	3
Unity [1,7]	716	48.109	14.883	1.49	2
Willow Branch [1,2,4]	350	67.326	5.199	0.52	1
Townships - 4 most populated	5,285	203.809	25.931	2.59	3
Townships - 4 least populated	2,150	235.391	9.134	0.91	1

[1] Bement CUSD #5
[2] Cisco FPD
[3] Monticello F&R
[4] Mid Piatt FPD
[5] Kirby Medical Center

What is the level of risk/vulnerability to existing buildings, infrastructure, and critical facilities vulnerable from tornadoes?

There are several factors that must be examined when assessing the vulnerability of existing buildings, infrastructure, and critical facilities to tornadoes. These factors include tornado frequency, population distribution and density, the ratings and pathways of previously recorded

tornadoes, and the presence of high-risk living accommodations (such as high-rise buildings, mobile homes, etc.).

Unincorporated Piatt County/Fire Protection Districts/Townships

For Piatt County, the level of risk or vulnerability posed by tornadoes to existing buildings, infrastructure and critical facilities is considered to be ***low***. This assessment is based on the frequency with which tornadoes have occurred in the County as well as the amount of damage that has been sustained tempered by the low population density throughout most the County and the relative absence of high risk living accommodations. While previously recorded tornadoes have followed largely rural pathways, they have caused significant damage on several occasions.

Participating Municipalities (including schools and Healthcare Facilities)

In general, if a tornado were to touch down or pass through any of the participating municipalities the risk to existing buildings, infrastructure, and critical facilities would be considered ***high***. This assessment is based on the population and housing unit distribution within the municipalities where wide expanses of open spaces do not generally exist. As a result, if a tornado were to touch down within any of the municipalities it will have a greater likelihood of causing substantial property damage.

What are the potential dollar losses to vulnerable structures from tornadoes?

Unlike other hazards, such as flooding, there are no standard loss estimation models or methodologies for tornadoes. However, a rough estimate of potential dollar losses to the *potentially-damaged housing units* determined previously can be calculated if several additional decisions/assumptions are made regarding:

- the value of the potentially-damaged housing units; and
- the percent damage sustained by the potentially-damaged housing units (i.e., damage scenario).

These assumptions represent a ***probable scenario*** based on the reported historical occurrences of tornadoes in Piatt County. The purpose of providing a rough estimate is to help residents and municipal/county officials make informed decisions to better protect themselves and their communities. These estimates are meant to provide a ***general idea*** of the magnitude of the potential damage that could occur. The following provides a brief discussion of each decision/assumption.

Assumption #4: Value of Potentially-Damaged Housing Units. In order to determine the potential dollar losses to the potentially-damaged housing units, the monetary value of the units must first be calculated. Typically, when damage estimates are prepared after a natural disaster such as a tornado, they are based on the market value of the structure. Since it would be impractical to determine the individual market value of each potentially-damaged housing unit, the average market value of residential structures in each municipality will be used.

Assumption #4

The average market value for residential structures in each participating jurisdiction will be used to determine the value of potentially-damaged housing units.

To determine the average market value, the average assessed value must first be calculated. The average assessed value is calculated by taking the total assessed value of residential buildings within a jurisdiction and dividing that number by the total number of housing units within the jurisdiction. The average market value is then determined by taking the average assessed value and multiplying that number by three (the assessed value of a structure in Piatt County is approximately one-third of the market value). **Figure T-16** provides a sample calculation. The total assessed value is based on 2022 tax assessment information provided by the Piatt County Chief County Assessment Officer.

Figure T-16
Sample Calculation of Average Assessed Value & Average Market Value – Bement

Average Assessed Value

Total Assessed Value of Residential Buildings in the Jurisdiction÷ Total Housing Units in the Jurisdiction = Average Assessed Value (Rounded to the Nearest Dollar)

Bement: $19,076,466 ÷ 710 housing units = $26,868

Average Market Value

Average Assessed Value x 3 = Average Market Value

Bement: $28,868 x 3 = $80,604

($80,604)

Figures T-17 and **T-18** provide the average assessed value and average market value for each participating municipality as well as by township and for the unincorporated areas of the County and the County as a whole.

Figure T-17
Average Market Value of Housing Units by Municipality

Participating Jurisdiction	Total Assessed Value of Residential Buildings (2022)	Total Housing Units (2016-2020)	Average Assessed Values	Average Market Value (2022)
Bement[1]	$19,076,466	710	$26,868	$80,604
Cisco[2,6]	$3,524,148	126	$27,969	$83,907
Hammond	$4,752,792	303	$15,686	$47,058
Mansfield	$15,323,357	499	$30,708	$92,124
Monticello[3,5,7]	$133,386,956	2,610	$51,106	$153,318
Unincorp. County	$117,667,655	1,848	$63,673	$191,019
County	$326,202,125	8,839	$36,905	$110,715

[1] Bement CUSD #5
[2] Cisco FPD
[3] Monticello F&R
[4] Mid Piatt FPD
[5] Monticello Township
[6] Willow Branch Township
[7] Kirby Medical Center

Source: Piatt County Chief County Assessment Officer.

Figure T-18
Average Market Value of Housing Units by Township

Participating Jurisdiction	Total Assessed Value of Residential Buildings (2022)	Total Housing Units (2016-2020)	Average Assessed Values	Average Market Value (2022)
Bement [1]	$21,389,036	807	$26,504	$79,513
Blue Ridge	$22,800,052	678	$33,628	$100,885
Cerro Gordo [1,7]	$23,540,603	843	$27,925	$83,774
Goose Creek [2,4]	$10,934,292	406	$26,932	$80,795
Monticello [1,3,4,5]	$133,890,947	2,653	$50,468	$151,403
Sangamon [4]	$70,912,742	982	$72,213	$216,638
Unity [1,7]	$16,358,252	716	$22,847	$68,540
Willow Branch [1,2,4]	$22,050,573	350	$63,002	$189,005
Townships - 4 most populated	$249,733,328	5,285	$47,253	$141,760
Townships - 4 least populated	$72,143,169	2,150	$33,555	$100,665

[1] Bement CUSD #5 [3] Monticello F&R [5] Kirby Medical Center
[2] Cisco FPD [4] Mid Piatt FPD

Source: Piatt County Chief County Assessment Officer.

Assumption #5: Damage Scenario. Finally, a decision must be made regarding the percent damage sustained by the potentially-damaged housing units and their contents. For this scenario, the expected percent damage sustained by the structure and its contents is 100%; in other words, all of the potentially-damaged housing units would be completely destroyed. While it is highly unlikely that each and every housing unit would sustain the maximum percent damage, identifying and calculating different degrees of damage within the average area impacted is complex and provides an additional complication when updating the Plan.

Assumption #5

The tornado would completely destroy the potentially-damaged housing units.

Structural Damage = 100%
Content Damage = 100%

Calculating Potential Dollar Losses

With all the decisions and assumptions made, the potential dollar losses can now be calculated. First, the potential dollar losses to the ***structure*** of a potentially-damaged housing unit must be determined. This is done by taking the average market value for a residential structure and multiplying it by the percent damage (100%) to get the average structural damage per unit. Next the average structural damage per unit is multiplied by the number of potentially-damaged housing units. **Figure T-19** provides a sample calculation.

Next, the potential dollar losses to the ***content*** of a potentially-damaged housing unit must be determined. Based on FEMA guidance, the value of a residential housing unit's content is approximately 50% of its market value. Therefore, start by taking one-half the average market value for a residential structure and multiply by the percent damage (100%) to get the average content damage per unit. Next the average content damage per unit is multiplied by the number of potentially-damaged housing units. **Figure T-20** provides a sample calculation.

Figure T-19
***Structure:* Potential Dollar Loss Sample Calculation – Bement**

Average Market Value of a Housing Unit within the Jurisdiction x Percent Damage = Average Structural Damage per Housing Unit
Bement: $80,604 x 100% = $80,604 per housing unit

Average Structural Damage per Housing Unit x Number of Potentially-Damaged Housing Units within the Jurisdiction = *Structure* Potential Dollar Losses
Bement: $80,604 per housing unit x 115 housing units = $9,269,460
($9,269,460)

Figure T-20
***Content:* Potential Dollar Loss Sample Calculation - Bement**

½ (Average Market Value of a Housing Unit) within the Jurisdiction x Percent Damage = Average Content Damage per Housing Unit
Bement: ½ ($80,604) x 100% = $40,302 per housing unit

Average Content Damage per Housing Unit x Number of Potentially-Damaged Housing Units within the Jurisdiction = *Content* Potential Dollar Losses
Bement: $40,302 per housing unit x 115 housing units = $4,634,730
($4,634,730)

Finally, the ***total potential dollar losses*** may be calculated by adding together the potential dollar losses to the structure and content. **Figures T-21** and **T-22** give a breakdown of the total potential dollar losses by municipality and township.

Figure T-21
Estimated Potential Dollar Losses to Potentially-Damaged Housing Units from a Tornado by Participating Jurisdiction

Participating Jurisdiction	Average Market Value (2022)	Potentially-Damaged Housing Units (Rounded Up)	Potential Dollar Losses		Total Potential Dollar Losses
			Structure	Content	
Bement[1]	$80,604	115	$9,269,460	$4,634,730	$13,904,190
Cisco[2,6]	$83,907	90	$7,551,630	$3,775,815	$11,327,445
Hammond	$47,058	144	$6,776,352	$3,388,176	$10,164,528
Mansfield	$92,124	140	$12,897,360	$6,448,680	$19,346,040
Monticello[3,5,7]	$153,318	123	$18,858,114	$9,429,057	$28,287,171
Unincorp. County	$191,019	1	$191,019	$95,510	$286,529
County	$110,715	2	$221,430	$110,715	$332,145

[1] Bement CUSD #5
[2] Cisco FPD
[3] Monticello F&R
[4] Mid Piatt FPD
[5] Monticello Township
[6] Willow Branch Township
[7] Kirby Medical Center

This assessment illustrates why potential residential dollar losses should be considered when jurisdictions are deciding which mitigation projects to pursue. ***Potential dollar losses caused by***

an average tornado in Piatt County would be expected to exceed at least $9.9 million in any of the participating municipalities.

Figure T-22
Estimated Potential Dollar Losses to Potentially-Damaged Housing Units from a Tornado by Township

Participating Jurisdiction	Average Market Value (2022)	Potentially-Damaged Housing Units (Rounded Up)	Potential Dollar Losses		Total Potential Dollar Losses
			Structure	Content	
Bement [1]	$ 79,513	2	$159,026	$79,513	$238,539
Blue Ridge	$100,885	2	$201,770	$100,885	$302,655
Cerro Gordo [1,7]	$ 83,774	2	$167,548	$83,774	$251,322
Goose Creek [2,4]	$ 80,795	1	$80,795	$40,398	$121,193
Monticello [1,3,4,5]	$151,403	6	$908,418	$454,209	$1,362,627
Sangamon [4]	$216,638	3	$649,914	$324,957	$974,871
Unity [1,7]	$ 68,540	2	$137,080	$68,540	$205,620
Willow Branch [1,2,4]	$189,005	1	$189,005	$94,503	$283,508
Townships - 4 most populated	$141,760	3	$425,280	$212,640	$637,920
Townships - 4 least populated	$100,665	1	$100,665	$50,333	$150,998

[1] Bement CUSD #5
[2] Cisco FPD
[3] Monticello F&R
[4] Mid Piatt FPD
[5] Kirby Medical Center

For comparison, an estimate of potential dollar losses was calculated for the entire County, the unincorporated portions of the County, the four most populated townships and the four least populated townships. As discussed previously, the estimate for the entire County is skewed because it does not take into consideration the differences in the housing density.

Vulnerability of Commercial/Industrial Businesses and Infrastructure/Critical Facilities

The calculations presented above are meant to provide the reader with a sense of the scope or magnitude of an average-sized tornado in term of residential dollar losses. These calculations do not include damages sustained by businesses or other infrastructure and critical facilities within the participating jurisdictions.

In terms of businesses, the impacts from an average-sized tornado event can be physical and/or monetary. Monetary impacts can include loss of sales revenue either through temporary closure or loss of critical services (i.e., power, drinking water, and sewer). Depending on the magnitude of the event, the damage sustained by infrastructure and critical facilities can be extensive in nature and expensive to repair. As a result, the cumulative monetary impacts to businesses and infrastructure can exceed the cumulative monetary impacts to residences. ***While average dollar amounts cannot be supplied for these items at this time, they should be taken into account*** when discussing the impacts that an average-sized tornado could have on the participating jurisdictions.

3.7 DROUGHTS

HAZARD IDENTIFICATION

What is the definition of a drought?

While difficult to define, the National Drought Mitigation Center (NDMC) considers "drought" in its most general sense to be a deficiency of precipitation over an extended period of time, usually a season or more, resulting in a water shortage.

Drought is a normal and recurrent feature of climate and can occur in all climate zones, though its characteristics and impacts vary significantly from one region to another. Unlike other natural hazards, drought does not have a clearly defined beginning or end. Droughts can be short, lasting just a few months, or they can persist for several years. There have been 28 drought events with losses exceeding $1 billion each (CPI-Adjusted) across the U.S. between 1980 and 2021. This is due in part to the sheer size of the areas affected.

What types of drought occur?

There are four main types of drought that occur: meteorological, agricultural, hydrological, and socioeconomic. They are differentiated based on the use and need for water. The following provides a brief description of each type.

- **Meteorological Drought.** Meteorological drought is defined by the degree of dryness or rainfall deficit and the duration of the dry period. Due to climate differences, what might be considered a drought in one location of the country may not be in another location.
- **Agricultural Drought.** An agricultural drought refers to a period when rainfall deficits, soil moisture deficits, reduced ground water or reservoir levels needed for irrigation impact crop development and yields.
- **Hydrological Drought.** Hydrological drought refers to a period when precipitation deficits (including snowfall) impact surface (stream flow, reservoir, and lake levels) and subsurface (aquifers) water supply levels.
- **Socioeconomic Drought.** Socioeconomic drought refers to a period when the demand for an economic good (fruit, vegetables, grains, etc.) exceeds the supply as a result of weather-related shortfall in the water supply.

How are droughts measured?

There are numerous quantitative measures (indicators and indices) that have been developed to measure drought. How these indicators and indices measure drought depends on the discipline affected (i.e., agriculture, hydrology, meteorology, etc.) and the region being considered. There is no single index or indicator that can account for and be applied to all types of drought.

Although none of the major indices are inherently superior to the rest, some are better suited than others for certain uses. The first comprehensive drought index developed in the U.S. was the Palmer Drought Severity Index (PDSI). The PDSI is calculated based on precipitation and temperature data, as well as the local Available Water Content of the soil. It is most effective

measuring drought impacts on agriculture. For many years it was the only operational drought index, and it is still very popular around the world.

The Standardized Precipitation Index (SPI), developed in 1993, uses precipitation records for any location to develop a probability of precipitation for any time scale in order to reflect the impact of drought on the availability of different water resources (groundwater, reservoir storage, streamflow, snowpack, etc.) In 2009 the World Meteorological Organization recommended SPI as the main meteorological drought index that countries should use to monitor and follow drought conditions.

The first operational 'composite' approach applied in the U.S. was the U.S. Drought Monitor (USDM). The USDM utilizes five key indicators, numerous supplementary indicators, and local reports from expert observers around the country to produce a drought intensity rating that is ideal for monitoring droughts that have many impacts, especially on agriculture and water resources during all seasons over all climate types. NOAA's Storm Events Database records include USDM ratings and utilized them along with additional weather information to describe the severity of the drought conditions impacting affected counties. Therefore, this Plan will utilize USDM ratings to identify and describe previous drought events recorded within the County. The following provides a more detailed discussion of the USDM to aid the Plan's developers and the general public in understanding how droughts are identified and categorized.

U.S. Drought Monitor (USDM)

Established in 1999, the USDM is a relatively new index that combines quantitative measures with input from experts in the field. It is designed to provide the general public, media, government officials and others with an easily understandable "big picture" overview of drought conditions across the U.S. It is unique in that it combines a variety of numeric-based drought indices and indicators with local expert input to create a single composite drought indicator, the results of which are illustrated via a weekly map that depicts the current drought conditions across the U.S. The USDM is jointly produced by the National Drought Mitigation Center at the University of Nebraska-Lincoln, the U.S. Department of Agriculture, and the National Oceanic and Atmospheric Administration.

The USDM has a scale of five intensity categories, D0 through D4, that are utilized to identify areas of drought. **Figure DR-1** provides a brief description of each category.

Because the ranges of the various indicators often don't coincide, the final drought category tends to be based on what a majority of the indictors show and on local observations. The authors also weight the indices according to how well they perform in various parts of the country and at different times of the year. It is the combination of the best available data, location observations and experts' best judgment that make the U.S. Drought Monitor more versatile than other drought indices.

In addition to identifying and categorizing general areas of drought, the USDM also identifies whether a drought's impacts are short-term (typically less than 6 months – agriculture, grasslands) or long-term (typically more than 6 months – hydrology, ecology). **Figure DR-2** shows an

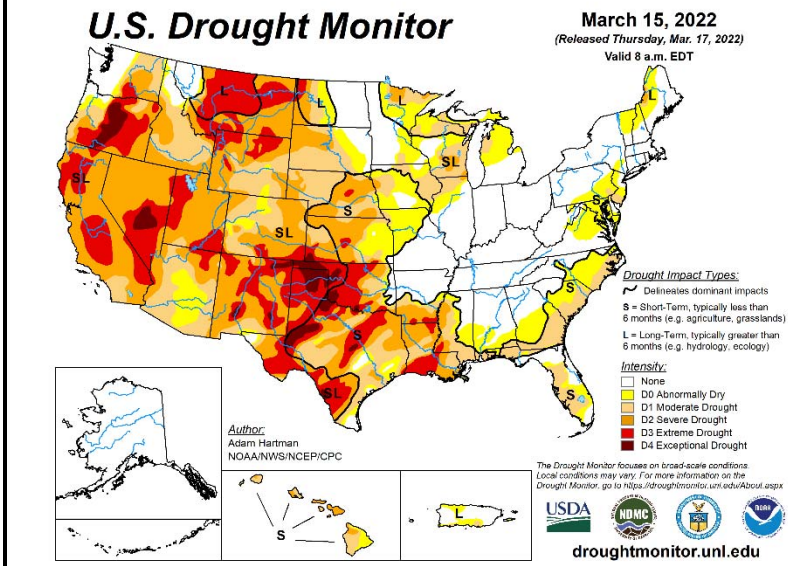
example of the USDM weekly map. The USDM is designed to provide a consistent big-picture look at drought conditions in the U.S. It is not designed to infer specifics about local conditions.

Figure DR-1
U.S. Drought Monitor – Drought Intensity Categories

Category	Possible Impacts
D0 (Abnormally Dry)	• Going into drought: - short-term dryness slowing planting, growth of crops or pastures. • Coming out of drought: - some lingering water deficits - pastures or crops not fully recovered
D1 (Moderate Drought)	• Some damage to crops, pastures • Streams, reservoirs, or wells low; some water shortages developing or imminent • Voluntary water-use restrictions requested
D2 (Severe Drought)	• Crop or pasture losses likely • Water shortages common • Water restrictions imposed
D3 (Extreme Drought)	• Major crop/pasture losses • Widespread water shortages or restrictions
D4 (Exceptional Drought)	• Exceptional and widespread crop/pasture losses • Shortages of water in reservoirs, streams, and wells creating water emergencies

Source: U.S. Drought Monitor.

Figure DR-2
U. S. Drought Monitor



The U.S. Drought Monitor is jointly produced by the National Drought Mitigation Center at the University of Nebraska-Lincoln, the U.S. Department of Agriculture, and the National Oceanic and Atmospheric Administration. Map Courtesy of NDMC.

HAZARD PROFILE

The following identifies past occurrences of drought, details the severity or extent of each event (if known); identifies the locations potentially affected and estimates the likelihood of future occurrences.

When have droughts occurred previously? What is the extent of these previous droughts?

Drought Fast Facts – Occurrences

Number of Drought Events Reported (1980 – 2021): ***6***

Table 11, located in **Appendix I**, summarizes the previous occurrences as well as the extent or magnitude of the drought events recorded in Piatt County. NOAA's Storm Events Database, the Illinois State Water Survey, the Illinois Emergency Management Agency (IEMA) and the USDA have documented six official droughts for Piatt County between 1980 and 2021.

The recorded drought events ranged in length from three to 16 months, with two events beginning in May, two of the events beginning in June, two of the events beginning in August. Of the four drought events that were assigned drought intensity category ratings by the USDM, the 2012 drought reached D3, extreme drought.

The State of Illinois Drought Preparedness and Response Plan identified seven additional outstanding statewide droughts since 1900 based on statewide summer values of the PDSI provided by NOAA's National Center for Environmental Information. Those seven droughts occurred in 1902, 1915, 1931, 1934, 1936, 1954 and 1964; however, the extent to which Piatt County was impacted was unavailable.

What locations are affected by drought?

Drought events affect the entire County. Droughts, like excessive heat and severe winter storms, tend to impact large areas, extending across an entire region and affecting multiple counties. The *2018 Illinois Natural Hazard Mitigation Plan* classifies Piatt County's hazard rating for drought as "medium."

What is the probability of future drought events occurring?

Piatt County, including the participating jurisdictions, has experienced six droughts between 1980 and 2021. With six occurrences over 42 years, the probability or likelihood that the County may experience a drought in any given year is 14.3%. However, if earlier recorded droughts are factored in, then the probability that Piatt County may experience a drought in any given year decreases to 10.8%.

HAZARD VULNERABILITY

The following describes the vulnerability to participating jurisdictions, identifies the impacts on public health and property (if known) and estimates the potential impacts on public health and safety as well as buildings, infrastructure, and critical facilities from drought.

Are the participating jurisdictions vulnerable to drought?

Yes. All of Piatt County, including the participating jurisdictions, is vulnerable to drought. Neither the amount nor the distribution of precipitation; soil types; topography; or water table conditions provides protection for any area within the County. Since 2012, Piatt County has experienced two droughts.

Do any of the participating jurisdictions consider drought to be among their community's greatest vulnerabilities?

No. Based on responses to a Critical Facilities Vulnerability Survey distributed to the participating jurisdictions, none of the participating jurisdictions considered drought to be among their community's greatest vulnerabilities.

What impacts resulted from the recorded drought events?

Damage information was only available for one of the six drought events experienced between 1980 and 2021. According to NOAA's Storm Events Database, the 2012 drought caused an estimated $32 million in corn crop damages in Piatt County. Damage information was either unavailable or none was recorded for the remaining five reported occurrences.

Drought Fast Facts – Impacts/Risk

Drought Impacts:
- Total Property Damage: ***n/a***
- Total Crop Damage: ***$ 32 million (corn crop damage only, 2012 drought)***

Drought Risk/Vulnerability:
- Public Health & Safety: ***Low***
- Buildings/Infrastructure/Critical Facilities: ***Low***

Of the six drought events, disaster relief payment information was only available for one of the events. In 1988, landowners and farmers in Illinois were paid in excess of $382 million in relief payments; however, a breakdown by county was unavailable.

What other impacts can result from drought events?

Based on statewide drought records available from the Illinois State Water Survey, the most common impacts that result from drought events in Illinois include reductions in crop yields and drinking water shortages.

Crop Yield Reductions

Agriculture is a leading industry in Piatt County. Farmland accounts for approximately 93% of all the land in the County. According to the 2017 Census of Agriculture, there were 422 farms in Piatt County occupying approximately 256,012 acres. Of the land in farms, approximately 98% or 250,890 acres are in crop production. Less than 1% of the land in crop production is irrigated.

According to the 2017 Census of Agriculture, total crop and livestock sales accounted for $165.2 million in revenue. This is an 11.6% reduction in revenue from the 2012 Census of Agriculture when the total crop and livestock sales accounted for $186.9 million. Piatt County ranks 31st in Illinois for crop cash receipts. A severe drought would have a major financial impact on the large agricultural community, particularly if it occurred during the growing season. Dry weather conditions, particularly when accompanied by excessive heat, can result in diminished crop yields and place stress on livestock.

A reduction in crop yields was seen as a result of the 1983, 1988, 2005, 2011, and 2012 droughts. **Figure DR-3** illustrates the reduction yields seen for corn and soybeans during the six recorded drought events. The USDA's National Agricultural Statistics Service records show that yield reductions for corn and soybeans were most severe for the 1988 drought when there was a 41.4% reduction in corn yields and a 34.7% reduction in soybean yields.

Figure DR-3
Crop Yield Reductions Due to Drought in Piatt County

Year	Corn		Soybeans	
	Yield (bushel)	% Reduction Previous Year	Yield (bushel)	% Reduction Previous Year
1982	143.0	---	43.5	---
1983	**99.0**	**30.8%**	**36.5**	**16.1%**
1984	130.0	---	35.0	---
1987	162.0	---	47.5	---
1988	**95.0**	**41.4%**	**31.0**	**34.7%**
1989	135.0	---	45.0	---
2004	191.0	---	54.0	---
2005	**171.0**	**10.5%**	56.0	**---**
2006	182.0	---	55.0	---
2007	190.0	---	57.0	---
2010	164.5	---	63.3	---
2011	**157.1**	**4.5%**	**53.0**	**16.3%**
2012	**130.8**	**16.7%**	**51.4**	**3.0%**
2013	187.4	---	58.2	---

Source: USDA, National Agricultural Statistics Service.

Drinking Water Shortages

Municipalities that rely on surface water sources for their drinking water supplies are more vulnerable to shortages as a result of drought. In Piatt County, ***none of the participating municipalities rely on surface water sources*** for their drinking water supply. All obtain drinking water from wells in unconfined sand and gravel aquifers ranging in depth from 87 feet to 300 feet in depth.

While most of the participating municipalities are less vulnerable to drinking water shortages, a prolonged drought, or a series of droughts in close succession, has the potential to impact water levels in aquifers used for individual drinking water wells in rural areas. This is because individual (private) water wells tend to be shallower than municipal (public) water wells.

What is the level of vulnerability to public health and safety from drought?

Unlike other natural hazards that affect the County, drought events do not typically cause injuries or fatalities. The primary concern centers on the financial impacts that result from loss of crop yields and livestock and potential drinking water shortages. Even taking into consideration the potential impacts that a water shortage may have on the general public, the risk or vulnerability to public health and safety from drought is ***low***.

Are existing buildings, infrastructure, and critical facilities vulnerable to drought?
No. In general, existing buildings, infrastructure and critical facilities located in Piatt County and the participating jurisdictions are not vulnerable to drought. The primary concern centers on the financial impacts that result from loss of crop yields and livestock.

While buildings do not typically sustain damage from drought events, in rare cases infrastructure and critical facilities may be directly or indirectly impacted. While uncommon, droughts can contribute to roadway damage. Severe soil shrinkage can compromise the foundation of a roadway and lead to cracking and buckling.

Prolonged heat associated with drought can also increase the demand for energy to operate air conditioners, fans, and other devices. This increase in demand places stress on the electrical grid, which increases the likelihood of power outages.

Additionally, droughts have impacted drinking water supplies. Reductions in aquifer water levels can cause water shortages that jeopardize the supply of water needed to provide drinking water and fight fires. While water use restrictions can be enacted in an effort to maintain a sufficient supply of water, they are only temporary and do not address long-term viability issues. Drinking water supplies vulnerable to drought, such as those that rely solely on surface water or shallow wells, need to consider mitigation measures that will provide long-term stability before a severe drought, or a series of droughts occur. Effective mitigation measures include drilling additional wells, preferably deep wells, securing agreements with alternative water sources and constructing water lines to provide a backup water supply.

In general, the risk or vulnerability to buildings, infrastructure and critical facilities from drought is ***low***, even taking into consideration the potential impact a drought may have on drinking water supplies and the stress that prolonged heat may place on the electrical grid.

Are future buildings, infrastructure, and critical facilities vulnerable to drought?
No. Future buildings, infrastructure and critical facilities within the County are no more vulnerable to drought than the existing building, infrastructure, and critical facilities. As discussed above, buildings do not typically sustain damage from drought. Infrastructure and critical facilities may, in rare cases, be damaged by drought, but very little can be done to prevent this damage.

What are the potential dollar losses to vulnerable structures from drought?
Unlike other natural hazards there are no standard loss estimation models or methodologies for drought. Since drought typically does not cause structure damage, it is unlikely that future dollar losses will be excessive. The primary concern associated with drought is the financial impacts that result from loss of crop yields and the potential impacts to drinking water supplies. Since a majority of the County is involved in farming activities, it is likely that there will be future dollar losses to drought. In addition, reduced water levels and the water conservation measures that typically accompany a drought will most likely impact consumers as well as businesses and industries that are water-dependent (i.e., car washes, landscapers, etc.).

3.8 EARTHQUAKES

HAZARD IDENTIFICATION

What is the definition of an earthquake?

An earthquake is a sudden shaking of the ground caused when rocks forming the earth's crust slip or move past each other along a fault (a fracture in the rocks). Most earthquakes occur along the boundaries of the earth's tectonic plates. These slow-moving plates are being pulled and dragged in different directions, sliding over, under and past each other. Occasionally, as the plates move past each other, their jagged edges will catch or stick causing a gradual buildup of pressure (energy).

Eventually, the force exerted by the moving plates overcomes the resistance at the edges and the plates snap into a new position. This abrupt shift releases the pent-up energy, producing vibrations or seismic waves that travel outward from the earthquake's point of origin. The location below the earth's surface where the earthquake starts is known as the hypocenter or focus. The point on the earth's surface directly above the focus is the epicenter.

The destruction caused by an earthquake may range from light to catastrophic depending on a number of factors including the magnitude of the earthquake, the distance from the epicenter, the local geologic conditions as well as construction standards and time of day (i.e., rush hour). Earthquake damage may include power outages, general property damage, road, and bridge failure, collapsed buildings and utility damage (ruptured gas lines, broken water mains, etc.).

Most of the damage done by an earthquake is caused by its secondary or indirect effects. These secondary effects result from the seismic waves released by the earthquake and include ground shaking, surface faulting, liquefaction, landslides and, in rare cases, tsunamis.

According to the U.S. Geological Survey, more than 143 million Americans in the contiguous U.S. are exposed to potentially damaging ground shaking from earthquakes. More than 44 million of those Americans, located in 18 states, are exposed to very strong ground shaking from earthquakes. Illinois ranks 10th in terms of the number of individuals exposed to very strong ground shaking. The Federal Emergency Management Agency's Hazus analysis indicates that the annualized earthquake losses to the national building stock is $6.1 billion per year. A majority of the average annual loss is concentrated in California ($3.7 million). The central U.S. (including Illinois) ranks third in annualized earthquake losses at $480 billion, behind the pacific northwest (Washington and Oregon) with annualized earthquake losses at $710 billion.

What is a fault?

A fault is a fracture or zone of fractures in the earth's crust between two blocks of rock. They may range in length from a few millimeters to thousands of kilometers. Many faults form along tectonic plate boundaries. Faults are classified based on the angle of the fault with respect to the surface (known as the dip) and the direction of slip or movement along the fault. There are three main groups of faults: normal, reverse (thrust) and strike-slip (lateral).

Normal faults occur in response to pulling or tension along the two blocks of rock causing the overlying block to move down the dip of the fault plane. Most of the faults in Illinois are normal faults. Reverse or thrust faults occur in response to squeezing or compression of the two blocks of rock causing the overlying block to move up the dip of the fault plane. Strike-slip or lateral faults can occur in response to either pulling/tension or squeezing/compression causing the blocks to move horizontally past each other.

Geologists have found that earthquakes tend to recur along faults, which reflect zones of weakness in the earth's crust. Even if a fault zone has recently experienced an earthquake, there is no guarantee that all the stress has been relieved. Another earthquake could still occur.

What are tectonic plates?

Tectonic plates are large, irregularly-shaped, relatively rigid sections of the earth's crust that float on the top, fluid layer of the earth's mantle. There are about a dozen tectonic plates that make up the surface of the planet. These plates are approximately 50 to 60 miles thick and the largest are millions of square miles in size.

How are earthquakes measured?

The severity of an earthquake is measured in terms of its magnitude and intensity. A brief description of both terms and the scales used to measure each are provided below.

Magnitude

Magnitude refers to the amount of seismic energy released at the hypocenter of an earthquake. The magnitude of an earthquake is determined from measurements of ground vibrations recorded by seismographs. As a result, magnitude is represented as a single, instrumentally determined value. A loose network of seismographs has been installed all over the world to help record and verify earthquake events.

There are several scales that measure the magnitude of an earthquake. The most well-known is the Richter Scale. This logarithmic scale provides a numeric representation of the magnitude of an earthquake through the use of whole numbers and decimal fractions. Because of the logarithmic basis of the scale, each whole number increase in magnitude represents a tenfold increase in ground vibrations measured. In addition, each whole number increase corresponds to the release of about 31 times more energy than the amount associated with the preceding whole number. It is important to note that the Richter Scale is used only to determine the magnitude of an earthquake, it does not assess the damage that results.

Once an earthquake's magnitude has been confirmed, it can be classified. **Figure EQ-1** categorizes earthquakes by class based on their magnitude (i.e., Richter Scale value). Any earthquake with a magnitude less than 3.0 on the Richter Scale is classified as a micro earthquake while any earthquake with a magnitude of 8.0 or greater on the Richter Scale is considered a "great" earthquake. Earthquakes with a magnitude of 2.0 or less are not commonly felt by individuals. The largest earthquake to occur in the U.S. since 1900 took place off the coast of Alaska in Prince William Sound on March 28, 1964 and registered a 9.2 on the Richter Scale.

Intensity

Intensity refers to the effect an earthquake has on a particular location. The intensity of an earthquake is determined from observations made of the damage inflicted on individuals, structures, and the environment. As a result, intensity does not have a mathematical basis; instead, it is an arbitrary ranking of observed effects. In addition, intensity generally diminishes with distance. There may be multiple intensity recordings for a region depending on a location's distance from the epicenter.

Figure EQ-1
Earthquake Magnitude Classes

Class	Magnitude (Richter Scale)
micro	smaller than 3.0
minor	3.0 – 3.9
light	4.0 – 4.9
moderate	5.0 – 5.9
strong	6.0 – 6.9
major	7.0 – 7.9
great	8.0 or larger

Source: Michigan Technological University, UPSeis

Although numerous intensity scales have been developed over the years, the one currently used in the U.S. is the Modified Mercalli Intensity Scale. This scale, composed of 12 increasing levels of intensity that range from imperceptible shaking to catastrophic destruction, is designated by Roman numerals. The lower numbers of the intensity scale are based on human observations (i.e., felt only by a few people at rest, felt quite noticeably by persons indoors, etc.).

The higher numbers of the scale are based on observed structural damage (i.e., broken windows, general damage to foundations etc.). Structural engineers usually contribute information when assigning intensity values of VIII or greater. **Figure EQ-2** provides a description of the damages associated with each level of intensity as well as comparing Richter Scales values to Modified Mercalli Intensity Scale values.

Generally, the Modified Mercalli Intensity value assigned to a specific site after an earthquake is a more meaningful measure of severity to the general public than magnitude because intensity refers to the effects actually experienced at that location.

When and where do earthquakes occur?

Earthquakes can strike any location at any time. However, history has shown that most earthquakes occur in the same general areas year after year, principally in three large zones around the globe. The world's greatest earthquake belt, the circum-Pacific seismic belt (nicknamed the "Ring of Fire"), is found along the rim of the Pacific Ocean, where about 81 percent of the world's largest earthquakes occur.

The second prominent belt is the Alpide, which extends from Java to Sumatra and through the Himalayan Mountains, the Mediterranean Sea and out into the Atlantic Ocean. It accounts for about 17 percent of the world's largest earthquakes, including those in Iran, Turkey, and Pakistan. The third belt follows the submerged mid-Atlantic Ridge, the longest mountain range in the world, nearly splitting the entire Atlantic Ocean north to south.

While most earthquakes occur along plate boundaries some are known to occur within the interior of a plate. (As the plates continue to move and plate boundaries change over time, weakened boundary regions become part of the interiors of the plates.) Earthquakes can occur along zones

of weakness within a plate in response to stresses that originate at the edges of the plate or from deep within the earth's crust. The New Madrid earthquakes of 1811 and 1812 occurred within the North American plate.

Figure EQ-2
Comparison of Richter Scale and Modified Mercalli Intensity Scale

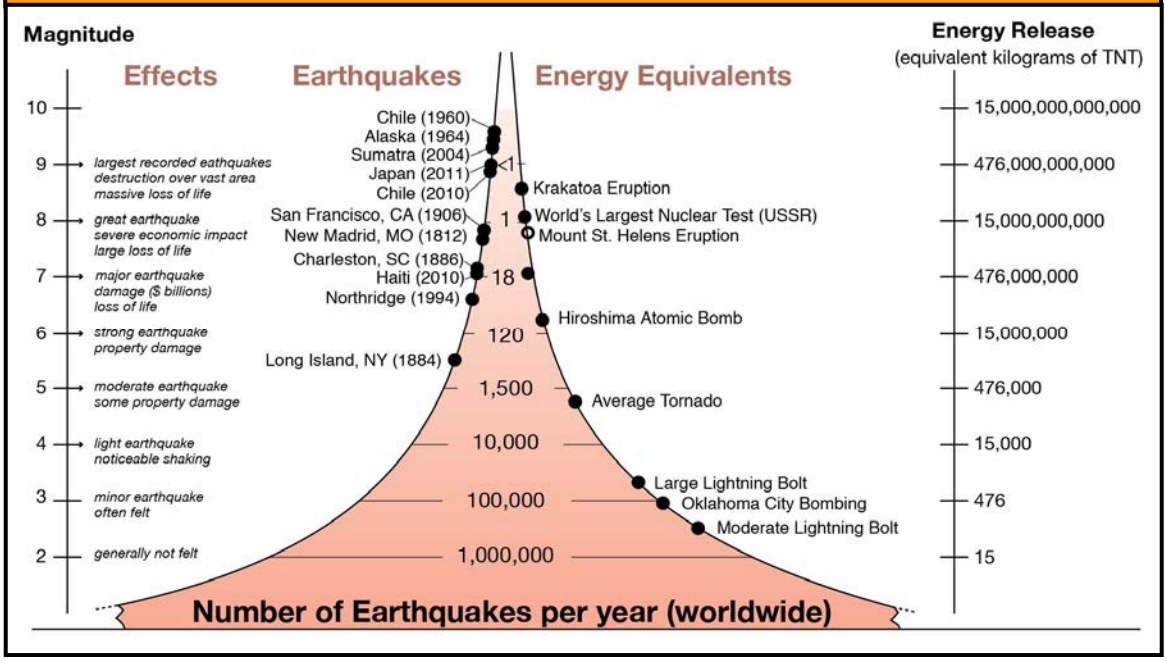
Richter Scale	Modified Mercalli Scale	Observations
1.0 – 1.9	I	Felt by very few people; barely noticeable. No damage.
2.0 – 2.9	II	Felt by a few people, especially on the upper floors of buildings. No damage.
3.0 – 3.9	III	Noticeable indoors, especially on the upper floors of buildings, but may not be recognized as an earthquake. Standing cars may rock slightly; vibrations similar to the passing of a truck. No damage.
4.0	IV	Felt by many indoors and a few outdoors. Dishes, windows, and doors disturbed. Standing cars rocked noticeably. No damage.
4.1 – 4.9	V	Felt by nearly everyone. Small, unstable objects displaced or upset; some dishes and glassware broken. Negligible damage.
5.0 – 5.9	VI	Felt by everyone. Difficult to stand. Some heavy furniture moved. Weak plaster may fall and some masonry, such as chimneys, may be slightly damaged. Slight damage.
6.0	VII	Slight to moderate damage to well-built ordinary structures. Considerable damage to poorly-built structures. Some chimneys may break. Some walls may fall.
6.1 – 6.9	VIII	Considerable damage to ordinary buildings. Severe damage to poorly built buildings. Some walls collapse. Chimneys, monuments, factory stacks, columns fall.
7.0	IX	Severe structural damage in substantial buildings, with partial collapses. Buildings shifted off foundations. Ground cracks noticeable.
7.1 – 7.9	X	Most masonry and frame structures and their foundations destroyed. Some well-built wooden structures destroyed. Train tracks bent. Ground badly cracked. Landslides.
8.0	XI	Few, if any structures remain standing. Bridges destroyed. Wide cracks in ground. Train tracks bent greatly. Wholesale destruction.
> 8.0	XII	Total damage. Lines of sight and level are distorted. Waves seen on the ground. Objects thrown up into the air.

Sources: Michigan Technological University, Department of Geological and Mining Engineering and Sciences, UPSeis.
U.S. Geological Survey.

How often do earthquakes occur?

Earthquakes occur every day. Magnitude 2 and smaller earthquakes occur several hundred times a day worldwide. These earthquakes are known as micro earthquakes and are generally not felt by humans. Major earthquakes, greater than magnitude 7, generally occur at least once a month. **Figure EQ-3** illustrates the approximate number of earthquakes that occur worldwide per year based on magnitude. This figure also identifies manmade and natural events that release approximately the same amount of energy for comparison.

Figure EQ-3
Approximate Number of Earthquakes Recorded Annually



Source: Incorporated Research Institutions for Seismology, Education and Outreach Series, "How Often Do Earthquakes Occur?"

HAZARD PROFILE

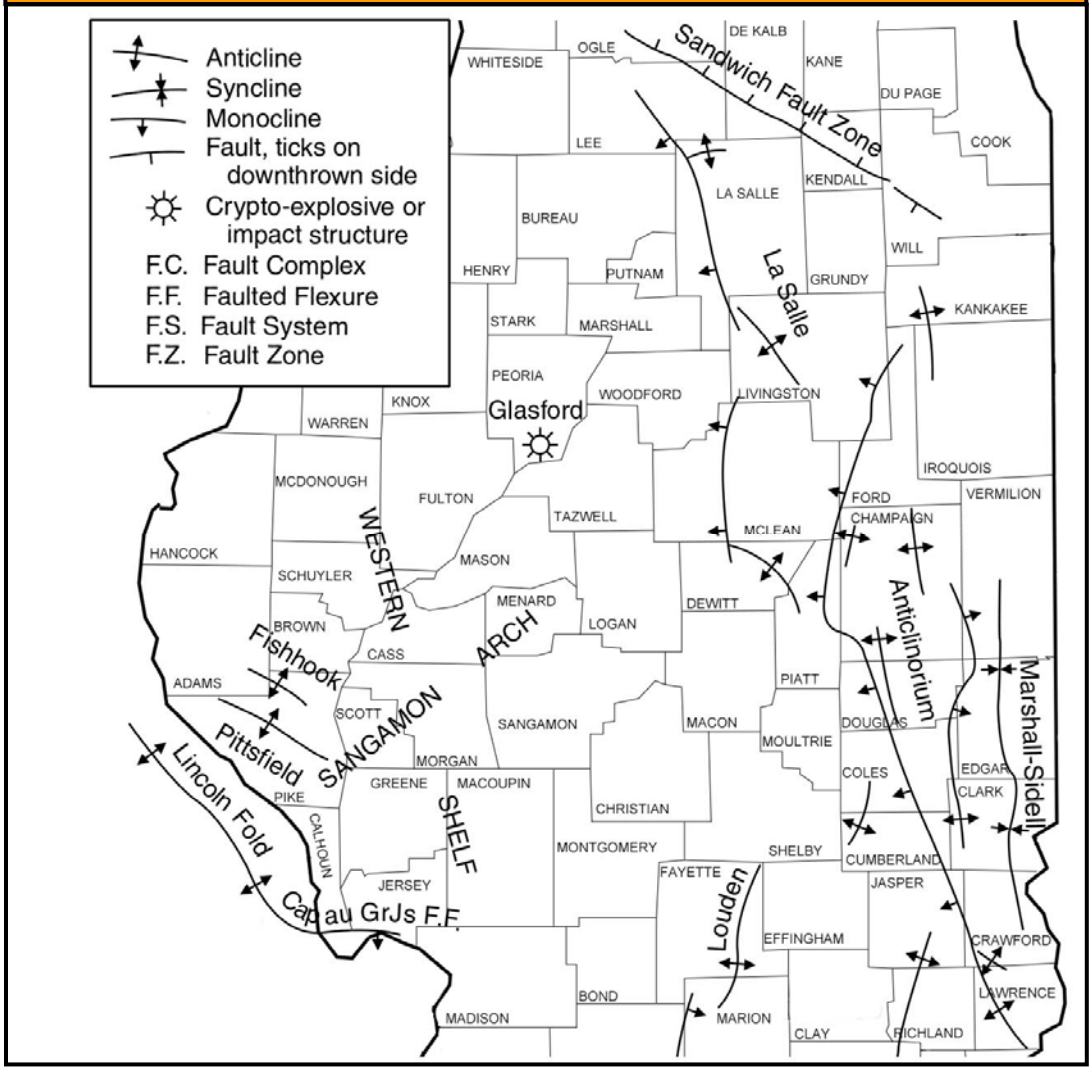
The following details the location of known fault zones and geologic structures, identifies past occurrences of earthquakes, details the severity or extent of each event (if known); identifies the locations potentially affected and estimates the likelihood of future occurrences.

Are there any faults located within the County?

No, there are no known faults located in Piatt County; however, there are two geological structures, the Colfax Syncline and the Osman Monocline (both associated with the La Salle Anticlinorium) that are present in the County. The following provides a brief description of each while **Figure EQ-4** illustrates the location of these geologic structures.

- *Colfax Syncline:* The Colfax Syncline generally runs north to south along the easter edge of Piatt County. This syncline begins in Livingston County and extends through McLean into Piatt County and separates the Downs Anticline on the west from the Osman Monocline on the east.
- *Osman Monocline*: The Osman Monocline also runs north to south along the eastern edge of the County, parallel and east of the Colfax Syncline. This monocline begins in Ford County and extends along the eastern border of McLean County into Piatt County before trending eastward and terminating in Champaign County.

Figure EQ-4
Geological Structures in Central Illinois



Source: Illinois State Geological Survey.

When have earthquakes occurred previously? What is the extent of these previous quakes?

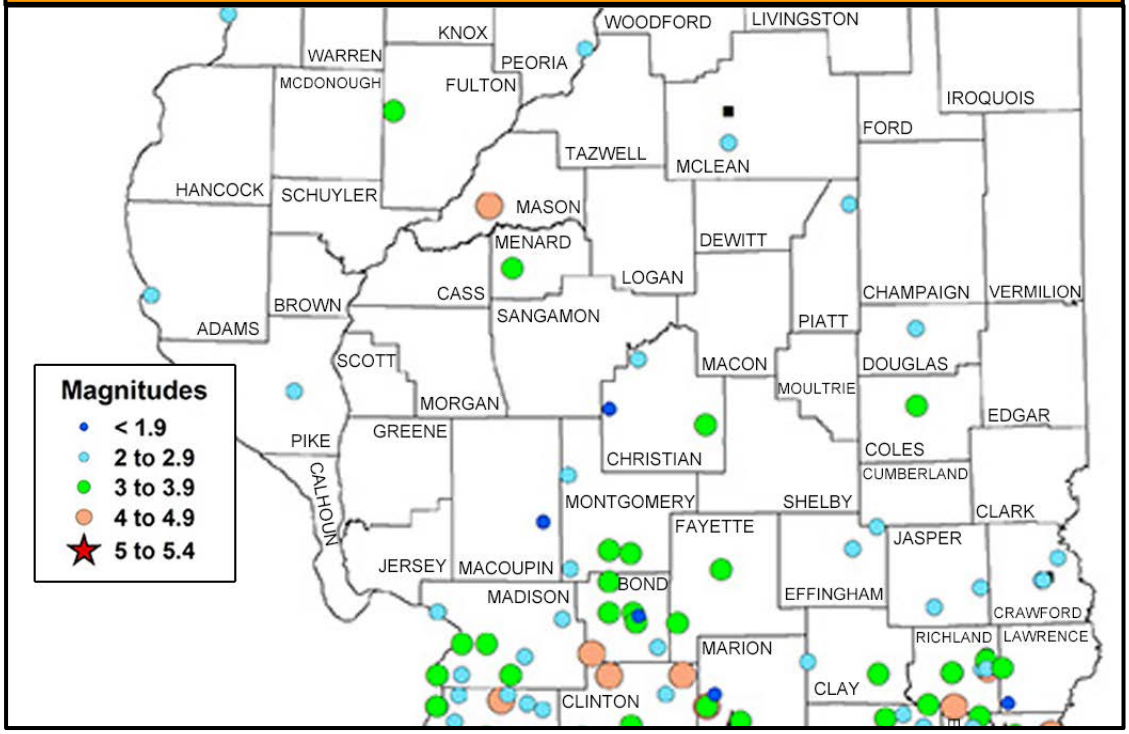
According to the Illinois State Geological Survey, the U.S. Geological Survey and Center for Earthquake Research and Information (CERI) at the University of Memphis, one earthquake has originated in Piatt County during the last 200 years. **Figure EQ-5** provides basic details on this event while **Figure EQ-6** illustrates the epicenters of the nearby earthquakes.

Earthquake Fast Facts – Occurrences

Earthquakes Originating in the County (1795 – 2021): ***1***
Fault Zones Located within the County: ***None***
Geological Structures Located within the County: ***2***
Earthquakes Originating in Adjacent Counties (1795-2021): ***4***
Fault Zones Located in Nearby Counties: ***None***
Geologic Structures Located in Adjacent Counties: ***6***

Figure EQ-5 Earthquakes Originating in Piatt County			
Date	**Magnitude**	**Intensity**	**Location**
January 7, 1952	2.0 – 2.9	III	1 mile southeast of Mansfield

Figure EQ-6
Earthquakes Originating in Piatt Illinois



Source: Illinois State Geological Survey.

Piatt County residents, including those in the participating jurisdictions, have also felt ground shaking caused by earthquakes that have originated outside of the County. The following provides a brief description, by region, of these events.

East-Central Illinois

Four earthquakes have originated in nearby Champaign, Douglas, and McLean Counties. The following provides a brief description of each.

- On November 6, 2020, a magnitude 2.4 earthquake took place in Champaign County near Pesotum.
- A magnitude 2.4 earthquake took place on February 16, 1978 in Douglas County approximately 2.5 miles east of Tuscola.
- On December 27, 1885, a magnitude 3.4 earthquake took place in McLean County, 4 miles south of Bloomington.

- An earthquake of undetermined magnitude took place on February 4, 1883 in Normal in McLean County.

Southern Illinois

Piatt County residents also felt ground shaking caused by several earthquakes that have originated in southern Illinois. The following provides a brief description of a few of the larger events that have occurred.

- On April 18, 2008, a magnitude 5.2 earthquake was reported in southeastern Illinois near Bellmont in Wabash County. The earthquake was located along the Wabash Valley seismic zone. Minor structural damage was reported in several towns in Illinois and Kentucky. Ground shaking was felt over all or parts of 18 states in the central U.S. and southern Ontario, Canada.
- A magnitude 5.2 earthquake took place on June 10, 1987, in southeastern Illinois near Olney in Richland County. This earthquake was also located along the Wabash Valley seismic zone. Only minor structural damage was reported in several towns in Illinois and Indiana. Ground shaking was felt over all or parts of 17 states in the central and eastern U.S. and southern Ontario, Canada.
- The strongest earthquake in the central U.S. during the 20th century occurred along the Wabash Valley seismic zone in southeastern Illinois near Dale in Hamilton County. This magnitude 5.4 earthquake occurred on November 9, 1968, with an intensity estimated at VII for the area surrounding the epicenter. Moderate structural damage was reported in several towns in south-central Illinois, southwest Indiana, and northwest Kentucky. Ground shaking was felt over all or parts of 23 states in the central and eastern U.S. and southern Ontario, Canada.

Three of the ten largest earthquakes ever recorded within the continental U.S. took place in 1811 and 1812 along the New Madrid seismic zone. This zone lies within the central Mississippi Valley and extends from northeast Arkansas through southeast Missouri, western Tennessee, western Kentucky, and southern Illinois. These magnitude 7.5 and 7.3 major earthquakes were centered near the town of New Madrid, Missouri and caused widespread devastation to the surrounding region and were felt by people in cities as far away as Pittsburgh, Pennsylvania and Norfolk, Virginia.

The quakes locally changed the course of the Mississippi River creating Reelfoot Lake in northwestern Tennessee. These earthquakes were not an isolated incident. The New Madrid seismic zone is one of the most seismically active areas of the U.S. east of the Rockies. Since 1974 more than 4,000 earthquakes have been recorded within this seismic zone, most of which were too small to be felt.

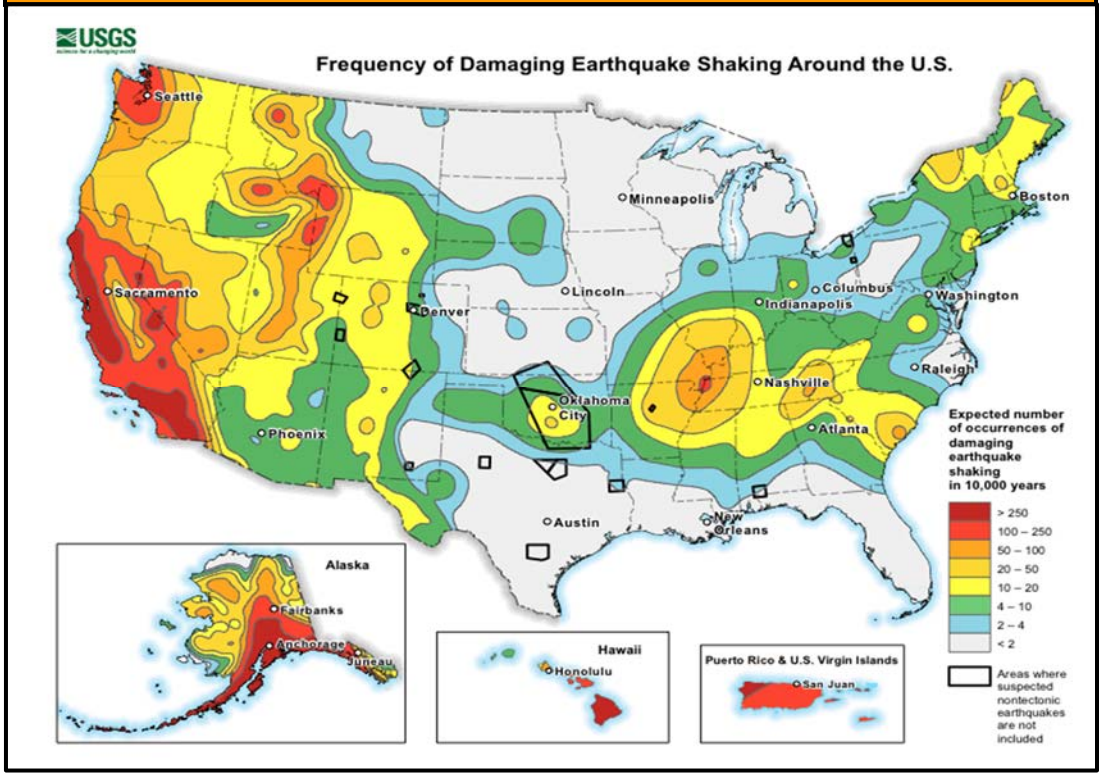
What locations are affected by earthquakes? What is the extent of future potential earthquakes?

Earthquake events generally affect the entire County. Earthquakes, like drought, impact large areas extending across an entire region and affecting multiple counties. Piatt County's proximity to multiple fault zones, both large and small, makes the entire area likely to be affected by an

earthquake if these faults become seismically active. The *2018 Illinois Natural Hazard Mitigation Plan* classifies Piatt County's hazard rating for earthquakes as "medium."

According to the USGS, Piatt County can expect 4 to 20 occurrences of damaging earthquake shaking over a 10,000-year period. **Figure EQ-7** illustrates the frequency of damaging earthquake shaking around the U.S.

Figure EQ-7
Frequency of Damaging Earthquake Shaking Around the U.S.



Source: U.S. Geological Survey.

What is the probability of future earthquake events occurring?

As with flooding, calculating the probability of future earthquakes changes depending on the magnitude of the event. According to the ISGS, Illinois is expected to experience a magnitude 3.0 earthquake every year, a magnitude 4.0 earthquake every four years and a magnitude 5.0 earthquake every 20 years. The likelihood of an earthquake with a magnitude of 6.3 or greater occurring somewhere in the central U.S. within the next 50 years is between 86% and 97%.

While the major earthquakes of 1811 and 1812 do not occur often along the New Madrid fault, they are not isolated events. In recent decades, scientists have collected evidence that earthquakes similar in size and location to those felt in 1811 and 1812 have occurred several times before within the central Mississippi Valley around 1450 A.D., 900 A.D. and 2350 B.C.

The general consensus among scientists is that earthquakes similar to the 1811-1812 earthquakes are expected to recur on average every 500 years. The U.S. Geological Survey and the Center for Earthquake Research and Information (CERI) at the University of Memphis estimates that for a 50-year period the probability of a repeat of the 1811-1812 earthquakes is between 7% and 10% and the probability of an earthquake with a magnitude of 6.0 or larger is between 25% and 40%.

HAZARD VULNERABILITY

The following describes the vulnerability to participating jurisdictions, identifies the impacts on public health and property (if known) and estimates the potential impacts on public health and safety as well as buildings, infrastructure, and critical facilities from earthquakes.

Are the participating jurisdictions vulnerable to earthquakes?

Yes. All of Piatt County is vulnerable to earthquakes. The unique geological formations topped with glacial drift soils found in the central U.S. conduct an earthquake's energy farther than in other parts of the Nation. Consequently, earthquakes that originate in the Midwest tend to be felt at greater distances than earthquakes with similar magnitudes that originate on the West Coast.

Earthquake Fast Facts – Risk

Earthquake Risk/Vulnerability:

- Public Health & Safety – Light/Moderate Quake within the County or immediate region: ***Low***
- Public Health & Safety – Major Quake in the region: ***Low/Medium***
- Buildings/Infrastructure/Critical Facilities – Light/ Moderate Quake within the County or immediate region: ***Low***
- Buildings/Infrastructure/Critical Facilities – Major Quake in the region: ***Low/Medium***

This vulnerability, found throughout most of Illinois and all of Piatt County, is compounded by relatively high water tables within the region. When earthquake shaking mixes the groundwater and soil, ground support is further weakened thus adding to the potential structural damages experienced by buildings, roads, bridges, electrical lines, and natural gas pipelines.

The *Projected Earthquake Intensities Map* prepared by the Missouri State Emergency Management Agency predicts that if a magnitude 6.7 earthquake were to take place anywhere along the New Madrid seismic zone, then the highest projected intensity felt in Piatt County would be a V on the Modified Mercalli Intensity Scale. If a magnitude 8.6 earthquake were to occur, then the highest projected intensity felt would be a VII.

The infrequency of major earthquakes, coupled with relatively low magnitude/intensity of past events, has led the public to perceive that Piatt County is not vulnerable to damaging earthquakes. This perception has allowed the County and participating municipalities to develop largely without regard to earthquake safety.

Do any of the participating jurisdictions consider earthquakes to be among their community's greatest vulnerabilities?

No. Based on responses to a Critical Facilities Vulnerability Survey distributed to the participating jurisdictions, none of the participating jurisdictions considered earthquakes to be among their community's greatest vulnerabilities.

What impacts resulted from the recorded earthquake events?

While Piatt County residents felt the earthquakes that have occurred in Illinois, no damages were reported as a result of these events. Given the magnitude of the great earthquakes of 1811 and 1812, it is almost certain that individuals in what is now Piatt County felt those quakes; however, historical records do not indicate the intensity or impacts that these quakes had on the County.

What other impacts can result from earthquakes?

Earthquakes can impact human life, health, and public safety. **Figure EQ-8** details the potential impacts that may be experienced by the County should a magnitude 6.0 or greater earthquake occur in the region.

Figure EQ-8
Potential Earthquake Impacts

Direct	Indirect
Buildings • Temporary displacement of businesses, households, schools, and other critical services where heat, water and power are disrupted • Long-term displacement of businesses, households, schools, and other critical services due to structural damage or fires *Transportation* • Damages to bridges (i.e., cracking of abutments, subsidence of piers/supports, etc.) • Cracks in the pavement of critical roadways • Increased traffic on Interstate, U.S., and State Routes (especially if the quake originates along the Wabash Valley Fault) as residents move out of the area to seek shelter and medical care and as emergency response, support services and supplies move south to aid in recovery • Misalignment of rail lines due to landslides (most likely near stream crossings), fissures and/or heaving *Utilities* • Downed power and communication lines • Breaks in drinking water and sanitary sewer lines resulting in the temporary loss of service • Disruptions in the supply of natural gas due to cracking and breaking of pipelines *Health* • Injuries/deaths due to falling debris and fires *Other* • Cracks in the earthen dams of the lakes and reservoirs within the County which could lead to dam failures	*Health* • Use of County health facilities (especially if the quake originates along the New Madrid Fault) to treat individuals injured closer to the epicenter • Emergency services (ambulance, fire, law enforcement) may be needed to provide aid in areas where damage was greater *Other* • Disruptions in land line telephone service throughout an entire region (i.e., central and southern Illinois) • Depending on the seasonal conditions present, more displacements may be expected as those who may not have enough water and food supplies seek alternate shelter due to temperature extremes that make their current housing uninhabitable

What is the level of vulnerability to public health and safety from earthquakes?

The risk or vulnerability to public health and safety from an earthquake is dependent on the intensity and location of the event. Since there are no known faults in Piatt County, the likelihood that an earthquake will originate in the County is very small, decreasing the changes for catastrophic damages. However, if a light earthquake originates within the County or from the structures in the immediate region, the risk or vulnerability to public health and safety is considered ***low***. This risk is elevated to ***medium*** for a major earthquake originating along seismic zones in the region (i.e., Wabash Valley or New Madrid.)

Are existing buildings, infrastructure, and critical facilities vulnerable to earthquakes?

Yes. All existing buildings, infrastructure and critical facilities located in Piatt County and the participating jurisdictions are vulnerable to damage from earthquakes. However, given the County's size (just over 16,400 individuals), its population density, the fact that there are very few buildings higher than two stories (with the exception of grain elevators and multi-story buildings in Monticello) tempered by the potential for magnitude 5.0 and above earthquakes to occur in the immediate region, the damage is anticipated to be slight to considerable for well-built ordinary structures and considerable to severe for poorly-built structures.

If a strong earthquake (6.0 – 6.9) were to occur in the region, then unreinforced masonry buildings are most at risk during an earthquake because the walls are prone to collapse outward. Steel and wood buildings have more ability to absorb the energy from an earthquake while wood buildings with proper foundation ties have rarely collapsed in earthquakes. **Figure EQ-9**, located at the end of this section, identifies the number of unreinforced masonry buildings that serve as critical facilities within the participating jurisdictions.

If the epicenter of a magnitude 7.6 earthquake were to originate anywhere along the New Madrid seismic zone, the highest projected Modified Mercalli intensity felt in Piatt County would be a VI according to the *Projected Earthquake Intensities Map* prepared by the Missouri State Emergency Management Agency.

An earthquake also has the ability to damage infrastructure and critical facilities such as roads and utilities. In the event of a major earthquake, bridges are expected to experience moderate damage such as cracking in the abutments and subsidence of piers and supports. The structural integrity may be compromised to the degree where safe passage is not possible, resulting in adverse travel times as alternate routes are taken. Some rural families may become isolated where alternate paved routes do not exist. In addition, cracks may form in the pavement of key roadways. **Figure R-6** lists the number of each type of critical infrastructure by jurisdiction.

An earthquake may also down overhead power and communication lines causing power outages and disruptions in communications. Cracks or breaks may form in natural gas pipelines and drinking water and sewage lines resulting in temporary loss of service. In addition, an earthquake could cause cracks to form in the earthen dams located within the County, increasing the likelihood of a dam failure.

As with public health and safety, the risk or vulnerability to buildings, infrastructure and critical facilities is dependent on the intensity and location of the event. The risk to buildings, infrastructure and critical facilities is considered to be ***low*** for a light to moderate earthquake that originates within the County or immediate region. This risk is elevated to ***medium*** for a major earthquake originating along seismic zones in the region (i.e., Wabash Valley or New Madrid.)

Are future buildings, infrastructure, and critical facilities vulnerable to earthquakes?

Yes. All future buildings, infrastructure and critical facilities located in Piatt County and the participating jurisdictions are vulnerable to damage from earthquakes. While Cisco and Monticello have building codes in place, these codes do not contain seismic provisions that address structural vulnerability for earthquakes. As a result, there is the potential for future buildings, infrastructure, and critical facilities to face the same vulnerabilities as those of existing buildings, infrastructure, and critical facilities described previously.

What are the potential dollar losses to vulnerable structures from earthquakes?

Since property damage information was either unavailable or none was recorded for the documented earthquakes that impacted Piatt County, there is no way to accurately estimate future potential dollar losses to vulnerable structures. However, according to the Piatt County Chief Assessment Officer the total equalized assessed values of buildings in the planning area is $373,307,756. Since all of the structures in the planning area are susceptible to earthquake impacts to varying degrees, this total represents the countywide property exposure to earthquake events.

Given Piatt County's proximity to geologic structures and fault zones, both large and small, and the fact that all structures within the County are vulnerable to damage, it is likely that there will be future dollar losses from any earthquake ranging from strong to great. As a result, participating jurisdictions were asked to consider mitigation projects that could provide wide ranging benefits for reducing the impacts or damages associated with earthquakes.

Figure EQ-9
Number of Unreinforced Masonry Buildings Serving as Critical Facilities by Jurisdiction

Participating Jurisdiction	Government[1]	Law Enforcement	Fire Stations	Ambulance Service	Schools	Drinking Water	Wastewater Treatment	Medical[2]	Healthcare Facilities[3]
Piatt County	2	---	5	1	---	---	---	1	2
Bement	---	---	---	---	---	---	---	---	---
Cisco	2	---	---	---	---	---	---	---	---
Hammond	---	---	---	---	---	---	---	---	---
Mansfield	---	---	---	---	---	---	---	---	---
Monticello	1	1	---	1	---	1	1	---	---
Monticello Township	2	---	---	---	---	---	---	---	---
Willow Branch Township	2	---	---	---	---	---	---	---	---
Bement CUSD #5	---	---	---	---	---	---	---	---	---
Cisco Fire Protection District	4	---	1	---	1	1	---	---	---
Monticello Fire & Rescue	---	---	---	---	---	---	---	---	---
Mid Piatt Fire Protection District	---	---	---	---	---	---	---	---	---
Kirby Medical Center	---	---	---	---	---	---	---	---	---

[1] Government includes: courthouses, city/village halls, township buildings, highway/road maintenance centers, etc.
[2] Medical includes: public health departments, hospitals, urgent/prompt care, and medical clinics.
[3] Healthcare Facilities include: nursing homes, skilled care facilities, memory care facilities, residential group homes, etc.
--- Indicates jurisdiction does not own/maintain any critical facilities within that category.

3.9 MAN-MADE HAZARDS

While the focus of this Plan update is on natural hazards, an ***overview of selected man-made hazards*** has been included. The Planning Committee recognizes that man-made hazards can also pose risks to public health and property. The extent and magnitude of the impacts that result from man-made hazard events can be influenced by natural hazard events. For example, severe winter storms can cause accidents involving trucks transporting hazardous substances. These accidents may lead to the release of these substances, which can result in injury and potential contamination of the natural environment.

Consequently, the Planning Committee decided to summarize the more prominent man-made hazards in Piatt County. The man-made hazards profiled in this Plan update include:

- Hazardous Substances
  - Generation
  - Transportation
  - Storage/Handling
- Waste Disposal
- Hazardous Material Incidents
- Hazardous Waste Remediation
- Nuclear Incidents
- Terrorism

While the man-made hazards risk assessment does not have the same depth as the natural hazards risk assessment, it does provide useful information that places the various man-made hazards in perspective.

3.9.1 Hazardous Substances

Hazardous substances broadly include any flammable, explosive, biological, chemical, or physical material that has the potential to harm public health or the environment. For the purposes of this Plan, the term hazardous substance includes hazardous product and hazardous waste. A hazardous waste is defined as the byproduct of a manufacturing process that is either listed or has the characteristics of ignitability, corrosivity, reactivity, or toxicity and cannot be reused. A hazardous product is all other hazardous material.

Hazardous substances can pose a public health threat to individuals at their workplace and where they reside. The type and quantity of the substance, the pathway of exposure (inhalation, ingestion, dermal, etc.), and the frequency of exposure are factors that will determine the risk of adverse health effects experienced by individuals. Impacts can range from minor, short-term health issues to chronic, long-term illnesses.

In addition to impacting public health, hazardous substances can also cause damage to buildings, infrastructure, and the environment. Incidents involving hazardous substances can range from minor (scarring on building floors and walls) to catastrophic (i.e., destruction of entire buildings, structural damage to roadways, etc.) and lead to injuries and fatalities. The number of incidents involving hazardous substances in Illinois and across the U.S. every year underscores the need for trained and equipped emergency responders to minimize damages.

Since 1970, significant changes have occurred in regard to how hazardous substances are transported and disposed. Comprehensive regulations and improved safety and industrial hygiene practices have reduced the frequency of incidents involving hazardous substances. Based on the

small number of facilities in Piatt County that generate and use hazardous substances, the population size, transportation patterns, and land use, the probability of a release occurring in Piatt County should remain relatively low compared to other counties in Illinois. The relatively low numbers of transportation incidents should not diminish municipal or county commitment to emergency management.

HAZARD PROFILE – HAZARDOUS SUBSTANCES

The following subsections identify the general pathways – generation, transportation, and storage/handling – by which hazardous substances pose a risk to public health and the environment in Piatt County.

Hazardous Substances Fast Facts - Occurrences

Generation
Number of Facilities that Generate Reportable Quantities of Hazardous Substances (2020): ***1***

Transportation
Number of Roadway Incidents Involving Hazardous Substance Shipments (2011 – 2020): ***6***

Number of Railway Accidents/Incidents Involving Hazardous Substance Shipments (2011 – 2020): ***3***

Number of Pipeline Incidents Involving Hazardous Substances (2011 – 2020): ***1***

Storage/Handling
Number of Facilities that Store/Handle Hazardous Substances (2020): ***16***

Number of Facilities that Store/Handle Extremely Hazardous Substances (2020): ***7***

3.9.1.1 Generation

Piatt County has one facility that generates reportable quantities of hazardous substances as a result of their operations according to the U.S. Environmental Protection Agency (USEPA) Toxic Release Inventory. **Figure MMH-1** identifies the hazardous substance generators located in Piatt County and summarizes the substances generated.

Figure MMH-1
Generators of Solid & Liquid Hazardous Substances – 2020

Name	Hazardous Substances Generated	Amount Generated (Pounds)
Monticello		
Viobin, LLC	n-Hexane	46,804

Source: U.S. Environmental Protection Agency, TRI Explorer, Releases: Facility Report.

3.9.1.2 Transportation

Roadways

Illinois has the nation's third largest interstate system and third largest inventory of bridges. According to the Illinois Department of Transportation, there were more than 147,000 miles of highways and streets in Illinois in 2018. Most of the truck traffic in Piatt County is carried on Interstate 72 and Interstate 74. Other major roadways that carry truck traffic include U.S. Route 36, U.S. Route 150, Illinois Route 10, Illinois Route 32, Illinois Route 48, and Illinois Route 105. While this modern roadway system provides convenience and efficiency for commuters, it also aids in-state and intra-state commerce, which includes the transportation of hazardous substances. A Commodity Flow Study to gauge chemical transport has not yet been conducted for Piatt County.

According to records obtained from the Illinois Emergency Management Agency (IEMA), there were six recorded roadway incidents involving the shipment of hazardous waste and/or products in Piatt County from 2011 through 2020. **Figure MMH-2** provides information on these incidents.

Figure MMH-2
Roadway Incidents* Involving Shipments of Hazardous Substances
2011 – 2020

Date	Area	Location	Hazardous Product Released	Quantity Released
3/8/2013	Mansfield[^]	I-74 at Exit 166	Diesel fuel	15 gallons
2/3/2014	Cisco[^]	I-72 at Exit 156	Diesel fuel	> 75 gallons
5/28/2014	Monticello[^]	I-72 at Exit 169	Diesel fuel	30 gallons
11/8/2014	Atwood[^]	280 CR 950N	Diesel fuel	> 25 gallons
8/17/2017	Cisco[^]	I-72 MP 158	Diesel fuel	70 gallons
11/6/2019	LaPlace[^]	U.S Route 36, 1-mile W of LaPlace	Diesel fuel	Unknown

* For the purposes of this report a roadway incident is generally defined as an accident/incident that occurs while in the process of transporting a hazardous substance(s) on a highway, roadway, access drive, field entrance, rest area or parking lot. Vehicles that experience a release while refueling are not considered roadway incidents but are instead considered fixed facility incidents.

[^] Accident verified in the vicinity of this area.

Source: Illinois Emergency Management Agency, Hazardous Materials Incident Reports.

Railways

Illinois' rail system is the country's second largest, with the East St. Louis and Chicago terminals being two of the nation's busiest. In Piatt County there are two main rail lines and two spur lines operated by Norfolk-Southern (NS) and the Decatur & Eastern Illinois Railroad (DREI). The main line operated by NS runs from Decatur, through Bement, to Danville and beyond. Both spur lines are operated by NS with one running from Bement through Monticello and Mansfield to Gibson City in Ford County. The other NS spur line runs from Mansfield to Champaign-Urbana. DREI operates the other main line that runs from Decatur through LaPlace, Hammond, and Atwood, to Tuscola in Douglas County and beyond.

According to the Association of American Railroads, 3,796,300 carloads (125.9 million tons) of freight originated in Illinois in 2019 (the latest year for which data is available). Chemicals accounted for 101,100 carloads (9.7 million tons) or 2.8% of the total freight handled. In comparison, 27,549,000 carloads of freight originated in the U.S. in 2019 with approximately 2,014,000 carloads (7.1%) involved in the transport of chemicals.

The Illinois Commerce Commission (ICC) is required to maintain records on railway accidents/incidents that involve hazardous substances. Their records are divided into three categories. These three categories are described in **Figure MMH-3**.

Figure MMH-3 ICC Hazardous Substances Railroad Accident/Incidents Classification Categories	
Category	**Description**
A	railroad derailments resulting in the release of the hazards substance(s) being transported
B	railroad derailments where hazards substance(s) were being transported but no release occurred
C	releases of hazardous substance(s)s from railroad equipment occurred; however, no railroad derailment was involved

Since 2011, there has been one rail accident involving hazardous substances in Piatt County according to the ICC. In comparison, ICC records indicate that since 2011 the annual number of railway accidents in Illinois involving hazardous substances has ranged between 45 and 122. **Figure MMH-4** provides a breakdown by category of the ICC-recorded railway accidents/incidents involving hazardous substances. Included is a comparison of the number of accidents/incidents in Piatt County to those in Cook and the Collar Counties as well as the rest of Illinois.

Figure MMH-4
ICC Recorded Railway Accidents/Incidents Involving Hazardous Substances
2011 – 2020
(Sheet 1 of 2)

Year	Category	Accident/Incident Location			
		Illinois	Piatt County	Cook & Collar Counties	All Other Counties
2011	A	8	0	1	7
	B	10	0	9	1
	C	60	0	33	27
2012	A	4	0	2	2
	B	13	0	11	2
	C	73	1	42	30
2013	A	5	0	3	2
	B	23	0	16	7
	C	82	0	51	31
2014	A	2	0	2	0
	B	36	0	21	15
	C	84	0	40	44
2015	A	4	0	3	1
	B	27	0	15	12
	C	69	0	36	33
2016	A	4	0	1	3
	B	14	0	6	8
	C	65	0	33	32
2017	A	2	0	1	1
	B	14	0	9	5
	C	69	0	34	35

Figure MMH-4
ICC Recorded Railway Accidents/Incidents Involving Hazardous Substances
2011 – 2020
(Sheet 2 of 2)

Year	Category	Accident/Incident Location			
		Illinois	Piatt County	Cook & Collar Counties	All Other Counties
2018	A	1	0	0	1
	B	8	0	4	4
	C	55	0	24	31
2019	A	6	0	4	2
	B	6	0	4	2
	C	33	0	12	21
2020	A	4	0	2	2
	B	7	0	5	2
	C	46	0	30	16

Source: Illinois Commerce Commission.

According to IEMA's hazardous materials incident records for the same time period, there were two rail accidents/incidents involving the release of hazardous substances. On April 17, 2011, one gallon of lube oil was released from a locomotive on the Norfolk-Southern tracks near Bement. On April 12, 2017, one gallon of hydraulic fluid was released from a locomotive on the Norfolk-Southern tracks near Lodge. No derailment was associated with either of these incidents.

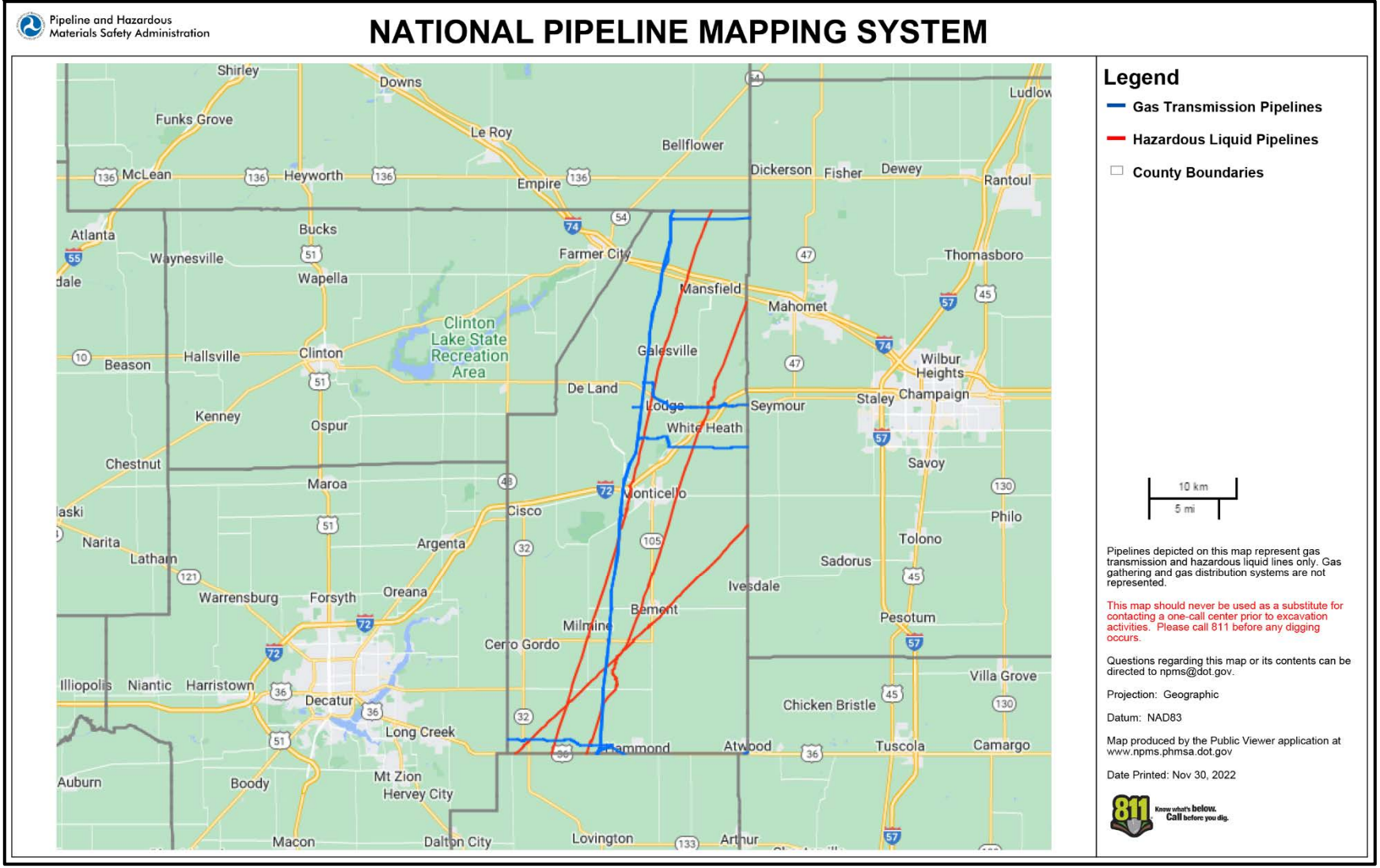
The top 20 hazardous substances moved by rail through Illinois include: sodium hydroxide, petroleum gases (liquefied), sulfuric acid, anhydrous ammonia, chlorine, sulfur, vinyl chloride, propane, fuel oil, denatured alcohol, methanol, gasoline, phosphoric acid, hydrochloric acid, styrene monomer, carbon dioxide (refrigerated liquid), ammonium nitrate, sodium chlorate, and diesel fuel.

Pipelines

Energy gases (natural gas and liquefied petroleum gas), petroleum liquids (crude oil and gasoline), and liquid and gas products used in industrial processes are carried in above-ground and buried pipelines across Illinois. According to the U.S. Department of Transportation's National Pipeline Mapping System, there are three interstate hazardous liquids pipelines and seven intrastate natural gas pipeline systems in Piatt County. One of the hazardous liquids pipelines is owned by Marathon Pipe Line, LLC (refined petroleum product), one is owned by BP Pipeline (North America Inc. (crude oil), and one is owned by Mustang Pipeline LLC (crude oil). The Natural Gas Pipeline Company of America owns three tightly grouped, parallel natural gas pipelines, while Ameren owns two, and Peoples Gas Light and Coke Co. and the University of Illinois both own one line each.

Figure MMH-5 shows the general location of the pipelines in Piatt County. ***One pipeline release occurred in Piatt County during a 10-year period from 2011 through 2020.*** This incident took place in Monticello on October 15, 2019. According to the U.S. Department of Transportation's Pipeline and Hazardous Materials Safety Division, a leak on a drain line was discovered during a

Figure MMH-5
Pipeline Location Map



routine inspection at the Monticello Station of the BP crude oil pipeline. The leak site was excavated and repaired. No evacuations were ordered, and no damage estimates were available.

There have been several high-profile incidents across the U.S., including one in Illinois, which have raised public concerns about our aging pipeline infrastructure. The following provides a brief description of each incident.

- On July 26, 2010, a 30-inch liquid product pipeline rupture near Marshall, Michigan and released at least 840,000 gallons of oil into a creek that led to the Kalamazoo River, a tributary of Lake Michigan.
- On September 9, 2010, another pipeline release received national attention. A 34-inch liquid product pipeline in the Chicago suburb of Romeoville, Illinois released more than 360,000 gallons of crude oil that flowed through sewers and into a retention pond narrowly avoiding the Des Plaines River. This release triggered numerous odor complaints from residents in the adjacent municipalities of Lemont and Bolingbrook. The property damage/cleanup costs were estimated at $46.6 million.
- Also, on September 9, 2010, a 30-inch-high pressure natural gas pipeline ruptured in the San Francisco suburb of San Bruno, California that resulted in an explosion that killed eight people, injured 51, destroyed more than 30 homes and damaged an entire neighborhood. The property damage was estimated at around $55 million.
- On March 12, 2014, a gas main rupture in Manhattan, New York resulted in an explosion that killed eight people and leveled two multi-use, five story buildings.
- On May 19, 2015, a 24-inch liquid product pipeline ruptured near Refugio State Beach in Santa Barbara County, California and released approximately 100,000 gallons of crude oil. The release occurred along a rustic stretch of coastline that forms the northern boundary of the Santa Barbara Channel, home to a rich array of sea life. Oil ran down a ravine and entered the Pacific Ocean, blackening area beaches, creating a 9-mile oil slick and impacting birds, marine mammals, fish, and coastal and subtidal habitats.

Continual monitoring and maintenance of these pipelines is necessary to prevent malfunctions from corrosion, aging, or other factors that could lead to a release. In addition to normal wear and tear experienced by pipelines, the possibility of sabotage and seismic activity triggering a release must be considered when contemplating emergency response scenarios.

3.9.1.3 Storage/Handling

Beyond knowing where hazardous substances are generated and the methods and routes used to transport them, it is important to identify where hazardous substances are handled and stored. This information will help government officials and emergency management professionals make informed choices on how to better protect human health, property and the environment and what resources are needed should an incident take place.

Records obtained from IEMA's Tier II database were used to gather information on the facilities that generate, use and store chemicals in excess of reportable threshold quantities within Piatt County. The Tier II information was then compared with USEPA's Toxic Release Inventory (TRI)

and information from Illinois Environmental Protection Agency (IEPA) databases. This review identified 16 facilities within Piatt County in 2020 that store and handle hazardous substances.

Of these 16 facilities, seven reported the presence of Extremely Hazardous Substances (EHSs) at their facilities. An EHS is any USEPA-identified chemical that could cause serious, irreversible health effects from an accidental release. There are approximately 400 chemicals identified as EHSs. Stationary sources that possess one or more of these substances at or above threshold reporting quantities are required to notify IEMA.

Figure MMH-6 identifies the types of EHSs and the facilities that store and handle them. Aside from EHSs, there are other chemicals, such as water reactives, that can pose risks that are equal to or greater than the risks posed by EHSs. These risks can be identified through a Threat and Hazard Identification and Risk Assessment (THIRA).

Figure MMH-6
Extremely Hazardous Substances by Facility – 2020

Facility Name	Extremely Hazardous Substance(s)
Bement	
Piatt County Service Co.	Headline SC 220GL, Dimethoate
Cerro Gordo	
Nutrien Ag Solutions - 2669	Anhydrous ammonia
Monticello	
Goose Creek Energy Center	Battery acid
Monticello West – Piatt County Service Co.	Anhydrous ammonia
Viobin, LLC	Electrolyte (sulfuric acid)
Pierson Station	
United Prairie, LLC 30	Anhydrous ammonia
White Heath	
United Prairie, LLC 28	Anhydrous ammonia

Sources: Illinois Emergency Management Agency, Tier II Hazardous Chemical Reports.
U.S. Environmental Protection Agency, TRI Explorer.

3.9.2 Waste Disposal

Waste disposal has caused surface water and ground water contamination in Illinois and across the U.S. Beginning in the late 1970s substantial regulatory changes strengthened the design, operating and monitoring requirements for landfills where the majority of waste is disposed. These regulatory changes have helped reduce the public health threat posed by landfills.

HAZARD PROFILE – WASTE DISPOSAL

The following subsections identify the general pathways – solid, medical, and hazardous – by which waste disposal poses a risk to public health and the environment in Piatt County.

3.9.2.1 Solid Waste

While recycling activities have reduced the amount of solid waste (waste generated in households), the majority continues to be disposed of in landfills. As of 2020, there were 36 landfills operating in Illinois.

According IEPA's Annual Landfill Capacity Report issued in August 2021, there are no commercial landfills currently operating in Piatt County.

Waste Disposal Fast Facts - Occurrences

Solid Waste
Number of Solid Waste Landfills Operating in Piatt County (2020): ***None***

Number of Landfills Serving Piatt and adjacent counties (2020): ***2***

Potentially-Infectious Medical Waste (PIMW)
Number of Facilities within the County Permitted to Handle PIMW: ***None***

Hazardous Waste
Number of Commercial Off-Site Hazardous Waste Treatment or Disposal Facilities located in the County: ***None***

There are currently two Illinois landfills that serve Piatt and the adjacent counties. These landfills include:

- Clinton Landfill #3 (DeWitt County); and
- Advanced Disposal Services Valley View Landfill, Inc. (Macon County).

3.9.2.2 Potentially- Infectious Medical Waste

Potentially-Infectious Medical Waste (PIMW) is generated in connection with medical research; biological testing; and the diagnosis, treatment or immunization of human beings or animals. PIMW is typically generated at hospitals, nursing homes, medical or veterinary clinics, dental offices, clinical or pharmaceutical laboratories, and research facilities.

According to IEPA's list of permitted PIMW Facilities, there are no facilities permitted to accept medical waste for disposal in Piatt County.

3.9.2.3 Hazardous Waste

A hazardous waste is defined as the byproduct of a manufacturing process that is either listed or has the characteristics of ignitability, corrosivity, reactivity, or toxicity and cannot be reused.

According to IEPA's Storage, Treatment, Recycling, Incinerating, Transfer Stations and Processing list, there are currently no off-site hazardous waste treatment or disposal facilities located in Piatt County.

3.9.3 Hazardous Material Incidents

A hazardous material or hazmat incident refers to any accident involving the release of hazardous substances, which broadly include any flammable, explosive, biological, chemical, or physical material that has the potential to harm public health or the environment. These incidents can take place where the substances are used, generated, stored, or while they are being transported. In addition, hazmat incidents also include the release of hazardous substances, such as fuel, used to operate vehicles. These releases can be the result of an accident or a leak.

HAZARD PROFILE – HAZARDOUS MATERIALS INCIDENTS

From 2011 through 2020, there were 31 hazmat incidents recorded in Piatt County. Of these incidents, eight (26%) involved transportation incidents/accidents while 23 (74%) occurred at fixed facilities. All of the transportation incidents/accidents involved petroleum-based products.

Hazmat Incident Fast Facts - Occurrences

Number of Hazardous Material Incidents in Piatt County (2011 – 2020): ***31***

Number of Transportation-Related Incidents/Accidents: ***8***

Number of Fixed Facility-Related Incidents/Accidents: ***23***

Average Number of Hazardous Material Incidents Experienced Annually: ***3***

Based on the recorded incidents, Piatt County experienced an average of three hazmat incidents annually over the last 10 years. The types of existing industries; the major transportation corridors through the County, which include interstate and Illinois highways, rail, and pipeline; and chemical use within and adjacent to the County suggest that hazmat incidents are likely to continue to take place at the rate reflected in the 10-year study period. Constant vigilance, proper training and equipment, and prompt response are needed to minimize the potential impacts of each incident.

3.9.4 Waste Remediation

The improper disposal or containment of special and hazardous waste through the years has led to soil, groundwater, and surface water contamination of sites across the U.S. In order to safeguard human health and the environment, these contaminants must be removed or neutralized so they cannot cause harm. This process is known as waste remediation.

HAZARD PROFILE – WASTE REMEDIATION

In Illinois, waste remediation is handled through several programs including the federal Superfund program, the State Response Action Program, the state Site Remediation Program, and the Leaking Underground Storage Tanks Program. The following provides a brief description of each.

Superfund (CERLCA) Program/National Priorities List

Superfund is a USEPA-led program to clean up sites within the U.S. contaminated by hazardous waste that has been dumped, left out in the open, or otherwise improperly managed and which pose a risk to human health and/or the environment. Sites of national priority among the known or threatened releases of hazardous substances, pollutants or contaminants throughout the U.S. and its territories are identified on the National Priorities List (NPL). Those sites that pose the largest threat to public health and the environment are typically found on the NPL.

According to the NPL database, there are 45 Superfund sites in Illinois. However, there are ***no sites*** in Piatt County being ***managed through the Superfund program***.

State Response Action Program (SRAP)

The main objective of the State Response Action Program (SRAP) is to clean up hazardous substances at sites that present an imminent and substantial threat to human health and the environment, but which may not be addressed by other federal or state cleanup programs. The sites handled by the SRAP include abandoned landfills, old manufacturing plants, former waste

oil recycling operations, contaminated agrichemical facilities, and other areas where surface water, groundwater, soil, and air may be contaminated with hazardous substances. Since the mid-1980s, cleanup activities have been conducted at more than 500 sites in Illinois through this Program. Once the threat to human health and the environment has been mitigated, some sites are transferred to other state cleanup programs to complete remediation activities.

Waste Remediation Fast Facts - Occurrences

Superfund
Number of Superfund Sites in the County: ***None***

Illinois Site Response Action Program
Number of SRAP Sites in the County: ***1***

Illinois Site Remediation Program
Number of SRP Sites in the County: ***5***

Number of SRP Sites with NFR Letters: ***1***

Illinois Leaking Underground Storage Tanks Program
Number of LUST Sites in County: ***47***

Number of LUST Sites with NFR/Non-Lust/4Y Letters: ***20***

There is ***one SRAP site*** in Piatt County and the site has completed the Program.

Illinois Site Remediation Program (SRP)
The Site Remediation Program (SRP) is a voluntary cleanup program that provides applicants the opportunity to receive technical assistance in determining what course of action is needed to remediate sites where hazardous substances, pesticides, or petroleum may be present. The goal of the SRP is to receive a no further remediation determination from IEPA. Most site remediation in Illinois is handled through this Program. Since the mid-1980s, remediation activities have been conducted and monitored at approximately 5,800 sites in Illinois. Properties that satisfy respective IEPA laws and regulations can receive a No Further Remediation (NFR) letter. They must demonstrate, through proper investigation and, when warranted, remedial action, that environmental conditions at their remediation site do not present a significant risk to human health or the environment. This letter describes what remediation activities have been taken and whether any portion of the property, based on future property use, might need additional remediation.

There are ***five SRP sites*** in Piatt County. One of the five SRP sites have received an NFR letter. The remaining four sites do not pose an immediate threat to public health or the environment.

Leaking Underground Storage Tank Program (LUST)
The Leaking Underground Storage Tanks Program (LUST) oversees remedial activities associated with petroleum product releases from underground storage tanks (UST). This Program began in the late 1980s as a result of the threats posed by vapors in homes and businesses, contaminated groundwater, and contaminated soil. In Illinois, more than 14,500 acres of soil contaminated by leaking underground tanks have been remediated between 1988 and 2010 (the most recent year for which data was available).

In Piatt County there are ***47 sites involving the remediation of petroleum product releases*** from underground storage tanks. Twenty of the 47 LUST sites (approximately 43%) have received NFR letters, other clearance letters, or remediation is virtually complete.

3.9.5 Nuclear Incidents

The term "nuclear incident" refers to the release of significant levels of radioactive material or exposure of the general public to radiation. This section does not address the intentional or malicious release of radioactive materials as a result of a terrorism activity. Exposure to dangerous levels of radiation can have varying health effects on people and animals. Impacts range from minor health issues to fatal illnesses.

HAZARD PROFILE – NUCLEAR INCIDENTS

In Piatt County, residents could be exposed to radioactive material/radiation from a nuclear incident that occurs:

- at the Clinton Power Station located in DeWitt County; or
- as spent nuclear fuel rods are being transported by railway through the County.

There have been no nuclear incidents and therefore no injuries or damages associated with the Clinton Power Station or the transportation of spent nuclear fuel rods through Piatt County.

Nuclear Incidents Fast Facts - Occurrences

Number of Nuclear Power Facilities in the County: ***None***

Number of Nuclear Power Facilities near the County: ***1***

Emergency Planning Zones

Are there Areas in the County within the 10-mile Critical Risk Zone of any Nuclear Power Facilities? ***Yes (portions of Blue Ridge, Goose Creek, and Willow Branch townships)***

Are there Areas in the County within the 50-mile Pathway Zone of any Nuclear Power Facilities? ***Yes (entire county)***

Number of Incidents Impacting the County: ***none***

3.9.5.1 Power Facilities

Commercial nuclear facilities constructed in the U.S. should withstand most natural hazards such as tornadoes and severe storms that frequently occur in Illinois. Nonetheless, IEMA has developed a Radiological Emergency Response Plan in cooperation with other state and local governments. Procedures are in place and exercises are conducted with state and local officials to protect the public in the unlikely event of a nuclear emergency. There is one nuclear generating station relatively close to Piatt County operated by the Exelon Corporation. **Figure MMH-7** identifies the facilities, their locations, and their respective distances to the Piatt County border.

Figure MMH-7
Nuclear Generating Stations Near Piatt County

Nuclear Generating Station Name	Location	Distance to Piatt County Border
Clinton Nuclear Power Station	6 miles east-northeast of Clinton in DeWitt County	8.2 miles

An Emergency Planning Zone (EPZ) around each nuclear facility is assessed to estimate potential damages to the public and critical infrastructure. EPZs typically include a 10-mile Critical Risk Zone and a 50-mile Ingestion Pathway Zone. Ingestion refers to radiation that might enter a person's body. A small portion of Blue Ridge, Goose Creek, and Willow Branch townships along the northwestern border of the County fall within the 10-mile Critical Risk Zone of the Clinton Power Station. All of Piatt County falls within the 50-mile Ingestion Pathway Zone for The

Clinton Power Station. **Figure MMH-8** identifies the locations that fall within the 10-mile Critical Risk Zone and the 50-mile Ingestion Pathway Zone. **Appendix K** contains an evacuation map published by Exelon that shows the 10-mile Critical Risk Zone for the Clinton Power Station.

Figure MMH-8
Locations within Emergency Planning Zones

Nuclear Generating Station Name	Areas within 10-Mile Critical Risk Zone	Areas within 50-Mile Ingestion Pathway Zone
Clinton Nuclear Power Station	unincorporated areas of Blue Ridge, Goose Creek, and Willow Branch near the DeWitt County Line	All of Piatt County

The consequences associated with a release at any nuclear power facility would depend on the magnitude of the accident and the prevailing weather conditions. A significant incident might require individuals to stay indoors or to evacuate to temporary relocation centers. Temporary relocation centers have been established for residents should a significant event requiring evacuation occur at the Clinton Power Station.

To protect the food supply, persons owning livestock may be advised to remove all livestock from pasture, shelter if possible, and provide them with stored feed and protected water. The American Nuclear Insurers (ANI) Company provides insurance to cover the Exelon Corporation's legal liability up to the limits imposed by the Price-Anderson Act, for bodily injury and property damage such as the loss of livestock and crops caused by a nuclear energy incident at any of the Exelon Nuclear Power Facilities.

No incidents have occurred at the Clinton Power Station that have impacted Piatt County. The probability of an incident causing off-site impacts appears low.

3.9.5.2 Transportation of Spent Nuclear Fuel Rods by Railway

The protocol for moving spent nuclear fuel rods from nuclear power plants requires that the train be stopped and inspected before moving through Illinois and that it be escorted as it moves through the State. Inspection of the track ahead of the train is also required to reduce the risk of derailment.

While movement of nuclear material has been minimal as the U.S. grapples with the issue of developing national or regional repositories, more rail movement is anticipated in the future. At the present time, the Clinton Power Station is storing spent fuel rods on-site. If a national or regional repository is established, then the spent fuel rods will be moved off-site. According to the Illinois Commerce Commission, there has never been a railway transportation accident resulting in the release of radioactive material; however, widespread concern remains regarding its safe transportation.

3.9.6 Terrorism

Terrorism has different definitions across the globe. For the purpose of this Plan, terrorism will be defined as any event that includes violent acts which threaten, or harm lives, health or property

conducted by domestic or foreign individuals or groups aimed at civilians, the federal government or symbolic locations intended to cause widespread fear.

HAZARD PROFILE – TERRORISM

The attack on the World Trade Center and the Pentagon on September 11, 2001 by foreign terrorists galvanized national action against terrorism and resulted in the creation of the U.S. Department of Homeland Security. While the number of terrorist activities garnering national attention in the U.S. has been relatively small, approximately 201,183 terrorist events have occurred worldwide between 1970 and 2019, according to the National Consortium for the Study of Terrorism and Responses to Terrorism (the Consortium). During this same time span, the Consortium documented 3,004 terrorist events within the U.S.

Terrorism Fast Facts – Occurrences*

Number of Recorded Terrorism Events Worldwide (1970 – 2019): ***201,183***

Number of Recorded Terrorism Events in the U.S. (1970 – 2019): ***3,004***

Number of Recorded Terrorism Events in Illinois (1970 – 2019): ***117***

* Based on data from the National Consortium for the Study of Terrorism and Responses to Terrorism (START) Global Terrorism Database.

Acts of terrorism have resulted in fatalities and injuries as a result of kidnappings, hijackings, bombings, and the use of chemical and biological weapons. The Global Terrorism Database has documented 3,633 American fatalities in the U.S. between 1995 and 2019 from terrorist attacks. The attacks on September 11, 2001 account for 3,001of the 3,633 fatalities. A search of the Global Terrorism Database identified 117 incidents of terrorism in Illinois between 1970 and 2019. These incidents resulted in six fatalities and 38 injuries.

The Federal Bureau of Investigation's (FBI) provides supporting documentation on domestic terrorist attacks in a series of reports on terrorism. These reports provide a chronological summary of terrorist incidents in the U.S. with detailed information on attacks between 1980 and 2005. During this time period, 192 incidents were documented within the U.S. Six of these incidents occurred in Illinois; five in the Chicago area and one downstate.

On September 24, 2009, a single individual from Macon County sought to carry out his anger at the federal government by detonating a van filled with explosive outside of the Federal Courthouse in Springfield. This attempt was thwarted by the FBI.

On May 16, 2018 at around 8:00 a.m., 19-year-old boy, armed with a 9-mm semi-automatic rifle, fired several shots near the Dixon High School Gymnasium where approximately 180 students were practicing for graduation. The school's resource officer confronted the shooter, who fled from the school on foot. The shooter fired several shots at the resource officer, who returned fire, wounding the shooter in the shoulder. The gunman suffered non-life threatening injuries. No students or staff were injured in the incident. Faculty and staff barricaded doors and took cover as the incident unfolded.

More recently an active shooter incident occurred at the Highland Park Independence Day parade on July 4, 2022. A 22-year-old man, armed with a semi-automatic rifle, gained access to the roof of a building along the parade route and opened fire on spectators and those in the parade killing

seven individuals and wounding an additional 48 individuals. The shooter evaded immediate capture and fled the scene but was apprehended later the same day. He confessed to the shooting and is being held without bail as he awaits trial.

It is impossible to predict with any reasonable degree of accuracy how many terrorism events might be expected to occur in Piatt County or elsewhere in Illinois. Although targets for terrorist activity are more likely centered in larger urban areas, recruitment, training, and other support activities, such as the ones described above, have occurred in rural areas.

The economic resources available to some terrorist groups coupled with the combination of global tensions, economic uncertainty, and frustration towards government appear to have recently raised the frequency of attempts. Enhanced efforts by law enforcement officials and civilian vigilance for unusual activity or behavior will be needed to repel terrorists whether they are domestic or foreign in origin.

4.0 MITIGATION STRATEGY

The mitigation strategy identifies how participating jurisdictions are going to reduce or eliminate the potential loss of life and property damage that results from the natural and man-made hazards identified in the Risk Assessment section of this Plan. The strategy includes:

- Reviewing and updating the mitigation goals. Mitigation goals describe the objective(s) or desired outcome(s) that the participants would like to accomplish in terms of hazard and loss prevention. These goals are intended to reduce or eliminate long-term vulnerabilities to natural and man-made hazards.
- Evaluating the status of the existing mitigation actions and identifying a comprehensive range of jurisdiction-specific mitigation actions including those related to continued compliance with the National Flood Insurance Program (NFIP). Mitigation actions are projects, plans, activities, or programs that achieve at least one of the mitigation goals identified.
- Analyzing the existing and new mitigation actions identified for each jurisdiction. This analysis ensures each action will reduce or eliminate future losses associated with the hazards identified in the Risk Assessment section.
- Reviewing and updating the mitigation actions prioritization methodology. The prioritization methodology outlines the approach used to prioritize the implementation of each identified mitigation action.
- Identifying the entity(s) responsible for implementation and administration. For each mitigation action, the entity(s) responsible for implementing and administering that action is identified as well as the timeframes for completing the actions and potential funding sources.
- Conducting a preliminary cost/benefit analysis of each mitigation action. The qualitative cost/benefit analysis provides participants a general idea of which actions are likely to provide the greatest benefit based on the financial cost and staffing efforts needed.

As part of the Plan update, the mitigation strategy was reviewed and revised. A detailed discussion of each aspect of the mitigation strategy and any updates made is provided below.

4.1 MITIGATION GOALS REVIEW

As part of the Plan update process, the mitigation goals developed in the original Plan were reviewed and re-evaluated. The Planning Committee chose to replace the three primary goals and list of objectives in order to simplify the mitigation strategy and address a more comprehensive range of mitigation activities and projects.

The original list of mitigation goals as well as potential updates to the list were distributed to the Planning Committee members at the first meeting on November 30, 2021. Members were asked to review the potential updates before the second meeting and consider whether any changes needed to be made or if additional goals should be included. At the Planning Committee's March 22, 2022 meeting the group discussed the updated goals and approved them with no changes. **Figure MIT-1** lists the approved mitigation goals.

Figure MIT-1 Mitigation Goals	
Goal 1	Lessen the impacts of hazards on new and existing infrastructure (buildings, roads, bridges, utilities, water supplies, sanitary sewer systems, etc.) in order to promote hazard-resistant communities.
Goal 2	Incorporate hazard mitigation strategies into existing and new community plans and regulations.
Goal 3	Develop long-term strategies to educate residents and businesses on the hazards affecting the County, the actions they can take before a hazard event occurs to protect themselves, their households, homes and businesses and the resources available to implement identified actions in an effort to promote hazard resiliency.
Goal 4	Protect the lives, health, and safety of the individuals living in the County from the dangers caused by natural and man-made hazards.
Goal 5	Place a priority on protecting community lifelines (i.e., safety and security; food, water, and shelter; health and medical; energy; communication; and transportation), public services and schools.
Goal 6	Preserve and protect the rivers, streams, and floodplains in the County.
Goal 7	Ensure future development does not increase the vulnerability of hazard-prone areas within the County or create unintended exposures to natural and man-made hazards.
Goal 8	Protect historic, cultural, and natural resources from the effects of natural and man-made hazards.

4.2 EXISTING MITIGATION ACTIONS REVIEW

The Plan update process included a review and evaluation of the ***existing hazard mitigation actions*** listed in the original Plan. A copy of these original actions is included in **Appendix L**. A review of the existing hazard mitigation actions revealed the following shortcomings:

- ❖ Actions did not identify specific entities other than the County responsible for implementation, even for municipal projects. This created a situation in which the municipalities did not have a clear understanding of which department within their own jurisdiction was tasked with implementing the action and therefore no sense of responsibility or ownership of the action was taken.
- ❖ Actions already completed were included in the mitigation strategy. Several of the actions identified were already implemented prior to the completion and adoption of the Plan and therefore were eliminated.
- ❖ Actions focused on emergency preparedness or response and not mitigation. Several of the actions identified were aimed at addressing emergency preparedness or response and not mitigation needs and therefore were eliminated.

The remaining existing mitigation actions were evaluated, assigned to the appropriate participating jurisdiction(s), and presented to the Planning Committee members for their review and evaluation at the second meeting held on March 22, 2022. Each participating jurisdiction was asked to identify those actions that were either in progress or that had been completed since the original Plan was prepared in 2012. They were also given the opportunity to eliminate any action on their specific list that they did not deem viable and/or practical for implementation.

Figures MIT-2 through **MIT-7**, located at the end of this section, summarize the results of this evaluation by jurisdiction. Each action listed includes a reference number to the original mitigation action list found in **Appendix L**. Bement CUSD #5, Monticello Fire & Rescue, Monticello Township, and Willow Branch Township did not participate in the development of the original Plan and therefore are not included in the summary. Cisco Fire Protection District, Kirby Medical Center, and Mid Piatt FPD participated in the original Plan's development, but did not include any mitigation actions in the Plan and also are not included in the summary. While Cerro Gordo and DeLand participated in the original Plan, they chose not to participate in the Plan update process and are not included in the summary.

4.3 NEW MITIGATION ACTION IDENTIFICATION

Following the review and evaluation of the existing mitigation actions, the Planning Committee members were asked to consult with their respective jurisdictions to identify ***new, jurisdiction-specific mitigation actions***.

Representatives of Piatt County, Cisco, Mansfield, and Monticello were also asked to identify mitigation actions that would ensure their continued compliance with the National Flood Insurance Program. The compiled lists of new mitigation actions were then reviewed to assure the appropriateness and suitability of each action. Those actions that were not deemed appropriate and/or suitable were either reworded or eliminated.

4.4 MITIGATION ACTION ANALYSIS

Next, those existing mitigation actions retained, and the new mitigation actions identified were assigned to one of four broad mitigation activity categories that allowed Planning Committee members to compare and consolidate similar actions. **Figure MIT-8** identifies each mitigation activity category and provides a brief description.

Each mitigation action was then analyzed to determine:

- the hazard or hazards being mitigated;
- the general size of the population affected (i.e., small, medium, or large);
- the goal or goals fulfilled;
- whether the action would reduce the effects on new or existing buildings and infrastructure; and
- whether the action would ensure continued compliance with the National Flood Insurance Program.

Each mitigation action was also evaluated to determine whether it would mitigate risk to one or more of FEMA's seven Community Lifelines. Community Lifelines are the most fundamental services in the community that, when stabilized, enable all aspects of society to function. These fundamental services enable the continuous operation of critical government and business functions essential to human health and safety or economic security. The Community Lifelines include Safety & Security; Food, Water, Shelter; Health & Medical; Energy (Power & Fuel); Communications; Transportation; and Hazardous Materials. **Figure MIT-9** provides a brief description of each Community Lifeline.

Figure MIT-8 Types of Mitigation Activities	
Category	**Description**
Local Plans & Regulations (LP&R)	Local Plans & Regulations include actions that influence the way land and buildings are being developed and built. Examples include stormwater management plans, floodplain regulations, capital improvement projects, participation in the NFIP Community Rating System, comprehensive plans, and local ordinances (i.e., building codes, etc.)
Structure & Infrastructure Projects (S&IP)	Structure & Infrastructure Projects include actions that protect infrastructure and structures from a hazard or remove them from a hazard area. Examples include acquisition and elevation of structures in flood prone areas, burying utility lines to critical facilities, construction of community safe rooms, install "hardening" materials (i.e., impact resistant window film, hail resistant shingles/doors, etc.) and detention/retention structures.
Natural System Protection (NSP)	Natural System Protection includes actions that minimize damage and losses and also preserve or restore natural systems. Examples include sediment and erosion control, stream restoration and watershed management.
Education & Awareness Programs (E&A)	Education & Awareness Programs include actions to inform and educate citizens, elected officials and property owners about hazards and the potential ways to mitigate them. Examples include outreach/school programs, brochures, and handout materials, becoming a StormReady community, evacuation planning and drills, and volunteer activities (i.e., culvert cleanout days, initiatives to check in on the elderly/disabled during hazard events such as storms and extreme heat events, etc.)

4.5 MITIGATION ACTION PRIORITIZATION METHODOLOGY REVIEW

The methodology developed to prioritize mitigation actions in the original Plan was reviewed by the Planning Committee as part of the Plan update process. The original prioritization methodology was based on the STAPLE+E planning factors (Social, Technical, Administrative, Political, Legal, Economic, and Environmental) and applied a rating of high, medium, or low to each mitigation action.

Taking into account the number and types of factors assessed and the complexity associated with the STAPLE+E analysis, the Planning Committee decided to replace the original prioritization methodology with one focused on just two key factors: 1) the frequency of the hazard and 2) the degree of mitigation attained. This updated prioritization methodology was presented to the Planning Committee members at the third meeting held on June 14, 2022. The group reviewed and discussed the methodology and chose to approve it with no changes.

Figure MIT-10 identifies and describes the four-tiered prioritization methodology adopted by the Planning Committee. The methodology developed provides a means of objectively determining which actions have a greater likelihood of eliminating or reducing the long-term vulnerabilities associated with the most frequently-occurring natural hazards.

While prioritizing the actions is useful and provides participants with additional information, it is important to keep in mind that implementing any the mitigation actions is desirable regardless of which prioritization category an action falls under.

Figure MIT-9 Community Lifelines	
Category	**Components/Subcomponents**
Safety & Security	- Law Enforcement/Security (police stations, law enforcement, site security, correctional facilities) - Fire Service (fire stations, firefighting resources) - Search & Rescue (local search & rescue) - Government Service (emergency operation centers, essential government functions, government offices, schools, public records, historic/cultural resources) - Community Safety (flood control, other hazards, protective actions)
Food, Water, Shelter	- Food [commercial food distribution, commercial food supply chain, food distribution programs (e.g., food banks)] - Water [drinking water utilities (intake, treatment, storage & distribution), wastewater systems, commercial water supply chain]; - Shelter [housing (e.g., homes, shelters), commercial facilities (e.g., hotels)]; - Agriculture (animals & agriculture)
Health & Medical	- Medical Care (hospitals, dialysis, pharmacies, long-term care facilities, VA health system, veterinary services, home care) - Patient Movement (emergency medical services) - Fatality Management (mortuary and post-mortuary services) - Public Health (epidemiological surveillance, laboratory, clinical guidance, assessment/interventions/treatments, human services, behavioral health) - Medical Supply Chain [blood/blood products, manufacturing (e.g., pharmaceutical, device, medical gases), distribution, critical clinical research, sterilization, raw materials]
Energy	- Power Grid (generation systems, transmission systems, distribution systems) - Fuel [refineries/fuel processing, fuel storage, pipelines, fuel distribution (e.g., gas stations, fuel points), off-shore oil platforms]
Communications	- Infrastructure [wireless, cable systems and wireline, broadcast (e.g., TV and radio), satellite, data centers/internet] - Alerts, Warnings, & Messages (local alert/warning ability, access to IPAWS, NAWAS terminals) - 911 & Dispatch (public safety answering points, dispatch) - Responder Communications (LMR networks) - Finance (banking services, electronic payment processing)
Transportation	- Highway/Roadway/Motor Vehicle (roads, bridges) - Mass Transit (bus, rail, ferry) - Railway (freight, passenger) - Aviation [commercial (e.g., cargo/passenger), general, military] - Maritime (waterways, ports, and port facilities)
Hazardous Materials	- Facilities [oil/hazmat facilities (e.g., chemical, nuclear), oil/hazmat/toxic incidents from facilities] - Hazmat, Pollutants, Contaminants (oil/hazmat/toxic incidents from non-fixed facilities, radiological or nuclear incidents)

Figure MIT-10
Mitigation Action Prioritization Methodology

		Hazard	
		Most Frequent Hazard **(M)** (i.e., severe storms, floods, excessive heat, severe winter storms)	Less Frequent Hazard **(L)** (i.e., extreme cold, tornadoes, drought, earthquakes)
Mitigation Action	Mitigation Action with the Potential to Virtually Eliminate or Significantly Reduce Impacts **(H)**	**HM** mitigation action will virtually eliminate damages and/or significantly reduce the probability of injuries and fatalities from the most frequent hazards	**HL** mitigation action will virtually eliminate damages and/or significantly reduce the probability of injuries and fatalities from less frequent hazards
	Mitigation Action with the Potential to Reduce Impacts **(L)**	**LM** mitigation action has the potential to reduce damages, fatalities and/or injuries from the most frequent hazards	**LL** mitigation action has the potential to reduce damages, fatalities and/or injuries from less frequent hazards

4.6 MITIGATION ACTION IMPLEMENTATION, ADMINISTRATION & COST/BENEFIT ANALYSIS

Finally, each participating jurisdiction was asked to identify how the mitigation actions will be implemented and administered. This included:

- identifying the party or parties responsible for oversight and administration;
- determining what funding source(s) are available or will be pursued;
- describing the time frame for completion; and
- conducting a preliminary cost/benefit analysis.

Oversight & Administration

It is important to keep in mind that many of the participating jurisdictions have extremely limited capabilities related to organization and staffing for oversight and administration of the identified mitigation actions. Three of the five participating municipalities are small in size, with populations of less than 900 individuals. In most cases these jurisdictions have minimal staff who are only employed part-time. Their organizational structure is such that most have very few offices and/or departments, generally limited to public works and water/sewer. Those in charge of the offices/departments often lack the technical expertise needed to individually oversee and administer the identified mitigation actions. As a result, most of the participating jurisdictions identified their governing body (i.e., village board, city council or board of trustees) as the entity responsible for oversight and administration simply because it is the only practical option given their organizational constraints. Other participants felt that oversight and administration fell under the purview of the entity's governing body (board/council) and not individual departments.

Funding Sources

While the Champaign County Regional Planning Commission has the ability to provide grant writing services to Piatt County, most of the participating jurisdictions do not have administrators with grant writing capabilities. As a result, assistance was needed in identifying possible funding sources for the identified mitigation actions. The consultant provided written information to the participants about FEMA and non-FEMA funding opportunities that have been used previously to finance mitigation actions. In addition, funding information was discussed with participants during planning committee meetings and in one-on-one contacts so that an appropriate funding source could be identified for each mitigation action.

A handout was prepared and distributed that provided specific information on the non-FEMA grant sources available including the grant name, the government agency responsible for administering the grant, grant ceiling, contact person and application period among other key points. Specific grants from the following agencies were identified: U.S. Department of Agricultural – Rural Development (USDA – RD), Illinois Department of Agriculture (IDOA), Illinois Department of Commerce and Economic Opportunity (DCEO), Illinois Environmental Protection Agency (IEPA), Illinois Department of Natural Resources (IDNR) and Illinois Department of Transportation (IDOT).

The funding source identified for each action is the most likely source to be pursued; however, if grant funding is unavailable through the most likely or other suggested sources, then implementation of medium and large-scale projects and activities is unlikely due to the budgetary constraints experienced by most, if not all, of the participants due to their size, projected population growth and limited revenue streams. It is important to remember that the population for the entire County is less than 16,500 individuals. Three of the five participating municipalities have populations of less than 900 individuals. Most of the jurisdictions struggle to maintain and provide the most critical of services to their residents. Additional funding is necessary if implementation is to be achieved.

Time Frame for Completion

The time frame for completion identified for each action is the timespan in which participants would like to see the action successfully completed. In most cases, however, the time frame identified is dependent on obtaining the necessary funding. As a result, a time range has been identified for many of the mitigation actions to allow for unpredictability in securing funds.

Cost/Benefit Analysis

A preliminary qualitative cost/benefit analysis was conducted on each mitigation action. The costs and benefits were analyzed in terms of the general overall cost to complete an action as well as the action's likelihood of permanently eliminating or reducing the risk associated with a specific hazard. The general descriptors of high, medium, and low were used. These terms are not meant to translate into a specific dollar amount, but rather to provide a relative comparison between the actions identified by each jurisdiction.

This analysis is only meant to give the participants a starting point to compare which actions are likely to provide the greatest benefit based on the financial cost and staffing effort needed. It was repeatedly communicated to the Planning Committee members that when a grant application is

submitted to IEMA/FEMA for a specific action, a detailed cost/benefit analysis will be required to receive funding.

4.7 RESULTS OF MITIGATION STRATEGY

Figures MIT-11 through **MIT-23**, located at the end of this section, summarize the results of the mitigation strategy. The mitigation actions are arranged alphabetically by participating jurisdiction following the County and include both existing and new actions.

Figure MIT-2
Piatt County – Status of Existing Mitigation Actions
(Sheet 1 of 2)

Activity/Project Description	Status			Year Completed	Summary/Details of Completed Activity/Project (i.e., location, scope, etc.)
	No Progress (✓)	In Progress (✓)	Completed (✓)		
Modify the Livingston Center for use as a shelter (Mitigation Item #1)	✓				
Develop a coordination plan for evacuation (Mitigation Item #2)	✓				
Trim trees to minimize the amount/duration of power outages (Mitigation Item #3)	✓				
Clear debris from waterways and lower ditches to improve water flow (Mitigation Item #4)	✓				
Repair and maintain storm sewer systems in Pierson Station (Mitigation Item #5)	✓				
Coordinate local agencies to develop a database of special needs populations (Mitigation Item #6)	✓				
Install automatic shut off valves on all natural gas lines to essential county-owned buildings and critical infrastructure (Mitigation Item #7)	✓				
Conduct a study to identify the potential buy-out homes that flood frequently (Mitigation Item #8)	✓				
Build a shallow retention pond along the railroad tracks in Milmine (Mitigation Item #9)	✓				
Conduct a flow allocation study for rail and road transportation (Mitigation Item #10)	✓				
Install warning sirens in Pierson Station and La Place and develop a plan for ongoing maintenance of these sirens (Mitigation Item #11)	✓				

(Mitigation Strategy "No.") refers to the original action by number detailed in Appendix L.

No substantial changes in development have occurred in hazard prone areas that would increase or decrease the County's vulnerability since the original Plan was approved.

In terms of changes in vulnerability associated with mitigation actions in progress or completed, Piatt County has one administrative activity in progress that has the potential to decrease the vulnerability of flood-prone areas. No additional actions were undertaken to due personnel and financial constraints. As a result, there has been no changes in vulnerability of hazard prone areas within the County.

Figure MIT-2
Piatt County – Status of Existing Mitigation Actions
(Sheet 2 of 2)

Activity/Project Description	Status			Year Completed	Summary/Details of Completed Activity/Project (i.e., location, scope, etc.)
	No Progress (✓)	In Progress (✓)	Completed (✓)		
Enforce existing floodplain ordinances to protect new infrastructure (Mitigation Item #12)		✓			
Conduct a study to identify high water areas for culverts/ditches (Mitigation Item #13)	✓				
Develop mutual aid agreements using Mutual Aid Box Alarm System (MABAS) (Mitigation Item #14)	✓				
Encourage all communities to participate in the NFIP through public education (Mitigation Item #15)	✓				
Develop capacity for local hazmat response and recovery training for first responders (Mitigation Item #16)	✓				
Institute Nixle (Mitigation Item #17)	✓				
Develop a public education program to discuss the importance of tie downs for manufactured homes and local shelter information (Mitigation Item #18)	✓				
Develop a public education program for schools to discuss the impact of hazards, in particular earthquakes (Mitigation Item #19)	✓				
Educate the public on the dangers of anhydrous ammonia (Mitigation Item #20)	✓				
Encourage county-wide participation in the annual Shake-Out Drill (Mitigation Item #21)	✓				

(Mitigation Strategy "No.") refers to the original action by number detailed in Appendix L.

No substantial changes in development have occurred in hazard prone areas that would increase or decrease the County's vulnerability since the original Plan was approved.

In terms of changes in vulnerability associated with mitigation actions in progress or completed, Piatt County has one administrative activity in progress that has the potential to decrease the vulnerability of flood-prone areas. No additional actions were undertaken to due personnel and financial constraints. As a result, there has been no changes in vulnerability of hazard prone areas within the County.

Figure MIT-3
Bement – Status of Existing Mitigation Actions

Activity/Project Description	Status			Year Completed	Summary/Details of Completed Activity/Project (i.e., location, scope, etc.)
	No Progress (✓)	In Progress (✓)	Completed (✓)		
Explore participation in the National Flood Insurance Program (Mitigation Item #15)		✓			

(Mitigation Strategy "No.") refers to the original action by number detailed in Appendix L.

No substantial changes in development have occurred in hazard prone areas that would increase or decrease the Village's vulnerability since the original Plan was approved.

In terms of changes in vulnerability associated with mitigation actions in progress or completed, Bement has one administrative activity in progress that has the potential to decrease the vulnerability of flood-prone areas.

Figure MIT-4
Cisco – Status of Existing Mitigation Actions

Activity/Project Description	Status			Year Completed	Summary/Details of Completed Activity/Project (i.e., location, scope, etc.)
	No Progress (✓)	In Progress (✓)	Completed (✓)		
Explore participation in the National Flood Insurance Program (Mitigation Item #15)			✓	2011	Joined the NFIP on June 16, 2011.

(Mitigation Strategy "No.") refers to the original action by number detailed in Appendix L.

No substantial changes in development have occurred in hazard prone areas that would increase or decrease the Village's vulnerability since the original Plan was approved.

In terms of changes in vulnerability associated with mitigation actions in progress or completed, Cisco completed one administrative activity that has the potential to decrease the vulnerability of flood-prone areas. It is still too early to tell the degree of reduction that will be experienced from the implementation of this project.

Figure MIT-5
Hammond – Status of Existing Mitigation Actions

Activity/Project Description	Status			Year Completed	Summary/Details of Completed Activity/Project (i.e., location, scope, etc.)
	No Progress (✓)	In Progress (✓)	Completed (✓)		
Clear debris from waterways and lower ditches to improve water flow (Mitigation Item #4)		✓			Continuous work done each year
Explore participation in the National Flood Insurance Program (Mitigation Item #15)	✓				

(Mitigation Strategy "No.") refers to the original action by number detailed in Appendix L.

No substantial changes in development have occurred in hazard prone areas that would increase or decrease the Village's vulnerability since the original Plan was approved.

In terms of changes in vulnerability associated with mitigation actions in progress or completed, Hammond has one infrastructure project in progress that has the potential to decrease the vulnerability of hazard prone areas to flooding. It remains to be seen the degree of reduction that will be experienced from the implementation of this project.

Figure MIT-6
Mansfield – Status of Existing Mitigation Actions

Activity/Project Description	Status			Year Completed	Summary/Details of Completed Activity/Project (i.e., location, scope, etc.)
	No Progress (✓)	In Progress (✓)	Completed (✓)		
Explore participation in the National Flood Insurance Program (Mitigation Item #15)	✓				

(Mitigation Strategy "No.") refers to the original action by number detailed in Appendix L.

No substantial changes in development have occurred in hazard prone areas that would increase or decrease the Village's vulnerability since the original Plan was approved.

In terms of changes in vulnerability associated with mitigation actions in progress or completed, Mansfield was not able to complete the identified activity due to personnel constraints. As a result, there has been no changes in vulnerability of hazard prone areas within the Village.

Figure MIT-7
Monticello – Status of Existing Mitigation Actions

Activity/Project Description	Status			Year Completed	Summary/Details of Completed Activity/Project (i.e., location, scope, etc.)
	No Progress (✓)	In Progress (✓)	Completed (✓)		
Modify the Livingston Center for use as a shelter (Mitigation Item #1)	✓				

(Mitigation Strategy "No.") refers to the original action by number detailed in Appendix L.

No substantial changes in development have occurred in hazard prone areas that would increase or decrease the City's vulnerability since the original Plan was approved.

In terms of changes in vulnerability associated with mitigation actions in progress or completed, Monticello was not able to complete the identified infrastructure improvement project due to fiscal constraints. As a result, there has been no changes in vulnerability of hazard prone areas within the Village.

Figure MIT-11
Piatt County Hazard Mitigation Actions
(Sheet 1 of 4)

Priority	Activity/Project Description	Hazard(s) to be Mitigated	Community Lifeline(s) to be Mitigated	Type of Mitigation Activity	Size of Population Affected	Goal(s) Met	Reduce Effects of Hazard(s) on Buildings & Infrastructure		Organization / Department Responsible for Implementation & Administration	Time Frame to Complete Activity	Funding Source(s)†	Cost/Benefit Analysis	Status
							New	Existing					
LM	Purchase and distribute NOAA weather radios to residents in areas without storm sirens to establish a Communications Community Lifeline that notifies residents/responders of natural and man-made hazard event information.	EC, EH, EQ, F, SS, SWS, T	C	E&A	Medium	4	---	---	EMA Director	2-5 years	County	Low/High	New
HM	Subscribe to an automated emergency notification system (i.e., reverse 911) to establish a Communications Community Lifeline.	EC, EH, EQ, F, MMH, SS, SWS, T	C	E&A	Large	4	---	---	EMA Director / 911 Coordinator	2-5 years	County	Low/High	New
HM	Install hardening materials (shatter resistant/shatter-proof windows, hail resistant doors/shingles, etc.) at the Piatt County Nursing Home to increase building resilience to natural hazards, maintain continuity of operations, protect staff and residents, and mitigate risk to a Community Lifeline.	EQ, MMH, SS, T	H&M	S&IP	Large	1, 4, 5	---	Yes	Nursing Home Executive Director	2-5 years	County / FEMA HMGP	Medium/High	New
HM	Reinforce the Piatt County Nursing Home's roof and include an anchoring system (i.e., tie downs such as hurricane clips/straps) to increase building resilience to high winds.	SS, T	H&M	S&IP	Large	1, 4, 5	---	Yes	Nursing Home Executive Director	5 years	County / USDA – RD Community Facilities Programs	Medium/High	New

† Identifies the most likely funding source to be pursued for the activity/project described. However, if funding is unavailable through the most likely or other suggested sources, then implementation of medium to large-scale activities/projects is unlikely due to the County's size (approx. 16,500 individuals), projected population growth and budgetary constraints. The County works hard to maintain critical services to its residents. Additional funding is necessary if implementation is to be achieved within the time frames specified.

Acronyms

Priority

HM	Mitigation action with the potential to virtually eliminate or significantly reduce impacts from the most frequent hazards
LM	Mitigation action with the potential to reduce impacts from the most frequent hazards
HL	Mitigation action with the potential to virtually eliminate or significantly reduce impacts from the less frequent hazards
LL	Mitigation action with the potential to reduce impacts from the less frequent hazards

Hazard(s) to be Mitigated:

DR	Drought	MMH	Man-Made Hazard
EC	Extreme Cold	SS	Severe Storms
EH	Excessive Heat	SWS	Severe Winter Storm
EQ	Earthquake	T	Tornado
F	Flood		

Type of Mitigation Activity:

E&A	Education & Awareness	NSP	Natural Systems Protection
LP&R	Local Plans & Regulations	S&IP	Structure & Infrastructure Projects

Community Lifelines to be Mitigated:

C	Communications	H&M	Health & Medical
E	Energy (Power & Fuel)	S&S	Safety & Security
FWS	Food, Water, Shelter	T	Transportation
HM	Hazardous Material		

Figure MIT-11
Piatt County Hazard Mitigation Actions
(Sheet 2 of 4)

Priority	Activity/Project Description	Hazard(s) to be Mitigated	Community Lifeline(s) to be Mitigated	Type of Mitigation Activity	Size of Population Affected	Goal(s) Met	Reduce Effects of Hazard(s) on Buildings & Infrastructure		Organization / Department Responsible for Implementation & Administration	Time Frame to Complete Activity	Funding Source(s)†	Cost/Benefit Analysis	Status
							New	Existing					
HM	Retrofit the Piatt County Nursing Home to include a community safe room (equipped with backup generator and HVAC system) that can also serve as an emergency shelter for area residents.	EQ, F, MMH, SS, SWS, T	H&M	S&IP	Large	4	---	Yes	Nursing Home Executive Director	5 years	County / FEMA HMGP	High/High	New
HM	Retrofit the Livingston Center for use as an emergency shelter.	EC, EH, EQ, F, SS, SWS, T	FWS	S&IP	Small	1, 4, 5	---	Yes	Building Maintenance Supervisor	5 years	County	Medium/High	Existing (2012)
LM	Develop a database of access and functional needs populations within the County in order to identify the best method(s) to alert these individuals to hazard events and develop a plan that identifies sheltering options/facilities for these populations.	EC, EH, EQ, F, MMH, SS, SWS, T	H&M	E&A	Small	4	---	---	EMA Director / Health Department Administrator	1-3 years	County	Low/High	Existing (2012)
LM	Install automatic shut off valves on all natural gas lines to essential County-owned buildings and critical infrastructure to increase building resilience and mitigate risk to community lifelines.	EQ, F, SS, SWS, T	S&S H&M	S&IP	Small	1, 4, 5	---	Yes	Building Maintenance Supervisor	5 years	County	Low/Medium	Existing (2012)

† Identifies the most likely funding source to be pursued for the activity/project described. However, if funding is unavailable through the most likely or other suggested sources, then implementation of medium to large-scale activities/projects is unlikely due to the County's size (approx. 16,500 individuals), projected population growth and budgetary constraints. The County works hard to maintain critical services to its residents. Additional funding is necessary if implementation is to be achieved within the time frames specified.

Acronyms

Priority

HM	Mitigation action with the potential to virtually eliminate or significantly reduce impacts from the most frequent hazards
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LL	Mitigation action with the potential to reduce impacts from the less frequent hazards

Hazard(s) to be Mitigated:

DR	Drought	MMH	Man-Made Hazard
EC	Extreme Cold	SS	Severe Storms
EH	Excessive Heat	SWS	Severe Winter Storm
EQ	Earthquake	T	Tornado
F	Flood		

Type of Mitigation Activity:

E&A	Education & Awareness	NSP	Natural Systems Protection
LP&R	Local Plans & Regulations	S&IP	Structure & Infrastructure Projects

Community Lifelines to be Mitigated:

C	Communications	H&M	Health & Medical
E	Energy (Power & Fuel)	S&S	Safety & Security
FWS	Food, Water, Shelter	T	Transportation
HM	Hazardous Material		

Figure MIT-11
Piatt County Hazard Mitigation Actions
(Sheet 3 of 4)

Priority	Activity/Project Description	Hazard(s) to be Mitigated	Community Lifeline(s) to be Mitigated	Type of Mitigation Activity	Size of Population Affected	Goal(s) Met	Reduce Effects of Hazard(s) on Buildings & Infrastructure		Organization / Department Responsible for Implementation & Administration	Time Frame to Complete Activity	Funding Source(s)†	Cost/Benefit Analysis	Status
							New	Existing					
LM	Conduct a county-wide commodity flow study to determine the types and quantities of hazardous substances and chemicals being transported within and through the County to assess potential impacts on critical infrastructure.	EQ, F, MMH, SS, SWS, T	C, E, FWS, HM, H&M, S&S, T	E&A	Medium	1, 2, 4, 5	Yes	Yes	EMA Director	3-5 years	County / USDOT HMEP	Low/Medium	Existing (2012)
LM	Conduct a drainage/hydraulic study to 1) identify high water areas; 2) determine the cause(s); and 3) identify design solutions (i.e., culverts, ditches, etc.) to address recurring flood/drainage problems within the County.	F, SS	T	E&A	Medium	1, 5	---	Yes	County Highway Engineer	1-5 years	County / IDOT Local Roads	Medium/High	Existing (2012)
LM	Develop mutual aid agreements with local government entities to improve coordination and enhance emergency preparedness, response, recovery, and mitigation activities within the County.	EC, EH, EQ, F, MMH, SS, SWS, T	S&S	LP&R	Large	1, 4, 5	Yes	Yes	EMA Director	2-5 years	County	Low/Medium	Existing (2012)
LM	Distribute flyers and encourage all segments of the population (i.e., childcare facilities, schools, businesses, healthcare facilities, faith-based organizations, government facilities, etc.) to participate in the Great Central U.S. Shake Out Drill held every October.	EQ	---	E&A	Large	3, 4	---	---	EMA Director	1-5 years	County	Low/Medium	Existing (2012)

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Hazard(s) to be Mitigated:

DR	Drought	MMH	Man-Made Hazard
EC	Extreme Cold	SS	Severe Storms
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F	Flood		

Type of Mitigation Activity:

E&A	Education & Awareness	NSP	Natural Systems Protection
LP&R	Local Plans & Regulations	S&IP	Structure & Infrastructure Projects

Community Lifelines to be Mitigated:

C	Communications	H&M	Health & Medical
E	Energy (Power & Fuel)	S&S	Safety & Security
FWS	Food, Water, Shelter	T	Transportation
HM	Hazardous Material		

Figure MIT-11
Piatt County Hazard Mitigation Actions
(Sheet 4 of 4)

Priority	Activity/Project Description	Hazard(s) to be Mitigated	Community Lifeline(s) to be Mitigated	Type of Mitigation Activity	Size of Population Affected	Goal(s) Met	Reduce Effects of Hazard(s) on Buildings & Infrastructure		Organization / Department Responsible for Implementation & Administration	Time Frame to Complete Activity	Funding Source(s)†	Cost/Benefit Analysis	Status
							New	Existing					
HM	Review new Flood Insurance Rate Maps (FIRMs) when they become available. Update the flood ordinance to reflect the revised FIRMs and present both for adoption. Enforce flood ordinance to ensure new development does not increase flood vulnerability or create unintended exposures to flooding.*	F	S&S	LP&R	Small	2, 3, 4, 6, 7	Yes	Yes	County Board Chair / County Board	1-5 years	County	Low/Medium	New
LM	Continue to make the most recent Flood Insurance Rate Maps available at the Zoning Office to assist the public in considering where to construct new buildings.*	F	S&S	E&A	Small	3, 4, 6, 7	Yes	n/a	Zoning Officer	1-3 years	County	Low/Medium	New
LM	Continue to make County officials aware of the most recent Flood Insurance Rate Maps and issues related to construction in a floodplain.*	F	S&S	E&A	Small	3, 4, 6, 7	Yes	n/a	Zoning Officer	1-5 years	County	Low/Medium	New

* Mitigation action to ensure continued compliance with NFIP.

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Type of Mitigation Activity:

E&A	Education & Awareness	NSP	Natural Systems Protection
LP&R	Local Plans & Regulations	S&IP	Structure & Infrastructure Projects

Community Lifelines to be Mitigated:

C	Communications	H&M	Health & Medical
E	Energy (Power & Fuel)	S&S	Safety & Security
FWS	Food, Water, Shelter	T	Transportation
HM	Hazardous Material		

Figure MIT-12
Bement Hazard Mitigation Actions
(Sheet 1 of 2)

Priority	Activity/Project Description	Hazard(s) to be Mitigated	Community Lifeline(s) to be Mitigated	Type of Mitigation Activity	Size of Population Affected	Goal(s) Met	Reduce Effects of Hazard(s) on Buildings & Infrastructure		Organization / Department Responsible for Implementation & Administration	Time Frame to Complete Activity	Funding Source(s)†	Cost/Benefit Analysis	Status
							New	Existing					
HM	Upgrade the storm sewer system to increase storage and draining capacity, better manage stormwater runoff, and ensure system resilience and functionality in an effort to address recurring heavy rain events that overwhelm the system.	F, SS	---	S&IP	Medium	1, 4, 5	Yes	Yes	President / Village Board	5 years	Village / USDA – RD Water & Waste Disposal Program / IEPA SRF - WPCLP	High/High	New
LM	Conduct sewer line reconnaissance study to inspect and clean sanitary sewer pipes and structures and identify locations where storm water infiltrates the lines and mitigate risk to a Community Lifeline	F, SS	FWS	S&IP	Medium	1, 5	Yes	Yes	President / Village Board /	3 years	Village / USDA – RD Water & Waste Disposal Program	Medium/Medium	New
HM	Purchase and install automatic emergency backup generators at the Village lift stations to establish a resilient and reliable power supply in order to maintain continuity of operations and mitigation risk to a Community Lifeline.	EC, EH, EQ, F, MMH, SS, SWS, T	FWS	S&IP	Large	1, 4, 5	Yes	Yes	President / Village Board	1 year	Village / USDA – RD Critical Facilities Programs	Medium/High	New

† Identifies the most likely funding source to be pursued for the activity/project described. However, if funding is unavailable through the most likely or other suggested sources, then implementation of medium to large-scale activities/projects is unlikely due to the budgetary constraints experienced by a village of this size (approx. 1,500 individuals). The Village works hard to provide even the most critical of services to its residents, but it's a struggle. Additional funding is necessary if implementation is to be achieved within the time frames specified.

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F	Flood		

Type of Mitigation Activity:

E&A	Education & Awareness	NSP	Natural Systems Protection
LP&R	Local Plans & Regulations	S&IP	Structure & Infrastructure Projects

Community Lifelines to be Mitigated:

C	Communications	H&M	Health & Medical
E	Energy (Power & Fuel)	S&S	Safety & Security
FWS	Food, Water, Shelter	T	Transportation
HM	Hazardous Material		

Figure MIT-12
Bement Hazard Mitigation Actions
(Sheet 2 of 2)

Priority	Activity/Project Description	Hazard(s) to be Mitigated	Community Lifeline(s) to be Mitigated	Type of Mitigation Activity	Size of Population Affected	Goal(s) Met	Reduce Effects of Hazard(s) on Buildings & Infrastructure		Organization / Department Responsible for Implementation & Administration	Time Frame to Complete Activity	Funding Source(s)†	Cost/Benefit Analysis	Status
							New	Existing					
LM	Develop information materials for schools that describe the risks associated with natural hazards, the proactive actions faculty and students can take to reduce their risk, and the procedures in place in case of an evacuation.	EC, EH, EQ, F, SS, SWS, T	S&S	E&A	Large	3, 4	---	---	President / Village Board	3 years	Village	Low/Medium	New
LM	Inventory, scan, and store off-site vital records to protect and maintain service in the event a natural or man-made hazard event impacts critical government facilities.	EQ, F, MMH, SS, SWS, T	S&S	E&A	Large	1, 5, 8	Yes	Yes	President / Village Board	3 years	Village	Medium/High	New
LM	Purchase and distribute NOAA weather radios for Village employees.	EC, EH, EQ, F, SS, SWS, T	C	E&A	Small	4	---	---	President / Village Board	1 year	Village	Low/High	New
LM	Research participation in the National Flood Insurance Program to explore benefits and costs.	F	S&S	LP&R	Small	2, 4, 6, 7	---	---	President / Village Board	1-3 years	Village	Low/Low	Existing (2012)

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Hazard(s) to be Mitigated:

DR	Drought	MMH	Man-Made Hazard
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EH	Excessive Heat	SWS	Severe Winter Storm
EQ	Earthquake	T	Tornado
F	Flood		

Type of Mitigation Activity:

E&A	Education & Awareness	NSP	Natural Systems Protection
LP&R	Local Plans & Regulations	S&IP	Structure & Infrastructure Projects

Community Lifelines to be Mitigated:

C	Communications	H&M	Health & Medical
E	Energy (Power & Fuel)	S&S	Safety & Security
FWS	Food, Water, Shelter	T	Transportation
HM	Hazardous Material		

Figure MIT-13
Bement CUSD #5 Hazard Mitigation Actions

Priority	Activity/Project Description	Hazard(s) to be Mitigated	Community Lifeline(s) to be Mitigated	Type of Mitigation Activity	Size of Population Affected	Goal(s) Met	Reduce Effects of Hazard(s) on Buildings & Infrastructure		Organization / Department Responsible for Implementation & Administration	Time Frame to Complete Activity	Funding Source(s)†	Cost/Benefit Analysis	Status
							New	Existing					
HM	Purchase and install automatic emergency backup generator(s) at the Bement Elementary/High School to establish a resilient and reliable power supply in order to maintain continuity of operations, ensure sustained functionality of all systems (i.e., heating, freezers, etc.) during extended power outage and mitigate risk to a Community Lifeline.	EC, EH, EQ, F, MMH, SS, SWS, T	S&S	S&IP	Large	1, 4, 5	---	Yes	Superintendent / School Board	1-2 years	CUSD / USDA – RD Critical Facilities Programs / FEMA HMGP	High/High	New
LM	Purchase and distribute NOAA weather radios to each school office to establish a Community Lifeline that notifies staff of natural and man-made event information.	EC, EH, EQ, F, SS, SWS< T	C	E&A	Large	4	---	---	Superintendent / School Board	1-2 years	CUSD	Low/High	New
HM	Install mass notification system (i.e., telephone/intercom system) to alert staff, students and visitors of natural and man-hazard event information.	EQ, F, SS, SWS, T	C	E&A	Large	4	---	---	Superintendent / School Board	1 year	CUSD	Medium/High	New

† Identifies the most likely funding source to be pursued for the activity/project described. However, if funding is unavailable through the most likely or other suggested sources, then implementation of medium to large-scale activities/projects is unlikely due to the budgetary constraints experienced by small, rural school districts. Additional funding is necessary if implementation is to be achieved within the time frames specified.

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Hazard(s) to be Mitigated:

EC	Extreme Cold	MMH	Man-Made Hazard
EH	Excessive Heat	SS	Severe Storms
EQ	Earthquake	SWS	Severe Winter Storm
F	Flood	T	Tornado

Type of Mitigation Activity:

E&A	Education & Awareness	NSP	Natural Systems Protection
LP&R	Local Plans & Regulations	S&IP	Structure & Infrastructure Projects

Community Lifelines to be Mitigated:

C	Communications	H&M	Health & Medical
E	Energy (Power & Fuel)	S&S	Safety & Security
FWS	Food, Water, Shelter	T	Transportation
HM	Hazardous Material		

Figure MIT-14
Cisco Hazard Mitigation Actions
(Sheet 1 of 4)

Priority	Activity/Project Description	Hazard(s) to be Mitigated	Community Lifeline(s) to be Mitigated	Type of Mitigation Activity	Size of Population Affected	Goal(s) Met	Reduce Effects of Hazard(s) on Buildings & Infrastructure		Organization / Department Responsible for Implementation & Administration	Time Frame to Complete Activity	Funding Source(s)†	Cost/Benefit Analysis	Status
							New	Existing					
HM	Upgrade and/or expand the storm sewer system to increase storage and draining capacity, better manage stormwater runoff, and ensure system resilience and functionality in an effort to address recurring heavy rain events that overwhelm the system.	F, SS	---	S&IP	Medium	1, 4, 5	Yes	Yes	President / Village Board	5-10 years	Village / USDA – RD Water & Waste Disposal Program / IEPA SRF - WPCLP	High/High	New
HM	Upgrade/retrofit drinking system (water lines, mains, hydrants, pumping system, etc.) within the Village to increase system resilience, ensure a constant supply of water for residents, and aid in fire suppression during natural and man-made hazard events.	EC, EH, EQ, F, MMH, SS, SWS, T	FWS	S&IP	Medium	1, 4, 5	Yes	Yes	President / Village Board	5-10 years	Village / USDA – RD Water & Waste Disposal Program / IEPA SRF – PWSLP	High/High	New
LM	Purchase and distribute NOAA weather radios to every household in the Village to notify residents of natural/man-made hazard event information and establish Communications Community Lifelines.	EC, EH, EQ, F, MMH, SS, SWS, T	C	E&A	Medium	4	---	---	President / Village Board	2-5 years	Village	Low/High	New

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Type of Mitigation Activity:

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Community Lifelines to be Mitigated:

C	Communications	H&M	Health & Medical
E	Energy (Power & Fuel)	S&S	Safety & Security
FWS	Food, Water, Shelter	T	Transportation
HM	Hazardous Material		

Figure MIT-14
Cisco Hazard Mitigation Actions
(Sheet 2 of 4)

Priority	Activity/Project Description	Hazard(s) to be Mitigated	Community Lifeline(s) to be Mitigated	Type of Mitigation Activity	Size of Population Affected	Goal(s) Met	Reduce Effects of Hazard(s) on Buildings & Infrastructure		Organization / Department Responsible for Implementation & Administration	Time Frame to Complete Activity	Funding Source(s)†	Cost/Benefit Analysis	Status
							New	Existing					
LM	Improve coordination between the Village, Township, Fire Protection District, and the County in an effort to increase implementation of hazard mitigation actions as well as other emergency management projects and activities.	EC, EH, EQ, F, MMH, SS, SWS, T	S&S	E&A	Large	1, 4, 5	Yes	Yes	President / Village Board	2-5 years	Village	Low/Medium	New
HM	Trim trees to minimize service disruptions, improve community resilience and mitigate risk to Community Lifelines.	SS, SWS, T	C, E, T	S&IP	Medium	1, 4, 5	Yes	Yes	President / Village Board / Public Works Director	1-3 years	Village	Medium/High	New
LL	Monitor drinking water capacity to determine whether mitigation measures need to be enacted in the future to ensure the resiliency of the Village's drinking water supply to drought.	DR	FWS	E&A	Large	1, 4, 5	---	Yes	President / Village Board / Public Works Director	5-10 years	Village	Low/Medium	New
LL	Educate residents about the water conservation measures that can be taken to reduce drought impacts.	DR	---	E&A	Large	1, 4	---	---	President / Village Board / Public Works Director	1-5 years	Village	Low/Low	New
LM	Establish digital data sets for all utilities (drainage, water, gas, electric, etc.) within the Village for use in GIS mapping applications. This information can be used to determine which utilities have the potential to be impacted by hazard events.	EC, EH, EQ, F, MMH, SS, SWS, T	C, E, FWS, T	E&A	Large	1, 5	---	---	President / Village Board	1-5 years	Village	Medium/Medium	New

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E&A	Education & Awareness	NSP	Natural Systems Protection
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Community Lifelines to be Mitigated:

C	Communications	H&M	Health & Medical
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FWS	Food, Water, Shelter	T	Transportation
HM	Hazardous Material		

Figure MIT-14
Cisco Hazard Mitigation Actions
(Sheet 3 of 4)

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							New	Existing					
LM	Coordinate with the Cisco Area Economic Development board to designate a portion of the organization's building as an evacuation shelter for area residents to establish a Food, Water, Shelter Community Lifeline essential to human health and safety.	EQ, F, MMH, SS, SWS, T	FWS	LP&R	Medium	4	---	---	President / Village Board	1-2 years	FPD / Cisco Area Economic Development	Low/Medium	New
HM	Subscribe to an automated emergency notification system (i.e., reverse 911, Code Red, etc.) to alert residents of natural and man-made hazard event conditions and information.	EC, EH, EQ, F, MMH, SS, SWS, T	C	E&A	Large	4	---	---	President / Village Board	1-5 years	Village	Medium/High	New
HM	Review new Flood Insurance Rate Maps (FIRMs) when they become available. Update the flood ordinance to reflect the revised FIRMs and present both for adoption. Enforce flood ordinance to ensure new development does not increase flood vulnerability or create unintended exposures to flooding.*	F	S&S	LP&R	Small	2, 3, 4, 6, 7	Yes	Yes	President / Village Board	2-5 years	Village	Low/Medium	New
LM	Continue to make the most recent Flood Insurance Rate Maps available at the Village Clerk's Office to assist the public in considering where to construct new buildings.*	F	S&S	E&A	Small	3, 4, 6, 7	Yes	n/a	President / Village Clerk	2-5 years	Village	Low/Low	New

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Community Lifelines to be Mitigated:

C	Communications	H&M	Health & Medical
E	Energy (Power & Fuel)	S&S	Safety & Security
FWS	Food, Water, Shelter	T	Transportation
HM	Hazardous Material		

Figure MIT-14
Cisco Hazard Mitigation Actions
(Sheet 4 of 4)

Priority	Activity/Project Description	Hazard(s) to be Mitigated	Community Lifeline(s) to be Mitigated	Type of Mitigation Activity	Size of Population Affected	Goal(s) Met	Reduce Effects of Hazard(s) on Buildings & Infrastructure		Organization / Department Responsible for Implementation & Administration	Time Frame to Complete Activity	Funding Source(s)†	Cost/Benefit Analysis	Status
							New	Existing					
LM	Continue to make Village officials aware of the most recent Flood Insurance Rate Maps and issues related to construction in a floodplain.*	F	S&S	E&A	Small	3, 4, 6, 7	Yes	n/a	President / Village Clerk	2-5 years	Village	Low/Low	New
LM	Evaluate the feasibility of participating in the National Flood Insurance Program's voluntary Community Rating System to reduce flood insurance premiums.*	F	S&S	LP&R	Small	2, 6	Yes	Yes	President / Village Board	2-5 years	Village	Low/Low	New

* Mitigation action to ensure continued compliance with NFIP.

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Community Lifelines to be Mitigated:

C	Communications	H&M	Health & Medical
E	Energy (Power & Fuel)	S&S	Safety & Security
FWS	Food, Water, Shelter	T	Transportation
HM	Hazardous Material		

Figure MIT-15
Cisco Fire Protection District Hazard Mitigation Actions
(Sheet 1 of 3)

Priority	Activity/Project Description	Hazard(s) to be Mitigated	Community Lifeline(s) to be Mitigated	Type of Mitigation Activity	Size of Population Affected	Goal(s) Met	Reduce Effects of Hazard(s) on Buildings & Infrastructure		Organization / Department Responsible for Implementation & Administration	Time Frame to Complete Activity	Funding Source(s)†	Cost/Benefit Analysis	Status
							New	Existing					
LM	Make public information materials available to District residents that detail the risks to life and property associated with the natural hazards that impact the District and the proactive approaches they can take to reduce their risk.	DR, EC, EH, EQ, F, FR, SS, SWS, T	---	E&A	Large	3	---	---	Fire Chief / Command Staff / Board of Trustees	1 year	FPD	Low/Medium	New
LM	Identify dry hydrants and water wells within the District that can be used as filling stations to supply an uninterrupted flow of water to aid in fire suppression as necessary during natural and man-made hazard events.	DR, EH, EQ, MMH, SS, T	S&S	E&A	Large	1, 4, 5	---	---	Fire Chief / Command Staff / Board of Trustees	3 years	FPD	Low/Medium	New
LM	Evaluate the need for additional outdoor warning sirens within the District to maximize the system's effectiveness and establish a Communications Community Lifeline essential to human health and safety in areas without coverage.	SS, T	C	E&A	Medium	4	---	---	Fire Chief / Command Staff / Board of Trustees	1-3 years	FPD	Low/Medium	New
HM	Purchase and install storm warning sirens in areas without alert coverage to establish Communications Community Lifelines essential to human health and safety.	SS, T	C	E&A	Medium	4	---	---	Fire Chief / Command Staff / Board of Trustees	2-5 years	FPD / USDA – RD Critical Facilities Programs	Medium/High	New

† Identifies the most likely funding source to be pursued for the activity/project described. However, if funding is unavailable through the most likely or other suggested sources, then implementation of medium to large-scale activities/projects is unlikely due to the budgetary constraints experienced by a rural, all-volunteer fire protection district. Additional funding is necessary if implementation is to be achieved.

Acronyms

Priority

HM	Mitigation action with the potential to virtually eliminate or significantly reduce impacts from the most frequent hazards
LM	Mitigation action with the potential to reduce impacts from the most frequent hazards
HL	Mitigation action with the potential to virtually eliminate or significantly reduce impacts from the less frequent hazards
LL	Mitigation action with the potential to reduce impacts from the less frequent hazards

Hazard(s) to be Mitigated:

DR	Drought	MMH	Man-Made Hazard
EC	Extreme Cold	SS	Severe Storms
EH	Excessive Heat	SWS	Severe Winter Storm
EQ	Earthquake	T	Tornado
F	Flood		

Type of Mitigation Activity:

E&A	Education & Awareness	NSP	Natural Systems Protection
LP&R	Local Plans & Regulations	S&IP	Structure & Infrastructure Projects

Community Lifelines to be Mitigated:

C	Communications	H&M	Health & Medical
E	Energy (Power & Fuel)	S&S	Safety & Security
FWS	Food, Water, Shelter	T	Transportation
HM	Hazardous Material		

Figure MIT-15
Cisco Fire Protection District Hazard Mitigation Actions
(Sheet 2 of 3)

Priority	Activity/Project Description	Hazard(s) to be Mitigated	Community Lifeline(s) to be Mitigated	Type of Mitigation Activity	Size of Population Affected	Goal(s) Met	Reduce Effects of Hazard(s) on Buildings & Infrastructure		Organization / Department Responsible for Implementation & Administration	Time Frame to Complete Activity	Funding Source(s)†	Cost/Benefit Analysis	Status
							New	Existing					
LM	Secure a Memorandum of Agreement with the Cisco Area Economic Development board to designate the organization's building as a warming and cooling center for use by area residents to establish a Food, Water, Shelter Community Lifeline essential to human health and safety.	EC, EH	FWS	LP&R	Medium	4	---	---	Fire Chief / Command Staff / Board of Trustees	1-2 years	FPD / Cisco Area Economic Development	Low/Medium	New
HM	Purchase and install an automatic emergency backup generator at the Cisco Area Economic Development building, a designated warming and cooling center, to establish a resilient and reliable power supply to ensure sustained functionality during extended power outages and mitigate risk to a Community Lifeline.	EC, EH	FWS	S&IP	Medium	1, 4, 5	---	Yes	Fire Chief / Command Staff / Board of Trustees	2-5 years	FPD / USDA – RD Critical Facilities Programs	Medium/High	New
HM	Establish dedicated emergency detour routes within the District to ensure functionality of Safety & Security Community Lifelines in the event key transportation routes are inaccessible due to natural and man-made hazard incidents.	EQ, F, MMH, SS, SWS, T	S&S	LP&R	Medium	2, 4, 5	---	---	Fire Chief / Command Staff / Board of Trustees	2-5 years	FPD	Low/High	New
LM	Distribute fire safety public information materials to District residents and assist residents in obtaining smoke/carbon monoxide detectors.	EQ, F, MMH, SS, SWS, T	---	E&A	Large	4	---	---	Fire Chief / Command Staff / Board of Trustees	1-3 years	FPD	Low/High	New

† Identifies the most likely funding source to be pursued for the activity/project described. However, if funding is unavailable through the most likely or other suggested sources, then implementation of medium to large-scale activities/projects is unlikely due to the budgetary constraints experienced by a rural, all-volunteer fire protection district. Additional funding is necessary if implementation is to be achieved.

Acronyms

Priority

HM	Mitigation action with the potential to virtually eliminate or significantly reduce impacts from the most frequent hazards
LM	Mitigation action with the potential to reduce impacts from the most frequent hazards
HL	Mitigation action with the potential to virtually eliminate or significantly reduce impacts from the less frequent hazards
LL	Mitigation action with the potential to reduce impacts from the less frequent hazards

Hazard(s) to be Mitigated:

DR	Drought	MMH	Man-Made Hazard
EC	Extreme Cold	SS	Severe Storms
EH	Excessive Heat	SWS	Severe Winter Storm
EQ	Earthquake	T	Tornado
F	Flood		

Type of Mitigation Activity:

E&A	Education & Awareness	NSP	Natural Systems Protection
LP&R	Local Plans & Regulations	S&IP	Structure & Infrastructure Projects

Community Lifelines to be Mitigated:

C	Communications	H&M	Health & Medical
E	Energy (Power & Fuel)	S&S	Safety & Security
FWS	Food, Water, Shelter	T	Transportation
HM	Hazardous Material		

Figure MIT-15
Cisco Fire Protection District Hazard Mitigation Actions
(Sheet 3 of 3)

Priority	Activity/Project Description	Hazard(s) to be Mitigated	Community Lifeline(s) to be Mitigated	Type of Mitigation Activity	Size of Population Affected	Goal(s) Met	Reduce Effects of Hazard(s) on Buildings & Infrastructure		Organization / Department Responsible for Implementation & Administration	Time Frame to Complete Activity	Funding Source(s)†	Cost/Benefit Analysis	Status
							New	Existing					
LM	Identify alternate location for District trucks, equipment, gear, etc. in the event a natural hazard incident impacts the fire house and/or administration building to ensure continued functionality of a Safety & Security Community Lifeline service.	EQ, F, MMH, SS, SWS, T	S&S	LP&R	Large	1, 4, 5	---	---	Fire Chief / Command Staff / Board of Trustees	2 years	FPD	Low/Medium	New

† Identifies the most likely funding source to be pursued for the activity/project described. However, if funding is unavailable through the most likely or other suggested sources, then implementation of medium to large-scale activities/projects is unlikely due to the budgetary constraints experienced by a rural, all-volunteer fire protection district. Additional funding is necessary if implementation is to be achieved.

Acronyms

Priority

HM	Mitigation action with the potential to virtually eliminate or significantly reduce impacts from the most frequent hazards
LM	Mitigation action with the potential to reduce impacts from the most frequent hazards
HL	Mitigation action with the potential to virtually eliminate or significantly reduce impacts from the less frequent hazards
LL	Mitigation action with the potential to reduce impacts from the less frequent hazards

Hazard(s) to be Mitigated:

DR	Drought	MMH	Man-Made Hazard
EC	Extreme Cold	SS	Severe Storms
EH	Excessive Heat	SWS	Severe Winter Storm
EQ	Earthquake	T	Tornado
F	Flood		

Type of Mitigation Activity:

E&A	Education & Awareness	NSP	Natural Systems Protection
LP&R	Local Plans & Regulations	S&IP	Structure & Infrastructure Projects

Community Lifelines to be Mitigated:

C	Communications	H&M	Health & Medical
E	Energy (Power & Fuel)	S&S	Safety & Security
FWS	Food, Water, Shelter	T	Transportation
HM	Hazardous Material		

Figure MIT-16
Hammond Hazard Mitigation Actions

Priority	Activity/Project Description	Hazard(s) to be Mitigated	Community Lifeline(s) to be Mitigated	Type of Mitigation Activity	Size of Population Affected	Goal(s) Met	Reduce Effects of Hazard(s) on Buildings & Infrastructure		Organization / Department Responsible for Implementation & Administration	Time Frame to Complete Activity	Funding Source(s)†	Cost/Benefit Analysis	Status
							New	Existing					
LM	Designate a warming/cooling center within the Village to establish a Food, Water, Shelter Community Lifeline essential to human health and safety.	EC, EH	FWS	LP&R	Small	4	---	---	President / Village Trustees	2-5 years	Village	Low/High	New
HM	Construct a retention pond to manage heavy rain overflow from roadway intersections to alleviate recurring flood/drainage problems, better manage stormwater runoff and mitigate risk to a Community Lifeline.	F, SS	T	S&IP	Medium	1, 5	---	Yes	President Village Trustees / Superintendent of Water & Sewer	5-10 years	CUSD / USDA – RD Water & Waste Disposal Program FEMA HMGP	High/Medium	New
LM	Distribute public information materials to residents that detail the risks to life and property associated with natural and man-made hazards that impact the Village and the proactive approaches they can take to reduce their risk.	DR, EC, EH, EQ, F, MMH, SS, SWS, T	---	E&A	Large	3, 4	---	---	President / Village Board	5 years	Village	Low/Medium	New
HM	Clean brush and debris out of drainage ditches in the Village to maximize carrying capacity, alleviate recurring drainage problems and mitigate risk to Transportation Community Lifelines.	F, SS	T	S&IP	Medium	1, 4, 5	---	Yes	President Village Trustees / Superintendent of Water & Sewer	5-10 years	Village	Low/Medium	Existing (2012)

† Identifies the most likely funding source to be pursued for the activity/project described. However, if funding is unavailable through the most likely or other suggested sources, then implementation of medium to large-scale activities/projects is unlikely due to the budgetary constraints experienced by a city of this size (less than 500 individuals). The Village struggles to provide even the most critical of services to its residents. Additional funding is necessary if implementation is to be achieved within the time frames specified.

Acronyms

Priority

HM	Mitigation action with the potential to virtually eliminate or significantly reduce impacts from the most frequent hazards
LM	Mitigation action with the potential to reduce impacts from the most frequent hazards
HL	Mitigation action with the potential to virtually eliminate or significantly reduce impacts from the less frequent hazards
LL	Mitigation action with the potential to reduce impacts from the less frequent hazards

Hazard(s) to be Mitigated:

EC	Extreme Cold	MMH	Man-Made Hazard
EH	Excessive Heat	SS	Severe Storms
EQ	Earthquake	SWS	Severe Winter Storm
F	Flood	T	Tornado

Type of Mitigation Activity:

E&A	Education & Awareness	NSP	Natural Systems Protection
LP&R	Local Plans & Regulations	S&IP	Structure & Infrastructure Projects

Community Lifelines to be Mitigated:

C	Communications	H&M	Health & Medical
E	Energy (Power & Fuel)	S&S	Safety & Security
FWS	Food, Water, Shelter	T	Transportation
HM	Hazardous Material		

Figure MIT-17
Kirby Medical Center Hazard Mitigation Actions

Priority	Activity/Project Description	Hazard(s) to be Mitigated	Community Lifeline(s) to be Mitigated	Type of Mitigation Activity	Size of Population Affected	Goal(s) Met	Reduce Effects of Hazard(s) on Buildings & Infrastructure		Organization / Department Responsible for Implementation & Administration	Time Frame to Complete Activity	Funding Source(s)†	Cost/Benefit Analysis	Status
							New	Existing					
HM	Purchase and install a lightning protection system to intercept, conduct and disperse lightning strikes safely through a low-resistance path to the ground to improve building resilience and mitigate risk to a Community Lifeline.	SS	H&M	S&IP	Large	1, 4, 5	---	Yes	Facility Director / Board of Directors	2 years	Kirby Medical Center / USDA – RD Critical Facilities Programs	Medium/High	New
LM	Make information materials available to Medical Center staff that detail the risks to life and property associated with the natural hazards that impact the County and the proactive approaches they can take to reduce their risk.	EC, EH, EQ, F, SS, SWS, T	---	E&A	Large	3	---	---	Emergency Preparedness Coordinator	1-5 years	Kirby Medical Center	Low/Medium	New

† Identifies the most likely funding source to be pursued for the activity/project described. However, if funding is unavailable through the most likely or other suggested sources, then implementation of medium to large-scale activities/projects is unlikely due to the budgetary constraints experienced by small, rural hospitals. Additional funding is necessary if implementation is to be achieved within the time frames specified.

Acronyms

Priority

HM	Mitigation action with the potential to virtually eliminate or significantly reduce impacts from the most frequent hazards
LM	Mitigation action with the potential to reduce impacts from the most frequent hazards
HL	Mitigation action with the potential to virtually eliminate or significantly reduce impacts from the less frequent hazards
LL	Mitigation action with the potential to reduce impacts from the less frequent hazards

Hazard(s) to be Mitigated:

EC	Extreme Cold	MMH	Man-Made Hazard
EH	Excessive Heat	SS	Severe Storms
EQ	Earthquake	SWS	Severe Winter Storm
F	Flood	T	Tornado

Type of Mitigation Activity:

E&A	Education & Awareness	NSP	Natural Systems Protection
LP&R	Local Plans & Regulations	S&IP	Structure & Infrastructure Projects

Community Lifelines to be Mitigated:

C	Communications	H&M	Health & Medical
E	Energy (Power & Fuel)	S&S	Safety & Security
FWS	Food, Water, Shelter	T	Transportation
HM	Hazardous Material		

Figure MIT-18
Mansfield Hazard Mitigation Actions
(Sheet 1 of 2)

Priority	Activity/Project Description	Hazard(s) to be Mitigated	Community Lifeline(s) to be Mitigated	Type of Mitigation Activity	Size of Population Affected	Goal(s) Met	Reduce Effects of Hazard(s) on Buildings & Infrastructure		Organization / Department Responsible for Implementation & Administration	Time Frame to Complete Activity	Funding Source(s)†	Cost/Benefit Analysis	Status
							New	Existing					
HM	Purchase and install storm warning sirens to establish Communications Community Lifelines essential to human health and safety.	SS, T	C	E&A	Large	4	---	---	Public Works Director	1-2 years	Village / USDA – RD Critical Facilities Programs	High/High	New
LM	Distribute public information materials to residents that detail the risks to life and property associated with natural and man-made hazards that impact the Village and the proactive approaches they can take to reduce their risk.	DR, EC, EH, EQ, F, MMH, SS, SWS, T	---	E&A	Large	3, 4	---	---	President / Village Board	1-5 years	Village	Low/Medium	New
LM	Clean brush and debris from waterways and drainage ditches to maximize carrying capacity, alleviate recurring drainage problems and mitigate risk to Transportation Community Lifelines.	F, SS	T	S&IP	Medium	1, 4, 5	---	Yes	Public Works Director	1-2 years	Village	Low/Medium	Existing (2012)
LM	Conduct a hydrologic/drainage study to identify design solutions to alleviate recurring flood problems and drainage deficiencies experienced as a result of heavy rain events within the Village to maintain continuity of operations, ensure community resilience and mitigate risk to Transportation Community Lifelines.	F, SS	T	E&A	Large	1, 5	---	---	President / Village Board	5 years	Village / USDA – RD Water & Waste Disposal Program	Medium/Medium	New

† Identifies the most likely funding source to be pursued for the activity/project described. However, if funding is unavailable through the most likely or other suggested sources, then implementation of medium to large-scale activities/projects is unlikely due to the budgetary constraints experienced by a village of this size (approx. 875 individuals). The Village struggles to provide even the most critical of services to its residents. Additional funding is necessary if implementation is to be achieved within the time frames specified.

Acronyms

Priority

HM	Mitigation action with the potential to virtually eliminate or significantly reduce impacts from the most frequent hazards
LM	Mitigation action with the potential to reduce impacts from the most frequent hazards
HL	Mitigation action with the potential to virtually eliminate or significantly reduce impacts from the less frequent hazards
LL	Mitigation action with the potential to reduce impacts from the less frequent hazards

Hazard(s) to be Mitigated:

DR	Drought	MMH	Man-Made Hazard
EC	Extreme Cold	SS	Severe Storms
EH	Excessive Heat	SWS	Severe Winter Storm
EQ	Earthquake	T	Tornado
F	Flood		

Type of Mitigation Activity:

E&A	Education & Awareness	NSP	Natural Systems Protection
LP&R	Local Plans & Regulations	S&IP	Structure & Infrastructure Projects

Community Lifelines to be Mitigated:

C	Communications	H&M	Health & Medical
E	Energy (Power & Fuel)	S&S	Safety & Security
FWS	Food, Water, Shelter	T	Transportation
HM	Hazardous Material		

Figure MIT-18
Mansfield Hazard Mitigation Actions
(Sheet 2 of 2)

Priority	Activity/Project Description	Hazard(s) to be Mitigated	Community Lifeline(s) to be Mitigated	Type of Mitigation Activity	Size of Population Affected	Goal(s) Met	Reduce Effects of Hazard(s) on Buildings & Infrastructure		Organization / Department Responsible for Implementation & Administration	Time Frame to Complete Activity	Funding Source(s)†	Cost/Benefit Analysis	Status
							New	Existing					
HM	Upgrade/expand the storm sewer system to increase storage and draining capacity, better manage stormwater runoff, and ensure system resilience and functionality in an effort to address recurring heavy rain events that overwhelm the system.	F, SS	---	S&IP	Medium	1, 4, 5	Yes	Yes	President / Village Board	5 years	Village / USDA – RD Water & Waste Disposal Program / IEPA SRF - WPCLP	High/High	New
HM	Review new Flood Insurance Rate Maps (FIRMs) when they become available. Update the flood ordinance to reflect the revised FIRMs and present both for adoption. Enforce flood ordinance to ensure new development does not increase flood vulnerability or create unintended exposures to flooding.*	F	S&S	LP&R	Small	2, 3, 4, 6, 7	Yes	Yes	President / Village Board	1-5 years	Village	Low/Medium	New
LM	Continue to make the most recent Flood Insurance Rate Maps available at the Village Clerk's Office to assist the public in considering where to construct new buildings.*	F	S&S	E&A	Small	3, 4, 6, 7	Yes	n/a	President / Village Clerk	1-3 years	Village	Low/Low	New
LM	Continue to make Village officials aware of the most recent Flood Insurance Rate Maps and issues related to construction in a floodplain.*	F	S&S	E&A	Small	3, 4, 6, 7	Yes	n/a	President / Village Clerk	1-5 years	Village	Low/Low	New

* Mitigation action to ensure continued compliance with NFIP.

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Acronyms

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Hazard(s) to be Mitigated:

DR	Drought	MMH	Man-Made Hazard
EC	Extreme Cold	SS	Severe Storms
EH	Excessive Heat	SWS	Severe Winter Storm
EQ	Earthquake	T	Tornado
F	Flood		

Type of Mitigation Activity:

E&A	Education & Awareness	NSP	Natural Systems Protection
LP&R	Local Plans & Regulations	S&IP	Structure & Infrastructure Projects

Community Lifelines to be Mitigated:

C	Communications	H&M	Health & Medical
E	Energy (Power & Fuel)	S&S	Safety & Security
FWS	Food, Water, Shelter	T	Transportation
HM	Hazardous Material		

Figure MIT-19
Mid Piatt Fire Protection District Hazard Mitigation Actions
(Sheet 1 of 3)

Priority	Activity/Project Description	Hazard(s) to be Mitigated	Community Lifeline(s) to be Mitigated	Type of Mitigation Activity	Size of Population Affected	Goal(s) Met	Reduce Effects of Hazard(s) on Buildings & Infrastructure		Organization / Department Responsible for Implementation & Administration	Time Frame to Complete Activity	Funding Source(s)†	Cost/Benefit Analysis	Status
							New	Existing					
LM	Determine the types of public information materials needed and make them available to District residents that detail the risks to life and property associated with the natural hazards that impact the District and the proactive approaches they can take to reduce their risk.	DR, EC, EH, EQ, F, FR, SS, SWS, T	---	E&A	Large	3	---	---	Fire Chief / Command Staff / Board of Trustees	1-2 years	FPD	Low/Medium	New
LM	Identify dry hydrants and water wells within the District that can be used as filling stations to supply an uninterrupted flow of water to aid in fire suppression as necessary during natural and man-made hazard events.	DR, EH, EQ, MMH, SS, T	S&S	E&A	Large	1, 4, 5	---	---	Fire Chief / Command Staff / Board of Trustees	2 years	FPD	Low/Medium	New
LM	Evaluate the need for additional outdoor warning sirens within the District to maximize the system's effectiveness and establish a Communications Community Lifeline essential to human health and safety in areas without coverage.	SS, T	C	E&A	Medium	4	---	---	Fire Chief / Command Staff / Board of Trustees	1-3 years	FPD	Low/Medium	New
HM	Establish dedicated emergency detour routes within the District to ensure functionality of Safety & Security Community Lifelines in the event key transportation routes are inaccessible due to natural and man-made hazard incidents.	EQ, F, MMH, SS, SWS, T	S&S	LP&R	Medium	2, 4, 5	---	---	Fire Chief / Command Staff / Board of Trustees	2-5 years	FPD	Low/High	New

† Identifies the most likely funding source to be pursued for the activity/project described. However, if funding is unavailable through the most likely or other suggested sources, then implementation of medium to large-scale activities/projects is unlikely due to the budgetary constraints experienced by a rural, all-volunteer fire protection district. Additional funding is necessary if implementation is to be achieved.

Acronyms

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LL	Mitigation action with the potential to reduce impacts from the less frequent hazards

Hazard(s) to be Mitigated:

DR	Drought	MMH	Man-Made Hazard
EC	Extreme Cold	SS	Severe Storms
EH	Excessive Heat	SWS	Severe Winter Storm
EQ	Earthquake	T	Tornado
F	Flood		

Type of Mitigation Activity:

E&A	Education & Awareness	NSP	Natural Systems Protection
LP&R	Local Plans & Regulations	S&IP	Structure & Infrastructure Projects

Community Lifelines to be Mitigated:

C	Communications	H&M	Health & Medical
E	Energy (Power & Fuel)	S&S	Safety & Security
FWS	Food, Water, Shelter	T	Transportation
HM	Hazardous Material		

Figure MIT-19
Mid Piatt Fire Protection District Hazard Mitigation Actions
(Sheet 2 of 3)

Priority	Activity/Project Description	Hazard(s) to be Mitigated	Community Lifeline(s) to be Mitigated	Type of Mitigation Activity	Size of Population Affected	Goal(s) Met	Reduce Effects of Hazard(s) on Buildings & Infrastructure		Organization / Department Responsible for Implementation & Administration	Time Frame to Complete Activity	Funding Source(s)†	Cost/Benefit Analysis	Status
							New	Existing					
LM	Identify alternate location for District trucks, equipment, gear, etc. in the event a natural hazard incident impacts the fire house and/or administration building to ensure continued functionality of a Safety & Security Community Lifeline service.	EQ, F, MMH, SS, SWS, T	S&S	LP&R	Large	1, 4, 5	---	---	Fire Chief / Command Staff / Board of Trustees	2 years	FPD	Low/Medium	New
LM	Conduct fire and hazard mitigation safety training at the grade school to educate students and staff about the risks to life and property associated with the natural hazards that impact their homes and school and the proactive actions they can take to reduce their risk.	DR, EC, EH, EQ, F, FR, SS, SWS, T	---	E&A	Large	3	---	---	Fire Chief / Command Staff / Board of Trustees	1-2 years	FPD	Low/Medium	New
LM	Evaluate the feasibility of designating the fire stations as warming centers for use by district residents.	EC	FWS	E&A	Small	4	---	---	Fire Chief / Command Staff / Board of Trustees	1-2 years	FPD	Low/Low	New
LM	Evaluate the feasibility of designating the Fire Station 1 as cooling center for use by district residents.	EH	FWS	E&A	Small	4	---	---	Fire Chief / Command Staff / Board of Trustees	1-2 years	FPD	Low/Low	New
LM	Coordinate with Piatt County 911 Director to determine the type and availability of GIS-based data on the structures located in the District to aid in emergency management planning activities for natural and man-made hazard events.	EQ, F, MMH, SS, SWS, T	S&S	E&A	Large	1, 4, 5	---	Yes	Fire Chief / Command Staff / Board of Trustees	3-5 years	FPD	Low/Medium	New

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Acronyms

Priority

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LM	Mitigation action with the potential to reduce impacts from the most frequent hazards
HL	Mitigation action with the potential to virtually eliminate or significantly reduce impacts from the less frequent hazards
LL	Mitigation action with the potential to reduce impacts from the less frequent hazards

Hazard(s) to be Mitigated:

DR	Drought	MMH	Man-Made Hazard
EC	Extreme Cold	SS	Severe Storms
EH	Excessive Heat	SWS	Severe Winter Storm
EQ	Earthquake	T	Tornado
F	Flood		

Type of Mitigation Activity:

E&A	Education & Awareness	NSP	Natural Systems Protection
LP&R	Local Plans & Regulations	S&IP	Structure & Infrastructure Projects

Community Lifelines to be Mitigated:

C	Communications	H&M	Health & Medical
E	Energy (Power & Fuel)	S&S	Safety & Security
FWS	Food, Water, Shelter	T	Transportation
HM	Hazardous Material		

Figure MIT-19
Mid Piatt Fire Protection District Hazard Mitigation Actions
(Sheet 3 of 3)

Priority	Activity/Project Description	Hazard(s) to be Mitigated	Community Lifeline(s) to be Mitigated	Type of Mitigation Activity	Size of Population Affected	Goal(s) Met	Reduce Effects of Hazard(s) on Buildings & Infrastructure		Organization / Department Responsible for Implementation & Administration	Time Frame to Complete Activity	Funding Source(s)†	Cost/Benefit Analysis	Status
							New	Existing					
LM	Evaluate the feasibility of designating the White Heath Community Center as a warming and cooling center for use by district residents.	EC, EH	FWS	E&A	Small	4	---	---	Fire Chief / Command Staff / Board of Trustees	1-2 years	FPD	Low/Low	New
LM	Secure a Memorandum of Agreement with the White Heath Community Center to designate the building as a warming and cooling center for use by area residents to establish a Food, Water, Shelter Community Lifeline essential to human health and safety.	EC, EH	FWS	LP&R	Medium	4	---	---	Fire Chief / Command Staff / Board of Trustees	1-2 years	FPD / White Heath Community Center	Low/Medium	New
HM	Purchase and install an automatic emergency backup generator at the White Heath Community Center, a designated warming and cooling center, to establish a resilient and reliable power supply to ensure sustained functionality during extended power outages and mitigate risk to a Community Lifeline.	EC, EH	FWS	S&IP	Medium	1, 4, 5	---	Yes	Fire Chief / Command Staff / Board of Trustees	2-5 years	FPD / USDA – RD Critical Facilities Programs	Medium/High	New

† Identifies the most likely funding source to be pursued for the activity/project described. However, if funding is unavailable through the most likely or other suggested sources, then implementation of medium to large-scale activities/projects is unlikely due to the budgetary constraints experienced by a rural, all-volunteer fire protection district. Additional funding is necessary if implementation is to be achieved.

Acronyms

Priority

HM	Mitigation action with the potential to virtually eliminate or significantly reduce impacts from the most frequent hazards
LM	Mitigation action with the potential to reduce impacts from the most frequent hazards
HL	Mitigation action with the potential to virtually eliminate or significantly reduce impacts from the less frequent hazards
LL	Mitigation action with the potential to reduce impacts from the less frequent hazards

Hazard(s) to be Mitigated:

DR	Drought	MMH	Man-Made Hazard
EC	Extreme Cold	SS	Severe Storms
EH	Excessive Heat	SWS	Severe Winter Storm
EQ	Earthquake	T	Tornado
F	Flood		

Type of Mitigation Activity:

E&A	Education & Awareness	NSP	Natural Systems Protection
LP&R	Local Plans & Regulations	S&IP	Structure & Infrastructure Projects

Community Lifelines to be Mitigated:

C	Communications	H&M	Health & Medical
E	Energy (Power & Fuel)	S&S	Safety & Security
FWS	Food, Water, Shelter	T	Transportation
HM	Hazardous Material		

Figure MIT-20
Monticello Hazard Mitigation Actions
(Sheet 1 of 2)

Priority	Activity/Project Description	Hazard(s) to be Mitigated	Community Lifeline(s) to be Mitigated	Type of Mitigation Activity	Size of Population Affected	Goal(s) Met	Reduce Effects of Hazard(s) on Buildings & Infrastructure		Organization / Department Responsible for Implementation & Administration	Time Frame to Complete Activity	Funding Source(s)†	Cost/Benefit Analysis	Status
							New	Existing					
LM	Conduct an inflow & infiltration study to identify and eliminate cross connections between the City's storm sewer and the sanitary sewer systems in an effort to better manage stormwater runoff, reduce flow rates to wastewater treatment plant, increase system resilience, prevent damage to the collection systems and plant during flood events, and mitigate risk to a Water Community Lifeline.	F, SS	FWS	S&IP	Medium	1, 4, 5	Yes	Yes	Public Works Director	1-5 years	City / USDA – RD Water & Waste Disposal Program / IEPA SRF – WPCLP	Medium/High	New
HM	Perform point repairs and/or slip lining of sanitary sewer system to eliminate stormwater infiltration, improve capacity, function and reliability of the City's sewer system and mitigate risk to a Community Lifeline.	F, SS	FWS	S&IP	Medium	1, 4, 5	Yes	Yes	Public Works Director	1-5 years	City / USDA – RD Water & Waste Disposal Program	Medium/Medium	New
LM	Distribute public information materials to residents that detail the risks to life and property associated with natural and man-made hazards that impact the Village and the proactive approaches they can take to reduce their risk.	DR, EC, EH, EQ, F, MMH, SS, SWS, T	---	E&A	Large	3, 4	---	---	City Administrator / Mayor City Council	1-5 years	Village	Low/Medium	New

* Mitigation action to ensure continued compliance with NFIP.

† Identifies the most likely funding source to be pursued for the activity/project described. However, if funding is unavailable through the most likely or other suggested sources, then implementation of medium to large-scale activities/projects is unlikely due to the budgetary constraints experienced by a city of this size (approx. 5,700 individuals). The City works hard to maintain critical services to its residents. Additional funding is necessary if implementation is to be achieved within the time frames specified.

Acronyms

Priority

HM	Mitigation action with the potential to virtually eliminate or significantly reduce impacts from the most frequent hazards
LM	Mitigation action with the potential to reduce impacts from the most frequent hazards
HL	Mitigation action with the potential to virtually eliminate or significantly reduce impacts from the less frequent hazards
LL	Mitigation action with the potential to reduce impacts from the less frequent hazards

Hazard(s) to be Mitigated:

DR	Drought	MMH	Man-Made Hazard
EC	Extreme Cold	SS	Severe Storms
EH	Excessive Heat	SWS	Severe Winter Storm
EQ	Earthquake	T	Tornado
F	Flood		

Type of Mitigation Activity:

E&A	Education & Awareness	NSP	Natural Systems Protection
LP&R	Local Plans & Regulations	S&IP	Structure & Infrastructure Projects

Community Lifelines to be Mitigated:

C	Communications	H&M	Health & Medical
E	Energy (Power & Fuel)	S&S	Safety & Security
FWS	Food, Water, Shelter	T	Transportation
HM	Hazardous Material		

Figure MIT-20
Monticello Hazard Mitigation Actions
(Sheet 2 of 2)

Priority	Activity/Project Description	Hazard(s) to be Mitigated	Community Lifeline(s) to be Mitigated	Type of Mitigation Activity	Size of Population Affected	Goal(s) Met	Reduce Effects of Hazard(s) on Buildings & Infrastructure		Organization / Department Responsible for Implementation & Administration	Time Frame to Complete Activity	Funding Source(s)†	Cost/Benefit Analysis	Status
							New	Existing					
HM	Review new Flood Insurance Rate Maps (FIRMs) when they become available. Update the flood ordinance to reflect the revised FIRMs and present both for adoption. Enforce flood ordinance to ensure new development does not increase flood vulnerability or create unintended exposures to flooding.*	F	S&S	LP&R	Small	2, 3, 4, 6, 7	Yes	Yes	Mayor / City Council	1-5 years	City	Low/Medium	New
LM	Continue to make the most recent Flood Insurance Rate Maps available at the City Clerk's Office to assist the public in considering where to construct new buildings.*	F	S&S	E&A	Small	3, 4, 6, 7	Yes	n/a	City Administrator / City Clerk	1-3 years	City	Low/Low	New
LM	Continue to make City officials aware of the most recent Flood Insurance Rate Maps and issues related to construction in a floodplain.*	F	S&S	E&A	Small	3, 4, 6, 7	Yes	n/a	City Administrator / City Clerk	1-5 years	City	Low/Low	New

* Mitigation action to ensure continued compliance with NFIP.

† Identifies the most likely funding source to be pursued for the activity/project described. However, if funding is unavailable through the most likely or other suggested sources, then implementation of medium to large-scale activities/projects is unlikely due to the budgetary constraints experienced by a city of this size (approx. 5,700 individuals). The City works hard to maintain critical services to its residents. Additional funding is necessary if implementation is to be achieved within the time frames specified.

Acronyms

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Hazard(s) to be Mitigated:

DR	Drought	MMH	Man-Made Hazard
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EQ	Earthquake	T	Tornado
F	Flood		

Type of Mitigation Activity:

E&A	Education & Awareness	NSP	Natural Systems Protection
LP&R	Local Plans & Regulations	S&IP	Structure & Infrastructure Projects

Community Lifelines to be Mitigated:

C	Communications	H&M	Health & Medical
E	Energy (Power & Fuel)	S&S	Safety & Security
FWS	Food, Water, Shelter	T	Transportation
HM	Hazardous Material		

Figure MIT-21
Monticello Fire & Rescue District Hazard Mitigation Actions

Priority	Activity/Project Description	Hazard(s) to be Mitigated	Community Lifeline(s) to be Mitigated	Type of Mitigation Activity	Size of Population Affected	Goal(s) Met	Reduce Effects of Hazard(s) on Buildings & Infrastructure		Organization / Department Responsible for Implementation & Administration	Time Frame to Complete Activity	Funding Source(s)†	Cost/Benefit Analysis	Status
							New	Existing					
HM	Construct a community safe room (equipped with emergency backup generator & HVAC units) that can also serve as a warming/cooling center and emergency shelter for District residents to establish a Food, Water, Shelter Community Lifeline essential to human health and safety.	EC, EH, EQ, SS, T	S&S FWS	S&IP	Small	4	Yes	---	Fire Chief Board of Trustees / Mayor City Council	3-5 years	FPD / USDA – RD Critical Facilities Programs	High/High	New
HM	Install hardening materials (shatter-proof windows, hail resistant doors/shingles, etc.) at Fire House to improve building resilience to natural hazards, safeguard functionality and mitigate risk to a Safety & Security Community Lifeline.	EQ, F, MMH, SS, SWS, T	S&S	S&IP	Large	1, 4, 5	---	Yes	Fire Chief Board of Trustees / Mayor City Council	3-5 years	FPD / USDA – RD Critical Facilities Programs	High/High	New
LM	Make public information materials available to District residents that detail the risks to life and property associated with the natural hazards that impact the District and the proactive approaches they can take to reduce their risk.	DR, EC, EH, EQ, F, FR, SS, SWS, T	---	E&A	Large	3	---	---	Fire Chief	1-5 years	FPD	Low/Medium	New

† Identifies the most likely funding source to be pursued for the activity/project described. However, if funding is unavailable through the most likely or other suggested sources, then implementation of medium to large-scale activities/projects is unlikely due to the budgetary constraints experienced by a rural, all-volunteer fire protection district. Additional funding is necessary if implementation is to be achieved.

Acronyms

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Hazard(s) to be Mitigated:

DR	Drought	MMH	Man-Made Hazard
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EQ	Earthquake	T	Tornado
F	Flood		

Type of Mitigation Activity:

E&A	Education & Awareness	NSP	Natural Systems Protection
LP&R	Local Plans & Regulations	S&IP	Structure & Infrastructure Projects

Community Lifelines to be Mitigated:

C	Communications	H&M	Health & Medical
E	Energy (Power & Fuel)	S&S	Safety & Security
FWS	Food, Water, Shelter	T	Transportation
HM	Hazardous Material		

Figure MIT-22
Monticello Township Hazard Mitigation Actions
(Sheet 1 of 3)

Priority	Activity/Project Description	Hazard(s) to be Mitigated	Community Lifeline(s) to be Mitigated	Type of Mitigation Activity	Size of Population Affected	Goal(s) Met	Reduce Effects of Hazard(s) on Buildings & Infrastructure		Organization / Department Responsible for Implementation & Administration	Time Frame to Complete Activity	Funding Source(s)†	Cost/Benefit Analysis	Status
							New	Existing					
LM	Conduct hydrologic/hydraulic analysis to determine the cause and identify design solutions to alleviate recurring roadway drainage problems and ensure continued functionality of Transportation Community Lifelines.	F, SS	T	E&A	Small	1, 4 5	---	---	Highway Commissioner / County Engineer	1-3 years	Township / County / IDOT Local Roads	Low/Medium	New
HM	Construct the identified design solutions to alleviate recurring roadway drainage problems, better manage stormwater runoff and ensure continued functionality of Transportation Community Lifelines.	F, SS	T	S&IP	Small	1, 4, 5	---	Yes	Highway Commissioner / County Engineer	2-5 years	Township / County / IDOT Local Roads	Medium/High	New
HM	Clean brush and debris out of waterways at bridges and box culverts within the Township to maximize carrying/storage capacity, reduce/prevent drainage problems and structure damage and mitigate risk to Transportation Community Lifelines.	F, SS	T	S&IP	Small	1, 4, 5	---	Yes	Highway Commissioner / County Engineer	1-5 years	Township	Low/Medium	New
HM	Address erosion damage to roadway and shoulders caused by heavy rain events on 1125 E Road north of 1765 N Road.	SS	T	S&IP	Small	1, 4, 5	---	Yes	Highway Commissioner	1-5 years	Township / County / IDOT Local Roads	Medium/High	New

† Identifies the most likely funding source to be pursued for the activity/project described. However, if funding is unavailable through the most likely or other suggested sources, then implementation of medium to large-scale activities/projects is unlikely due to the budgetary constraints experienced by small, rural townships of this size (just over 5,900 individuals). The Township works hard to maintain critical services to its residents. Additional funding is necessary if implementation is to be achieved within the time frames specified.

Acronyms

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E&A	Education & Awareness	NSP	Natural Systems Protection
LP&R	Local Plans & Regulations	S&IP	Structure & Infrastructure Projects

Community Lifelines to be Mitigated:

C	Communications	H&M	Health & Medical
E	Energy (Power & Fuel)	S&S	Safety & Security
FWS	Food, Water, Shelter	T	Transportation
HM	Hazardous Material		

Figure MIT-22
Monticello Township Hazard Mitigation Actions
(Sheet 2 of 3)

Priority	Activity/Project Description	Hazard(s) to be Mitigated	Community Lifeline(s) to be Mitigated	Type of Mitigation Activity	Size of Population Affected	Goal(s) Met	Reduce Effects of Hazard(s) on Buildings & Infrastructure		Organization / Department Responsible for Implementation & Administration	Time Frame to Complete Activity	Funding Source(s)†	Cost/Benefit Analysis	Status
							New	Existing					
HM	Replace box culvert on 1150 E Road north of 1500 N Road to ensure adequate drainage and carrying capacity and ensure continued functionality of a Transportation Community Lifeline.	F, SS	T	S&IP	Small	1, 4, 5	---	Yes	Highway Commissioner / County Engineer	2-3 years	Township / County / IDOT Local Roads	Medium/High	New
HM	Elevate a two-mile section of 1300 N Road east of IL Route 105 to alleviate recurring roadway overtopping during heavy rain events that causes traffic disruptions and adversely impacts emergency response times.	F, SS	T S&S	S&IP	Small	1, 4, 5	---	Yes	Highway Commissioner / County Engineer	2-5 years	Township / County / IDOT Local Roads	Medium/High	New
HM	Clean out brush and debris at Goose Creek Bridge on Bucks Pond Road to maximize carrying/storage capacity of the Creek, reduce flooding problems and structure damage and mitigate risk to Transportation Community Lifelines.	F, SS	T	S&IP	Small	1, 4, 5	---	Yes	Highway Commissioner / County Engineer	2-5 years	Township	Low/Medium	New
HM	Clean out catch basins throughout the Township to improve tile drainage and maximize stormwater runoff capacity in an effort to alleviate drainage/flooding problems.	F, SS	T	S&IP	Medium	1, 4, 5	---	Yes	Highway Commissioner	2-5 years	Township	Low/Medium	New

† Identifies the most likely funding source to be pursued for the activity/project described. However, if funding is unavailable through the most likely or other suggested sources, then implementation of medium to large-scale activities/projects is unlikely due to the budgetary constraints experienced by small, rural townships of this size (just over 5,900 individuals). The Township works hard to maintain critical services to its residents. Additional funding is necessary if implementation is to be achieved within the time frames specified.

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EH	Excessive Heat	SWS	Severe Winter Storm
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F	Flood		

Type of Mitigation Activity:

E&A	Education & Awareness	NSP	Natural Systems Protection
LP&R	Local Plans & Regulations	S&IP	Structure & Infrastructure Projects

Community Lifelines to be Mitigated:

C	Communications	H&M	Health & Medical
E	Energy (Power & Fuel)	S&S	Safety & Security
FWS	Food, Water, Shelter	T	Transportation
HM	Hazardous Material		

Figure MIT-22
Monticello Township Hazard Mitigation Actions
(Sheet 3 of 3)

Priority	Activity/Project Description	Hazard(s) to be Mitigated	Community Lifeline(s) to be Mitigated	Type of Mitigation Activity	Size of Population Affected	Goal(s) Met	Reduce Effects of Hazard(s) on Buildings & Infrastructure		Organization / Department Responsible for Implementation & Administration	Time Frame to Complete Activity	Funding Source(s)†	Cost/Benefit Analysis	Status
							New	Existing					
HM	Monitor and clean brush and debris out of diches within the Township to maximize carrying capacity, alleviate recurring drainage problems and mitigate risk to Transportation Community Lifelines.	F, SS	T	S&IP	Medium	1, 4, 5	---	Yes	Highway Commissioner	1-5 years	Township	Low/Medium	New
LM	Install solar-powered warning signs with flashing lights at at-grade railroad crossings not equipped with gates and signals to alert individuals of impending rail traffic during natural hazard events.	F, SS, SWS, T	---	E7A	Small	4	---	---	Highway Commissioner / Supervisor / County Engineer	2-5 years	Township / IDOT Local Roads	Low/High	New
LM	Purchase and distribute NOAA weather radios for Township employees.	EC, EH, EQ, F, SS, SWS, T	C	E&A	Small	4	---	---	Highway Commissioner	1-2 years	Township	Low/High	New
LM	Make public information materials available to township residents about the risks to life and property associated with the natural hazards that impact the Township and the proactive actions they can take to reduce their risk.	DR, EC, EH, EQ, F, FR, SS, SWS, T	---	E&A	Large	3	---	---	Highway Commissioner / Supervisor / Township Board	1-3 years	Township	Low/Medium	New

† Identifies the most likely funding source to be pursued for the activity/project described. However, if funding is unavailable through the most likely or other suggested sources, then implementation of medium to large-scale activities/projects is unlikely due to the budgetary constraints experienced by small, rural townships of this size (just over 5,900 individuals). The Township works hard to maintain critical services to its residents. Additional funding is necessary if implementation is to be achieved within the time frames specified.

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Hazard(s) to be Mitigated:

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EC	Extreme Cold	SS	Severe Storms
EH	Excessive Heat	SWS	Severe Winter Storm
EQ	Earthquake	T	Tornado
F	Flood		

Type of Mitigation Activity:

E&A	Education & Awareness	NSP	Natural Systems Protection
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Community Lifelines to be Mitigated:

C	Communications	H&M	Health & Medical
E	Energy (Power & Fuel)	S&S	Safety & Security
FWS	Food, Water, Shelter	T	Transportation
HM	Hazardous Material		

Figure MIT-23
Willow Branch Township Hazard Mitigation Actions
(Sheet 1 of 2)

Priority	Activity/Project Description	Hazard(s) to be Mitigated	Community Lifeline(s) to be Mitigated	Type of Mitigation Activity	Size of Population Affected	Goal(s) Met	Reduce Effects of Hazard(s) on Buildings & Infrastructure		Organization / Department Responsible for Implementation & Administration	Time Frame to Complete Activity	Funding Source(s)†	Cost/Benefit Analysis	Status
							New	Existing					
HM	Remove trees along critical access routes to address downed limbs and trees blocking the roadways during natural hazard events.	SS, T	C, E, T	S&IP	Medium	1,4, 5	---	Yes	Highway Commissioner	1-5 years	Township	Low/High	New
HM	Replace/upsize select roadway culverts as needed to increase carrying capacity to alleviate recurring drainage/flooding problems and ensure system resilience and functionality.	F, SS	T	S&IP	Medium	1, 4, 5	---	Yes	Highway Commissioner	1-5 years	Township / IDOT Local Roads	Medium/High	New
HM	Clean brush and debris out of diches within the Township to maximize carrying capacity, alleviate recurring drainage problems and mitigate risk to Transportation Community Lifelines.	F, SS	T	S&IP	Medium	1, 4, 5	---	Yes	Highway Commissioner	1-5 years	Township	Low/Medium	New
HM	Clean debris/obstructions out of roadway culverts with the Township to maximize carrying capacity, reduce/prevent drainage problems and mitigate risk to Transportation Community Lifelines.	F, SS	T	S&IP	Medium	1, 4, 5	---	Yes	Highway Commissioner	1-5 years	Township	Low/Medium	New
HM	Clean brush and debris out of waterways at bridges and box culverts within the Township to maximize carrying/storage capacity, reduce/prevent drainage problems and structure damage and mitigate risk to Transportation Community Lifelines.	F, SS	T	S&IP	Small	1, 4, 5	---	Yes	Highway Commissioner / County Engineer	1-5 years	Township	Low/Medium	New

† Identifies the most likely funding source to be pursued for the activity/project described. However, if funding is unavailable through the most likely or other suggested sources, then implementation of medium to large-scale activities/projects is unlikely due to the budgetary constraints experienced by small, rural townships of this size (just over 5,900 individuals). The Township works hard to maintain critical services to its residents. Additional funding is necessary if implementation is to be achieved within the time frames specified.

Acronyms

Priority

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Hazard(s) to be Mitigated:

DR	Drought	MMH	Man-Made Hazard
EC	Extreme Cold	SS	Severe Storms
EH	Excessive Heat	SWS	Severe Winter Storm
EQ	Earthquake	T	Tornado
F	Flood		

Type of Mitigation Activity:

E&A	Education & Awareness	NSP	Natural Systems Protection
LP&R	Local Plans & Regulations	S&IP	Structure & Infrastructure Projects

Community Lifelines to be Mitigated:

C	Communications	H&M	Health & Medical
E	Energy (Power & Fuel)	S&S	Safety & Security
FWS	Food, Water, Shelter	T	Transportation
HM	Hazardous Material		

Figure MIT-23
Willow Branch Township Hazard Mitigation Actions
(Sheet 2 of 2)

Priority	Activity/Project Description	Hazard(s) to be Mitigated	Community Lifeline(s) to be Mitigated	Type of Mitigation Activity	Size of Population Affected	Goal(s) Met	Reduce Effects of Hazard(s) on Buildings & Infrastructure		Organization / Department Responsible for Implementation & Administration	Time Frame to Complete Activity	Funding Source(s)†	Cost/Benefit Analysis	Status
							New	Existing					
HM	Purchase and install storm warning sirens within the Township to establish Communications Community Lifelines essential to human health and safety.	SS, T	C	E&A	Large	4	---	---	Highway Commissioner / Supervisor / Township Board	5 years	Township / USDA – RD Critical Facilities Programs	Medium/High	New
LM	Adopt the Piatt County Multi-Jurisdictional All Hazards Mitigation Plan update by formal resolution to remain eligible for hazard mitigation funds.	DR, EC, EH, EQ, F, MMH, SS, SWS, T	---	LP&R	Large	2	---	---	Highway Commissioner / Supervisor / Township Board	6 months	Township	Low/High	New
LM	Identify locations that can be used as warming/cooling centers within the Township. Secure agreements with and formally designate identified locations for use by Township residents.	EC, EH	FWS	LP&R	Medium	4	---	---	Highway Commissioner / Supervisor / Township Board	1 year	Township	Low/Medium	New
LM	Make public information materials available to township residents that detail the risks to life and property associated with the natural hazards that impact the Township and the proactive approaches they can take to reduce their risk.	DR, EC, EH, EQ, F, FR, SS, SWS, T	---	E&A	Large	3	---	---	Highway Commissioner / Supervisor	1-3 years	Township	Low/Medium	New

† Identifies the most likely funding source to be pursued for the activity/project described. However, if funding is unavailable through the most likely or other suggested sources, then implementation of medium to large-scale activities/projects is unlikely due to the budgetary constraints experienced by small, rural townships of this size (less than 900 individuals). The Township works hard to maintain critical services to its residents but it's a struggle. Additional funding is necessary if implementation is to be achieved within the time frames specified.

Acronyms

Priority

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C	Communications	H&M	Health & Medical
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FWS	Food, Water, Shelter	T	Transportation
HM	Hazardous Material		

5.0 PLAN MAINTENANCE

This section focuses on the Federal Emergency Management Agency (FEMA) requirements for maintaining and updating the Plan once it has been approved by FEMA and adopted by the participating jurisdictions. These requirements include:

- establishing the method and schedule for monitoring, evaluating, and updating the Plan;
- describing how the mitigation strategy will be incorporated into existing planning processes; and
- detailing how continued public input will be obtained.

These requirements ensure that the Plan remains an effective and relevant document. The following provides a detailed discussion of each requirement.

5.1 MONITORING, EVALUATING & UPDATING THE PLAN

Outlined below is a method and schedule for monitoring, evaluating, and updating the Plan. This method allows the participating jurisdictions to make necessary changes and updates to the Plan and track the implementation and results of the mitigation actions that have been undertaken.

5.1.1 Monitoring and Evaluating the Plan

The Plan update will be monitored and evaluated by a Plan Maintenance Subcommittee on an annual basis. The Plan Maintenance Subcommittee will be composed of the participating jurisdictions who sought Plan approval and other key members of the Planning Committee. The Piatt County Emergency Management Agency (EMA) will chair the Plan Maintenance Subcommittee.

The Piatt County EMA will assume lead responsibility for monitoring and tracking the implementation status of the mitigation actions identified in the Plan update. It will be the responsibility of each Plan participant to provide the Piatt County EMA with an annual progress report on the status of their existing mitigation actions and identify whether any actions need to be modified. New mitigation actions may be added to the Plan during the annual monitoring and evaluation period or at any time during the plan maintenance cycle by contacting the Piatt County EMA Director and providing the appropriate information.

Monitoring & Evaluating

- A Plan Maintenance Subcommittee will be formed to monitor and evaluate the Plan update.
- The ***Plan update will be monitored and evaluated*** on an ***annual basis***.
- Each Plan participant will be responsible for providing an annual progress report on the status of their mitigation actions.
- Plan participants can add ***new mitigation actions*** to the Plan ***during the annual monitoring phase or by contacting*** the Piatt County EMA Director.

The Piatt County EMA together with the Plan Maintenance Subcommittee will also evaluate the Plan update on an annual basis to determine the effectiveness of the Plan at achieving its stated purpose and goals. In order to evaluate the effectiveness of the Plan update, the Subcommittee will review the mitigation actions that have been successfully implemented and determine whether the action achieved the identified goal(s) and had the intended result (i.e., were losses avoided or the vulnerability of hazard-prone areas reduced.)

The Subcommittee will also ask each Plan participant to identify any significant changes in development that have occurred within the previous 12 months; whether any new plans, policies, regulations, or reports have been adopted; and if any hazard-related damages to critical facilities and infrastructure have been sustained.

In order to streamline the plan maintenance process, the Piatt County EMA will provide each Plan participant with a Plan Maintenance Checklist along with the necessary forms to complete and return. **Appendix M** contains a copy of Checklist and associated forms.

The Piatt County EMA will then prepare a progress report detailing the results of the annual Plan monitoring and evaluation period and provide copies to the Subcommittee. The annual progress report will include:

- information on any hazard-related damages sustained by critical facilities and infrastructure within the planning area during the previous year.
- implementation status of the mitigation actions identified in the Mitigation Strategy.
- identification of any new mitigation actions proposed by the Plan participants.
- information on changes in development and planning and regulatory capabilities for the Plan participants.

If any existing mitigation actions are modified or new mitigation actions are identified for the Plan participants, then Section 4.7 of the Mitigation Strategy will be updated, and the Plan update resubmitted to the Illinois Emergency Management Agency (IEMA) and FEMA for reference.

5.1.2 Updating the Plan

The Plan must be updated within five years of the of the Plan approval date indicated on the signed FEMA final approval letter. (This date can be found in Section 6, Plan Adoption.) This ensures that all the participating jurisdictions will remain eligible to receive federal grant funds to implement those mitigation actions identified in this Plan.

Updating the Plan

- The Piatt County EMA, with assistance from the Plan Maintenance Subcommittee, will be responsible for updating the Plan.
- The Plan ***must be updated within 5 years*** of the ***date of the final approval letter*** provided by FEMA.
- Any jurisdictions that did not take part in the previous Plan may do so during the 5-year update.
- Once the Plan update has received FEMA/IEMA approval, each participating jurisdiction ***must adopt the Plan to remain eligible to receive federal mitigation funds.***

The Piatt County EMA, with assistance from the Plan Maintenance Subcommittee, will be responsible for updating the Plan. The update will incorporate all of the information gathered during the monitoring and evaluation phase and will also include:

- a review of the Mitigation Strategy, including potential updates to the mitigation goals;
- an assessment of whether other natural or man-made hazards need to be addressed or included in the Plan;
- a review of new hazard data that may affect the Risk Assessment Section; and

- ❖ identification of any changes in development that have occurred in hazard prone areas that would increase or decrease the participating jurisdictions' vulnerability.

In addition, any jurisdictions that did not take part in the previous Plan may do so at this time. It will be the responsibility of these jurisdictions to provide all of the information needed to be integrated into the Plan update.

A public forum will be held to present the Plan update to the public for review and comment. The comments received at the public forum will be reviewed and incorporated into the Plan update. The Plan update will then be submitted to IEMA and FEMA for review and approval. ***Once the Plan update has received state and federal approval, FEMA requires that each of the participating jurisdictions adopt the Plan to remain eligible to receive federal funds to implement identified mitigation actions.***

5.2 INCORPORATING THE MITIGATION STRATEGY INTO EXISTING PLANNING MECHANISMS

As part of the planning process, the Planning Committee identified each participating jurisdiction's existing capabilities (i.e., existing authorities, policies, programs, technical information, etc.) and resources available to support or accomplish mitigation and reduce long-term vulnerability. **Figures PP-3** through **PP-14** identify the existing authorities, policies, programs, technical information, and resources available by capability type by jurisdiction. ***It will be the responsibility of each participating jurisdiction to incorporate, where applicable, the mitigation strategy and other information contained in the Plan update into the planning mechanisms identified for their jurisdiction.***

Adoption of this Plan update will trigger each participating jurisdiction to review and, where appropriate, integrate the Plan into other available planning mechanisms. The Plan Maintenance Subcommittee's annual review will help maintain awareness of the Plan among the participating jurisdictions and encourage active integration of the Plan into their day-to-day operations and planning mechanisms. Any time a mitigation action is slated for implementation by a participating jurisdiction, it will be integrated into their capital improvement plan/budget.

Based on conversations with Planning Committee members, none of the jurisdictions that participated in the original Plan have incorporated it into other planning mechanisms within their jurisdictions, with the exception of Monticello. This is due in part to the size, fiscal and staffing situations, and technical capacity of the participants. While Piatt County has a comprehensive plan, it was completed prior to the adoption of the original hazard mitigation Plan and has not been updated since.

Monticello incorporated hazard mitigation planning principles into the update of its comprehensive plan completed in 2014. Items addressed included 1) working to address the flooding problems in the City (Objective P2.2); 2) improving stormwater system to prevent overflow during rain events (Objective AG2.2); 3) practicing techniques that both curb and prevent stormwater runoff (Objective AG2.3); 4) encouraging the use of green infrastructure in new development and redevelopment projects (Objective AG2.4); and 5) safeguarding the City's architectural, prehistoric, historic, aesthetic and cultural heritage (Objective FS5.1).

There is no indication that the County or any of the participating jurisdictions, aside from Monticello, will be adopting, reviewing, or strengthening current policies or programs in the near future. Most of the participating jurisdictions (Bement, Cisco, Hammond, and Mansfield) have limited capabilities to integrate the mitigation strategy and other information contained in the Plan update into existing planning mechanisms. These jurisdictions are small in size and do not have the financial resources or trained personnel to develop planning mechanisms such as comprehensive plans or building and zoning ordinances.

5.3 CONTINUED PUBLIC INVOLVEMENT

The County and participating jurisdictions understand the importance of continued public involvement and will seek public input on the Plan update throughout the plan maintenance cycle. A copy of the approved Plan will be maintained and available for review at the Piatt County EMA Office. Individuals will be encouraged to provide feedback and submit comments for the next Plan update to the Piatt County EMA Director.

The comments received will be compiled and included in the annual progress report and considered for incorporation into the next Plan update. Any meetings held by the Plan Maintenance Subcommittee will be noticed and open to the public. Separate committee meetings and a public forum will be held prior to the next Plan update submittal to provide the public an opportunity to comment on the proposed revision to the Plan update.

6.0 PLAN ADOPTION

The final step in the planning process is the adoption of the approved Plan update by each participating jurisdiction. Each jurisdiction must formally adopt the Plan to remain eligible for federal grant funds to implement mitigation actions identified in this Plan.

6.1 PLAN ADOPTION PROCESS

Before the Plan update could be adopted by the participating jurisdictions, it was made available for public review and comment through a public forum and comment period. Comments received were incorporated into the Plan update and the Plan was then submitted to the Illinois Emergency Management Agency (IEMA) and the Federal Emergency Management Agency (FEMA) for their review and approval.

Upon receipt of the Approval Pending Adoption (APA) letter from FEMA, the Plan update was presented to the County and participating jurisdictions for adoption. ***Each participating jurisdiction was required to formally adopt*** the Plan to remain eligible to receive federal grant funds to implement the mitigation actions identified in this Plan. Any jurisdiction that chose not to adopt the Plan update did not affect the eligibility of those who did.

Figure PA-1 identifies the participating jurisdictions and the date each formally adopted the Plan update. Signed copies of the adoption resolutions are located in **Appendix N**. FEMA signed the final approval letter on (Date) which began the five-year approval period and set the expiration date of (Date) for the Plan.

Figure PA-1
Plan Adoption Dates

Participating Jurisdiction	Plan Adoption Date

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4.0 MITIGATION STRATEGY

1. Piatt County Multi-Jurisdictional All Hazards Mitigation Planning Committee. Existing Mitigation Project/Activity Status. Form.

2. Piatt County Multi-Jurisdictional All Hazards Mitigation Planning Committee. Hazard Mitigation Projects. Form.

APPENDIX A

Attendance Sheet

Piatt County Multi-Jurisdictional
All Hazards Mitigation Planning Committee Meeting

November 30, 2021

	Name (Please Print)	Representing (Jurisdiction/Organization)	Title
1.	Pat Tiemann	Village of Bement	Village President
2.	Kevin Durbaum	Piatt Co Zoning	Zoning/Co. Board Sec.
3.	Zachary Kruz	AER	specialist
4.	Rob Bross	EMA / Atwood PD	Director / Chief
5.	Suzanne Brock	PCNH	Safety Coordinator
6.	John Carter	Monticello PD	Chief
7.	John Rupkey	Monticello Fire / CISCO	Chief / Captain
8.	Baley Milton	Piatt County Farm Bureau	Manager
9.	Doug Winder	Piatt County Maintenance Mid-Piatt Fire dept.	Supervisor of Maint & Asst. Chief
10.	Ray Spencer	Piatt Co. Board	Chair
11.	Jonah Cooley	Piatt Co. SWCD	R.C.
12.	Eric Seibring	Piatt Co Hwy	County Engineer
13.	Terry Summers	City of Monticello	City Administrator
14.			
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Attendance Sheet

Piatt County Multi-Jurisdictional
All Hazards Mitigation Planning Committee Meeting

November 30, 2021

	Name (Please Print)	Representing (Jurisdiction/Organization)	Title
1.	Tim Furman	Piatt County 9-1-1	9-1-1 Director
2.	BRETT BAKER	CITY OF MONTICELLO	PUBLIC WORKS DIRECTOR
3.	Andrea Bostwick	American Environmental	EMS Manager
4.	Scott Porter	Piatt County Nursing Home	EX Dir
5.	Hillary Stanifer	Blue Ridge CUSD #18	Superintendent
6.	Adam Kownacki	Monticello Fire & Rescue	Captain
7.	Michael Lawrence	Piatt County Highway department	Engr tech
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Attendance Sheet

Piatt County Multi-Jurisdictional
All Hazards Mitigation Planning Committee Meeting

March 22, 2022

	Name (Please Print)	Representing (Jurisdiction/Organization)	Title
1.	KEN RUNKLE	AMERICAN ENVIRONMENTAL	RISK ASSESSOR
2.	PAT TIEMAN	Village of Bement	Village President
3.	Terry Summers	City of Monticello	City Administrator
4.	Matt Wilhelm	Cisco Fire Protection Dist.	Fire Chief
5.	" "	Willow Branch Twp	Highway Commissioner
6.	Ray Spencer	Piatt County Board	Chair
7.	Tim Furman	Piatt County 9-1-1	9-1-1 Director
8.	Scott Porter	Piatt County Nursing Home	Ex Director
9.	BRET BAKER	CITY OF MONTICELLO	DIRECTOR OF PUBLIC WORKS
10.	Michael Lawrence	Piatt County Highway Department	Engr Tech
11.	Keri Nusbaum	Pi Co Zoning	Zoning officer
12.	Rob Bross	Piatt Co EMA / Atwood PD	Director / Chief
13.	Debbie Ball	Village of Hammond	Village Clerk
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Attendance Sheet

Piatt County Multi-Jurisdictional
All Hazards Mitigation Planning Committee Meeting

March 22, 2022

	Name (Please Print)	Representing (Jurisdiction/Organization)	Title
1.	Mary Voyt	Bement CUSD 5	incoming supt
2.	Sheila Greenwood	Bement CUSD 5	supt.
3.	Doug Winder	Mid-Piatt FPD	Asst. Chief
4.	Baley Milton	Piatt County Farm Bureau	Manager
5.	Andrea Bostwick	AEC	EMS Manager
6.	John Rupley	Monticello City Fire	Chief
7.	Eric Seibring	Piatt Co Hwy	County Engineer
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Attendance Sheet

Piatt County Multi-Jurisdictional
All Hazards Mitigation Planning Committee Meeting

June 14, 2022

	Name (Please Print)	Representing (Jurisdiction/Organization)	Title
1.	Andrea Bostwick	American Environmental	EMS Manager
2.	Adam Sprinkle	Monticello Township Hwy	Highway Commissioner
3.	Matt Wilhelm	Village of Cisco	Rep.
4.	Matt Wilhelm	Cisco Fire Dept	Fire Chief
5.	Matt Wilhelm	Willow Branch Township	Highway Commissioner
6.	Keri Nusbaum	Piatt Co. Zoning	Zoning / Co. Bd Sec
7.	Ray Spencer	Piatt Co. Board	Chairman
8.	Jessica Bartley	Mansfield Board	Trustee
9.	Chad Corum	Village of Bement	Public Work Supervisor
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Attendance Sheet

Piatt County Multi-Jurisdictional
All Hazards Mitigation Planning Committee Meeting

June 14, 2022

	Name (Please Print)	Representing (Jurisdiction/Organization)	Title
1.	KEN RUNKLE	AEC	ENV. RISK ASSESSOR
2.	Tamara Wilson	Monticello Township	Supervisor
3.	Debbie Ball	Village of Hammond	Clerk
4.	Suzanne Brock	Piatt County Nursing Home	Admin Assist
5.	Scott Porter	Piatt County Nursing Home	Executive Director
6.	Michael Lawrence	Piatt County Highway Dept	Engi tech
7.	ERIC SEIBERT	PIATT COUNTY HIGHWAY DEPT	COUNTY ENGINEER
8.	KEVIN Barlow	Piatt County Journal	Editor
9.	John Rupkey	Monticello F.M + Rescue	CHIEF
10.	Rob Bross	Piatt Co. EMA	Director
11.	Rob Bross	Village of Atwood	Police Chief
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Attendance Sheet

Piatt County Multi-Jurisdictional
All Hazards Mitigation Planning Committee Meeting

September 13, 2022

	Name (Please Print)	Representing (Jurisdiction/Organization)	Title
1.	KEN RUNKLE	AEC	ENV. TOXICOLOGIST
2.	Andrea Bostwick-Campbell	AEC	EMS Manager
3.	Debbie Ball	Village of Hammond	Clerk
4.	Crystal Alexander	Kirby Medical Center	Emergency Preparedness Director of Ambulance
5.	AARON LEYNES	KIRBY AMBULANCE	LEAD PARAMEDIC
6.	ADAM SPRINKLE	MONTICELLO TOWNSHIP	HWY COMMISSIONER
7.	Mary Vogt	Bement CUSD 5	Superintendent
8.	Rob Bross	Piatt Co. EMA - Atwood PD	Director
9.	Michael Lawrence	Piatt Co. Highway Dept	Engr tech.
10.	KEVIN BAILOW	PIATT COUNTY JOURNAL-REPUBLICAN	EDITOR
11.	John Carter	Monticello PD	Chief
12.	Keri Nusbaum	Piatt Co. Zoning	Zoning Off.
13.	Jessica Bartlett	Mansfield	Trustee
14.	Ray Spencer	Piatt Co. Board	Chair
15.	Doug Winder	Mid-Piatt FPD	Asst. Chief.
16.	Tamara Wilson	Monticello Township	Supervisor

Attendance Sheet

Piatt County Multi-Jurisdictional
All Hazards Mitigation Planning Committee Meeting

September 13, 2022

	Name (Please Print)	Representing (Jurisdiction/Organization)	Title
1.	Callie Smith	American Environmental	Environmental Analyst
2.	BRETT BAKER	CITY OF MONTICELLO	PUBLIC WORKS DIRECTOR
3.	Dan Sheehan	Monticello CUSD #25 / Monticello FIRE	ADMIN / Lt.
4.	Terry Summers	City of Monticello	City Administrator
5.	Pat Germain	Village of Bement	Village President
6.	Suzanne Brock	PCNAH	Admin Asst Safety Officer
7.	Scott Porter	PCNAH	Executive Director
8.	Matt Wilhelm	Cisco Fire	Fire Chief
9.	Matt Wilhelm	Village of Cisco	Rep.
10.	Matt Wilhelm	Willow Branch Twp	Highway Commissioner
11.	Gail Jones	Piatt County Board	Member
12.	ERIC SEIBRING	PIATT COUNTY HWY	COUNTY ENGINEER
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APPENDIX B

Meeting Minutes

Piatt County Multi-Jurisdictional
All Hazards Mitigation Planning Committee

November 30, 2021
1:30 p.m.
Monticello Community Building
201 N. State Street, Monticello

Committee Members

Atwood, Village of
Bement, Village of
Blue Ridge CUSD #18
Cisco Fire Protection District
Mid-Piatt Fire Protection District
Monticello, City of
Monticello Fire & Rescue

Piatt County Offices:
- 911
- County Board
- EMA
- Highway
- Maintenance
- Nursing Home
- Zoning

Piatt County Farm Bureau
Piatt Co. Soil & Water Conservation Dist.
American Environmental Corp.

Welcome and Introductions

Chief Rob Bross, Chairman of the Piatt County Multi-Jurisdictional All Hazards Mitigation Planning Committee, welcomed attendees. He indicated that the purpose of this Committee is to update the Piatt County All Hazards Mitigation Plan.

Handout materials were distributed to each member, including a Natural Hazards Events Questionnaire. The questionnaire will help gauge residents and committee member understanding of the natural hazards that impact the County.

Before discussing the plan development, Andrea Bostwick, American Environmental Corp. (AEC), began the discussion by providing background on the grant and its planning process. The Piatt County Sheriff applied for and received a planning grant last summer from FEMA to update the County's hazard mitigation plan. This grant is administered through the Illinois Emergency Management Agency (IEMA) and pays for 75% of the planning cost. The remaining 25% will be met through in-kind services. The goal of the grant is to obtain a FEMA approved hazard mitigation plan. The process generally takes approximately 16 months from start to finish.

What is Mitigation?

Andrea explained that for the purpose of this process, mitigation is any sustained action that reduces the long-term risk to people and property from natural hazards and their

impacts. Sustained actions can include projects and activities such as building a community safe room or establishing warming and cooling centers. Mitigation is one of the phases of emergency management and is an important component in creating hazard-resistant communities.

What is a Natural Hazards Mitigation Plan?

Andrea then explained that an All-Hazards Mitigation Plan details the natural and man-made hazard events that have previously impacted the County and identifies activities and projects that reduce the risk to people and property from these hazards before an event occurs. A hazard mitigation plan is different from the County's Emergency Operations Plan (EOP) because it identifies actions that can be taken before a disaster strikes, whereas the EOP identifies how the County will respond during and immediately after an event occurs.

The natural and man-made hazards that will be included in the Plan update are: floods; floods; tornadoes; severe summer storms (including thunderstorms, hail and lightning events); severe winter storms (including ice and snowstorms); extreme cold; excessive heat; drought; earthquakes; transportation, generation and storage/handling of hazardous substances; hazardous materials incidents; and waste disposal and remediation.

Why Develop the County's Natural Hazards Mitigation Plan?

Since the early 1990s, damages caused by weather extremes have risen substantially. In 2020, the U.S. experienced $95 billion in severe storm damages from 22 severe weather and natural hazard events. 2020 shattered the record number of annual billion-dollar events set in 2011 and 2017 by six events. In addition, the losses experienced in 2020 were the 4th highest only behind 2017, 2005, and 2012. In the last decade, the U.S. has experienced the top three years with the highest total number of billion-dollar events and two of the top three years with the highest total losses ever recorded. Consequently, the Federal Emergency Management Agency (FEMA) continues to encourage counties throughout the U.S. to prepare and develop hazard mitigation plans because they've found that for every dollar spent on mitigation, $6 dollars can be reaped in savings.

Updating this plan provides several major benefits:

1.) Access to the federal mitigation assistance fund. Specific projects and activities will be developed through the planning process to help each participating jurisdiction reduce damages. By including these actions in this Plan, the participating jurisdictions will become eligible to receive state and federal funds to implement the actions.

2.) Increased awareness of the impacts associated with natural hazards. Verifiable information about the natural hazards that occur in Piatt County will be gathered to help participants in municipal and county meetings make decisions about how to better protect citizens and property from storm damages.

The Planning Process

The goal of the Committee meetings is to update the Plan to meet state and federal requirements so that it can be approved by IEMA and FEMA. The Planning Committee is an integral part of the planning process and ensures that the Plan is tailored to the needs of the County and participating jurisdictions.

A five-meeting process has been developed to achieve this goal. Specific activities for the Committee meetings include:

1st Committee meeting	Orientation to the Planning Process Required Information Needed to Participate
2nd Committee meeting	Discuss the Risk Assessment Approve Mission Statement & Goals Participants Return Required Forms Begin discussing Mitigation Projects and Activities
3rd Committee meeting	Discuss and approve Mitigation Strategy Committee returns draft list of Mitigation Projects and Activities
4th Committee meeting	Finish discussing Mitigation Projects and Activities Committee discusses approval/adoption of the Plan
5th Committee meeting (Public Forum)	Present the Plan update for public review Committee helps answer questions from the public

Jurisdictions who wish to be part of the Plan must meet certain participation requirements that include:

- Participating in the planning meetings and public forum;
- Completing the required forms;
- Coordinating with their constituents and the public; and
- Adopting the Plan once it's completed.

Information Needed from the Committee

As part of the plan update, Andrea indicated that there is information that will be needed from each participating jurisdiction. The information provided will be used to meet FEMA plan requirements. She then talked about each of the forms that must be completed at the beginning of the planning process. These Include:

Critical Facilities. Completed lists of Critical Facilities will be used to identify facilities vulnerable to natural hazards and will be provided to IEMA and FEMA as a separate supplement. Copies of the Plan made available to the public will not include these lists for security reasons.

Capability Assessment: Each jurisdiction has a unique set of capabilities and resources available to accomplish hazard mitigation and reduce long-term

vulnerabilities to hazard events. As part of the plan, the existing capabilities of each jurisdiction need to be identified and described.

Shelter Surveys: The locations of designated as severe weather shelters within each jurisdiction including warming centers, cooling centers, and community safe rooms needs to be identified.

Drinking Water Supply Worksheet: Information on the drinking water supplies that serve the participating communities needs to be gathered to assist in assessing drought vulnerability.

She asked participants to complete the forms and return them by the next meeting if possible and to let her know if they had any questions.

Severe Weather Events

Committee members were asked to share their memories of hazardous events that have occurred in the County including any damages to critical infrastructure and facilities. Flooding, severe winter weather and lightning strikes were mentioned.

Hazard events related include:

- Heavy rains in 2021 overwhelmed the storm sewers in Bement and caused a drainage line to collapse under the Norfolk Southern rail line.
- Straight-line winds in April 2020 brought down power poles along IL Route 105.
- The Bement FPD Station was hit by lightning in 2021.

Andrea told the Committee that, while AEC will review multiple data sources, including NOAA, NWS, and state and federal databases, these sources don't always include every event nor do they always include damage information, especially dollar amounts. In many cases, individuals at the local level are her best resource for this kind of information.

She asked participants to identify any hazard events that have impacted their jurisdiction by completing the form titled, "Hazard Event Questionnaire". The information provided will help supplement the information included in the risk assessment.

Andrea also asked Committee members if they had any photos of storm damage that they would be willing to share for inclusion in the Plan.

Community Participation

Andrea stressed the importance of attending each committee meeting and indicated that member participation helps the County meet its 25% match for this grant in addition to assuring that member jurisdictions are eligible for IEMA/FEMA funds. She indicated that tag-teaming and designating substitute representatives is permissible when other obligations arise. Andrea pointed out that a designated substitute representative does not have be an official or employee of the jurisdiction.

Andrea requested that each jurisdiction consider sharing meeting information with their boards, councils, etc. at regularly scheduled meetings and consider posting the press release or adding a calendar item to their web pages. She also asked jurisdictions who are on Facebook to consider posting about the Plan on their pages as well.

Andrea indicated that another opportunity to include the public in the process is to post the link to the Citizen Questionnaire on their web page or Facebook. The more individuals who complete the survey, the better our understanding will be of the public's perception of the hazards that impact the County. Finally, she asked the participants to consider posting or making available at their offices the "Frequently Asked Questions" document in their meeting packet. It provides a quick summary of what the Plan is and why it's important to participate.

Mission Statement & Goals

Copies of a draft mission statement and updated goals were distributed in the meeting packet. Committee Members were asked to review these prior to the next meeting. The mitigation goals describe the objectives or end results the Committee would like to accomplish in terms of hazard and loss reduction/prevention. Every project included in the Plan should be aimed at one or more of the goals identified by this Committee. Specific goals related to where you live can be added to this list as well.

What Happens Next?

The risk assessment will be the main topic of the next committee meeting.

The second meeting of the Committee is scheduled for:

Tuesday, March 22, 2022
Monticello Community Building, 201 N. State Street, Monticello
1:30 P.M.

Andrea asked Committee members to please review the "Tasks to be Completed" handout before the next meeting and indicated that her contact information could be found on the last page of the meeting handout if any questions come up. With no further questions she adjourned the meeting.

Meeting Minutes

Piatt County Multi-Jurisdictional
All Hazards Mitigation Planning Committee

March 22, 2022
1:30 p.m.
Monticello Community Building
201 N. State Street, Monticello

Committee Members

Atwood, Village of
Bement, Village of
Bement CUSD #5
Cisco Fire Protection District
Hammond, Village of
Mid-Piatt Fire Protection District
Monticello, City of
Monticello Fire & Rescue

Piatt County Offices:
- 911
- County Board
- EMA
- Highway
- Maintenance
- Nursing Home
- Zoning

Piatt County Farm Bureau
Willow Branch Township
American Environmental Corp.

Welcome and Introductions

Rob Bross, Chairman of the Piatt County Multi-Jurisdictional All Hazards Mitigation Planning Committee, welcomed attendees. He turned the meeting over to Andrea Bostwick, American environmental Corporation (AEC), who opened the meeting.

Handout materials were distributed to each committee member in attendance.

Andrea provided a brief recap to reorient Committee Members as to what has been accomplished. Before beginning the vulnerability analysis presentation, Andrea asked the participating jurisdictions to submit their completed, “Critical Facilities”, “Capability Assessments” and “Shelter Surveys” if they haven’t done so already.

Risk Assessment

Andrea began the presentation by noting that there have been six federally-declared disasters in Piatt County since 1968. A total of 700 verified natural hazard events have been document over the last 20 to 70 years. A minimum of $11.8 million in damages have resulted from approximately 62 documented natural hazard events. In addition, $32.1 million in crop damages were recorded for just four events.

The damage amounts are actually much higher based on several facts:

1.) damage descriptions for many floods, tornadoes and severe storm events did not include dollar amounts;
2.) damages to roads from heat and freeze/thaws conditions were not included; and
3.) crop damage figures were unavailable for a majority of the events.

The frequency, magnitude, and property damages for each category of natural hazard were then described.

Severe Storms

Severe storms are the most frequently occurring natural hazard in Piatt County with 256 events verified since 1961. One of the six federal disaster declarations for Piatt County include severe storms. Approximately $2.8 million in damages has resulted from 47 events. There has been $75,000 in crop damages from just 2 events. At least 1 fatality and 58 injuries can be attributed to severe storms. Almost all the injuries and fatalities are attributed crashes associated with wet pavement conditions.

The highest recorded wind speed in the County, not associated with a tornado, is 70 knots (81 mph) and occurred east of Cisco on May 25, 2011. The largest hail recorded in the county is 4.0 inches (softball-sized) near Milmine on August 26, 2000.

Severe Winter Storms

There were at least 98 verified events involving severe winter storms (snow and/or ice) since 1950 and 50 extreme cold events since 1995. Two of the six federal disaster declarations for Piatt County include severe winter storms – the 1990 Valentine's Day ice storm and a December 1, 2006 winter storm. Approximately $435,000 in property damages/emergency protective measures resulted from the two events. Additionally, 33 injuries can be attributed to crashes involving ice and snow-covered roadways between 2015 and 2019.

At least 12 severe winter storms have occurred every decade since 1960. In the last decade, 18 severe winter storms took place.

The record maximum 24-hour snowfall in the County is 13.5 inches, which occurred northwest of Monticello on March 24, 2013. Since there are no National Weather Service COOP observation stations in the County that have kept temperature records for more than 2 years, we looked at data from the surrounding counties.

The coldest recorded temperature from the Champaign COOP Station in Champaign County and Decatur COOP station in Macon County occurred on February 13, 1905 and was -25°F, while the coldest temperature at the Tuscola COOP station in Douglas County was -26°F on December 22, 1989.

Floods

There have been a least 143 verified flood events in Piatt County, 88 riverine/shallow flood events since 2010 and 55 flash flood events since 1990. At least $1.5 million in damages has resulted from two flash flood events. No fatalities or injuries were recorded for any of the other events. Three of the six federal disaster declarations for Piatt County are related to flooding.

Excessive Heat

There have been 109 recorded excessive heat events reported in Piatt County since 1995. No damages were recorded for any of the events, and no fatalities or injuries have occurred as the result of any of the excessive heat events.

Since there are no National Weather Service COOP observation stations in the County that have kept temperature records, we looked at data from the surrounding counties. The hottest recorded temperatures from the Champaign COOP station in Champaign County, the Decatur COOP station in Macon County, and the Tuscola COOP Station in Douglas County all occurred on July 14, 1936, and were between 113°F and 109°F.

Drought

Six major droughts have occurred during the last four decades – 1983, 1988, 2005, 2011, 2012, and 2013. There has been at least one drought per decade with the exception of the 1990s when no substantial droughts were recorded. Three of these droughts resulted in the County being a USDA-designated disaster area.

The 2012 drought caused an estimated $32 million in crop damages. Following each declared drought, crop yield reductions were generally experienced, some substantial. Corn and soybean yield reductions were most severe for the 1988 drought when there was a 41.4% reduction in corn and a 34.7% reduction in soybeans.

Year	Corn	Soybeans
1983	30.8%	16.1%
1988	41.4%	34.7%
2005	10.5%	---
2011	4.5%	16.3%
2012	16.7%	3.0%

Tornadoes

Since 1950, 37 tornadoes have been verified in Piatt County. Approximately $7.1 million in property damages has resulted from 11 of these tornadoes. Three tornadoes (1976, 1996, and 2001) had property damage totals of at least $1 million.

One fatality and 14 injuries can be attributed to four tornado events.

The average tornado in Piatt County is approximately 2.4 miles long and 77 yards wide. The average area covered by a tornado in Piatt County is 0.1 square miles.

The highest recorded F-Scale rating for a tornado in the County was an F4, which occurred on March 20, 1976. This tornado was also the longest and widest tornado in the County. It was 17.2 miles long in the County (the tornado covered 4 counties including Piatt and its total length was 63.7 miles) and was 800 yards wide (almost ½ mile wide).

Earthquakes

In the previous 200 years, one earthquake has originated in Piatt County while four earthquakes have originated in adjacent counties. On January 7, 1952, an earthquake with a magnitude between 2.0 and 2.9 occurred about 1 mile southeast of Mansfield. While there are no known fault zones located in Piatt County, there are two geologic

structures: the Colfax Syncline and the Osman Monocline (both part of the LaSalle Anticlinorium).

Ken Runkle of AEC then provided information about select man-made hazards in Piatt County.

Man-Made Hazards Risk Assessment

Ken informed the Committee that while the focus of this planning effort is directed at natural hazards, FEMA allows a small portion of the planning process to be devoted to an overview of select man-made hazards.

Although this overview does not have the same depth as the assessment of natural hazards, it provides useful information to place various man-made hazards in perspective. The man-made hazard risk assessment focused on the following categories:

- generation, storage/handling, and transportation of hazardous substances;
- waste disposal;
- hazardous materials (hazmat) incidents; and
- waste remediation.

Hazardous substances broadly include flammable, explosive, biological, chemical, or physical material that has the potential to harm public health or the environment. For the purposes of this Plan, the term includes both hazardous product and hazardous waste.

Generation, Storage/Handling & Transportation

In 2020, there was one facility in Piatt County that generated reportable quantities of hazardous substances according to the USEPA.

Based on records obtained from IEMA's Tier II database, there were 16 stationary facilities within Piatt County that stored and/or handled hazardous substances. Seven of these facilities stored and/or handled chemicals identified as "Extremely Hazardous Substances".

Waste Disposal

There are no active commercial solid (household) waste landfills operating in Piatt County. There are two landfills that serves the area: Clinton Landfill #3 (DeWitt County) and Advanced Disposal Services Valley View Landfill, Inc. (Macon County). There are no facilities within the county permitted to handle Potentially Infectious Medical Waste and no commercial off-site hazardous waste treatment or disposal facilities.

Hazardous Materials (Hazmat) Incidents

A hazardous materials (hazmat) incident refers to any accident involving the release of hazardous substances. Incidents can take place at fixed facilities or as they are being transported. Between 2011 and 2020 there were 31 hazmat incidents recorded in Piatt County. Of the 31 incidents, 26% occurred during transport.

Of the 8 incidents that occurred during transport, 6 were roadway incidents and 2 were rail incidents.

Waste Remediation

Waste remediation in Illinois is primarily conducted through three programs: the federal Superfund Program (for sites posing the largest threat to public health and the environment), the Illinois Site Remediation Program (SRP) and the Illinois Leaking Underground Storage Tank (LUST) Program.

Superfund: There are no active Superfund sites in Piatt County.

Illinois SRP: There are five sites located in Piatt County. One of the sites has received "No Further Remediation" (NFR) or 4(y) letter.

Illinois LUST: There are 47 LUST sites located in Piatt County. Approximately 43% of these sites have received NFR, Non-Lust Determination or Section 4(y) letters or remediation is virtually complete.

Risk Priority Index Exercise

Following the risk assessment, Andrea led the Committee through a Risk Priority Index (RPI) exercise. The RPI is a quantitative means of providing guidance for ranking the hazards that have the potential to impact the County. This ranking can assist participants in determining which hazards present the highest risks and therefore which ones to focus on when formulating mitigation projects and activities. Each hazard is scored on three categories: frequency, impacts on life and health and impacts on property and infrastructure based on a scoring system provided. Andrea walked the committee through the scoring system using excessive heat as an example and then provided time for the Committee to fill out the PRI form during the meeting. The results will be compiled, and the findings will be presented at the next meeting.

Mission Statement & Goals

Andrea asked Committee members to review the draft mission statement and updated mitigation goals provided in the meeting materials. Both of these are required elements of the Plan. As part of the Plan update process both items need to be reviewed and re-evaluated.

The mission statement was reviewed, and it was determined that no revisions to the wording were needed.

Next Andrea discussed the mitigation goals which are intended to reduce long-term vulnerabilities to natural and man-made hazards. Each project included in the updated Plan should be aimed at one or more of the goals developed by the committee. The updated goals were reviewed, and no revisions were made to the wording.

The mission statement and goals will be added to the Plan update.

Mitigation

Andrea explained that mitigation actions include activities and projects that reduce the long-term risk to people and property from the natural and man-made hazards discussed in the risk assessment. The purpose of the next meeting is to review and update the list of mitigation projects for each participating jurisdiction.

Status of Existing Projects
Andrea distributed **"Status of Existing Mitigation Actions"** forms to each of the previously participating jurisdictions detailing the mitigation projects and activities included in the original Plan. She explained that as part of the update process the status of these projects needs to be determined. She described how the form should be completed so that this information can be included in the Plan update.

New Projects
The form titled **"Hazard Mitigation Projects"** was distributed and Andrea indicated this form should be used to submit new projects and activities for the Plan update. To help the jurisdictions think about and assemble their lists a 2-page list of potential mitigation projects was included in the handout material along with mitigation project lists from other jurisdictions. These examples can be used to help Committee members when they prepare their list. Finally, Andrea provided excerpts from a FEMA publication on mitigation ideas as another resource.

She indicated individual mitigation project lists will be developed for each participating jurisdiction and that this is a list of projects each jurisdiction would like to see accomplished if funding becomes available. FEMA is trying to stimulate the implementation of mitigation projects and activities to reduce the extraordinary amount of money being expended on hazard event damages.

The projects and activities included in the Plan should be mitigation-related, not emergency preparedness, response, recovery, or maintenance. Mitigation projects can include studies, regulatory activities, structural and infrastructure projects, and information/education activities. She provided advice for completing the mitigation project list including providing a detailed description of the project, the jurisdiction responsible for the project and the time frame to complete the project.

Committee members were encouraged to contact Andrea if questions arise before they return to the next Committee meeting.

What Happens Next?
The vulnerability assessment and mitigation project prioritization methodology will be the main topics of the next committee meeting.

The third meeting of the Committee was scheduled for:

Tuesday, June 14, 2022
1:30 p.m.
Monticello Community Building
201 N. State Street, Monticello

Public Comment
With no questions or comments, Andrea adjourned the meeting.

Meeting Minutes

Piatt County Multi-Jurisdictional
All Hazards Mitigation Planning Committee

June 14, 2022
1:30 p.m.
Monticello Community Building
201 N. State Street, Monticello

Committee Members

Atwood, Village of
Bement, Village of
Cisco, Village of
Cisco Fire Protection District
Hammond, Village of
Mansfield, Village of
Monticello Fire & Rescue
Monticello Township
Piatt County Offices:
- County Board
- EMA
- Highway
- Nursing Home
- Zoning

Willow Branch Township
American Environmental Corp.

Welcome

Rob Bross, Chairman of the Piatt County Multi-Jurisdictional All Hazards Mitigation Planning Committee, welcomed attendees. He turned the meeting over to Andrea Bostwick, American Environmental Corporation (AEC), who opened the meeting. Handout materials were distributed to each committee member in attendance.

Andrea provided a brief recap to reorient Committee Members as to what has been accomplished. Before beginning the vulnerability analysis presentation, Andrea asked the participating jurisdictions to submit their completed "Critical Facilities", "Capability Assessments", and "Shelter Surveys" if they haven't done so already.

Vulnerability Analysis

Andrea began the vulnerability analysis discussion by noting that the focus of this meeting is the vulnerability posed by tornadoes. The analysis estimates future potential damages in terms of dollar loss to residences, including contents, for each participating jurisdiction based on FEMA acceptable formulas. The potential damages were calculated on the magnitude most likely to be encountered, not on a worst-case event.

Tornadoes

Since 1950, 37 tornadoes have been verified in Piatt County. While occurring less frequently than severe storms and severe winter storms, tornadoes have caused more than $7.1 million in property damages, 1 fatality, and 14 injuries.

Using information from the 37 verified tornadoes, damages were calculated based on an "average" tornado. The average tornado in Piatt County impacts approximately 0.10 square miles. Housing densities were calculated from U.S. Census Bureau

information for each of the participating jurisdictions. This information, along with a set of assumptions were used to estimate the number of vulnerable residential structures.

Potential dollar losses were then calculated for these vulnerable residential structures using the provided tax assessment values and an additional assumption about the degree of damage sustained by the structures and their contents.

Potential dollar losses caused by an average-sized tornado to residences and their contents would be expected to exceed at least $9.9 million in any of the participating municipalities. Losses ranged from $9.9 million in Atwood to $28.2 million in Monticello. Potential dollar losses by township would be expected to range from $121,193 in Goose Creek Township to $1.3 million in Monticello Township. Andrea noted that the damage figure for the Monticello Township would only be reached if the tornado's path included a portion of the City of Monticello.

Risk Priority Index Exercise Results

Andrea then presented the results of the Risk Priority Index Exercise that was conducted at the March 22, 2022 meeting. She provided the Committee with a brief recap on what the Risk Priority Index is and how it can help participants determine which hazards present the highest risk and therefore which ones to focus on when formulating mitigation projects and activities.

Based on the Committee's responses, tornadoes scored the highest, followed by thunderstorms with damaging winds and winter storms. The highest scoring man-made hazard was transportation related hazmat incidents. The hazards that scored the lowest included drought, terrorism, and fixed facility hazmat incidents.

A side-by-side comparison of how the hazards ranked between the original exercise conducted for the 2012 Plan and this exercise was provided for comparison. The top hazards from the original exercise included severe storms and severe winter storms/ extreme cold.

Critical Facilities Vulnerability Survey

As part of the Plan update, Andrea indicated that vulnerable community assets need to be identified for the participating jurisdictions. She asked Committee members to complete a 2-page survey distributed to help identify each community's most vulnerable assets as well as identify a list of key issues that clearly describe each community's greatest vulnerabilities. This information will be used in the vulnerability analysis.

Mitigation Actions Prioritization Methodology

The Mitigation Actions Prioritization Methodology outlines the approach used to classify each mitigation action identified by the participating jurisdictions and is a FEMA-required element of the Plan.

Mitigation actions can be prioritized in a number of ways. Andrea explained that the updated methodology is based on two key factors:

1) Frequency of hazard—severe storms occur more frequently than earthquakes.

2) Degree of mitigation—some projects will *significantly reduce* damages while other projects only have the potential to reduce damages.

This methodology helps objectively identify which projects and activities have a greater likelihood to significantly reduce the long-term vulnerabilities associated with the most frequently-occurring hazards. After reviewing the updated methodology, the Committee determined that no changes needed to be made.

Andrea acknowledged that while this methodology does not take cost or politics into consideration, these factors may affect the order in which projects are implemented. She also noted that it is important to keep in mind that implementing all of the mitigation projects is desirable regardless of which prioritization category they fall under.

Community Lifelines

Before discussing mitigation projects and the mitigation action tables with the Committee, Andrea took a few minutes to discuss the concept of community lifelines. FEMA has identified seven community lifelines that are the most fundamental services in the community that, when stabilized, enable all aspects of society to function. The seven community lifelines include: safety & security; food, water, shelter; health & medical; energy (power & fuel); communications; transportation; and hazardous materials.

While the concept of community lifelines was developed to support emergency response and planning, FEMA has begun applying it to all phases of emergency management. Efforts to protect community lifelines and prevent and mitigate potential impacts to them is one of the focuses of the BRIC grant program. A handout with a brief description of the community lifelines was included in the meeting packet. Community lifelines will be included in most project description to create a clear connection to the concept.

Mitigation Projects

Committee Members were asked to submit their existing and new Mitigation Projects forms. Andrea then described how the draft methodology, the existing and new lists of mitigation projects, finalized goals and other information will be presented for Committee review.

Andrea chose a frequently requested mitigation project, a community safe room (tornado shelter), as an example to show how a typical project is prioritized and entered into the Plan on a Mitigation Action Table. She described how each column in the Mitigation Action Table would be completed for this example project.

Andrea explained that the information in the Mitigation Action Tables would be prepared by AEC, but that the Tables cannot be completed until all of the participants submit their draft lists of projects. Committee Members will have the opportunity at the next meeting to review all of the mitigation projects submitted so that they can make adjustments to their lists if they choose.

It was noted that each jurisdiction will have their own list of jurisdiction-specific mitigation projects and they do not need to get approval from the County or any of the other participants for any of their projects. Participants were also reminded that this is a list of projects and activities they would like to see accomplished if funding becomes available. For a jurisdiction to be eligible for a project, it must be on its list.

This is a mitigation plan and there are some projects that IEMA/FEMA do not consider mitigation. Projects associated with emergency preparedness, disaster response & recovery and maintenance will not be included in the Plan. Andrea noted that as the committee members put their lists together, if they are unsure about whether a project would be considered mitigation, go ahead, and include it on their list. AEC will review the lists and help make the appropriate determinations.

What Happens Next?

It is anticipated that participants will need time to assemble their mitigation project lists. Consequently, the Committee agreed to schedule the next meeting on:

September 13, 2022
1:30 p.m.
Monticello Community Building
201 N. State Street, Monticello

Public Comment

No additional questions or comments were raised. With concurrence from Rob Bross, Andrea adjourned the meeting.

Meeting Minutes

Piatt County Multi-Jurisdictional
All Hazards Mitigation Planning Committee

September 13, 2022
1:30 p.m.
Monticello Community Building
201 N. State Street, Monticello

Committee Members

Atwood, Village of
Bement, Village of
Bement CUSD #5
Cisco, Village of
Cisco Fire Protection District
Hammond, Village of
Kirby Medical Center/Ambulance
Mansfield, Village of
Mid-Piatt Fire Protection District
Monticello, City of
Monticello CUSD #25
Monticello Fire & Rescue
Monticello Township
Piatt County Offices:
- County Board
- EMA
- Highway
- Nursing Home
- Zoning

Willow Branch Township
American Environmental Corp.

Welcome

Rob Bross, Chair of the Piatt County Multi-Jurisdictional All Hazards Mitigation Planning Committee, welcomed attendees. He turned the meeting over to Andrea Bostwick, American Environment Corp. (AEC), who opened the meeting.

Handout materials were distributed to each Committee member. Andrea provided a brief recap to reorient Committee members as to what has been accomplished and what will be covered at this meeting.

Mitigation Project Submittal & Action Tables

Andrea thanked the Committee Members for assembling their lists of mitigation projects and activities. She explained that the information in the draft Mitigation Action Tables handout was prepared by AEC using the lists of mitigation projects and activities provided by the participation jurisdictions. A draft of the Mitigation Strategy section that details the review and re-evaluation of the goals and prioritization methodology as well as how the mitigation projects were analyzed in the tables was also provided in the meeting handouts for review by the Committee.

Committee members were asked to review the Mitigation Action Tables containing the descriptions of the mitigation projects and activities. Andrea, Callie Smith, and Ken Runkle of AEC, moved throughout the room to discuss questions with each member. Some additional mitigation projects were provided and will be added to these tables.

Andrea advised Committee Members who wished to add additional projects to provide them to her as soon as possible and no later than October 14.

Participants were reminded that this is a list of projects and activities they would like to see accomplished if the money becomes available. Also, for a jurisdiction to be eligible for a project, it must be on its list.

Since this is a mitigation plan, some projects were either removed or not included if they were not considered mitigation. Projects associated emergency preparedness/response, recovery, and maintenance will not be included in the Plan.

Public Forum and Adoption

The final Committee meeting will be conducted as an open-house style public forum to present the draft Plan for review and comment. A paper copy of the draft Plan will be available for review at the meeting and posted online on the County's website. There will be a two-week public comment period following the public forum.

Unless otherwise specified, Committee members will receive an electronic copy of the draft plan to make available for public comment.

Once the comment period is over, any comments received will be incorporated into the Plan and submitted to IEMA/FEMA. Following IEMA and FEMA review, any edits requested will be made and then FEMA will issue an Approval Pending Adoption letter. At this point an email will be sent to all the participating jurisdictions, along with a copy of a model adoption resolution, asking them to formally adopt the Plan by resolution. A copy of the executed resolution should then be provided to AEC. Once all the adoption resolutions are received, Andrea will submit them to IEMA and FEMA. FEMA will then issue the Final Approval letter starting the clock for the five-year update.

Plan Maintenance and Update

Andrea described the Plan maintenance and update commitments provided in the meeting handouts for review by the committee detailed in a draft of the Plan Maintenance and update section. The Plan will be monitored and evaluated on an annual basis by a Plan Maintenance Subcommittee, which will be made up of the participating jurisdictions and key member of the Planning Committee. The Piatt County EMA Office will send out a Plan Maintenance Checklist to each of the participating jurisdictions who will be responsible for providing information to the Subcommittee. This information will include: the status of their mitigation actions; any hazard-related damages to critical facilities and infrastructure; the adoption of any new plans, policies, or regulations; and any significant changes in development. The Subcommittee will also evaluate the Plan to determine its effectiveness at achieving its stated purpose and goals. Participants can also add new mitigation actions during the annual monitoring phase or by contacting the EMA Coordinator.

The EMA Office will then prepare an annual progress report detailing the results of the annual monitoring and evaluation period and provide copies to the Subcommittee. Any modifications or additions to the mitigation project list will require an update of the Mitigation Strategy and a resubmittal of the Plan to IEMA and FEMA for reference.

At least once every five years, the Plan must be reviewed, revised, and resubmitted to IEMA/FEMA for the participating jurisdictions to remain eligible for mitigation project funds. At the five-year update, any jurisdiction that is not already part of this Plan and who wants to become part of the updated Plan may do so. New jurisdictions must supply the same information that all the current jurisdictions supplied.

What Happens Next?

Public Forum

The final Committee meeting will be conducted as an open-house style public forum where the draft Plan update will be presented for review and comment.

The public forum will be held on:

Tuesday, December 13, 2022
Monticello Community Building
201 N. State Street, Monticello
4 p.m. to 6 p.m.

Public Comment

With no other questions, the meeting was adjourned.

APPENDIX C

Piatt County Citizen Questionnaire

You can help protect lives and property from natural hazard events in the County by taking a few moments to complete this questionnaire.

Asterisk (*) desonates required questions for form completion.

* 1. **Please indicate where you live in the County (Please check only one.):**

- ☐ Atwood
- ☐ Bement
- ☐ Cerro Gordo
- ☐ Cisco
- ☐ De Land
- ☐ Hammond
- ☐ Mansfield
- ☐ Monticello
- ☐ Other (please specify)

* 2. **Please place a checkmark next to each of the natural hazards listed below that you have experienced in the County. (Please check all that apply.)**

- ☐ Severe Summer Storms (thunderstorms, hail, lightning strikes)
- ☐ Floods
- ☐ Severe Winter Storms(snow,sleet, ice)
- ☐ Excessive Heat
- ☐ Extreme Cold
- ☐ Tornadoes
- ☐ Drought
- ☐ Earthquakes
- ☐ Other (please specify)

3. **Which of the natural hazards above have you encountered most frequently?**

4. **Rank the natural hazards listed below in order from 1 to 11 based on which hazard you feel poses the greatest threat. (1 = greatest threat and 8 = least threat)** ***Each number should only be used once.***

- ☰ ☐ Severe Summer Storms
- ☰ ☐ Floods
- ☰ ☐ Severe Winter Storms
- ☰ ☐ Excessive Heat
- ☰ ☐ Extreme Cold
- ☰ ☐ Tornadoes
- ☰ ☐ Drought
- ☰ ☐ Earthquakes

* 5. **What types of mitigation projects or activities are most needed in the County? (Please check the five you feel are most important.)**

- [ ] Public information fact sheets and brochures describing actions residents can take to protect themselves and their property against natural hazard impacts.
- [ ] Floodplain Ordinances
- [ ] Building Codes and Enforcement
- [ ] Sirens or other Alert Systems
- [ ] Flood or Drainage Protection (i.e., culvert and drainage ditch maintenance, retention pond construction, dam or levee conctruction/maintenance and/or hydraulic studies to determine cause of drainage problems.)
- [ ] Maintain power during storms by burying power lines, trimming trees and/or purchasing a back-up generator
- [ ] Other (please specify)
- [ ] Tornado Safe Shelters
- [ ] Maintain roadway passage during snow storms and heavy rains
- [ ] Provide sufficient water supply during drought
- [ ] Identify residents with special needs in order to provide assistance during a ntural hazard event
- [ ] Retrofit critical infrastructure (public water supplies, schools, sewage treatment facilities, bridges, hospitals and other important services) to reduce potential damages

* 6. **What are the most effective ways *for you* to receive information about how to make your household and property safer from natural hazards (Please check all that apply.)**

- [ ] Newspapers
- [ ] Television
- [ ] Radio
- [ ] Internet
- [ ] Social Media (Facebook, Twitter, etc.)
- [ ] Schools
- [ ] Mailings
- [ ] Other (please specify)
- [ ] Fact Sheet/Brochure
- [ ] Extension Service
- [ ] Public Workshops/Meeting
- [ ] Fire Department/Law Enforcement
- [ ] Public Health Department
- [ ] Municipal/County Government

Thank you for your time in assisting with the update of the County's Hazard Mitigation Plan.
Piatt County Multi-Jurisdictional All Hazard Mitigation Planning Committee

Done

APPENDIX D

Frequently Asked Questions

Piatt County Multi-Jurisdictional
All Hazards Mitigation Plan Update

1) What is the Piatt County All Hazard Mitigation Plan?

The Piatt County Multi-Jurisdictional All Hazards Mitigation Plan evaluates damage to life and property from natural and man-made hazards in the County and identifies projects and activities that can reduce these damages. The Plan is considered to be multi-jurisdictional because it includes municipalities, townships, and other jurisdictions (fire protection districts, schools, health centers, etc.) who want to participate.

2) What is hazard mitigation?

Hazard mitigation is any action taken to ***reduce*** the long-term risk to life and property from a natural or man-made hazard ***before*** an event occurs.

3) Why is this Plan being updated?

The Plan update fulfills federal planning requirements of the Stafford Act as amended by the Disaster Mitigation Act and the Disaster Recovery and Reform Act. While meeting federal requirements, this Plan update also provides these benefits:

- Funding for mitigation projects and activities ***before*** disasters occur.
- Funding for mitigation projects and activities ***following*** federally-declared disasters.
- Increased awareness about natural and man-made hazards and closer cooperation among the various organizations and political jurisdictions involved in emergency planning and response.

4) Who is updating this Plan?

The Piatt County Multi-Jurisdiction All Hazards Mitigation Planning Committee is updating the Plan with assistance from technical experts in emergency planning, environmental matters, and infrastructure. The Committee includes members from education, emergency services, municipal, township and county government, health care, and law enforcement.

5) How can I participate?

You are invited to attend public meetings of the Piatt County All Hazards Mitigation Planning Committee. In addition, you are encouraged to provide photographs, other documentation, and information about damages you experienced from natural and man-made hazards in Piatt County. Surveys will be available at participating jurisdictions and through the County to help gather specific information from residents. All of this information will be used to update the Plan. A draft of the Plan update will be presented at a public forum for further public input.

More information can be obtained by contacting:

Rob Bross, Director
Piatt County Emergency Management Agency
1115 North State Street, Suite #13B
Monticello, Illinois 61856
(217) 762-9482

APPENDIX E

PIATT COUNTY BOARD

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Monticello, IL 61856-1681
Phone: 217.762.9487 / Fax: 217.762.7563

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Jerry Edwards - Gail Jones - Todd Henricks - Randy Shumard

Jennifer Harper (County Clerk & Recorder) ~ Keri Nusbaum (Secretary)

Contact: Chief Rob Bross

County Prepares For Natural Disasters

Monticello, IL (11/15/2021) — Piatt County will begin the process of updating its plan to reduce the damages caused by natural hazards such as tornadoes, thunderstorms, floods, ice storms and snowstorms, among others. The plan is called a Hazard Mitigation Plan and the process to update it will be funded through a grant from the Federal Emergency Management Agency (FEMA).

“This Plan will detail the natural hazards that have impacted the County and municipalities and identify projects and activities to reduce the risk to people and property before severe weather strikes”, said Chief Rob Bross, Piatt County Emergency Management Agency Director. “In addition, this Plan will allow us to remain eligible for federal funds to construct the projects identified in the Plan,” added Bross.

The Piatt County Hazard Mitigation Planning Committee will hold its first meeting on Tuesday, November 30th at 1:30 P.M. The meeting will be held at the Monticello Community Building at 201 N. State Street in Monticello. This Committee is made up of County, township, municipal, school and fire protection district representatives as well as technical partners and stakeholders and will meet over the next year to update this plan. Meetings of this committee will be conducted as working sessions so that any interested resident can attend and ask questions. The purpose of these working sessions is to gather and discuss information that will be used in the plan update.

“This mitigation plan is different because it focuses on ways to reduce and prevent damages before they occur, rather than on how the County and municipalities will respond to a disaster after it occurs,” added Bross.

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https://www.journal-republican.com/news/hazard-mitigation-plan-meetings-to-start-nov-30/article_b9d380b4-4d3e-11ec-aca0-8b4b61377bad.html

Hazard Mitigation Plan meetings to start Nov. 30

Nov 24, 2021

MONTICELLO — Piatt County will begin the process of updating its plan to reduce the damages caused by natural hazards such as tornadoes, thunderstorms, floods, ice storms and snowstorms, among others. The plan is called a Hazard Mitigation Plan and the process to update it will be funded through a grant from the Federal Emergency Management Agency (FEMA).

“This plan will detail the natural hazards that have impacted the county and municipalities and identify projects and activities to reduce the risk to people and property before severe weather strikes,” said Rob Bross, Piatt County Emergency Management Agency Director.

“In addition, this Plan will allow us to remain eligible for federal funds to construct the projects identified in the Plan.”

The Piatt County Hazard Mitigation Planning Committee will hold its first meeting at 1:30 p.m. Tuesday, Nov. 30 at the Monticello Community Building, 201 N. State Street in Monticello. The committee is made up of county, township, municipal, school and fire protection district representatives as well as technical partners and stakeholders and will meet over the next year to update this plan.

Meetings of this committee will be conducted as working sessions so that any interested resident can attend and ask questions. The purpose of these working sessions is to gather and discuss information that will be used in the plan update.

“This mitigation plan is different because it focuses on ways to reduce and prevent damages before they occur, rather than on how the County and municipalities will respond to a disaster after it occurs,” added Bross.

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Contact: Rob Bross
217-762-9482

Reducing Damages Caused by Severe Weather

Monticello, IL (March 7, 2022) — The frequency and damages caused by severe storms and other natural hazards in Piatt County will be discussed when the Piatt County All Hazards Mitigation Planning Committee meets at the Monticello Community Building, 201 N. State Street in Monticello, at 1:30 p.m. on Tuesday, March 22.

This Committee, comprised of County and municipal representatives as well as technical partners and stakeholders, will meet over the next several months to update the Piatt County All Hazards Mitigation Plan. All Committee Meetings are open to the public.

“The goal of this Committee meeting is to identify how often severe weather events occur within the County and what kinds of damages have resulted. Based on this information, we will begin to update lists of activities and projects to reduce damages caused by these events,” said Rob Bross, Piatt County Emergency Management Agency Director.

The focus of this effort is on natural hazards — severe thunderstorms with damaging winds or hail, tornadoes, snow and ice storms, floods, drought, and excessive heat.

Interested persons can provide input at these Piatt County Hazards Mitigation Planning Committee meetings or submit their comments and questions to their municipal or county representatives.

Participants include the County, Atwood, Bement, Mansfield, and Monticello, as well as Blue Ridge CUSD #18, CISCO FPD, Mid-Piatt FPD, and the Piatt County Soil and Water Conservation District.

“This Plan will be our best resource for determining how to prepare for storms and other natural hazards. After the Plan is completed, comprehensive information will be available in one document to help guide those who are making decisions about how to better protect Piatt County residents,” added Bross.

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PIATT COUNTY BOARD

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Jennifer Harper (County Clerk & Recorder) ~ Keri Nusbaum (Secretary)

FOR IMMEDIATE RELEASE

Contact: Rob Bross
217-762-9482

Projects to Reduce Damages Caused by Natural Hazards

Monticello, IL (May 31, 2022) — Identifying projects and activities that can protect Piatt County residents and property from natural and man-made hazards while maintaining vital services when severe weather hits will be discussed at the Monticello Community Building, 201 N. State Street in Monticello, at 1:30 p.m. on Tuesday, June 14, 2022. Committee meetings are open to the public.

“Severe weather frequently damages buildings, crops, roads, and other critical infrastructure in this area. Since 1968, the County has been a part of six federal disaster declarations. In addition, there has been at least $11.8 million in verified property damages and $32.1 million in crop damages caused by natural hazard events in the County. Identifying preventative steps that can be taken to reduce the dollar damages as well as protect public health before a natural hazard event occurs is the goal of this planning process,” said Rob Bross, Piatt County EMA Director. This Committee began work in November 2021 to update the County’s Hazard Mitigation Plan.

“Other emergency plans are directed at responding after a storm or natural disaster strikes. With this Plan update, we will identify actions that can reduce damages caused by natural hazards for each participating jurisdiction before they occur. This Plan also helps assure each participating jurisdiction is eligible to receive federal grant money for mitigation projects,” added Bross.

The County and the municipalities of Atwood, Bement, Cisco, Hammond, Mansfield, and Monticello have been participating in the planning process, as well as Bement CUSD #5, Blue Ridge CUSD #18, Cisco Fire Protection District (FPD), Mid-Piatt FPD,

Monticello Fire and Rescue, Willow Branch Township, and the Piatt County Soil and Water Conservation District.

Building community safe rooms, acquiring flood prone properties, resolving drainage issues, retrofitting critical infrastructure to better withstand hazard events, purchasing back-up power supplies, and developing public information materials are a few of the more frequently encountered mitigation projects in Illinois.

XXXXXXXXXXXXXXXX

https://www.journal-republican.com/news/local/ema-sets-meeting-on-preparing-for-hazards/article_48a81ddc-e1a9-11ec-877e-e3bf6785025a.html

EMA sets meeting on preparing for hazards

Jun 1, 2022

MONTICELLO – Identifying projects and activities that can protect Piatt

County residents and property from natural and man-made hazards while maintaining vital services when severe weather hits, will be discussed 1:30 p.m. on June 14 at the Monticello Community Building, 201 N. State Street in Monticello.

Committee meetings are open to the public.

“Severe weather frequently damages buildings, crops, roads, and other critical infrastructure in this area,” said Piatt County EMA Director Rob Bross. “Since 1968, the county has been a part of six federal disaster declarations. In addition, there has been at least $11.8 million in verified property damages and $32.1 million in crop damages caused by natural hazard events in the county. Identifying preventative steps that can be taken to reduce the dollar damages as well as protect public health before a natural hazard event occurs is the goal of this planning process.”

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The county and the municipalities of Atwood, Bement, Cisco, Hammond, Mansfield, and Monticello have been participating in the planning process, as well as Bement, CUSD #5, Blue Ridge CUSD #18, Cisco Fire Protection District (FPD), Mid-Piatt FPD, Monticello Fire and Rescue, Willow Branch Township, and the Piatt County Soil and Water Conservation District.

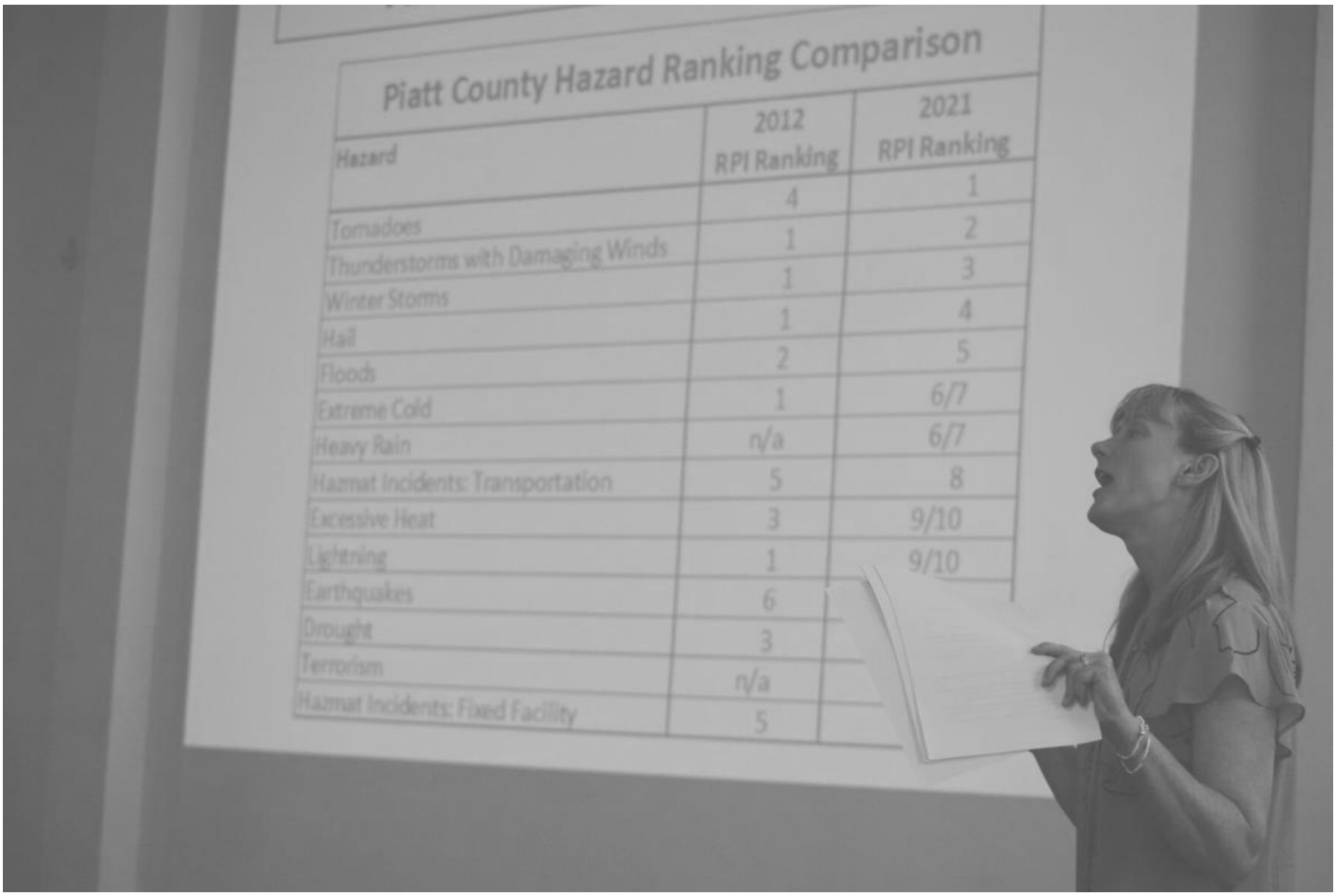
Building community safe rooms, acquiring flood prone properties, resolving drainage issues, retrofitting critical infrastructure to better withstand hazard events, purchasing back-up power supplies, and developing public information materials are a few of the more frequently encountered mitigation projects in Illinois.

https://www.journal-republican.com/news/local/piatt-county-officials-looking-for-ways-to-protect-residents-during-hazards/article_f80e0d12-f163-11ec-850e-571d4bccd565.html

FEATURED

Piatt County officials looking for ways to protect residents during hazards

By Kevin Barlow PCJR editor
Jun 22, 2022



Kevin Barlow PCJR

MONTICELLO – Officials in Piatt County are identifying projects and activities designed to protect Piatt County residents and property from natural and man-made hazards in case of severe weather or natural hazards.

The county and the municipalities throughout the county have been participating in the planning process.

Piatt County EMA Director Rob Bross is coordinating the effort for the county.

There have been six federally-declared disasters in Piatt County since 1968 said Andrea Bostwick, the Emergency Management Services Manager at American Environmental Corporation in Springfield. More than 700 verified natural hazard events have been documented over the last 20 to 70 years. At least $11.8 million in damages have resulted from approximately 62 documented natural hazard events. Also, $32.1 million in crop damages were recorded for just four events.

“Severe storms are the most frequently occurring natural hazard in Piatt County,” she said. Since 1961, there have been at least 256 different events causing property damage and/or personal injury.

There have been at least 98 verified events involving severe winter storms since 1950 and 50 extreme cold events since 1995. Two of the six federal disaster declarations for Piatt County included winter storms – the 1990 Valentine’s Day ice storm and a Dec. 1, 2006 winter storm.

Floods, excessive heat, drought, tornadoes and earthquakes were also identified as natural hazards that have damaged property or caused injury in Piatt County. On Jan. 7, 1952, an earthquake with a magnitude between 2.0 and 2.9 occurred abut one mile southeast of Mansfield.

The average tornado in Piatt County is approximately 2.4 miles long and 77 yards wide. The average area covered by a tornado in Piatt County is 0.1 square miles.

The highest recorded F-Scale rating for a tornado in the county was an F4, which occurred on March 20, 1976. This tornado was also the longest and widest tornado in the county. It was 17.2 miles long and was 800 yards wide, almost one-half of a mile.

The committee finalized eight mitigation goals to work on during the next five years, when the group will re-organize and update the plan.

Those goals include:

1) Lessen the impacts of hazards on new and existing infrastructure (buildings, roads, bridges, utilities, water supplies, sanitary sewer systems, etc.) in order to promote hazard-resistant communities.

2) Incorporate hazard mitigation strategies into existing and new community plans and regulations.

3) Develop long-term strategies to educate residents and businesses on the hazards affecting the county, the actions they can take before a hazard event occurs to protect themselves, their households, homes and businesses and the resources available to implement identified actions in an effort to promote hazard resiliency.

4) Protect the lives, health and safety of the individuals living in the county from the dangers caused by natural and man-made hazards.

5) Place a priority on protecting community lifelines (i.e., safety and security; food, water and shelter; health and medical; energy; communication; and transportation), public services and schools.

6) Preserve and protect the rivers, streams and floodplains in the county.

7) Ensure future development does not increase the vulnerability of h azard-prone areas within the county or create unintended exposures to natural and man-made hazards.

8) Protect historic, cultural, and natural resources from the effects of natural and man-made hazards.

The committee will meet again on Sept. 13 to finalize their goals and plans, and will begin the process of finalizing grant requests from FEMA for projects to assist with public safety as a result of a natural hazard. A public forum to gather input from Piatt County residents will also be scheduled.

Piatt County EMA Director Rob Bross asked for assistance in encouraging representatives from DeLand and Cerro Gordo to attend the Sept. 13 meeting.

Kevin Barlow

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FOR IMMEDIATE RELEASE

Contact: Rob Bross
217-762-9482

Protecting Public Health and Property in Piatt County

Monticello, IL (August 29, 2022)—Projects and activities to prevent injuries and fatalities while maintaining vital services for Piatt County residents will be the main topic of discussion at the Piatt County All Hazards Mitigation Planning Committee meeting, 1:30 p.m. on Tuesday, September 13, 2022, at the Monticello Community Building, 201 N. State Street in Monticello. Committee meetings are open to the public.

The Committee began work in November 2021 to update the County's All Hazards Mitigation Plan. This Plan details the past severe weather events that have impacted the County and identifies mitigation projects and activities that can be taken before a severe weather event occurs to protect residents and critical services and infrastructure.

"There has been at least $11.8 million in verified property damages and $32.1 million in crop damages caused by severe weather events in the County. Obtaining FEMA's approval of our updated Plan will make all of the participants eligible to receive federal grant money for mitigation projects and activities," according to Rob Bross, Piatt County Emergency Management Agency (EMA) Director.

Projects identified by Committee members at this meeting will become part of the Piatt County All Hazards Mitigation Plan. While the public has provided input on portions of the Plan, the entire Plan will be presented for public review and comment before it is submitted to the state and federal government for approval.

"A public forum will be conducted this winter for interested persons to review the Plan update and ask questions of Committee Members. A two-week public comment period will be held following the public forum to accommodate interested persons who are unable to attend. We want to make sure that anybody who is interested has an opportunity to review and comment on the draft Plan update," added Bross.

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https://www.journal-republican.com/news/local/all-hazards-mitigation-planning-meeting-set/article_22026bfa-27d7-11ed-97f1-371ecc7e74cb.html

All hazards mitigation planning meeting set

Aug 31, 2022

MONTICELLO - Projects and activities to prevent injuries and fatalities while maintaining vital services for Piatt County residents will be the main topic of discussion at the Piatt County All Hazards Mitigation Planning Committee meeting, 1:30 p.m. on Tuesday, Sept.13 at the Monticello Community Building, 201 N. State Street in Monticello.

Committee meetings are open to the public. The Committee began work in November 2021 to update the County's All Hazards Mitigation Plan. This Plan details the past severe weather events that have impacted the County and identifies mitigation projects and activities that can be taken before a severe weather event occurs to protect residents and critical services and infrastructure.

"There has been at least $11.8 million in verified property damages and $32.1 million in crop damages caused by severe weather events in the County. Obtaining FEMA's approval of our updated Plan will make all of the participants eligible to receive federal grant money for mitigation projects and activities," according to Rob Bross, Piatt County Emergency Management Agency (EMA) Director.

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"A public forum will be conducted this winter for interested persons to review the Plan update and ask questions of Committee Members. A two-week public comment period will be held following the public forum to accommodate interested persons who are unable to attend. We want to make sure that anybody who is interested has an opportunity to review and comment on the draft Plan update," added Bross.

https://www.journal-republican.com/news/local/public-hearing-schedules-for-input-on-county-mitigation-issues/article_74950b72-3847-11ed-8003-23d5040c45bb.html

Public hearing schedules for input on county mitigation issues

By Kevin Barlow PCJR editor
Sep 21, 2022

MONTICELLO – The purchase and distribution of NOAA weather radios to Piatt County residents in areas without storm sirens is among the list of activities county officials would like to see accomplished in the next two to five years.

That is part of the upgrade to the Piatt County All Hazards Mitigation Plan.

A committee which included officials from across Piatt County, began work in November 2021 to update the plan. The plan details the past severe weather events that have impacted the county and identifies mitigation projects and activities that can be taken before a severe weather event occurs to protect residents and critical services and infrastructure.

Projects identified by committee members will become part of the Piatt County All Hazards Mitigation Plan. The entire plan will be presented for public review and comment before it is submitted to the state and federal government for approval.

Other proposed plans include subscribing to an automated emergency notification system to establish a communications community lifeline. The county currently uses Hyper-Reach, but officials have suggested that the system has not been used to its full potential.

Other possibilities

Also proposed by county officials: Install hardening materials (shatter resistant/shatter-proof windows, hail resistant doors/shingles) at the Piatt County Nursing Home and to reinforce the nursing home's roof and include an anchoring system to increase building resistance to high winds; retrofit the Livingston Center for use as an emergency shelter; develop a database of access and functional needs populations within the county in order to identify the best method

to alert these individuals to hazardous events and develop a plan that identifies sheltering options; and to become a Mutual Aid Box Alarm System (MABAS) participating agency. MABAS is a mutual aid response system for fire, EMS and specialized incident operational teams.

All of those projects and several others could be funded through outside sources such as the Federal Emergency Management Agency (FEMA) and have a window to complete below five years.

Monticello officials suggested performing point repairs and/or slip lining of sanitary sewer system to eliminate stormwater infiltration, improve capacity, function and reliability of the city's sewer system; and distribute public information materials to residents that detail the risks to live and property.

The Monticello Fire and Rescue District proposed building a community safe room with a backup generator and HVAC units that can serve as a warming and cooling center.

The last mitigation plan for the county was updated 10 years ago.

"We were supposed to do this in 2016 or 2017, and it didn't get done," said Piatt County EMA director Rob Bross. "Now, we have started to get this going and hopefully, the state has some mitigation grant money to throw our way. We can start getting some of these projects completed then."

A public forum will be held to gather public input at 4 p.m. on Dec. 13.

Kevin Barlow

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FOR IMMEDIATE RELEASE

Contact: Rob Bross
217-762-9482

Piatt County's Plan to Reduce Severe Weather Damages Ready for Public Review

Monticello, IL (November 28, 2022)—The Piatt County Multi-Jurisdictional All Hazards Mitigation Plan outlining projects and activities to reduce damages caused by severe weather and other natural and man-made hazards will be available for public review and comment starting December 13, 2022. The Plan, along with a summary sheet and a comment survey, will be available on the Piatt County webpage. The comment period will remain open through December 30, 2022.

If you are unable to access the Plan via the website, a paper copy of the Plan will be available for review at the Piatt County Courthouse, Room 105, from 8:30 am to 4:30 pm on weekdays the courthouse is open. Public comments received will be used to make any revisions needed before the Plan is submitted to the Illinois and Federal Emergency Management Agencies.

A public forum will be held at the Monticello Community Building, 201 N. State Street in Monticello, from 4 p.m. to 6 p.m. on Tuesday, December 13, 2022. Individuals can still review the Plan and provide comments without participating in the public forum.

"This Plan describes how the County and the participating jurisdictions have been impacted by severe weather and other natural and man-made hazards and identifies specific mitigation actions that can be taken to reduce damages to people and property before events occur," explained Bross.

The Piatt County All Hazards Mitigation Planning Committee has been conducting working meetings open to the public since November 2021. The Committee prepared this Plan update with technical assistance from state and federal agencies as well as a consultant specializing in emergency management planning.

The municipalities of Bement, Cisco, Hammond, Mansfield, and Monticello, as well as Monticello Township, Willow Branch Township, Bement CUSD #5, Kirby Medical Center, Cisco Fire Department, Monticello Fire & Rescue, and Mid Piatt Fire Protection District have participated in the planning process.

APPENDIX F

PIATT COUNTY MULTI-JURISDICTIONAL ALL HAZARDS MITIGATION PLAN PUBLIC FORUM SUMMARY HANDOUT

DECEMBER 13, 2022
4:00 P.M. – 6:00 P.M.

Each year natural hazards (i.e., severe thunderstorms, tornadoes, severe winter storms, flooding, etc.) cause damage to property and threaten the lives and health of Piatt County residents. Since 1968, Piatt County has been a part of six federally-declared disasters and experienced at least $12.1 million in recorded property damages and $32 million in recorded crop damages.

In the last 10 years alone (2012 – 2021), there have been 59 heavy rain events, 44 excessive heat events, 32 riverine flood events, 31 thunderstorms with damaging winds, 25 flash flood events, 25 extreme cold events, 13 severe winter storms, 7 severe storms with hail one inch in diameter or greater, 6 tornadoes, and 2 droughts verified in the County. While natural hazards cannot be avoided, their impacts can be reduced through effective hazard mitigation planning and implementation.

What is hazard mitigation planning?
Hazard mitigation planning is the process of determining how to reduce or eliminate property damage and loss of life from natural and man-made hazards. This process helps the County and participating jurisdictions reduce their risk by identifying vulnerabilities and developing mitigation actions to lessen and sometimes even eliminate the effects of a hazard. The results of this process are documented in an all hazards mitigation plan.

Why prepare an updated all hazards mitigation plan?
By preparing and adopting an updated all hazards mitigation plan, participating jurisdictions become eligible to apply for and receive federal hazard mitigation funds to implement mitigation actions identified in the Plan. These funds, made available through the Disaster Mitigation Act of 2000, can help provide local government entities with the opportunity to complete mitigation projects that would not otherwise be financially possible.

Who participated in the update of the Piatt County Multi-Jurisdictional All Hazards Mitigation Plan?
Recognizing the benefits that could be gained from preparing an updated all hazards mitigation plan, Piatt County invited all the local government entities within the County to participate. The following jurisdictions chose to participate in the Plan update with the County:

- Bement, Village of
- Bement CUSD #5
- Cisco, Village of
- Cisco Fire Protection District
- Hammond, Village of
- Kirby Medical Center
- Mansfield, Village of
- Mid Piatt Fire Protection District
- Monticello, City of
- Monticello Fire & Rescue
- Monticello Township
- Willow Branch Township

How was the Plan update developed?
The Piatt County Multi-Jurisdictional All Hazards Mitigation Plan update was developed through the Piatt County Multi-Jurisdictional All Hazards Mitigation Planning Committee. The Planning Committee included representatives from each participating jurisdiction, as well as agriculture, education, emergency services, and healthcare. The Planning Committee met five times between November 2021 and December 2022.

PIATT COUNTY MULTI-JURISDICTIONAL ALL HAZARDS MITIGATION PLAN

Which natural and man-made hazards are included in the Plan update?
After reviewing the risk assessment, the Planning Committee chose to include the following natural and man-made hazards in the Plan:

Natural Hazards:
- severe storms (thunderstorms, hail, lightning, heavy rain)
- severe winter storms (snow & ice)
- floods (riverine & flash)
- excessive heat
- extreme cold
- tornadoes
- drought
- earthquakes

Man-Made hazards:
- hazardous substances (generation, transportation, and storage/handling)
- waste disposal
- hazardous material incidents
- waste remediation
- nuclear incidents
- terrorism

What is included in the Plan update?
The Plan update is divided into sections that cover the planning process; the risk assessment; the mitigation strategy, including the jurisdiction-specific mitigation action lists; and plan maintenance and adoption. The majority of the Plan update is devoted to the risk assessment and mitigation strategy.

The risk assessment identifies the natural and man-made hazards that pose a threat to the County and includes a profile of each natural hazard, which describes the location and severity of past occurrences, reported damages to public health and property, and the likelihood of future occurrences. It also provides a vulnerability analysis that estimates the potential impacts each natural hazard would have on the health and safety of the residents of Piatt County, as well as the buildings, critical facilities, and infrastructure in the County.

The key component of the mitigation strategy is a list of the projects and activities developed by each participating jurisdiction to reduce the potential loss of life and property damage that results from the natural and man-made hazards identified in the risk assessment. These projects and activities are intended to be implement *before* a hazard event occurs.

What happens next?
Any comments received at today's public forum and during the public comment period will be reviewed and, where applicable, incorporated into the draft Plan update before it is submitted to the Illinois Emergency Management Agency (IEMA) and the Federal Emergency Management Agency (FEMA) for review. Once IEMA and FEMA have reviewed and approved the Plan, it will be presented to the County and each participating jurisdiction for formal adoption. After adopting the Plan update, each participating jurisdiction will be eligible to apply for federal mitigation funds and can begin implementing the mitigation actions identified in the Plan.

APPENDIX G

PIATT COUNTY MULTI-JURISDICTIONAL ALL HAZARDS MITIGATION PLAN

COMMENT SHEET

PLAN COMMENT PERIOD
DECEMBER 13, 2022 THRU DECEMBER 30, 2022

The County's Multi-Jurisdictional All Hazards Mitigation Plan evaluates damage to life and property from natural and man-made hazards that occur in the County. This Plan also identifies projects and activities for the County and each participating jurisdiction that will help reduce these damages. This comment sheet should be used to provide feedback on the draft Plan update.

What comments, concerns or questions do you have regarding the draft Plan update?
(Use additional sheets if necessary.)

_____

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Please Print Your Name, Address, and Phone Number Below:

Name: _____ Phone: _____

Address: _____

_____ Zip Code: _____

Comments will be accepted through December 30, 2022.

Place
Stamp
Here

Rob Bross, Director
Piatt County EMA
1115 N. State Street, Suite #13B
Monticello, IL 61856

Piatt County Multi-Jurisdictional All Hazards Mitigation Plan Comment Survey

The Piatt County Multi-Jurisdictional All Hazards Mitigation Plan evaluates damage to life and property from natural and man-made hazards that occur in the County. This Plan also identifies projects and activities for the County and each participating jurisdiction to help reduce these damages. This comment survey should be used to provide feedback on the draft Plan.

An Asterisk (*) denotes a question that is required for form completion.

* 1. What comments, concerns or questions do you have regarding the draft Plan?

* 2. Name:

3. Address:

4. City/Village/Town:

5. State/Province:

6. Zip Code:

* 7. Email Address:

8. Phone Number:

Comments will be accepted through December 30, 2022.

Done

APPENDIX H

PIATT COUNTY BOARD

Courthouse Room 107 ~ 101 W. Washington Street
Monticello, IL 61856-1681
Phone: 217.762.9487 / Fax: 217.762.7563

To: Champaign County EMA: John Dwyer (jdwyer@co.champaign.il.us)
DeWitt County EMA: Micah Gallardo (mgallardo@dewittcountyil.gov)
Douglas County EMA: Chana Ray (chana.ray@douglascountyil.com)
Macon County EMA: Tammy Schneider (emamail@sheriff-macon-il.us)
McLean County, EMA: Cathy Beck (cathy.beck@mcleancountyil.gov)
Moultrie County, ESDA: Mike Jennings (mike.jennings@moultriecountyil.gov)

From: Rob Bross, EMA Coordinator, Piatt County

Subject: Hazard Mitigation Plan Update

Date: November 28, 2022

The purpose of this memorandum is to inform you that Piatt County is updating its countywide All Hazards Mitigation Plan. Since we share common boundaries, you are invited to review our draft Plan and provide comments during the public comment period, which runs from December 13 through December 30, 2022. Starting December 13, the Plan along with a summary sheet and a comment survey can be viewed on the Piatt County webpage.

A public forum is scheduled for:

Tuesday, December 13, 2022
4 p.m. to 6 p.m.
Monticello Community Building
201 N. State Street, Monticello, IL

If you have any questions, please contact me at 217-762-9482 or r.bross@piatt.gov

American Environmental Corp., an emergency management and environmental consulting firm experienced in preparing these plans, is leading our planning process. If you have specific questions about the Plan, please contact Ken Runkle, a consultant team member, at 217-585-9517 Ext. 8 or krunkle@aecspfld.com

Bostwick, Andrea

From: Rob Bross <r.bross@piatt.gov>
Sent: Tuesday, November 29, 2022 12:37 PM
To: jdwyer@co.champaign.il.us; Micah Gallardo; chana.ray@douglascountyil.com; Tammy Schneider; cathy.beck@mcleancountyil.gov; mike.jennings@moultriecountyil.gov
Cc: Bostwick, Andrea
Subject: Piatt Co AHMP Required Notification of Adjacent Counties Memo
Attachments: Adjacent counties.doc

Please see the attached letter about our Hazard Mitigation Plan.

Thanks,
Rob Bross
Piatt County EMA

APPENDIX I

Table 1
Severe Storms - Thunderstorms with Damaging Winds Reported in Piatt County
1961 - 2021

Date(s)	Start Time	Location(s)	Magnitude Windspeed (knots)	Injuries	Fatalities	Property Damages	Crop Damages	Impacts/Event Description
3/4/1961	4:55 PM	Monticello^	n/a	n/a	n/a	n/a	n/a	
10/18/1963	9:00 PM	Milmine^	n/a	n/a	n/a	n/a	n/a	
7/3/1973	1:30 PM	Monticello^	n/a	n/a	n/a	n/a	n/a	
3/4/1974	5:10 PM	Monticello	n/a	n/a	n/a	n/a	n/a	
5/30/1974	4:00 PM	Hammond^	n/a	n/a	n/a	n/a	n/a	
5/26/1975	1:15 PM	Bement	n/a	n/a	n/a	n/a	n/a	
5/12/1978	6:33 PM	Bement	n/a	n/a	n/a	n/a	n/a	
7/5/1980	3:36 AM	Cisco^	n/a	n/a	n/a	n/a	n/a	
4/13/1981	11:40 PM	Cerro Gordo	52 kts	n/a	n/a	n/a	n/a	
4/2/1982	10:30 PM	La Place	n/a	n/a	n/a	n/a	n/a	
4/2/1982	11:30 PM	De Land	n/a	n/a	n/a	n/a	n/a	
5/25/1984	5:22 PM	Bement^	n/a	n/a	n/a	n/a	n/a	
4/23/1985	6:50 PM	Cisco^	n/a	n/a	n/a	n/a	n/a	
9/8/1989	3:45 PM	Monticello	n/a	n/a	n/a	n/a	n/a	
6/17/1990	6:00 PM	Bement	n/a	n/a	n/a	n/a	n/a	
10/4/1991	7:06 PM	Monticello	n/a	n/a	n/a	n/a	n/a	
7/19/1994	8:50 AM	Cisco	n/a	n/a	n/a	n/a	n/a	Winds blew down several trees and tree limbs
6/20/1995	4:47 PM	Monticello	n/a	n/a	n/a	n/a	n/a	One tree was blown down
1/18/1996	11:20 AM	Cerro Gordo Cerro Gordo^ Milmine^	n/a	n/a	n/a	n/a	n/a	
5/3/1996	9:38 PM	Cerro Gordo	n/a	n/a	n/a	n/a	n/a	
10/29/1996	6:05 PM	Monticello	n/a	n/a	n/a	n/a	n/a	
4/30/1997	3:07 PM	De Land^	n/a	n/a	n/a	n/a	n/a	Winds blew off the doors of a shed and a barn
7/21/1997	2:30 PM	White Heath^	n/a	n/a	n/a	n/a	n/a	Winds blew down a large tree onto some power lines 1 mile northeast of White Heath

^ Thunderstorms with damaging winds verified in the vicinity of this location(s).

Table 1
Severe Storms - Thunderstorms with Damaging Winds Reported in Piatt County
1961 - 2021

Date(s)	Start Time	Location(s)	Magnitude Windspeed (knots)	Injuries	Fatalities	Property Damages	Crop Damages	Impacts/Event Description
5/19/1998	7:10 PM	Bement^ Atwood	n/a	n/a	n/a	$4,000	n/a	Winds blew down numerous power lines, trees, and tree limbs and damaged several storage sheds and barns
6/12/1998	3:23 PM	Cerro Gordo Atwood	n/a	n/a	n/a	n/a	n/a	Winds blew down numerous trees, tree limbs, and power lines
6/29/1998	4:31 PM	Countywide	n/a	n/a	n/a	$300,000	n/a	
11/10/1998	5:50 AM	Cisco Atwood Bement^	n/a	n/a	n/a	n/a	n/a	Several trees and power lines were blown down in Cisco and Atwood
6/1/1999	7:30 PM	Monticello Pierson Station Pierson Station^ Bement^	n/a	n/a	n/a	n/a	n/a	- Numerous trees, tree limbs, and power lines were blown down - Some trees fell onto US Route 36 near Pierson Station
6/23/2000	5:50 PM	Mansfield^	n/a	n/a	n/a	n/a	n/a	Several trees were blown down
8/26/2000	7:51 PM	Monticello Atwood Bement Bement^	n/a	n/a	n/a	$5,000	n/a	- Numerous trees were blown down, as well as, large areas of corn and soybean crops extending from Monticello south to the county line along US 36 - In Bement, a large tree limb fell onto a house breaking a window and tearing down some guttering and some homes suffered siding damage
2/9/2001	9:30 AM	Cerro Gordo	50 kts	n/a	n/a	n/a	n/a	Power lines were blown down
8/18/2001	1:23 PM	De Land^ Galesville^	55 kts	n/a	n/a	n/a	n/a	- Several large trees were blown down - A door on a machine shed was blown in and sporadic crop damage was noted
8/18/2001	2:29 PM	Atwood	50 kts	n/a	n/a	n/a	n/a	Several trees, tree limbs, and power lines were blown down
8/22/2001	7:46 PM	Cisco	50 kts	n/a	n/a	n/a	n/a	A tree limb was blown over onto a power line but no power outage resulted and the power line never broke

^ Thunderstorms with damaging winds verified in the vicinity of this location(s).

Table 1
Severe Storms - Thunderstorms with Damaging Winds Reported in Piatt County
1961 - 2021

Date(s)	Start Time	Location(s)	Magnitude Windspeed (knots)	Injuries	Fatalities	Property Damages	Crop Damages	Impacts/Event Description
8/30/2001	6:00 PM	Bement	50 kts	n/a	n/a	n/a	n/a	Power lines and trees were reported down
6/11/2002	3:00 PM	Bement Bement^	50 kts	n/a	n/a	n/a	n/a	Several trees were blown down north of Bement
5/6/2003	8:25 PM	Hammond Pierson Station	55 kts	n/a	n/a	n/a	n/a	Winds blew down numerous trees and power lines
5/30/2003	8:30 PM	Monticello	60 kts	n/a	n/a	n/a	n/a	Three large trees were blown down
6/29/2003	5:25 PM	Cerro Gordo	52 kts	n/a	n/a	n/a	n/a	- Winds blew down several tree limbs and power lines - A shed was damaged and a power pole was blown over
5/25/2004	12:18 AM	Cisco Monticello	52 kts	n/a	n/a	n/a	n/a	Several trees, power lines and power poles were blown down
5/30/2004	6:45 AM	Mansfield^	50 kts	n/a	n/a	n/a	n/a	Several trees and power lines were blown down
5/30/2004	6:17 PM	Cerro Gordo De Land^ Cisco^	52 kts	n/a	n/a	n/a	n/a	Winds blew down numerous trees, tree limbs and power poles
7/13/2004	2:57 PM	Mansfield^ White Heath^	58 kts	n/a	1	$800,000	n/a	- Numerous trees, tree limbs and power lines were blown down - Several fallen trees landed on homes causing minor to moderate damage - A grain elevator sustained minor damage - A semi was blown over on I-74 near Mansfield with the driver sustaining minor injuries
7/22/2004	1:15 PM	Cisco	52 kts	n/a	n/a	n/a	n/a	
8/9/2004	6:26 PM	Cisco	52 kts	n/a	n/a	n/a	n/a	A tree was blown down onto a house causing minor damage
7/26/2005	5:40 PM	Monticello	50 kts	n/a	n/a	n/a	n/a	Several trees and large branches blown down
8/19/2005	1:20 AM	Cisco^	50 kts	n/a	n/a	n/a	n/a	Several tree limbs and power lines blown down

^ Thunderstorms with damaging winds verified in the vicinity of this location(s).

Table 1
Severe Storms - Thunderstorms with Damaging Winds Reported in Piatt County
1961 - 2021

Date(s)	Start Time	Location(s)	Magnitude Windspeed (knots)	Injuries	Fatalities	Property Damages	Crop Damages	Impacts/Event Description
4/2/2006	5:54 PM	Bement Bement^	55 kts	n/a	n/a	n/a	n/a	- Ten power poles and numerous tree limbs blown down - A Large outbuilding destroyed three miles west of the Village
4/2/2006	5:55 PM	Hammond^	55 kts	n/a	n/a	n/a	n/a	Power lines were blown down
4/14/2006	12:08 AM	Cisco^	52 kts	n/a	n/a	n/a	n/a	Power lines were blown down at Highway 48 and 1700 North
4/16/2006	2:26 PM	Cisco	50 kts	n/a	n/a	n/a	n/a	
5/15/2007	1:15 PM	Monticello White Heath^	52 kts	n/a	n/a	$3,000	n/a	- Numerous large tree limbs were blown down - One limb tore a porch roof off a house
10/18/2007	4:35 PM	Cisco^	52 kts	n/a	n/a	$22,000	n/a	Trees were damaged, a trampoline was blown into a tree in a tree, and a semi truck flipped over
5/2/2008	9:36 AM	Hammond^	50 kts	n/a	n/a	$10,000	n/a	Semi trailer was blown off US Route 36
7/8/2008	4:45 PM	Cerro Gordo Cerro Gordo^	52 kts	n/a	n/a	$15,000	n/a	Trees were blown down near the Macon/Piatt County line
5/13/2009	10:55 PM	Monticello	61 kts	n/a	n/a	$35,000	n/a	Several large trees were blown down and roof damage occurred to 3 homes
6/18/2009	5:10 AM	Mansfield^	61 kts	n/a	n/a	$30,000	n/a	Numerous trees and power lines were blown down
6/18/2009	5:15 AM	White Heath^	61 kts	n/a	n/a	$30,000	n/a	Numerous trees and power lines were blown down
6/18/2009	5:30 AM	Atwood	61 kts	n/a	n/a	n/a	n/a	Numerous trees and power lines were blown down
6/19/2009	3:21 PM	Mansfield^	52 kts	n/a	n/a	$25,000	n/a	Several trees were blown down, causing damage to a home
6/19/2009	3:44 PM	Galesville^	52 kts	n/a	n/a	n/a	n/a	Numerous tree limbs were blown down
6/19/2009	5:20 PM	Cisco^	52 kts	n/a	n/a	$75,000	n/a	- Two machine sheds were destroyed by strong winds - Several trees were blown down
6/19/2009	5:57 PM	Galesville^	52 kts	n/a	n/a	n/a	n/a	Numerous tree limbs were blown down
8/4/2009	8:25 AM	White Heath^	61 kts	n/a	n/a	$8,000	n/a	A 2-foot diameter tree was blown down onto a house 1 mile north of White Heath

^ Thunderstorms with damaging winds verified in the vicinity of this location(s).

Table 1
Severe Storms - Thunderstorms with Damaging Winds Reported in Piatt County
1961 - 2021

Date(s)	Start Time	Location(s)	Magnitude Windspeed (knots)	Injuries	Fatalities	Property Damages	Crop Damages	Impacts/Event Description
8/19/2009	3:20 PM	Monticello	52 kts	n/a	n/a	$35,000	n/a	- Numerous 3-inch diameter tree limbs were blown down - A large tree was blown onto a home on the east side of the City - A nearby barn had its doors ripped off and part of its roof damaged
8/19/2009	3:30 PM	Hammond	52 kts	n/a	n/a	$17,000	n/a	A large tree was blown down onto an apartment building
4/19/2011	6:05 PM	Cerro Gordo	61 kts	n/a	n/a	$80,000	n/a	Strong winds damaged several grain bins and sheds and the roof of a house
4/19/2011	6:25 PM	Mansfield^	61 kts	n/a	n/a	$45,000	n/a	Several grain bins were blown over
5/25/2011	6:40 AM	Cisco^	70 kts	n/a	n/a	$125,000	n/a	Several farm outbuildings were destroyed
5/27/2013	3:00 PM	Monticello	52 kts	n/a	n/a	$2,000	n/a	A large tree was blown down
5/31/2013	8:50 PM	Cisco Cisco^	52 kts	n/a	n/a	$12,000	n/a	Trees were blown down on Route 32 near the Village
5/31/2013	9:00 PM	Monticello	52 kts	n/a	n/a	$1,500	n/a	A cable line was blown down
5/31/2013	9:00 PM	Milmine Milmine^	52 kts	n/a	n/a	$15,000	n/a	Power lines were blown down
5/31/2013	9:15 PM	Bement	52 kts	n/a	n/a	$2,000	n/a	A tree was blown down across a road
11/17/2013	12:22 PM	Mansfield^	61 kts	n/a	n/a	$4,000	n/a	- A large tree was blown over and several small branches were knocked down - One small storage shed was flipped over
6/4/2014	1:12 AM	Monticello	52 kts	n/a	n/a	$20,000	n/a	Several trees were blown down
9/4/2015	5:00 PM	Hammond^	52 kts	n/a	n/a	$25,000	n/a	Numerous 4-inch diameter tree branches were blown down along US Route 36 about a half mile west of the Village
12/23/2015	10:00 AM	Cerro Gordo	61 kts	n/a	n/a	$45,000	n/a	Several trees were blown down and a pole barn was damaged along Route 105

^ Thunderstorms with damaging winds verified in the vicinity of this location(s).

Table 1
Severe Storms - Thunderstorms with Damaging Winds Reported in Piatt County
1961 - 2021

Date(s)	Start Time	Location(s)	Magnitude Windspeed (knots)	Injuries	Fatalities	Property Damages	Crop Damages	Impacts/Event Description
12/23/2015	10:07 AM	Milmine^	61 kts	n/a	n/a	$75,000	n/a	Numerous trees and power lines were blown down and a carport was damaged
4/29/2017	5:15 PM	Atwood	52 kts	n/a	n/a	$15,000	n/a	Numerous large tree limbs were blown down
5/10/2017	7:10 PM	Bement	52 kts	n/a	n/a	$15,000	n/a	Large tree branches were blown down
6/19/2017	6:54 PM	Monticello	52 kts	n/a	n/a	n/a	n/a	A large tree branch was blown down
5/9/2018	6:15 PM	Cisco^	61 kts	n/a	n/a	$10,000	n/a	The roof was blown off a concrete barn
5/9/2018	6:20 PM	Monticello^	52 kts	n/a	n/a	$5,000	n/a	A machine shed door was blown off, knocking down some small trees nearby
5/9/2018	6:25 PM	Monticello	61 kts	n/a	n/a	$10,000	n/a	A cinder block pool house was destroyed
5/9/2018	6:45 PM	La Place	61 kts	n/a	n/a	$30,000	n/a	Numerous trees and power lines were blown down
6/10/2018	1:05 PM	Mansfield Mansfield^	61 kts	n/a	n/a	$15,000	n/a	Numerous trees were blown down
6/15/2019	10:40 PM	Lodge^	52 kts	n/a	n/a	$45,000	n/a	Six power poles were snapped along IL Route 10 just west of Lodge
6/15/2019	10:48 PM	White Heath^	52 kts	n/a	n/a	$15,000	n/a	Several trees were snapped near White Heath
8/20/2019	9:55 AM	Bement	52 kts	n/a	n/a	n/a	n/a	A tree was blown onto a power line
9/29/2019	4:02 PM	De Land	52 kts	n/a	n/a	n/a	n/a	Two large trees were blown down
9/29/2019	4:29 PM	White Heath^	52 kts	n/a	n/a	$20,000	n/a	Trees and power lines were blown down
4/8/2020	4:55 PM	Bement Bement^ Monticello	61 kts	n/a	n/a	$100,000	n/a	- A chimney and fence were blown down at the Bement School - Numerous power lines and trees were blown down near Bement - Several trees were blown down in Monticello
4/8/2020	5:00 PM	Bement^ Monticello^	61 kts	n/a	n/a	$150,000	n/a	Numerous power poles were blown down along IL Route 105 between Bement and Monticello
4/8/2020	5:02 PM	Bement^ Cerro Gordo	61 kts	n/a	n/a	$30,000	n/a	- Several trees and power lines were blown down southwest of the Bement - Winds downed trees and power lines in Cerro Gordo

^ Thunderstorms with damaging winds verified in the vicinity of this location(s).

Table 1
Severe Storms - Thunderstorms with Damaging Winds Reported in Piatt County
1961 - 2021

Date(s)	Start Time	Location(s)	Magnitude Windspeed (knots)	Injuries	Fatalities	Property Damages	Crop Damages	Impacts/Event Description
4/8/2020	5:07 PM	Hammond^	61 kts	n/a	n/a	$30,000	n/a	Winds blew a wall out of a pole barn
7/9/2020	11:06 PM	Mansfield Mansfield^	52 kts	n/a	n/a	$10,000	$60,000	Winds caused crop damage and snapped tree branches just south of the Village
7/9/2020	11:08 PM	Mansfield^	52 kts	n/a	n/a	$50,000	n/a	Power poles and power lines were blown down
7/21/2020	10:01 AM	De Land	52 kts	n/a	n/a	$50,000	n/a	- Multiple trees and tree branches were blown down - One tree smashed the park pavilion
10/24/2021	9:25 PM	Monticello	52 kts	n/a	n/a	n/a	n/a	A tree was blown onto a house
GRAND TOTAL:				**0**	**1**	**$2,465,500**	**$60,000**	

Sources: Piatt County Multi-Jurisdictional All Hazards Mitigation Planning Committee Member responses to Natural Hazard Events Questionnaire.
NOAA, National Environmental Satellite, Data & Information Service, National Centers for Environmental Information, Cooperative Observation Forms.
NOAA, National Environmental Satellite, Data & Information Service, National Centers for Environmental Information, Storm Events Database.

^ Thunderstorms with damaging winds verified in the vicinity of this location(s).

Table 2
Severe Storms - Hail Events Reported in Piatt County
1981 - 2021

Date(s)	Start Time	Location(s)	Magnitude Hail Stone Diameter (inches)	Injuries	Fatalities	Property Damages	Crop Damages	Impacts/Event Description
4/10/1981	3:55 PM	Cisco^	1.75 in.	n/a	n/a	n/a	n/a	
7/2/1985	5:40 PM	Lodge^	1.50 in.	n/a	n/a	n/a	n/a	
6/2/1987	12:10 PM	Cisco^	1.30 in.	n/a	n/a	n/a	n/a	
8/24/1997	6:40 PM	La Place	1.75 in.	n/a	n/a	n/a	n/a	
5/12/1998	9:45 PM	Cisco	1.00 in.	n/a	n/a	n/a	n/a	
4/20/1999	11:42 PM	Cerro Gordo	1.75 in.	n/a	n/a	n/a	n/a	
5/12/2000	6:55 PM	Monticello	1.75 in.	n/a	n/a	n/a	n/a	
8/26/2000	8:10 PM	Bement Pierson Station^ Milmine^	4.00 in.	n/a	n/a	n/a	n/a	Several vehicles in the Milmine area received hail damage
8/26/2000	9:17 PM	Bement	1.00 in.	n/a	n/a	n/a	n/a	
4/19/2002	6:40 PM	Cerro Gordo	1.75 in.	n/a	n/a	n/a	n/a	
4/4/2003	6:17 PM	Mansfield^	1.75 in.	n/a	n/a	n/a	n/a	
5/8/2003	11:05 PM	Cisco^	1.75 in.	n/a	n/a	n/a	n/a	
3/30/2005	5:47 PM	White Heath^	1.00 in.	n/a	n/a	n/a	n/a	
5/13/2005	4:39 PM	Hammond^	1.00 in.	n/a	n/a	n/a	n/a	
5/15/2009	5:50 PM	Monticello	2.75 in.	n/a	n/a	$255,000	n/a	- Large hail damaged siding, gutters, roofs, and windows to numerous homes in the Long Grove subdivision west of Monticello - On the east side of Monticelloseveral cars were damaged
5/15/2009	6:00 PM	Monticello	1.25 in.	n/a	n/a	n/a	n/a	
5/30/2009	7:15 PM	White Heath^	1.00 in.	n/a	n/a	n/a	n/a	
5/21/2014	2:40 PM	Bement	1.50 in.	n/a	n/a	n/a	n/a	
5/21/2014	4:20 PM	White Heath^	2.00 in.	n/a	n/a	n/a	n/a	
4/9/2015	8:08 PM	Monticello	1.00 in.	n/a	n/a	n/a	n/a	

^ Hail event verified in the vicinity of this location(s).

Table 2
Severe Storms - Hail Events Reported in Piatt County
1981 - 2021

Date(s)	Start Time	Location(s)	Magnitude Hail Stone Diameter (inches)	Injuries	Fatalities	Property Damages	Crop Damages	Impacts/Event Description
9/4/2015	5:00 PM	Hammond^	1.00 in.	n/a	n/a	n/a	n/a	
5/11/2016	2:21 PM	Monticello^	2.00 in.	n/a	n/a	n/a	n/a	
5/9/2018	6:10 PM	Cisco^	1.00 in.	n/a	n/a	n/a	$15,000	Hail that destroyed 80 acres of young soybeans about 3 miles north of the Village
5/28/2019	1:15 PM	De Land	2.50 in.	n/a	n/a	n/a	n/a	
GRAND TOTAL:				**0**	**0**	**$255,000**	**$15,000**	

Source: NOAA, National Environmental Satellite, Data & Information Service, National Centers for Environmental Information, Storm Events Database.

^ Hail event verified in the vicinity of this location(s).

Table 3
Severe Storms - Lightning Events Reported in Piatt County
2009 - 2021

Date(s)	Start Time	Location(s)	Injuries	Fatalities	Property Damages	Crop Damages	Impacts/Event Description
5/15/2009	5:50 PM	Monticello	n/a	n/a	$60,000	n/a	Lightning struck a power pole on the east side of the City damaging the electrical systems and appliances in several homes
GRAND TOTAL:			**0**	**0**	**$60,000**	**$0**	

Source: NOAA, National Environmental Satellite, Data & Information Service, National Centers for Environmental Information, Storm Events Database.

Table 4
Severe Storms - Heavy Rain Events Reported in Piatt County
2000 - 2021

Date(s)	Start Time	Magnitude Rainfall (inches)	Observed Location(s)[1]	Injuries	Fatalities	Property Damages	Crop Damages	Impacts/Event Description
06/20/2000 thru 06/21/2000	1:30 PM	2.28 in.	Hammond Monticello	n/a	n/a	n/a	n/a	
07/03/2000 thru 07/05/2000	12:30 PM	3.16 in.	Hammond Monticello	n/a	n/a	n/a	n/a	
08/02/2000 thru 08/03/2000	5:30 PM	1.60 in.	Hammond	n/a	n/a	n/a	n/a	
10/04/2000 thru 10/05/2000	10:30 PM	2.00 in.	Hammond	n/a	n/a	n/a	n/a	
02/24/2001 thru 02/25/2001	9:00 AM	1.98 in.	Hammond Monticello	n/a	n/a	n/a	n/a	
04/10/2001 thru 04/11/2001	7:00 PM	3.05 in.	Hammond	n/a	n/a	n/a	n/a	
06/06/2001 thru 06/07/2001	10:00 PM	1.69 in.	Hammond	n/a	n/a	n/a	n/a	
7/5/2001	n/a	1.92 in.	Monticello	n/a	n/a	n/a	n/a	
7/29/2001	12:00 AM	1.73 in.	Hammond	n/a	n/a	n/a	n/a	
08/30/2001 thru 08/31/2001	9:00 PM	1.60 in.	Hammond	n/a	n/a	n/a	n/a	

[1] Observed Location information was obtained from NWS's COOP Observation Station records as well as other officially-designated sources identified in the Midwestern Regional Climate Center's cli-MATE data system and NOAA's Storm Events Database.

Table 4
Severe Storms - Heavy Rain Events Reported in Piatt County
2000 - 2021

Date(s)	Start Time	Magnitude Rainfall (inches)	Observed Location(s)[1]	Injuries	Fatalities	Property Damages	Crop Damages	Impacts/Event Description
1/31/2002	n/a	1.75 in.	Monticello	n/a	n/a	n/a	n/a	
04/20/2002 thru 04/21/2002	10:30 PM	1.92 in.	Hammond	n/a	n/a	n/a	n/a	
04/27/2002 thru 04/28/2002	9:30 AM	1.68 in.	Monticello Hammond	n/a	n/a	n/a	n/a	
05/06/2002 thru 05/07/2002	11:00 PM	1.57 in.	Hammond	n/a	n/a	n/a	n/a	
05/11/2002 thru 05/13/2002	4:00 AM	4.58 in.	Hammond Monticello	n/a	n/a	n/a	n/a	
5/17/2002	n/a	1.71 in.	Monticello	n/a	n/a	n/a	n/a	
6/13/2002	n/a	1.61 in.	Monticello	n/a	n/a	n/a	n/a	
8/23/2002	n/a	2.37 in.	Monticello	n/a	n/a	n/a	n/a	
5/10/2003	7:30 AM	1.56 in.	Hammond	n/a	n/a	n/a	n/a	
5/20/2003	1:30 AM	1.87 in.	Hammond Monticello	n/a	n/a	n/a	n/a	
6/12/2003	n/a	1.87 in.	Monticello	n/a	n/a	n/a	n/a	
07/08/2003 thru 07/09/2003	7:00 PM	1.47 in.	Hammond	n/a	n/a	n/a	n/a	
07/09/2003 thru 07/10/2003	7:00 PM	1.75 in.	Hammond Monticello	n/a	n/a	n/a	n/a	

[1] Observed Location information was obtained from NWS's COOP Observation Station records as well as other officially-designated sources identified in the Midwestern Regional Climate Center's cli-MATE data system and NOAA's Storm Events Database.

Table 4
Severe Storms - Heavy Rain Events Reported in Piatt County
2000 - 2021

Date(s)	Start Time	Magnitude Rainfall (inches)	Observed Location(s)[1]	Injuries	Fatalities	Property Damages	Crop Damages	Impacts/Event Description
08/30/2003 thru 08/31/2003	n/a	1.65 in.	Monticello	n/a	n/a	n/a	n/a	
8/31/2003	n/a	1.75 in.	Monticello	n/a	n/a	n/a	n/a	
9/1/2003	12:00 AM	3.45 in.	Monticello Hammond	n/a	n/a	n/a	n/a	
11/17/2003 thru 11/18/2003	5:30 PM	3.50 in.	Hammond	n/a	n/a	n/a	n/a	
08/25/2004 thru 08/26/2004	7:00 PM	1.84 in.	Hammond	n/a	n/a	n/a	n/a	
09/24/2005 thru 09/25/2005	7:00 AM	1.79 in.	Hammond	n/a	n/a	n/a	n/a	
10/20/2005 thru 10/21/2005	8:00 AM	1.66 in.	Hammond	n/a	n/a	n/a	n/a	
4/16/2006	3:00 PM	2.19 in.	Hammond	n/a	n/a	n/a	n/a	
10/16/2006 thru 10/17/2006	11:00 AM	2.30 in.	Hammond	n/a	n/a	n/a	n/a	
11/29/2006 thru 12/01/2006	11:00 PM	2.63 in.	Monticello Hammond	n/a	n/a	n/a	n/a	

[1] Observed Location information was obtained from NWS's COOP Observation Station records as well as other officially-designated sources identified in the Midwestern Regional Climate Center's cli-MATE data system and NOAA's Storm Events Database.

Table 4
Severe Storms - Heavy Rain Events Reported in Piatt County
2000 - 2021

Date(s)	Start Time	Magnitude Rainfall (inches)	Observed Location(s)[1]	Injuries	Fatalities	Property Damages	Crop Damages	Impacts/Event Description
01/12/2007 thru 01/13/2007	7:30 AM	1.51 in.	Hammond	n/a	n/a	n/a	n/a	
06/23/2007 thru 06/24/2007	3:30 PM	2.65 in.	Monticello Hammond	n/a	n/a	n/a	n/a	
09/08/2007 thru 09/09/2007	10:00 AM	2.98 in.	Hammond	n/a	n/a	n/a	n/a	
11/22/2007	n/a	1.52 in.	Monticello	n/a	n/a	n/a	n/a	
01/07/2008 thru 01/08/2008	10:30 PM	1.93 in.	Monticello Hammond	n/a	n/a	n/a	n/a	
02/05/2008 thru 02/06/2008	8:30 AM	3.19 in.	Hammond Monticello	n/a	n/a	n/a	n/a	
06/02/2008 thru 06/04/2008	11:00 PM	7.41 in.	Monticello Hammond	n/a	n/a	n/a	n/a	
06/06/2008 thru 06/07/2008	10:30 PM	3.17 in.	Hammond	n/a	n/a	n/a	n/a	
07/06/2008 thru 07/07/2008	10:00 PM	4.58 in.	Hammond Monticello	n/a	n/a	n/a	n/a	

[1] Observed Location information was obtained from NWS's COOP Observation Station records as well as other officially-designated sources identified in the Midwestern Regional Climate Center's cli-MATE data system and NOAA's Storm Events Database.

Table 4
Severe Storms - Heavy Rain Events Reported in Piatt County
2000 - 2021

Date(s)	Start Time	Magnitude Rainfall (inches)	Observed Location(s)[1]	Injuries	Fatalities	Property Damages	Crop Damages	Impacts/Event Description
7/8/2008	5:00 PM	1.70 in.	Monticello Hammond	n/a	n/a	n/a	n/a	
07/21/2008 thru 07/22/2008	5:30 PM	1.65 in.	Hammond	n/a	n/a	n/a	n/a	
9/4/2008	n/a	1.78 in.	Monticello	n/a	n/a	n/a	n/a	
09/05/2008 thru 09/06/2008	7:00 AM	3.12 in.	Monticello Hammond	n/a	n/a	n/a	n/a	
09/13/2008 thru 09/15/2008	7:00 PM	4.62 in.	Monticello Hammond	n/a	n/a	n/a	n/a	
10/23/2008 thru 10/24/2008	3:00 PM	1.50 in.	Hammond Monticello	n/a	n/a	n/a	n/a	
12/27/2008 thru 12/28/2008	7:00 AM	1.85 in.	Hammond Monticello	n/a	n/a	n/a	n/a	
4/28/2009	n/a	1.60 in.	Monticello	n/a	n/a	n/a	n/a	
05/14/2009 thru 05/15/2009	8:00 AM	2.77 in.	Hammond Atwood Monticello	n/a	n/a	n/a	n/a	
5/16/2009	n/a	1.53 in.	Mansfield Monticello	n/a	n/a	n/a	n/a	
6/16/2009	n/a	1.50 in.	Atwood	n/a	n/a	n/a	n/a	
6/18/2009	n/a	1.65 in.	Mansfield	n/a	n/a	n/a	n/a	

[1] Observed Location information was obtained from NWS's COOP Observation Station records as well as other officially-designated sources identified in the Midwestern Regional Climate Center's cli-MATE data system and NOAA's Storm Events Database.

Table 4
Severe Storms - Heavy Rain Events Reported in Piatt County
2000 - 2021

Date(s)	Start Time	Magnitude Rainfall (inches)	Observed Location(s)[1]	Injuries	Fatalities	Property Damages	Crop Damages	Impacts/Event Description
6/20/2009	n/a	1.50 in.	Atwood	n/a	n/a	n/a	n/a	
07/04/2009 thru 07/05/2009	7:00 AM	2.03 in.	Hammond Atwood Monticello	n/a	n/a	n/a	n/a	
08/19/2009 thru 08/20/2009	n/a	1.50 in.	Atwood	n/a	n/a	n/a	n/a	
8/28/2009	n/a	1.83 in.	Mansfield	n/a	n/a	n/a	n/a	
10/9/2009	n/a	2.21 in.	Hammond Atwood Monticello Mansfield	n/a	n/a	n/a	n/a	
10/23/2009	n/a	2.34 in.	Monticello Mansfield Atwood Hammond	n/a	n/a	n/a	n/a	
11/16/2009 thru 11/17/2009	n/a	3.84 in.	Hammond Atwood Monticello	n/a	n/a	n/a	n/a	
12/25/2009	n/a	1.70 in.	Atwood Hammond	n/a	n/a	n/a	n/a	
5/27/2010	n/a	2.00 in.	Atwood	n/a	n/a	n/a	n/a	
6/9/2010	n/a	1.92 in.	Monticello	n/a	n/a	n/a	n/a	
6/13/2010	n/a	1.65 in.	Monticello	n/a	n/a	n/a	n/a	
6/16/2010	n/a	1.53 in.	Mansfield	n/a	n/a	n/a	n/a	
6/19/2010	n/a	1.89 in.	Mansfield	n/a	n/a	n/a	n/a	

[1] Observed Location information was obtained from NWS's COOP Observation Station records as well as other officially-designated sources identified in the Midwestern Regional Climate Center's cli-MATE data system and NOAA's Storm Events Database.

Table 4
Severe Storms - Heavy Rain Events Reported in Piatt County
2000 - 2021

Date(s)	Start Time	Magnitude Rainfall (inches)	Observed Location(s)[1]	Injuries	Fatalities	Property Damages	Crop Damages	Impacts/Event Description
7/20/2010	n/a	in.	Hammond Atwood	n/a	n/a	n/a	n/a	
7/22/2010	n/a	1.68 in.	Monticello	n/a	n/a	n/a	n/a	
09/01/2010 thru 09/02/2010	n/a	1.98 in.	Mansfield Atwood	n/a	n/a	n/a	n/a	
09/02/2010 thru 09/03/2010	7:00 PM	1.77 in.	Atwood Hammond	n/a	n/a	n/a	n/a	
11/24/2010 thru 11/25/2010	8:00 AM	2.05 in.	Atwood Hammond	n/a	n/a	n/a	n/a	
4/26/2011	n/a	1.55 in.	Atwood	n/a	n/a	n/a	n/a	
5/26/2011	n/a	2.30 in.	Monticello Mansfield Atwood	n/a	n/a	n/a	n/a	
6/27/2011	n/a	2.47 in.	Atwood	n/a	n/a	n/a	n/a	
8/17/2012	n/a	1.54 in.	Mansfield	n/a	n/a	n/a	n/a	
8/27/2012	n/a	1.98 in.	Mansfield	n/a	n/a	n/a	n/a	
09/01/2012 thru 09/02/2012	n/a	3.25 in.	Monticello Mansfield	n/a	n/a	n/a	n/a	
10/14/2012	n/a	1.71 in.	Mansfield	n/a	n/a	n/a	n/a	
4/11/2013	n/a	3.14 in.	Mansfield Atwood Monticello	n/a	n/a	n/a	n/a	

[1] Observed Location information was obtained from NWS's COOP Observation Station records as well as other officially-designated sources identified in the Midwestern Regional Climate Center's cli-MATE data system and NOAA's Storm Events Database.

Table 4
Severe Storms - Heavy Rain Events Reported in Piatt County
2000 - 2021

Date(s)	Start Time	Magnitude Rainfall (inches)	Observed Location(s)[1]	Injuries	Fatalities	Property Damages	Crop Damages	Impacts/Event Description
4/19/2013	n/a	2.55 in.	Mansfield Monticello Atwood	n/a	n/a	n/a	n/a	
5/3/2013	n/a	2.84 in.	Atwood	n/a	n/a	n/a	n/a	
6/19/2013	n/a	2.17 in.	Atwood	n/a	n/a	n/a	n/a	
6/26/2013	n/a	4.40 in.	Mansfield Atwood	n/a	n/a	n/a	n/a	
7/11/2013	n/a	1.64 in.	Atwood	n/a	n/a	n/a	n/a	
7/22/2013	n/a	1.59 in.	Atwood	n/a	n/a	n/a	n/a	
10/31/2013	n/a	1.64 in.	Atwood	n/a	n/a	n/a	n/a	
6/4/2014	n/a	1.87 in.	Monticello	n/a	n/a	n/a	n/a	
6/24/2014	n/a	2.72 in.	Atwood Monticello	n/a	n/a	n/a	n/a	
7/1/2014	n/a	2.94 in.	Monticello Mansfield	n/a	n/a	n/a	n/a	
07/12/2014 thru 07/13/2014	n/a	4.26 in.	Monticello Mansfield	n/a	n/a	n/a	n/a	
7/27/2014	n/a	1.57 in.	Mansfield	n/a	n/a	n/a	n/a	
9/11/2014	n/a	2.91 in.	Mansfield	n/a	n/a	n/a	n/a	
5/31/2015	n/a	1.94 in.	Atwood	n/a	n/a	n/a	n/a	
6/13/2015	n/a	2.43 in.	Monticello	n/a	n/a	n/a	n/a	
6/25/2015	n/a	1.82 in.	Mansfield	n/a	n/a	n/a	n/a	
7/9/2015	n/a	2.30 in.	Monticello Mansfield	n/a	n/a	n/a	n/a	
9/19/2015	n/a	1.86 in.	Mansfield	n/a	n/a	n/a	n/a	

[1] Observed Location information was obtained from NWS's COOP Observation Station records as well as other officially-designated sources identified in the Midwestern Regional Climate Center's cli-MATE data system and NOAA's Storm Events Database.

Table 4
Severe Storms - Heavy Rain Events Reported in Piatt County
2000 - 2021

Date(s)	Start Time	Magnitude Rainfall (inches)	Observed Location(s)[1]	Injuries	Fatalities	Property Damages	Crop Damages	Impacts/Event Description
12/27/2015	n/a	2.72 in.	Monticello Mansfield	n/a	n/a	n/a	n/a	
12/29/2015	n/a	1.68 in.	Mansfield Monticello	n/a	n/a	n/a	n/a	
6/27/2016	n/a	1.85 in.	Atwood	n/a	n/a	n/a	n/a	
7/25/2016	n/a	2.79 in.	Mansfield Monticello Atwood	n/a	n/a	n/a	n/a	
7/29/2016	n/a	1.86 in.	Monticello	n/a	n/a	n/a	n/a	
8/13/2016	n/a	2.31 in.	Monticello Mansfield	n/a	n/a	n/a	n/a	
8/16/2016	n/a	1.94 in.	Monticello Mansfield Atwood	n/a	n/a	n/a	n/a	
4/30/2017	n/a	2.35 in.	Monticello Mansfield	n/a	n/a	n/a	n/a	
5/4/2017	n/a	1.52 in.	Atwood	n/a	n/a	n/a	n/a	
7/12/2017	n/a	2.55 in.	Atwood Monticello	n/a	n/a	n/a	n/a	
2/21/2018	n/a	2.38 in.	Monticello Mansfield	n/a	n/a	n/a	n/a	
6/1/2018	n/a	2.18 in.	Mansfield	n/a	n/a	n/a	n/a	
6/22/2018		1.78 in.	Atwood	n/a	n/a	n/a	n/a	
7/30/2018		1.75 in.	Monticello	n/a	n/a	n/a	n/a	

[1] Observed Location information was obtained from NWS's COOP Observation Station records as well as other officially-designated sources identified in the Midwestern Regional Climate Center's cli-MATE data system and NOAA's Storm Events Database.

Table 4
Severe Storms - Heavy Rain Events Reported in Piatt County
2000 - 2021

Date(s)	Start Time	Magnitude Rainfall (inches)	Observed Location(s)[1]	Injuries	Fatalities	Property Damages	Crop Damages	Impacts/Event Description
9/8/2018	n/a	3.25 in.	Atwood Monticello Mansfield	n/a	n/a	n/a	n/a	
10/5/2018	n/a	2.14 in.	Mansfield	n/a	n/a	n/a	n/a	
5/9/2019		1.57 in.	Atwood	n/a	n/a	n/a	n/a	
6/16/2019		1.66 in.	Atwood	n/a	n/a	n/a	n/a	
6/20/2019		1.73 in.	Atwood	n/a	n/a	n/a	n/a	
08/12/2019 thru 08/13/2019	n/a	1.68 in.	Monticello Atwood	n/a	n/a	n/a	n/a	
9/1/2019	n/a	1.52 in.	Monticello	n/a	n/a	n/a	n/a	
9/29/2019	n/a	1.84 in.	Monticello Mansfield	n/a	n/a	n/a	n/a	
10/27/2019	n/a	2.64 in.	Atwood Mansfield Monticello	n/a	n/a	n/a	n/a	
1/11/2020	n/a	1.94 in.	Monticello Mansfield	n/a	n/a	n/a	n/a	
4/29/2020	n/a	1.90 in.	Monticello	n/a	n/a	n/a	n/a	
5/17/2020	n/a	1.66 in.	Atwood	n/a	n/a	n/a	n/a	
6/28/2020	n/a	1.58 in.	Atwood Monticello	n/a	n/a	n/a	n/a	
7/22/2020	n/a	2.03 in.	Monticello	n/a	n/a	n/a	n/a	
3/18/2021	n/a	1.75 in.	Monticello	n/a	n/a	n/a	n/a	
4/29/2021	n/a	1.90 in.	Mansfield	n/a	n/a	n/a	n/a	

[1] Observed Location information was obtained from NWS's COOP Observation Station records as well as other officially-designated sources identified in the Midwestern Regional Climate Center's cli-MATE data system and NOAA's Storm Events Database.

Table 4
Severe Storms - Heavy Rain Events Reported in Piatt County
2000 - 2021

Date(s)	Start Time	Magnitude Rainfall (inches)	Observed Location(s)[1]	Injuries	Fatalities	Property Damages	Crop Damages	Impacts/Event Description
06/25/2021 thru 06/26/2021	n/a	3.15 in.	Monticello Atwood Mansfield	n/a	n/a	n/a	n/a	
7/25/2021	n/a	2.10 in.	Atwood	n/a	n/a	n/a	n/a	
8/13/2021	n/a	2.23 in.	Atwood Mansfield	n/a	n/a	n/a	n/a	
8/27/2021	n/a	4.11 in.	Atwood	n/a	n/a	n/a	n/a	
9/8/2021	n/a	1.52 in.	Atwood	n/a	n/a	n/a	n/a	
10/25/2021	n/a	2.68 in.	Mansfield Atwood Monticello	n/a	n/a	n/a	n/a	
GRAND TOTAL:				**0**	**0**	**$ -**	**$ -**	

Sources: Midwestern Regional Climate Center, cli-MATE.
NOAA, National Environmental Satellite, Data & Information Service, National Centers for Environmental Information, Cooperative Observation Forms.
NOAA, National Environmental Satellite, Data & Information Service, National Centers for Environmental Information, Storm Events Database.

[1] Observed Location information was obtained from NWS's COOP Observation Station records as well as other officially-designated sources identified in the Midwestern Regional Climate Center's cli-MATE data system and NOAA's Storm Events Database.

Table 5
General Flood Events Reported in Piatt County
1990 - 2021

Date(s)	Start Time	Water Body	Location(s)	Magnitude Flood Crest Sangamon River Monticello[1]	Impacts[2]			Injuries	Fatalities	Property Damages	Crop Damages	Impacts/ Event Description
					Home	Business	Infra-structure					
05/16/1990	n/a	Sangamon River	central portion of county	17.09 ft. 05/16/1990				n/a	n/a	n/a	n/a	
12/31/1990	n/a	Sangamon River	central portion of county	17.71 ft. 12/31/1990 8th highest crest on record				n/a	n/a	n/a	n/a	
07/11/1992	n/a	Sangamon River	central portion of county	13.01 ft. 07/11/1992				n/a	n/a	n/a	n/a	
01/06/1993	n/a	Sangamon River	central portion of county	15.85 ft. 01/06/1993				n/a	n/a	n/a	n/a	
04/12/1994 thru 04/21/1994	12:00 PM	Sangamon River	central portion of county	19.06 ft. 04/13/1994 Flood of Record	X			n/a	n/a	n/a	n/a	
05/12/1996	n/a	Sangamon River	central portion of county	15.56 ft. 05/12/1996				n/a	n/a	n/a	n/a	
05/28/1996	n/a	Sangamon River	central portion of county	13.53 ft. 05/28/1996				n/a	n/a	n/a	n/a	
02/24/1997	n/a	Sangamon River	central portion of county	13.47 ft. 02/24/1997				n/a	n/a	n/a	n/a	
03/01/1997	n/a	Sangamon River	central portion of county	14.42 ft. 03/01/1997				n/a	n/a	n/a	n/a	

[1] Flood stage at gauge location is 13.0 feet, moderate flood stage is 17.0 feet and major flood stage is 20.0 feet.

[2] An "X" in the columns of Home, Business and Infrastructure indicates impacts occurred to those structure/infrastructure types during a general flood event. A detailed description of the type and magnitude of the impacts are included in the Impacts/Event Description column if available.

Table 5
General Flood Events Reported in Piatt County
1990 - 2021

Date(s)	Start Time	Water Body	Location(s)	Magnitude Flood Crest Sangamon River Monticello[1]	Impacts[2]			Injuries	Fatalities	Property Damages	Crop Damages	Impacts/ Event Description
					Home	Business	Infra-structure					
03/21/1998	n/a	Sangamon River	central portion of county	14.94 ft. 03/21/1998				n/a	n/a	n/a	n/a	
03/29/1998	n/a	Sangamon River	central portion of county	13.13 ft. 03/29/1998				n/a	n/a	n/a	n/a	
05/04/1998 thru 05/10/1998	n/a	Sangamon River	central portion of county	14.37 ft. 05/10/1998				n/a	n/a	n/a	n/a	
06/15/1998 thru 06/19/1998	n/a	Sangamon River	central portion of county	15.56 ft. 06/19/1998				n/a	n/a	n/a	n/a	
01/25/1999	n/a	Sangamon River	central portion of county	13.22 ft. 01/25/1999				n/a	n/a	n/a	n/a	
04/19/1999	n/a	Sangamon River	central portion of county	13.73 ft. 04/19/1999				n/a	n/a	n/a	n/a	
02/27/2001	n/a	Sangamon River	central portion of county	15.38 ft. 02/27/2001				n/a	n/a	n/a	n/a	
05/14/2002	n/a	Sangamon River	countywide	15.77 ft. 05/14/2002				n/a	n/a	n/a	n/a	***This event was part of a federally-declared disaster (Declaration #1416)***
07/13/2003	n/a	Sangamon River	central portion of county	13.99 ft. 07/13/2003				n/a	n/a	n/a	n/a	

[1] Flood stage at gauge location is 13.0 feet, moderate flood stage is 17.0 feet and major flood stage is 20.0 feet.

[2] An "X" in the columns of Home, Business and Infrastructure indicates impacts occurred to those structure/infrastructure types during a general flood event. A detailed description of the type and magnitude of the impacts are included in the Impacts/Event Description column if available.

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1990 - 2021

Date(s)	Start Time	Water Body	Location(s)	Magnitude Flood Crest Sangamon River Monticello[1]	Impacts[2]			Injuries	Fatalities	Property Damages	Crop Damages	Impacts/ Event Description
					Home	Business	Infra-structure					
11/22/2003	n/a	Sangamon River	central portion of county	13.37 ft. 11/22/2003				n/a	n/a	n/a	n/a	
03/27/2004 thru 04/03/2004	n/a	Sangamon River	central portion of county	14.10 ft. 04/01/2004				n/a	n/a	n/a	n/a	
06/03/2004 thru 06/05/2004	n/a	Sangamon River	central portion of county	13.80 ft. 06/04/2004				n/a	n/a	n/a	n/a	
06/12/2004 thru 06/16/2004	n/a	Sangamon River	central portion of county	14.00 ft. 06/15/2004				n/a	n/a	n/a	n/a	
11/28/2004 thru 12/04/2004	n/a	Sangamon River	central portion of county	14.12 ft. 12/01/2004				n/a	n/a	n/a	n/a	
12/09/2004 thru 12/12/2004	n/a	Sangamon River	central portion of county	14.30 ft. 12/10/2004				n/a	n/a	n/a	n/a	

[1] Flood stage at gauge location is 13.0 feet, moderate flood stage is 17.0 feet and major flood stage is 20.0 feet.

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					Home	Business	Infra-structure					
01/07/2005 thru 01/09/2005	n/a	Sangamon River	central portion of county	14.94 ft. 01/07/2005 7th highest crest on record				n/a	n/a	n/a	n/a	
01/13/2005 thru 01/18/2005	n/a	Sangamon River	central portion of county	17.77 ft. 01/15/2005				n/a	n/a	n/a	n/a	
02/15/2005 thru 02/17/2005	n/a	Sangamon River	central portion of county	13.10 ft. 02/16/2005				n/a	n/a	n/a	n/a	
07/27/2006 thru 07/28/2006	n/a	Sangamon River	central portion of county	13.36 ft. 07/27/2006				n/a	n/a	n/a	n/a	
12/04/2006 thru 12/05/2006	n/a	Sangamon River	central portion of county	13.13 ft. 12/05/2006				n/a	n/a	n/a	n/a	

[1] Flood stage at gauge location is 13.0 feet, moderate flood stage is 17.0 feet and major flood stage is 20.0 feet.

[2] An "X" in the columns of Home, Business and Infrastructure indicates impacts occurred to those structure/infrastructure types during a general flood event. A detailed description of the type and magnitude of the impacts are included in the Impacts/Event Description column if available.

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					Home	Business	Infra-structure					
12/23/2006 thru 12/27/2006	n/a	Sangamon River	central portion of county	14.06 ft. 12/25/2006				n/a	n/a	n/a	n/a	
01/15/2007 thru 01/19/2007	n/a	Sangamon River	central portion of county	13.74 ft. 01/16/2007				n/a	n/a	n/a	n/a	
02/26/2007	n/a	Sangamon River	central portion of county	13.20 ft. 02/26/2007				n/a	n/a	n/a	n/a	
03/01/2007 thru 03/02/2007	n/a	Sangamon River	central portion of county	13.51 ft. 03/02/2007				n/a	n/a	n/a	n/a	
01/09/2008 thru 01/14/2008	n/a	Sangamon River	central portion of county	17.25 ft. 01/10/2008				n/a	n/a	n/a	n/a	
02/05/2008 thru 02/11/2008	n/a	Sangamon River	central portion of county	17.88 ft. 02/06/2008 6th highest crest on record				n/a	n/a	n/a	n/a	

[1] Flood stage at gauge location is 13.0 feet, moderate flood stage is 17.0 feet and major flood stage is 20.0 feet.

[2] An "X" in the columns of Home, Business and Infrastructure indicates impacts occurred to those structure/infrastructure types during a general flood event. A detailed description of the type and magnitude of the impacts are included in the Impacts/Event Description column if available.

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1990 - 2021

Date(s)	Start Time	Water Body	Location(s)	Magnitude Flood Crest Sangamon River Monticello[1]	Impacts[2]			Injuries	Fatalities	Property Damages	Crop Damages	Impacts/ Event Description
					Home	Business	Infra-structure					
06/03/2008 thru 06/12/2008	n/a	Sangamon River	central portion of county	18.79 ft. 06/04/2008 2nd highest crest on record				n/a	n/a	n/a	n/a	
07/09/2008 thru 07/10/2008	n/a	Sangamon River	central portion of county	13.63 ft. 07/09/2008				n/a	n/a	n/a	n/a	
07/13/2008 thru 07/14/2008	n/a	Sangamon River	central portion of county	14.32 ft. 07/13/2008				n/a	n/a	n/a	n/a	
09/15/2008 thru 09/20/2008	n/a	Sangamon River	central portion of county	15.81 ft. 09/17/2008				n/a	n/a	n/a	n/a	
12/28/2008 thru 01/02/2009	n/a	Sangamon River	central portion of county	15.39 ft. 12/30/2008				n/a	n/a	n/a	n/a	

[1] Flood stage at gauge location is 13.0 feet, moderate flood stage is 17.0 feet and major flood stage is 20.0 feet.

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					Home	Business	Infra-structure					
03/12/2009 thru 03/15/2009	n/a	Sangamon River	central portion of county	14.06 ft. 03/13/2009				n/a	n/a	n/a	n/a	
05/01/2009 thru 05/04/2009	n/a	Sangamon River	central portion of county	13.21 ft. 05/04/2009				n/a	n/a	n/a	n/a	
05/14/2009 thru 05/21/2009	n/a	Sangamon River	central portion of county	15.50 ft. 05/16/2009				n/a	n/a	n/a	n/a	
10/24/2009 thru 10/29/2009	n/a	Sangamon River	central portion of county	13.89 ft. 10/27/2009				n/a	n/a	n/a	n/a	
10/31/2009 thru 11/05/2009	n/a	Sangamon River	central portion of county	15.30 ft. 11/02/2009				n/a	n/a	n/a	n/a	
11/18/2009	n/a	Sangamon River	central portion of county	13.63 ft. 11/18/2009				n/a	n/a	n/a	n/a	

[1] Flood stage at gauge location is 13.0 feet, moderate flood stage is 17.0 feet and major flood stage is 20.0 feet.

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Date(s)	Start Time	Water Body	Location(s)	Magnitude Flood Crest Sangamon River Monticello[1]	Impacts[2]			Injuries	Fatalities	Property Damages	Crop Damages	Impacts/ Event Description
					Home	Business	Infra-structure					
12/25/2009 thru 12/30/2009	n/a	Sangamon River	central portion of county	14.34 ft. 12/27/2009				n/a	n/a	n/a	n/a	
01/25/2010 thru 01/28/2010	n/a	Sangamon River	central portion of county	13.45 ft. 01/26/2010				n/a	n/a	n/a	n/a	
06/15/2010 thru 06/23/2010	n/a	Sangamon River	central portion of county	15.74 ft. 06/20/2010				n/a	n/a	n/a	n/a	
04/01/2011 thru 05/01/2011	n/a	Sangamon River	central portion of county	14.58 ft. 04/28/2011				n/a	n/a	n/a	n/a	
05/27/2011 thru 06/01/2011	n/a	Sangamon River	central portion of county	15.18 ft. 05/29/2011				n/a	n/a	n/a	n/a	
04/12/2013 thru 04/15/2013	n/a	Sangamon River	central portion of county	13.23 ft. 04/13/2013				n/a	n/a	n/a	n/a	

[1] Flood stage at gauge location is 13.0 feet, moderate flood stage is 17.0 feet and major flood stage is 20.0 feet.

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Date(s)	Start Time	Water Body	Location(s)	Magnitude Flood Crest Sangamon River Monticello[1]	Impacts[2]			Injuries	Fatalities	Property Damages	Crop Damages	Impacts/ Event Description
					Home	Business	Infra-structure					
04/18/2013 thru 04/24/2013	n/a	Sangamon River	central portion of county	16.49 ft. 04/19/2013				n/a	n/a	n/a	n/a	
06/03/2013 thru 06/04/2013	n/a	Sangamon River	central portion of county	13.12 ft. 06/03/2013				n/a	n/a	n/a	n/a	
06/26/2013 thru 06/29/2013	n/a	Sangamon River	central portion of county	16.38 ft. 06/26/2013				n/a	n/a	n/a	n/a	
02/21/2014 thru 02/16/2014	n/a	Sangamon River	central portion of county	14.40 ft. 02/24/2014				n/a	n/a	n/a	n/a	
07/03/2014 thru 07/05/2014	n/a	Sangamon River	central portion of county	13.46 ft. 07/04/2014				n/a	n/a	n/a	n/a	
07/13/2014 thru 07/19/2014	n/a	Sangamon River	central & northern portions of county	16.72 ft. 07/15/2014	X		X	n/a	n/a	n/a	n/a	many roads were closed due to flooding

[1] Flood stage at gauge location is 13.0 feet, moderate flood stage is 17.0 feet and major flood stage is 20.0 feet.

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					Home	Business	Infra-structure					
06/10/2015 thru 06/21/2015	n/a	Sangamon River	central portion of county	14.81 ft. 06/11/2015				n/a	n/a	n/a	n/a	
06/27/2015 thru 07/01/2015	n/a	Sangamon River	central portion of county	14.43 ft. 06/28/2015				n/a	n/a	n/a	n/a	
07/10/2015 thru 07/15/2015	n/a	Sangamon River	central portion of county	14.80 ft. 07/12/2015				n/a	n/a	n/a	n/a	
12/27/2015 thru 01/03/2016	n/a	Sangamon River	central portion of county	18.56 ft. 12/29/2015 3rd highest crest on record				n/a	n/a	n/a	n/a	
05/31/2016 thru 05/15/2016	n/a	Sangamon River	central portion of county	13.50 ft. 05/14/2016				n/a	n/a	n/a	n/a	

[1] Flood stage at gauge location is 13.0 feet, moderate flood stage is 17.0 feet and major flood stage is 20.0 feet.

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					Home	Business	Infra-structure					
01/22/2017 thru 01/24/2017	n/a	Sangamon River	central portion of county	13.34 ft. 01/23/2017				n/a	n/a	n/a	n/a	
04/09/2017	n/a	Sangamon River	central portion of county	13.24 ft. 04/09/2017				n/a	n/a	n/a	n/a	
05/01/2017 thru 05/08/2017	n/a	Sangamon River	central & southern portions of county	14.36 ft. 05/05/2017			X	n/a	n/a	n/a	n/a	most roads were impassable for nearly 24 hours
02/22/2018 thru 02/27/2018	n/a	Sangamon River	central portion of county	16.49 ft. 02/23/2018				n/a	n/a	n/a	n/a	
03/29/2018 thru 03/31/2018	n/a	Sangamon River	central portion of county	13.40 ft. 03/30/2018				n/a	n/a	n/a	n/a	
06/13/2018 thru 06/14/2018	n/a	Sangamon River	central portion of county	13.32 ft. 06/13/2018				n/a	n/a	n/a	n/a	
06/24/2018	n/a	Sangamon River	central portion of county	13.21 ft. 06/24/2018				n/a	n/a	n/a	n/a	

[1] Flood stage at gauge location is 13.0 feet, moderate flood stage is 17.0 feet and major flood stage is 20.0 feet.

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					Home	Business	Infra-structure					
01/01/2019 thru 01/03/2019	n/a	Sangamon River	central portion of county	13.85 ft. 01/02/2019				n/a	n/a	n/a	n/a	
02/07/2019 thru 02/09/2019	n/a	Sangamon River	central portion of county	13.89 ft. 02/08/2019				n/a	n/a	n/a	n/a	
03/31/2019 thru 04/03/2019	n/a	Sangamon River	central portion of county	14.06 ft. 04/02/2019				n/a	n/a	n/a	n/a	
05/02/2019 thru 05/07/2019	n/a	Sangamon River	central portion of county	15.99 ft. 05/03/2019				n/a	n/a	n/a	n/a	
01/12/2020 thru 01/16/2020	n/a	Sangamon River	central portion of county	13.67 ft. 01/15/2020				n/a	n/a	n/a	n/a	
03/21/2020 thru 03/23/2020	n/a	Sangamon River	central portion of county	13.30 ft. 03/22/2020				n/a	n/a	n/a	n/a	

[1] Flood stage at gauge location is 13.0 feet, moderate flood stage is 17.0 feet and major flood stage is 20.0 feet.

[2] An "X" in the columns of Home, Business and Infrastructure indicates impacts occurred to those structure/infrastructure types during a general flood event. A detailed description of the type and magnitude of the impacts are included in the Impacts/Event Description column if available.

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					Home	Business	Infra-structure					
04/29/2020 thru 05/04/2020	n/a	Sangamon River	central portion of county	13.84 ft. 04/30/2020				n/a	n/a	n/a	n/a	
05/18/2020 thru 05/23/2020	n/a	Sangamon River	central portion of county	15.28 ft. 05/20/2020				n/a	n/a	n/a	n/a	
06/06/2020 thru 06/08/2020	n/a	Sangamon River	central portion of county	13.93 ft. 06/07/2020				n/a	n/a	n/a	n/a	
06/27/2021 thru 07/04/2021	n/a	Sangamon River	central portion of county	15.77 ft. 06/30/2021				n/a	n/a	n/a	n/a	
07/21/2021	n/a	Sangamon River	central portion of county	13.10 ft. 02/21/2021				n/a	n/a	n/a	n/a	
08/15/2021 thru 08/18/2021	n/a	Sangamon River	central portion of county	16.10 ft. 08/15/2021				n/a	n/a	n/a	n/a	

[1] Flood stage at gauge location is 13.0 feet, moderate flood stage is 17.0 feet and major flood stage is 20.0 feet.

[2] An "X" in the columns of Home, Business and Infrastructure indicates impacts occurred to those structure/infrastructure types during a general flood event. A detailed description of the type and magnitude of the impacts are included in the Impacts/Event Description column if available.

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Date(s)	Start Time	Water Body	Location(s)	Magnitude Flood Crest Sangamon River Monticello[1]	Impacts[2]			Injuries	Fatalities	Property Damages	Crop Damages	Impacts/ Event Description
					Home	Business	Infra-structure					
10/26/2021 thru 11/01/2021	n/a	Sangamon River	central portion of county	16.51 ft. 10/27/2021				n/a	n/a	n/a	n/a	
GRAND TOTAL:								**0**	**0**	**$ -**	**$ -**	

Sources: NOAA, National Environmental Satellite, Data & Information Service, National Centers for Environmental Information, Storm Data.
NOAA, National Environmental Satellite, Data & Information Service, National Centers for Environmental Information, Storm Events Database.
NOAA, National Weather Service, River Observations, North Central River Forecast Center, Sangamon River at Monticello.
United States Army Corps of Engineers, RiverGages.com, Data Mining.

[1] Flood stage at gauge location is 13.0 feet, moderate flood stage is 17.0 feet and major flood stage is 20.0 feet.

[2] An "X" in the columns of Home, Business and Infrastructure indicates impacts occurred to those structure/infrastructure types during a general flood event. A detailed description of the type and magnitude of the impacts are included in the Impacts/Event Description column if available.

Table 6
Flash Flood Events Reported in Piatt County
1990 - 2021

Date(s)	Start Time	Location(s)	Impacts[1]			Injuries	Fatalities	Property Damages	Crop Damages	Impacts/ Event Description
			Home	Business	Infra-structure					
12/29/1990	n/a	Countywide				n/a	n/a	n/a	n/a	
04/11/1994 thru 04/12/1994	5:00 PM	Countywide	X		X	n/a	n/a	n/a	n/a	***This event was part of a federally-declared disaster (Declaration #1025)*** Numerous homes were damaged by flash flooding and many roads were closed due to flooding
05/08/1996	11:30 AM	southern portion of county	X		X	n/a	n/a	$10,000	n/a	Ten homes in La Place sustained some damage from the flood waters and IL Rt. 32 was flooded for a couple of hours. In Atwood, the Grade School's basement was flooded and four homes were partially submerged. In Bement, two homes sustained minor flood damage.
08/17/1997	n/a	Countywide				n/a	n/a	n/a	n/a	
08/13/1999	n/a	Countywide				n/a	n/a	n/a	n/a	
04/19/2002 thru 04/20/2002	n/a	east-central portion of county				n/a	n/a	n/a	n/a	
05/07/2002	n/a	central & northern portions of county				n/a	n/a	n/a	n/a	
05/12/2002	9:30 AM	southern portion of county	X		X	n/a	n/a	n/a	n/a	***This event was part of a federally-declared disaster (Declaration #1416)*** Numerous roads were under water due to between 2 and 4 inches of rain, including Illinois Route 105 between Bement and Monticello. Numerous basements in the Cerro Gordo and Bement areas were flooded.

^ Flash flood event verified in the vicinity of this location(s).

[1] An "X" in the columns of Home, Business and Infrastructure indicates impacts occurred to those structure/infrastructure types during a general flood event. A detailed description of the type and magnitude of the impacts are included in the Impacts/Event Description column if available.

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Flash Flood Events Reported in Piatt County
1990 - 2021

Date(s)	Start Time	Location(s)	Impacts[1]			Injuries	Fatalities	Property Damages	Crop Damages	Impacts/ Event Description
			Home	Business	Infra-structure					
07/22/2002	n/a	northern portion of county				n/a	n/a	n/a	n/a	
08/22/2002 thru 08/23/2002	8:30 PM	northern portion of county				n/a	n/a	n/a	n/a	Between 2 and 5 inches of rain fell in a short amount of time. Numerous roads were flooded. No structures were affected.
06/11/2003	7:52 PM	Countywide			X	n/a	n/a	n/a	n/a	Very heavy rain fell in a short amount of time countywide. Several rural roads were flooded and a couple were washed out.
07/09/2003 thru 07/10/2003	11:30 PM	Countywide			X	n/a	n/a	n/a	n/a	Very heavy rains fell for several hours over Piatt County. Many streets and roads were flooded.
07/21/2003	n/a	Countywide				n/a	n/a	n/a	n/a	
05/13/2004 thru 05/14/2004	n/a	Countywide				n/a	n/a	n/a	n/a	
06/15/2004	n/a	Countywide				n/a	n/a	n/a	n/a	
08/25/2004 thru 08/26/2004	n/a	Countywide				n/a	n/a	n/a	n/a	

^ Flash flood event verified in the vicinity of this location(s).

[1] An "X" in the columns of Home, Business and Infrastructure indicates impacts occurred to those structure/infrastructure types during a general flood event. A detailed description of the type and magnitude of the impacts are included in the Impacts/Event Description column if available.

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1990 - 2021

Date(s)	Start Time	Location(s)	Impacts[1]			Injuries	Fatalities	Property Damages	Crop Damages	Impacts/ Event Description
			Home	Business	Infra-structure					
01/11/2005 thru 01/12/2005	n/a	southern portion of county				n/a	n/a	n/a	n/a	
01/13/2005	n/a	northern portion of county				n/a	n/a	n/a	n/a	
06/14/2005	n/a	Countywide				n/a	n/a	n/a	n/a	
07/26/2006	7:00 PM	De Land			X	n/a	n/a	n/a	n/a	Water was flowing across Main Street.
07/27/2006	3:27 PM	Countywide			X	n/a	n/a	n/a	n/a	Widespread flooding was reported across the county. Several roads had water flowing over them, including State Route 10.
02/06/2008	1:00 AM	Monticello^			X	n/a	n/a	n/a	n/a	Allerton Road was impassible near the Sangamon River.
06/03/2008 thru 06/04/2008	n/a	Countywide				n/a	n/a	n/a	n/a	
07/07/2008	5:55 AM	La Place^			X	n/a	n/a	n/a	n/a	6.0 to8.0 inches of water was flowing across IL Route 32 between the town of LaPlace and US-36.
05/14/2009	12:30 AM	Countywide			X	n/a	n/a	n/a	n/a	Heavy rain of 2.50 to 4.00 inches within three hours produced significant flash flooding of most roads in Piatt County.

^ Flash flood event verified in the vicinity of this location(s).

[1] An "X" in the columns of Home, Business and Infrastructure indicates impacts occurred to those structure/infrastructure types during a general flood event. A detailed description of the type and magnitude of the impacts are included in the Impacts/Event Description column if available.

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Flash Flood Events Reported in Piatt County
1990 - 2021

Date(s)	Start Time	Location(s)	Impacts[1]			Injuries	Fatalities	Property Damages	Crop Damages	Impacts/ Event Description
			Home	Business	Infra-structure					
05/15/2009	7:00 PM	central portion of county			X	n/a	n/a	n/a	n/a	Heavy rain of 1.00 to 1.50 inches fell within one hour, on already saturated ground, across central Piatt County. This produced extensive flash flooding, particularly on rural roads and on streets in the city of Monticello.
06/12/2010	n/a	Countywide				n/a	n/a	n/a	n/a	
07/24/2010 thru 07/25/2010	9:00 PM	southern portion of county			X	n/a	n/a	n/a	n/a	A thunderstorm produced a heavy downpour with more than 1.50 of rain in 30 minutes across southern Piatt County. Numerous rural roads were flooded as a result.
06/15/2011	n/a	southern portion of county				n/a	n/a	n/a	n/a	
06/27/2011	3:45 AM	southern portion of county			X	n/a	n/a	n/a	n/a	Several rural roads were flooded and impassable as a result of the rainfall accumulations.
04/10/2013 thru 04/11/2013	n/a	Countywide				n/a	n/a	n/a	n/a	
05/31/2013 thru 06/01/2013	n/a	Countywide				n/a	n/a	n/a	n/a	
02/20/2014	5:30 PM	Countywide			X	n/a	n/a	n/a	n/a	Rainfall of 0.50 to 1.00 combined with 1 to 2 of snow depth and a frozen ground to produce flash flooding across most of Piatt County. Many streets in Monticello were flooded and most rural roads were impassable.

^ Flash flood event verified in the vicinity of this location(s).

[1] An "X" in the columns of Home, Business and Infrastructure indicates impacts occurred to those structure/infrastructure types during a general flood event. A detailed description of the type and magnitude of the impacts are included in the Impacts/Event Description column if available.

Table 6
Flash Flood Events Reported in Piatt County
1990 - 2021

Date(s)	Start Time	Location(s)	Impacts[1]			Injuries	Fatalities	Property Damages	Crop Damages	Impacts/ Event Description
			Home	Business	Infra-structure					
05/21/2014	5:30 PM	White Heath Lodge^			X	n/a	n/a	n/a	n/a	Persistent rain from numerous thunderstorms tracking over the same areas produced 3.00 inches in less than two hours during the early evening hours in a small part of east central Piatt County. Numerous rural roads were impassable, streets in White Heath were flooded, and Interstate 72 in the vicinity of White Heath was impacted.
05/29/2014	n/a	northern portion of county				n/a	n/a	n/a	n/a	
06/04/2014	2:00 AM	southwestern portion of county			X	n/a	n/a	n/a	n/a	Heavy rain accumulation of 2.00 to 3.00 in one hour resulted in flash flooding of rural areas in southwest Piatt County. Streets in Cerro Gordo were flooded, as were parts of Illinois Route 32 and 105. Numerous rural roads were impassable in rural Piatt County.

^ Flash flood event verified in the vicinity of this location(s).

[1] An "X" in the columns of Home, Business and Infrastructure indicates impacts occurred to those structure/infrastructure types during a general flood event. A detailed description of the type and magnitude of the impacts are included in the Impacts/Event Description column if available.

Table 6
Flash Flood Events Reported in Piatt County
1990 - 2021

Date(s)	Start Time	Location(s)	Impacts[1]			Injuries	Fatalities	Property Damages	Crop Damages	Impacts/ Event Description
			Home	Business	Infra-structure					
07/12/2014	8:30 AM	northern portion of county			X	n/a	n/a	$1,500,000	n/a	Periods of thunderstorms with heavy rainfall produced rain rates of 1 to 2.5 inches for at least two hours in northern Piatt County. The highest rain totals ranged between 5.00 to 7.00 inches along and north of U.S. Highway 150, including the city of Mansfield and Blue Ridge. Nearly all rural roads in northern Piatt County were flooded with at least a foot of water. County Road 2 from Mansfield to Blue Ridge sustained damage from the flooding. A five mile stretch of U.S. Highway 150 through Mansfield was closed due to flooding. Parts of Interstate 74 from milepost 164 to 168 were impassable. Many homes in Mansfield also had significant basement flooding.
08/26/2014	n/a	Countywide				n/a	n/a	n/a	n/a	
06/07/2015 thru 06/08/2015	n/a	northern portion of county				n/a	n/a	n/a	n/a	
06/14/2015	n/a	northeastern portion of county				n/a	n/a	n/a	n/a	
06/25/2015	n/a	Countywide				n/a	n/a	n/a	n/a	
09/01/2015	n/a	central portion of county				n/a	n/a	n/a	n/a	
02/02/2016	n/a	Countywide				n/a	n/a	n/a	n/a	

^ Flash flood event verified in the vicinity of this location(s).

[1] An "X" in the columns of Home, Business and Infrastructure indicates impacts occurred to those structure/infrastructure types during a general flood event. A detailed description of the type and magnitude of the impacts are included in the Impacts/Event Description column if available.

Table 6
Flash Flood Events Reported in Piatt County
1990 - 2021

Date(s)	Start Time	Location(s)	Impacts[1]			Injuries	Fatalities	Property Damages	Crop Damages	Impacts/ Event Description
			Home	Business	Infra-structure					
08/27/2016 thru 08/28/2016	n/a	west-central portion of county				n/a	n/a	n/a	n/a	
04/29/2017 thru 04/30/2017	n/a	Countywide				n/a	n/a	n/a	n/a	
05/04/2017	8:00 AM	southern portion of county			X	n/a	n/a	n/a	n/a	Heavy rainfall of 1.50 to 2.00 inches during the early morning hours, on already saturated ground, resulted in flash flooding across southern Piatt County. Officials reported that most roads were impassable and numerous creeks rapidly flooded.
05/19/2017	2:00 AM	central portion of county			X	n/a	n/a	n/a	n/a	Heavy rain of 3.00 to 6.00 inches from the late evening of May 18th through the early morning of May 19th produced flash flooding in central Piatt County. Numerous rural roads were closed from Cerro Gordo through Milmine toward Bement. A vehicle was stranded in the flood waters just north of Route 105, about 3 miles east of Cerro Gordo.
11/18/2017	n/a	northern portion of county				n/a	n/a	n/a	n/a	
02/20/2018 thru 02/21/2018	n/a	Countywide				n/a	n/a	n/a	n/a	

^ Flash flood event verified in the vicinity of this location(s).

[1] An "X" in the columns of Home, Business and Infrastructure indicates impacts occurred to those structure/infrastructure types during a general flood event. A detailed description of the type and magnitude of the impacts are included in the Impacts/Event Description column if available.

Table 6
Flash Flood Events Reported in Piatt County
1990 - 2021

Date(s)	Start Time	Location(s)	Impacts[1]			Injuries	Fatalities	Property Damages	Crop Damages	Impacts/ Event Description
			Home	Business	Infra-structure					
09/07/2018	n/a	Countywide				n/a	n/a	n/a	n/a	
08/12/2019 thru 08/13/2019	n/a	southern portion of county				n/a	n/a	n/a	n/a	
06/22/2020	6:08 PM	northeastern portion of county			X	n/a	n/a	n/a	n/a	Parts of Highway 150 were flooded from Mansfield eastward to the Champaign County border.
06/25/2021 thru 06/26/2021	n/a	northern portion of county				n/a	n/a	n/a	n/a	
08/12/2021	n/a	southern portion of county				n/a	n/a	n/a	n/a	
08/26/2021	n/a	southeastern portion of county				n/a	n/a	n/a	n/a	
GRAND TOTAL:						**0**	**0**	**$1,510,000**	**$ -**	

Sources: Iowa State University, Iowa Environmental Mesonet, National Weather Service Data, Search for Warnings.
NOAA, National Environmental Satellite, Data & Information Service, National Centers for Environmental Information, Storm Data.
NOAA, National Environmental Satellite, Data & Information Service, National Centers for Environmental Information, Storm Events Database.

^ Flash flood event verified in the vicinity of this location(s).

[1] An "X" in the columns of Home, Business and Infrastructure indicates impacts occurred to those structure/infrastructure types during a general flood event. A detailed description of the type and magnitude of the impacts are included in the Impacts/Event Description column if available.

Table 7
Regional Excessive Heat Events Extrapolated for Piatt County
1995 - 2021

Date(s)	Start Time	Magnitude - Temperature °F			Observed Location(s)[1]	Injuries	Fatalities	Property Damages	Crop Damages	Impacts/Event Description
		Day (Max)	Night (Min)	Heat Index (Max)						
07/12/1995 thru 07/16/1995	n/a	102 °F	70 °F	n/a	Champaign Decatur Tuscola	n/a	n/a	n/a	n/a	
07/27/1995 thru 07/28/1995	n/a	93 °F	69 °F	n/a	Champaign Decatur Tuscola	n/a	n/a	n/a	n/a	
07/30/1995 thru 08/02/1995	n/a	96 °F	69 °F	n/a	Champaign Decatur Tuscola	n/a	n/a	n/a	n/a	
08/11/1995 thru 08/19/1995	n/a	97 °F	70 °F	n/a	Champaign Decatur Tuscola	n/a	n/a	n/a	n/a	
08/29/1995 thru 08/31/1995	n/a	96 °F	67 °F	n/a	Champaign Decatur Tuscola	n/a	n/a	n/a	n/a	
05/18/1996 thru 05/19/1996	n/a	91 °F	69 °F	n/a	Decatur Tuscola	n/a	n/a	n/a	n/a	
06/22/1996 thru 06/23/1996	n/a	96 °F	65 °F	n/a	Champaign Decatur Tuscola	n/a	n/a	n/a	n/a	
06/29/1996 thru 07/01/1996	n/a	96 °F	67 °F	n/a	Champaign Decatur Tuscola	n/a	n/a	n/a	n/a	

[1] Observed Location information, if available, was obtained from NWS's COOP Observation Station records as well as other officially-designated sources identified in NOAA's Storm Events Database and the Midwestern Regional Climate Center's cli-MATE data system.

Table 7
Regional Excessive Heat Events Extrapolated for Piatt County
1995 - 2021

Date(s)	Start Time	Magnitude - Temperature °F			Observed Location(s)[1]	Injuries	Fatalities	Property Damages	Crop Damages	Impacts/Event Description
		Day (Max)	Night (Min)	Heat Index (Max)						
07/18/1996 thru 07/19/1996	n/a	97 °F	76 °F	n/a	Champaign Decatur Tuscola	n/a	n/a	n/a	n/a	
08/05/1996 thru 08/07/1996	n/a	97 °F	68 °F	n/a	Champaign Decatur Tuscola	n/a	n/a	n/a	n/a	
08/20/1996 thru 08/23/1996	n/a	96 °F	69 °F	n/a	Champaign Decatur Tuscola	n/a	n/a	n/a	n/a	
06/24/1997 thru 06/25/1997	n/a	94 °F	70 °F	n/a	Champaign Decatur Tuscola	n/a	n/a	n/a	n/a	
07/26/1997 thru 07/28/1997	9:00 AM	100 °F	73 °F	115 °F	Champaign Decatur Tuscola	n/a	n/a	n/a	n/a	
06/24/1998 thru 06/28/1998	n/a	97 °F	69 °F	110 °F	Champaign Decatur Tuscola	n/a	n/a	n/a	n/a	
07/19/1998 thru 07/29/1998	n/a	97 °F	69 °F	n/a	Champaign Decatur Tuscola	n/a	n/a	n/a	n/a	
08/24/1998 thru 08/25/1998	n/a	95 °F	69 °F	n/a	Champaign Decatur Tuscola	n/a	n/a	n/a	n/a	

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Table 7
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1995 - 2021

Date(s)	Start Time	Magnitude - Temperature °F			Observed Location(s)[1]	Injuries	Fatalities	Property Damages	Crop Damages	Impacts/Event Description
		Day (Max)	Night (Min)	Heat Index (Max)						
06/06/1999 thru 06/11/1999	n/a	97 °F	68 °F	n/a	Champaign Decatur Tuscola	n/a	n/a	n/a	n/a	
07/03/1999 thru 07/06/1999	n/a	96 °F	64 °F	n/a	Champaign Decatur Tuscola	n/a	n/a	n/a	n/a	
07/19/1999 thru 07/31/1999	n/a	101 °F	68 °F	110 °F	Champaign Decatur Tuscola	n/a	n/a	n/a	n/a	
08/29/2000 thru 08/31/2000	n/a	96 °F	66 °F	n/a	Champaign Decatur Tuscola	n/a	n/a	n/a	n/a	
06/11/2001 thru 06/13/2001	n/a	92 °F	65 °F	n/a	Champaign Decatur Tuscola	n/a	n/a	n/a	n/a	
07/08/2001 thru 07/10/2001	n/a	94 °F	67 °F	n/a	Champaign Decatur Tuscola	n/a	n/a	n/a	n/a	
07/20/2001 thru 07/24/2001	n/a	98 °F	69 °F	n/a	Champaign Decatur Tuscola	n/a	n/a	n/a	n/a	
07/30/2001 thru 08/02/2001	n/a	94 °F	68 °F	n/a	Champaign Decatur Tuscola	n/a	n/a	n/a	n/a	

[1] Observed Location information, if available, was obtained from NWS's COOP Observation Station records as well as other officially-designated sources identified in NOAA's Storm Events Database and the Midwestern Regional Climate Center's cli-MATE data system.

Table 7
Regional Excessive Heat Events Extrapolated for Piatt County
1995 - 2021

Date(s)	Start Time	Magnitude - Temperature °F			Observed Location(s)[1]	Injuries	Fatalities	Property Damages	Crop Damages	Impacts/Event Description
		Day (Max)	Night (Min)	Heat Index (Max)						
08/07/2001 thru 08/09/2001	n/a	97 °F	67 °F	n/a	Champaign Decatur Tuscola	n/a	n/a	n/a	n/a	
06/01/2002 thru 06/04/2002	n/a	93 °F	65 °F	n/a	Champaign Decatur Tuscola	n/a	n/a	n/a	n/a	
06/30/2002 thru 07/09/2002	n/a	98 °F	67 °F	n/a	Champaign Decatur Tuscola	n/a	n/a	n/a	n/a	
07/20/2002 thru 07/22/2002	n/a	100 °F	68 °F	n/a	Champaign Decatur Tuscola	n/a	n/a	n/a	n/a	
08/01/2002 thru 08/02/2002	n/a	95 °F	69 °F	n/a	Champaign Decatur Tuscola	n/a	n/a	n/a	n/a	
08/04/2002 thru 08/05/2002	n/a	95 °F	68 °F	n/a	Champaign Decatur Tuscola	n/a	n/a	n/a	n/a	
09/08/2002 thru 09/10/2002	n/a	95 °F	61 °F	n/a	Champaign Decatur Tuscola	n/a	n/a	n/a	n/a	
07/04/2003 thru 07/08/2003	n/a	96 °F	67 °F	n/a	Champaign Decatur Tuscola	n/a	n/a	n/a	n/a	

[1] Observed Location information, if available, was obtained from NWS's COOP Observation Station records as well as other officially-designated sources identified in NOAA's Storm Events Database and the Midwestern Regional Climate Center's cli-MATE data system.

Table 7
Regional Excessive Heat Events Extrapolated for Piatt County
1995 - 2021

Date(s)	Start Time	Magnitude - Temperature °F			Observed Location(s)[1]	Injuries	Fatalities	Property Damages	Crop Damages	Impacts/Event Description
		Day (Max)	Night (Min)	Heat Index (Max)						
08/15/2003 thru 08/17/2003	n/a	94 °F	67 °F	n/a	Champaign Decatur Tuscola	n/a	n/a	n/a	n/a	
08/21/2003 thru 08/22/2003	n/a	98 °F	65 °F	n/a	Champaign Decatur Tuscola	n/a	n/a	n/a	n/a	
08/26/2003 thru 08/27/2003	n/a	98 °F	66 °F	n/a	Champaign Decatur Tuscola	n/a	n/a	n/a	n/a	
07/21/2004 thru 07/22/2004	n/a	92 °F	69 °F	n/a	Champaign Decatur Tuscola	n/a	n/a	n/a	n/a	
06/24/2005 thru 06/30/2005	n/a	96 °F	69 °F	n/a	Champaign Decatur Tuscola	n/a	n/a	n/a	n/a	
07/20/2005 thru 07/26/2005	n/a	96 °F	68 °F	115 °F	Champaign Decatur Tuscola	n/a	n/a	n/a	n/a	
08/10/2005 thru 08/13/2005	n/a	96 °F	69 °F	n/a	Champaign Decatur Tuscola	n/a	n/a	n/a	n/a	
08/19/2005 thru 08/20/2005	n/a	92 °F	68 °F	n/a	Champaign Decatur Tuscola	n/a	n/a	n/a	n/a	

[1] Observed Location information, if available, was obtained from NWS's COOP Observation Station records as well as other officially-designated sources identified in NOAA's Storm Events Database and the Midwestern Regional Climate Center's cli-MATE data system.

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1995 - 2021

Date(s)	Start Time	Magnitude - Temperature °F			Observed Location(s)[1]	Injuries	Fatalities	Property Damages	Crop Damages	Impacts/Event Description
		Day (Max)	Night (Min)	Heat Index (Max)						
05/28/2006 thru 05/30/2006	n/a	92 °F	67 °F	n/a	Champaign Decatur Tuscola	n/a	n/a	n/a	n/a	
06/21/2006 thru 06/22/2006	n/a	94 °F	72 °F	n/a	Champaign Decatur Tuscola	n/a	n/a	n/a	n/a	
07/02/2006 thru 07/04/2006	n/a	96 °F	68 °F	n/a	Champaign Decatur Tuscola	n/a	n/a	n/a	n/a	
07/15/2006 thru 07/19/2006	n/a	94 °F	67 °F	n/a	Champaign Decatur Tuscola	n/a	n/a	n/a	n/a	
07/29/2006 thru 08/03/2006	n/a	98 °F	70 °F	110 °F	Champaign Decatur Tuscola	n/a	n/a	n/a	n/a	
08/07/2006 thru 08/11/2006	n/a	95 °F	66 °F	n/a	Champaign Decatur Tuscola	n/a	n/a	n/a	n/a	
08/22/2007 thru 08/24/2007	n/a	100 °F	68 °F	n/a	Champaign Decatur Tuscola	n/a	n/a	n/a	n/a	
06/22/2009 thru 06/26/2009	n/a	97 °F	69 °F	n/a	Champaign Decatur Tuscola	n/a	n/a	n/a	n/a	

[1] Observed Location information, if available, was obtained from NWS's COOP Observation Station records as well as other officially-designated sources identified in NOAA's Storm Events Database and the Midwestern Regional Climate Center's cli-MATE data system.

Table 7
Regional Excessive Heat Events Extrapolated for Piatt County
1995 - 2021

Date(s)	Start Time	Magnitude - Temperature °F			Observed Location(s)[1]	Injuries	Fatalities	Property Damages	Crop Damages	Impacts/Event Description
		Day (Max)	Night (Min)	Heat Index (Max)						
08/08/2009 thru 08/09/2009	n/a	92 °F	64 °F	n/a	Champaign Decatur	n/a	n/a	n/a	n/a	
07/14/2010 thru 07/15/2010	n/a	93 °F	68 °F	n/a	Champaign Decatur Tuscola	n/a	n/a	n/a	n/a	
07/22/2010 thru 07/24/2010	n/a	92 °F	69 °F	n/a	Champaign Decatur Tuscola	n/a	n/a	n/a	n/a	
07/28/2010	n/a	91 °F	71 °F	n/a	Champaign Decatur Tuscola	n/a	n/a	n/a	n/a	
08/03/2010 thru 08/04/2010	12:00 PM	96 °F	70 °F	105 °F	Champaign Decatur Tuscola	n/a	n/a	n/a	n/a	
08/09/2010 thru 08/14/2010	n/a	95 °F	69 °F	105 °F	Champaign Decatur Tuscola	n/a	n/a	n/a	n/a	
06/04/2011	n/a	94 °F	70 °F	n/a	Champaign Decatur Tuscola	n/a	n/a	n/a	n/a	
06/07/2011 thru 06/08/2011	n/a	95 °F	70 °F	n/a	Champaign Decatur Tuscola	n/a	n/a	n/a	n/a	
07/02/2011	n/a	95 °F	72 °F	n/a	Champaign Decatur	n/a	n/a	n/a	n/a	

[1] Observed Location information, if available, was obtained from NWS's COOP Observation Station records as well as other officially-designated sources identified in NOAA's Storm Events Database and the Midwestern Regional Climate Center's cli-MATE data system.

Table 7
Regional Excessive Heat Events Extrapolated for Piatt County
1995 - 2021

Date(s)	Start Time	Magnitude - Temperature °F			Observed Location(s)[1]	Injuries	Fatalities	Property Damages	Crop Damages	Impacts/Event Description
		Day (Max)	Night (Min)	Heat Index (Max)						
07/11/2011 thru 07/12/2011	n/a	98 °F	73 °F	n/a	Champaign Decatur Tuscola	n/a	n/a	n/a	n/a	
07/18/2011 thru 07/23/2011	n/a	101 °F	71 °F	n/a	Champaign Decatur Tuscola	n/a	n/a	n/a	n/a	
07/26/2011 thru 07/28/2011	n/a	96 °F	70 °F	n/a	Champaign Decatur Tuscola	n/a	n/a	n/a	n/a	
07/31/2011 thru 08/03/2011	n/a	97 °F	70 °F	n/a	Champaign Decatur Tuscola	n/a	n/a	n/a	n/a	
08/07/2011	n/a	92 °F	71 °F	n/a	Champaign Decatur	n/a	n/a	n/a	n/a	
08/24/2011	n/a	97 °F	71 °F	n/a	Champaign Decatur	n/a	n/a	n/a	n/a	
09/01/2011 thru 09/03/2011	n/a	102 °F	65 °F	n/a	Champaign Decatur Tuscola	n/a	n/a	n/a	n/a	
05/28/2012	n/a	93 °F	69 °F	n/a	Champaign Decatur Tuscola	n/a	n/a	n/a	n/a	
06/28/2012 thru 07/08/2012	n/a	103 °F	67 °F	110 °F	Champaign Decatur Tuscola	n/a	n/a	n/a	n/a	

[1] Observed Location information, if available, was obtained from NWS's COOP Observation Station records as well as other officially-designated sources identified in NOAA's Storm Events Database and the Midwestern Regional Climate Center's cli-MATE data system.

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Regional Excessive Heat Events Extrapolated for Piatt County
1995 - 2021

Date(s)	Start Time	Magnitude - Temperature °F			Observed Location(s)[1]	Injuries	Fatalities	Property Damages	Crop Damages	Impacts/Event Description
		Day (Max)	Night (Min)	Heat Index (Max)						
07/16/2012 thru 07/19/2012	n/a	101 °F	71 °F	n/a	Champaign Decatur Tuscola	n/a	n/a	n/a	n/a	
07/22/2012 thru 07/26/2012	n/a	103 °F	68 °F	n/a	Champaign Decatur Tuscola	n/a	n/a	n/a	n/a	
08/04/2012	n/a	98 °F	69 °F	n/a	Champaign Decatur Tuscola	n/a	n/a	n/a	n/a	
07/17/2013 thru 07/19/2013	n/a	93 °F	71 °F	n/a	Champaign Decatur Tuscola	n/a	n/a	n/a	n/a	
08/27/2013 thru 08/28/2013	n/a	93 °F	69 °F	n/a	Champaign Decatur	n/a	n/a	n/a	n/a	
09/10/2013 thru 09/11/2013	n/a	97 °F	69 °F	n/a	Champaign Decatur Tuscola	n/a	n/a	n/a	n/a	
09/19/2013	n/a	97 °F	69 °F	n/a	Champaign Decatur	n/a	n/a	n/a	n/a	
08/25/2014	n/a	94 °F	68 °F	n/a	Champaign Decatur Tuscola	n/a	n/a	n/a	n/a	
07/18/2015	n/a	91 °F	70 °F	n/a	Champaign Tuscola	n/a	n/a	n/a	n/a	

[1] Observed Location information, if available, was obtained from NWS's COOP Observation Station records as well as other officially-designated sources identified in NOAA's Storm Events Database and the Midwestern Regional Climate Center's cli-MATE data system.

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Regional Excessive Heat Events Extrapolated for Piatt County
1995 - 2021

Date(s)	Start Time	Magnitude - Temperature °F			Observed Location(s)[1]	Injuries	Fatalities	Property Damages	Crop Damages	Impacts/Event Description
		Day (Max)	Night (Min)	Heat Index (Max)						
07/28/2015	n/a	92 °F	71 °F	n/a	Champaign Decatur	n/a	n/a	n/a	n/a	
09/02/2015 thru 09/07/2015	n/a	93 °F	66 °F	n/a	Champaign Decatur Tuscola	n/a	n/a	n/a	n/a	
06/10/2016 thru 06/11/2016	n/a	92 °F	69 °F	n/a	Champaign Decatur Tuscola	n/a	n/a	n/a	n/a	
06/15/2016	n/a	92 °F	71 °F	n/a	Champaign Decatur Tuscola	n/a	n/a	n/a	n/a	
06/20/2016	n/a	92 °F	70 °F	n/a	Champaign Decatur Tuscola	n/a	n/a	n/a	n/a	
06/26/2016 thru 06/27/2016	n/a	93 °F	68 °F	n/a	Champaign Decatur Tuscola	n/a	n/a	n/a	n/a	
07/21/2016	n/a	92 °F	71 °F	n/a	Champaign Decatur	n/a	n/a	n/a	n/a	
08/11/2016 thru 08/12/2016	n/a	93 °F	68 °F	n/a	Champaign Decatur Tuscola	n/a	n/a	n/a	n/a	
09/06/2016 thru 09/07/2016	n/a	92 °F	68 °F	n/a	Champaign Decatur Tuscola	n/a	n/a	n/a	n/a	

[1] Observed Location information, if available, was obtained from NWS's COOP Observation Station records as well as other officially-designated sources identified in NOAA's Storm Events Database and the Midwestern Regional Climate Center's cli-MATE data system.

Table 7
Regional Excessive Heat Events Extrapolated for Piatt County
1995 - 2021

Date(s)	Start Time	Magnitude - Temperature °F			Observed Location(s)[1]	Injuries	Fatalities	Property Damages	Crop Damages	Impacts/Event Description
		Day (Max)	Night (Min)	Heat Index (Max)						
06/13/2017 thru 06/14/2017	n/a	94 °F	68 °F	n/a	Champaign Decatur Tuscola	n/a	n/a	n/a	n/a	
07/10/2017 thru 07/12/2017	n/a	92 °F	68 °F	n/a	Champaign Decatur	n/a	n/a	n/a	n/a	
07/19/2017 thru 07/23/2017	n/a	95 °F	69 °F	n/a	Champaign Decatur Tuscola	n/a	n/a	n/a	n/a	
06/16/2018 thru 06/19/2018	n/a	92 °F	69 °F	n/a	Champaign Decatur Tuscola	n/a	n/a	n/a	n/a	
06/29/2018 thru 07/01/2018	n/a	91 °F	68 °F	n/a	Champaign Decatur Tuscola	n/a	n/a	n/a	n/a	
07/04/2018 thru 07/05/2018	n/a	92 °F	71 °F	n/a	Champaign Decatur Tuscola	n/a	n/a	n/a	n/a	
07/10/2018	n/a	91 °F	70 °F	n/a	Champaign Decatur	n/a	n/a	n/a	n/a	
08/26/2018 thru 08/28/2018	n/a	93 °F	72 °F	n/a	Champaign Decatur Tuscola	n/a	n/a	n/a	n/a	
09/03/2018 thru 09/05/2018	n/a	95 °F	68 °F	n/a	Champaign Decatur Tuscola	n/a	n/a	n/a	n/a	

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		Day (Max)	Night (Min)	Heat Index (Max)						
06/30/2019 thru 07/03/2019	n/a	94 °F	68 °F	n/a	Champaign Decatur Tuscola	n/a	n/a	n/a	n/a	
07/06/2019	n/a	91 °F	70 °F	n/a	Champaign Decatur	n/a	n/a	n/a	n/a	
07/10/2019	n/a	94 °F	72 °F	n/a	Champaign Decatur	n/a	n/a	n/a	n/a	
07/14/2019 thru 07/15/2019	n/a	92 °F	69 °F	n/a	Champaign Decatur Tuscola	n/a	n/a	n/a	n/a	
07/18/2019 thru 07/21/2019	n/a	94 °F	71 °F	n/a	Champaign Decatur Tuscola	n/a	n/a	n/a	n/a	
07/04/2020 thru 07/09/2020	n/a	93 °F	69 °F	n/a	Champaign Decatur Tuscola	n/a	n/a	n/a	n/a	
07/18/2020	n/a	91 °F	70 °F	n/a	Champaign Decatur	n/a	n/a	n/a	n/a	
07/26/2020 thru 07/27/2020	n/a	91 °F	70 °F	n/a	Champaign Decatur Tuscola	n/a	n/a	n/a	n/a	
08/24/2020 thru 08/26/2020	n/a	92 °F	69 °F	n/a	Champaign Decatur Tuscola	n/a	n/a	n/a	n/a	
08/28/2020	n/a	91 °F	71 °F	n/a	Champaign Decatur	n/a	n/a	n/a	n/a	

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Date(s)	Start Time	Magnitude - Temperature °F			Observed Location(s)[1]	Injuries	Fatalities	Property Damages	Crop Damages	Impacts/Event Description
		Day (Max)	Night (Min)	Heat Index (Max)						
06/12/2021	n/a	95 °F	70 °F	n/a	Champaign Decatur Tuscola	n/a	n/a	n/a	n/a	
07/25/2021 thru 07/26/2021	n/a	91 °F	69 °F	n/a	Champaign Tuscola	n/a	n/a	n/a	n/a	
08/10/2021 thru 08/12/2021	n/a	92 °F	71 °F	n/a	Champaign Decatur Tuscola	n/a	n/a	n/a	n/a	
08/24/2021 thru 08/26/2021	n/a	95 °F	68 °F	n/a	Champaign Decatur Tuscola	n/a	n/a	n/a	n/a	
08/28/2021 thru 08/30/2021	n/a	91 °F	68 °F	n/a	Champaign Decatur Tuscola	n/a	n/a	n/a	n/a	
GRAND TOTAL:						**0**	**0**	**$ -**	**$ -**	

Sources: Iowa State University, Iowa Environmental Mesonet, National Weather Service Data, Search for Warnings.
Midwestern Regional Climate Center, cli-MATE.
NOAA, National Environmental Satellite, Data & Information Service, National Centers for Environmental Information, Cooperative Observation Forms.
NOAA, National Environmental Satellite, Data & Information Service, National Centers for Environmental Information, Storm Events Database.

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Table 8
Severe Winter Storm Events Reported in Piatt County
1950 - 2021

Date(s)	Start Time	Event Type	Magnitude[1]					Observed Location(s)[2]	Injuries	Fatalities	Property Damages	Impacts/ Event Description
			Snow (inches)	Freezing Rain (inches)	Ice (inches)	Sleet (Inches)	Strong Wind (mph)					
12/18/1951	n/a	Heavy Snow	4.0 in.					Monticello	n/a	n/a	n/a	
02/29/1952	9:30 AM	Heavy Snow	4.8 in.					Monticello	n/a	n/a	n/a	
03/01/1953	5:00 PM	Winter Storm	6.2 in.				X	Monticello	n/a	n/a	n/a	
01/29/1956 thru 01/30/1956	8:00 PM	Heavy Snow	4.0 in.					Monticello	n/a	n/a	n/a	
03/25/1957	1:30 AM	Heavy Snow	4.5 in.					Monticello	n/a	n/a	n/a	
03/09/1959 thru 03/10/1959	8:00 PM	Heavy Snow	7.0 in.					Monticello	n/a	n/a	n/a	
02/24/1960 thru 02/25/1960	10:00 PM	Winter Storm	7.0 in.				X	Monticello	n/a	n/a	n/a	High winds, heavy drifting
03/02/1960 thru 03/03/1960	7:30 PM	Heavy Snow	4.0 in.					Monticello	n/a	n/a	n/a	
03/09/1960	12:00 AM	Heavy Snow	4.8 in.					Monticello	n/a	n/a	n/a	
03/15/1960 thru 03/16/1960	9:00 PM	Heavy Snow	4.0 in.					Monticello	n/a	n/a	n/a	
12/11/1960	12:00 AM	Winter Storm	4.0 in.	X				Monticello	n/a	n/a	n/a	
12/20/1960	4:30 AM	Heavy Snow	4.0 in.					Monticello	n/a	n/a	n/a	

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1950 - 2021

Date(s)	Start Time	Event Type	Magnitude[1]					Observed Location(s)[2]	Injuries	Fatalities	Property Damages	Impacts/ Event Description
			Snow (inches)	Freezing Rain (inches)	Ice (inches)	Sleet (Inches)	Strong Wind (mph)					
02/02/1961 thru 02/03/1961	7:30 PM	Blizzard	4.4 in.					Monticello	n/a	n/a	n/a	
01/12/1964 thru 01/13/1964	5:00 AM	Heavy Snow	8.0 in.					Monticello	n/a	n/a	n/a	
02/12/1964 thru 02/13/1964	1:00 PM	Heavy Snow	5.3 in.					Monticello	n/a	n/a	n/a	
01/15/1965	8:30 AM	Heavy Snow	6.0 in.					Monticello	n/a	n/a	n/a	
03/03/1965 thru 03/04/1965	8:00 PM	Heavy Snow	8.0 in.					Monticello	n/a	n/a	n/a	
02/01/1966	4:00 AM	Heavy Snow	6.0 in.					Monticello	n/a	n/a	n/a	
01/27/1967	5:00 AM	Heavy Snow	4.0 in.					Monticello	n/a	n/a	n/a	
11/29/1967	7:00 PM	Heavy Snow	4.0 in.					Monticello	n/a	n/a	n/a	
01/05/1969	5:00 PM	Heavy Snow	5.0 in.					Monticello	n/a	n/a	n/a	
03/09/1969 thru 03/10/1969	11:00 PM	Heavy Snow	6.5 in.					Monticello	n/a	n/a	n/a	
12/30/1969	4:00 PM	Heavy Snow	5.0 in.					Monticello	n/a	n/a	n/a	
02/08/1970	1:00 PM	Heavy Snow	4.0 in.					Monticello	n/a	n/a	n/a	
01/03/1971	10:00 AM	Heavy Snow	4.0 in.					Monticello	n/a	n/a	n/a	
12/19/1973	n/a	Heavy Snow	6.5 in.					Monticello	n/a	n/a	n/a	

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1950 - 2021

Date(s)	Start Time	Event Type	Magnitude[1]					Observed Location(s)[2]	Injuries	Fatalities	Property Damages	Impacts/ Event Description
			Snow (inches)	Freezing Rain (inches)	Ice (inches)	Sleet (Inches)	Strong Wind (mph)					
12/20/1973	n/a	Heavy Snow	4.0 in.					Monticello	n/a	n/a	n/a	
12/27/1973	n/a	Heavy Snow	6.0 in.					Monticello	n/a	n/a	n/a	
02/12/1975 thru 02/13/1975	6:00 PM	Heavy Snow	4.0 in.					Monticello	n/a	n/a	n/a	
11/27/1975	n/a	Heavy Snow	5.0 in.					Monticello	n/a	n/a	n/a	
01/05/1977	n/a	Heavy Snow	4.0 in.					Monticello	n/a	n/a	n/a	
01/10/1977	2:00 PM	Heavy Snow	5.5 in.					Monticello	n/a	n/a	n/a	
01/27/1977 thru 01/30/1977	n/a	Blizzard	2.0 in.				X		n/a	n/a	n/a	
12/05/1977	12:00 AM	Winter Storm	4.5 in.			X		Monticello	n/a	n/a	n/a	
12/08/1977	8:30 AM	Winter Storm	4.0 in.			X		Monticello	n/a	n/a	n/a	
03/07/1978 thru 03/08/1978	11:30 AM	Winter Storm	7.0 in.					Monticello	n/a	n/a	n/a	
03/24/1978 thru 03/27/1978	n/a	Ice Storm			X		X	Hammond	n/a	n/a	n/a	***This event was part of a federally-declared disaster (Declaration #860)*** COOP Observer reported heavy ice damage
03/09/1979	n/a	Heavy Snow	4.5 in.					Monticello	n/a	n/a	n/a	Very wet snow
02/05/1980	n/a	Winter Storm	3.3 in.	0.1 in.				Monticello	n/a	n/a	n/a	
11/26/1980	n/a	Heavy Snow	7.5 in.					Monticello	n/a	n/a	n/a	

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1950 - 2021

Date(s)	Start Time	Event Type	Magnitude[1]					Observed Location(s)[2]	Injuries	Fatalities	Property Damages	Impacts/ Event Description
			Snow (inches)	Freezing Rain (inches)	Ice (inches)	Sleet (Inches)	Strong Wind (mph)					
02/10/1981	n/a	Heavy Snow	6.0 in.					Monticello	n/a	n/a	n/a	
12/16/1981	n/a	Heavy Snow	6.0 in.					Monticello	n/a	n/a	n/a	
12/22/1981	n/a	Heavy Snow	7.5 in.					Monticello	n/a	n/a	n/a	
01/12/1982	n/a	Heavy Snow	4.0 in.					Monticello	n/a	n/a	n/a	
01/30/1982 thru 01/31/1982	n/a	Heavy Snow	10.0 in.					Monticello	n/a	n/a	n/a	
02/03/1982	n/a	Heavy Snow	4.0 in.					Monticello	n/a	n/a	n/a	
03/20/1983	n/a	Heavy Snow	5.0 in.					Monticello	n/a	n/a	n/a	
12/21/1983	n/a	Heavy Snow	5.0 in.					Monticello	n/a	n/a	n/a	
02/23/1986	n/a	Heavy Snow	6.0 in.					Monticello	n/a	n/a	n/a	
01/09/1987	n/a	Heavy Snow	9.2 in.					Monticello	n/a	n/a	n/a	
01/18/1987	n/a	Heavy Snow	4.5 in.					Monticello	n/a	n/a	n/a	
12/14/1987 thru 12/15/1987	n/a	Blizzard	6.0 in.				50 mph	Monticello	n/a	n/a	n/a	
02/10/1988	n/a	Heavy Snow	5.0 in.					Monticello	n/a	n/a	n/a	
03/03/1988	n/a	Heavy Snow	8.0 in.					Monticello	n/a	n/a	n/a	
02/14/1990 thru 02/15/1990	n/a	Ice Storm			X		X		n/a	n/a	n/a	
01/10/1993	n/a	Heavy Snow	7.0 in.					Monticello	n/a	n/a	n/a	
02/16/1993	n/a	Heavy Snow	5.0 in.					Monticello	n/a	n/a	n/a	
02/26/1993	n/a	Heavy Snow	8.0 in.					Monticello	n/a	n/a	n/a	

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Date(s)	Start Time	Event Type	Magnitude[1]					Observed Location(s)[2]	Injuries	Fatalities	Property Damages	Impacts/ Event Description
			Snow (inches)	Freezing Rain (inches)	Ice (inches)	Sleet (Inches)	Strong Wind (mph)					
01/17/1994	n/a	Heavy Snow	5.6 in.					Hammond	n/a	n/a	n/a	
01/18/1996 thru 01/19/1996	10:00 AM	Winter Storm	X		X		35 mph		n/a	n/a	n/a	Rain changed to ice than snow causing numerous power outages and minor accidents
11/25/1996	10:00 AM	Winter Storm	X	X		X	X		n/a	n/a	n/a	- Significant icing occurred in this area causing numerous accidents and power outages - Power outages came as ice covered power lines snapped from winds of 15 to 30 mph
01/08/1997 thru 01/09/1997	9:00 PM	Heavy Snow	5.5 in.					Monticello Hammond	n/a	n/a	n/a	Numerous accidents were reported thoughout central Illinois
01/15/1997 thru 01/17/1997	3:00 AM	Winter Storm	7.1 in.				30 mph	Monticello	n/a	n/a	n/a	Numerous accidents were reported
12/31/1997	n/a	Heavy Snow	5.0 in.					Monticello	n/a	n/a	n/a	
01/01/1999 thru 01/03/1999	12:00 PM	Heavy Snow	22.0 in.				X	Monticello Hammond	n/a	n/a	n/a	Extensive blowing and drifting occurred on the 3rd
01/13/1999	4:00 AM	Ice Storm			0.5 in.				n/a	n/a	n/a	Ice caused widespread power outages and numerous car accidents

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Date(s)	Start Time	Event Type	Magnitude[1]					Observed Location(s)[2]	Injuries	Fatalities	Property Damages	Impacts/ Event Description
			Snow (inches)	Freezing Rain (inches)	Ice (inches)	Sleet (Inches)	Strong Wind (mph)					
03/08/1999 thru 03/09/1999	12:00 PM	Heavy Snow	5.0 in.					Monticello	n/a	n/a	n/a	
01/19/2000	10:00 AM	Winter Storm	4.0 in.					Monticello	n/a	n/a	n/a	- Blowing and drifting was reported - numerous road closures and accidents were reported across central Illinois
01/30/2000	n/a	Heavy Snow	4.0 in.					Monticello	n/a	n/a	n/a	
03/11/2000	6:30 AM	Heavy Snow	4.2 in.					Monticello Hammond	n/a	n/a	n/a	
03/25/2002 thru 03/26/2002	9:00 PM	Winter Storm	7.0 in.	X		X		Monticello	n/a	n/a	n/a	- Significant blowing and drifting - The combination of ice and snow resulted in downed power lines and tree limbs, along with dozens of traffic accidents the morning of the 26th
12/24/2002 thru 12/25/2002	3:00 PM	Heavy Snow	6.0 in.					Monticello	n/a	n/a	n/a	Numerous vehicle-related accidents occurred across the region

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Date(s)	Start Time	Event Type	Magnitude[1]					Observed Location(s)[2]	Injuries	Fatalities	Property Damages	Impacts/ Event Description
			Snow (inches)	Freezing Rain (inches)	Ice (inches)	Sleet (Inches)	Strong Wind (mph)					
02/15/2003 thru 02/16/2003	3:00 PM	Winter Storm	4.0 in.		0.3 in.		50 mph	Monticello	n/a	n/a	n/a	Major blowing and drifting occurred creating drifts as high as 3 to 5 feet
01/05/2005 thru 01/06/2005	1:00 PM	Ice Storm			0.5 in.				n/a	n/a	n/a	Numerous reports of downed trees and power lines, as well as numerous traffic accidents across the region
11/30/2006 thru 12/01/2006	2:00 PM	Winter Storm	2.0 in.		0.8 in.	0.5 in.		Monticello	n/a	n/a	$425,551	*Event Description Provided Below*
This event was part of a federally-declared disaster (Declaration #1681) - Considerable tree and power line damage was caused by the ice and heavy snow, especially across central Illinois - The power was not restored across some locales for several days - The snow and ice covered roads also resulted in numerous vehicular accidents								*FEMA Public Assistance totals by Jurisdiction* Bement: $1,179 Cerro Gordo: $3,480 Cisco: $3,297 DeLand: $6,118 DeLand Fire Protection District: $857 Hammond: $2,926 Mansfield: $7,694				
02/07/2007	n/a	Heavy Snow	4.5 in.					Monticello	n/a	n/a	n/a	
02/12/2007 thru 02/13/2007	10:00 PM	Blizzard	12.0 in.				45 mph	Hammond Monticello	n/a	n/a	n/a	Many locations reported snow drifts ranging from 3 to 6 feet, prompting closure of several area roads

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			Snow (inches)	Freezing Rain (inches)	Ice (inches)	Sleet (Inches)	Strong Wind (mph)					
12/08/2007 thru 12/09/2007	2:00 PM	Ice Storm			0.4 in.				n/a	n/a	n/a	
12/15/2007 thru 12/16/2007	4:00 AM	Heavy Snow	9.0 in.					Hammond Monticello	n/a	n/a	n/a	
01/31/2008 thru 02/01/2008	2:00 PM	Heavy Snow	7.0 in.					Hammond Monticello	n/a	n/a	n/a	
12/28/2009	n/a	Heavy Snow	4.5 in.					Mansfield	n/a	n/a	n/a	
01/06/2010 thru 01/07/2010	9:00 PM	Winter Storm	6.0 in.				X	Mansfield Monticello	n/a	n/a	n/a	Gusty northwesterly winds created considerable blowing and drifting across the area
02/08/2010 thru 02/09/2010	4:00 PM	Winter Storm	4.5 in.				X	Monticello Mansfield Hammond	n/a	n/a	n/a	Gusty northwesterly winds created considerable blowing and drifting
12/04/2010	n/a	Heavy Snow	4.0 in.					Mansfield	n/a	n/a	n/a	
12/12/2010 thru 12/13/2010	9:00 AM	Blizzard	2.0 in.				50 mph	Hammond	n/a	n/a	n/a	
12/24/2010 thru 12/25/2010	1:00 PM	Heavy Snow	5.0 in.					Hammond Monticello	n/a	n/a	n/a	

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			Snow (inches)	Freezing Rain (inches)	Ice (inches)	Sleet (Inches)	Strong Wind (mph)					
02/01/2011 thru 02/02/2011	11:00 AM	Winter Storm	8.0 in.			2.0 in.			n/a	n/a	$10,000	Numerous county highways and several interstates, including I-72, were closed from the afternoon of the 1st through much of the day on the 2nd
03/24/2013 thru 03/25/2013	1:00 PM	Heavy Snow	14.0 in.					Mansfield Monticello	n/a	n/a	n/a	- Many area schools and businesses were closed - Numerous traffic accidents were reported across the area
12/13/2013 thru 12/14/2013	5:00 PM	Heavy Snow	7.0 in.						n/a	n/a	n/a	Numerous traffic accidents were reported
01/02/2014	n/a	Heavy Snow	4.0 in.					Monticello	n/a	n/a	n/a	
01/05/2014 thru 01/06/2014	8:00 AM	Heavy Snow	10.0 in.						n/a	n/a	n/a	Significant blowing and drifting caused numerous road closures and traffic accidents across the County
02/01/2014	n/a	Heavy Snow	4.0 in.					Mansfield	n/a	n/a	n/a	
02/04/2014 thru 02/05/2014	6:00 PM	Heavy Snow	8.0 in.						n/a	n/a	n/a	Numerous traffic accidents occurred due to snow-covered roads

[1] An "X" in the snow, freezing rain, ice, sleet and/or strong winds columns indicates the presences of that weather condition during the severe winter storm event.

[2] Observed Location information was obtained from NWS's COOP Observation Station records as well as other officially-designated sources identified in the Midwestern Regional Climate Center's cli-MATE data system and NOAA's Storm Events Database.

Table 8
Severe Winter Storm Events Reported in Piatt County
1950 - 2021

Date(s)	Start Time	Event Type	Magnitude[1]					Observed Location(s)[2]	Injuries	Fatalities	Property Damages	Impacts/ Event Description
			Snow (inches)	Freezing Rain (inches)	Ice (inches)	Sleet (Inches)	Strong Wind (mph)					
02/20/2015 thru 02/21/2015	9:45 PM	Heavy Snow	8.0 in.						n/a	n/a	n/a	Numerous traffic accidents occurred due to snow-covered and hazardous roadways
02/28/2015 thru 03/01/2015	4:30 PM	Heavy Snow	10.0 in.					Monticello Mansfield	n/a	n/a	n/a	Numerous traffic accidents were reported due to snow-covered and hazardous roadways
02/24/2016	6:30 AM	Blizzard	4.0 in.				50 mph		n/a	n/a	n/a	- Poor visibility and snow-covered roads contributed to numerous traffic accidents across the County, especially on I-74 - Many trees and power lines were blown down, resulting in scattered power outages
04/02/2018	n/a	Heavy Snow	5.0 in.					Mansfield	n/a	n/a	n/a	
01/11/2019 thru 01/13/2019	11:30 PM	Heavy Snow	9.0 in.						n/a	n/a	n/a	Numerous traffic accidents occurred due to snow-covered roads
01/02/2021 thru 01/03/2021	8:30 PM	Heavy Snow	10.0 in.						n/a	n/a	n/a	Roads became hazardous and snow-covered

[1] An "X" in the snow, freezing rain, ice, sleet and/or strong winds columns indicates the presences of that weather condition during the severe winter storm event.

[2] Observed Location information was obtained from NWS's COOP Observation Station records as well as other officially-designated sources identified in the Midwestern Regional Climate Center's cli-MATE data system and NOAA's Storm Events Database.

Table 8
Severe Winter Storm Events Reported in Piatt County
1950 - 2021

Date(s)	Start Time	Event Type	Magnitude[1]					Observed Location(s)[2]	Injuries	Fatalities	Property Damages	Impacts/ Event Description
			Snow (inches)	Freezing Rain (inches)	Ice (inches)	Sleet (Inches)	Strong Wind (mph)					
02/14/2021 thru 02/16/2021	9:00 PM	Heavy Snow	9.0 in.						n/a	n/a	n/a	Numerous traffic accidents occurred due to snow-covered and hazardous roadways
GRAND TOTAL:									**0**	**0**	**$435,551**	

Sources: Midwestern Regional Climate Center, cli-MATE.
NOAA, National Environmental Satellite, Data & Information Service, National Centers for Environmental Information, Cooperative Observation Forms.
NOAA, National Environmental Satellite, Data & Information Service, National Centers for Environmental Information, Storm Events Database.

[1] An "X" in the snow, freezing rain, ice, sleet and/or strong winds columns indicates the presences of that weather condition during the severe winter storm event.

[2] Observed Location information was obtained from NWS's COOP Observation Station records as well as other officially-designated sources identified in the Midwestern Regional Climate Center's cli-MATE data system and NOAA's Storm Events Database.

Table 9
Regional Extreme Cold Events Extrapolated for Piatt County
1995 - 2021

Date(s)	Start Time	Magnitude - Temperature °F			Observed Location(s)[1]	Injuries	Fatalities	Property Damages	Impacts/Event Description
		Low (Min)	High (Max)	Wind Chill (Max)					
01/30/1996 thru 01/31/1996	n/a	-13 °F	12 °F	n/a	Champaign Decatur Tuscola	n/a	n/a	n/a	
02/02/1996 thru 02/04/1996	12:00 AM	-18 °F	13 °F	n/a	Champaign Decatur Tuscola	n/a	n/a	n/a	
01/11/1997 thru 01/13/1997	n/a	-9 °F	11 °F	n/a	Champaign Decatur Tuscola	n/a	n/a	n/a	
01/17/1997 thru 01/18/1997	n/a	-14 °F	11 °F	n/a	Champaign Decatur Tuscola	n/a	n/a	n/a	
01/28/1997	n/a	-11 °F	16 °F	n/a	Champaign Decatur Tuscola	n/a	n/a	n/a	
12/31/1998	n/a	-1 °F	16 °F	n/a	Champaign Decatur Tuscola	n/a	n/a	n/a	
01/04/1999 thru 01/05/1999	n/a	-25 °F	22 °F	n/a	Champaign Decatur Tuscola	n/a	n/a	n/a	
01/9/1999	n/a	-15 °F	19 °F	n/a	Champaign Decatur Tuscola	n/a	n/a	n/a	
12/12/2000	n/a	2 °F	13 °F	n/a	Champaign Decatur	n/a	n/a	n/a	

[1] Observed Location information, if available, was obtained from NWS's COOP Observation Station records as well as other officially-designated sources identified in NOAA's Storm Events Database and the Midwestern Regional Climate Center's cli-MATE data system.

Table 9
Regional Extreme Cold Events Extrapolated for Piatt County
1995 - 2021

Date(s)	Start Time	Magnitude - Temperature °F			Observed Location(s)[1]	Injuries	Fatalities	Property Damages	Impacts/Event Description
		Low (Min)	High (Max)	Wind Chill (Max)					
12/22/2000	n/a	-4 °F	14 °F	n/a	Champaign Decatur Tuscola	n/a	n/a	n/a	
12/25/2000	n/a	-6 °F	17 °F	n/a	Champaign Decatur Tuscola	n/a	n/a	n/a	
01/02/2001	n/a	-3 °F	19 °F	n/a	Champaign Decatur Tuscola	n/a	n/a	n/a	
01/23/2003	n/a	-5 °F	16 °F	n/a	Champaign Decatur Tuscola	n/a	n/a	n/a	
01/30/2004 thru 01/31/2004	n/a	-13 °F	11 °F	n/a	Champaign Decatur Tuscola	n/a	n/a	n/a	
02/04/2007 thru 02/08/2007	n/a	-7 °F	18 °F	n/a	Champaign Decatur Tuscola	n/a	n/a	n/a	
02/15/2007	n/a	-7 °F	18 °F	n/a	Champaign Decatur Tuscola	n/a	n/a	n/a	
01/20/2008	n/a	-2 °F	17 °F	n/a	Champaign Decatur Tuscola	n/a	n/a	n/a	

[1] Observed Location information, if available, was obtained from NWS's COOP Observation Station records as well as other officially-designated sources identified in NOAA's Storm Events Database and the Midwestern Regional Climate Center's cli-MATE data system.

Table 9
Regional Extreme Cold Events Extrapolated for Piatt County
1995 - 2021

Date(s)	Start Time	Magnitude - Temperature °F			Observed Location(s)[1]	Injuries	Fatalities	Property Damages	Impacts/Event Description
		Low (Min)	High (Max)	Wind Chill (Max)					
12/22/2008	n/a	-1 °F	18 °F	n/a	Champaign Decatur Tuscola	n/a	n/a	n/a	
01/15/2009 thru 01/16/2009	12:00 AM	-17 °F	14 °F	-40 °F	Champaign Decatur Tuscola	n/a	n/a	n/a	
01/02/2010 thru 01/05/2010	n/a	-4 °F	18 °F	n/a	Champaign Decatur Tuscola	n/a	n/a	n/a	
01/09/2010 thru 01/10/2010	n/a	-8 °F	18 °F	n/a	Champaign Decatur Tuscola	n/a	n/a	n/a	
12/13/2010 thru 12/14/2010	n/a	-2 °F	19 °F	n/a	Champaign Decatur Tuscola	n/a	n/a	n/a	
01/21/2011 thru 01/22/2011	n/a	-10 °F	9 °F	n/a	Champaign Decatur Tuscola	n/a	n/a	n/a	
02/03/2011	n/a	-2 °F	18 °F	n/a	Champaign Decatur Tuscola	n/a	n/a	n/a	
02/08/2011 thru 02/10/2011	n/a	-12 °F	22 °F	n/a	Champaign Decatur Tuscola	n/a	n/a	n/a	

[1] Observed Location information, if available, was obtained from NWS's COOP Observation Station records as well as other officially-designated sources identified in NOAA's Storm Events Database and the Midwestern Regional Climate Center's cli-MATE data system.

Table 9
Regional Extreme Cold Events Extrapolated for Piatt County
1995 - 2021

Date(s)	Start Time	Magnitude - Temperature °F			Observed Location(s)[1]	Injuries	Fatalities	Property Damages	Impacts/Event Description
		Low (Min)	High (Max)	Wind Chill (Max)					
01/06/2014 thru 01/07/2014	12:00 AM	-14 °F	16 °F	-45 °F	Champaign Decatur Tuscola	n/a	n/a	n/a	
01/23/2014	n/a	-4 °F	21 °F	n/a	Champaign Decatur Tuscola	n/a	n/a	n/a	
01/28/2014	n/a	-6 °F	13 °F	-30 °F	Champaign Decatur Tuscola	n/a	n/a	n/a	
02/06/2014 thru 02/07/2014	n/a	-14 °F	13 °F	n/a	Champaign Decatur Tuscola	n/a	n/a	n/a	
02/10/2014 thru 02/11/2014	n/a	-13 °F	15 °F	n/a	Champaign Decatur Tuscola	n/a	n/a	n/a	
03/03/2014	n/a	0 °F	19 °F	n/a	Champaign Decatur Tuscola	n/a	n/a	n/a	
01/05/2015	n/a	1 °F	16 °F	n/a	Champaign Decatur Tuscola	n/a	n/a	n/a	
01/07/2015	n/a	-7 °F	15 °F	n/a	Champaign Decatur Tuscola	n/a	n/a	n/a	

[1] Observed Location information, if available, was obtained from NWS's COOP Observation Station records as well as other officially-designated sources identified in NOAA's Storm Events Database and the Midwestern Regional Climate Center's cli-MATE data system.

Table 9
Regional Extreme Cold Events Extrapolated for Piatt County
1995 - 2021

Date(s)	Start Time	Magnitude - Temperature °F			Observed Location(s)[1]	Injuries	Fatalities	Property Damages	Impacts/Event Description
		Low (Min)	High (Max)	Wind Chill (Max)					
01/09/2015	n/a	-1 °F	16 °F	n/a	Champaign Decatur Tuscola	n/a	n/a	n/a	
02/19/2015 thru 02/20/2015	n/a	-4 °F	19 °F	n/a	Champaign Decatur Tuscola	n/a	n/a	n/a	
02/23/2015	n/a	-13 °F	17 °F	n/a	Champaign Decatur Tuscola	n/a	n/a	n/a	
02/27/2015	n/a	-5 °F	17 °F	n/a	Champaign Decatur Tuscola	n/a	n/a	n/a	
03/05/2015	n/a	-4 °F	17 °F	n/a	Champaign Decatur Tuscola	n/a	n/a	n/a	
01/18/2016	n/a	-2 °F	10 °F	n/a	Champaign Decatur Tuscola	n/a	n/a	n/a	
12/18/2016	n/a	-2 °F	14 °F	n/a	Champaign Decatur Tuscola	n/a	n/a	n/a	
01/06/2017	n/a	-2 °F	14 °F	n/a	Champaign Decatur Tuscola	n/a	n/a	n/a	

[1] Observed Location information, if available, was obtained from NWS's COOP Observation Station records as well as other officially-designated sources identified in NOAA's Storm Events Database and the Midwestern Regional Climate Center's cli-MATE data system.

Table 9
Regional Extreme Cold Events Extrapolated for Piatt County
1995 - 2021

Date(s)	Start Time	Magnitude - Temperature °F			Observed Location(s)[1]	Injuries	Fatalities	Property Damages	Impacts/Event Description
		Low (Min)	High (Max)	Wind Chill (Max)					
12/26/2017 thru 12/27/2017	n/a	-6 °F	14 °F	n/a	Champaign Decatur Tuscola	n/a	n/a	n/a	
12/31/2017 thru 01/02/2018	n/a	-15 °F	14 °F	n/a	Champaign Decatur Tuscola	n/a	n/a	n/a	
01/04/2018 thru 01/06/2018	n/a	-11 °F	12 °F	n/a	Champaign Decatur Tuscola	n/a	n/a	n/a	
01/16/2018	n/a	-5 °F	9 °F	n/a	Champaign Decatur Tuscola	n/a	n/a	n/a	
01/29/2019 thru 01/31/2019	n/a	-17 °F	18 °F	n/a	Champaign Decatur Tuscola	n/a	n/a	n/a	
03/04/2019	n/a	-3 °F	13 °F	n/a	Champaign Decatur Tuscola	n/a	n/a	n/a	
02/14/2020	n/a	-5 °F	22 °F	n/a	Champaign Decatur Tuscola	n/a	n/a	n/a	
02/07/2021	n/a	-4 °F	9 °F	n/a	Champaign Decatur Tuscola	n/a	n/a	n/a	

[1] Observed Location information, if available, was obtained from NWS's COOP Observation Station records as well as other officially-designated sources identified in NOAA's Storm Events Database and the Midwestern Regional Climate Center's cli-MATE data system.

Table 9
Regional Extreme Cold Events Extrapolated for Piatt County
1995 - 2021

Date(s)	Start Time	Magnitude - Temperature °F			Observed Location(s)[1]	Injuries	Fatalities	Property Damages	Impacts/Event Description
		Low (Min)	High (Max)	Wind Chill (Max)					
02/13/2021 thru 02/17/2021	n/a	-8 °F	18 °F	n/a	Champaign Decatur Tuscola	n/a	n/a	n/a	
GRAND TOTAL:						**0**	**0**	**$ -**	

Sources: Iowa State University, Iowa Environmental Mesonet, National Weather Service Data, Search for Warnings.
Midwestern Regional Climate Center, cli-MATE.
NOAA, National Environmental Satellite, Data & Information Service, National Centers for Environmental Information, Cooperative Observation Forms.
NOAA, National Environmental Satellite, Data & Information Service, National Centers for Environmental Information, Storm Events Database.

[1] Observed Location information, if available, was obtained from NWS's COOP Observation Station records as well as other officially-designated sources identified in NOAA's Storm Events Database and the Midwestern Regional Climate Center's cli-MATE data system.

Table 10
Tornadoes Reported in Piatt County
1950 - 2021

Map No.	Date(s)	Start Time	Location(s)	Magnitude Fujita Scale	Length (Miles)[1]	Width (Yards)	Injuries	Fatalities	Property Damages	Crop Damages	Impacts/Event Description
1	4/3/1956	4:08 PM	DeLand DeLand^	F 2	4.8 mi.	40 yd.	n/a	n/a	n/a	n/a	*Touchdown/Liftoff – Two Counties* Touched down in DeWitt County southwest of Weldon and traveled east-northeast into Piatt County before lifting off northeast of DeLand – total length: 9.5 miles
2	5/11/1959	12:50 AM	Monticello Monticello^	F 2	0.1 mi.	30 yd.	n/a	n/a	$250,000	n/a	Tornado caused minor damage in the City and wrecked electric cable factory south of the City
3	6/4/1960	11:37 PM	Galesville White Heath^	F 2	13.8 mi.	20 yd.	5	n/a	n/a	n/a	*Touchdown/Liftoff – Multiple Counties* Touched down in McLean County west of Normal and traveled southeast through DeWitt & Piatt Counties before lifting off near Sadorus in Champaign County – total length: 56.2 miles
4	4/22/1963	6:10 PM	Cerro Gordo^ Bement^ Ivesdale^	F 3	15.3 mi.	200 yd.	n/a	n/a	n/a	n/a	*Touchdown/Liftoff – Two Counties* Touched down near the Macon/Piatt County Line northwest of Cerro Gordo and travelled east-northeast through Piatt County before lifting off near Philo in Champaign County – total length: 31.8 miles - Tornado broke trees, uprooted hedge row, and damaged farm homes and buildings in Piatt County

[1] The length provided is only for the portion(s) of the tornado that occurred in the County.
^ Tornado touchdown verified in the vicinity of this location(s).
† Property damages sustained as a result of this tornado represent losses sustained in two or more counties. A detailed breakdown by county was not available.

Table 10
Tornadoes Reported in Piatt County
1950 - 2021

Map No.	Date(s)	Start Time	Location(s)	Magnitude Fujita Scale	Length (Miles)[1]	Width (Yards)	Injuries	Fatalities	Property Damages	Crop Damages	Impacts/Event Description
5	4/3/1974	2:10 PM	Mansfield^	F 1	7.0 mi.	20 yd.	n/a	n/a	$2,500	n/a	*Touchdown/Liftoff – Multiple Counties* Touched down in Piatt County norhtwest of Mansfield and travelled northeast through the southeast corner of McLean County and into Champaign County before lifting off west of Fisher – total length: 10.9 miles
6	4/3/1974	2:25 PM	Hammond^ Pierson Station^	F 0	3.3 mi.	20 yd.	n/a	n/a	$2,500	n/a	
7	6/19/1974	8:15 PM	Cisco Cisco^	F 0	0.1 mi.	10 yd.	n/a	n/a	n/a	n/a	
8	3/20/1976	1:20 PM	La Place^ Bement^ Ivesdale^	F 4	17.2 mi.	800 yd.	5	n/a	$2,500,000	n/a	*Touchdown/Liftoff – Multiple Counties* Touched down in Macon County southeast of Long Creek and traveled northeast through Piatt and Champaign Counties before lifting off northwest of Danville in Vermilion County – total length: 63.7 miles - Tornado destroyed the Voorhies Clock Tower Barn (considered an area landmark) and several other buildings
9	6/8/1981	8:37 PM	Mansfield^	F 1	0.1 mi.	10 yd.	n/a	n/a	n/a	n/a	
10	6/8/1981	8:40 PM	Galesville^	F 1	0.1 mi.	10 yd.	n/a	n/a	n/a	n/a	

[1] The length provided is only for the portion(s) of the tornado that occurred in the County.
^ Tornado touchdown verified in the vicinity of this location(s).
† Property damages sustained as a result of this tornado represent losses sustained in two or more counties. A detailed breakdown by county was not available.

Table 10
Tornadoes Reported in Piatt County
1950 - 2021

Map No.	Date(s)	Start Time	Location(s)	Magnitude Fujita Scale	Length (Miles)[1]	Width (Yards)	Injuries	Fatalities	Property Damages	Crop Damages	Impacts/Event Description
11	11/19/1985	3:58 PM	Mansfield^	F 1	1.4 mi.	40 yd.	n/a	n/a	$250,000	n/a	*Touchdown/Liftoff – Multiple Counties* Touched down north of Mansfield and travelled northeast through extreme southeast McLean County before lifting off west of Fisher in Champaign County – total length: 5.0 miles
12	5/16/1986	5:15 PM	Mansfield^ Farmer City^	F 1	0.5 mi.	10 yd.	n/a	n/a	$2,500	n/a	Several buildings sustained minor damage
13	4/11/1987	3:56 PM	De Land De Land^	F 1	4.0 mi.	23 yd.	n/a	n/a	$250,000	n/a	*Touchdown/Liftoff – Two Counties* Touched down in DeWitt County west of Kenney and traveled east-northeast into Piatt County before lifting off east of DeLand – total length: 28.0 miles
14	5/16/1991	1:07 PM	Mansfield^	F 0	0.2 mi.	50 yd.	n/a	n/a	n/a	n/a	Tornado damaged several trees
15	8/16/1993	8:31 PM	Monticello^	F 0	0.1 mi.	10 yd.	n/a	n/a	n/a	n/a	
16	4/19/1996	6:55 PM	Milmine Milmine^	F 1	0.3 mi.	50 yd.	n/a	n/a	$500,000	n/a	- Tornado completely destroyed a new grain bin in Milmine, throwing a grain auger across the railroad tracks, and causing minor damage to some homes in town, mainly some shingle and window damage - Several trees were blown down, windows on a number of cars were broken and several large trucks were overturned

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† Property damages sustained as a result of this tornado represent losses sustained in two or more counties. A detailed breakdown by county was not available.

Table 10
Tornadoes Reported in Piatt County
1950 - 2021

Map No.	Date(s)	Start Time	Location(s)	Magnitude Fujita Scale	Length (Miles)[1]	Width (Yards)	Injuries	Fatalities	Property Damages	Crop Damages	Impacts/Event Description
17	4/19/1996	7:00 PM	Monticello^	F 1	2.0 mi.	300 yd.	1	n/a	$1,000,000	n/a	- Tornado touched down briefly 3 miles south of Monticello, in the Breezy Meadows subdivision where it destroyed 2 homes, seriously damaged a third, caused major damage to a church and a metal machine shed The tornado then lifted and travelled to the northeast touching down briefly 2 miles southeast of Monticello at the Monticello Airport destroying 3 single engine planes, 2 gliders, a hanger and caused major damage to another hanger before lifting and dissipating
18	4/30/1997	3:15 PM	White Heath^	F 0	0.1 mi.	50 yd.	n/a	n/a	n/a	n/a	Tornado briefly touched down in an open field, near the intersection of I-72 and Route 10 causing no damage
19	4/8/1999	9:35 PM	Cisco^ De Land^	F 1	3.5 mi.	100 yd.	3	1	$150,000	n/a	- Tornado touched down destroying a double wide trailer 3 miles north of Cisco - Four people were initially injured, though one died the next day - A barn and two garages nearby were destroyed - Further to the northeast, the tornado destroyed a barn - Five miles north northeast of Cisco, the top story of a two story barn was removed

[1] The length provided is only for the portion(s) of the tornado that occurred in the County.

^ Tornado touchdown verified in the vicinity of this location(s).

† Property damages sustained as a result of this tornado represent losses sustained in two or more counties. A detailed breakdown by county was not available.

Table 10
Tornadoes Reported in Piatt County
1950 - 2021

Map No.	Date(s)	Start Time	Location(s)	Magnitude Fujita Scale	Length (Miles)[1]	Width (Yards)	Injuries	Fatalities	Property Damages	Crop Damages	Impacts/Event Description
20	6/4/1999	4:38 PM	Mansfield^	F 0	0.1 mi.	20 yd.	n/a	n/a	n/a	n/a	A tornado briefly touched down in field but no damage was reported
21	6/4/1999	4:48 PM	Mansfield^	F 0	0.1 mi.	20 yd.	n/a	n/a	n/a	n/a	A tornado briefly touched down in field but no damage was reported
22	4/20/2000	9:05 AM	Lodge Lodge^ White Heath^	F 0	3.5 mi.	30 yd.	n/a	n/a	n/a	n/a	- In Lodge, the tornado briefly touched down destroying a chimney on a house, then lifted and moved to the east
23	6/20/2000	8:08 PM	Mansfield^	F 0	0.9 mi.	50 yd.	n/a	n/a	n/a	n/a	*Touchdown/Liftoff – Two Counties* Touched down southeast of Mansfield and travelled east before lifting off west of Mahomet in Champaign County – total length: 2.6 miles - Destroyed a barn 1 mile southwest of Mansfield

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^ Tornado touchdown verified in the vicinity of this location(s).
† Property damages sustained as a result of this tornado represent losses sustained in two or more counties. A detailed breakdown by county was not available.

Table 10
Tornadoes Reported in Piatt County
1950 - 2021

Map No.	Date(s)	Start Time	Location(s)	Magnitude Fujita Scale	Length (Miles)[1]	Width (Yards)	Injuries	Fatalities	Property Damages	Crop Damages	Impacts/Event Description
24	10/24/2001	12:35 PM	Monticello Monticello^	F 2	1.8 mi.	300 yd.	n/a	n/a	$2,200,000	n/a	*Event Description Proveided below*
- A farm implement building/business, which was close to 200 feet in length, had roughly three quarters of the building destroyed and damage for this building was estimated at nearly $2 million, as several combines inside were severely damaged or destroyed - A tornado touched down on the southwest side of Monticello and traveled to the north northeast across the City - It blew down numerous trees near the golf course then destroyed a storage building - In this area the tornado intensified to F2 Intensity (wind speeds of 120 to 130 mph) taking the roof of a church completely off and blew it into the roof of a nearby 2 story apartment building - The apartment building suffered severe damage and has been deemed uninhabitable - Debris from the building was thrown into a nearby power substation, causing a complete power outage to the town of 5,000 residents as well as neighboring communities - The tornado appeared to have lifted off the ground and stayed at tree top level for the remainder of its life through the town producing F0 damage - Numerous trees had the tops broken off and several large trees were uprooted - Once outside of Monticello the tornado touched down briefly once more, damaging the roof of one home and destroying several outbuildings and a garage of another homestead about a mile north northeast - At this location, several 2 inch by 6 inch pieces of lumber from one of the machine sheds had shot through patio doors into the home										
25	5/14/2003	6:28 PM	Lodge^	F 0	0.1 mi.	10 yd.	n/a	n/a	n/a	n/a	A tornado briefly touched down in field but no damage was reported
26	3/30/2005	7:53 PM	Pierson Station Pierson Station^	F 1	0.8 mi.	150 yd.	n/a	n/a	n/a	n/a	*Touchdown/Liftoff – Two Counties* Touched down in Moultrie County northeast of Lovington and traveled northeast into Piatt County before lifting off north of Pierson Station – total length: 2.0 miles
27	5/31/2006	1:25 PM	Bement^	F 0	0.4 mi.	30 yd.	n/a	n/a	n/a	n/a	A tornado briefly touched down in field but no damage was reported

[1] The length provided is only for the portion(s) of the tornado that occurred in the County.
^ Tornado touchdown verified in the vicinity of this location(s).
† Property damages sustained as a result of this tornado represent losses sustained in two or more counties. A detailed breakdown by county was not available.

Table 10
Tornadoes Reported in Piatt County
1950 - 2021

Map No.	Date(s)	Start Time	Location(s)	Magnitude Fujita Scale	Length (Miles)[1]	Width (Yards)	Injuries	Fatalities	Property Damages	Crop Damages	Impacts/Event Description
28	7/26/2006	6:22 PM	Cisco^	F 0	0.1 mi.	20 yd.	n/a	n/a	n/a	n/a	A tornado briefly touched down in field causing crop damage
29	7/26/2006	6:25 PM	Monticello^	EF 0	0.1 mi.	20 yd.	n/a	n/a	n/a	n/a	A tornado briefly touched down in field causing crop damage
30	7/26/2006	6:50 PM	Cisco^	EF 0	0.1 mi.	30 yd.	n/a	n/a	n/a	n/a	A tornado briefly touched down in field causing crop damage
31	7/26/2006	6:51 PM	Monticello^	EF 0	0.1 mi.	30 yd.	n/a	n/a	n/a	n/a	A tornado briefly touched down in field causing crop damage
32	5/1/2012	2:59 PM	Monticello^	EF 0	0.1 mi.	10 yd.	n/a	n/a	n/a	n/a	A tornado briefly touched down in field but no damage was reported
33	6/7/2015	8:03 PM	Monticello^	EF 0	1.5 mi.	25 yd.	n/a	n/a	n/a	$4,000	*Touchdown/Liftoff – Two Counties* Touched down east of Monticello in Piattt County and travelled east-northeast before lifting off southwest of Champaign in Champaign County – total length: 2.7 mile - Caused minor crop damage 4.4 miles east of the City
34	5/23/2019	12:10 AM	Cisco Cisco^	EF 1	1.3 mi.	200 yd.	n/a	n/a	$300,000	n/a	- Numerous trees were damaged, several of which fell onto buildings as the tornado tracked through the Village - According to the Piatt County EMA Director, 22 homes and several vehicles sustained damaged
35	5/19/2020	5:07 PM	Hammond^ La Place^	EF U	0.9 mi.	25 yd.	n/a	n/a	n/a	n/a	

[1] The length provided is only for the portion(s) of the tornado that occurred in the County.
^ Tornado touchdown verified in the vicinity of this location(s).
† Property damages sustained as a result of this tornado represent losses sustained in two or more counties. A detailed breakdown by county was not available.

Table 10
Tornadoes Reported in Piatt County
1950 - 2021

Map No.	Date(s)	Start Time	Location(s)	Magnitude Fujita Scale	Length (Miles)[1]	Width (Yards)	Injuries	Fatalities	Property Damages	Crop Damages	Impacts/Event Description
36	6/25/2021	5:08 PM	Cisco^	EF 0	1.5 mi.	50 yd.	n/a	n/a	n/a	n/a	A tornado touched down in an open field north-northwest of the Village causing minor crop damage
37	6/25/2021	5:20 PM	De Land^	EF U	0.9 mi.	25 yd.	n/a	n/a	n/a	n/a	A tornado touched down in an open field but no damage was reported
GRAND TOTAL:							**14**	**1**	**$7,407,500**	**$4,000**	

Sources: Piatt County Multi-Jurisdictional All Hazard Mitigation Planning Committee Member responses to the Natural Hazard Events Questionnaire.
NOAA, National Environmental Satellite, Data & Information Service, National Centers for Environmental Information, Storm Data.
NOAA, National Environmental Satellite, Data & Information Service, National Centers for Environmental Information, Storm Events Database.
NOAA, National Weather Service, Weather Forecast Office Lincoln, Illinois, Tornado Climatology for Central and Southeast Illinois, Piatt County.
NOAA, National Weather Service, Storm Prediction Center, SVRGIS, Tornadoes (1950-2021) Database.

[1] The length provided is only for the portion(s) of the tornado that occurred in the County.
^ Tornado touchdown verified in the vicinity of this location(s).
† Property damages sustained as a result of this tornado represent losses sustained in two or more counties. A detailed breakdown by county was not available.

Table 11
Drought Events Reported in Piatt County
1980 - 2021

Year(s)	Start Month	Duration (Months)	Magnitude Drought Intensity Category[1]					Percent Crop Yield Reduction from Previous Year		Designated USDA Primary Natural Disaster Area	Crop Damages	Impacts/Event Description
			D0	D1	D2	D3	D4	Corn	Soybeans			
1983	June	n/a						30.8 %	16.1 %	n/a	n/a	All 102 counties in Illinois were proclaimed state disaster areas because of high temperatures and insufficient precipitation beginning in mid-June
1988	June	16						41.4 %	34.7 %	n/a	n/a	Approximately half of all Illinois counties were impacted by drought conditions
2005	May	12	X	X	X			10.5 %	---	Yes	n/a	
2011	August	3	X	X	X			4.5 %	16.3 %	Yes	n/a	
2012	May	9	X	X	X	X		16.7 %	3.0 %	Yes	$ 32,000,000	- Total damage to corn crop was estimated at $32 million - The Sangamon River at Monticello was at zero flow for much of July and 15 days in August, which was the lowest flow ever recorded at that site for 105 years
2013	August	8	X	X	X			---	---	No	n/a	
GRAND TOTAL:											**$ 32,000,000**	

Sources: Illinois State Water Survey, Illinois State Climatologist.
National Drought Mitigation Center, United States Drought Monitor.
NOAA, National Environmental Satellite, Data & Information Service, National Centers for Environmental Information, Storm Events Database.
United States Department of Agriculture, National Agricultural Statistics Service, Quik Stats Lite.

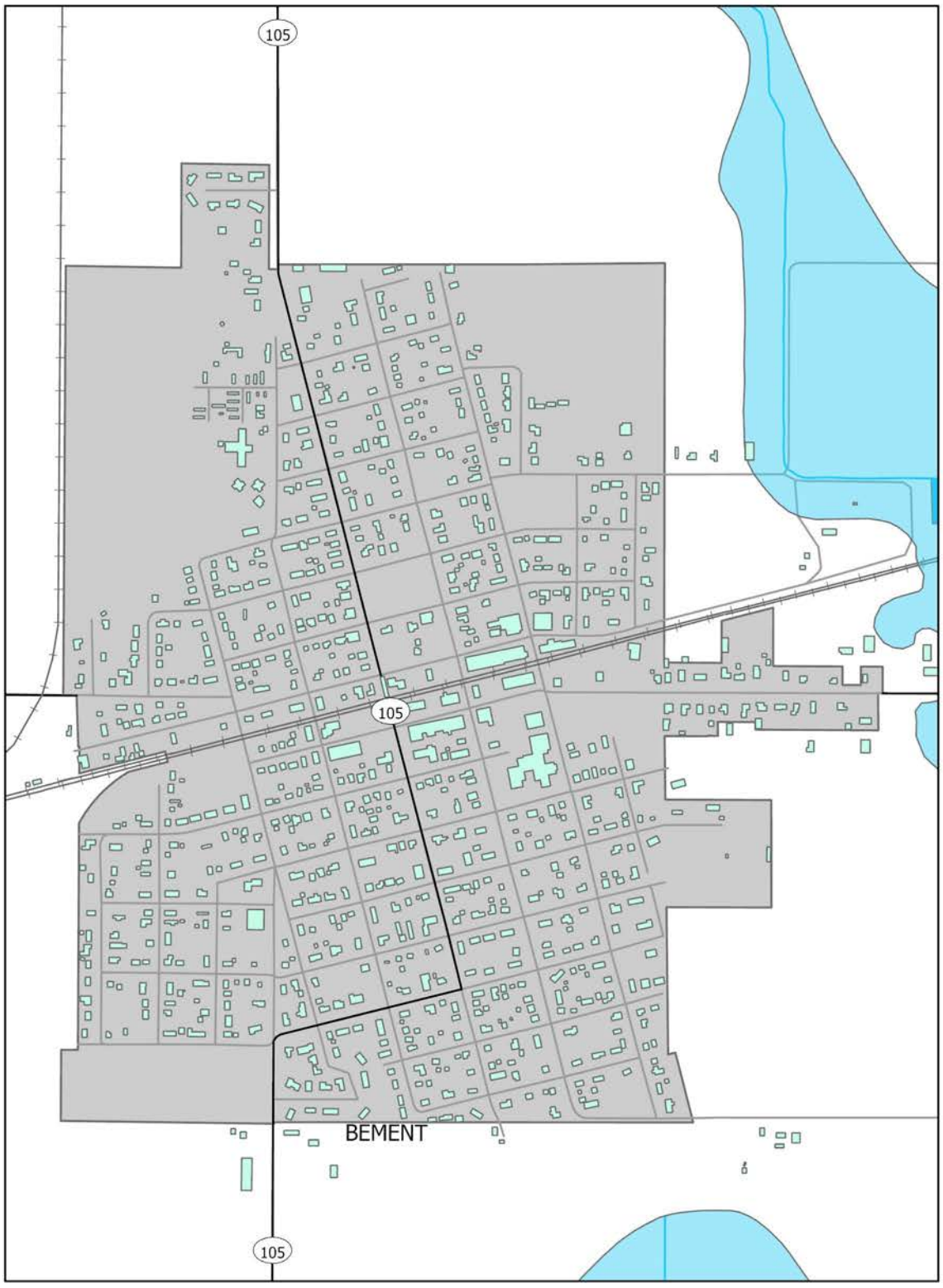
[1] An "X" identifies the level of drought intensity reached by at least a portion of the County during the event, if available.

US Drought Monitor – Drought Intensity Category Descriptions

D0	abnormally dry	D3	extreme drought
D1	moderate drought	D4	exceptional drought
D2	severe drought		

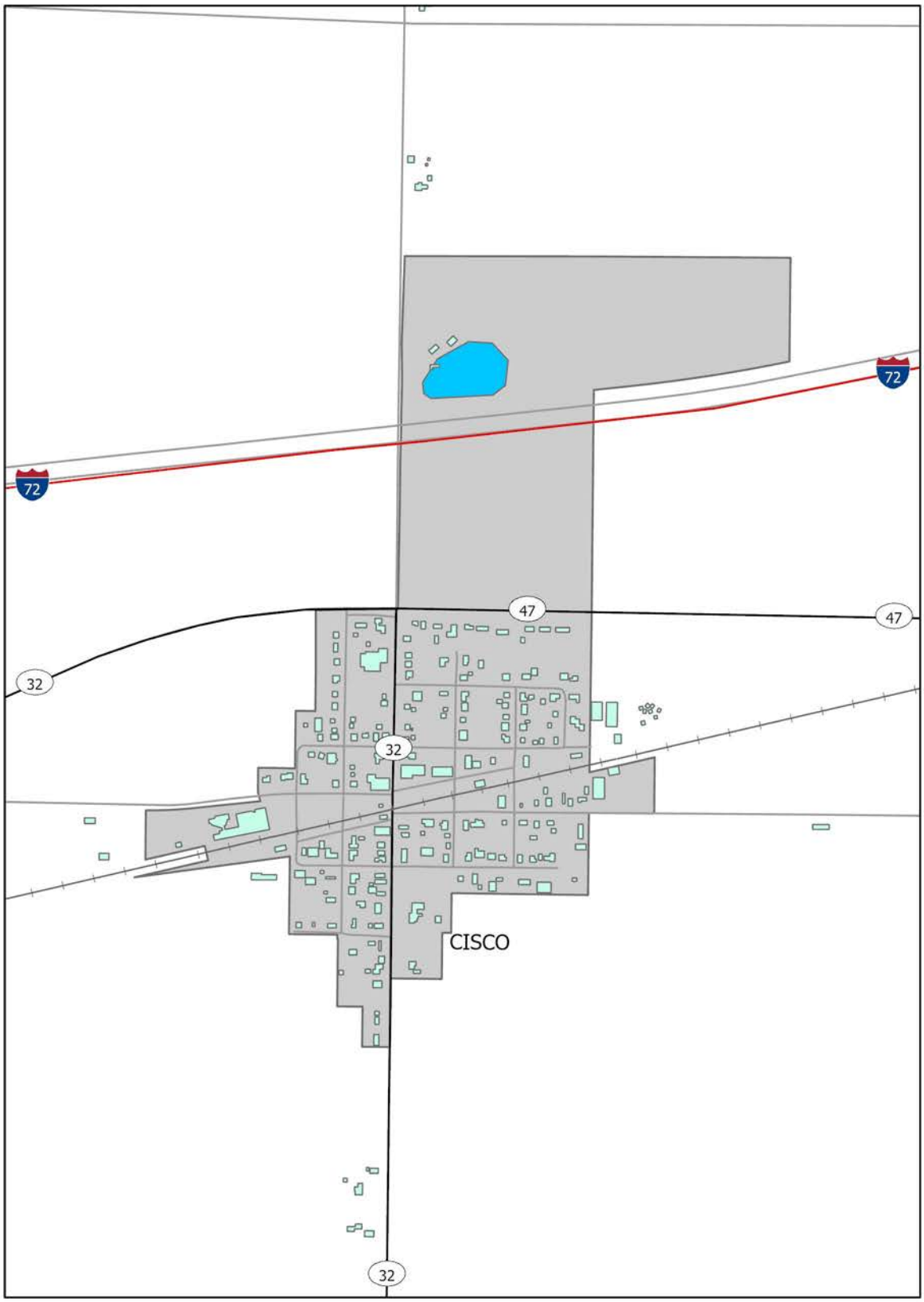
APPENDIX J

Bement



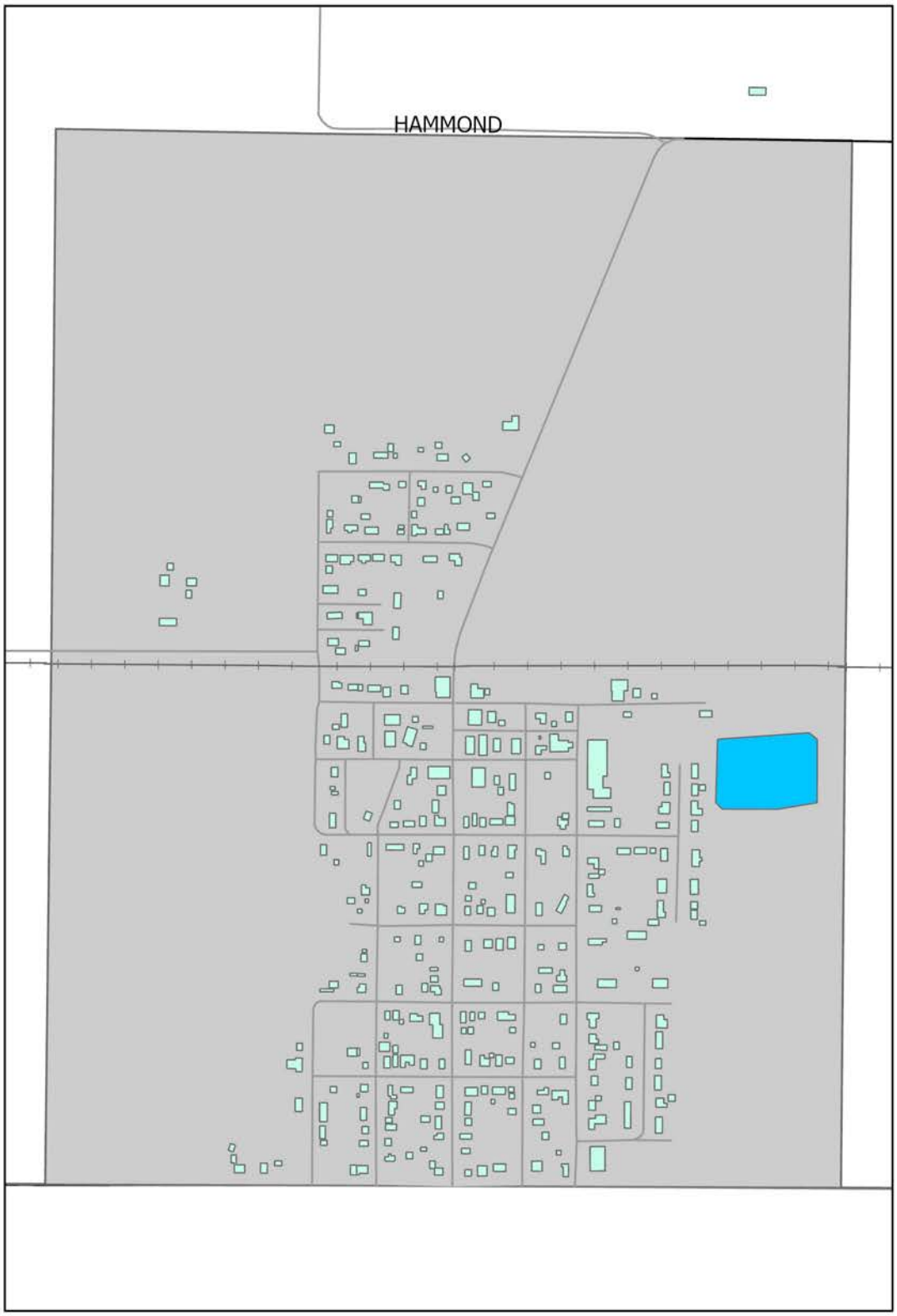
Map created November 2022 in ArcGIS Pro by Callie Smith at American Environmental Corporation
Sources: Esri Community Maps Contributors, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA, Esri, NASA, NGA, USGS, FEMA

Cisco



Map created November 2022 in ArcGIS Pro by Callie Smith at American Environmental Corporation
Sources: Esri Community Maps Contributors, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA, Esri, NASA, NGA, USGS, FEMA

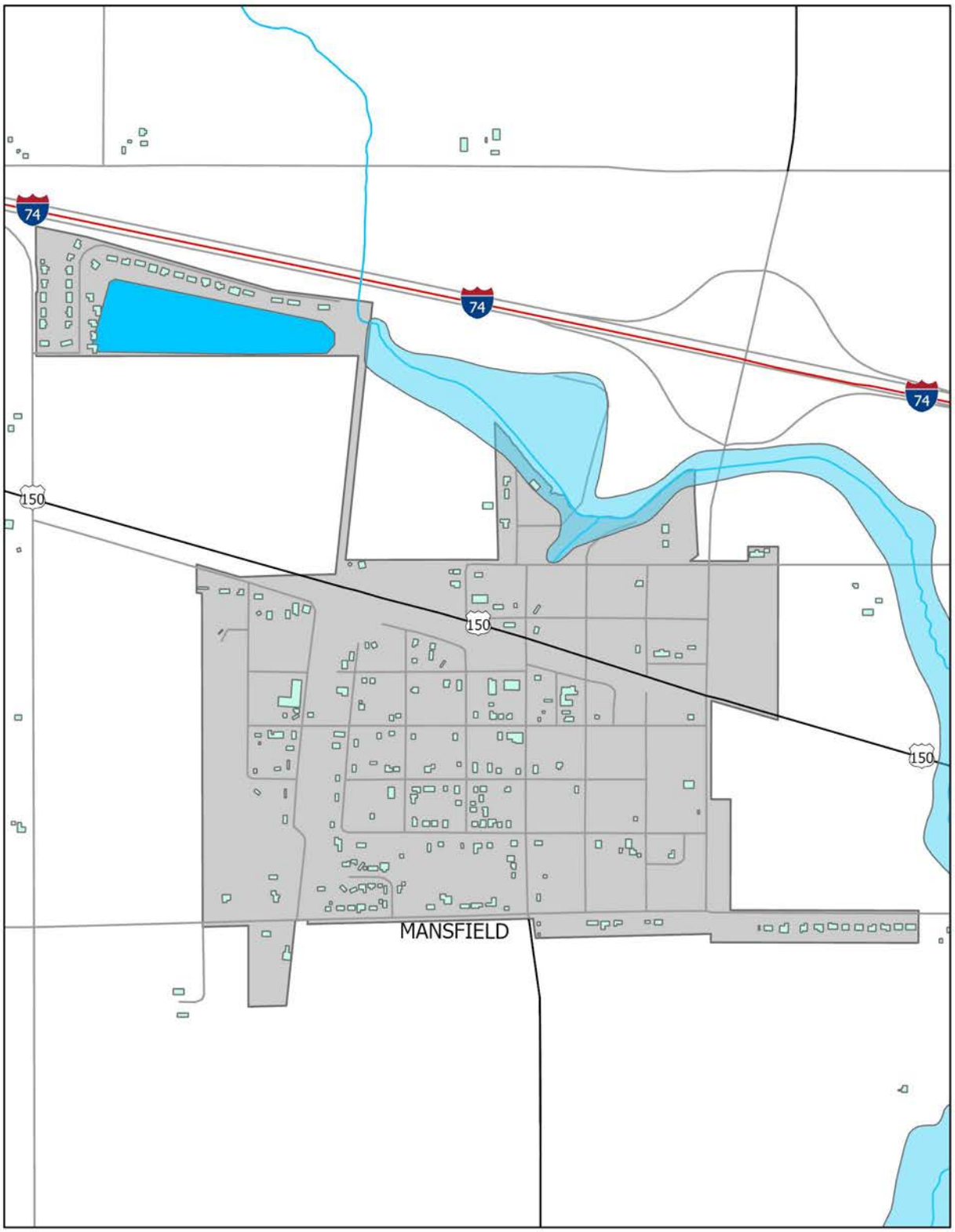
Hammond



Map created November 2022 in ArcGIS Pro by Callie Smith at American Environmental Corporation
Sources: Esri Community Maps Contributors, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA, Esri, NASA, NGA, USGS, FEMA

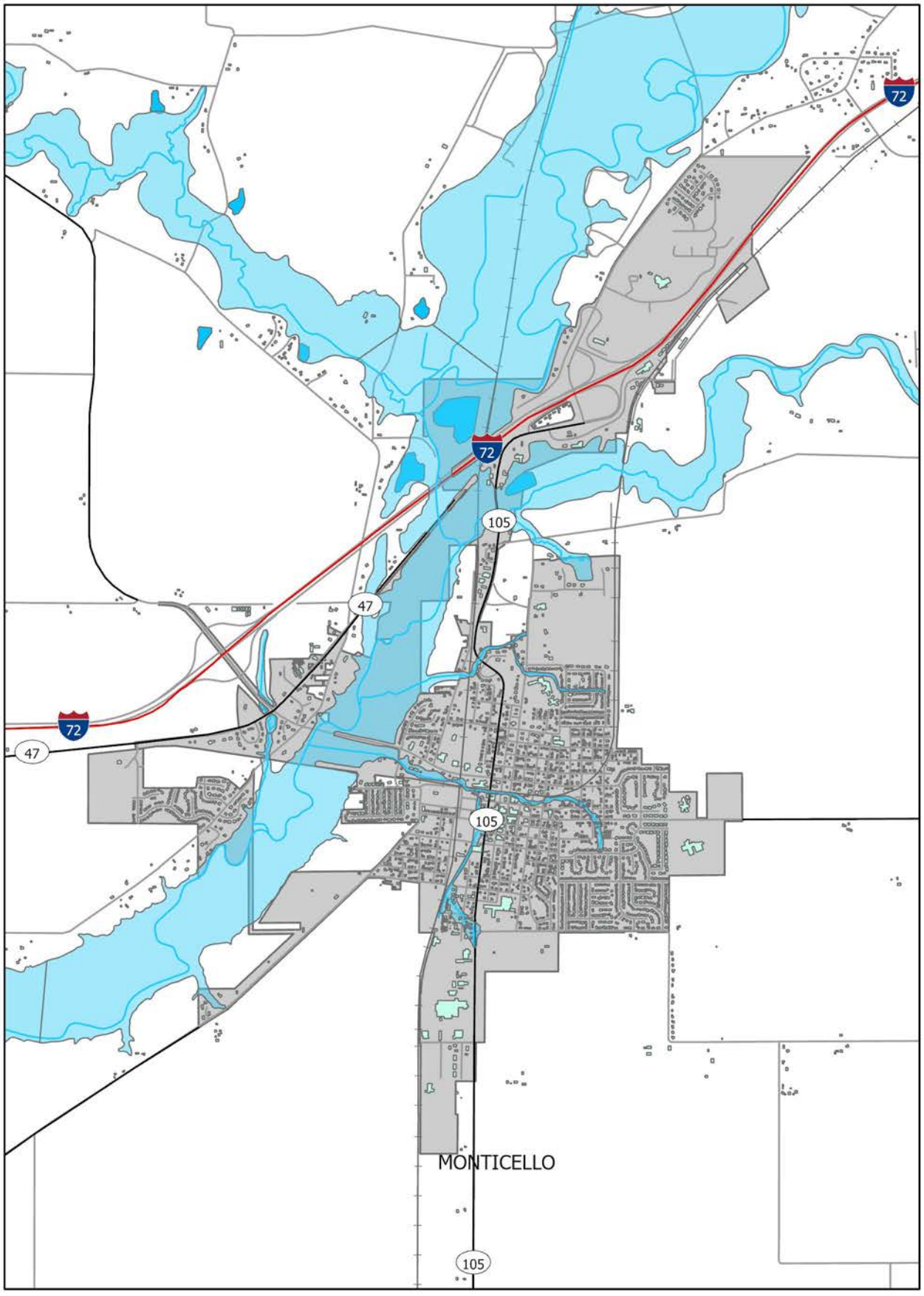
Appendix J

Mansfield



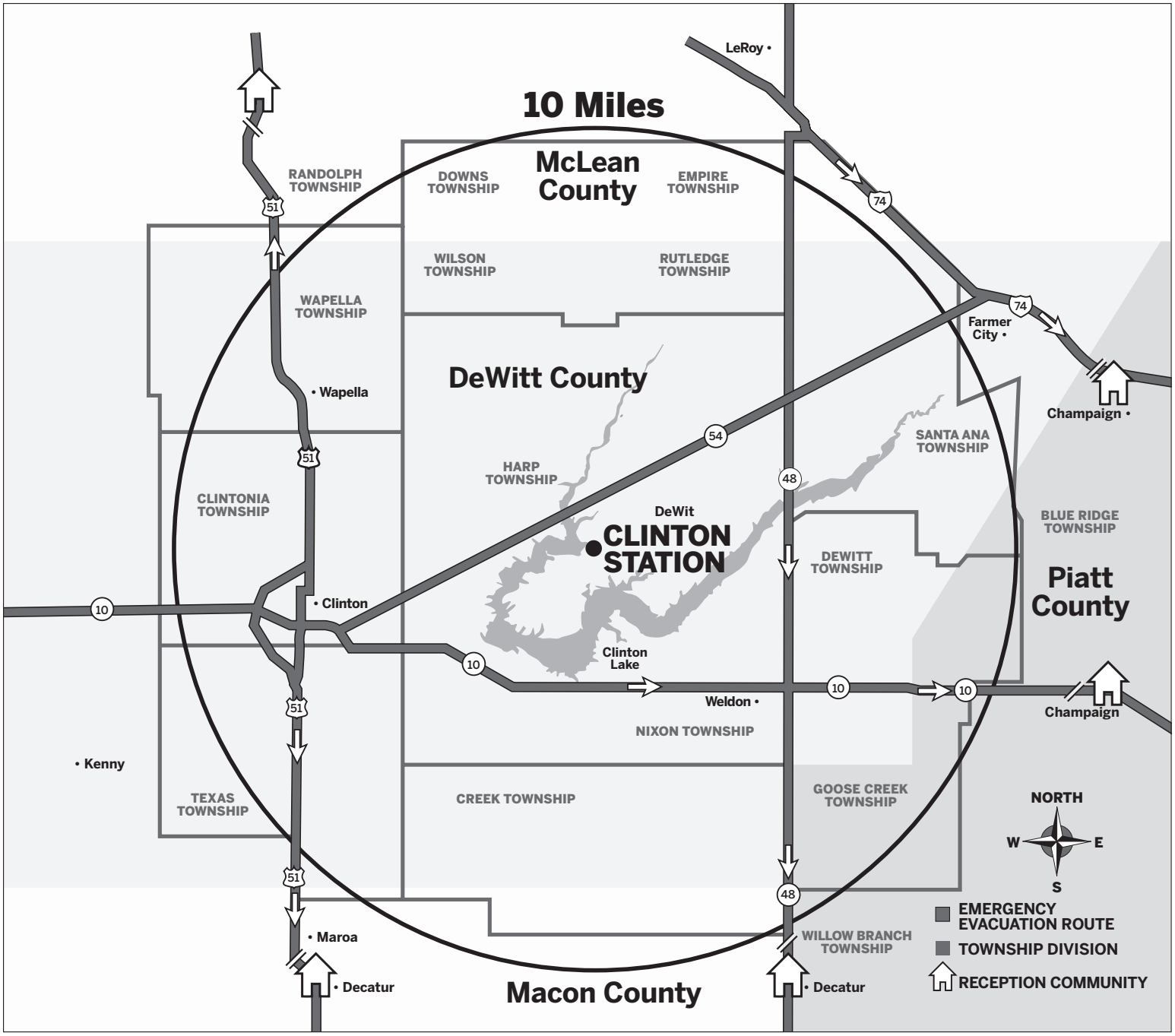
Map created November 2022 in ArcGIS Pro by Callie Smith at American Environmental Corporation
Sources: Esri Community Maps Contributors, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA, Esri, NASA, NGA, USGS, FEMA

Monticello



Map created November 2022 in ArcGIS Pro by Callie Smith at American Environmental Corporation
Sources: Esri, NASA, NGA, USGS, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/ NASA, USGS, EPA, NPS, USDA

APPENDIX K



The Nuclear Regulatory Commission requires specific plans for protecting the public within an approximate 10-mile radius of any nuclear power plant. Know your location on the map and mark it. Some primary evacuation routes are listed below. ***In an emergency, follow the directions given on the radio, even if different from those shown below.*** *Broadcasted directions will be based on actual road and weather conditions and wind direction — helping to ensure your safety as you leave the evacuation area.*

Evacuation Routes/Reception Communities

Champaign
- **IL 10 east**
- **I-74 east**

Decatur
- **IL 48 south**
- **U.S. 51 south**

Normal
- **U.S. 51 north**

APPENDIX L

Table 5-5: Mitigation Strategies

	Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Jurisdictions Covered	Priority	Comments
---	Distribute weather radios to residents in mobile homes, nursing homes, and assisted living facilities	**Goal:** Lessen the impacts of hazards to new and existing infrastructure **Objective:** Equip public facilities and communities to guard against damage caused by secondary effects of hazards.	Tornado, Thunderstorm, Flood, Earthquake, Drought, Winter Storm, Subsidence	Piatt County	Completed	The county EMA has distributed weather radios.
---	Elevate bridges that flood frequently	**Goal:** Lessen the impacts of hazards to new and existing infrastructure **Objective:** Minimize the amount of infrastructure exposed to hazards.	Flood, Thunderstorm	Piatt County	Completed	The county has worked with ILDOT to modify the county bridges that historically flood
---	Using CREP resources, address flooding issues to 400 identified acres in Piatt County	**Goal:** Lessen the impacts of hazards to new and existing infrastructure **Objective:** Minimize the amount of infrastructure exposed to hazards.	Flood	Piatt County	Completed	The county has worked with CREP to address flooding issues.
---	Develop county ordinances requiring subdivision to have retention ponds and ditches.	**Goal:** Create new or revise existing plans/maps for the community **Objective:** Review and update existing community plans and ordinances to support hazard mitigation.	Flood, Thunderstorm	Piatt County	Completed	The county has implemented ordinances to protect residential areas from flooding. Additional effort will be exerted to maintain them and enforce these ordinances to regulate development within the floodplain.
---	Implement Blackboard Connect to improve emergency communications	**Goal:** Lessen the impacts of hazards to new and existing infrastructure **Objective:** Evaluate and strengthen the communication and transportation abilities of emergency services throughout the county.	Tornado, Thunderstorm, Flood, Earthquake, Drought, Winter Storm, Hazmat, Fire	Piatt County, Bement	Completed	The county has implemented Blackboard Connect to ensure effective communication to protect residents in the event of an emergency.
1	Modify the Livingston Center for use as a shelter	**Goal**: Lessen the impacts of hazards to new and existing infrastructure **Objective**: Retrofit critical facilities with structural design practices and equipment that will withstand natural disasters and offer weather-proofing.	Tornado, Flood, Earthquake, Drought, Winter Storm, Hazmat, Fire	Monticello	In Progress	The county is in the process of retro-fitting the Livingston Center to provide an emergency shelter.
---	Develop a multi-county program to purchase and train on the use of a grain elevator rescue tube	**Goal:** Lessen the impacts of hazards to new and existing infrastructure **Objective:** Minimize the amount of infrastructure exposed to hazards.	Hazmat	Piatt County	In Progress	Piatt County, along with the surrounding jurisdictions, is part of a communal effort to purchase a grain elevator rescue tube. Fire departments and first responders will need training on the use of these devices. The Communities of Monticello and Deland currently have grain elevator rescue.
2	Develop a coordination plan for evacuation	**Goal:** Develop long-term strategies to educate Piatt County residents on the hazards affecting their county **Objective:** Raise public awareness on hazard mitigation.	Hazmat	Piatt County	High	The county EMA will oversee the implementation of this project. Local resources will be used to help coordinate all jurisdictions. Implementation is forecasted to begin within one year.

	Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Jurisdictions Covered	Priority	Comments
3	Trim trees to minimize the amount/duration of power outages	**Goal:** Lessen the impacts of hazards to new and existing infrastructure **Objective:** Minimize the amount of infrastructure exposed to hazards.	Winter Storm	Piatt County	High	The County EMA will coordinate a team to work with utility companies to address this strategy. Funding may come from community grants or local resources. If funding and resources are available, implementation will begin within one year.
4	Clear debris from ponds, waterways, and lower ditches to improve water flow	**Goal:** Lessen the impacts of hazards to new and existing infrastructure **Objective:** Minimize the amount of infrastructure exposed to hazards.	Flood, Thunderstorm, Winter Storm	Mansfield, Hammond	High	The County EMA will oversee this project. Funding will be sought from state agencies such as IEMA and IDNR. If funding is available, implementation will begin in one year.
5	Repair and maintain storm sewer systems in Pierson Station	**Goal:** Lessen the impacts of hazards to new and existing infrastructure **Objective:** Minimize the amount of infrastructure exposed to hazards.	Flood, Thunderstorm	Piatt County	High	The county will seek funding from the state to coordinate with the EPA and effectively implement this project. Funding has not been secured as of 2011, but Implementation will begin within one year.
6	Coordinate local agencies to develop a database of special needs populations	**Goal:** Create new or revise existing plans/maps for the community **Objective:** Conduct new studies/research to profile hazards and follow up with mitigation strategies.	Tornado, Flood, Earthquake, Thunderstorm, Winter Storm, Drought, Hazmat, Fire	Piatt County	High	The county EMA, along with local resources, will coordinate the development of this county-wide database. Implementation will begin within one year.
7	Install inertial valves in county buildings	**Goal**: Lessen the impacts of hazards to new and existing infrastructure **Objective**: Retrofit critical facilities with structural design practices and equipment that will withstand natural disasters and offer	Earthquake	Piatt County, Monticello	Medium	The County EMA will oversee implementation of this project and determine which facilities do not currently have inertial valves. Funding has not been secured as of 2011, but the PDM program and community grants are an option. If funding is available, implementation will begin within three years.
8	Conduct a study to identify the potential buy-out homes that flood frequently.	**Goal:** Create new or revise existing plans/maps for Piatt County **Objective:** Support compliance with the NFIP for each jurisdiction in Piatt County.	Flood	Piatt County	Medium	The county EMA oversees the implementation of the project. Funding has not been secured as of 2011 but will be sought from funding sources such as IEMA. Implementation, if funding is available, is forecasted to begin within three years.
9	Build a shallow retention pond along the railroad tracks in Melmine	**Goal**: Lessen the impacts of hazards to new and existing infrastructure **Objective**: Minimize the amount of infrastructure exposed to hazards.	Flood, Thunderstorm, Winter Storm	Piatt County	Medium	The EMA director will work with local officials to oversee this project. Funding has not been secured as of 2011, but USDA grants are an option. If funding is available, implementation will begin within three years.
10	Conduct a flow allocation study for rail and road transportation	**Goal:** Create new or revise existing plans/maps for Piatt County **Objective:** Conduct new studies/research to profile hazards and follow up with mitigation strategies.	Hazmat	Piatt County	Medium	The county EMA will work with local government leaders, county highway department, and railroad companies to coordinate this project. Funding will be sought from ILDOT, IEMA, and local sources. Implementation, if funding is available, will begin within three years.

	Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Jurisdictions Covered	Priority	Comments
11	Install warning sirens in Pierson Station and La Place and develop a plan for ongoing maintenance of these sirens	**Goal:** Lessen the impacts of hazards to new and existing infrastructure **Objective:** Evaluate and strengthen the communication and transportation abilities of emergency services throughout the county.	Tornado, Thunderstorm, Fire	Piatt County, Bement	Medium	The EMA director will oversee this project and seek state or federal funding. If funding is available, implementation will begin within three years.
12	Enforce existing floodplain ordinances to protect new infrastructure	**Goal:** Lessen the impacts of hazards to new and existing infrastructure **Objective:** Minimize the amount of infrastructure exposed to hazards.	Flood	Piatt County	Medium	The county EMA will oversee the implementation of this project. Local resources will be used to continue enforcement. Implementation is forecasted to begin within three years.
13	Conduct a study to identify high water areas for culverts/ditches	**Goal:** Lessen the impacts of hazards to new and existing infrastructure **Objective:** Minimize the amount of infrastructure exposed to hazards.	Flood	Deland	Medium	The County will work with the local highway department to implement this project. Funding as not been secured as of 2011but the county will seek state and federal grants. Implementation, if funding is available, will begin within three years.
14	Develop mutual aid agreements using Mutual Aid Box Alarm System (MABAS)	Goal: Create new or revise existing plans/maps for the community Objective: Review and update existing, or create new, community plans and ordinances to support hazard mitigation	Tornado, Flood, Earthquake, Thunderstorm, Drought, Winter Storm, Hazmat, Fire,	Piatt County	Medium	The county EMA will oversee the implementation of this project. Local resources will be used to help coordinate all jurisdictions. Implementation is forecasted to begin within three years.
15	Encourage all communities to participate in the NFIP through public education	**Goal:** Create new or revise existing plans/maps for the community Objective: Support compliance with the NFIP for each jurisdiction.	Flood, Thunderstorm	Bement, Cerro Gordo, Cisco, Hammond	Medium	Although the county is not typically at risk of severe flooding, the County EMA will establish a team to educate the public on the benefits of joining the NFIP. FEMA may be approached for funding for educational materials. If funding and resources are available, implementation will begin within three years.
16	Develop capacity for local hazmat response and recovery training for first responders.	**Goal:** Develop long-term strategies to educate Pike County residents on the hazards affecting their county **Objective:** Improve education and training of emergency personnel and public officials	Hazmat	Piatt County	Medium	The county EMA will coordinate with private entities (corporations and individuals) for equipment and expertise. Local resources or community grants will be used for funding and to research training opportunities. If funding and resources are available, implementation will begin within three years.
17	Institute Nixle	**Goal:** Lessen the impacts of hazards to new and existing infrastructure **Objective:** Evaluate and strengthen the communication and transportation abilities of emergency services throughout the county.	Tornado, Flood, Earthquake, Thunderstorm, Winter Storm, Hazmat, Fire	Piatt County	Low	The county EMA will oversee the implementation of this project. Local resources will be used to maintain the system. Funding for implementation will be sought from state and federal agencies. Implementation, if funding is available, is forecasted to begin within five years.
18	Develop a public education program to discuss the importance of tie downs for manufactured homes and local shelter information	**Goal:** Develop long-term strategies to educate Pike County residents on the hazards affecting their county **Objective:** Raise public awareness on hazard mitigation.	Tornado, Thunderstorm, Flood, Earthquake, Drought, Winter Storm, Hazmat,	Piatt County	Low	The county EMA will oversee this project and seek federal funding. Local resources will be used to develop educational literature and present to each jurisdiction at public events. If resources are available, the project will be implemented within five years.

	Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Jurisdictions Covered	Priority	Comments
19	Develop a public education program for schools to discuss the impact of hazards, in particular earthquakes	**Goal:** Develop long-term strategies to educate Piatt County residents on the hazards affecting their county **Objective:** Raise public awareness on hazard mitigation.	Earthquake	Piatt County	Low	The county EMA will oversee this project. Local resources will be used to develop educational literature and present to each jurisdiction at public events. If resources are available, the project will be implemented within five years.
---	Implement clean-up of brownfield sites to encourage redevelopment and reuse of contaminated property	**Goal:** Lessen the impacts of hazards to new and existing infrastructure **Objective:** Minimize the amount of infrastructure exposed to hazards.	Hazmat	Cerro Gordo, Cisco	Low	The county will work with the EPA to expedite the cleanup and redevelopment of brownfield sites. If resources are available, the project will be implemented within five years.
20	Educate the public on the dangers of anhydrous ammonia	**Goal:** Develop long-term strategies to educate Piatt County residents on the hazards affecting their county **Objective:** Raise public awareness on hazard mitigation.	Hazmat	Piatt County	Low	The county EMA will oversee this project. Local resources will be used to develop educational literature and present to each jurisdiction at public events. If resources are available, the project will be implemented within five years.
21	Encourage county-wide participation in the annual Shake-Out Drill	**Goal:** Develop long-term strategies to educate Piatt County residents on the hazards affecting their county **Objective:** Raise public awareness on hazard mitigation.	Earthquake	Piatt County	Low	The county EMA will oversee this project. Local resources will be used to develop educational literature and present to each jurisdiction at public events. If resources are available, the project will be implemented within five years.

APPENDIX M

Plan Maintenance Checklist

We are in the process of conducting our annual evaluation/status update of the Watseka Multi-Jurisdictional Natural Hazard Mitigation Plan. Please review the following tasks and complete and return this checklist along with the necessary forms. If you have any questions, please let us know.

Jurisdiction: _____

Prepared By: _____

Title: _____ Date: _____

TASK 1: DAMAGE INFORMATION

Has your jurisdiction sustained any natural hazard-related damages to critical facilities and infrastructure within the last year?

☐ Yes ☐ No ☐ Don't Know

If Yes, please complete and return the attached critical facilities damages questionnaire.

TASK 2: STATUS OF EXISTING PROJECTS/ACTIVITIES

Please look over the attached Mitigation Action Tables for your jurisdiction and determine whether any of the mitigation projects/activities listed have been completed or are in progress (in the planning stages.)

Does your jurisdiction have any mitigation projects/activities in progress (in the planning stages) or completed?

☐ Yes ☐ No

If Yes, please fill out and return the attached Mitigation Action Progress Report for each project/activity that has been completed or is in progress.

TASK 3: IDENTIFICATION OF NEW PROJECTS/ACTIVITIES

Are there any new mitigation projects/activities your jurisdiction would like to see add to the Plan? (Remember, only projects included in the Plan are potentially eligible for federal mitigation projects funding.)

☐ Yes ☐ No

If yes, please complete and return the attached New Mitigation Project Form.

Plan Maintenance Checklist

TASK 4: JURISDICTION EVALUATION

Have there been any significant changes in development in your jurisdiction within the last 12 months (i.e. expansion of existing businesses, siting of new businesses, new subdivision development or expansion of existing subdivisions, demolition of businesses/residents to create green spaces, etc.)

☐ Yes ☐ No

If yes, please specify the type of development changes.

_____

_____

Has your jurisdiction adopted any new policies, plans, regulations, or reports that could be incorporated into this Plan?

☐ Yes ☐ No

If yes, please provide the name of the policy, plan, regulation or report and its purpose.

_____

_____

Do any new critical facilities or infrastructure need to be added to your jurisdiction's Critical Facilities Survey?

☐ Yes ☐ No

If yes, please provide the name and address of the facility.

_____

_____

Critical Facilities Damage Questionnaire

Supplemental information about ***damages to critical infrastructure/facilities*** (i.e., government buildings, schools, communication tower and radio equipment, water & sewer treatment facilities, hospitals, etc.) that have ***taken place*** in the municipalities and County is needed for the risk assessment/vulnerability analysis portion of the Plan. If you could take a moment and think about the critical infrastructure damages caused by past natural hazard occurrences and provide any available information in the form below, it would be greatly appreciated.

Please complete <u>one record</u> for <u>each natural hazard event that damaged a critical facility</u>. Do not combine multiple events on one record. Additional forms are located on the back of this page.

Prepared By: _____ Date: _____

1.) Date of Event (month/day/year if possible)**:** _____

2.) Critical Facility Damaged: _____

3.) Type of Hazard:

- ☐ thunderstorm (straight-line winds)
- ☐ hail
- ☐ lightning strike
- ☐ heavy rain
- ☐ flood
- ☐ tornado
- ☐ snow storm
- ☐ ice storm
- ☐ extreme cold
- ☐ drought
- ☐ excessive heat
- ☐ landslide
- ☐ sinkhole
- ☐ mine subsidence
- ☐ earthquake
- ☐ levee failure
- ☐ dam failure

4.) Types of Damages: _____

_____

5.) Estimate of Damages: $ _____

Mitigation Action Progress Report

As part of the Plan Maintenance "monitoring" phase, the implementation status of each project and activity listed in the Plan for the participating jurisdictions needs to be identified.

1) Please review the Mitigation Action Tables provided for your jurisdiction to determine whether any of the projects/activities listed have been ***"Completed"*** or are ***"In Progress"*** (in the planning stages.)
2) For each project or activity that is ***"Completed"*** or "***In Progress"***, please fill out the following Progress Report.

Jurisdiction: _____

Prepared By: _____

Title: _____ Date: _____

Progress Report Period	From Date: To Date:
Project/Activity Description	
Responsible Agency	
Project Status	☐ In Progress ☐ Approved by Council/Board ☐ Included in Capital Improvement Plan/Slated for Construction & Implementation ☐ Grant Completed & Submitted ☐ Letting/Contractor Selected ☐ Notice to Proceed Issued ☐ Construction Underway ☐ Anticipated Completion Date: _____ ☐ Other (please specify): _____ ☐ Completed ☐ Project Delayed ☐ Project Cancelled

SUMMARY OF PROJECT PROGRESS FOR THIS REPORT PERIOD

What was accomplished during this reporting period for this project?

Were any obstacles, problems or delays encountered? ☐ Yes ☐ No ☐ Don't Know
If Yes, please describe:

If the project was delayed, is it still relevant? ☐ Yes ☐ No ☐ Don't Know
If Yes, should the project be changed/revised?

Other comments:

New Hazard Mitigation Projects Form
Multi-Jurisdictional Hazard Mitigation Plan

Participating Jurisdiction _____

Prepared by: _____

Title _____ Date: _____

	Project Description	**Position/Organization Responsible for Implementation & Administration of the Project** *(i.e. Mayor / City Council; Public Works Director; Fire Chief / Board of Trustees)*	**Time Frame to Complete the Project** *(i.e. 1 year; 5 years; 2-5 years)*
1.			
2.			
3.			
4.			

APPENDIX N