

THE SANGAMON COUNTY MULTI-JURISDICTIONAL NATURAL HAZARDS MITIGATION PLAN



City of Auburn, Village of Buffalo, Village of Chatham, Village of Curran,
Village of Dawson, Village of Divernon, Village of Grandview,
Village of Illiopolis, Village of Jerome, City of Leland Grove,
Village of Mechanicsburg, Village of New Berlin,
Village of Pawnee, Village of Pleasant Plains, Village of Riverton,
Village of Rochester, Sangamon County, Village of Sherman,
Village of Southern View, Village of Spaulding,
City of Springfield, Village of Williamsville,
Sangamon County Water Reclamation District



Prepared by the Springfield-Sangamon
County Regional Planning Commission

Prepared by:

THE SPRINGFIELD-SANGAMON COUNTY REGIONAL PLANNING COMMISSION

200 South 9th Street, Room 212

Springfield, Illinois 62701-1629

(217) 535-3110

www.SSCRPC.com

Use of these materials for non-commercial purposes is permitted as long as proper credit is given. Cover photographs courtesy of Molly Berns.

Sangamon County Multi-jurisdictional Natural Hazards Mitigation Plan

Plan Author:

Springfield-Sangamon County Regional Planning Commission

Molly Berns, Executive Director

Steve Kennan, Senior Planner - Land Use and Environmental Planning

Emily Prather, Associate Planner - Land Use and Environmental Planning

Lindsay Kovski, Planning Specialist

February 2023

Sangamon County Multi-jurisdictional Natural Hazards Mitigation Plan Task Force:

- City of Auburn - John Edie
- Village of Buffalo - Dan Miller
- Village of Chatham - Trent Thompson
- Village of Curran - Tim Thomas
- Village of Dawson - Tyler Abbott
- Village of Divernon - Chuck Apgar
- Village of Grandview - Maria Ray
- Village of Illiopolis - Sam L. Rogers
- Village of Jerome - Dale Lael
- City of Leland Grove - Lance Cull
- Village of Mechanicsburg - Larry Hamlin
- Village of New Berlin - Stephen Knox
- Village of Pawnee - Jeff Thomas/Dave Skinner
- Village of Pleasant Plains - Craig Held
- Village of Riverton - Tom Rader
- Village of Riverton - Joe Bartley
- Village of Riverton - Regina Rusciollelli
- Village of Rochester - Stacia Munroe/Matt Butcher
- Village of Sherman - Mike Moos
- Village of Southern View - Lisa Cave
- Village of Southern View - Robert Eskew
- Village of Spaulding - Jean Hillyer
- Village of Spaulding - Carrie Marcy
- City of Springfield - Nate Bottom
- Village of Williamsville - John M. Brennan
- Sangamon County - Brian McFadden/Brian Davis
- American Red Cross - Jamie Beaver/Edward Johnson
- City of Springfield, OPED - Ravi Doshi
- City Water, Light & Power - P.J. Becker
- Greater Springfield Chamber of Commerce - Jeff Large
- Lincoln Land Community College - Chris Russell
- National Weather Service - Ed Shimon
- Rural Electric Convenience Cooperative - Tim Hemberger
- Sangamon County Dept. of Building & Zoning - Trustin Harrison/Ryan Bangert
- Sangamon County Dept. of Public Health - Gail O'Neill
- Sangamon County Farm Bureau - Jim Birge
- Sangamon County Highway Dept. - Brian Davis
- Sangamon County OEM - Bill Lee
- Sangamon County Soil & Water Cons. Dist. - Michelle Curby
- Sangamon County Water Reclamation Dist. - Gregg Humphrey
- Sangamon Mass Transit District - Melony Lonon
- Springfield Airport Authority - Mike Buchele
- Springfield Area Homebuilders Association - Steve Sturm
- Springfield Park District - James Schackmann
- Springfield School District #186 - Darrell Schaver/Kevin Roberts
- State of Illinois DOA - Mark Clayton
- State of Illinois CMS - Brent Boesdorfer
- State of Illinois DNR - Ron Davis
- State of Illinois DOT - Brandon Keller
- State of Illinois SOS - David Fuchs
- University of Illinois Springfield - Ross Owens/Joan Sestek

MISSION STATEMENT
Sangamon County Multi-jurisdictional Natural Hazards
Mitigation Plan Task Force
(Adopted March 24, 2023)

The mission of the Sangamon County Multi-Jurisdictional Natural Hazards Mitigation Plan Task Force is to reduce the impact of natural hazards on citizens, infrastructure, property, and critical facilities through a combined effort of communities, government entities, non-profit organizations, citizenry, and other partners to develop a mitigation action plan that will be adopted and implemented by each participating community.

Natural Hazards Being Considered

Dam failure

Drought

Earthquake

Extreme heat

Flood

Mine subsidence

Pandemic

Severe storm

Tornado

Wildfire

Winter storm

Section I - Introduction

Overview of Multi-jurisdictional Area

Sangamon County is in Central Illinois with an area of 877 square miles and a population of 196,343 according to the 2020 Census. This is down from a population of 197,465 in the 2010 Census. The County is an area of generally flat topography with prime agricultural soils resulting in robust agricultural production.

Twenty-seven (27) incorporated communities are located in Sangamon County. The primary urbanized area includes Springfield which is the location of the state capitol. Several of the smaller incorporated communities are immediately adjacent to the City of Springfield while other communities are more rural in character. The outlying unincorporated areas are primarily agricultural.

Why a Mitigation Plan?

Communities look to protect the health, safety, and welfare of their citizens. Related to natural hazard events this has traditionally meant responding to the needs of the community after an event occurs. Mitigation looks to reduce the need for response by permanently removing people and structures from harm's way when a known area of impact can be identified (such as a floodplain) or significantly reducing the impact from a known risk (such as a tornado). This Plan provides an assessment of the risks to Sangamon County from natural hazard events and a comprehensive range of mitigation projects to lessen the impact of these hazards on our communities. With the availability of mitigation grant funding from the Federal Government, communities have the opportunity to implement mitigation projects that would not otherwise be financially possible. The preparation of this plan follows the guidelines to make participating communities eligible to apply for mitigation grant funding.

Why update a Mitigation Plan?

Regular plan maintenance is a vital component of the planning process. Such maintenance ensures that the plan reflects the current conditions of the participating communities. The process requires that communities analyze socioeconomic data, assess major changes in land use and development, review goals and objectives, review mitigation projects to reduce the impact of natural hazards, and identify new mitigation projects that will continue to protect communities. A key component of the planning process is to provide an opportunity for public participation in the process.

As part of the 2022 plan update process, the entire 2015 plan update was reviewed to meet the Federal Emergency Management Agency (FEMA) requirements for timely, accurate, and actionable information resulting from planning. The plan update review emphasized new information that occurred in the years since the adoption of the plan update in 2017. Priorities have not changed greatly since the previous plan update. In general, development patterns and conditions have also not changed. Therefore, the Task Force for this plan, described in greater detail in Section II, re-validates the information in the 2015 plan update except when new information is in this document.

2022 Update to the Sangamon County Multi-jurisdictional Natural Hazards Mitigation Plan

The Springfield-Sangamon County Regional Planning Commission (SSCRPC) received a planning grant through the Hazard Mitigation Grant Program to prepare this plan update deploying a process of

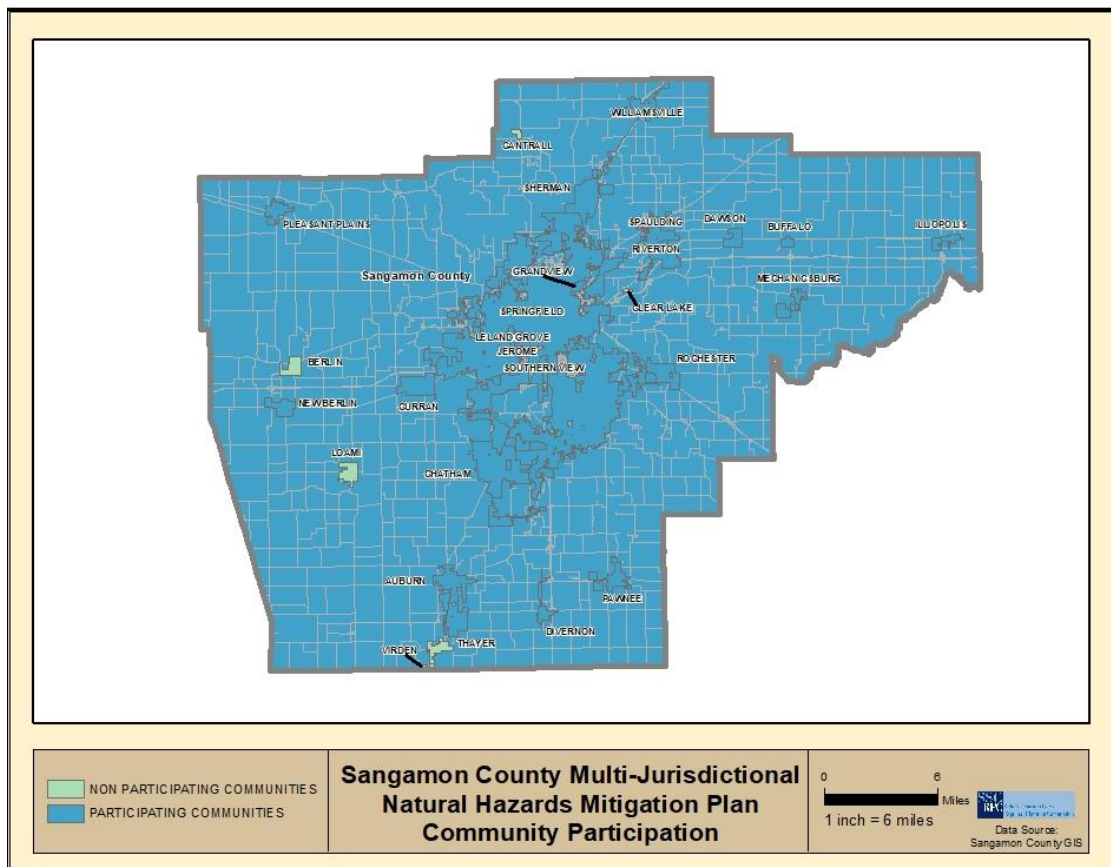
coordination and participation. Steve Keenan, Senior Land Use Planner for the SSCRPC, served as project manager for the preparation of the plan. The project manager identified the following tasks as an appropriate structure to ensure an effective and comprehensive planning process:

- 1: Organization
- 2: Public Involvement
- 3: Risk Assessment
- 4: Goal Setting
- 5: Mitigation Actions and Strategy
- 6: Draft Plan
- 7: Final Plan and Adoption of Plan

Community Participation

All 27 municipalities in Sangamon County received an invitation to participate in the 2022 update of the Sangamon County Multi-jurisdictional Natural Hazards Mitigation Plan. Of those, 21 municipalities and Sangamon County indicated an initial interest in being part of the planning team.

Figure 1: Participating and Non-participating Jurisdictions in Sangamon County



Demographics of Participating Communities

Socioeconomic data about the communities are shown in Figure 2 on page 10. There were four categories of population trends that occurred based on projections since the 2015 plan update. First, communities that had a projected population increase in the 2015 plan update and in which the population increased were: Cantrall, Chatham, Curran, Mechanicsburg, New Berlin, Riverton, Rochester, and Sherman. Second,

communities that had a projected population decrease in the 2015 plan update and in which the population increased were Dawson and Jerome. Third, communities that had a projected population increase in the 2015 plan update and in which population decreased were: Buffalo, Divernon, Leland Grove, Pawnee, Sangamon County (unincorporated), Spaulding, Springfield (city of), and Williamsville. Finally, communities that had a projected population decrease in the 2015 plan update and in which the population decreased were: Auburn, Illiopolis, and Southern View. Grandview and Pleasant Plains did not have figures in the plan update so the previous analysis does not apply. However, Grandview's population decreased and Pleasant Plains' population increased between the Census in 2010 and 2020. The socioeconomic data for the Village of Cantrall are left in to promote historical continuity because Cantrall participated in the 2015 plan update. The Sangamon County Water Reclamation District (SCWRD) did not have a population projection in the 2015 plan update. However, the software used to prepare the SCWRD projection shows a decline in population between 2010 and 2027. The SCWRD was also left out of the total population counts at the bottom of Figure 2 and the school population counts since the schools the district serves are part of other communities to avoid double counting. Population declines are projected for all communities except Dawson from 2020 to 2027.

The median household income for all of Sangamon County is \$61,743 according to the 2020 Census. Communities with incomes that are above this median include Auburn, Buffalo, Cantrall, Chatham, Curran, Dawson, Divernon, Illiopolis, Leland Grove, Mechanicsburg, New Berlin, Pawnee, Pleasant Plains, Riverton, Rochester, Sherman, Spaulding Williamsville, Unincorporated Sangamon County, and the SCWRD. Communities that are below this threshold include Grandview, Jerome, Southern View, and Springfield. More detailed demographic information from the Census Bureau on Sangamon County is also available on the SSCRPC website, www.sscrpc.com.

Figure 2: Socioeconomic Data of Communities

Community	Population in 2008	Population in 2010*	Population in 2020*	Anticipated Population in 2027**	Number of Housing Units*	Median Household Income (2022)**	Number of Students in Schools***
Auburn	4,317	4,771	4,574	4,369	1,914	\$65,560	794
Buffalo	491	503	447	437	204	\$83,429	364
Cantrall	139	139	144	137	62	\$131,506	0
Chatham	10,260	11,500	14,377	14,164	5,839	\$97,548	3,387
Curran	249	212	213	202	88	\$100,703	0
Dawson	466	509	519	543	225	\$66,092	0
Divernon	1,201	1,172	1,139	1,128	535	\$68,391	245
Grandview	N/A	1,441	1,405	1,346	691	\$49,296	0
Illiopolis	916	891	846	813	368	\$71,558	294
Jerome	1,414	1,656	1,692	1,630	899	\$55,008	0
Leland Grove	1,592	1,503	1,454	1,425	711	\$108,230	0
Mechanicsburg	456	590	662	658	265	\$83,291	0
New Berlin	1,030	1,346	1,381	1,324	573	\$76,329	749
Pawnee	2,647	2,739	2,678	2,669	1,168	\$78,390	497
Pleasant Plains	777	802	808	770	347	\$72,988	392
Riverton	3,048	3,455	3,532	3,434	1,559	\$62,095	1,480
Rochester	2,893	3,689	3,863	3,714	1,509	\$106,993	1,996
Sherman	2,871	4,148	4,673	4,511	1,779	\$110,241	494
Southern View	1,695	1,642	1,596	1,578	819	\$53,503	156
Spaulding	559	873	801	765	324	\$95,014	0
Springfield	111,454	116,250	114,394	112,737	57,337	\$59,063	15,029
Williamsville	1,439	1,476	1,425	1,478	592	\$98,445	930
Sangamon County (Unincorporated)*	37,106	35,876	32,408	31,906	14,258	\$79,123	1,904
Sangamon County Water Reclamation District**	N/A	150,773	149,785	147,315	65,720	\$62,953	0
TOTAL	186,243	197,183	195,031	191,738	157,786	\$1,935,749	28,711

*U.S. Census Bureau **ESRI Community Analyst ***IL State Board of Education, GreatSchools.org, privateschoolreview.com & other website search 8/2022

Major employers are in Figure 3. They are listed by community and vary in size from small businesses to large hospitals.

All communities that participate in the National Flood Insurance Program (NFIP) recognize the mitigation value of floodplain management and are committed to continued compliance with the NFIP. The communities are aware of the need to adopt and enforce floodplain management requirements, and all communities have adopted the effective Flood Insurance Rate Maps (FIRMs).

Sangamon County's effective FIRMs are available in many communities and there is a community repository of the maps and studies in several places including but not limited to the SSCRPC office and the Lincoln Library in Springfield. Digital versions of the maps are available on msc.fema.gov and the Sangamon County GIS website for public use. Where input is required, communities are also aware of their responsibilities regarding requests for map updates and will actively participate in community assistance and monitoring activities.

Figure 3: Major Employers by Community, 2022

Community	Major Employers
Auburn	Dickey John Corp., Springfield Plastics, Auburn School District, Seivers Equipment, City of Auburn
Buffalo	Tri-City School District, Trotters, Herrin Fertilizer, Rosens, and Dollar General
Chatham	Ball Chatham School District, Village of Chatham, RP Lumber Co., Henry Technologies, County Market, Walgreens, Villas of Holly Brook, Reflections Memory Care, Memorial Express Care, St John's Therapy Care, HS Hospital Services, Goodwill Industries, McDonald's, The Creek Pub & Grill, Sangamo Brewery & Pub, Bright Beginnings Child Care, Pleasant Park Child Development & Care, Casey's General Store, Villas of South Park, South County Publications
Curran	Brandt Consolidated, Lincoln Land Concrete
Dawson	None
Divernon	United Community Bank, Village of Divernon, Auburn School District, Rettbergs, Emerson Press, Hermans Garage
Grandview	Village of Grandview, Quicksilver Mailing Services, Ritz's Lil Fryer, Krekel's, Primo Designs
Illioopolis	Sangamon Valley School District, Dollar General
Jerome	None
Leland Grove	Illini Country Club
Mechanicsburg	Pryco, Village of Mechanicsburg
New Berlin	New Berlin School District, Brandt Consolidated, Inc., New Berlin Travel Plaza, Farmer's Elevator, Dollar General, Warren Boynton State Bank
Pawnee	United Community Bank, First National Bank, Langheim Concrete, Midwest Garage Door, Pawnee School District
Pleasant Plains	Pleasant Plains CUSD # 8, Brandt Consolidated, Whalen Trucking (Formerly Boesdorfer Trucking), The Grainery, Illinois National Bank (Formerly Pleasant Plains State Bank), Subway, Dollar General, RCM Farmer's Co-Op
Riverton	Riverton Public School District, Village of Riverton, SIC Recycling, Truck Stop, S&W Construction, Teddy Bear Daycare, Asplundh, Dolllar General
Rochester	Rochester Public School District, Village of Rochester, Rochester State Bank, Bank and Trust Company, HSHS Priority Care – Rochester, Public House 29, Beginning Steps Development Center, Silverleaf Children's Academy, Carriage Crossings, Rochester Estates
Sherman	Sherman Elementary School, Springfield Clinic, Tasty Café, Villa East, Villa West, Walgreens, County Market, Carter Bros. Lumber, The Rail, All His Children, UCB Bank, Williamsville State Bank and Trust, Animal Health Center, Green Prairie Animal Hospital, Casey's, Cancun, US Post Office, Fairlane Diner, Village of Sherman, One Stop Auto, Fire and Ale, State Farm
Southern View	Southern View Elementary School, Village of Southern View, St Joseph's Home, Heartland Credit Union, Illinois National Bank, Dollar General
Spaulding	Dockers and Jim and Annie's
Springfield	State of Illinois, City of Springfield, Memorial Health, Hospital Sisters Health System, Southern Illinois University School of Medicine, University of Illinois-Springfield, Springfield Clinic, Springfield Public Schools, Horace Mann, Illinois National Guard, Blue Cross/Blue Shield
Williamsville	Williamsville School District, Donley Inc., RCM Co-Op (Formerly Culver Fancy Prairie Co-Op), Hicksgas (Formerly Patterson Bros. Oil), Williamsville State Bank, Casey's General Store, Love's Travel Stop, MacDonalds, Speedway, Subway, Huddle House, Illini Propane
Sangamon County (Unincorporated)	Illinois Department of Natural Resources, Illinois Department of Agriculture, Illinois Department of Transportation
Sangamon County Water Reclamation District	State of Illinois, City of Springfield, Memorial Medical Center, St. John's Hospital, Southern Illinois School of Medicine, University of Illinois-Springfield, Springfield Clinic, Springfield Public Schools, Horace Mann, Illinois National Guard, BlueCross BlueShield of Illinois, Ball Chatham School District, Village of Chatham, RP Lumber, Co., Henry Technologies, County Market, Walgreens, Villas of Holly Brook, Reflections Memory Care, Memorial Medical Office, Goodwill Industries, MacDonald's, The Creek Pub, Brandt Consolidated, Concrete Plant, Rochester Public School District, Village of Rochester, Village Market, Rochester State Bank, Bank and Trust Company, HSHS Priority Care-Rochester, Public House 29, Beginning Steps Development Center, Silverleaf Children's Academy, Illinois Department of Natural Resources, Illinois Department of Agriculture, Illinois Department of Transportation, Agriculture, Villa Health Care, Sherman Elementary School, Carter Bros. Lumber, Springfield Clinic, Illini Country Club, Southern View Elementary School Note- SCWRD provides sanitary sewer services to many of the communities listed above and these communities' employers are included.

Figure 4 lists the geography and floodplain information for participating communities. The SCWRD does not participate in the National Flood Insurance Program (NFIP) as it is a special district without floodplain management authority and it has a N/A in the NFIP Community Number column. The Village of Curran does not have an NFIP number assigned as it does not participate in the NFIP and has no special flood hazard areas (SFHAs) within its Village limits. It also has a N/A in the NFIP Community Number column. Sangamon County is the only Community Rating System (CRS) community in the planning area. Further information on flooding and the NFIP is available in Section III of this plan.

Figure 4: Geography of Participating Communities

Community	Square Miles of Land Area	Major Geographic Features	FEMA Floodplain	Nat'l Flood Insurance Participant*	NFIP Community Number
Auburn	4.1	None	Yes	Yes	170944
Buffalo	0.3	None	No	No	171056
Chatham	7.4	Polecat Creek, Sugar Creek, Grindstone Creek	Yes	Yes	170601
Curran	2.0	None	No	No	N/A**
Dawson	0.8	None	No	No	171047
Divernon	0.8	Brush Creek	Yes	Yes	170949
Grandview	0.3	None	No	No	171048
Illioopolis	0.7	Long Point Slough Tributary	Yes	Yes	171049
Jerome	0.4	Jacksonville Branch	Yes	Yes	171004
Leland Grove	0.6	Jacksonville Branch	Yes	Yes	170925
Mechanicsburg	1.0	Griffith Creek	Yes	No	170960
New Berlin	1.1	None	No	Yes	171052
Pawnee	1.6	Henkle Branch, Horse Creek	Yes	Yes	170602
Pleasant Plains	1.1	Branch of Richland Creek	Yes	Yes	170798
Riverton	3.1	Sangamon River	Yes	Yes	170603
Rochester	2.7	South Fork Sang. River, Black Branch	Yes	Yes	170840
Sherman	3.2	Sangamon River	Yes	Yes	170969
Southern View	0.6	None	No	No	171051
Spaulding	0.7	Sangamon River	Yes	Yes	171050
Springfield	67.6	Lake Spfld., Washington Park, Various Creeks / Branches	Yes	Yes	170604
Williamsville	1.7	None	Yes	Yes	171041
Sangamon County (unincorporated)	772.1	Sang. River, Lake Spfld., Various Branches & Creeks	Yes	Yes	170912
Sangamon County Water Reclamation District	87.2	Sang. River, Lake Spfld., Various Branches & Creeks	Yes	N/A**	N/A**

* "Yes" indicates the community participates in the National Flood Insurance Program making flood insurance available to property owners. ** As the SCWRD is not a city or county with floodplain management authority, the Nat'l Flood Insurance Participant and NFIP Community Number columns are marked N/A. The Village of Curran does not have an NFIP participant number, presumably because it has no SFHA, and is therefore also marked N/A in the NFIP Community Number column.

Section II – Planning Process

How the Plan Was Prepared

The SSCRPC prepared the Sangamon County Multi-Jurisdictional Natural Hazards Mitigation Plan Update through the Sangamon County Multi-Jurisdictional Natural Hazards Mitigation Plan Task Force. The Task Force met five times in 2022, and twice in 2023: the fourth Thursday of each month from March through July, and twice in 2023 when the draft plan was discussed and a final public hearing was held. All Task Force meetings were open to the public. Meetings were announced on the SSCRPC Facebook page and an agenda was posted on the hazard mitigation plan website and linked from the SSCRPC Facebook page. An example agenda posting from the SSCRPC Facebook page are in Section VI. A summary of the meetings and relevant intervening activities follows.

February and March 2022 Letters were sent to Mayors of all municipalities in Sangamon County, the Chairman of the Sangamon County Board, and participating taxing bodies. All municipalities, Sangamon County, and participating taxing bodies were asked to return the resolution of participation passed by the respective Village Boards, City Councils, or County Boards along with assigning a contact for the planning process. Example letters and participation resolutions are included in Section VI. Technical partners were asked to provide a contact for the planning process if they wished to attend the meetings.

March 24, 2022 **Task Force Meeting 1:** Task Force members from participating municipalities, Sangamon County, participating taxing bodies, and the technical partners met and discussed the planning steps and adopted participation requirements and a mission. A press release in anticipation of this meeting was released in March 2022.

April 28, 2022 **Task Force Meeting 2:** Task Force members met and adopted two new hazards (wildfire and pandemic) to the plan, discussed potential definition changes for critical facilities, and discussed changes to the citizen survey. A citizen survey and a mid-term press release were released in May 2022.

May 26, 2022 **Task Force Meeting 3:** Task Force members reviewed the methodology to calculate the Risk Priority Index (RPI) for the Risk Assessment section of the plan, finalized several critical facilities definitions generated as a result of the Task Force discussions at the April meeting, and discussed changes to the goals from the previous plan.

June 30, 2022 **Task Force Meeting 4:** Task Force members approved the revised goals as discussed at the previous meeting and discussed potential changes to the objectives.

July 28, 2022 Task Force Meeting 5: The Task Force adopted revised objectives, broke into groups to discuss potential mitigation action items (projects), discussed mitigation projects as a large group, and discussed the plan maintenance section.

January 26, 2023 Task Force Meeting 6: The Task Force heard a presentation on the draft plan and discussed potential changes and other items of importance.

February 27, 2023 Task Force Meeting 7: The Task Force held a final public meeting where comments from the public were taken and a recommendation made.

Participation in the 2022 Plan Update

The criteria that would constitute satisfactory participation in the planning process were established at the first meeting of the Sangamon County Multi-jurisdictional Natural Hazards Mitigation Plan Task Force in 2007. The 2022 Task Force determined that the criteria would remain the same while adding an item to submit all hourly participation documents. Figure 5 shows the required participation elements established.

Figure 5: Criteria for Participating Communities

Attended a minimum of 4 meetings (2/3 of 6 total meetings)
Submitted all hourly participation documents
Submitted a list of relevant community documents
Confirmed hazards that affect the community
Submitted a description of critical facilities at risk
Submitted a description of land use patterns
Developed goals for the community
Developed mitigation actions for the community
Prioritized mitigation actions
Hosted opportunities for public involvement
Reviewed and commented on the draft plan

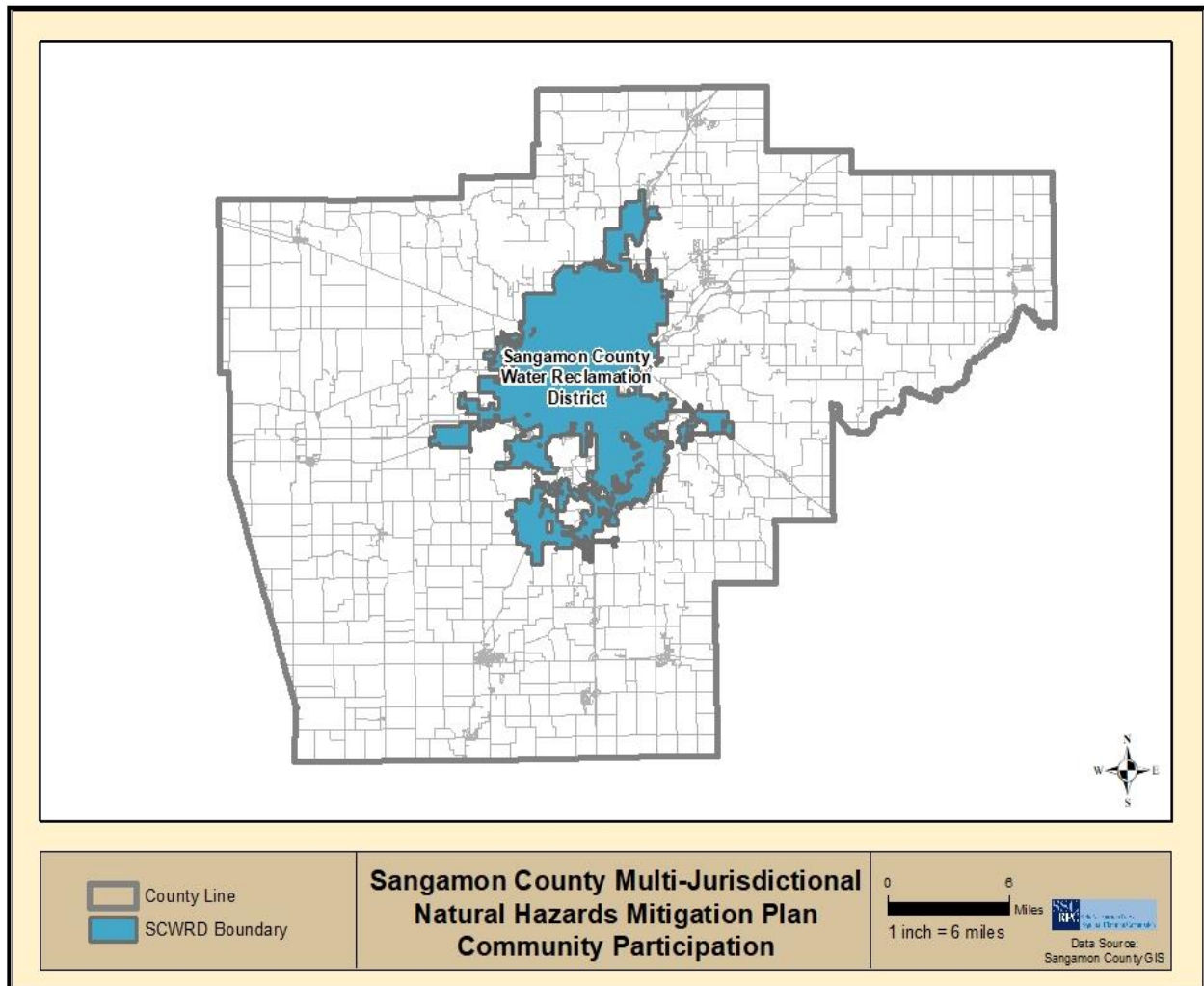
The plan had 21 of the 27 municipalities and Sangamon County participate. Communities that did not participate in the 2015 plan update but opted to participate in the 2022 plan update include Curran, Dawson, Illiopolis, Pleasant Plains, Riverton, and Spaulding. The Village of Cantrall elected not to participate in the 2022 plan update but participated in the 2015 plan update.

The following lists all 27 communities with those participating shown in bold. Representatives are in the minutes in Section VI by meeting.

Auburn	Dawson	Mechanicsburg	Southern View
Berlin	Divernon	New Berlin	Spaulding
Buffalo	Grandview	Pawnee	Springfield
Cantrall	Illiopolis	Pleasant Plains	Thayer
Chatham	Jerome	Riverton	Viriden
Clear Lake	Leland Grove	Rochester	Williamsville
Curran	Loami	Sherman	Sangamon County

The SCWRD also elected to send a representative and meet the participation requirements. Since the SCWRD has boundaries coterminous with several of the municipalities in and around Springfield, it is not shown in Figure 1 (see page 8) to reduce map clutter. The SCWRD treats wastewater from the communities of Chatham, Curran, Grandview, Jerome, Leland Grove, Rochester, Sherman, Southern View, Springfield, and part of unincorporated Sangamon County. The map of the SCWRD boundaries is shown in Figure 6.

Figure 6: SCWRD Boundaries, 2022



Because it was recognized that there are many people in our communities with expertise that would benefit from this planning effort, a letter of invitation to be a member of the Task Force was sent to the following agencies to be technical partners. Those shown in bold agreed to participate and appointed a representative using the form in Section VI. The SCWRD is shown with an asterisk (*) below as it is a participating community.

Ameren Illinois

American Red Cross

City of Springfield Building and Zoning Department

City of Springfield, Office of Planning and Economic Development

City of Springfield, Office of Public Works (Same Representative as City of Springfield)

City Water, Light, and Power

Greater Springfield Chamber of Commerce

Lincoln Land Community College

Mid-Illinois Medical District Commission

National Weather Service

Regional Office of Education 51

Rural Electric Convenience Cooperative

Sangamon County Department of Building and Zoning

Sangamon County Department of Public Health

Sangamon County Farm Bureau

Sangamon County GIS

Sangamon County Highway Department (Became Sangamon County Representative)

Sangamon County Office of Emergency Management

Sangamon County Soil and Water Conservation District

Sangamon County Water Reclamation District*

Sangamon Mass Transit District

Springfield Airport Authority/Abraham Lincoln Capital Airport

Springfield Area Home Builders Association

Springfield Black Chamber of Commerce

Springfield Park District

Springfield School District 186

State of Illinois Department of Agriculture

State of Illinois Department of Central Management Services

State of Illinois Department of Natural Resources

State of Illinois Department of Transportation

State of Illinois Emergency Management Agency

State of Illinois Office of the Secretary of State

University of Illinois Springfield

All participants on the final Planning Team participated fully in development of the Plan by attending meetings, providing input through discussion and group exercises, reviewing documents, and voting on issues coming before the Task Force.

Public Participation

There were several public participation opportunities in the development of the plan. Public participation was integral to the planning process and the highlights for the public to attend throughout the planning process are below.

Plan	The existing website for the Sangamon County Multi-jurisdictional Natural Hazards Website Mitigation Plan was online August 24, 2007 and was updated by the Regional Planning Commission on a regular basis. Plan maintenance group documents have been available on the website about the 2015 plan update for the past two years. As the 2022 plan update has progressed, information such as the draft plan, meeting agendas, minutes, and other helpful documents have been made available to the public along with contact information for the Planning Commission staff. Several communities have also provided information related to the planning process on their respective organization websites. The website address is www.co.sangamon.il.us/NHMP .
Community Websites	Each participating community with a website included information regarding the plan.
Press Releases	Three press releases were sent during the planning process: after the grant award, approximately halfway through the survey to build support, and a final press release to announce the last Task Force meeting. The press releases are included in the Appendix (Section VI).
Citizen Survey	A survey was made available on the plan website and through all the communities from May 4, 2022, through June 24, 2022. 161 survey responses were received. A copy of the survey and an analysis of the results are in Section VI.
Task Force Meetings	Each Task Force meeting included time for public comment on the agenda. No members of the public who were not Task Force members attended the Task Force meetings.
Agendas	Agendas for each Task Force meeting were posted at the site of the meeting, at the Planning Commission office, and on the Hazard Mitigation Plan website. No members of the public who were not on the Task Force asked to be kept informed. The meeting agendas are in Section VI.
Newspaper Articles	The State Journal-Register, the regional newspaper did not publish articles on the 2022 Plan Update.
Radio	One radio station, WDBR, ran a story about the survey on two outlets, 101.3 FM and 107.5 FM, which is in the Appendix (Section VI).
Television	No television coverage of the 2022 Plan Update was provided.
Social Media	Posts announcing Task Force meetings and the survey were added to the SSCRPC Facebook page. Example posts are included in Section VI. Several communities also had links regarding the survey on their community Facebook sites. Selected examples of these are also included in the Appendix.
Direct Mailings	As part of Sangamon County's Community Rating System project a letter is sent to every owner of floodprone property in the unincorporated areas of the County each year. A copy of the letter is in Section VI.
Public Notices	A public hearing notice was placed in the State-Journal Register/Illinois Times before the public hearing on January 26, 2023, inviting members of the public to attend the final Task Force meeting.

Participation Opportunities for Interested Parties

Opportunities for neighboring communities, agencies, businesses, academia, nonprofits, and other interested parties to be included in the planning process were provided by direct invitation to serve on the Task Force by direct notification of the planning process via letter, and through the many other public participation activities listed above.

Community Survey

The survey for the 2022 Sangamon County Multi-Jurisdictional Natural Hazard Mitigation Plan occurred between May 4 and June 24, 2022. The survey was available for the participating communities and technical partners to link through the Natural Hazard Mitigation Plan website and was online only. This is different from the previous natural hazard mitigation plan surveys, where paper copies were made available. Overall, 161 responses were received, which was 116 more surveys than the previous survey in 2014-2015. A full copy of the final survey text and the survey analysis is available in Section VI.

Highlights from the analysis are:

- Respondents generally did not consider the effects of natural disasters when moving into residences but if natural hazard impact information is disclosed, it would influence the decision on whether to buy or move into a residence.
- There is an apparent shift from more traditional sources of information like newspapers and television to social media and texting applications when it comes to how respondents want to receive information about natural hazards.
- The survey respondents ranked tornados, severe thunderstorms, and winter storms as the natural hazards with the most concerning impacts.

This public feedback from the survey results guided the Task Force and SSCRPC staff during the preparation of Section III on Risk Assessment.

Review and Incorporation of Existing Plans, Studies, Reports, and Technical Information

At the first Task Force meeting, community representatives were given a Documents Form to update (see Section VI) in consultation with the leaders in their community. A combined listing of documents for participating communities is shown in Figure 7 on page 20.

Many of the smaller municipalities have limited organizational capacities. While they may have staff, these staff may not have sufficient time to devote to hazard mitigation due to limited hours, additional responsibilities, and limited budgets. The capacity to implement hazard mitigation projects is largely dictated by the size and resources of the organization in Sangamon County.

Natural hazards mitigation can be incorporated into existing plans and ordinances during updates. If a community does not have particular regulations that would promote hazard mitigation, such as building codes, these could be considered for adoption. Other documents could provide helpful information for assessing risks or determining appropriate mitigation projects.

Participating communities have responded to the need to incorporate natural hazards mitigation planning into existing plans and ordinances. Since the 2008 Plan, the Villages of Sherman and Williamsville and the City of Leland Grove have adopted Comprehensive Plans; Sangamon County developed a Regional Strategic Plan; the Village of Chatham adopted a Storm Water Management Plan; and, the Villages of New Berlin and Williamsville have adopted more strict regulatory standards through the passage of drainage ordinances.

Participating communities have continued responding to the need to incorporate natural hazard mitigation planning into existing plans and ordinances since the 2015 plan update. The Villages of Chatham and Dawson and the City of Springfield have adopted new comprehensive plans. Sangamon

County is in the process of updating its comprehensive plan. Also, the Villages of Riverton and Curran, which did not participate in the 2015 plan update, have adopted new comprehensive plans since the 2008 plan. These plans included information about natural hazard mitigation planning, considered in the adoption of various general goals and policies that guide the implementation of the plans while also reducing the risk to the community from natural hazards. The SSCRPC and the participating communities are aware of the hazard mitigation planning information, which will be folded into various Sangamon County comprehensive plans as they are written.

For the 2022 plan update, communities that have adopted land use and development regulations such as zoning and/or subdivision ordinances as stated in the community documents table include all participating communities except the SCWRD for zoning ordinances and all the participating communities except for Curran and the SCWRD for subdivision ordinances. The SCWRD does not have zoning and/or subdivision ordinances as it is not a municipality with these powers authorized by the State of Illinois. All communities have building codes as stated in the community documents table except for Curran, Dawson, Illiopolis, Pleasant Plains, and Williamsville. Updating building codes are a continuing issue among the communities. Sangamon County has adopted updated building codes to the 2018 editions as of the 2022 plan update. The Village of Mechanicsburg reported a new building code. Likewise, the Villages of New Berlin and Southern View reported drainage ordinances, although Southern View's is from 1962.

Two other important issues for this plan are urban flooding and groundwater supplies. There is a general lack of drainage and storm water/watershed planning documents that could begin to assess drainage and urban flooding. Leaky basements and flooding outside the regulatory floodplain were common responses to some of the open-ended questions in the survey. Nine participating communities have storm water management plans while fourteen other participating communities including Sangamon County do not. Understanding groundwater resources in both drought and non-drought situations was another issue discussed by communities since the 2015 plan update, mainly during the planning process for the draft Sangamon County Comprehensive Plan.

The Illinois State Hazard Mitigation Plan from 2018 was reviewed when the SSCRPC staff considered potential goals and objectives for Task Force consideration. The Task Force adopted goals and objectives are in Section IV. The state hazard mitigation plan was also considered at various points during the writing of Section III.

Figure 7: Existing Community Documents for Participating Communities

Document	Auburn	Buffalo	Chatham	Curran	Dawson	Divernon	Grandview	Illiopolis	Jerome	Leland Grove	Mechanicsburg	New Berlin	Pawnee	Pleasant Plains	Riverton	Rochester	Sherman	Southern View	Spaulding	Springfield	Williamsville	Sangamon County	SCWRD	
Comprehensive Plan	X	X	X	X	X			X		X		X	X		X	X	X			X	X	X		
Subdivision Ordinance	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Zoning Ordinance	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Zoning Map	X	X	X		X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	
Building Codes	X	X	X			X	X		X	X	X	X	X		X	X	X	X	X	X			X	X
Land Use Plan	X		X	X	X			X				X	X	X	X	X	X	X			X	X	X	
Existing Land Use Map	X		X	X	X			X				X	X	X	X	X	X				X	X	X	
Flood Ordinance	X		X			X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	
Flood Insurance Rate Map	X		X			X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	
Flood/eng. studies for streams			X						X			X	X	X	X						X		X	
Flood Insurance Claims List			X						X														X	
Repetitive Flood Loss List			X												X						X		X	
Elevation Certificates for Bldgs			X					X													X		X	X
Capital Improvement Plan			X			X						X			X						X		X	X
Historic Preservation Ordinance																					X		X	
Stormwater Management Plan			X		X					X		X			X	X	X				X			X
Hazard Mitigation Plan*	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Emergency Management Plan	X	X	X	X	X	X						X	X		X		X	X	X	X	X	X	X	X
Drainage Ordinance			X		X							X		X	X	X	X	X	X	X	X	X		X
Critical Facilities Map**	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Hazard Vulnerability Analysis	X		X	X		X									X		X				X			
Infrastructure Map	X	X	X		X	X		X			X	X	X	X	X	X	X				X	X		
Topographic Map***	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Other																								
Burn Ban Ordinance	X		X	X	X					X			X	X			X	X			X	X	X	
Community Website	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

*Participating communities adopting the 2022 Plan will have a Hazard Mitigation Plan.

** Participating communities adopting the 2022 Plan will have a map of critical facilities in their communities based on the information submitted during the natural hazards mitigation planning process.

*** Topographic mapping is available on the county-wide GIS system.

Section III – Risk Assessment

Overview of All Natural Hazards Affecting Sangamon County

The 2018 Illinois Natural Hazard Mitigation Plan (INHMP) identified seven hazards that affect Sangamon County: severe thunderstorms and wind, flood, severe winter storms, drought, extreme heat, earthquake, and tornado. Previous Sangamon County natural hazard mitigation plans added mine subsidence and dam failure hazards which were kept in this plan update. In 2022, the Task Force identified the hazards of wildfire and pandemic based on its meeting discussions. Therefore, the hazards adopted by the Task Force are dam failure, drought, earthquake, extreme heat, flood, mine subsidence, pandemic, severe storm, tornado, wildfire, and winter storm. Figure 9 shows these hazards, their estimated annual probability of occurrence, the communities that could be affected, and the number of square miles that could be vulnerable.

In 2022, the Task Force decided to add climate change to the risk assessment component of the plan. A challenge in describing climate change for the Sangamon County planning area is the lack of accurate modeling at smaller scales than the state, regional, or global levels. Qualitative descriptions of potential climate change effects are included with some of the hazards where information was available for the central Illinois region in the report *“An Assessment of the Impacts of Climate Change in Illinois”* by Wuebbles, Angel, Petersen, Lemke, and others in 2021, hereinafter the “Illinois Climate Assessment”, and published by the Nature Conservancy. Additionally, information related to climate change from the Climate Mapping for Resilience and Adaptation (CMRA) site at <http://resilience.climate.gov> was added. The CMRA site is a federal interagency site dedicated to climate change data related to drought, extreme heat, flooding, and wildfire hazards. The CMRA site began in August 2022. Some hazards have no discernible patterns due to climate change and are noted as applicable in this section.

The Task Force updated several of the tables, graphics, and maps throughout Section III. Based on new data or new data collection methods, these changes are detailed by hazard as applicable.

Figure 8 indicates the overall risk to Sangamon County from the various hazards identified by the Task Force in 2022.

Figure 8: Overall Summary of Sangamon County's Vulnerability to Natural Hazards (2022)

Hazard	Annual Probability	Impact Location	Square Miles Affected**
Dam Failure	*	Riverton, Rochester, Springfield, Sangamon County, Sangamon County Water Reclamation District	30
Drought	*	Countywide	877
Earthquake	*	Countywide	877
Extreme Heat	31%	Countywide	877
Flood	40%	Auburn, Chatham, Dawson***, Divernon, Illiopolis, Jerome, Leland Grove, Mechanicsburg, Pawnee, Pleasant Plains, Riverton, Rochester, Sherman, Spaulding, Springfield, Williamsville, Sangamon County (Unincorporated), Sangamon County Water Reclamation District	96
Mine Subsidence	*	Auburn, Chatham, Dawson, Divernon, Grandview, Illiopolis, Jerome, Leland Grove, Mechanicsburg, Pawnee, Pleasant Plains, Riverton, Sherman, Southern View, Spaulding, Springfield, Williamsville, Sangamon County (Unincorporated), Sangamon County Water Reclamation District	101
Pandemic	11%	Countywide	877
Severe Storm - Thunderstorm	88%	Countywide	877
Severe Storm - Hail	66%	Countywide	877
Tornado	46%	Countywide	877
Wildfire	4%	Countywide	877
Winter Storm	88%	Countywide	877

* Not enough data is available to calculate annual probability. Annual probability is based on recorded occurrences over the past 50 years (when data is available) in Sangamon County. There is no record of a dam failure or earthquake. Although droughts have occurred, no reliable records were found. A severe drought did occur in the 1950s. Mine subsidence has occurred and many of those locations have been documented, but the timeframe of occurrence is not recorded.

** As the SCWRD overlaps jurisdictional lines as discussed in previous sections, the SCWRD area is not included in the Square Miles Affected column to avoid double counting.

*** While there is no floodplain in the Dawson Village limits, its water plant is currently in the SFHA. A new plant outside the SFHA is under construction. See Section IV.

Presidential Disaster Declarations

FEMA requires that hazard mitigation plan updates include information related to major disaster declarations since the 2015 plan update. Figure 9 indicates the eight major disaster declarations in Sangamon County according to FEMA as of 2022. The only declaration since the 2015 plan update is the COVID-19 Pandemic disaster declaration in 2020. This disaster declaration is one of the reasons the Task Force decided to add the pandemic as a new hazard in the 2022 plan update. The disaster declarations are discussed in more detail as needed in Section III concerning Risk Assessment.

Figure 9: Presidential Disaster Declarations, Sangamon County, Illinois

	Disaster Number	Year	Hazard	Title
1	438	1974	Flood	Severe Storms & Flooding
2	1025	1994	Severe Storm(s)	Severe Storms and Flooding
3	1112	1996	Severe Storm(s)	Severe Storms and Flooding
4	1416	2002	Tornado	Severe Storms, Tornadoes, and Flooding
5	1633	2006	Severe Storm(s)	Tornadoes and Severe Storms
6	1681	2007	Severe Ice Storm	Severe Winter Storm
7	1960	2011	Snow	Severe Winter Storm and Snowstorm
8	4489	2020	Biological	COVID-19 Pandemic

Risk Priority Index (RPI)

The 2022 Task Force calculated a Risk Priority Index (RPI) for the hazards affecting the County and its participating communities. The RPI quantifies the likelihood that a specific hazard would affect a region and has two components, probability and magnitude/severity.

Figure 10 indicates the future occurrence or probability ranking. These are important to understand how likely the Task Force members believe a hazard might happen. Events that are ranked a four are more likely to occur than events ranked a one.

Figure 10: Future Occurrence Ranking

Probability	Characteristics
4 - Highly Likely	Event is probable within the calendar year. Event has up to 1 in 1 year chance of occurring. (1/1=100%) History of events is greater than 33% likely per year.
3 - Likely	Event is probable within the next three years. Event has up to 1 in 3 years chance of occurring. (1/3=33%) History of events is greater than 20% but less than or equal to 33% likely per year.
2 - Possible	Event is probable within the next five years. Event has up to 1 in 5 years chance of occurring. (1/5=20%) History of events is greater than 10% but less than or equal to 20% likely per year.
1 - Unlikely	Event is possible within the next ten years. Event has up to 1 in 10 years chance of occurring. (1/10=10%) History of events is less than or equal to 10% likely per year.

Understanding the future occurrence will not give meaningful information without also having a strength component. Figure 11 shows the estimated potential magnitude and/or severity of the hazard. This table shows the categories ranked from eight to one from strongest to weakest.

Figure 11: Hazard Magnitude

Magnitude/Severity	Characteristics
8 - Catastrophic	Multiple deaths. Complete shutdown of facilities for 30 or more days. More than 50% of property is severely damaged.
4 - Critical	Injuries and/or illnesses result in permanent disability. Complete shutdown of critical facilities for at least 14 days. More than 25% of property is severely damaged.
2 - Limited	Injuries and/or illnesses do not result in permanent disability. Complete shutdown of critical facilities for more than seven days. More than 10% of property is severely damaged.
1 - Negligible	Injuries and/or illnesses are treatable with first aid. Minor quality of life lost. Shutdown of critical facilities and services for 24 hours or less. Less than 10% of property is severely damaged.

The Task Force was asked to calculate an RPI score for each hazard for all of Sangamon County. After the SSCRPC planning staff analyzed the data received from the Task Force members, the Task Force decided to use the mode, or the most frequently chosen multiplied score of probability times magnitude/severity, to rank the final RPI scores by hazard. This method was chosen because it is an easily understood measure of central tendency in the RPI scores. The final RPI values, as determined by the Task Force at its May 2022 meeting, are shown in Figure 12 below. The top three hazards chosen were severe storm, tornado, and winter storm (RPI score of 8), with flood being the next most chosen hazard (RPI score of 6). The Task Force's RPI scores for all of Sangamon County were then utilized to adjust the priorities of the mitigation action items described in more detail in Section IV.

Figure 12: Risk Priority Index for Sangamon County Hazards

Hazard	Risk Priority Index	Rank
Severe Storm	8.00	1
Tornado	8.00	1
Winter Storm	8.00	1
Flood	6.00	4
Pandemic	4.00	5
Extreme Heat	4.00	5
Drought	2.00	7
Mine Subsidence	2.00	7
Dam Failure	2.00	7
Earthquake	2.00	7
Wildfire	1.00	11

Each Task Force member from a participating community was further asked to score the hazards as they might affect their respective communities. The scores were obtained by multiplying the probability score

times the magnitude/severity score. Figure 13 shows the communities' RPI score calculations. Higher scores in this case indicate the community thought that the hazard would have a greater impact on the community.

Figure 13: Community RPI Scores by Hazard

Community	Severe Storm	Winter Storm	Tornado	Drought	Flood	Extreme Heat	Mine Subsidence	Dam Failure	Earthquake	Wildfire	Pandemic
Auburn	4	4	8	2	4	4	2	1	4	1	8
Buffalo	8	8	8	6	6	6	4	1	1	6	6
Chatham	8	4	8	6	1	3	4	1	1	1	4
Curran	8	4	8	4	1	3	2	2	2	2	*
Dawson	16	8	16	4	2	4	4	1	2	2	4
Divernon	8	8	8	6	4	4	1	1	1	1	4
Grandview	8	8	8	6	6	4	4	2	1	1	4
Illiopolis	4	4	4	1	1	4	1	1	1	1	2
Jerome	8	8	8	6	3	4	4	1	6	1	32
Leland Grove	4	4	4	3	1	4	4	1	1	1	16
Mechanicsburg	8	8	8	6	6	4	2	2	4	1	1
New Berlin	4	4	6	2	2	9	0	0	4	1	0
Pawnee	8	8	8	6	6	4	4	1	1	1	*
Pleasant Plains	4	4	4	3	2	4	1	1	1	1	1
Riverton	8	8	8	2	12	4	3	8	2	2	16
Rochester	6	6	6	3	3	3	1	1	1	1	2
Sangamon County	4	8	8	4	6	4	4	2	1	1	4
Sherman	16	4	12	2	2	4	4	1	4	2	32
Southern View	6	6	12	1	1	6	2	1	2	1	4
Spaulding	8	8	8	2	4	3	2	1	2	1	16
Springfield	8	8	6	4	6	4	2	2	2	1	4
Williamsville	8	8	8	6	4	4	2	2	1	1	8
SCWRD	4	4	4	2	2	1	1	4	2	1	8

*Score not provided by the community for these hazards.

2018 INHMP

The 2018 INHMP calculated a hazard rating for each county based on a methodology established by the state’s Hazard Mitigation Planning Committee. The methodology analyzed data and quantified a rating for each hazard using data in four categories: historical/probability (frequency); vulnerability (percentage of people); severity of impact (injuries, fatalities, personal property and infrastructure); and population. The ratings for Sangamon County are shown in Figure 14.

Figure 14: Sangamon County Hazard Rating in the 2018 Illinois Natural Hazard Mitigation Plan

County	Severe Storms	Floods	Severe Winter Storms	Drought	Extreme Heat	Earthquake	Tornado
Sangamon	Severe	High	High	Medium	Medium	Medium	High

Very Low 0-12	Low 13-24	Medium 25-36	High 37-48	Severe 49-60
---------------	-----------	--------------	------------	--------------

Critical Facilities

An extensive discussion on the continued use of critical facilities definitions from the previous plan occurred in 2022. This discussion centered on the fact that while the two previous plans had the same definitions to define what types of critical facilities there were in Sangamon County, there had not been an adopted definition for a “critical facility”. This definition is important as it focuses on and prioritizes the critical facilities information submitted by the participating communities. There was also a discussion of updated definitions for the various types of critical facilities throughout the planning area. After discussing several different critical facilities definitions, the Task Force adopted the following definition of critical facilities and their sub-components.

- *Critical facilities* 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 impacts and speed of recovery associated with a hazard event. Critical facilities 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.
 - *Gathering Places:* Facilities such as parks, libraries, community centers, and churches.
 - *Government Facilities:* Facilities associated with the continued operations of government services such as courthouses, city/village halls, township buildings, and highway/maintenance 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 chemicals.
 - *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 daycare centers.
 - *Infrastructure Systems:* Infrastructure associated with drinking water, wastewater, transportation (roads, railways, waterways), communication systems, electric power, natural gas, and oil.

SSCRPC staff updated the critical facilities maps and lists to reflect these definitions. The maps were then confirmed by the Task Force members from the participating communities.

Value

In 2022, new methods were used to calculate both critical facilities values and the value of other buildings to give a sense of the building exposure risk among the participating communities for the plan update. The reasons for this change are property values increased since the 2015 plan update and changes in FEMA guidelines requesting more recent and accurate information in hazard mitigation plans and updates. SSCRPC staff utilized replacement cost valuations available in the FEMA Hazus Inventory Technical Manual for Hazus 4.2 Service Pack 3 published in February 2021 to update the critical facilities values. These replacement costs are based on RS Means, a widely used building values information source, from 2018. Building footprints using Sangamon County GIS data were used for building square footage estimates. Sangamon County Supervisor of Assessment records from 2021 were used to obtain the community values for the other building values column. Utilities represented on the Task Force presented figures for infrastructure including, but not limited to, water and electric plants, sewage plants, pump stations, and electric substations. Figure 15 summarizes these values by participating community.

Figure 15: Total Structures per Community (Participating)

Community	# of Critical Facilities	Estimated Value of Critical Facilities	Estimated Value of Other Structures	Total
Auburn	33	\$79,860,833	\$234,264,507	\$314,125,340
Buffalo	15	\$43,003,232	\$18,205,788	\$61,209,020
Chatham	47	\$307,090,296	\$1,090,416,201	\$1,397,506,497
Curran	9	\$21,618,609	\$13,603,569	\$35,222,178
Dawson	9	\$9,568,894	\$20,384,145	\$29,953,039
Divernon	13	\$26,166,109	\$60,784,323	\$86,950,432
Grandview	3	\$6,588,661	\$41,323,533	\$47,912,194
Illiopolis	26	\$38,412,035	\$34,091,877	\$72,503,912
Jerome	4	\$1,884,073	\$104,969,244	\$106,853,317
Leland Grove	2	\$6,515,049	\$181,889,586	\$188,404,635
Mechanicsburg	7	\$2,823,355	\$40,157,730	\$42,981,085
New Berlin	12	\$66,055,857	\$81,377,991	\$147,433,848
Pawnee	15	\$64,252,275	\$137,550,735	\$201,803,010
Pleasant Plains	31	\$63,984,932	\$47,462,880	\$111,447,812
Riverton	54	\$140,165,064	\$155,945,070	\$296,110,134
Rochester	20	\$140,868,869	\$329,983,386	\$470,852,255
Sherman	42	\$103,012,877	\$434,017,695	\$537,030,572
Southern View	11	\$36,914,814	\$92,137,212	\$129,052,026
Spaulding	5	\$547,059	\$56,681,952	\$57,229,011
Springfield	265	\$7,507,651,083	\$8,225,251,734	\$15,732,902,817
Williamsville	17	\$76,776,192	\$131,812,152	\$208,588,344
Sangamon County Unincorp.	24	\$195,857,465	\$2,458,631,196	\$2,654,488,661
Total	664	\$8,939,617,633	\$13,990,942,506	\$22,930,560,139

The SCWRD verified critical facilities as part of its participation in the 2022 plan update. The SCWRD has 44 facilities, including two sewage plants and forty-two lift stations. The values and number of critical facilities are in Figure 16. These values were not included in the municipality calculations to avoid double counting.

Figure 16: Sangamon County Water Reclamation District Critical Facilities

Community	# of Critical Facilities	Estimated Value of Critical Facilities	Estimated Value of Other Structures	Total
SCWRD	44	\$421,000,000	\$10,728,708,195	\$11,149,708,195

The following pages provide a detailed profile of each type of hazard including the location, extent, previous occurrences, and probability of future events; and a vulnerability assessment for each hazard. Climate change information is noted by hazard in the following pages as applicable.

DAM FAILURE HAZARD

DESCRIPTION

FEMA defines a “dam” as an artificial barrier that has the ability to impound water, wastewater, or any liquid-borne material for the purpose of storage or control of water. Dam failure is a result from one or a combination of the following reasons:

- Overtopping caused by floods that exceed the capacity of the dam.
- Deliberate acts of sabotage.
- Structural failure of materials used in dam construction.
- Movement and/or failure of the foundation supporting the dam.
- Settlement and cracking of concrete or embankment dams.
- Piping and internal erosion of soil in embankment dams.
- Inadequate maintenance and upkeep.

How are dam failures categorized?

The INHMP identifies two categories of dam failures:

Rainy day failure involves periods of excessive precipitation leading to an unusually high runoff. This high runoff increases the reservoir of the dam and if not controlled, the overtopping of the dam or excessive water pressure can lead to dam failure. Normal storm events can also lead to rainy day failures if water outlets are plugged with debris or otherwise made inoperable.

Sunny day failures occur due to poor dam maintenance, damage/obstruction of outlet systems, or vandalism. This is the worst type of failure and can be catastrophic because the breach is unexpected and there may be insufficient time to properly warn downstream residents.

PROFILE

What dams could pose a risk in Sangamon County?

According to the National Inventory of Dams, there are 18 dams in Sangamon County. The INHMP uses the following classifications derived from the U.S. Army Corps of Engineers and FEMA.

- Low hazard potential: Dams assigned the low hazard potential classification are those where failure or misoperation results in no probable loss of human life and low economic and/or environmental losses. Losses are principally limited to the owner’s property.
- Significant hazard potential: Dams assigned the significant hazard potential classification are those dams where failure or misoperation results in no probable loss of human life but can cause economic loss, environmental damage, disruption of life facilities, or can impact other concerns.
- High Hazard Potential: Dams assigned the high hazard potential classification are those where failure or misoperation will probably cause loss of human life.

Figure 18 is a list of these dams. The list has 20 dams due to the Task Force’s inclusion of Saddle Dam as a separate dam for identification of risks should dam failure occur. Lake Sangchris Dam is also included because its impacts would almost entirely be in Sangamon County though it is located in another county. Approximately 60 percent, 10 percent, and 20 percent of the dams are low, significant, and high-risk, respectively according to the classification system used by the National Inventory of Dams. The other two dams (Saddle Dam and Theilen Dam) are undetermined/unknown. High-risk dams include Kimbro, Woodlake Estates, and the larger dams Lake Sangchris and Spaulding Dam. While Saddle Dam is unknown

as it is not listed separately under the National Inventory of Dams, it is most likely a high-risk dam due to the presence of an EAP as noted in this section.

Figure 17: List of Dams in Sangamon County

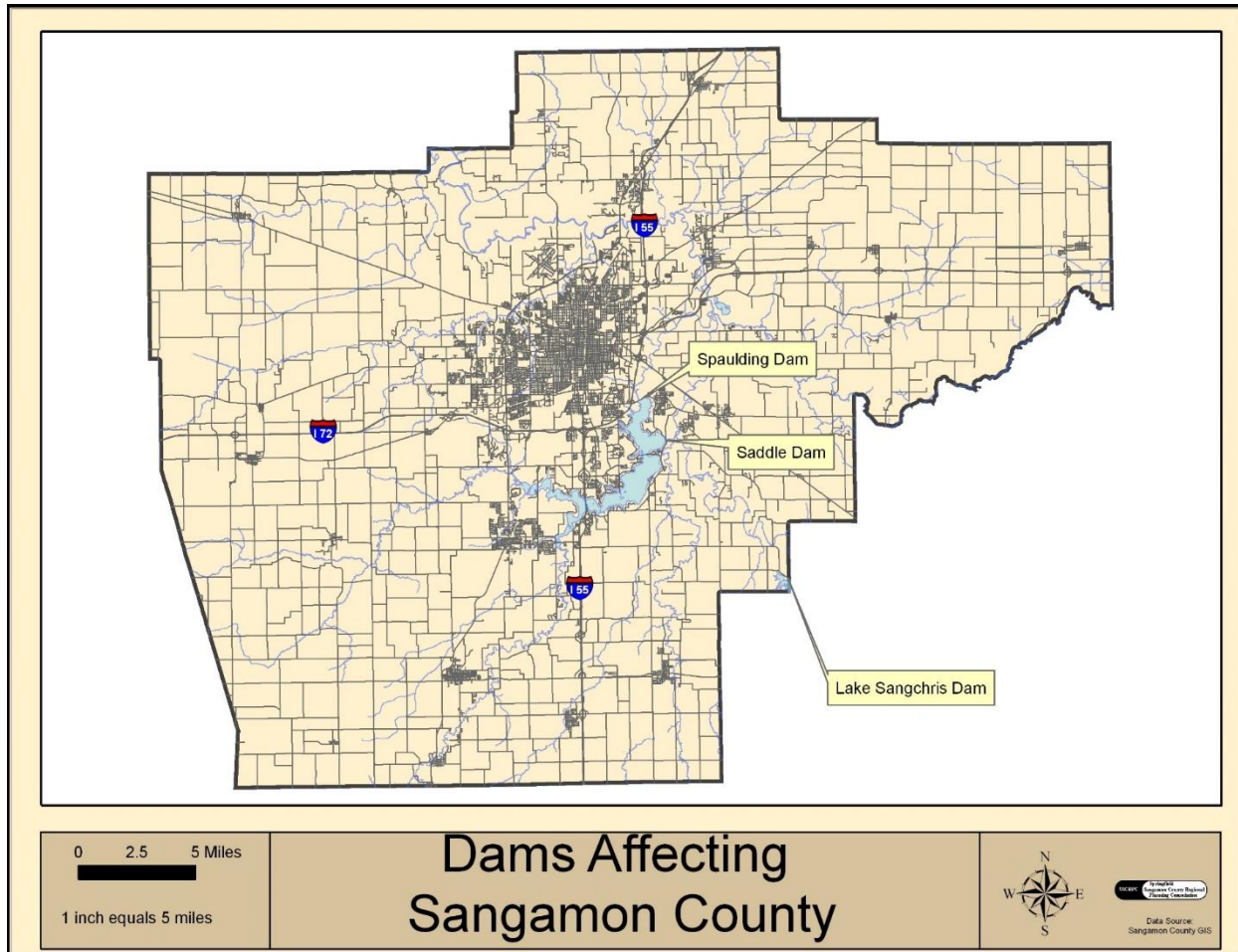
Name	River, Creek, or Tributary
Benson Pond Dam 1	Richland Creek
Brandon Kimbro Dam	Sangamon River
Braun Pond Dam	Richland Creek Offstream
Buffalo Drive Dam	Spring Creek Tributary
Cilca Lake Dam	Sangamon River Tributary
Crystal Lake Dam	Spring Creek Tributary
Denby Dam 1	Lick Creek
Hickory Hills Lake Dam	Sangamon River Tributary
Hunter Pond Dam 1	South Fork of Sangamon River Tributary
Lake Sangchris Dam	South Fork of Sangamon River Tributary
Rising Moon Road Detention Area Dam	Lick Creek Tributary
Saddle Dam	South Fork of Sangamon River Tributary
Schmidgall Dam 1	Sangamon River Tributary
Spaulding Dam	Sugar Creek
Springfield Lakeside Ash Disposal Pond Dam	Sugar Creek Offstream
Temporary Sangamon River Dam	Sangamon River
Theilen Pond Dam 1	Lick Creek Tributary
Weingardt Pond Dam	Fancy Creek Tributary
Williamsville Lake Dam 1	Wolf Creek
Woodlake Estates Dam	Spring Creek Tributary

Source: National Inventory of Dams

Of the 20 dams listed, three of these dams are large and could impact Sangamon County if they failed. These are the two dams on Lake Springfield: Spaulding Dam and Saddle Dam that are owned by the City of Springfield's City Water, Light and Power (CWLP). The third large dam, Lake Sangchris Dam is located just over the county line in Christian County, but the impact of its failure would be almost entirely within Sangamon County. The Lake Sangchris Dam is owned by Vistra Corp. The location of these dams is shown in Figure 18.

According to the Illinois Department of Natural Resources (IDNR), Office of Dam Safety, five of these dams are Class I dams meaning high hazard, which are Lake Sangchris Dam, Spaulding Dam, Brandon Kimbro Dam, Woodlake Estates Dam, and Saddle Dam. Two others are listed as Class II dams, which are Braun Pond Dam and Buffalo Drive Dam. The remaining 13 dams listed in Sangamon County are low-risk Class III dams. The state Class I, II, and III dams roughly correspond to the high, significant, and low hazard potential categories in the U.S. Army Corps of Engineers categories.

Figure 18: Locations of Large Dams Affecting Sangamon County

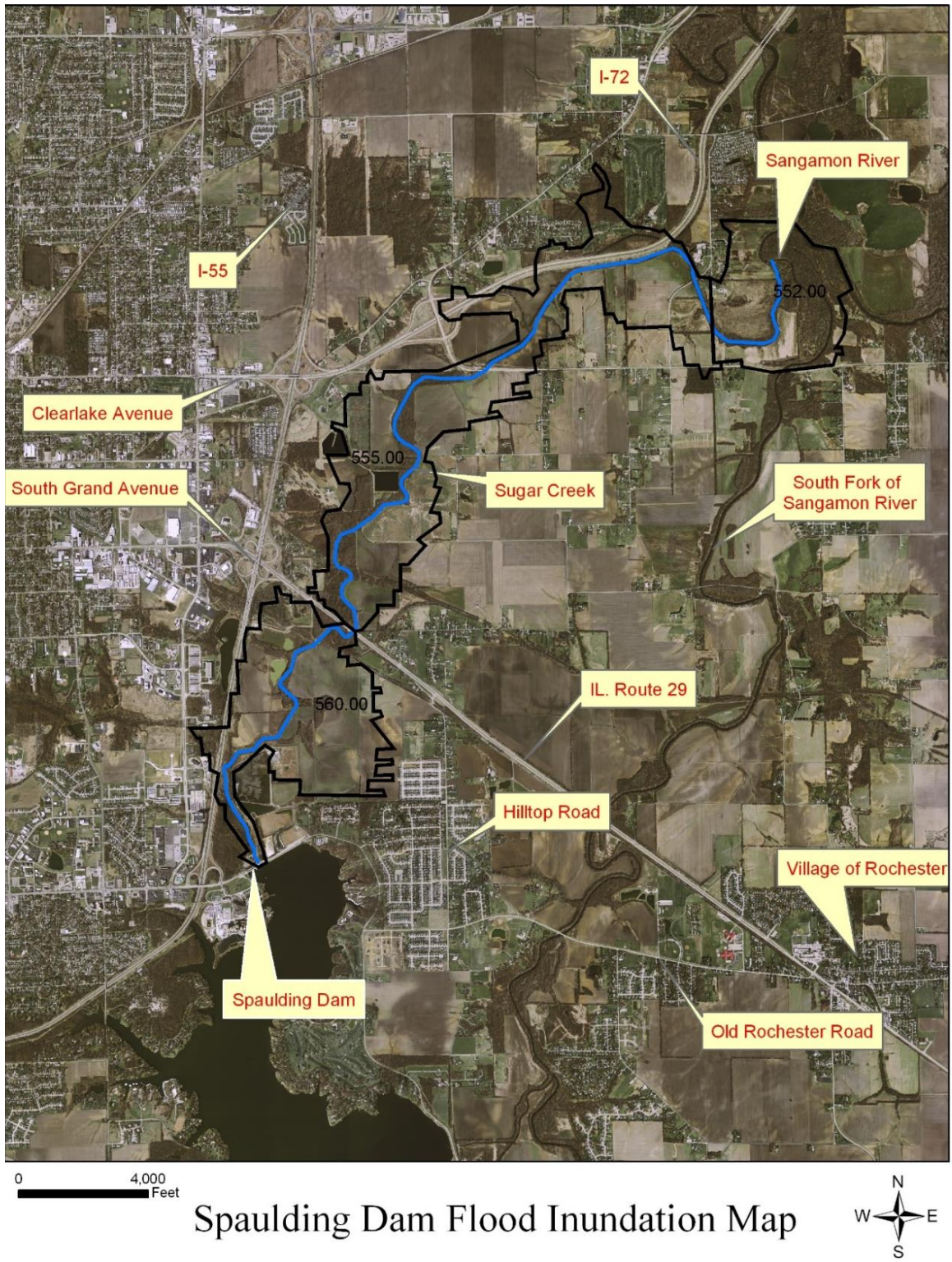


Four other dams in Sangamon County are classified by IDNR Office of Dam Safety but do not appear listed in the National Inventory of Dams as of the fall of 2022. These are the CWLP Lime Pond Dam and Washington Park Dam in the City of Springfield, the Lake in the Woods Dam in Island Grove Township, and the Prairie Grove Detention Pond Dam in the Village of Chatham. The Lime Pond Dam is a Class II dam and the other three are Class III dams.

The locations affected by dam failure.

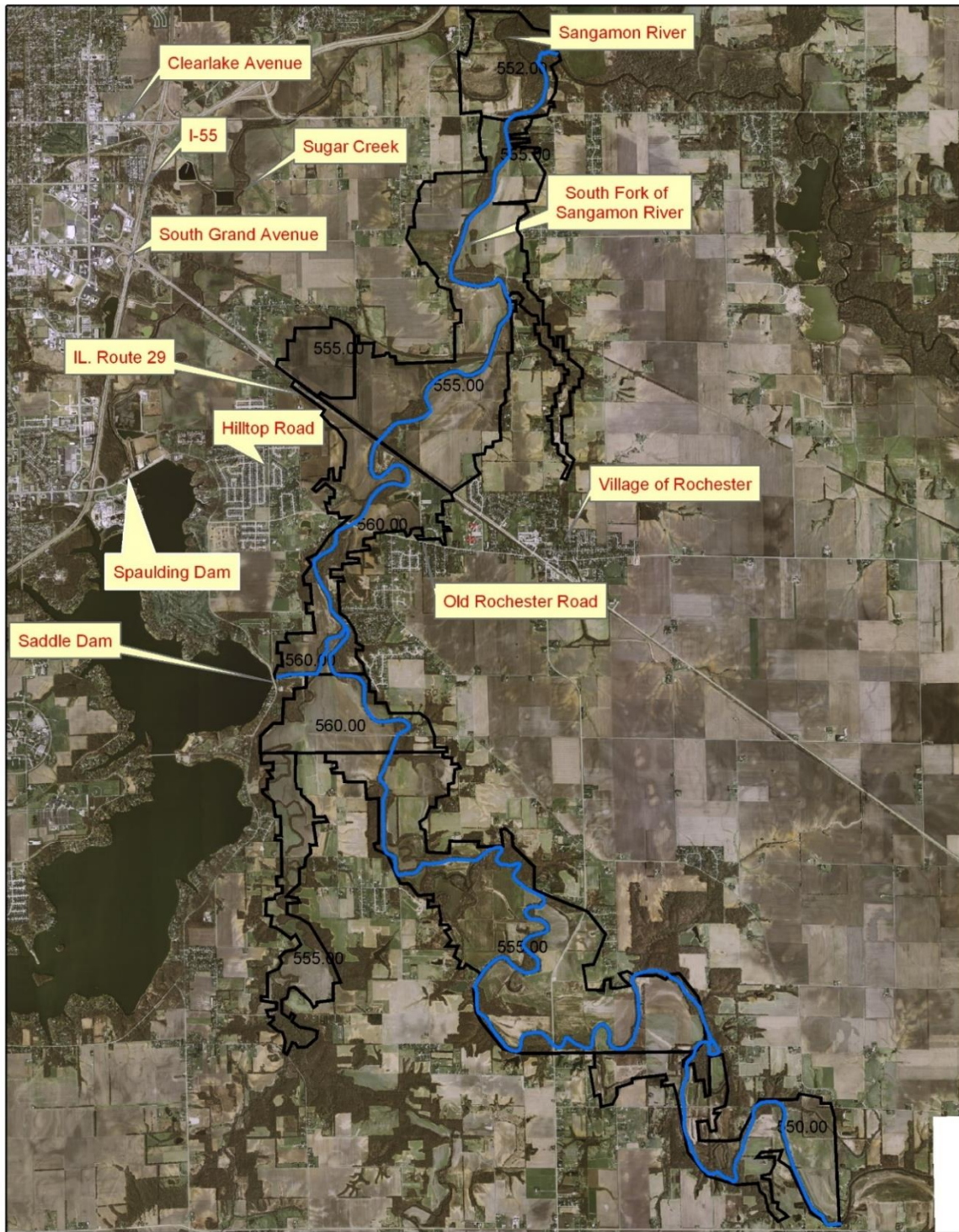
The locations that could be affected by complete failure of each of the dams are shown in Figures 19, 20, and 21. FLDWAV, dam failure software from the National Weather Service, was used to model the dam failure scenarios for Lake Sangchris Dam and Spaulding Dam. The Saddle Dam inundation area was determined using a less sophisticated method, but does provide some idea of the potential consequence of failure. The scenarios depict an immediate failure of the entire length of each dam which would be a worst case situation. In 2022, the Task Force reviewed the dam failure scenarios in Figures 19, 20, and 21, and found that there are no changes in the locations that could be affected by complete dam failure.

Figure 19: Spaulding Dam Flood Inundation Area



Spaulding Dam Flood Inundation Map

Figure 20: Saddle Dam Flood Inundation Area



Saddle Dam Flood Inundation Map

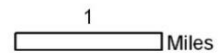
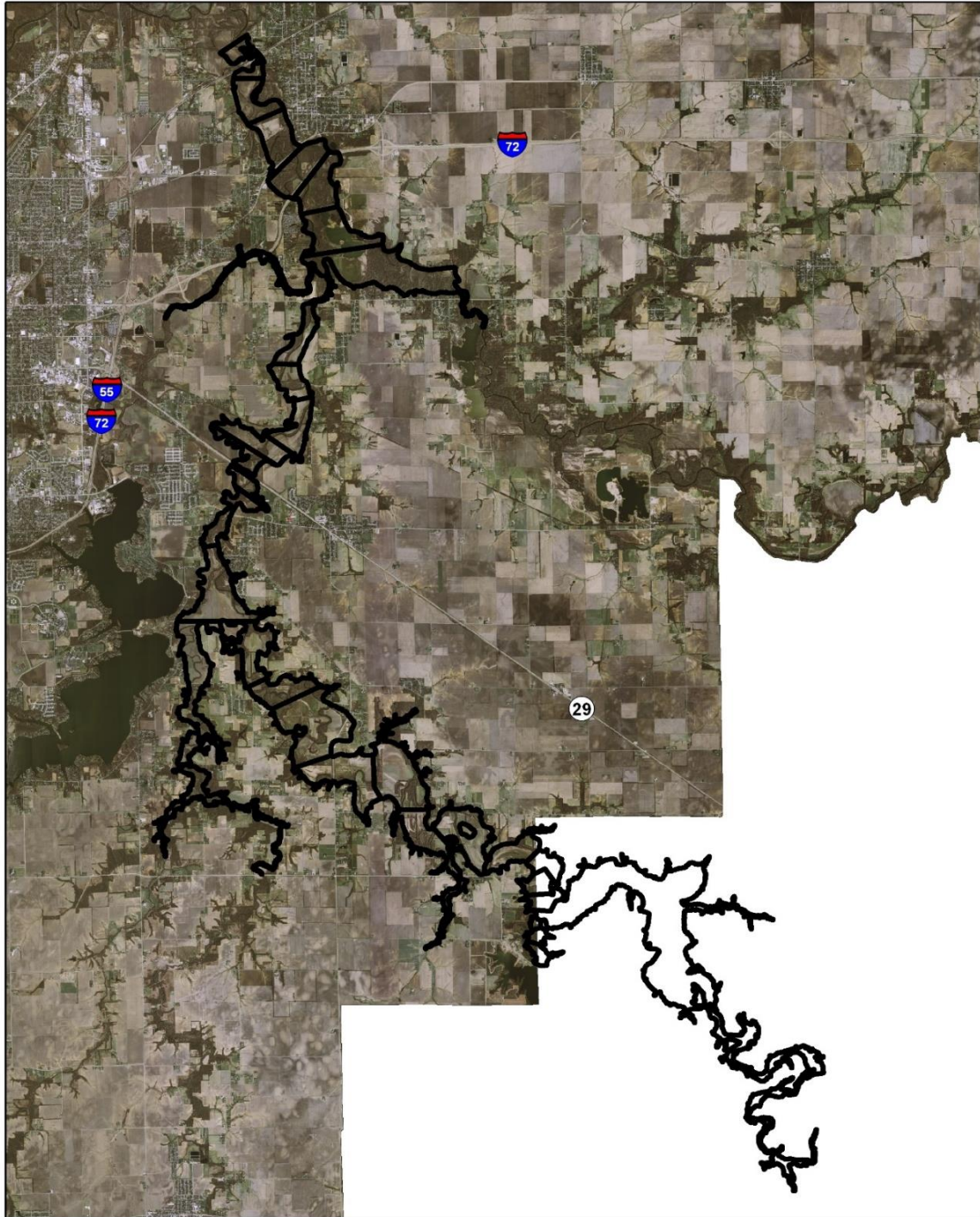


Figure 21: Lake Sangchris Dam Flood Inundation Area



SEDCDC Springfield Sangamon County Regional Planning Commission

Data Source: Sangamon County GIS

Lake Sangchris Dam Flood Inundation Map

0 1 2
Miles
1 inch equals 2 miles

Probability of future dam failure events.

To date, none of the dams have failed. As a result, the probability of a dam failure affecting the county cannot be specifically established, but it is estimated to be relatively low and complete failure is highly unlikely.

ASSESSING VULNERABILITY

Dam failure flood inundation scenarios were generated that could occur if complete failure happened all at once. Each of the dams is earth filled, so it is more likely that failure would occur over time as scouring removes the soil comprising the structure.

Figure 22: Dam Failure, Estimated # of Buildings

Dam	Buildings Affected*
Lake Sangchris Dam	65
Spaulding Dam	301
Saddle Dam	undetermined at this time

* The numbers of buildings indicated are derived from the planimetric layer of the County GIS map. The types of buildings affected are not specifically identified at this time.

Spaulding Dam is located on Lake Springfield which is the water source for the City of Springfield and several surrounding communities. The level of the lake is monitored daily and if found to be too high controlled release measures are deployed making a rainy-day failure highly unlikely.

Sufficient information needed to determine potential dollar losses if dam failure were to occur are not available at this time. The City of Springfield does plan to prepare an Emergency Action Plan (EAP) addressing a breach of the Spaulding and Saddle Dams. The Emergency Action Plan would look at the specific buildings affected.

Since the 2015 plan update, the City of Springfield through its utility CWLP wrote an EAP for Spaulding and Saddle Dams dated 2018 with an update of key personnel and no map updates in 2022, which are both incorporated herein by this reference. A copy of the 2018 EAP was reviewed by SSCRPC staff, and CWLP was a Task Force member. The EAP looks at both sunny and rainy-day failures of the dams. Due to security concerns, the inundation maps from the EAP are not being added to the plan. The dam owner has more detailed information about the EAP including its assumptions and methodologies. Further information about factors including, but not limited to, more detailed inundation maps, cascading impacts that could affect flooding risks, potential multi-jurisdictional economic/environmental/social impacts, location/size of at-risk populations at risk from the dams, and impacts to critical facilities are also available from the dam owner. Likewise, limitations and/or deficiencies in dams related to these factors will be captured in more detail with other documents like the EAPs or project-specific grant applications. It is believed the number of buildings affected by both dam failures is the same as the numbers presented in Figure 22. Potential dollar amounts for building damage continue to not be available at this time. The relevant emergency management parties in Sangamon County are aware of the plan and their roles within the parameters set by the plan. Based on this information, the Task Force reaffirms the information in this section related to Spaulding Dam and Saddle Dam at this time.

The owner of the Lake Sangchris Dam is in the process of updating its EAP for the dam as of late 2022. The updated EAP for this dam will be complete in 2023. The EAP looks at both sunny and rainy day failures of

the dam. The updated EAP, as amended, and the existing EAP are incorporated herein by this reference. Due to security concerns, the inundation maps from the EAP are not being added to the plan. The dam owner has more detailed information about the EAP including its assumptions and methodologies. Further information about factors including, but not limited to, more detailed inundation maps, cascading impacts that could affect flooding risks, potential multi-jurisdictional economic/environmental/social impacts, location/size of at-risk populations at risk from the dams, and impacts to critical facilities are also available from the dam owner. Likewise, limitations and/or deficiencies in dams related to these factors will be captured in more detail with other documents like the EAPs or project-specific grant applications. It is believed the number of buildings affected by both dam failures is the same as the numbers presented in Figure 22. Potential dollar amounts for building damage continue to not be available at this time. The relevant emergency management parties in Sangamon County are aware of the plan and their roles within the parameters set by the plan. Based on this information, the Task Force reaffirms the information in this section related to Lake Sangchris Dam at this time.

CLIMATE CHANGE

Climate change effects for dam failure are similar to those for flooding which are detailed further in the Flooding part of this Section.

DROUGHT HAZARD

DESCRIPTION

What is drought?

The Illinois State Climatologist Office identifies drought as:

“A complex physical and social phenomenon of widespread significance, and despite all the problems droughts have caused, drought has been difficult to define. There is no universally accepted definition because: 1) drought, unlike flood, is not a distinct event, and 2) drought is often the result of many complex factors acting on and interacting within the environment. Complicating the problem of drought is the fact that drought often has neither a distinct start nor end. It is usually recognizable only after a period of time and, because a drought may be interrupted by short spells of one or more wet months, its termination is difficult to recognize.”

Drought is a temporary feature of the climate of Illinois, and we know it occurs only when less than adequate precipitation exists for an extended period of time. Because of the complex nature of droughts, there are many definitions, often reflecting a specific area of concern of an individual, a city, or a region.

The most commonly used drought definitions are:

1. Meteorological or Climatological Drought – a period of well-below-average precipitation that spans from a few months to a few years.
2. Agricultural Drought – a period when soil moisture is inadequate to meet the demands for crops to initiate and sustain plant growth.
3. Hydrological Drought – a period of below-average streamflow and/or depleted reservoir storage.

How are droughts measured?

The Illinois State Climatologist Office website provides a method for estimating drought conditions on a state-wide basis.

Figure 23: Severity of Precipitation Drought Expressed as Percent of the State-wide Average Precipitation

Drought Duration	Moderate Drought	Severe Drought
3 months	45 to 60%	less than 45%
6 months	56 to 70%	less than 56%
12 months	70 to 80%	less than 70%
24 months	78 to 90%	less than 78%

Based on data from the National Weather Service reported from the Springfield Abraham Lincoln Capital Airport, when comparing the period of 2009 – 2014 to 2015 – 2021, Sangamon County experienced a decrease in average precipitation in February, April, May, June, September, October, November, and December. Decreases in average precipitation greater than one inch occurred in May and June, with 1.07 inches and 1.10 inches, respectively. Precipitation increased in the remaining months of January by 0.55 inches, March by 1.58 inches, July by 2.45 inches, and August by 1.88 inches. Even though there were

more months with a decrease in the average precipitation from the 2015 plan to the 2022 plan, the total average precipitation still increased by over two inches.

In 2012, the State of Illinois experienced varying degrees of drought according to the National Weather Service. The lack of rain was also experienced in Sangamon County. In July 2012, the rain total was 6.43 inches lower than the average of the previous three years, and in August of that year, the rain total was 3.07 inches lower than the average of 2009-2011. In 2022, the Task Force confirmed that Sangamon County has not experienced a severe drought since the drought reported in 2012.

The average precipitation by month for Sangamon County is shown in Figure 24.

Figure 24: Precipitation in Springfield from 1981-2021

Month	1981 - 2008 Average Precipitation (in inches)	2009 - 2014 Average Precipitation (in inches)	2015-2021 Average Precipitation (in inches)	Difference (in inches) (2009-14 to 2015-2021)	% Change
January	1.88	1.56	2.11	0.55	35
February	1.81	2.33	2.10	-0.23	-10
March	2.59	2.46	4.04	1.58	64
April	3.42	4.76	4.22	-0.54	-11
May	4.03	5.93	4.86	-1.07	-18
June	4.21	5.66	4.56	-1.10	-19
July	3.90	2.73	5.18	2.45	90
August	3.20	2.63	4.51	1.88	71
September	2.75	3.52	3.24	-0.28	-8
October	2.93	4.37	3.43	-0.94	-22
November	3.24	2.13	2.10	-0.03	-1
December	2.48	2.60	2.52	-0.08	-3
TOTAL	36.44	40.68	42.87	2.19	5

PROFILE

The locations affected by drought.

The locations affected by drought are not isolated because the precipitation patterns throughout the region are similar. Many homes outside of municipalities use private wells to provide water, although there are also several water districts that supply public water to some rural areas. Municipalities in the County provide water to their residents from surface water or ground water sources. Severe drought affects all these water sources.

Since the 2015 plan update was adopted, additional private water companies have located in Sangamon County and expanded services to provide potable water to rural residents. There has also been an expansion of several municipalities' water systems to include service to homes in unincorporated areas.

The extent of previous occurrences in Sangamon County.

Previous occurrences in Sangamon County were the periods in the 1930s and 1950s when drought was most frequent and troublesome according to the Illinois State Climatologist Office. Sangamon County experienced a severe drought in 1953-1955. In September 1983 all counties in the state were declared State disaster areas because of high temperatures and low precipitation conditions that began in June.

Probability of future drought events.

According to the Illinois State Climatologist Office, the persistence of drought from one season to the next in Illinois is not as high as in other parts of the U.S., especially the West where multi-year droughts are common. Therefore, the ability to predict the onset or continuation of a drought is more problematic. Recent advances in our understanding of large-scale atmospheric and oceanic circulation features, such as El Niño and the Pacific Decadal Oscillation, may lead to some small degree of skill in predicting drought one or two seasons ahead. As global and regional climate models improve we may begin to realize the ability to predict changes in frequency, intensity, or location of drought.

ASSESSING VULNERABILITY

A drought in Sangamon County would impact two major aspects of our communities – water supply and agricultural production. No damage to buildings generally results from drought conditions.

The Illinois State Climatologist Office indicates the first part of the hydrological cycle to be impacted by drought is the soil moisture. The changes in soil moisture can be quite rapid during the growing season when demand for moisture is high due to plant growth. Dry periods in Illinois typically have a near-normal number of days with rain, but the rains are spottier and less intense. As a result, stream flow usually drops as well due to a lack of heavy rainfall events. Any rain that does fall is first absorbed into the ground because of the depleted soil moisture, reducing runoff.

According to the 2017 Census of Agriculture, there were 1,083 farms in Sangamon County accounting for 531,290 acres of land. Ninety-four percent of this land was in crop production. Crop sales were \$325,891,000. Livestock sales were \$26,733,000. A severe drought would have a financial impact on the largely agricultural community in Sangamon County particularly if it occurred during the growing season.

Water supplies from private wells, ground water sources, and surface water sources would also be impacted by a severe drought.

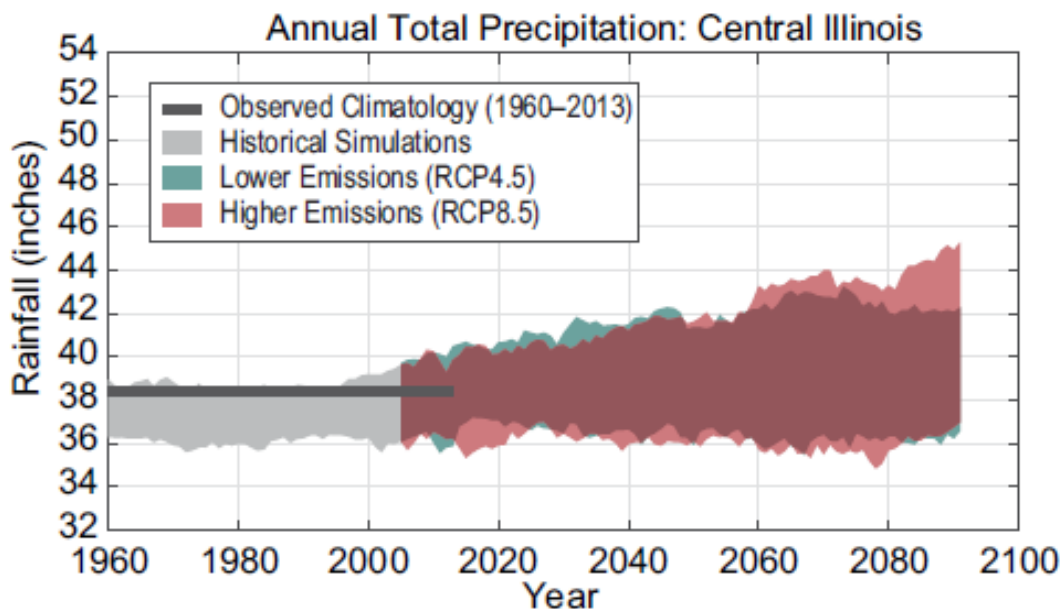
CLIMATE CHANGE

Climate change effects on drought are difficult to assess in central Illinois. According to the Illinois Climate Assessment, Illinois has had less frequent droughts recently when compared to the first half of the twentieth century. This is attributed to wetter springs in Illinois in general which leads to more of the sun's energy going to evaporation than toward heating the ground and atmosphere, moderating daytime maximum temperatures and decreasing the frequency of drought events. However, the Illinois State Water Survey (ISWS) Bulletin 75 from 2020 shows that the precipitation amount for the 100-year probability 24-hour rain event declining from 7.40 inches to 7.31 inches in the previous ISWS Bulletin 70. This is also attributed to larger rainfall events occurring more frequently in the early part of the 20th century in central Illinois.

In several parts of the Risk Assessment, there are discussions of greenhouse emissions using Representative Concentration Pathways (RCP) emissions scenarios, which are measured by the radiative force of the sun in watts per meter squared and greenhouse gases emissions in concentrations of carbon dioxide. Larger RCP values indicate a future with higher levels of greenhouse gas emissions than futures with smaller RCP values.

Projections for central Illinois in the Illinois Climate Assessment based on average total precipitation predict the same or a slight increase in precipitation to the year 2099, as shown in Figure 26. The period from 1970-2019 had an average precipitation of 37 inches. For the period 2070-2099, this figure is projected to increase to 37-42 inches under a lower emissions scenario (RCP 4.5) and 37-45 inches under a higher emissions scenario (RCP 8.5). The Illinois Climate Assessment also notes that drought is likely to be a concern in some years throughout Illinois even if precipitation increases due to expected increases in temperature and the distribution of precipitation throughout the year.

Figure 25: Central Illinois Projected Annual Total Precipitation, 1960 – 2100



Source: Illinois Climate Assessment p. 28

The red shading in Figure 25 indicates a higher emissions scenario (RCP 8.5) where emissions keep rising with declining emission rates in the second half of the 21st century as detailed in the Illinois Climate Assessment. The teal shading indicates a lower emissions scenario (RCP 4.5) that assumes rapid movement away from fossil fuels to electric vehicles over the coming decades as outlined in the Illinois Climate Assessment. Gray is historical simulations from 1960-2005 while the black line indicates observed climatological values averaged for the period 1960-2013.

According to the CMRA website, Sangamon County's maximum number of consecutive dry days will increase from approximately 15 days to approximately 16 days by late in the 21st century. Figure 27 shows this information in the bottom row of the table. Other drought information from the CMRA website is also in this table. This figure is broken into two different emissions scenarios similar to the Illinois Climate Assessment. The higher emissions scenario called RCP 8.5 considers a future where emissions keep increasing. The lower emissions scenario called RCP 4.5 assumes that emissions begin to level off in

approximately the year 2040. Climate modeling assumptions are explained in more detail on the CMRA website.

Figure 26: Drought Projection Information for Sangamon County to the Year 2099

Category	Emissions Scenario					
	Lower Emissions (RCP4.5)			Higher Emissions (RCP8.5)		
	Early century (2015-'44)	Mid-century (2035-'64)	Late century (2070-'99)	Early	Mid	Late
Annual days max temp > 100	4.7	9	14.3	5.8	13.7	38.8
Annual days max temp > 90	54.4	66.4	77	58.4	76.1	107.7
Average daily max temp (F)	66.7	68	69.3	66.9	68.9	73
Annual single highest max temp (F)	102.3	104.2	105.6	102.8	105.4	110.4
Annual highest max temp avg over 5 days (F)	98.7	100.4	101.9	99.3	101.8	106.7
Annual total precipitation (In.)	37.2	37.4	37.6	36.8	37.8	38.7
Average number of dry days	160.7	161.4	161.5	161.3	162.6	165.6
Average number of days with measurable precipitation (wet days)	204.3	203.6	203.5	203.7	202.4	199.4
Maximum number of consecutive dry days	15.1	15.4	15.8	15.4	15.7	16.4

Source: <https://livingatlas.arcgis.com/assessment-tool/explore/details>

EARTHQUAKE HAZARD

DESCRIPTION

What is an earthquake?

The 2007 INHMP describes earthquakes as follows: “Earthquakes occur when rocks forming the earth’s crust slip past each other along a fault. This slippage occurs when the buildup of stresses gets to the point that they are greater than the strength of the locked up section of rocks along the fault plane. When faulting takes place, the sudden release of energy produces vibrations or seismic (shock) waves that radiate from the main fault movements. These waves cause the shaking or “quaking” that lasts tens of seconds to a few minutes, depending on the magnitude of the event (energy released) and what kinds of rocks they travel through and the stiffness or lack of stiffness of the soils at a site. Where the faulting starts, at some depth below the Earth’s surface, is the hypocenter (focus) of an earthquake. The point on the surface directly above the focus is the epicenter.”

How are earthquakes measured?

There are two ways to measure earthquakes:

The magnitude is a calculation of the seismic energy released and is measured through ground vibrations with a seismograph. The familiar Richter scale is one way of reporting magnitude. The increments of magnitude are logarithmic. An increase of 0.2 on the Richter scale indicates a doubling of the amount of energy released. For example, a magnitude 7 earthquake releases about 32 times more energy than a magnitude 6 earthquake. A single magnitude number is calculated for each earthquake event.

The intensity relates to the effects of an earthquake and is based on descriptions provided by people experiencing the event rather than readings from an instrument. The intensity decreases when moving away from the epicenter. The type of soil influences intensity which will be stronger through the thick, loose, saturated soils found along river valleys. The Modified Mercalli Intensity Scale is used in the United States to report earthquake intensities. Many intensities are indicated for each earthquake event based on distance from the epicenter and soil type.

Figure 27 shows a comparison of the Richter Scale and Modified Mercalli Intensity Scale.

PROFILE

The locations affected by earthquakes.

To date, there has been no earthquake damage recorded in Sangamon County. However, all of Sangamon County has some vulnerability to earthquake activity that occurs elsewhere. A relatively intense earthquake with an epicenter in Mason County would cause more costly damage in the north and west parts of the County. Another earthquake event along the New Madrid fault would more intensely affect the south/southeast parts of the County thus all of Sangamon County has some vulnerability to earthquake activity.

Figure 27: Comparison of Modified Mercalli Scale and Richter Scale

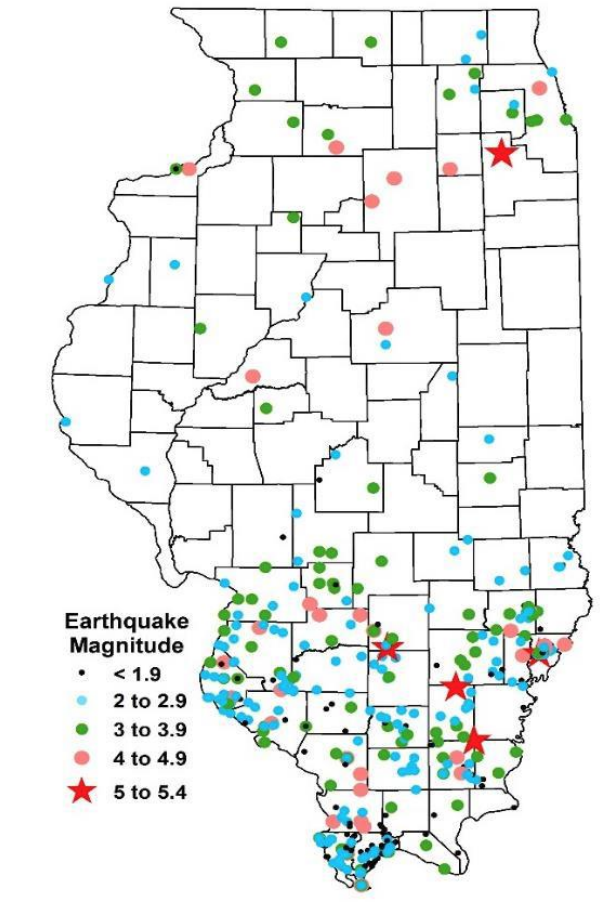
The Modified Mercalli scale		Level of Damage	The Richter scale
1-4	Instrumental to Moderate	No damage.	≤ 4.3
5	Rather Strong	Damage negligible. Small, unstable objects displaced or upset; some dishes and glassware broken.	4.4-4.8
6	Strong	Damage slight. Windows, dishes, glassware broken. Furniture moved or overturned. Weak plaster and masonry cracked.	4.9-5.4
7	Very Strong	Damage slight-moderate in well-built structures; considerable in poorly-built structures. Furniture and weak chimneys broken, Masonry damaged. Loose bricks, tiles, plaster, and stones will fail.	5.5-6.1
8	Destructive	Structure damage considerable, particularly to poorly built structures. Chimneys, monuments, towers, elevated tanks may fail. Frame houses moved. Trees damaged. Cracks in wet ground and steep slopes.	6.2-6.5
9	Ruinous	Structural damage severe: some will collapse. General damage to foundations. Serious damage to reservoirs. Underground pipes broken. Conspicuous cracks in ground; liquefaction.	6.6-6.9
10	Disastrous	Most masonry and frame structures/foundations destroyed. Some well-built wooden structures and bridges destroyed. Serious damage to dams, dikes, embankments. Sand and mud shifting on beaches and flat land.	7.0-7.3
11	Very Disastrous	Few or no masonry structures remain standing. Bridges destroyed. Broad fissures in ground. Underground pipelines completely out of service. Rails bent. Widespread earth slumps and landslides.	7.4-8.1
12	Catastrophic	Damage nearly total. Large rock masses displaced. Lines of slight and level distorted.	> 8.1

Source: FEMA

The extent of previous earthquakes in Sangamon County.

There is no earthquake history for Sangamon County although tremors have been felt in the past from earthquakes with epicenters elsewhere. The INHMP (2018) indicates 406 earthquakes in the previous 222 years as shown in Figure 28. The nearest earthquake of significant magnitude occurred on July 19, 1909 in Mason County between Petersburg and Havana. The estimated magnitude was 4.8 and no damage was recorded in Sangamon County.

Figure 28: Earthquakes in Illinois from 1795 to 2017



Source: INHMP

On November 9, 1968 a magnitude 5.5 earthquake (the largest in the Central United States during the 20th century) occurred with an epicenter northeast of Harrisburg in southern Illinois. The intensity felt in Sangamon County was 5 on the Modified Mercalli Intensity scale, which indicates trembling was felt, but no damage resulted.

Evidence suggests that large magnitude earthquakes centered in the New Madrid area occurred in the years 300, 900, 1450, and 1811-1812. The shortest interval between events was 360 years (most recently). During the winter of 1811-1812 what is commonly known as the New Madrid earthquake occurred, but this actually consisted of four earthquakes of magnitude 7+ and hundreds of smaller earthquakes over a several month period. At that time the area that is now Sangamon County was sparsely populated and there is no record of the intensity experienced here from these events.

Probability of future earthquake events.

It is difficult to calculate the probability of future earthquake events in Sangamon County since there has not been one of any significance since records have been maintained. The New Madrid seismic zone is the most studied area for earthquake activity. The US Geological Survey estimates the probability of a repeat

of the 1811-1812 magnitude earthquakes is 7-10 percent over a 50-year time period. The Illinois State Geological Survey estimates the likelihood of a damaging earthquake (magnitude 6.3 or greater) occurring somewhere in the Central United States is 86-97 percent over a 50-year period.

ASSESSING VULNERABILITY

To prepare the 2008 Plan, HAZUS software provided by FEMA was utilized to prepare an analysis of the damages that could be caused in Sangamon County today by a recurrence of the earthquake originating in Mason County in 1909. Although that earthquake had a magnitude of 4.8, a magnitude of 5.0 was used in the model as this appears to be the minimum value for getting accurate data from the software. Direct economic loss predicted totaled \$5,632,010.

In 2008, the plan stated “another major earthquake centered in the New Madrid area could have an impact on Sangamon County. However, limitations in the HAZUS software prevent its use in estimating damages and no other mechanism is available to do so.” In 2022, staff was able to model a 7.4 magnitude earthquake like the one that struck on February 4, 1812, using HAZUS software. The direct economic loss was predicted at \$6,069,530 for Sangamon County.

To prepare the 2022 Plan update, HAZUS software provided by FEMA was utilized to further prepare an analysis of the damages that could be caused to Sangamon County as of November 9, 2022, by an arbitrarily determined earthquake centered on a large medical center in Springfield. The earthquake was set at 5.0, a magnitude that has occurred in the Midwest. This was also the minimum magnitude that seemed to get reliable results in the 2008 plan. Direct economic loss is predicted at \$3,397,812,100. The damages expressed in the following table, Figure 29, are stated in thousands of dollars from Hazus 5.1.

Figure 29: Total Economic Loss Estimates in Sangamon County for a Magnitude 5.0 Earthquake Centered in Springfield (Thousands of \$ Damage)*

Building Damage	Contents Damage	Inventory Loss	Relocation Cost	Income Loss	Rental Income Loss	Wage Loss	Total Loss
\$2,014,523	\$727,772	\$9,906	\$253,979	\$116,784	\$108,287	\$166,561	\$3,397,812

*Numbers may not add exactly due to rounding.

Other notes of interest under this scenario are:

- Casualties (injuries and/or deaths, the model does not differentiate) would be approximately 700 if the earthquake occurred at 2:00 AM or approximately 1,300 if the earthquake occurred at 2:00 PM, or approximately 1,000 if the earthquake occurred at 5:00 PM.
- Impacts on transportation systems (separate from the table in Figure 29) would be approximately \$5 billion in damage. Approximately \$4 billion would be to road segments with another approximately \$1 billion to bridges.
- Approximately 1,800 households would be displaced with approximately 1,000 individuals needing short-term shelter.

It appears there would be some impacts on Sangamon County. There are no fault lines in Sangamon County, but a similar earthquake could happen in the planning area. If a magnitude 5.0 earthquake were to occur in the region, it is thought the impacts would be less than shown because the model used default settings to obtain the impacts shown. Figure 30 shows the areas of impact from this scenario.

Figure 30: Direct Economic Loss from a 5.0 Earthquake centered in Springfield

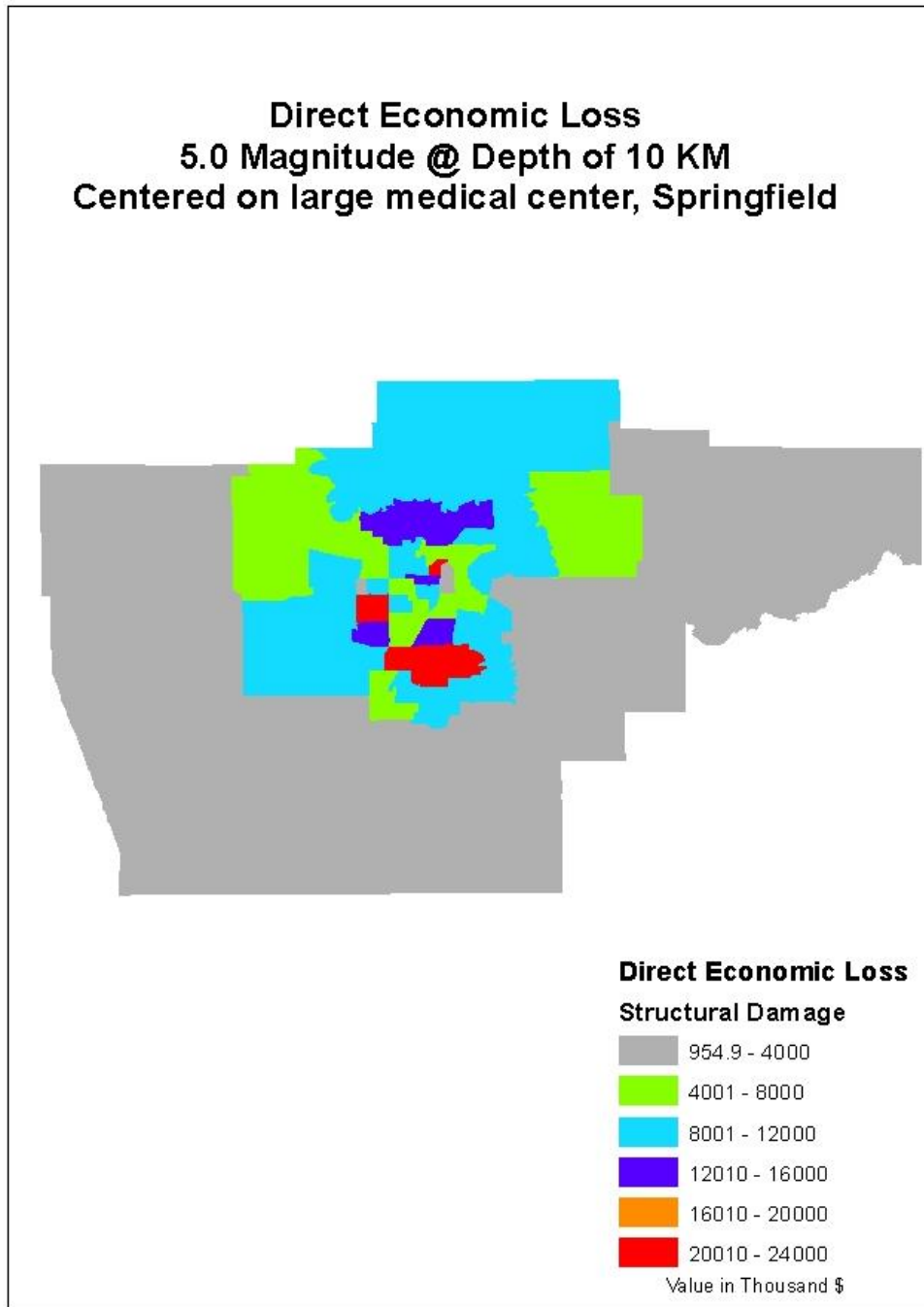
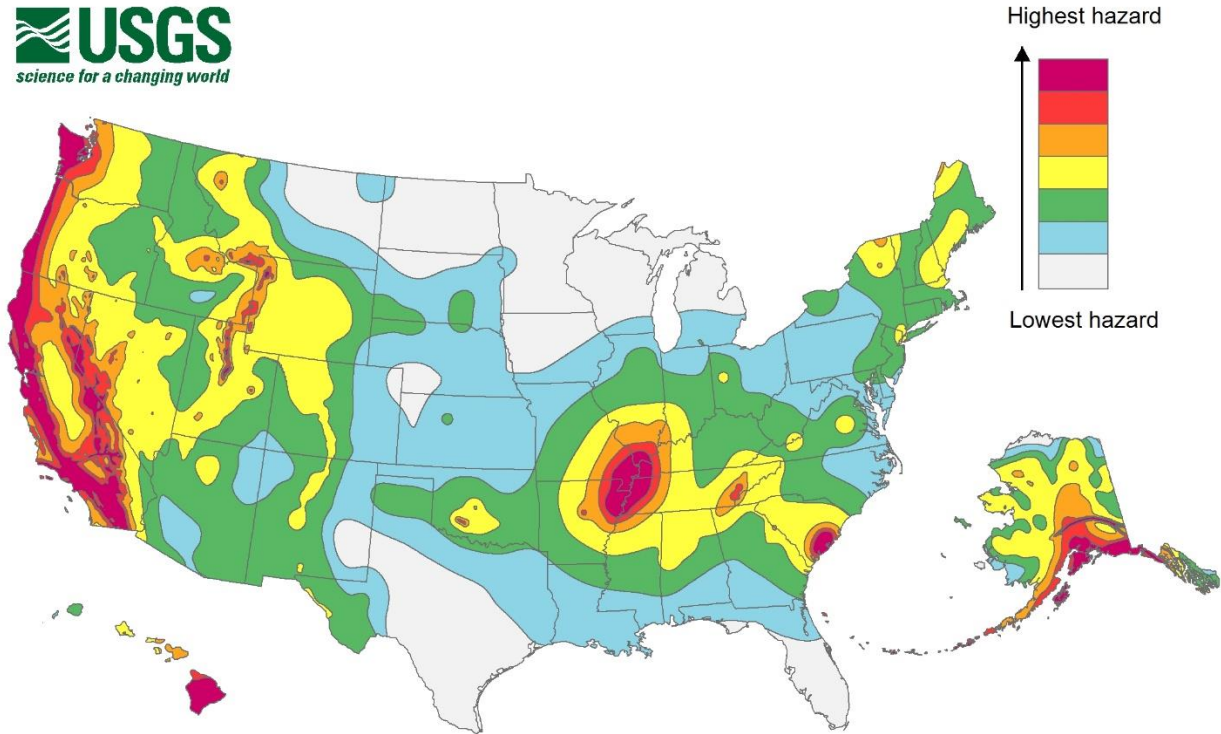


Figure 31 is a 2018 shaking-hazard map from the US Geological Survey (USGS) that shows the levels of horizontal shaking that have a 1 in 50 chance of being exceeded in 50 years. The colors proceed from white which has the lowest hazard for an earthquake to red and purple which have the highest hazards for an earthquake. Sangamon is on the lower end of the colors in the green category.

Figure 31: 2018 Shaking Hazard Map



Source: USGS, 2018

CLIMATE CHANGE

Like mine subsidence, earthquakes are more subterranean than surface phenomena and therefore climate change may have minimal impacts. However, firm conclusions for Sangamon County cannot be drawn due to a lack of readily available information at the local level.

EXTREME HEAT HAZARD

DESCRIPTION

What is extreme heat?

Extreme heat is a combination of high temperatures and high humidity. Conditions of extreme heat are dangerous and can cause injury and death.

The Heat Index is apparent temperature or a measure of how it feels when temperature and humidity are combined. It is the result of biometeorological studies and takes into account body size, core and body surface temperatures, clothing, the skin’s resistance to heat and moisture transfer away from the body. The Heat Index assumes an average-sized adult with clothing in the shade with a 5-mph wind. Being in the full sun or in an area with little air movement can increase the apparent temperature.

What makes extreme heat dangerous?

According to the Illinois State Climatologist Office of the Illinois State Water Survey, extreme heat is dangerous because the body cools itself by sweating because the evaporation of moisture has a cooling effect. High humidity reduces this evaporation and hinders the body’s effort to cool itself. The dew point temperature is a much more useful measure of the moisture content of the atmosphere than the commonly used relative humidity. During summer in Illinois, dew point temperatures in the 50s are generally comfortable. Most people begin to feel the humidity when dew point temperatures are in the 60s. Dew point temperatures in the 70s are rare and cause significant discomfort.

Effects of extreme heat.

The effects of extreme heat are as follows, as taken from the 2018 INHMP. Figure 32 shows heat disorder relationships to the heat index:

Heat cramps: Muscular pains and spasms due to heavy exertion. Although heat cramps are the least severe of heat related medical problems, they are often the first signal that the body is having trouble with the heat.

Heat exhaustion: Typically occurs when people exercise heavily or work in a hot, humid place where body fluids are lost through heavy sweating. Blood flow to the skin increases, causing blood flow to decrease to the vital organs. This results in a form of mild shock. If not treated, the victim’s condition will worsen. Body temperature will keep rising and the victim may suffer heat stroke.

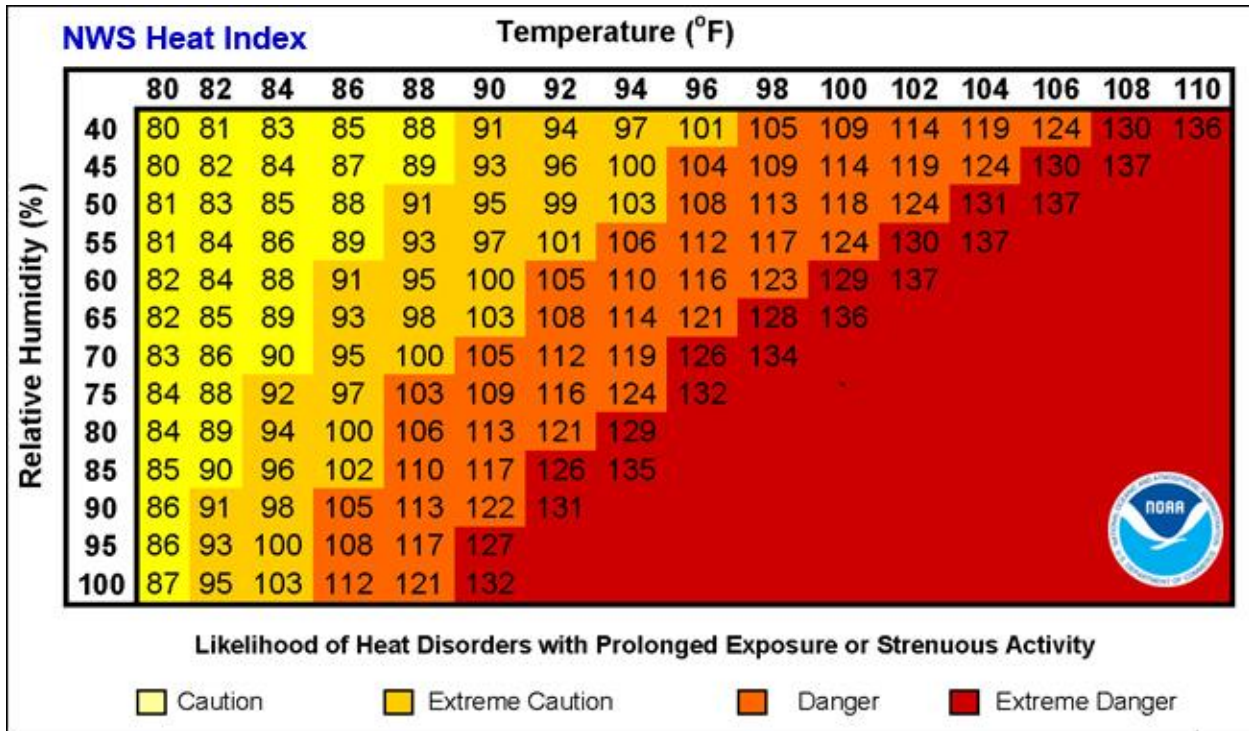
Heat stroke/Sunstroke: Heat stroke or sunstroke is life-threatening. The victim’s temperature control system, which produces sweating to cool the body, stops working. The body temperature can rise so high that brain damage and death may result if the body is not cooled quickly.

Figure 32: Relationship of Heat Disorders to Heat Index

Classification	Heat Index	Effect on the body
Extreme Danger	125° +	Heat stroke highly likely,
Danger	103° - 124°	Sun stroke/heat cramps or heat exhaustion likely, and heat stroke possible with prolonged exposure and/or physical activity.
Extreme Caution	90° - 103°	Heat cramps or heat exhaustion likely, and heat stroke possible with prolonged exposure and/or physical activity.
Caution	80° - 90°	Fatigue possible with prolonged exposure and/or physical activity

Sources: INHMP (2018) and <https://www.weather.gov/ama/heatindex>

Figure 33: Heat Index Derived from Humidity and Temperature



Source: National Weather Service

Extreme heat warnings.

Figures 33 and 34 show the relationship between heat index, humidity, temperature, and various heat warnings and advisories issued by the National Weather Service related to extreme heat conditions in Sangamon County.

Figure 34: National Weather Service Heat Terms

Type of Alert	Conditions
Excessive Heat Warning	Issued within 12 hours of the onset of the following criteria: heat index of at least 105 degrees Fahrenheit for more than three hours per day for two consecutive days, or heat index of more than 115 degrees Fahrenheit for any period of time.
Heat Advisory	Issued within 12 hours of the onset of the following conditions: heat index of at least 105 degrees Fahrenheit but less than 115 degrees Fahrenheit for less than three hours per day, or nighttime lows above 80 degrees Fahrenheit for two consecutive days.
Excessive Heat Watch	Issued by the National Weather Service when heat indices in excess of 105 degrees Fahrenheit or 41 degrees Celsius during the day, combined with nighttime low temperatures of 80 degrees Fahrenheit or 27 degrees Celsius or higher, are forecast to occur for two consecutive days.
Heat Wave	A period of abnormally and uncomfortably hot and unusually humid weather. Typically a heat wave lasts two or more days.

Source: National Weather Service

PROFILE

The locations affected by extreme heat.

Extreme heat conditions generally occur throughout central Illinois during any single event. People in all of our communities are vulnerable to the dangers present during these conditions.

The extent of previous extreme heat events in Sangamon County.

Previous extreme heat events in Sangamon County are shown in Figure 35. Historical data is only available from 1996 to the present.

Figure 35: Extreme Heat Events in Sangamon County from Jan 1, 1996 – May 2022

Dates	Temperature Ranges (degrees)	Heat Index Values (degrees)	Impact Reported
July 26 – July 27, 1997	95 - 100	105 - 115	heat related injuries, roads buckling
June 26 – June 28, 1998	middle to upper 90s	105 - 110	heat related injuries, roads buckling
July 20 – July 26, 1999	lower to middle 90s	105 - 110	heat related death and injuries
July 28 – July 31, 1999	lower to middle 90s	105 - 110	heat related injuries
July 22 – July 25, 2005	middle 90s to 100	105 - 115	heat related death and injuries
July 30 – Aug 2, 2006	94 - 100	105 - 110	heat related injuries
Aug 3 - Aug 4, 2010	middle 90s	105	none
Aug 9 - Aug 14, 2010	middle 90s	105	none
Aug 1 - Aug 2, 2011	middle 90s	110 - 115	none
June 29 - July 7, 2012	95 - 105	110	none

Source: National Centers for Environmental Information

Previous occurrences of extreme heat.

As seen in Figure 35, extreme heat conditions in Sangamon County from 1996 through 2022 have occurred from late June to early August with late July to early August being the prime time. Extreme heat conditions have lasted from two days to nine days. In two cases deaths occurred due to the heat. In July 1999 a 62-year old woman was found in her Springfield home with all the windows closed and no fans or air conditioning. In July 2005 an elderly Springfield woman was found in her mobile home with malfunctioning air conditioning.

Probability of future extreme heat events.

In the 26 years from 1996 through 2022, there were eight years when at least one extreme heat event was recorded in Sangamon County. This indicates a 31 percent probability that an extreme heat event will occur in Sangamon County in any given year. This probability is lower than the probabilities expressed in the 2015 plan update of 44 percent and the 2008 plan which indicated a 45 percent probability. The lower probability can be attributed to the fact that no new extreme heat events have been reported in Sangamon County since the completion of the previous plan update.

ASSESSING VULNERABILITY

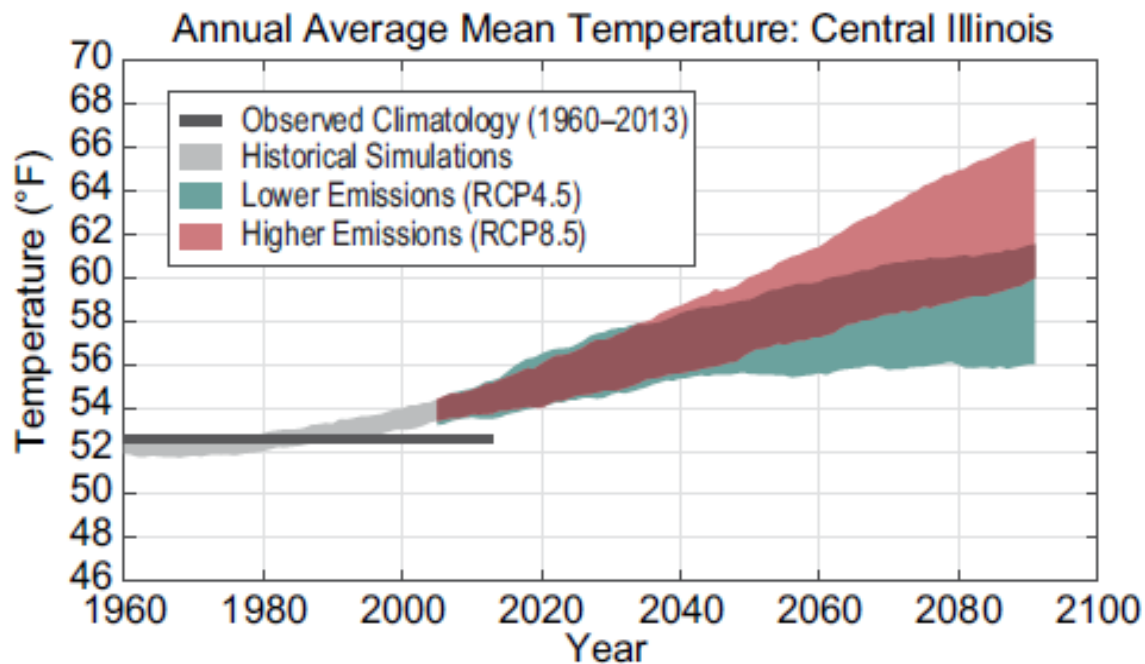
Unlike other natural hazard events extreme heat does not damage buildings. The toll is on people and can lead to extreme medical conditions and death. Heat related injuries are a major concern with heat stroke being a severe medical condition that requires emergency medical treatment. The most vulnerable

are the elderly, infants, young children, and people with chronic health problems. In central Illinois most deaths have occurred when people have been in a closed home with no air conditioning. There is a greater concern in urban areas because concrete and asphalt retain heat and release it at night, offsetting any relief that otherwise would have been felt. The loss of power can also exacerbate a serious situation.

CLIMATE CHANGE

Climate change could affect temperatures across central Illinois. This is detailed in the Illinois Climate Assessment. The projected annual average mean temperature will increase from 52 degrees Fahrenheit to between 56 and 62 degrees Fahrenheit under a lower emissions scenario (RCP 4.5) and from 52 degrees Fahrenheit to between 60 and 66 degrees Fahrenheit under a higher emissions scenario (RCP 8.5) by the year 2100. This is shown in Figure 36. The red shading indicates a higher emissions scenario detailed in the Illinois Climate Assessment and the teal shading indicates a lower emissions scenario (RCP 4.5) that is also detailed in the report. Gray is historical simulations from 1960-2005 while the black line indicates observed climatological values averaged for the period 1960-2013.

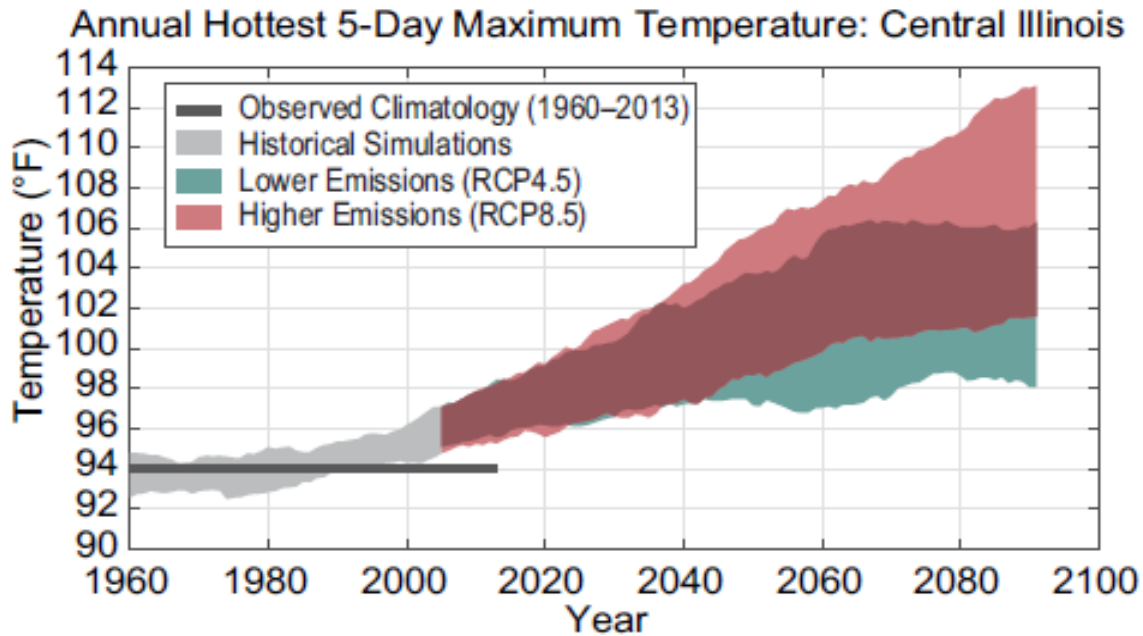
Figure 36: Annual Average Mean Temperature for Central Illinois, 1960-2100



Source: Illinois Climate Assessment, p. 26.

For extreme heat, the more interesting comparison is the average five-day hottest maximum temperatures. For Central Illinois, the projected maximum temperature increases from 94 degrees Fahrenheit to between 98 and 106 degrees Fahrenheit under a lower emissions scenario (RCP 4.5) and from 94 degrees to between 102 and 112 degrees Fahrenheit under a higher emissions scenario (RCP 8.5) by the year 2100. Figure 37 shows these temperatures. Once again, the red shading indicates a higher emissions scenario (RCP 8.5) detailed in the Illinois Climate Assessment and the teal shading indicates a lower emissions scenario (RCP 4.5) that is also detailed in the report. Gray is historical simulations from 1960-2005 while the black line indicates observed climatological values averaged for the period 1960-2013.

Figure 37: Annual Hottest 5-Day Maximum Temperature for Central Illinois, 1960-2100



Source: Illinois Climate Assessment, p. 33

According to the CMRA website, Sangamon County’s average annual days with a temperature greater than 100 degrees Fahrenheit are projected to increase from approximately four to five in 2015 to nearly 14 and 39 in 2099 as shown in Figure 38, highlighted in red. Other extreme heat information from the CMRA website is also in this table. This figure is broken into two different emissions scenarios similar to the Illinois Climate Assessment where the higher emissions scenario (RCP 8.5) considers a future where emissions keep increasing whereas the lower emissions scenario (RCP 4.5) assumes that emissions begin to level off in approximately the year 2040.

Figure 38: Extreme Heat Projection Information for Sangamon County to the Year 2099

Category	Emissions Scenario					
	Lower Emissions (RCP4.5)			Higher Emissions (RCP8.5)		
	Early century (2015-'44)	Mid century (2035-'64)	Late century (2070-'99)	Early	Mid	Late
Annual days max temp > 105	0.9	2	3.5	0.9	3.1	15
Annual days max temp > 100	4.7	9	14.3	5.8	13.7	38.8
Annual days max temp > 95	20.3	29.9	39.3	23.9	39.6	72.8
Annual days max temp > 90	54.4	66.4	77	58.4	76.1	107.7
Average daily min temp (F)	45.9	47	48.1	46.1	48	51.7
Average daily max temp (F)	66.7	68	69.3	66.9	68.9	73
Annual single highest max temp (F)	102.3	104.2	105.6	102.8	105.4	110.4
Annual highest max temp avg over 5 days (F)	98.7	100.4	101.9	99.3	101.8	106.7
Cooling degree days (CDD)	1660.3	1872.9	2077.2	1720	2063.4	2799.8

Source: <https://livingatlas.arcgis.com/assessment-tool/explore/details>

FLOOD HAZARD

DESCRIPTION

What is a flood?

The standard definition of a flood as utilized in the INHMP is: “A general and temporary condition of partial or complete inundation of normally dry land areas from (1) the overflow of inland or tidal waters, (2) the unusual and rapid accumulation or runoff of surface waters from any source, or (3) mudflows or the sudden collapse of shoreline land.” A simpler definition is too much water in the wrong place. Since water circulates from clouds to the soil to streams to rivers to the oceans and returns to the clouds, a scientific definition of a flood is an imbalance in the “hydrological system” with more water flowing through the system than the system can draw off.

What types of floods occur in Sangamon County?

The majority of flooding in Sangamon County is riverine flooding, related to the overbanking of rivers and streams. Some flooding also occurs along the shoreline of Lake Springfield; however, the controlled release practices limit this flooding. Flash flooding unrelated to bodies of water also can result from heavy rainfall over a short period of time in areas where the ground is already saturated with water or there are large expanses of impermeable surfaces, such as urbanized areas developed with buildings, concrete sidewalks, and asphalt parking lots and roadways.

How are flood alerts issued?

The flood alert system utilized in Sangamon County is as follows:

Urban and small stream advisory or a flash flood statement or a flood statement: issued when heavy rains that could inundate streams or roadways are predicted. Flash floods can be very dangerous, occurring when water accumulates so rapidly that it cannot be absorbed by the ground or accommodated by storm sewers. Flood waters can move rapidly carrying away anything in its path and can create deep areas of standing water. During a flash flood watch residents should stay aware of the weather and take necessary precautions if conditions worsen.

Flash flood warning: issued when a flash flood is occurring. In addition to the information provided during a flash flood watch, areas of greatest hazard are identified. During periods of a warning, areas subject to flooding should be evacuated and avoided.

Flood warning: issued for the Sangamon River and South Fork of the Sangamon River when heavy rains occurring in areas to the east of Sangamon County will cause local flooding. These usually provide a couple of days lead time before flooding reaches our area and local weather forecasts will include this information along with predicted flood heights.

Watches and warnings are sent to radio and television stations by the National Weather Service in Lincoln, Illinois:

Local Television Stations

WAND Channel 17
 WCIA Channel 3
 WICS Channel 20
 Cable Weather Channel 44
 Sangamon County SAM Alert System

Local Radio Stations

WFMB 1450 AM
 WTAX 1240 AM
 WMAY 92.7 FM
 NOAA Weather Radio— WXJ75 162.400kHz

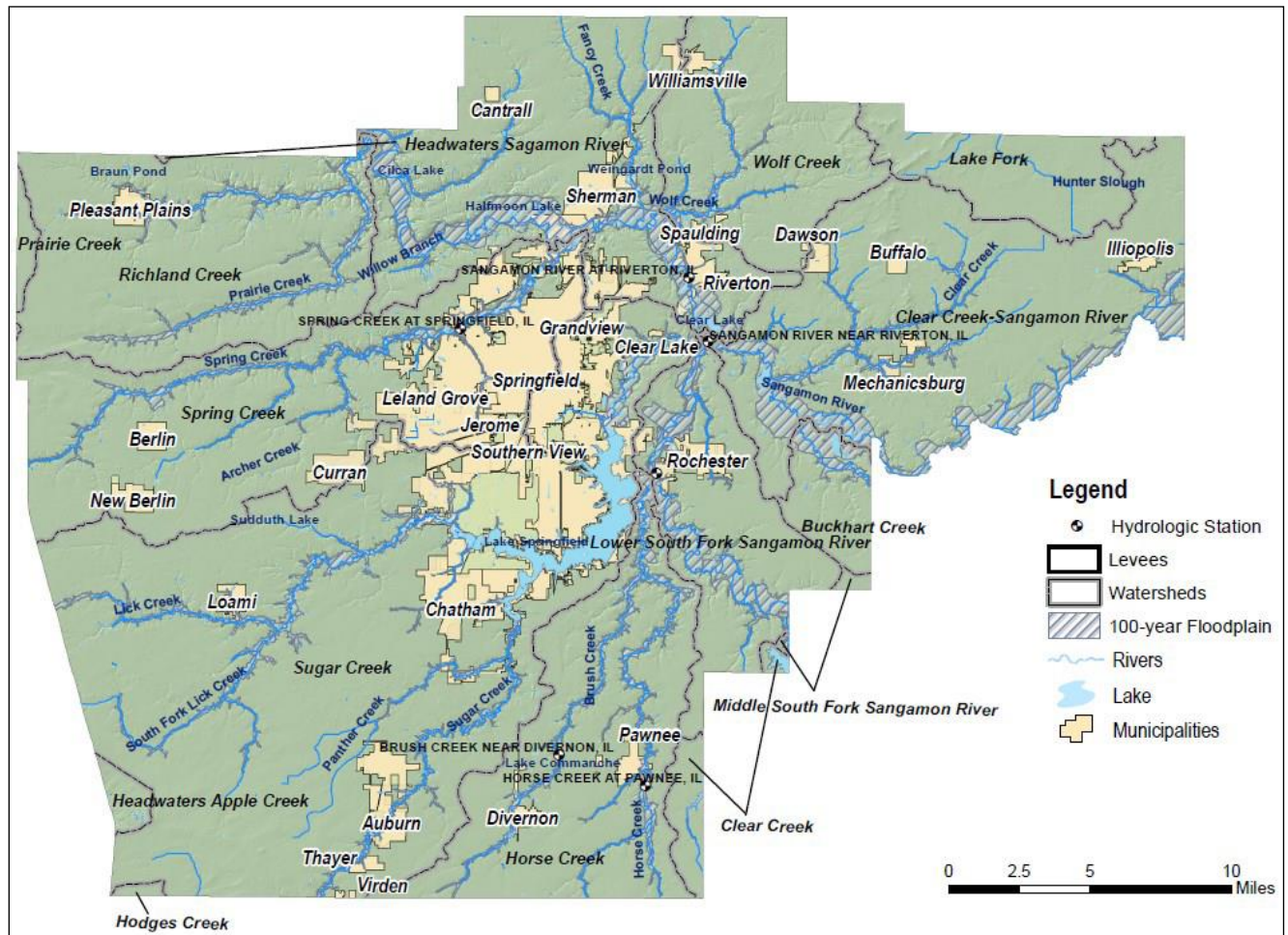
What are the benefits of floodplains?

When left undisturbed, a floodplain provides critical storage area for flood waters helping to reduce the height and flow of flooding. Floodplains also provide habitat for a diverse array of plants and animals, control erosion, filter runoff, and recharge groundwater. Particularly important is the fact that when there are no buildings in a floodplain, damage to human life and property by flooding is greatly diminished.

PROFILE

Sangamon County is rich with several lakes, rivers and watersheds that supply water as well as recreational opportunities for residents. A map of the county with the levees, watersheds, rivers, lakes, and 100-year floodplain is provided in Figure 39.

Figure 39: Sangamon County Lakes, Rivers, and Watersheds



Source: Illinois Statewide Mitigation Plan

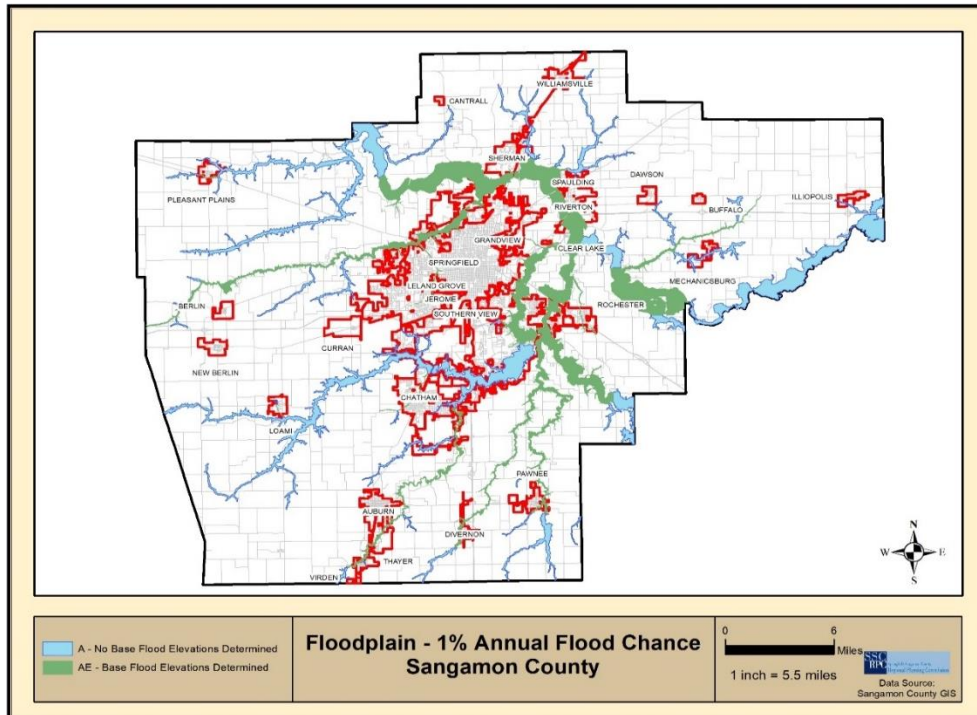
Approximately 10 percent of the area in Sangamon County is designated as a 100-year floodplain by the FEMA. The most recent Flood Insurance Rate Maps for the county are dated August 2, 2007. A large portion of the flood-prone area is in the unincorporated parts of the county although several communities are also vulnerable to flooding. The following chart in Figure 40 indicates which bodies of water are identified by FEMA with special flood hazard areas in each community. Communities that did not participate in the 2022 Plan update are included in the chart as flooding can affect the entire county and mitigation projects undertaken by one community can have an effect on a neighboring community.

Figure 40: Water Bodies Subject to Flooding in Each Community

Community	Water Bodies Subject to Flooding
Auburn	Sugar Creek
Buffalo	None
Cantrall	None
Chatham	Fox Creek, Polecat Creek, Panther Creek, Lake Springfield
Curran	None
Dawson	None
Divernon	Brush Creek
Grandview	None
Illiopolis	Long Point Slough Tributary
Jerome	Jacksonville Branch
Leland Grove	Jacksonville Branch
Mechanicsburg	Griffiths Creek
New Berlin	None
Pawnee	Horse Creek, Henkle Branch
Pleasant Plains	Richland Creek, Branch of Richland Creek
Riverton	Sangamon River
Rochester	Black Branch, South Fork Sangamon River
Sherman	Sangamon River, Fancy Creek
Southern View	None
Spaulding	Sangamon River
Springfield	Lake Springfield, Lick Creek, Polecat Creek, Sugar Creek, Spring Creek, Sangamon River, Jacksonville Branch
Thayer	Sugar Creek
Williamsville	Wolf Creek
unincorporated Sangamon County	Black Branch, Brush Creek, Buckhart Creek, Cantrall Creek, Clear Creek, Fancy Creek, Horse Creek, Lick Creek, Panther Creek, Polecat Creek, Prairie Creek, Richland Creek, Spring Creek, Sugar Creek, Wolf Creek (and their tributaries), Sangamon River, South Fork of the Sangamon River, Lake Springfield

Figure 41 is a map of the flood-prone areas of the county. The FIRM provides base flood elevations when a study has been performed for a particular body of water and these flood zones are designated AE. Flood zone A designates an area where a base flood elevation has not been established.

Figure 41: Floodplain – One Percent Annual Flood Chance in Sangamon County



The extent of previous floods in Sangamon County.

Figures 42 and 43 provide data related to the extent of previous floods in Sangamon County. FEMA has determined that there is a one percent chance of a flood occurring in any given year for areas of Sangamon County. These are designated as special flood hazard areas (SFHAs) on the Flood Insurance Rate Maps and are commonly known as 100-year floodplains. This term, however, does mislead people to believe that a flood of that magnitude would only occur once in any 100-year period. To the contrary, Figure 42 shows the dates and heights of five “100-year” floods that have been recorded on the Sangamon River at the Old Route 36 Bridge in Riverton over 111 years from 1911-2022. Four additional floods rose to less than a foot below the 100-year flood level. High floods on the South Fork of the Sangamon River as recorded 100 feet downstream of Horse Creek near Rochester are shown in Figure 43. One flood in 2015-2016 was approximately two-and-a-half feet above the 100-year flood elevation.

Figure 42: Historically High Flood Events on the Sangamon River at Riverton (100 yr flood elevation = 537)

Date	Elevation (ft.)
10/04/1926	540.78
5/19/1943	539.90
9/11/1926	538.53
12/31/2015	538.51
5/14/2002	538.45
4/13/1994	536.66
4/11/1922	536.60
2/2/1916	536.41
6/6/1917	536.18
9/30/1911	535.60
6/8/2008	535.55
8/24/1915	535.23

Figure 43: Historically High Flood Events on the South Fork of the Sangamon River at Rochester (100 yr flood elevation = 545.5)

Date	Elevation (ft.)
12/31/2015	547.98
5/13/2002	543.85
4/14/1994	543.70
4/14/1979	543.22
2/26/1985	542.09
9/18/2008	541.47
6/18/1970	541.26
4/21/2013	541.09
11/22/1985	540.44
1/23/1974	540.43
5/11/1996	540.22
9/27/1993	540.15
4/25/1973	540.14

Previous flood occurrences.

In May 2002, major flooding occurred in the County after excessive rainfall on already saturated ground. The South Fork of the Sangamon River reached the highest level in a 50 year period. The Sangamon River exceeded the 100-year flood elevation, although it did not reach the 1943 height of five feet above the 100-year flood elevation. Many homes in Riverton, Divernon, Pawnee, and unincorporated areas of the County received substantial damage when they were inundated with flood water for up to five days. Some buildings that were not located in a floodplain were also damaged due to the accumulation of water in areas where the ground was saturated. Major and minor roads were made impassable for varying amounts of time when I-55 flooded north of Divernon at Brush Creek, Mechanicsburg Road flooded east of the I-72 interchange at Sugar Creek, Peoria Road flooded south of Sherman at the Sangamon River, and several country roads flooded in low-lying areas. The widespread destruction resulted in Presidential Disaster Declaration 1416. According to the listed Presidential Disaster Declarations in Section I, declarations due to flooding were issued in 1974, 1994, and 1996.¹

In June 2008 major flooding again occurred with the Sangamon River cresting at 535.55 feet at Riverton and the South Fork of the Sangamon River cresting at 539.95 feet at Rochester on June 9.

The most recent notable flood along both the Sangamon River and the South Fork of the Sangamon River occurred late in 2015 and into 2016. Both streams had floods that exceeded the 100-year flood elevations during this event. During December 2015, heavier-than-average rains fell over the region. In Springfield, 6.56 inches of precipitation fell in December, 4.04 inches more than the 2015-2021 average of 2.52 inches. The rains were heaviest between December 23 and December 28 in Springfield. Two-thirds of the monthly rain total (4.37 inches) fell in three days between December 26 and December 28. Heavier rainfall occurred outside Springfield as parts of Christian County received over ten inches of rain, according to the National Weather Service.

The heavy rainfall, combined with saturated ground conditions, led to general flooding along the South Fork of the Sangamon River and the Sangamon River. Major roads into Springfield including Illinois Route 4 at the Sangamon River Bridge near Sherman and Illinois Route 29 between Springfield and Rochester closed due to the flooding. Flooding along the South Fork of the Sangamon River was record-setting. The South Fork reached a crest four feet above the previous record set in 2002, according to the National Weather Service. The crest exceeded the 100-year flood elevation. Flooding along the Sangamon River was also noteworthy. The river rose approximately ten feet in two days between December 27 and December 29. The flood exceeded the 100-year flood elevation at Riverton, cresting at 30.13 feet on December 31, but did not reach historic crests seen in 1926 and 1943, according to the National Weather Service. The Sangamon River at Riverton was above flood stage for approximately seven days from December 28 through January 4. Fortunately, there was no loss of life in Sangamon County during the flooding event in December 2015. In addition, sandbagging efforts and deployment of the communities' respective emergency management plans minimized the property damage.

Over 100 buildings were removed from the floodplain throughout Sangamon County over the past two decades through acquisition projects and public health code enforcement. After the 2002 flood, officials in Divernon, Pawnee, Riverton, and unincorporated Sangamon County acquired 36 substantially damaged

¹ The 2008 plan listed disaster declaration 674 in 1982 as a flood disaster declaration applicable to Sangamon County. The website <https://www.fema.gov/disaster/674/designated-areas> was reviewed in preparation of the 2022 plan update and it does not list Sangamon County as an applicable area. This reference was therefore removed from the 2022 plan update.

properties with hazard mitigation grant funds. Enforcement of local floodplain ordinances, state regulations, and building codes prohibiting the construction of structures in special flood hazard areas continues to be a priority for local and county officials.

Probability of future flooding events.

Future flooding events are likely to occur in Sangamon County. FEMA calculates the elevation of a flood that has a one percent chance in any given year of occurring. Land that is located in a designated floodplain will flood at some point. Unlike other natural hazards, the properties that are affected by riverine and lake flooding are mapped so the risk is more easily pinned down. Figure 41 shows the areas of the county that are at risk of flooding. Some water bodies have a base flood elevation, or projected height of a one percent chance flood (100-year flood), determined. These are differentiated on this map from those areas of floodplain where the base flood elevation is not determined. The graphic depiction only shows the one percent chance flood. Flooding can reach elevations higher than shown and flash flooding due to heavy rainfall can create water accumulation in areas not designated as floodplains. Based on the four Presidential Disaster Declarations over the 26-year period from 1981 – 2007, including the footnoted declaration previously described, the probability of a major flood occurring in Sangamon County in any given year is 15 percent. In 2022, the Task Force reviewed this probability and found it to apply to this plan update. There have been no significant floods and no further disaster declarations due to floods since the adoption of the plan update in 2017. Another potential way to calculate the probability is by the number of floods above flood stage at Riverton of 23 feet. Figure 50 indicates six years in which flood events above the flood stage at Riverton of 23 feet in the fifteen years from 2007 – 2022. These years were 2008, 2009, 2010, 2013, 2015, and 2017. This puts the probability of a flood stage flood at Riverton at approximately 40 percent.

ASSESSING VULNERABILITY

The following participating communities in Sangamon County have some floodplain according to the countywide Flood Insurance Rate Map effective August 2, 2007, provided by FEMA.

Auburn, Chatham, Divernon, Illiopolis, Jerome, Leland Grove, Mechanicsburg, Pawnee, Pleasant Plains, Riverton, Rochester, Sherman, Spaulding, Springfield, Williamsville, and unincorporated Sangamon County

The Task Force established a new method to determine flood exposures by each community. While property tax assessments include both land and building values, only building valuations were used in the data analysis. This method paints the most accurate and realistic valuations, which will be more helpful for future grant applications. Assessment data from the Sangamon County Supervisor of Assessments was reviewed to calculate the total non-farm building assess values on the parcels identified in Figure 44. The digital FIRM on the Sangamon County GIS mapping system was used to generate these values.

Several caveats are important in this table. These values are necessarily tied to the number of parcels rather than the number of buildings as the assessment data reviewed does not lend itself to an analysis of individual building values. This figure is only a planning estimate and did not consider the ground elevation of any buildings. Further, no attempt was made to count the types and numbers of principal (residences and businesses) versus accessory buildings (garages and sheds) in the floodplain since this is a multi-jurisdictional planning estimate. Figure 44 identifies about \$200 million in building exposure in these communities. Participating communities not listed here were not considered in this analysis as they either did not have regulatory floodplains or they did not have parcels in the regulatory floodplain in their respective communities. Finally, the structures in the SCWRD were similarly not included to avoid double counting.

Figure 44: Estimates of Building Exposure in the Floodplain, Sangamon County, 2022

Community	# Parcels with building(s) in floodplain	Total Non-Farm Buildings Fair Market Value (2022)
Auburn	14	\$2,103,918
Chatham	58	\$7,512,783
Divernon	72	\$3,662,517
Jerome	16	\$1,287,708
Leland Grove	24	\$5,725,983
Mechanicsburg	3	\$536,655
Pawnee	48	\$2,928,990
Pleasant Plains	16	\$183,153
Riverton	26	\$1,758,492
Rochester	36	\$4,664,031
Spaulding	5	\$729,858
Springfield	475	\$110,671,716
Sangamon County ²	514	\$60,744,747
Total	1349	\$204,371,775

Flood insurance.

The NFIP is an asset to property owners for land in the floodplain. Figure 45 is the list of the communities on the Task Force with initial FIRM dates taken from the effective FIRM. The NFIP status of Mechanicsburg is unknown at this time. The status of the other participating communities not in the NFIP, including Buffalo, Curran, Dawson, Grandview, and Southern View, is they do not participate because there are no SFHAs within their corporate limits. The SCWRD does not participate in the NFIP as it is not a municipality. All other participating communities participate in the NFIP including Auburn, Chatham, Divernon, Illiopolis, Jerome, Leland Grove, New Berlin, Pawnee, Pleasant Plains, Riverton, Rochester, Sherman, Spaulding, Springfield, Williamsville, and unincorporated Sangamon County. The requirement for community compliance with the NFIP is also discussed in Section I.

² Sangamon County reports counts of buildings in the SFHA to CRS. The latest number reported in Sangamon County's annual recertification from February 2022 was 241.

Figure 45: NFIP Participation Dates by Community

Community	Date	Community	Date
Sangamon County	1/6/1983	New Berlin	5/3/2004
Auburn	8/19/1985	Pawnee	5/3/1982
Buffalo	5/3/2004	Pleasant Plains	9/2/1981
Chatham	9/2/1981	Riverton	12/1/1981
Curran	N/A	Rochester	6/15/1982
Dawson	5/3/2004	Sherman	11/16/1983
Divernon	5/15/1984	Southern View	5/3/2004
Grandview	5/3/2004	Spaulding	5/3/2004
Illiopolis	5/3/2004	Springfield	2/2/1982
Jerome	11/16/1983	Williamsville	5/3/2004
Leland Grove	12/16/1982		
Mechanicsburg	5/3/2004		

Sangamon County began its Community Rating System participation in 2000 as a Class 8 community and has been a Class 7 community since 2015. Sangamon County’s latest CRS cycle visit in 2020 reaffirmed its Class 7 rating. Sangamon County is the only CRS community in the planning area.

Repetitive loss.

Repetitive loss properties must be addressed in all plans approved or updated after October 1, 2008, by analyzing the data related to structures within the NFIP that have been repetitively damaged by floods. FEMA defines a “repetitive loss structure” as a structure for which two or more losses of at least \$1,000 each have been paid under the NFIP within any 10-year period since 1978. FEMA further defines a “severe repetitive loss structure” as residential properties that have at least four NFIP payments over \$5,000 each and the cumulative amount of such claims payments exceeds \$20,000, or at least two separate claims payments with the cumulative amount exceeding the market value of the building.

Figure 46 shows that the participating communities of Leland Grove, Pawnee, Pleasant Plains, Riverton, Sangamon County, and Springfield have repetitive loss properties while the others do not. For privacy reasons under federal law, individually identifiable locations and claim amounts cannot be publicly disclosed. Figure 46 also indicates the multi-jurisdictional planning area has 18 non-mitigated properties as of June 11, 2022. According to the data provided by IEMA from FEMA’s database, there are three unmitigated severe repetitive loss properties, two in unincorporated Sangamon County and one in Leland Grove. Figure 46 shows the amount of total county-wide claims for building damage and contents coverage is \$1,114,242.24.

Figure 46: Repetitive Loss Data (Source: IEMA)³

CID	Community	Type of Properties	Total Properties	Total Losses	Building Pymts.	Contents Pymts.
170925	Leland Grove	Residences	2	5	\$201,493.44	\$11,477.34
170602	Pawnee	Residences	2	6	\$47,931.65	\$11,776.54
170798	Pleasant Plains	Residences	1	2	\$7,994.81	\$0.00
170603	Riverton	Residences	1	2	\$13,014.31	\$0.00
170912	Sangamon County	Residences	9	28	\$461,912.68	\$71,009.13
170604	Springfield	1 - Res, 2 Non-Res	3	6	\$285,482.13	\$2,150.21
Totals			18	49	\$1,017,829.02	\$96,413.22

It should be noted the data provided by IEMA from FEMA's database has several errors. For instance, two properties in Pawnee do not currently have residences on them and thus appear mitigated and are owned by the village. One residence in Riverton is inaccurately attributed to Sangamon County, does not have a residence on it, and thus appears mitigated and is owned by the village. Two properties attributed to the City of Springfield are actually in Sangamon County and one is not in the SFHA and has had its residence removed and thus appears mitigated. Another property was in Mason County and was ignored in the counts. The SSCRPC staff will work with FEMA to correct this data for future planning purposes.

Floods and development trends.

Each community in Sangamon County that has floodplain participates in the NFIP and has adopted a floodplain ordinance with the exception of Mechanicsburg. Enforcing floodplain ordinances provides protection to any new structures built in a flood-prone area. Ordinances state that structures are either not built in the floodplain or are elevated or protected to the flood protection elevation adopted in the ordinance. After a flooding event, communities that have adopted flood ordinances inspect floodplain areas and enforce the applicable substantial improvement/substantial damage provisions of their respective ordinances. The Sangamon County Subdivision Ordinance, covering the unincorporated portions of the county, requires any flood-prone area in a new subdivision to be set aside as open space. Other flood-prone communities with subdivision ordinances also include specific regulations to prohibit development in the floodplain.

CLIMATE CHANGE

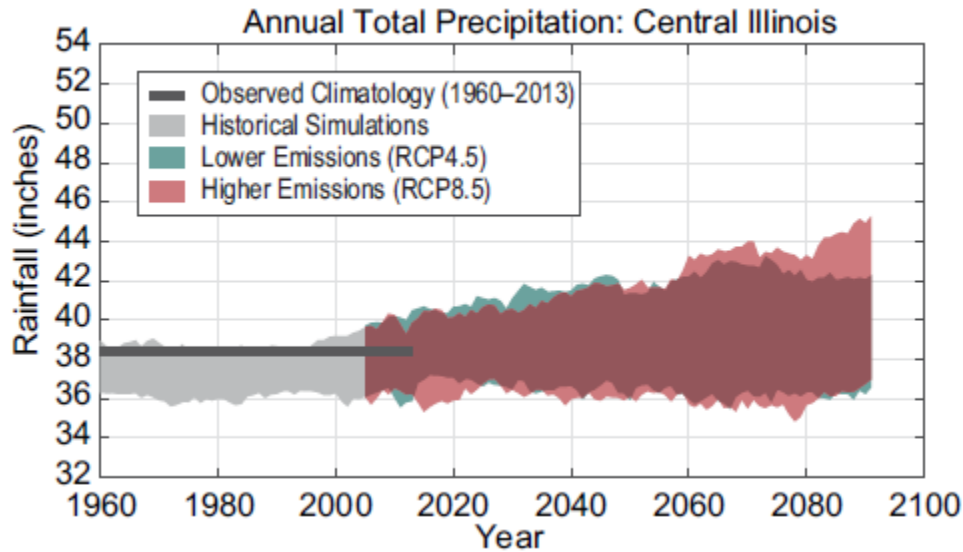
Climate change effects on flooding are difficult to assess in central Illinois. The planning area receives slightly less precipitation than in the past. According to the Illinois State Water Survey [Bulletin 75](#) (2020), the precipitation amount for the 100-year probability 24-hour rain event in the region containing Sangamon County is 7.31 inches. This is a slight decline from the previous [Bulletin 70](#) which had this same rain event as 7.40 inches. The reason for this decline is thought to be because larger average rains occurred in the earlier part of the 20th century in the planning area.

However, projections for central Illinois in the Illinois Climate Assessment based on average total precipitation predict the same or a slight increase in precipitation to the year 2099, as shown in Figure 47.

³ Unincorporated Sangamon County has one repetitive loss property which was demolished with private funds since adoption of the 2015 plan update. The paperwork for this demolition has not been submitted to FEMA as of June 11, 2022, when the data for this table was obtained from IEMA. The last number of repetitive loss properties number reported to CRS in 2022 was six. Of the two additional properties attributed to Sangamon County for this plan, neither were on the list provided by FEMA for Sangamon County's CRS cycle visit in 2020. The corrected number should be seven for unincorporated Sangamon County.

The period from 1970-2019 had an average precipitation of 37 inches. For the period 2070-2099, this figure is projected to increase to 37-42 inches under a lower emissions scenario (RCP 4.5) and 37-45 inches under a higher emissions scenario (RCP 8.5).

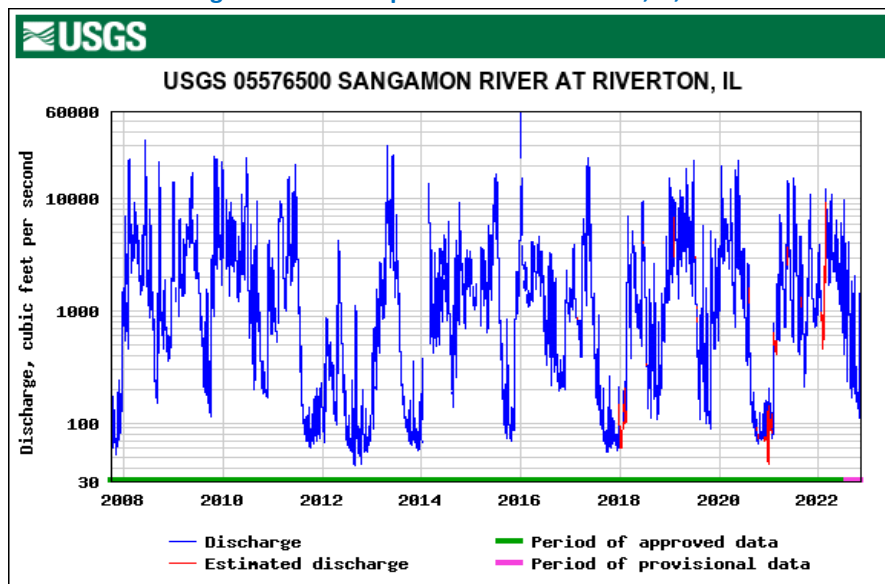
Figure 47: Central Illinois Projected Annual Total Precipitation, 1960 – 2100



Source: Illinois Climate Assessment p. 28

Flows on the river can be an indication of the intensity and frequency of floods. Increased flows that occur more rapidly can indicate more flooding in a particular river basin. Figure 48 shows river flow (discharge) data for the 15 years 2007-2022 obtained from the USGS website for the Sangamon River gauge at Riverton, Illinois. The peak flow in this period was approximately 58,700 cubic feet per second on December 31, 2015. This flow does not exceed the 1943 flood peak flow of 68,700 CFS according to the effective Flood Insurance Study. Thus, it does not appear in looking at this data that more intense floods than in the past are occurring more frequently.

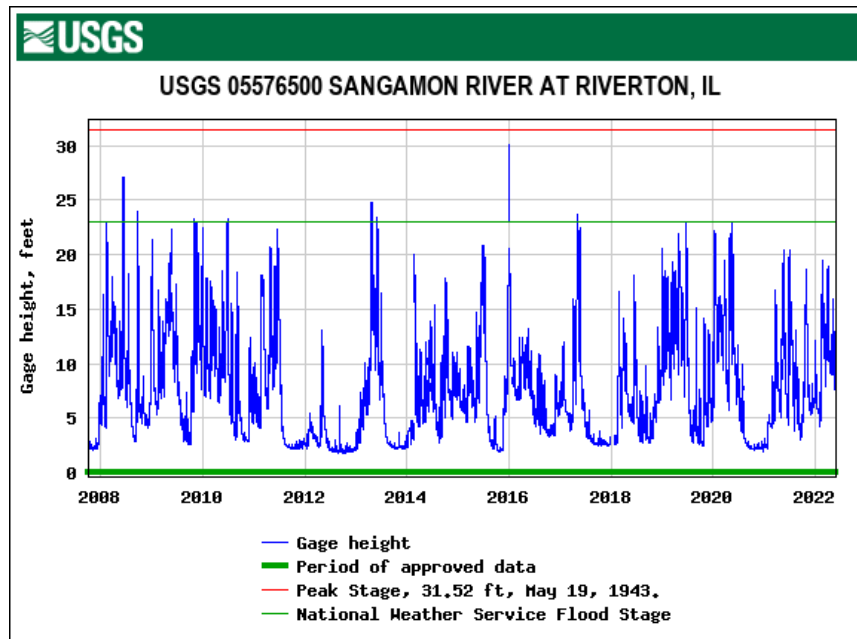
Figure 48: Sangamon River Discharge in Cubic Feet per Second at Riverton, IL, 2007-2022



Source: USGS

Figure 49 shows the river gauge height at Riverton on the Sangamon River from 2007 to 2022 obtained from the US Geological Survey. The peak height in this period was approximately 30.12 feet on December 31, 2015, during the 2015-2016 flood. In looking at this data, it does not appear that river gauge heights for more intense floods are occurring more frequently than in the past. For example, Figure 42 (see page 56) shows that in the 17 years between 1926 and 1943, there were three floods greater than the 2015 flood described earlier in this section.

Figure 49: Sangamon River Discharge in Cubic Feet per Second at Riverton, IL, 2007-2022



Source: USGS

Large floods can happen at any time. However, the peaks in these historical graphics do not appear to have an upward trend that would indicate more precipitation or an increased probability for riverine flooding events based upon the previous approximately 15 years of data in Sangamon County.

MINE SUBSIDENCE HAZARD

DESCRIPTION

What is mine subsidence?

According to “Approaches to Mine Subsidence in Four U.S. Communities” mine subsidence is:

“the collapse of the ground surface over areas where coal or mineral ores were removed. Subsidence causes ground surface deformation resulting in a range of problems from deep holes with vertical sides that pose physical threats to people, to more subtle forms of subsidence characterized by sagging of the ground surface producing more damage, over larger areas, affecting nearly all man-made structures.

Subsidence is an onerous problem. The underground mine lays dormant and forgotten until, one day, failure within the mine has progressed upward far enough that it reaches the ground surface. Subsidence damages, therefore, tend to be sudden and unexpected. History has demonstrated that nearly any undermined area regardless of depth, where significant volumes of coal or mineral ore were extracted, is susceptible to subsidence.”

There are two types of subsidence. Pit subsidence creates a hole 6 to 8 feet deep and 2 to 40 feet across (although most are less than 16 feet in diameter). Sag subsidence creates a depression over a broad area up to several hundred feet long and a few hundred feet wide. Vertical settlement of a structure is usually 2-4 feet.

What are the consequences of mine subsidence?

The consequences of damage to buildings resulting from mine subsidence are identified in the publication *Mine Subsidence: A Guidebook for Local Officials* as follows:

- A homeowner hears popping, creaking, and cracking sounds.
- Cracks start to appear in the foundation and exterior walls.
- Sections of a building begin to tilt. The doors swing open and shut.
- Windows begin to stick, jam, and even break.
- A hairline crack appears in the basement or garage floor and begins to widen.
- Separations between walls and floors develop.
- The foundation starts pulling away from the frame of the house.
- Long continuous cracks in the ground are seen.

Subsidence can also buckle roadways and break waterlines, gas lines, telephone lines, and sewer lines. Damage can occur adjacent to undermined lands as well.

Mining in Sangamon County

Mining in Sangamon County has been prevalent with the first coal mine in Springfield beginning operations in 1867 and the last one being abandoned in 1964. A total of 53 coal mines have operated in Sangamon County. It appears that most, if not all, of these mines used the room-and-pillar technique which leaves pillars to support the mine roof after 30-80 percent of the coal has been extracted. Unfortunately the pillars do not provide permanent structural support and subsidence can occur when:

- pillars become weak and fail
- the floor beneath the pillars fail, causing the pillars to sink
- the mine roof collapses

PROFILE

The locations affected by mine subsidence.

State law required all mine owners to record maps of coal mines. However, this law was not strictly enforced because mine safety was a bigger concern for regulators. Consequently, the mines identified by the Illinois State Geological Survey may not be all inclusive or necessarily accurate.

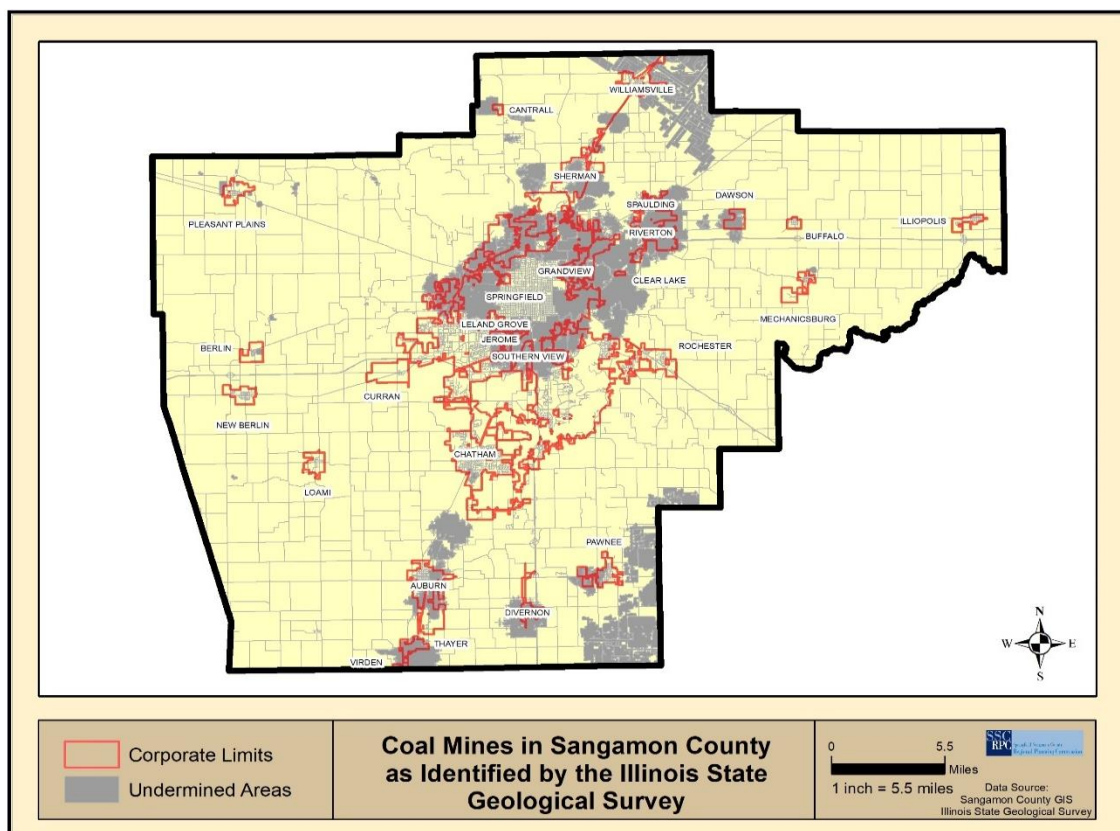
As seen in Figure 50, the known coal mines in Sangamon County are concentrated in the central area from north to south. Mines were often located in proximity to cities, which offered labor and a market. At times towns were established near coal mines to provide housing for miners. Therefore, several participating communities are located near or directly over mines: Auburn, Chatham, Dawson, Divernon, Grandview, Illiopolis, Jerome, Leland Grove, Mechanicsburg, Pawnee, Pleasant Plains, Riverton, Sherman, Southern View, Spaulding, Springfield, Williamsville, Sangamon County (Unincorporated), and the Sangamon County Water Reclamation District.

The extent of previous occurrences of mine subsidence in Sangamon County.

There is no public database of previous occurrences of mine subsidence in Sangamon County. However, there have been many instances when damage has occurred, although exact costs related to specific structures are not available.

In 2022, there was an instance of mine subsidence at Lutheran High School in Springfield. According to a *State Journal-Register* article located in Section VI, the building damage caused the displacement of approximately 150 students. Classes are being held at a local house of worship during the 2022-2023 school year due to life safety issues with the school building. No readily accessible repair estimate has been published as of September 2022.

Figure 50: Coal Mines in Sangamon County



Previous occurrences of mine subsidence.

Figure 51 shows places in the vicinity of Springfield where mine subsidence occurred from 1867 -1998 based on information available to the IDNR Office of Mines and Minerals. Approximately one-half of the data was collected from reports prepared prior to 1930. The remaining data is based on aerial imagery or direct observation and measurements. The map is the best available data at the time of the 2022 plan.

Property taxes in Sangamon County are reduced on property that has been damaged by mine subsidence although no centralized records are maintained to identify these properties. Anecdotal information suggests that homes in Divernon and Riverton have been given reduced taxes because of subsidence damage.

Probability of future mine subsidence events.

In the past three years including 2022, IDNR, Office of Mines and Minerals reported only one event in Sangamon County. With no data available on mine subsidence events in Sangamon County, a probability of occurrence cannot be calculated. However, given the large area of the county that has been mined, there is a likelihood that subsidence will continue to occur.

Historic Distribution of Known and Suspected Subsidence Events Springfield, Illinois 1867-1998

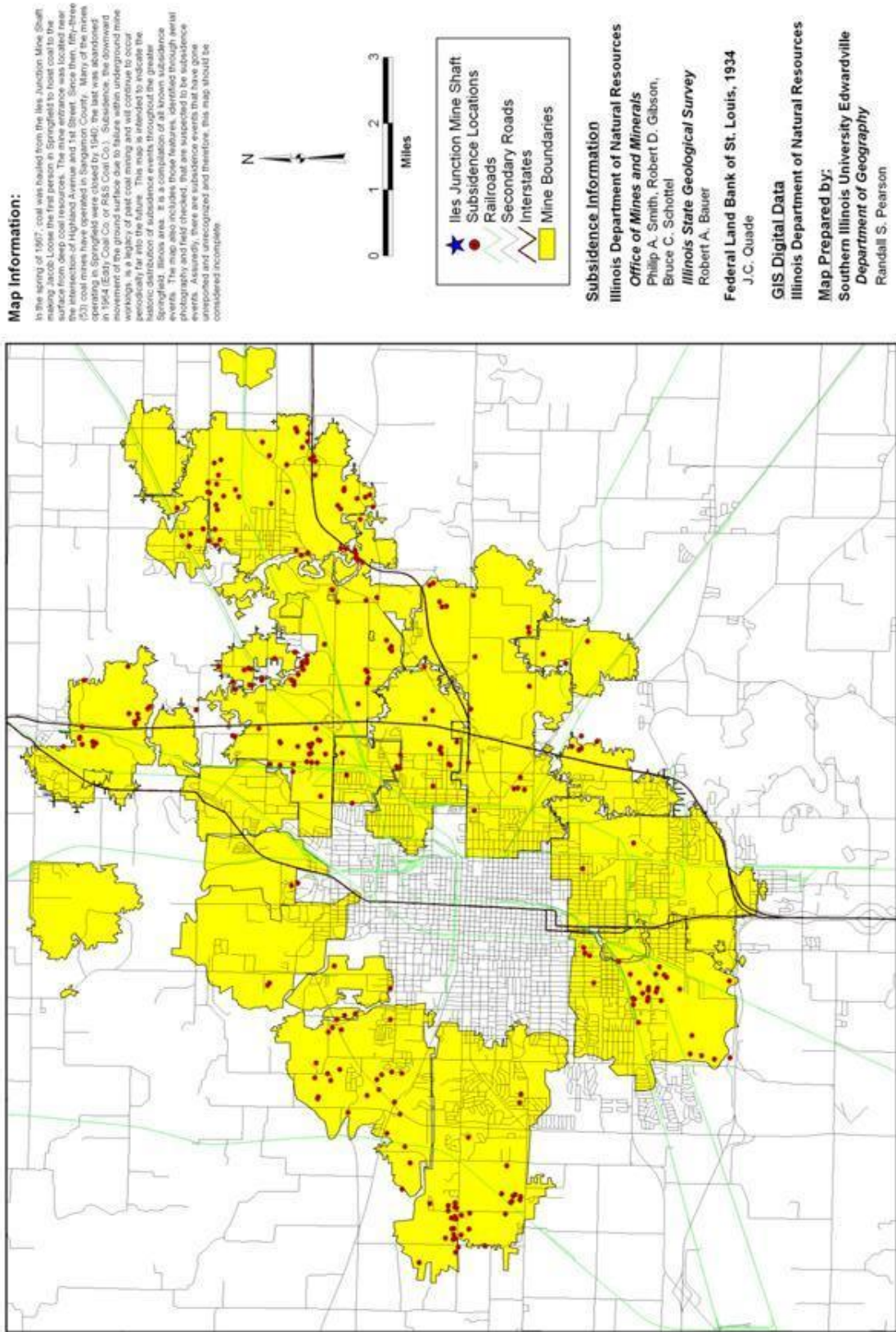


Figure 51: Historic Distribution of Subsidence

ASSESSING VULNERABILITY

In Sangamon County, 101 square miles have been mined leaving homes, businesses, critical facilities, and infrastructure vulnerable to damage from subsidence. The precise location or timing of mine subsidence cannot be predicted. Generally, when a subsidence event occurs there is a relatively small area (a few acres) affected compared to other natural hazards. The length of a subsidence event is also unpredictable and can happen quickly over a few hours or days or slowly over years. Besides doing damage to buildings, there is also the accompanying decrease in property values for those properties affected, as well as nearby properties.

The Illinois Mine Subsidence Insurance Fund was established in 1979 when mine subsidence insurance was made available through insurance companies for the first time in Illinois. Figure 52 provides a breakdown of data from 1979-2022 with a separate breakdown of claims since the 2015 plan update.

Since its creation, the Fund reports 1,666 claims were filed in Sangamon County with 408 confirmed as mine subsidence (376 residential claims and 32 commercial claims). The total amount paid is \$58.4 million with \$53.2 million paid in residential claims and \$5.2 million paid in commercial claims. In the previous six years, there have been 58 confirmed residential claims, paying \$17.2 million in claims, and one confirmed commercial claim paying \$200,000. The average paid claim per residential structure in 2016-2022 is almost three times the same figure for the period of 1979-2015. The commercial average paid per claim increased slightly from 2016-2022 versus 1979-2015.

Figure 52: Sangamon County Mine Subsidence Claims

TYPE OF CLAIM	1979-2015			2016-August 11, 2022			1979-2022	
	Confirmed # of Claims	Claims Paid (in millions)	Average Paid Per Structure	Confirmed # of Claims	Claims Paid (in millions)	Average Paid Per Structure	Total # of Claims	Total Claims Paid (in millions)
Residential	318	\$36.00	\$113,207	58	\$17.20	\$296,551	376	\$53.20
Commercial	31	\$5.00	\$161,290	1	\$0.20	\$200,000	32	\$5.20
TOTAL	349	\$41.00		108	\$20.00		408	\$58.40

Source: Illinois Mine Subsidence Insurance Fund

In 2022, SSCRPC staff confirmed with the Illinois Mine Subsidence Insurance Fund that the individual limits for both residential and commercial policies are \$750,000. More information is available at the Fund website at <https://www.imsif.com>.

CLIMATE CHANGE

It is not believed that climate change has or will have an effect on this hazard. As mine subsidence is more of a subterranean than a terrestrial phenomenon, changes in the earth's climate are unlikely to have much of an effect.

PANDEMIC HAZARD

DESCRIPTION

What is a pandemic?

According to the Centers for Disease Control (CDC), a pandemic is an epidemic that has spread over several countries or continents, usually affecting a large number of people. The CDC continues by noting that epidemics occur when an agent and susceptible hosts are present in adequate numbers, and the agent can be effectively conveyed from a source to the susceptible hosts. More specifically, an epidemic may result from:

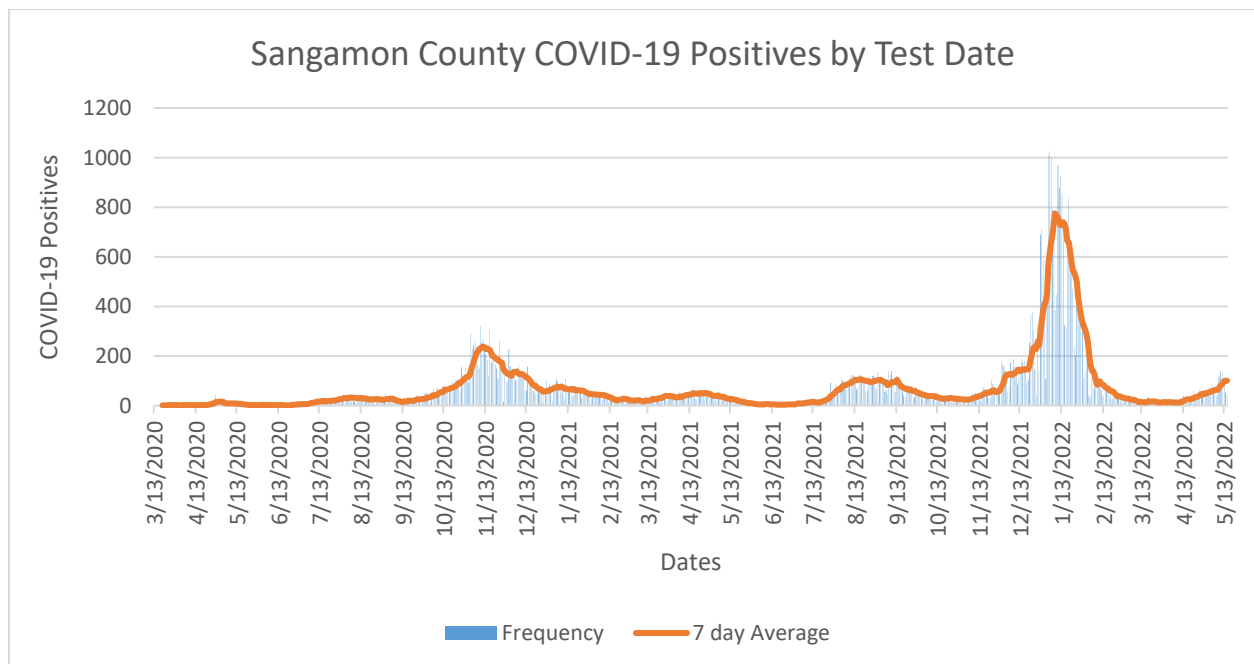
- A recent increase in amount or virulence of the agent,
- The recent introduction of the agent into a setting where it has not been before,
- An enhanced mode of transmission so that more susceptible persons are exposed,
- A change in the susceptibility of the host response to the agent, and/or
- Factors that increase host exposure or involve introduction through new portals of entry.

Viruses, like COVID-19, can cause pandemics when they easily spread from person to person throughout the world. It is hard to predict when or where pandemics will emerge.

How are pandemics measured?

The most common measurement during the recent COVID-19 pandemic has been public health statistics such as the total number of positive cases. A seven-day average can help smooth out the peaks and valleys in the number of cases over time. Figure 53 displays the seven-day average of COVID-19 positives by test date in Sangamon County between March 2020 and May 2022.

Figure 53: Seven-day Average of COVID-19 Positives, Sangamon County March 2020 – May 2022



Source: Sangamon County Department of Public Health

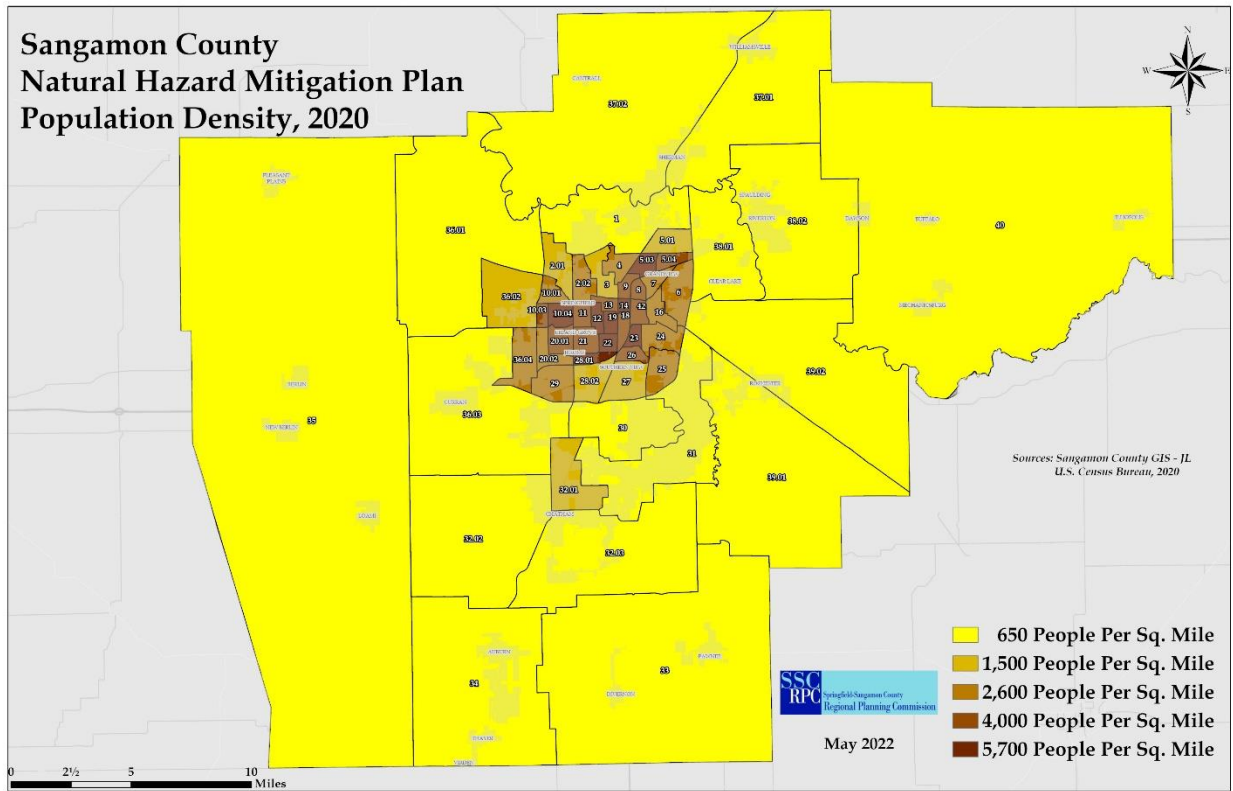
As the figure shows, there were several waves of COVID-19 case increases in Sangamon County in the past two years. The largest peak in the period between March 2020 and May 2022 shown was the cases increase in late December 2021 and January 2022.

PROFILE

What locations are affected by pandemics?

Since 2020, the pandemic has affected all of Sangamon County. Unlike the other natural hazards in this plan, a pandemic primarily affects people rather than buildings and property. In the case of a respiratory virus that easily spreads from contact with large numbers of people such as the COVID-19 virus, more densely populated areas in cities like Springfield might expect a greater number of cases than in less densely populated areas. Figure 54 below shows the population density from the 2020 Census by Census Tracts.

Figure 54: Population Density in Sangamon County



The yellow areas are less densely populated while the darker orange and brown areas are more densely populated. Areas of Springfield on the south, east, and northeast have some of the highest population density Census Tracts in Sangamon County.

The extent of previous pandemics in Sangamon County

The CDC tracks pandemics and its website summarize five pandemic events since 1918. Four of these pandemics were influenza, and the fifth is the COVID-19 virus.

The influenza pandemic of 1918 – 1920 killed more than 500 residents in Sangamon County according to the Sangamon County Historical Society. Approximately 675,000 people died in the United States according to the CDC.

In February 1957, an influenza outbreak emerged in East Asia that became a pandemic. It lasted through 1958 and there were approximately 116,000 deaths in the United States according to the CDC.

In September 1968, an influenza pandemic came to the United States. The pandemic lasted into the spring of 1969 and resulted in approximately 100,000 deaths in the United States according to the CDC.

In the spring of 2009, a novel variant of the H1N1 flu caused an influenza pandemic. Typical influenza vaccines offered little protection against this variant. From April 2009 through April 2010, the CDC estimated 60.8 million cases and 12,469 deaths in the United States.

In March 2020, Illinois reported its first COVID-19 cases. As of May 15, 2022, there have been 56,440 reported cases of COVID-19 in Sangamon County and 378 deaths according to the Sangamon County Department of Public Health. Using the 2020 Census population for all of Sangamon County of 196,343 people, the number of cases equates to approximately 28 percent of the County population. As of May 12, 2022, there have been approximately 1,000,000 COVID deaths in the United States according to NBC News.

Probability of pandemic events

In the 104 years between 1918 and 2022, there were 11 years of pandemic illness outbreaks. This is a probability of approximately 11 percent.

ASSESSING VULNERABILITY

Pandemics affect people more than buildings. It is difficult to predict the extent and degree to which a pandemic might spread. Due to the potential rapid transmission of illness from person to person, an entire population is vulnerable to an outbreak. Pandemics can affect those with medical conditions, compromised immune systems, the elderly, and other vulnerable populations more than the general population. If the pandemic disease is severe enough, it can lead to hospitalization, long-term health effects, and death.

The COVID-19 pandemic had a large initial effect on the population through the implementation of mitigation measures that resulted in the shutdown of parts of the local and state economy in 2020. Many sectors of the economy including but not limited to retail, schools, daycares, eating and drinking establishments, entertainment establishments, offices, and manufacturing establishments had temporary shutdowns or other limitations on the number of people that could be in buildings. Other businesses were deemed essential and remained operating but with restrictions on the number of people in one place.

CLIMATE CHANGE

Research regarding climate change and pandemics is anecdotal and does not appear to allow firm conclusions to be drawn at the local level.

SEVERE STORM HAZARD

DESCRIPTION

What are severe storms?

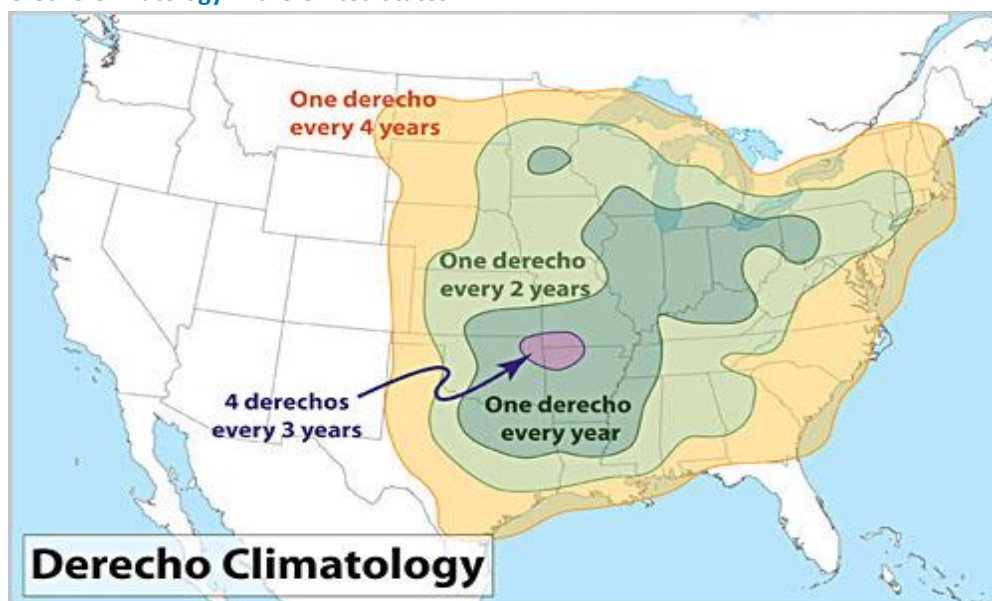
According to the INHMP from 2018, a severe thunderstorm produces hail at least one inch in diameter, has winds of 58 miles per hour (50 knots), or produces a tornado. For Sangamon County, hail events considered also included events down to 0.75 inches in diameter that were in the National Climate Data Center (NCDC) Storm Events Database. The reason for this inclusion is that historical definitions of thunderstorms included hail events to 0.75 inches in diameter. Tornadoes are not severe storms for the purpose of this plan. They are considered separately because the Task Force separated them into a different hazard. Figure 55 considers some of the consequences different parts of thunderstorms.

Figure 55: Consequences of Severe Storms

Element	Consequence
Rain	flooding, poor visibility, auto accidents, sewer backup, crop damage
Wind	building damage, downed power lines, auto accidents, tree damage, crop damage
Lightning	injury, death, fire, power outage, damage to electronics/appliances
Hail	building damage, vehicle damage, crop damage

The INHMP further describes a derecho as “a widespread and straight-lined windstorm that often has a band of rapidly moving thunderstorms associated with it,” (p. III-28). The derecho that affected northern Illinois and Iowa in August 2020 did not cause damage in Sangamon County. The 2022 plan update did not identify derecho as a separate hazard due to a lack of a derecho category in the NCDC Storm Events Database from which the other risk assessment hazard information was drawn and that previous plans had used severe storms with high winds. Instead, the Task Force decided to keep the thunderstorms with high wind hazard as shown later in this section. This is consistent with both the 2008 plan and the 2015 plan update. Derecho climatology is shown below in Figure 56. Sangamon County is in the one derecho every year part of Illinois.

Figure 56: Derecho Climatology in the United States



Source: <https://www.spc.noaa.gov/misc/AbtDerechos/derechofacts.htm#development>

PROFILE

The locations affected by severe storms.

Severe storms can occur anywhere in Sangamon County and generally hit more than one location per event.

The extent of previous occurrences of severe storms in Sangamon County.

Figure 57 presents data on thunderstorms with high winds that have occurred in Sangamon County over the 67 years from January 1, 1955, through May 31, 2022. During 59 of these years, there was at least one thunderstorm with severe winds. Wind speeds are available for 311 of these thunderstorms and ranged from 50 knots to 95 knots. The thunderstorm with 95 knot wind speeds occurred in 1957 and produced the one F4 tornado that hit Sangamon County during this time period. The winds associated with thunderstorms in Sangamon County have otherwise averaged 56 knots (about 64.4 mph).

Figure 57: Thunderstorm and High Wind Events in Sangamon County*

387 THUNDERSTORM & HIGH WIND event(s) were reported in Sangamon County, Illinois between 1/1/1955 and 5/31/2022.					
Year	#	Location*	Date	Time	Magnitude (kts.)
1955	1	SANGAMON	5/26/1955	1:33 PM	59
1956	2	SANGAMON	6/26/1956	2:12 PM	50
	3	SANGAMON	8/12/1956	9:30 PM	0
1957	4	SANGAMON	6/11/1957	1:15 PM	66
	5	SANGAMON	6/14/1957	2:05 PM	95
	6	SANGAMON	7/13/1957	7:40 PM	0
	7	SANGAMON	7/13/1957	7:40 PM	50
1959	8	SANGAMON	9/1/1957	1:30 PM	0
	9	SANGAMON	9/26/1959	4:00 PM	65
1961	10	SANGAMON	6/6/1961	3:08 PM	53
	11	SANGAMON	7/22/1961	4:16 PM	58
1962	12	SANGAMON	4/30/1962	12:30 PM	0
	13	SANGAMON	7/11/1962	6:00 PM	60
	14	SANGAMON	7/13/1962	1:17 PM	74
1963	15	SANGAMON	4/17/1963	6:49 PM	50
	16	SANGAMON	4/19/1963	3:00 AM	57
1964	17	SANGAMON	4/21/1964	5:00 AM	0
	18	SANGAMON	6/21/1964	5:00 AM	51
1965	19	SANGAMON	6/20/1965	6:05 PM	0
	20	SANGAMON	7/17/1965	3:45 AM	0
	21	SANGAMON	8/27/1965	8:30 AM	0
	22	SANGAMON	8/30/1965	8:35 PM	0
1966	23	SANGAMON	7/5/1966	9:35 PM	52
1967	24	SANGAMON	4/16/1967	9:40 PM	56
	25	SANGAMON	4/16/1967	10:41 PM	58
	26	SANGAMON	4/21/1967	1:50 PM	0
	27	SANGAMON	7/10/1967	3:50 PM	53

1969	28	SANGAMON	6/28/1969	8:00 PM	55
	29	SANGAMON	8/9/1969	2:12 AM	0
	30	SANGAMON	10/10/1969	8:13 PM	0
	31	SANGAMON	10/10/1969	8:20 PM	0
1970	32	SANGAMON	5/9/1970	1:05 PM	53
	33	SANGAMON	6/14/1970	2:30 PM	51
	34	SANGAMON	7/19/1970	4:50 PM	0
	35	SANGAMON	7/31/1970	2:34 AM	0
1972	36	SANGAMON	9/28/1972	9:30 PM	53
1973	37	SANGAMON	3/31/1973	3:57 PM	50
	38	SANGAMON	6/18/1973	4:45 PM	70
1974	39	SANGAMON	3/4/1974	4:30 PM	0
	40	SANGAMON	3/29/1974	2:00 PM	65
	41	SANGAMON	4/21/1974	3:43 PM	50
	42	SANGAMON	5/30/1974	2:15 PM	0
	43	SANGAMON	7/28/1974	3:24 AM	50
1975	44	SANGAMON	5/26/1975	12:30 PM	0
	45	SANGAMON	5/30/1975	1:25 PM	0
	46	SANGAMON	11/9/1975	10:00 PM	0
	47	SANGAMON	11/9/1975	10:01 PM	51
	48	SANGAMON	11/29/1975	10:56 PM	66
1977	49	SANGAMON	5/4/1977	4:55 PM	74
	50	SANGAMON	8/6/1977	4:00 PM	0
	51	SANGAMON	10/1/1977	1:20 AM	0
1978	52	SANGAMON	5/12/1978	4:23 PM	50
	53	SANGAMON	5/12/1978	5:14 PM	57
	54	SANGAMON	7/26/1978	3:25 PM	50
	55	SANGAMON	8/27/1978	2:45 PM	0
1980	56	SANGAMON	4/8/1980	12:00 AM	52
	57	SANGAMON	9/6/1980	6:38 PM	0
1981	58	SANGAMON	4/3/1981	11:25 PM	0
	59	SANGAMON	6/15/1981	6:48 PM	0
1982	60	SANGAMON	4/16/1982	6:35 PM	56
	61	SANGAMON	6/7/1982	10:35 PM	0
1983	62	SANGAMON	5/1/1983	7:00 PM	0
1986	63	SANGAMON	7/29/1986	2:14 AM	61
	64	SANGAMON	7/29/1986	2:40 AM	0
	65	SANGAMON	7/31/1986	3:06 AM	52
	66	SANGAMON	7/31/1986	3:40 AM	0
	67	SANGAMON	7/31/1986	3:45 AM	0
1987	68	SANGAMON	5/21/1987	8:57 PM	0
	69	SANGAMON	8/3/1987	7:30 PM	0
	70	SANGAMON	8/3/1987	8:12 PM	0

	71	SANGAMON	8/16/1987	8:32 PM	70
1988	72	SANGAMON	4/5/1988	6:36 PM	52
	73	SANGAMON	11/15/1988	10:00 PM	0
1989	74	SANGAMON	5/25/1989	12:50 AM	0
1990	75	SANGAMON	5/9/1990	12:30 PM	0
1991	76	SANGAMON	10/4/1991	5:00 PM	58
	77	SANGAMON	12/8/1991	3:00 PM	0
1992	78	SANGAMON	7/2/1992	3:30 PM	0
	79	SANGAMON	7/2/1992	8:00 PM	0
	80	SANGAMON	7/3/1992	12:35 AM	52
	81	SANGAMON	7/9/1992	5:38 PM	0
	82	SANGAMON	7/9/1992	5:54 PM	0
1993	83	SANGAMON	9/9/1992	5:40 PM	0
1993	84	DIVERNON	8/19/1993	4:00 PM	0
1994	85	RIVERTON	4/15/1994	3:34 AM	0
	86	PAWNEE	4/26/1994	8:34 PM	0
	87	PLEASANT PLAINS	6/16/1994	4:25 PM	0
	88	PLEASANT PLAINS	6/23/1994	2:12 PM	0
	89	PLEASANT PLAINS	7/2/1994	11:05 AM	0
	90	CANTRALL	7/20/1994	5:25 PM	0
1995	91	SPRINGFIELD	7/20/1994	5:40 PM	0
	92	CHATHAM TO	5/16/1995	7:30 PM	0
	93	DIVERNON	6/8/1995	7:22 AM	0
	94	DIVERNON	6/8/1995	9:15 AM	0
1996	95	PLEASANT PLAINS	6/21/1995	8:10 PM	0
	96	ILLIOPOLIS	4/19/1996	6:17 PM	0
1997	97	GLENARM	5/8/1996	11:20 AM	70
	98	SPRINGFIELD ARPT	4/5/1997	3:15 PM	50
	99	DAWSON	4/5/1997	3:40 PM	0
	100	PLEASANT PLAINS	8/3/1997	11:15 PM	0
1998	101	NEW BERLIN	8/15/1997	2:55 AM	0
	102	PLEASANT PLAINS	3/27/1998	6:25 PM	0
	103	GLENARM	5/22/1998	8:30 AM	0
	104	CHATHAM	6/4/1998	6:58 PM	0
	105	PLEASANT PLAINS	6/11/1998	2:00 PM	61
	106	FARMINGDALE	6/18/1998	6:40 PM	61
	107	WILLIAMSVILLE	6/28/1998	7:00 PM	0
	108	COUNTYWIDE	6/29/1998	4:10 PM	61
1999	109	DIVERNON	7/22/1998	2:20 PM	0
	110	PLEASANT PLAINS	11/10/1998	4:35 AM	55
	111	PLEASANT PLAINS	4/8/1999	8:10 PM	0
	112	DIVERNON	6/1/1999	6:01 PM	61
	113	RIVERTON	6/4/1999	4:12 PM	61

	114	AUBURN	6/8/1999	1:45 PM	0
	115	PLEASANT PLAINS	8/12/1999	8:00 PM	0
	116	AUBURN	8/12/1999	9:10 PM	52
	117	PLEASANT PLAINS	8/23/1999	6:20 PM	0
2000	118	CHATHAM	4/20/2000	5:03 AM	0
	119	NEW BERLIN	5/26/2000	10:50 PM	0
	120	ILLIOPOLIS	6/14/2000	11:35 AM	0
	121	SPRINGFIELD	6/20/2000	6:45 PM	0
	122	SPRINGFIELD	6/23/2000	5:35 PM	0
	123	AUBURN	7/5/2000	4:15 PM	0
	124	SPRINGFIELD	8/17/2000	5:15 PM	0
	125	RIVERTON	8/17/2000	6:20 PM	0
2001	126	SPRINGFIELD	2/9/2001	10:20 AM	50
	127	SPRINGFIELD	5/22/2001	12:00 PM	50
	128	CHATHAM	5/26/2001	12:30 PM	50
	129	SPRINGFIELD ARPT	7/4/2001	9:30 PM	50
	130	SPRINGFIELD ARPT	7/17/2001	4:02 PM	54
	131	SPRINGFIELD	7/23/2001	4:05 PM	52
	132	SPRINGFIELD	8/2/2001	5:45 PM	50
	133	NEW CITY	10/24/2001	11:24 AM	50
2002	134	PLEASANT PLAINS	4/19/2002	7:00 PM	64
	135	MECHANICSBURG	6/4/2002	5:45 PM	50
	136	BUFFALO	7/26/2002	10:05 PM	50
	137	SHERMAN	8/19/2002	4:53 AM	52
2003	138	SPRINGFIELD	4/24/2003	5:45 PM	52
	139	CHATHAM	5/9/2003	7:10 PM	60
	140	SPRINGFIELD ARPT	6/29/2003	5:05 PM	55
	141	ANDREW	7/8/2003	6:17 PM	60
	142	(SPI)SPRINGFIELD ARP	7/8/2003	10:05 PM	52
	143	SPRINGFIELD	7/21/2003	9:30 AM	52
2004	144	SPRINGFIELD	4/20/2004	11:30 PM	50
	145	COUNTYWIDE	5/24/2004	11:05 PM	69
	146	SPRINGFIELD	5/31/2004	6:30 PM	52
	147	CHATHAM	8/17/2004	8:30 PM	50
	148	SPRINGFIELD	8/27/2004	7:10 PM	52
	149	SPRINGFIELD	10/29/2004	11:30 PM	50
2005	150	SPRINGFIELD	6/8/2005	2:33 PM	50
	151	CHATHAM	6/8/2005	2:35 PM	55
	152	SPRINGFIELD	6/8/2005	2:50 PM	50
	153	CHATHAM	6/13/2005	5:23 PM	60
	154	CHATHAM	6/13/2005	10:00 PM	50
	155	CURRAN	8/18/2005	9:30 PM	55
	156	SALISBURY	11/5/2005	9:00 PM	50

	157	SPRINGFIELD	11/28/2005	12:50 AM	50
2006	158	AUBURN	1/2/2006	7:20 AM	60
	159	NEW BERLIN	3/12/2006	8:04 PM	60
	160	SPRINGFIELD	3/12/2006	8:30 PM	58
	161	AUBURN	3/12/2006	8:30 PM	52
	162	LOAMI	3/12/2006	8:30 PM	50
	163	AUBURN	3/13/2006	2:46 AM	60
	164	PAWNEE	3/13/2006	3:20 AM	60
	165	SPRINGFIELD	4/2/2006	5:01 PM	52
	166	SPRINGFIELD	4/16/2006	12:45 PM	55
	167	(SPI)SPRINGFIELD ARP	4/18/2006	11:04 PM	51
	168	PLEASANT PLAINS	5/24/2006	2:30 PM	52
	169	CANTRALL	7/19/2006	4:03 PM	56
	170	CHATHAM	7/19/2006	4:44 PM	52
	171	NEW BERLIN	8/18/2006	8:20 PM	50
2007	172	DIVERNON	5/15/2007	12:07 PM	52
	173	LANESVILLE	5/15/2007	12:33 PM	52
	174	SPRINGFIELD	10/18/2007	1:46 AM	52
2008	175	FARMINGDALE	4/25/2008	5:18 PM	52
	176	MILDRED	5/30/2008	5:06 PM	59
	177	CANTRALL	5/30/2008	5:29 PM	52
	178	SPRINGFIELD	6/3/2008	1:10 AM	61
	179	CHATHAM	6/3/2008	9:31 PM	56
	180	SHERMAN	6/3/2008	8:13 PM	52
	181	LELAND GROVE	7/8/2008	3:45 PM	52
	182	STARNES	7/8/2008	3:50 PM	61
	183	CHATHAM	7/11/2008	2:40 PM	52
	184	BERLIN	7/27/2008	8:45 PM	52
	185	SPRINGFIELD	12/27/2008	12:05 PM	61
	186	SPRINGFIELD	12/27/2008	12:20 PM	52
	187	SPRINGFIELD	12/27/2008	12:20 PM	61
	188	SPRINGFIELD	12/27/2008	12:22 PM	52
	189	SPRINGFIELD	12/27/2008	12:25 PM	52
	190	SPRINGFIELD	12/27/2008	12:25 PM	61
	191	SPAULDING	12/27/2008	12:26 PM	52
2009	192	SPRINGFIELD	3/8/2009	10:44 AM	61
	193	SPRINGFIELD	3/8/2009	10:45 AM	61
	194	CURRAN	3/8/2009	10:46 AM	61
	195	JEROME	3/8/2009	10:48 AM	61
	196	SPRINGFIELD	5/13/2009	9:45 PM	52
	197	WILLIAMSVILLE	5/15/2009	5:45 PM	52
	198	WILLIAMSVILLE	6/2/2009	4:10 PM	52
	199	(SPI)SPRINGFIELD ARP	6/19/2009	4:40 PM	52

	200	SHERMAN	7/24/2009	11:20 PM	52
	201	CHATHAM	8/4/2009	7:20 AM	61
	202	SPRINGFIELD	8/4/2009	7:27 AM	61
2010	203	CHATHAM	5/24/2010	6:30 PM	55
	204	DIVERNON	5/24/2010	6:40 PM	50
	205	SPRINGFIELD	6/2/2010	12:58 AM	61
	206	JEROME	6/2/2010	1:03 AM	52
	207	SPRINGFIELD	6/22/2010	1:35 AM	52
	208	SOUTHERN VIEW	6/22/2010	1:51 AM	52
	209	SOUTHLAWN	9/2/2010	3:45 PM	52
	210	SPRINGFIELD	10/24/2010	7:40 PM	52
	2011	211	MECHANICSBURG	2/27/2011	9:40 PM
212		LOAMI	4/19/2011	5:00 PM	61
213		AUBURN	4/19/2011	5:02 PM	61
214		CHATHAM	4/19/2011	5:05 PM	61
215		SPRINGFIELD	4/19/2011	5:06 PM	61
216		BUFFALO	4/19/2011	5:25 PM	61
217		PAWNEE	4/19/2011	5:30 PM	61
218		AUBURN	5/25/2011	4:41 AM	61
219		SPRINGFIELD	5/25/2011	5:03 AM	52
220		DIVERNON	5/25/2011	3:45 PM	52
221		BUFFALO	6/4/2011	6:39 PM	61
222		CHATHAM	7/12/2011	2:47 PM	52
2012		223	BRECKENRIDGE	1/17/2012	2:00 AM
	224	PLEASANT PLAINS	5/20/2012	3:35 PM	61
	225	SHERMAN	5/20/2012	4:08 PM	52
	226	WILLIAMSVILLE	5/20/2012	4:25 PM	52
	227	PAWNEE	8/16/2012	1:45 PM	52
	228	WILLIAMSVILLE	10/17/2012	5:40 PM	61
2013	229	SPRINGFIELD	4/15/2013	11:05 PM	61
	230	ROCHESTER	4/15/2013	11:10 PM	61
	231	BUFFALO	4/15/2013	11:15 PM	61
	232	AUBURN	5/27/2013	1:37 PM	61
	233	CHATHAM	5/27/2013	1:43 PM	52
	234	CHATHAM	5/27/2013	1:45 PM	52
	235	ILES	5/27/2013	1:47 PM	52
	236	MILDRED	5/27/2013	1:48 PM	61
	237	GRANDVIEW	5/27/2013	1:52 PM	52
	238	SPRINGFIELD	5/27/2013	1:53 PM	61
	239	CLEAR LAKE	5/27/2013	1:54 PM	61
	240	SOUTHLAWN	5/27/2013	1:55 PM	61
	241	TORONTO	5/27/2013	1:55 PM	61
	242	SPRINGFIELD	5/27/2013	1:55 PM	52

	243	RIVERTON	5/27/2013	2:00 PM	70
	244	ILLIOPOLIS	5/27/2013	2:16 PM	61
	245	LOWDER	5/30/2013	6:48 PM	52
	246	COMPRO	5/30/2013	6:52 PM	61
	247	COMPRO	5/30/2013	6:52 PM	61
	248	LOAMI	5/30/2013	6:58 PM	61
2014	249	PLEASANT PLAINS	6/4/2014	12:00 AM	52
	250	ARCHER	6/4/2014	12:05 AM	52
	251	CHATHAM	6/4/2014	12:20 AM	52
2015	252	SPRINGFIELD	5/10/2015	5:45 PM	52
	253	CHATHAM	5/10/2015	5:50 PM	52
	254	PAWNEE	5/15/2015	2:45 PM	52
	255	SOUTHLAWN	6/7/2015	8:00 PM	61
	256	ROCHESTER	6/13/2015	12:21 PM	52
	257	CURRAN	6/13/2015	6:26 PM	52
	258	ARCHER	6/13/2015	6:33 PM	52
	259	RIVERTON	6/20/2015	9:05 PM	52
	260	BUFFALO HART	6/20/2015	9:09 PM	52
	261	MECHANICSBURG	6/20/2015	9:14 PM	52
	262	AUBURN	7/13/2015	6:30 PM	52
	263	PAWNEE	7/13/2015	6:45 PM	52
2016	264	PAWNEE	4/26/2016	2:00 PM	61
	265	SHERMAN	5/13/2016	6:31 PM	52
	266	SPRINGFIELD	5/31/2016	9:20 AM	52
	267	WILLIAMSVILLE	6/22/2016	4:40 AM	61
	268	SPAULDING	6/22/2016	4:48 AM	52
	269	CHATHAM	7/13/2016	3:08 PM	61
	270	MILDRED	7/13/2016	3:23 PM	61
	271	PAWNEE	7/19/2016	7:02 PM	52
	272	MILDRED	7/24/2016	9:00 PM	61
	273	FARMINGDALE	8/25/2016	12:25 AM	52
	274	LELAND GROVE	11/2/2016	3:25 PM	52
2017	275	RIVERTON	3/7/2017	12:34 AM	52
	276	NEW BERLIN	4/29/2017	3:15 PM	52
	277	PLEASANT PLAINS	4/29/2017	3:25 PM	52
	278	PAWNEE	4/29/2017	4:00 PM	61
	279	BERLIN	5/10/2017	5:55 PM	61
	280	SPAULDING	5/10/2017	6:07 PM	61
	281	MILDRED	5/10/2017	6:11 PM	52
	282	ILES	5/10/2017	6:25 PM	52
	283	SPRINGFIELD	5/10/2017	6:25 PM	52
	284	CIMIC	5/10/2017	6:35 PM	52
	285	PAWNEE	5/10/2017	6:42 PM	52

	286	MILDRED	6/14/2017	6:00 PM	52
	287	CURRAN	6/17/2017	9:52 PM	52
	288	TORONTO	6/17/2017	9:59 PM	52
	289	CHATHAM	6/17/2017	10:10 PM	61
	290	CHATHAM	6/17/2017	10:10 PM	61
	291	SHERMAN	7/10/2017	9:00 PM	52
	292	SPRINGFIELD	7/10/2017	9:04 PM	52
	293	ROCHESTER	7/10/2017	9:25 PM	52
2018	294	PAWNEE	5/27/2018	1:45 PM	52
	295	NEW BERLIN	6/19/2018	4:10 PM	52
	296	CHATHAM	6/19/2018	4:18 PM	52
	297	SPRINGFIELD	6/20/2018	7:50 PM	52
	298	ARCHER	6/28/2018	3:39 PM	52
	299	MILDRED	6/28/2018	3:40 PM	52
	300	CHATHAM	6/28/2018	3:41 PM	52
	301	AUBURN	6/28/2018	3:42 PM	52
	302	DIVERNON	6/28/2018	3:50 PM	52
	303	DIVERNON	6/28/2018	3:50 PM	52
	304	SPRINGFIELD	8/16/2018	9:40 PM	52
	305	SHERMAN	12/1/2018	5:38 PM	61
2019	306	NEW BERLIN	5/22/2019	11:01 PM	61
	307	ANDREW	5/22/2019	11:15 PM	61
	308	SHERMAN	5/22/2019	11:15 PM	61
	309	SPRINGFIELD	5/22/2019	11:16 PM	61
	310	(SPI)SPRINGFIELD ARP	5/22/2019	11:16 PM	61
	311	SHERMAN	5/22/2019	11:17 PM	61
	312	WILLIAMSVILLE	5/22/2019	11:19 PM	61
	313	WILLIAMSVILLE	5/22/2019	11:19 PM	61
	314	MILDRED	5/22/2019	11:20 PM	61
	315	DIVERNON	5/22/2019	11:21 PM	61
	316	DIVERNON	5/22/2019	11:30 PM	61
	317	LELAND GROVE	5/25/2019	11:05 PM	52
	318	DIVERNON	5/25/2019	11:26 PM	52
	319	SOUTHERN VIEW	5/29/2019	7:00 PM	52
	320	ROCHESTER	5/29/2019	7:08 PM	52
	321	ROCHESTER	6/5/2019	2:55 PM	52
	322	LOWDER	6/5/2019	3:10 PM	52
	323	AUBURN	6/5/2019	3:16 PM	52
	324	AUBURN	6/5/2019	3:17 PM	52
	325	PAWNEE	6/5/2019	3:20 PM	52
326	SPRINGFIELD	8/12/2019	7:15 PM	52	
327	SOUTHERN VIEW	8/20/2019	9:15 AM	52	
328	SOUTHLAWN	8/20/2019	9:15 AM	52	

	329	BRADFORDTON	8/20/2019	9:15 AM	52
	330	ARCHER	8/20/2019	9:15 AM	52
2020	331	MECHANICSBURG	4/8/2020	4:30 PM	61
	332	BARCLAY	4/8/2020	4:30 PM	61
	333	LANESVILLE	4/8/2020	4:38 PM	61
	334	SPRINGFIELD	5/2/2020	8:34 PM	52
	335	RIVERTON	5/25/2020	5:55 PM	52
	336	BUFFALO	5/25/2020	6:02 PM	52
	337	AUBURN	6/22/2020	2:24 PM	52
	338	GLENARM	6/22/2020	2:28 PM	52
	339	CIMIC	6/22/2020	2:30 PM	52
	340	GLENARM	6/22/2020	2:30 PM	52
	341	CHATHAM	6/22/2020	2:35 PM	52
	342	CHATHAM	6/22/2020	2:40 PM	52
	343	JEROME	7/21/2020	2:50 PM	52
	344	AUBURN	7/21/2020	3:08 PM	61
	345	PAWNEE	7/21/2020	3:18 PM	61
	346	PAWNEE	7/21/2020	3:20 PM	61
	347	GRANDVIEW	8/10/2020	2:45 PM	52
	348	RIVERTON	8/10/2020	2:45 PM	52
349	GRANDVIEW	8/10/2020	2:45 PM	52	
350	SPRINGFIELD	8/10/2020	2:50 PM	52	
2021	351	SOUTHERN VIEW	4/7/2021	7:05 PM	52
	352	SOUTHERN VIEW	4/7/2021	7:05 PM	52
	353	SPRINGFIELD	4/7/2021	7:07 PM	52
	354	DAWSON	5/3/2021	5:12 PM	61
	355	SOUTHERN VIEW	5/27/2021	11:35 AM	52
	356	SOUTHERN VIEW	5/27/2021	11:40 AM	52
	357	RIVERTON	5/27/2021	11:50 AM	52
	358	DAWSON	5/27/2021	11:52 AM	52
	359	GRANDVIEW	6/19/2021	5:53 AM	52
	360	LOWDER	6/24/2021	7:20 PM	52
	361	GRANDVIEW	6/26/2021	2:15 PM	52
	362	(SPI)SPRINGFIELD ARP	6/26/2021	2:18 PM	70
	363	SPRINGFIELD	6/26/2021	2:25 PM	52
	364	GRANDVIEW	7/9/2021	10:15 PM	52
	365	CHATHAM	8/12/2021	1:27 PM	61
	366	SHERMAN	8/12/2021	1:39 PM	61
	367	LELAND GROVE	8/12/2021	1:40 PM	52
368	MILDRED	8/12/2021	1:44 PM	61	
369	STARNES	8/12/2021	1:44 PM	61	
370	RIVERTON	8/12/2021	1:47 PM	61	
371	SHERMAN	8/12/2021	1:48 PM	61	

	372	CHATHAM	8/12/2021	1:48 PM	61
	373	CHATHAM	8/12/2021	1:48 PM	61
	374	TORONTO	8/12/2021	1:48 PM	61
	375	CHATHAM	8/12/2021	1:48 PM	61
	376	GRANDVIEW	8/12/2021	1:48 PM	61
	377	RIVERTON	8/12/2021	2:06 PM	61
	378	SHERMAN	10/24/2021	6:04 PM	52
	379	CHATHAM	12/10/2021	8:25 PM	52
	380	(SPI)SPRINGFIELD ARP	12/10/2021	8:33 PM	52
	381	BUFFALO	12/10/2021	8:36 PM	70
2022	382	NEW BERLIN	3/5/2022	10:30 PM	52
	383	(SPI)SPRINGFIELD ARP	3/5/2022	10:40 PM	57
	384	(SPI)SPRINGFIELD ARP	3/5/2022	10:43 PM	55
	385	ZENOBIA	4/24/2022	11:35 AM	52
	386	NEW BERLIN	5/25/2022	6:20 PM	52
	387	SPRINGFIELD	5/25/2022	6:45 PM	52

* Prior to 1993 specific locations were not recorded.

Source: National Climactic Data Center

Figure 58 shows hail events from January 1, 1955 – May 31, 2022. During 44 of the 67 years, at least one hail event occurred in Sangamon County. The storms with recorded hail size ranged from 0.75 inches to 3.00 inches with an average diameter of 1.09 inches. The size of the hail in a 2020 event in Devereaux Heights on the northeast side of Springfield reached three inches in diameter, which is the size of a baseball. The size of the hail reached a diameter of 2.5 inches during a 1974 hailstorm and a diameter of 2.0 inches in a 2011 storm. Seventeen of the hail events were associated with a tornado on the following dates – April 2, 1964, April 20, 2000, May 12, 2000, March 19, 2003, May 9, 2003, May 10, 2003, May 23, 2004, March 12, 2006, May 30, 2008, March 15, 2016, December 1, 2018, and July 21, 2020.

Figure 58: Hail Events in Sangamon County*

234 HAIL events were reported in Sangamon County, Illinois, between 1/1/1955 and 5/31/2022					
Year	#	Location	Date	Time	Magnitude (In.)
1956	1	SANGAMON	5/22/1956	7:15 PM	1.75
	2	SANGAMON	9/15/1956	12:22 AM	1.75
1958	3	SANGAMON	7/30/1958	7:35 AM	0.75
	4	SANGAMON	7/30/1958	7:35 AM	0.75
1961	5	SANGAMON	4/24/1961	7:45 PM	0.75
	6	SANGAMON	5/6/1961	4:12 PM	1.75
1963	7	SANGAMON	4/29/1963	2:45 PM	1.75
1964	8	SANGAMON	4/2/1964	5:32 PM	1
	9	SANGAMON	4/2/1964	7:23 PM	0.75
	10	SANGAMON	4/19/1964	9:00 PM	1.75
1965	11	SANGAMON	4/15/1965	12:56 PM	0.75
1967	12	SANGAMON	4/21/1967	1:20 PM	1.75

1972	13	SANGAMON	3/12/1972	5:43 PM	1
1973	14	SANGAMON	6/18/1973	4:40 PM	1.5
	15	SANGAMON	10/3/1973	2:55 AM	0.75
1974	16	SANGAMON	4/3/1974	12:42 PM	2.5
	17	SANGAMON	5/30/1974	2:15 PM	0.75
1975	18	SANGAMON	5/11/1975	4:00 PM	1.5
1982	19	SANGAMON	5/20/1982	3:22 PM	1
	20	SANGAMON	9/14/1982	1:02 PM	1
1985	21	SANGAMON	6/2/1985	1:00 AM	1.75
1986	22	SANGAMON	5/6/1986	5:31 PM	1
	23	SANGAMON	5/6/1986	7:15 PM	1
	24	SANGAMON	5/8/1986	7:15 PM	1
	25	SANGAMON	7/10/1986	7:15 PM	0.75
	26	SANGAMON	8/10/1986	12:44 AM	0.75
1987	27	SANGAMON	6/2/1987	12:10 PM	1
	28	SANGAMON	6/2/1987	12:45 PM	1
1992	29	SANGAMON	2/15/1992	3:15 AM	1.75
	30	SANGAMON	4/15/1992	3:50 PM	0.75
1994	31	SPRINGFIELD	5/24/1994	6:30 PM	0.75
	32	SPRINGFIELD	5/24/1994	6:37 PM	0.75
1996	33	SPRINGFIELD	4/18/1996	6:40 PM	1.75
	34	MECHANICSBURG	4/18/1996	7:31 PM	1.75
	35	SPRINGFIELD/RIVERTON	5/3/1996	8:25 PM	1.75
	36	DIVERNON/PAWNEE	6/2/1996	9:20 PM	1.75
	37	SHERMAN	7/28/1996	6:40 PM	1.75
	38	WILLIAMSVILLE	8/26/1996	2:45 PM	1.75
1997	39	PLEASANT PLAINS	3/28/1997	3:35 PM	1.75
1998	40	NEW BERLIN	4/7/1998	3:45 PM	1.75
	41	CANTRALL	4/7/1998	4:02 PM	1.75
	42	PAWNEE	4/7/1998	4:20 PM	1.75
	43	DIVERNON	6/12/1998	4:57 PM	1
1999	44	DIVERNON	5/5/1999	7:05 PM	0.88
	45	LANESVILLE	6/4/1999	4:30 PM	0.75
	46	DIVERNON	8/12/1999	9:15 PM	1
2000	47	SPRINGFIELD	4/20/2000	7:30 AM	1
	48	ILLIOPOLIS	4/20/2000	8:05 AM	1.75
	49	ILLIOPOLIS	5/12/2000	4:00 PM	0.75
	50	DIVERNON	5/12/2000	5:00 PM	1
	51	AUBURN	5/23/2000	12:55 AM	1
	52	SPRINGFIELD	5/26/2000	11:13 PM	1
2001	53	BUFFALO	8/18/2001	2:15 PM	1
2002	54	AUBURN	5/1/2002	2:00 PM	1.75
	55	SPRINGFIELD	5/6/2002	11:05 PM	0.75

	56	SPRINGFIELD	5/7/2002	12:05 AM	1.75
	57	AUBURN	5/27/2002	2:35 PM	2
2003	58	AUBURN	3/19/2003	4:40 PM	1.75
	59	SPRINGFIELD	3/19/2003	6:58 PM	1
	60	LOAMI	4/4/2003	3:22 PM	0.75
	61	PLEASANT PLAINS	4/4/2003	3:23 PM	1.75
	62	LOAMI	4/24/2003	5:05 PM	1
	63	SPRINGFIELD	4/24/2003	5:45 PM	1
	64	JEROME	5/8/2003	10:25 PM	0.88
	65	PLEASANT PLAINS	5/9/2003	6:52 PM	1
	66	SPRINGFIELD	5/9/2003	9:53 PM	0.75
	67	LOAMI	5/10/2003	6:40 AM	1.75
	68	SPRINGFIELD	8/3/2003	10:53 PM	0.75
	2004	69	LOAMI	5/23/2004	5:18 PM
2005	70	SPRINGFIELD	3/30/2005	3:50 PM	0.88
	71	SPRINGFIELD	5/11/2005	4:45 PM	0.88
	72	CHATHAM	5/11/2005	4:53 PM	0.75
	73	RIVERTON	9/19/2005	5:35 PM	1
	74	RIVERTON	9/19/2005	9:04 PM	1.75
	75	SPRINGFIELD	11/5/2005	9:35 PM	0.88
2006	76	PLEASANT PLAINS	3/11/2006	6:34 PM	0.88
	77	NEW BERLIN	3/11/2006	6:51 PM	1
	78	SPRINGFIELD	3/11/2006	7:05 PM	0.75
	79	NEW BERLIN	3/12/2006	7:53 PM	1.75
	80	SPRINGFIELD	3/12/2006	8:15 PM	1
	81	SPRINGFIELD	3/12/2006	8:27 PM	0.75
	82	AUBURN	4/30/2006	2:27 PM	0.75
	83	CHATHAM	4/30/2006	2:39 PM	0.75
	84	RIVERTON	6/26/2006	5:16 PM	0.88
	85	WILLIAMSVILLE	7/19/2006	4:08 PM	0.88
	86	CHATHAM	7/19/2006	4:44 PM	0.88
	87	SPRINGFIELD	9/22/2006	5:50 PM	0.75
88	SHERMAN	9/22/2006	5:54 PM	1	
2007	89	SHERMAN	4/3/2007	9:55 AM	0.75
	90	SPAULDING	7/10/2007	6:21 PM	0.75
2008	91	NEW BERLIN	4/25/2008	5:04 PM	0.75
	92	BERLIN	5/30/2008	4:35 PM	1.25
	93	SPRINGFIELD	5/30/2008	5:25 PM	1.75
	94	MECHANICSBURG	5/30/2008	5:33 PM	1.75
	95	NEW BERLIN	5/30/2008	6:16 PM	0.75
	96	PROUTY	5/30/2008	6:20 PM	3
	97	PAWNEE	5/30/2008	6:34 PM	1.75
	98	CHATHAM	5/30/2008	6:36 PM	1.75

	99	DIVERNON	5/30/2008	6:40 PM	2.5
	100	CHATHAM	5/30/2008	6:45 PM	1.5
	101	BUFFALO	6/15/2008	2:52 PM	0.75
	102	SHERMAN	6/22/2008	4:14 PM	0.75
	103	CHATHAM	7/11/2008	2:35 PM	0.88
	104	JEROME	7/21/2008	8:57 PM	0.75
2009	105	WILLIAMSVILLE	5/7/2009	4:23 PM	1.75
	106	WILLIAMSVILLE	5/7/2009	4:28 PM	0.75
	107	WILLIAMSVILLE	5/7/2009	4:36 PM	0.88
	108	WILLIAMSVILLE	5/7/2009	5:01 PM	0.88
	109	DIVERNON	5/7/2009	5:03 PM	0.75
	110	CANTRALL	5/15/2009	4:28 PM	1.75
	111	SPRINGFIELD	5/15/2009	5:45 PM	0.88
	112	SPRINGFIELD	5/15/2009	5:45 PM	1.75
	113	SPRINGFIELD	5/15/2009	5:49 PM	0.75
	114	BUFFALO	5/30/2009	5:49 PM	1
	115	SPRINGFIELD	7/28/2009	1:56 PM	0.88
116	SPRINGFIELD	7/28/2009	2:05 PM	1.5	
117	RIVERTON	7/28/2009	2:10 PM	1	
2010	118	SPRINGFIELD	5/24/2010	6:35 PM	0.75
	119	SPRINGFIELD	5/25/2010	10:57 AM	0.75
	120	SPRINGFIELD	5/26/2010	2:49 PM	1.75
	121	JEROME	5/26/2010	3:03 PM	0.75
	122	SPRINGFIELD	5/26/2010	3:45 PM	0.75
	123	SPRINGFIELD	6/21/2010	3:30 AM	0.75
	124	SPRINGFIELD	9/2/2010	4:46 PM	0.75
2011	125	TORONTO	4/15/2011	4:45 PM	1.75
	126	SPRINGFIELD	4/15/2011	4:55 PM	1.75
	127	PAWNEE	4/15/2011	4:59 PM	1.75
	128	CHATHAM	4/15/2011	5:06 PM	1
	129	SOUTHLAWN	4/15/2011	5:12 PM	1.75
	130	(SPI)SPRINGFIELD ARP	4/15/2011	5:22 PM	1.75
	131	BUFFALO	4/15/2011	6:00 PM	0.88
	132	NEW BERLIN	4/19/2011	4:50 PM	0.88
	133	NEW BERLIN	4/19/2011	4:55 PM	1
	134	SHERMAN	4/19/2011	4:57 PM	1.25
	135	SHERMAN	4/19/2011	5:00 PM	1
	136	WILLIAMSVILLE	4/19/2011	5:10 PM	1
	137	WILLIAMSVILLE	5/22/2011	2:11 PM	0.75
	138	SPRINGFIELD	5/22/2011	2:35 PM	0.75
	139	SPRINGFIELD	5/22/2011	2:37 AM	0.75
	140	LELAND GROVE	5/22/2011	2:40 PM	1
	141	SOUTHERN VIEW	5/22/2011	2:40 PM	0.88

	142	MECHANICSBURG	5/25/2011	4:07 PM	1.25
	143	LELAND GROVE	5/28/2011	1:27 PM	1
	144	SPRINGFIELD	5/28/2011	1:30 PM	1
	145	GRANDVIEW	5/28/2011	1:32 PM	1.75
	146	GRANDVIEW	5/28/2011	1:35 PM	1.5
	147	SPRINGFIELD ARPT	5/28/2011	1:37 PM	1.25
	148	RIVERTON	5/28/2011	1:40 PM	0.75
	149	SPRINGFIELD	6/18/2011	4:49 PM	0.75
	150	CHATHAM	6/25/2011	7:04 PM	1
	151	LOAMI	6/25/2011	7:50 PM	0.88
	152	CHATHAM	6/25/2011	8:13 PM	1
	153	LELAND GROVE	8/13/2011	3:08 PM	0.88
	154	LOAMI	8/13/2011	3:25 PM	0.88
	155	DIVERNON	8/13/2011	3:43 PM	2
	156	CIMIC	8/13/2011	3:48 PM	0.75
	157	CHATHAM	8/13/2011	4:28 PM	0.75
2012	158	LOAMI	1/17/2012	1:04 AM	0.75
	159	LOAMI	3/2/2012	7:41 AM	0.75
	160	LOAMI	3/2/2012	11:35 AM	0.88
	161	GRANDVIEW	3/2/2012	8:44 PM	0.75
	162	MILDRED	3/2/2012	8:50 AM	0.75
	163	CANTRALL	3/15/2012	7:14 PM	1
	164	SHERMAN	3/15/2012	7:15 PM	1
	165	SHERMAN	3/15/2012	7:20 PM	1
	166	SHERMAN	3/15/2012	7:24 PM	0.75
	167	SHERMAN	3/15/2012	7:27 PM	0.88
	168	SPRINGFIELD	3/15/2012	7:30 PM	0.88
	169	MECHANICSBURG	5/20/2012	4:42 PM	0.75
2013	170	(SPI)SPRINGFIELD ARP	5/20/2012	5:05 PM	0.75
	171	DAWSON	4/10/2013	3:55 PM	0.75
	172	RIVERTON	4/15/2013	11:08 PM	0.75
	173	SHERMAN	6/21/2013	3:45 PM	0.88
	174	SPRINGFIELD	6/21/2013	4:10 PM	1
	175	WILLIAMSVILLE	6/24/2013	4:19 PM	0.88
2014	176	WILLIAMSVILLE	6/24/2013	4:25 PM	1
	177	AUBURN	4/3/2014	3:58 AM	0.75
2015	178	AUBURN	4/9/2015	6:10 PM	1
	179	CHATHAM	4/9/2015	6:13 PM	1
	180	DIVERNON	4/9/2015	6:17 PM	1
	181	DIVERNON	4/9/2015	6:19 PM	1
	182	MILDRED	5/28/2015	5:06 PM	0.75
	183	WILLIAMSVILLE	6/7/2015	8:04 PM	1
	184	ARCHER	6/28/2015	5:30 PM	0.75

	185	SPRINGFIELD	6/28/2015	5:35 PM	0.75
	186	SPRINGFIELD	6/28/2015	5:40 PM	1
	187	SPRINGFIELD	6/28/2015	5:40 PM	1
	188	TORONTO	6/28/2015	5:55 PM	0.88
	189	SPRINGFIELD	6/28/2015	6:09 PM	1
	190	PLEASANT PLAINS	9/10/2015	4:38 PM	1.75
2016	191	NEW BERLIN	3/15/2016	6:33 PM	1.75
	192	SALISBURY	3/15/2016	6:45 PM	0.88
	193	BUFFALO	3/30/2016	2:07 PM	0.75
	194	GLENARM	3/30/2016	2:07 PM	1
	195	PAWNEE	4/27/2016	10:15 PM	1
	196	DIVERNON	4/27/2016	10:17 PM	0.88
	197	CANTRALL	5/11/2016	12:40 PM	1
	198	SPRINGFIELD	5/26/2016	5:59 AM	0.88
2017	199	WILLIAMSVILLE	3/7/2017	12:25 AM	0.75
	200	LELAND GROVE	3/17/2017	5:25 AM	1
	201	CHATHAM	4/10/2017	3:12 PM	0.88
	202	CHATHAM	4/10/2017	3:15 PM	0.75
	203	AUBURN	4/10/2017	4:00 PM	0.75
	204	AUBURN	7/23/2017	3:45 PM	0.88
	205	AUBURN	7/23/2017	3:45 PM	1
	206	DIVERNON	7/23/2017	3:59 PM	0.88
	207	BEAMINGTON	9/4/2017	3:38 PM	0.88
	208	TORONTO	9/4/2017	3:40 PM	1
2018	209	NEW BERLIN	1/22/2018	1:24 PM	1
	210	PLEASANT PLAINS	1/22/2018	1:35 PM	0.75
	211	CANTRALL	1/22/2018	2:25 PM	0.75
	212	SHERMAN	5/27/2018	1:34 PM	1
	213	SHERMAN	8/16/2018	8:47 PM	0.75
	214	PAWNEE	12/1/2018	6:15 PM	1
2019	215	PAWNEE	5/29/2019	6:49 PM	0.88
	216	GRANDVIEW	6/5/2019	2:32 PM	0.75
	217	SPRINGFIELD	6/5/2019	2:38 PM	0.75
	218	KEYS	6/5/2019	2:46 PM	0.75
2020	219	GLENARM	3/28/2020	9:50 AM	1
	220	ROCHESTER	3/28/2020	10:01 AM	1.25
	221	CANTRALL	4/8/2020	4:11 PM	0.75
	222	SHERMAN	4/8/2020	4:20 PM	0.75
	223	DEVEREUX HGTS	4/8/2020	4:21 PM	3
	224	SHERMAN	4/8/2020	4:23 PM	1.25
	225	DAWSON	4/8/2020	4:28 PM	0.88
	226	RIVERTON	4/8/2020	4:32 PM	1.5
	227	LOAMI	4/11/2020	6:31 PM	1

	228	AUBURN	4/11/2020	6:37 PM	0.75
	229	CHATHAM	4/11/2020	6:37 PM	1
	230	GRANDVIEW	5/2/2020	8:28 PM	0.88
	231	PLEASANT PLAINS	7/21/2020	2:32 PM	1
2021	232	PAWNEE	3/27/2021	4:33 PM	1
	233	GRANDVIEW	6/18/2021	7:54 PM	0.75
2022	234	CHATHAM	4/30/2022	4:33 PM	1

* Prior to 1993 specific locations were not recorded.

Source: National Climactic Data Center

Previous occurrences of severe storms in Sangamon County.

Severe storms occur with regularity in Sangamon County. Some examples of damage done are:

- Power outages leaving thousands of people without electricity.
- Numerous trees damaged or destroyed.
- In July 1994 many windows were broken at the grade school in Cantrall.
- In July 2001 two semitrailers were blown over on I-72 north of Curran.
- In February 1999 roof damage was done to the Illinois Supreme Court Building.
- Grain bins have been blown over and machine sheds damaged.
- In August 1987 fifty-eight people sustained minor injuries at the Illinois State Fair.
- Homes have been damaged and some mobile homes have been destroyed.
- Businesses have temporarily closed due to power outages.

Figures 59 and 60 show the breakdown of months and times of day when severe storms and hailstorms occurred in Sangamon County from January 1955 through May 2022. Thunderstorms with high wind are most likely to occur in Sangamon County in April through August and during the hours of noon to 6:00 PM with 6:00 PM to midnight in second. Thunderstorms with hail are most likely to occur in Sangamon County from March through June and during the hours of noon to 6:00 PM.

Figure 59: Thunderstorms in Sangamon County from 1/1/1955 – 5/31/2022

Time of Day	Midnight - 6:00 AM	6:00 AM-Noon	Noon - 6:00 PM	6:00 PM - Midnight	TOTAL
# of Events	17	32	179	159	387

Month	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec	TOTAL
# of Events	2	2	18	46	91	86	56	50	6	1	8	12	387

Figure 60: Hailstorms in Sangamon County from 1/1/1955 – 5/31/2022

Time of Day	Midnight - 6:00 AM	6:00 AM-Noon	Noon - 6:00 PM	6:00 PM - Midnight	TOTAL
# of Events	14	12	138	70	234

Month	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec	TOTAL
# of Events	4	1	30	58	71	30	16	11	10	1	1	1	234

Probability of future events.

Severe storms are expected in Sangamon County. During the 67 years from 1955 – 2022, there were 387 thunderstorms with severe winds that occurred during 59 of the years. There were no severe thunderstorms recorded during eight of these years. This indicates an 88 percent probability that in any given year at least one thunderstorm with severe winds will occur. During 52 years of the 67 years more than one such storm occurred. This indicates a 78 percent probability that in any given year more than one thunderstorm with severe winds will hit Sangamon County.

Hail events were reported during 44 of these 67 years. This indicates a 66 percent probability that in any given year a hailstorm will occur. During 33 years more than one hailstorm occurred. This indicates a 49 percent probability that in any given year more than one hailstorm will hit somewhere in Sangamon County.

ASSESSING VULNERABILITY

With the presence of lightning, high winds, driving rain, and hail posing the threat of injury and death, severe storms are a danger to people.

Additionally, building damage can occur from flying and falling debris, lightning strikes, blowing wind, hail, and rain if windows are broken, roofs are compromised, or other damage occurs. If one-third of the planning area were affected by a severe storm and one percent of the buildings sustained some damage then the costs could be:

$$\begin{aligned} & \$ 22,930,560,139 \text{ (total value of all buildings)} \times .33 = \$7,567,084,846 \\ & \text{(value of 1/3 of buildings)} \end{aligned}$$

$$\begin{aligned} & \$7,567,084,846 \text{ (value of 1/3 of buildings)} \times .01 = \$75,640,848 \\ & \text{(value of 1\% of 1/3 of buildings =building value exposed to damage)} \end{aligned}$$

The critical facility that is most often a concern during a severe storm is the electrical supply infrastructure. Winds, lightning, and falling trees can damage power lines requiring many dollars and hours of work to repair. People's lives are disrupted by power outages and there is an economic impact on businesses when they are unable to operate.

CLIMATE CHANGE

Climate change due to severe thunderstorms is difficult to estimate at a local level. Added to this difficulty is the lack of jurisdiction-specific studies on the effects that climate change has on severe thunderstorms in Sangamon County. Impacts of climate change based on high precipitation, low precipitation, high temperatures, and low temperatures, are covered in flood, drought, extreme heat, and winter storm hazards, respectively. There is a general lacking of local trends that indicates whether more frequent storms occur earlier or later in the year than in the past. Drawing definitive conclusions based on local data alone is difficult at best.

TORNADO HAZARD

DESCRIPTION

What is a tornado?

Tornadoes are nature's most violent storms. Spawned from powerful thunderstorms, tornadoes can cause fatalities and devastate a neighborhood in seconds. A tornado appears as a rotating, funnel-shaped cloud that extends from a thunderstorm to the ground with whirling winds that can reach 300 miles per hour. Damage paths can be in excess of one mile wide and 50 miles long. Every state is at some risk from this hazard. (Source: FEMA)

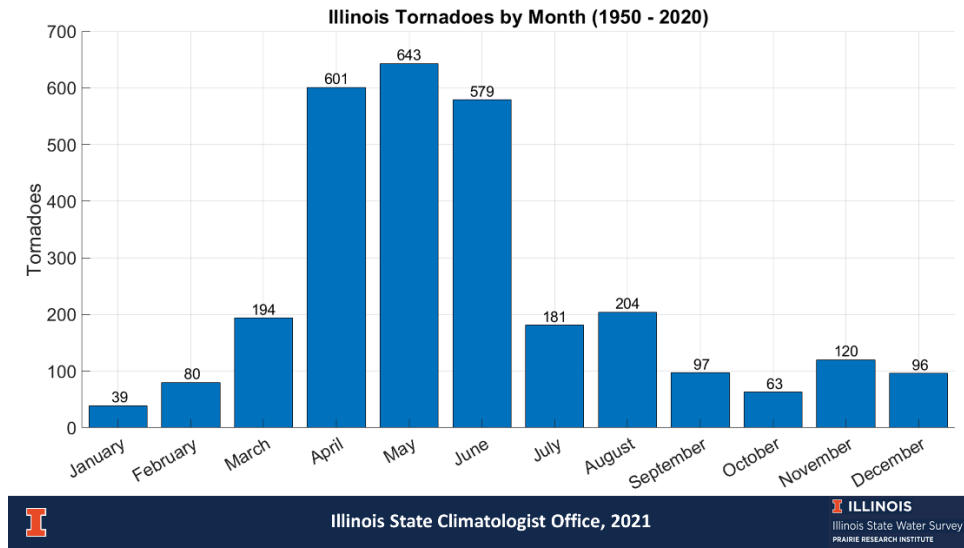
Some tornadoes are clearly visible, while rain or nearby low-hanging clouds obscure others. Occasionally, tornadoes develop so rapidly that little, if any, advance warning is possible. Before a tornado hits, the wind may die down and the air may become very still. A cloud of debris can mark the location of a tornado even if a funnel is not visible. Tornadoes generally occur near the trailing edge of a thunderstorm. It is not uncommon to see clear, sunlit skies behind a tornado.

The following are facts about tornadoes:

- They may strike quickly, with little or no warning.
- They may appear nearly transparent until dust and debris are picked up or a cloud forms in the funnel.
- The average tornado moves southwest to northeast, but tornadoes have been known to move in any direction.
- The average forward speed of a tornado is 30 MPH, but may vary from stationary to 70 MPH.
- Waterspouts are tornadoes that form over water.
- Tornadoes are most frequently reported east of the Rocky Mountains during spring and summer months.
- Peak tornado season in the southern states is March through May; in the northern states, it is late spring through early summer.
- Tornadoes are most likely to occur between 3 p.m. and 9 p.m., but can occur at any time.

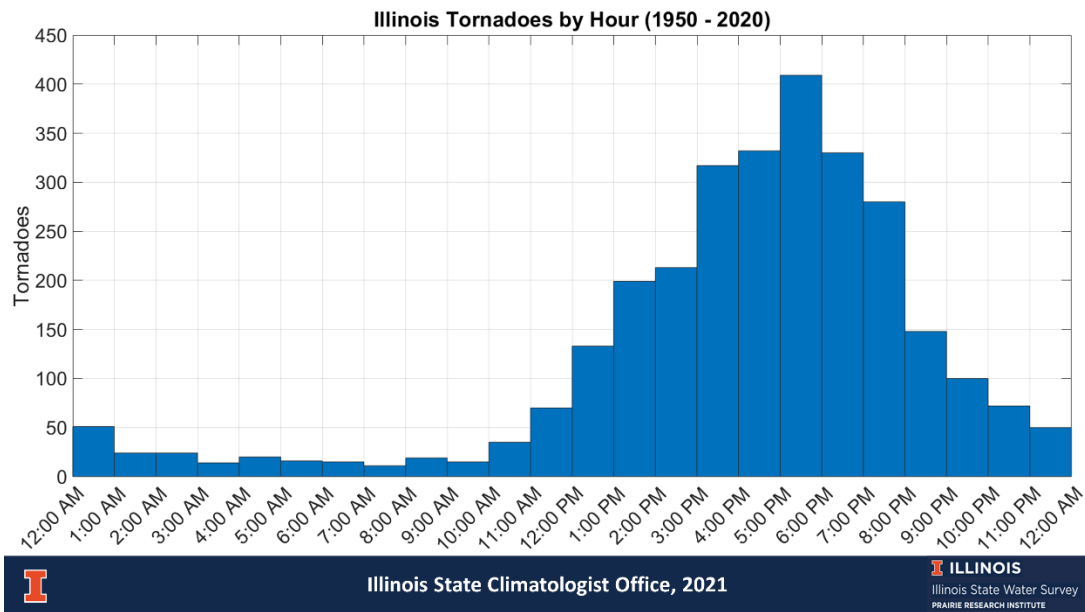
Figures 61 and 62 indicate the distribution of tornadoes across Illinois by month and by hours of the day. The three most common months statewide are April, May, and June. The most common hours of the day for tornadoes are in the late afternoon from 3:00 PM to 7:00 PM. These charts are from the Illinois State Climatologist for the years 1950 – 2020.

Figure 61: Previous Illinois Tornado Occurrences by Month, 1950-2020



Source: Illinois State Climatologist

Figure 62: Previous Illinois Tornado Occurrences by Hour, 1950-2020



How are tornadoes rated?

The classification system used for tornadoes is the Fujita Scale, which is based on wind speed and damage caused. The original scale is shown in Figure 63. On February 1, 2007 an Enhanced Fujita Scale (see Figure 64) was implemented, although it would not apply to the historical data given for Sangamon County. The Enhanced Fujita scale would apply to all jurisdictions in Sangamon County equally since the entire county is equally likely to be affected by a tornado.

Figure 63: Original Fujita Scale (from: Illinois State Water Survey)

Scale	Wind Speeds	Typical Damage
F-0	40-72 mph	Tree branches broken
F-1	73-112 mph	mobile homes pushed off foundation
F-2	113-157 mph	Considerable damage, mobile home demolished, tees uprooted
F-3	158-205 mph	roofs and walls blown down, cars thrown
F-4	207-260 mph	well-constructed buildings leveled
F-5	261-318 mph	massive destruction, autos thrown as far as 100 meters

Figure 64: Comparison of Fujita Scale and Enhanced Fujita Scale*

Fujita Scale			Enhanced Fujita Scale	
F Number	Fastest ¼-mile (mph)	3 Second Gust (mph)	EF Number	3 Second Gust (mph)
0	40-72	45-78	0	65-85
1	73-112	79-117	1	86-110
2	113-157	118-161	2	111-135
3	158-207	162-209	3	136-165
4	208-260	210-261	4	166-200
5	261-318	262-317	5	Over 200

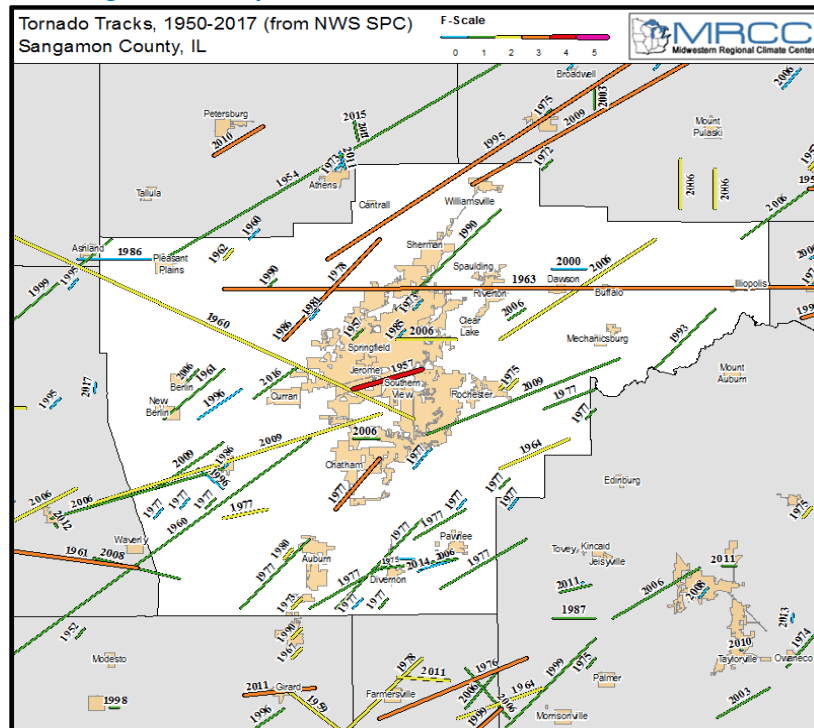
*There is also an EFU category for un-surveyable tornadoes that did not pass through areas that allow damage to be assessed or a survey was not completed according to the National Weather Service.

PROFILE

The locations affected by tornadoes.

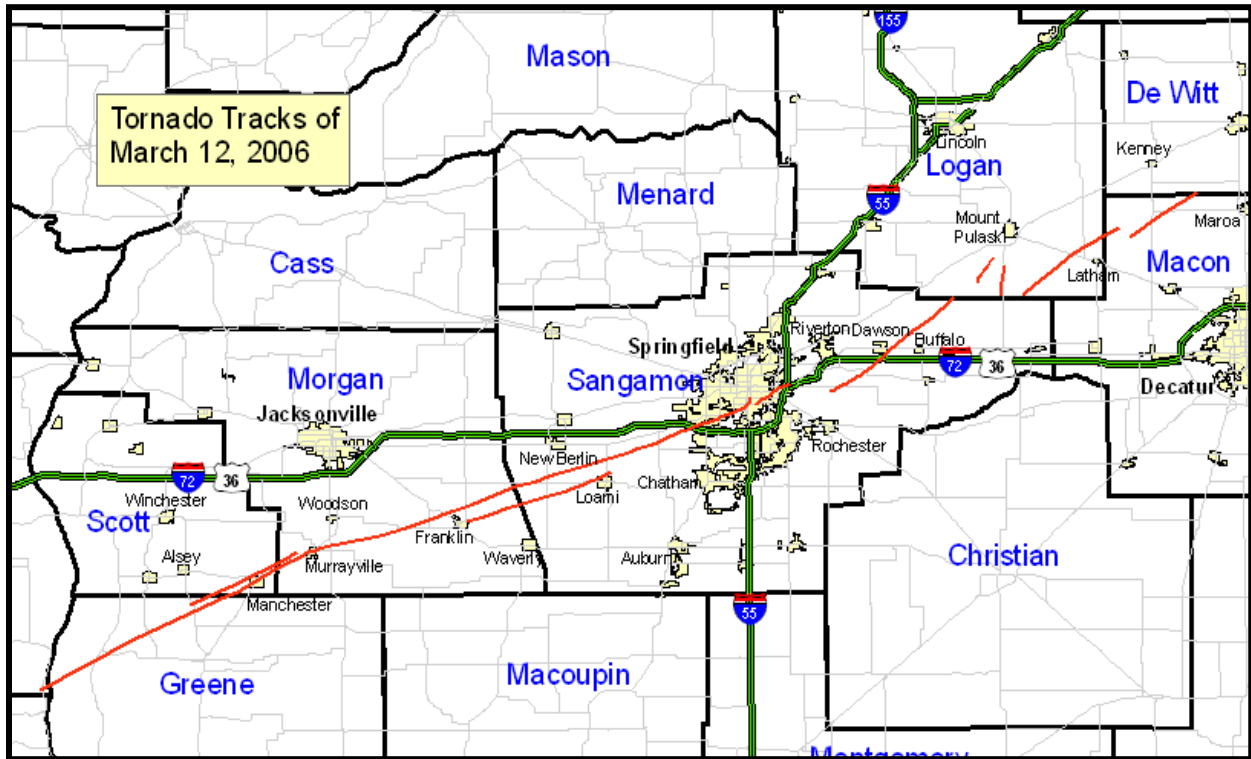
Tornadoes can and have occurred throughout the county. The paths of the tornadoes recorded in Sangamon County from 1950 – 2017 are shown in Figure 65. Paths of the 2006 tornadoes are shown in Figures 66 and 67, and the path of the 2009 tornadoes is shown in Figure 68.

Figure 65: Tornadoes in Sangamon County 1950 - 2017



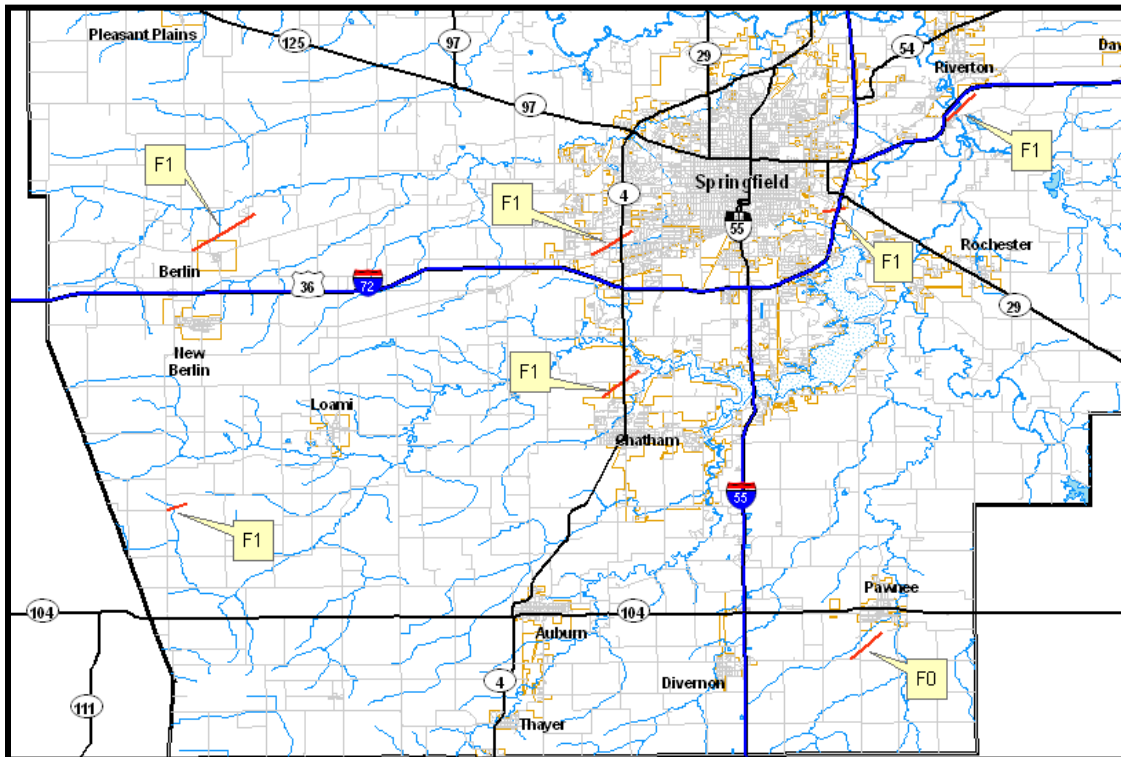
Source: MRCC

Figure 66: Tornado Tracks of March 12, 2006



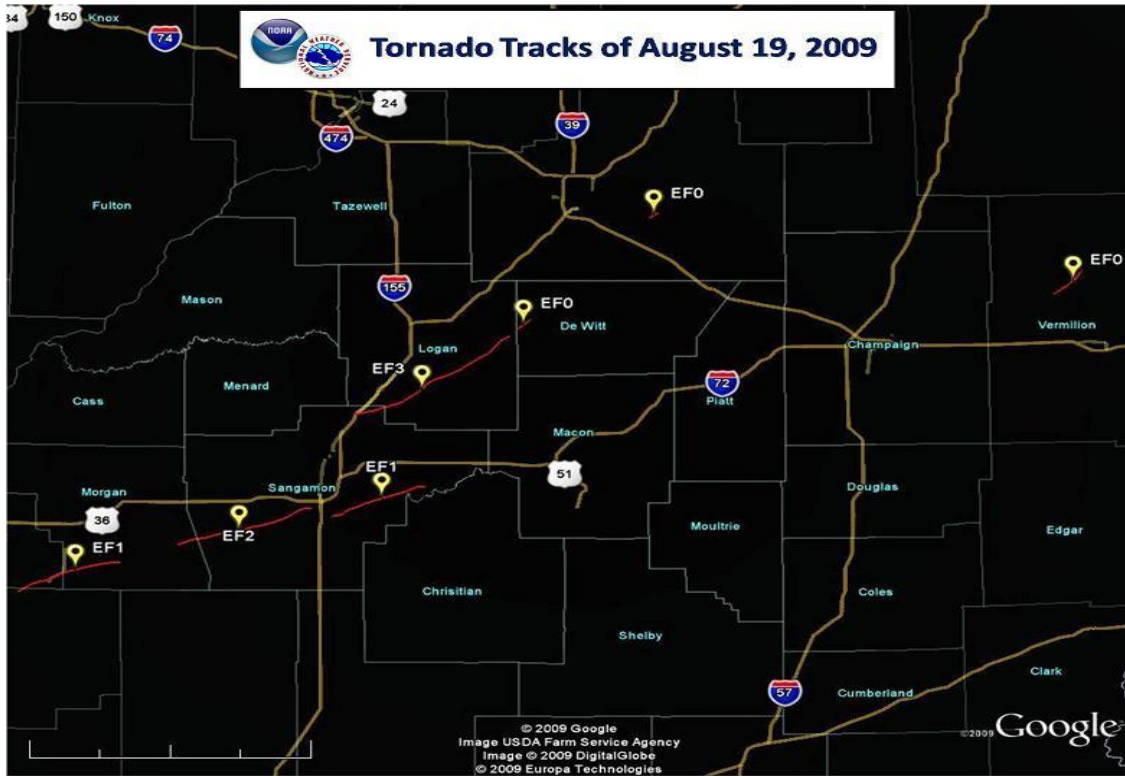
Source: National Weather Service

Figure 67: Tornado Tracks of April 2, 2006



Source: National Weather Service

Figure 68: Tornado Tracks of August 19, 2009



Source: USDA Farm Service Agency

The extent of previous occurrences of tornadoes in Sangamon County.

Central Illinois is a prime area for tornadoes. From January 1, 1950, through May 31, 2022, there were 84 tornadoes reported. There were 48 different tornado events, 11 of which included more than one tornado as shown in Figure 69.

Figure 69: Tornadoes Reported in Sangamon County from January 1, 1950 – May 31, 2022⁴

Date	Time	Magnitude	Deaths	Injuries	Property Damage
3/12/1954	6:00 PM	F1	0	0	250K
5/13/1957	11:00 AM	F1	0	0	250
6/14/1957	2:00 PM	F4	2	50	2.5M
6/23/1960	2:50 AM	F2	0	0	250K
5/14/1961	10:10 PM	F1	0	0	250K
5/26/1962	5:30 AM	F2	0	0	3K
4/22/1963	5:30 PM	F3	1	5	250K
4/2/1964	6:45 PM	F2	0	0	25K
6/16/1973	9:58 PM	F0	0	0	0
8/14/1975	5:58 PM	F2	0	0	25K
11/29/1975	11:20 PM	F1	0	1	250K
8/6/1977	3:25 - 4:10 PM	6- F0, 9-F1, 1-F2, 1-F3	0	0	2.8M

⁴ One of the tornadoes on September 6, 2007 was classified as an F0 in previous plans. The data received from NCD for this plan classified it as EF-0 in accord with the definition available at the time. This resulted in a decline of one F0 tornado and an addition of one EF-0 tornado in this plan not accounted for in previous plans.

Date	Time	Magnitude	Deaths	Injuries	Property Damage
7/26/1978	3:30 PM	F?	0	0	250K
7/10/1980	5:00 AM	F2	0	0	250K
6/8/1981	8:40 PM	F0	0	0	0
7/14/1985	11:44 PM	F0	0	0	25K
5/16/1986	4:20 - 4:25 PM	2- F0	0	0	0
5/8/1988	5:18 PM	F2	0	0	250K
6/2/1990	4:30 PM	F1	0	0	25K
6/20/1990	12:15 AM	F1	0	0	25K
4/19/1996	5:32 PM	F0	0	0	250K
5/27/1996	9:45 PM	F0	0	0	0
6/29/1998	4:30 - 4:36 PM	2-F0	0	0	130K
4/8/1999	7:53 PM	F0	0	0	0
4/20/2000	8:05 AM	F0	0	0	0
5/12/2000	3:30 PM	F0	0	0	0
6/20/2000	6:44 PM	F0	0	0	1K
3/19/2003	1:25 PM	F0	0	0	0
5/9/2003	6:40 PM	F0	0	0	0
5/10/2003	6:53 AM - 6:58 AM	3-F0	0	0	45K
6/11/2003	5:20 PM - 5:22 PM	2-F0	0	0	0
5/23/2004	6:27 PM	F0	0	0	0
5/24/2004	11:09 PM	F1	0	0	0
8/26/2004	5:09 PM	F0	0	0	0
3/12/2006	8:00 PM - 8:32 PM	1-F1, 3-F2	0	23	unknown
4/2/2006	4:46 - 5:13 PM	1-F0,6-F1	0	1	unknown
9/6/2007	5:28 PM	EF0	0	0	0
5/30/2008	6:23 PM	EF1	0	0	63K
3/8/2009	10:32 AM	EF1	0	2	610K
8/19/2009	1:51 - 2:19 PM	1-EF1, 1-EF2, 1-EF3	0	20	15.2M
2/20/2014	3:43-3:57 PM	1-EF0, 1-EF1	0	0	1.02M
3/15/2016	6:44 PM	EF1	0	0	280K
12/1/2018	6:16 PM	EF1	0	0	225K
5/22/2019	11:15 PM	EF1	0	0	0
4/28/2020	5:56 PM	EF0	0	0	100K
7/15/2020	3:30-4:25 PM	2-EF0	0	0	0
7/21/2020	3:05 PM	EF1	0	0	300K
5/3/2021	4:27-5:14 PM	3-EFU	0	0	0

Source: National Climactic Data Center

Previous occurrences.

According to the 2018 INHMP, for the period between 1950 and 2017, Sangamon County ranked third with 8.99 tornadoes per 100 square miles of county area after Will (11.88) and Logan (9.55) counties. During that time, Sangamon County recorded total losses of \$25,647,000 with an average of \$341,960.00

in property damage per event. Figure 70 has a statistical breakdown of tornadoes by the time of day, month, and magnitude.

Figure 70: Sangamon County Tornadoes 1/1/1950-5/31/2022

Time of Day	Number of Events	Number of Tornadoes
12:00 AM - 5:59 AM	5	4
6:00 AM - 12:00 PM	3	6
12:00 PM - 5:59 PM	22	53
6:00 PM - 12:00 AM	18	21
TOTAL	48	84
Month	Number of Events	Number of Tornadoes
January	0	0
February	1	2
March	5	8
April	7	13
May	14	19
June	9	11
July	5	6
August	4	22
September	1	1
October	0	0
November	1	1
December	1	1
TOTAL	48	84
Magnitude	Number of Tornadoes	Percent of Total**
F0	29	44%
F1	23	35%
F2	10	15%
F3	2	3%
F4	1	2%
unknown	1	2%
TOTAL	66	
Magnitude	Number of Tornadoes	Percent of Total**
EF0	5	12%
EF1	8	2%
EF2	1	2%
EF3	1	0%
EF4	0	0%
EF5	0	5%
EFU	3	27%
TOTAL	18	

** May not total exactly 100 percent due to rounding.

The months of April, May and June are the most likely time for weather events that spawn tornadoes, although in August 1977 one weather event produced 17 different tornadoes in the County. Most of Sangamon County's tornadoes have been of a lower magnitude, although very destructive tornadoes can and do occur. Seventy-nine percent of the tornadoes that occurred from 1950-2007 were lower magnitudes, F0 or F1, although up to \$250,000 in damage per event was reported. Fifteen percent were rated F2. 4.5% were rated F3 or F4, while the remaining 1.5% were unknown. In the period 2007-2014,

eighty-six percent of the tornadoes that occurred were lower magnitude, EF0 or EF1. The remaining one tornado (fourteen percent) was an EF2.

No major tornadoes occurred in Sangamon County since the previous plan. In 2015-2022, 70 percent of the ten tornadoes were lower-magnitude tornadoes with magnitudes of EF0 or EF1. The remaining three tornadoes, or 30 percent, were EFU.

Eleven times a single weather event produced more than one tornado. In August 1977, seventeen tornadoes touched down over a 45-minute period. Three people have been killed and 102 people injured by tornado events since 1950 in Sangamon County.

The most damaging tornado touched down on June 14, 1957, and was rated F4. It caused two deaths, fifty injuries, and \$2.5 million in property damage, including 25 homes that were completely destroyed and 175 homes that were severely damaged.

Probability of future events.

The paths, magnitudes, and numbers of tornadoes are unpredictable over time, but with the history of tornado events in Sangamon County, the probability of occurrence in any one year is fairly high. As seen in Figure 69, there were 33 years when at least one tornado was recorded in Sangamon County in the 72 years from 1950 to 2022. This indicates a 46 percent probability that a tornado will hit somewhere in Sangamon County in any given year. During a 72-year period, there were 9 years (1957, 1975, 1990, 1996, 2000, 2003, 2004, 2006, 2009, and 2020) when more than one weather event spawned a tornado. This is an approximately 12 percent probability more than one weather event will spawn a tornado in a given year.

2006 tornado experiences in Sangamon County.

The tornadoes that came through the County in March 2006 caused major destruction and resulted in Presidential Disaster Declaration 1633. The two that came through Springfield and Jerome were rated as F2 and followed a path nearly identical to that of the F4 tornado that hit in 1957.

Although there was substantial property damage in 2006, no deaths or serious injuries were reported. The tornadoes varied in width from 100 yards to ½ mile. Many homes and businesses were damaged, some completely destroyed. Extensive damage occurred to electrical lines, telephone lines, and cable television lines with service unavailable for several days to over a week in areas hit by the tornadoes. There were numerous damaged and downed trees which in turn created damage to buildings, fences, utility lines, vehicles and blocked roadways. Recovery efforts started immediately, but with the extensive damage, debris removal alone took many months and property owners waited months and in some cases over a year for building repairs to be completed. Some businesses never reopened.

The State Journal-Register, a local newspaper, reported that some of the costs of tornado damage included:

FEMA Assistance to Local Governments:	\$12,774,995
FEMA Housing Assistance:	\$632,985 (264 households)
FEMA Moving/Storage/Personal Property/Transportation	\$434,269 (340 households)
FEMA Assistance to Those Put out of Work	\$34,761 (24 applicants)
American Red Cross	\$588,564 (699 cases)
CWLP Utility Infrastructure Repair	\$11,600,000

2009 tornado experience in Sangamon County.

On August 19, 2009, Sangamon County experienced three separate tornadoes resulting in injuries and property damage. The first tornado, rated an EF2, crossed into western Sangamon County and moved east-northeast through the southern part of Loami. It lifted four miles northeast of Chatham at 3:16 p.m. The tornado started out around 200 yards wide and peaked around a quarter mile wide in rural portions of the county. It was about 200 yards wide as it passed through Loami where nine homes were destroyed and fifteen others severely damaged. Along its path, the tornado produced damage to several homes, machine sheds, and major tree and crop damage.

The second tornado first touched down six miles south-southeast of downtown Springfield on the west bank of Lake Springfield at 3:17 p.m. The tornado crossed the lake and tracked to a point southeast of Rochester then lifted two miles south-southeast of Mechanicsburg at 3:37 p.m. This tornado was rated an EF1 and resulted in no significant damage.

The third tornado touched down on the west side of Williamsville just west of I-55 at 3:19 p.m. and continued to move northeast through the village. There was no loss of life although several people sustained injuries. The width of the tornado through town ranged from 100 to 150 yards, had a maximum wind speed of 135 mph and was rated an EF2 while in Williamsville. As it left the village, the tornado gained momentum to an EF3 level and caused damage to homes, machine sheds, garages, and crops.

The damage included the total destruction of an antique mall, damage to a Casey's General Store causing the gas pump canopy to collapse, significant damage to a church, damage to a farm chemical business, and storage buildings. There were also losses of roofs from several houses.

The Illinois Office of Emergency Management staff examined 57 sites in Williamsville and parts of unincorporated Williams Township and estimated the total structural damage to be \$6,405,300. Figure 71 provides a breakdown of the estimated damages.

Figure 71: 2009 Tornado Losses

Williamsville	Losses
Nonresidential	\$ 3,815,000
Residential – Destroyed	\$ 944,100
Residential – Damaged	\$ 1,309,000
Williamsville Township	
Residential	\$337,200
TOTAL LOSSES	\$6,405,300

Source: Lincoln Courier, Lincoln, IL 10/19/2009

ASSESSING VULNERABILITY

The magnitudes of tornadoes in Sangamon County have ranged from F0 – F4. F-5 tornadoes have occurred in other parts of Illinois; so an F-5 tornado is not out of the realm of possibility here. According to FEMA's website, the design wind speed for our area is 250 mph.

An EF4 tornado can cause substantial damage, leveling even well-constructed buildings. According to the Illinois State Water Survey website, an EF4 tornado can have a path over 1,200 feet wide and over 20 miles long. This would translate to approximately 4.5 square miles of damage.

The first F2 tornado to hit Springfield on March 12, 2006 had been on the ground for 60 miles. It traveled approximately 13 of those miles through an unincorporated area of the county and then continued for

5.5 miles through the urbanized area with a width ranging from 900 feet to 2,640 feet. The 2009 tornado, which occurred on August 19, 2009, traveled for 4.5 miles primarily through the Village of Williamsville.

Calculating the property damage extent of the 2006 tornado if it was rated EF4 required the use of two databases. First, the “value of buildings” figures are based on the property tax assessment-based market value for all but critical facilities. Second, for critical facilities, the replacement value based on the square footage of the structure was used.

Unincorporated Area of Sangamon County

13 miles x 1,200 feet (.23 mile) width = 3 square miles or .4% of the entire unincorporated area

.004 x \$2,654,488,661 (total value of buildings in the unincorporated area) = **\$10,617,955** if property is damaged at 100% of value

Urbanized Area-Springfield

4.5 miles x 1,200 feet (.23 mile) width = 1.035 square miles or 2% of the area of Springfield

.02 x \$ 15,732,902,817 (total value of buildings in Springfield) = **\$314,658,056** if property is damaged at 100% of value

Urbanized Area-Village of Jerome

1 mile x 1,200 feet (.23 mile) width= .23 square mile or 58 % of the area of Jerome

.58 x \$106,853,317 (total value of buildings in Jerome) = **\$61,974,924** if property is damaged at 100% of value

Total

\$10,617,955+ \$314,658,056 + \$61,974,924 = **\$387,250,935** potential property damage at 100% of value

Since the damage to buildings caused by the F4 tornado in 1957 was complete or severe, this would be a likely scenario for another such occurrence. An F4 tornado is estimated to damage 50 percent of a structure’s value. If the structure is a manufactured home, an F4 will result in 100 percent damage.

Fifty percent damage to structures would be \$193,625,467. Including contents value as well as damage to vehicles, it would be conceivable that between \$193 and \$387 million in property damage could occur if an EF4 tornado took the same path as the first tornado that hit Springfield in March 2006.

There is also the expectation that lives would be at great risk. The planning area has a population of 196,343 people (2020 U.S. Census) plus the area attracts tourists from around the world and commuters who travel here to work from nearby counties.

The economic loss to businesses and the community when workplaces are damaged is also a consideration. Businesses can be impacted in the short-term, such as downtime due to power outages, lack of access, and minor damage, or in the long-term if major damage occurs resulting in extended temporary closure or permanent closure.

CLIMATE CHANGE

Tornado effects due to climate change are difficult to gauge. The INHMP (2018) states, “it is not clear if the intensity or frequency of tornadoes will increase or decrease in Illinois in the future,” (p. VII-48). Locally, it appears to be difficult to say whether the number of tornadoes is increasing or decreasing overall due to climate change as the probability has remained approximately the same. However, frequency is not necessarily as important as the magnitude of tornadoes due to the hazard’s destructive power. Tornadoes may have more of an impact if temperatures continue climbing in the future.

WILDFIRE HAZARD

DESCRIPTION

What is wildfire?

According to FEMA, a wildfire is an unplanned, unwanted, fire burning in a natural area, such as a forest, grassland, or prairie. FEMA notes that wildfires can start from natural causes, such as lightning, but most are caused by humans, either accidentally or intentionally. Wildfires can damage natural resources, destroy homes, and threaten human lives and safety.

Since 2000, the Congressional Research Service notes annually an average of 70,072 wildfires have burned an average of seven million acres nationwide. This equates to roughly 100 acres per wildfire. This is more than double the average acreage burned in the 1990s of 3.3 million acres annually.

How are wildfires measured?

Experts measure fire conditions based on many variables like length of the day, humidity, air temperature, slope of the ground, and fuel mixture. To make the wildfire explanation easier, two indices are used in the report because they have readily accessible maps on the National Weather Service (NWS) office website based in Lincoln, Illinois. They are the Dead Fuel Moisture Maps and the Lower Atmospheric Severity, or Haines, Index.

Dead fuel moisture measurements respond to factors in the environment such as the moisture and humidity in the air. Dead fuels are plants or plant parts that have died. Any water contained in the plants evaporates until the dead plants become air-dry according to the U.S. Forest Service.

Dead fuels are classified based on a time lag, or the amount of time it takes a fuel particle to reach 2/3 of its way to equilibrium with its local environment. Larger pieces of wood have longer fuel times because it takes them longer to become as wet or dry as the surrounding air due to their sizes. Dead fuels fall into four classes as shown in Figure 72, obtained from the U.S. Forest Service Wildland Fire Assessment System website.

Figure 72: Dead Fuel Moisture Classifications

Time	Diameter (inches)	Interpretation
1 hour	< 0.25	Fine flashy fuels that respond quickly to weather changes. Computed from observation time, temperature, humidity, and cloudiness.
10 hours	0.25 - 1	Computed from observation time temperature, humidity, and cloudiness. Or can be an observed value, from a standard set of "10-hour fuels sticks" that are weighed as part of the fire weather observation.
100 hours	1-3	Computed from 24-hour average boundary condition composed of day length, hours of rain, and daily temperature/humidity ranges.
1000 hours	3-8	Computed from a 7-day average boundary condition composed of day length, hours of rain, and daily temperature/humidity ranges.

The U.S. Forest Service updates the dead fuel moisture maps daily. Figures 73, 74, 75, and 76 are dead fuel moisture maps obtained from the NWS website in Lincoln on May 17, 2022, for May 16 or 17, 2022.

Figure 73: 10-Hour Dead Fuel Mixture Map Forecast, May 17, 2022

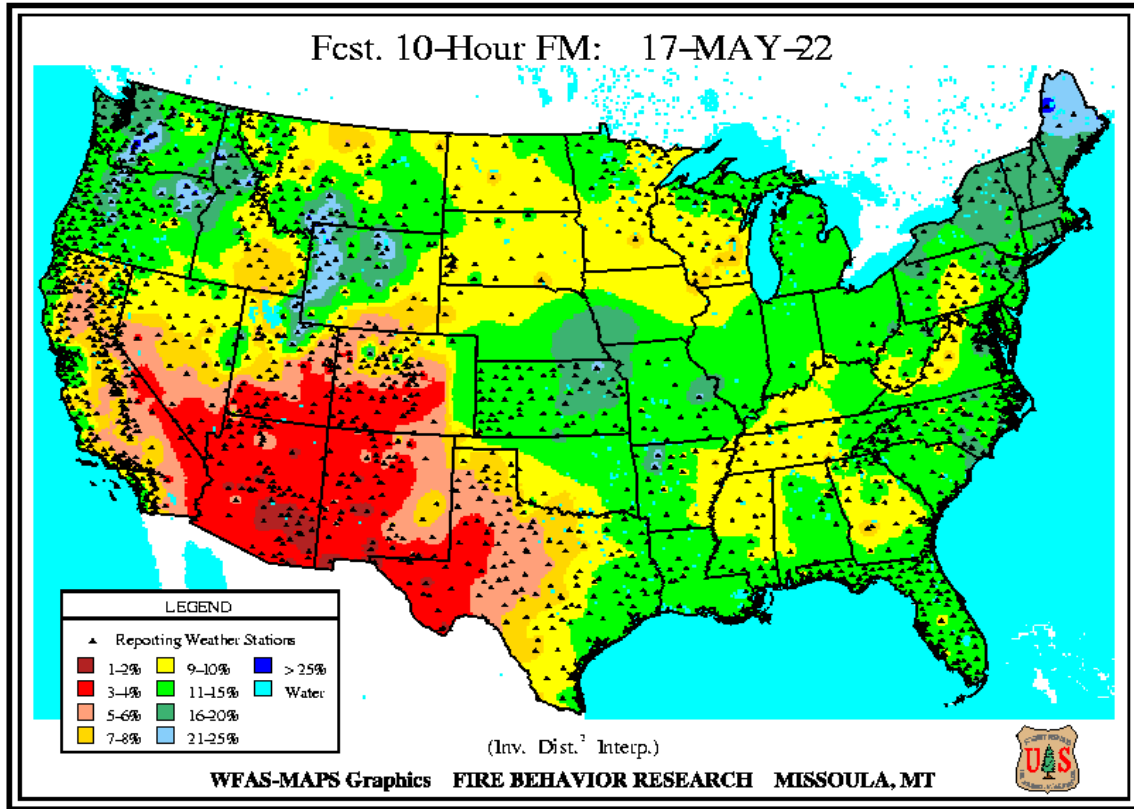


Figure 74: 10-Hour Dead Fuel Mixture Map Observed or Computed, May 16, 2022

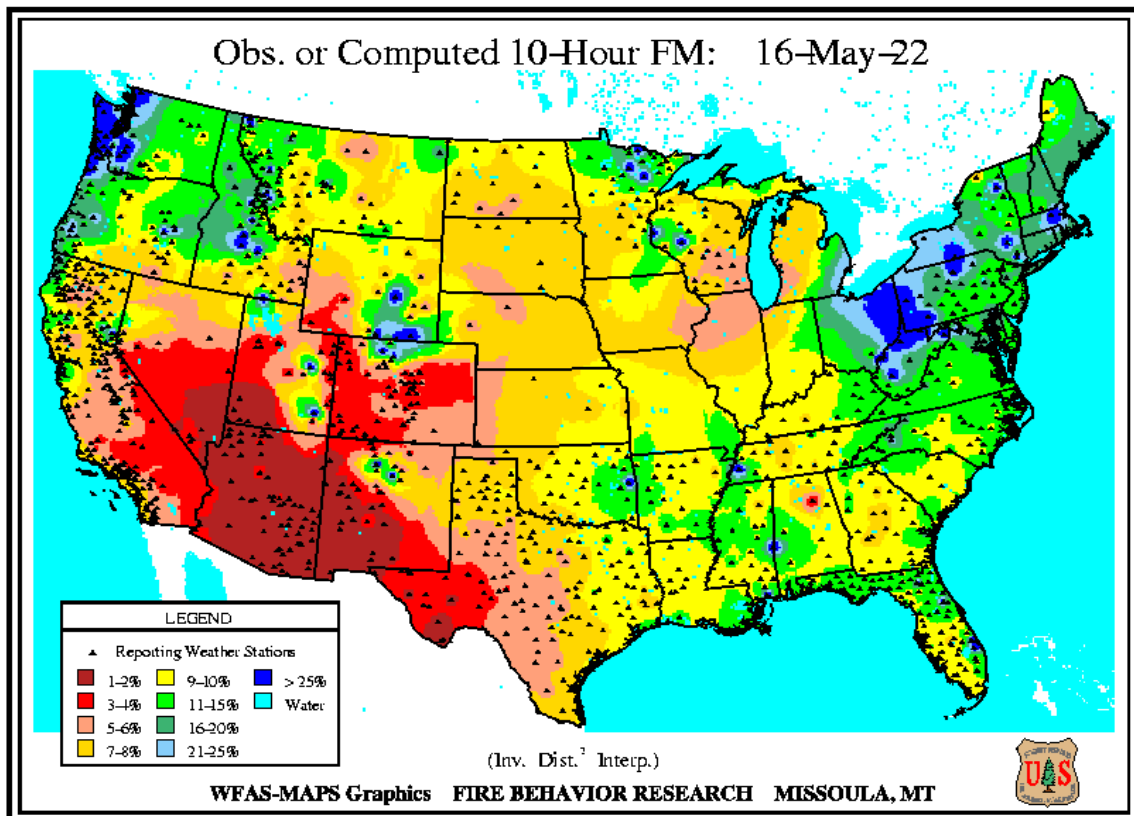


Figure 75: 100-Hour Dead Fuel Mixture Map, May 16, 2022

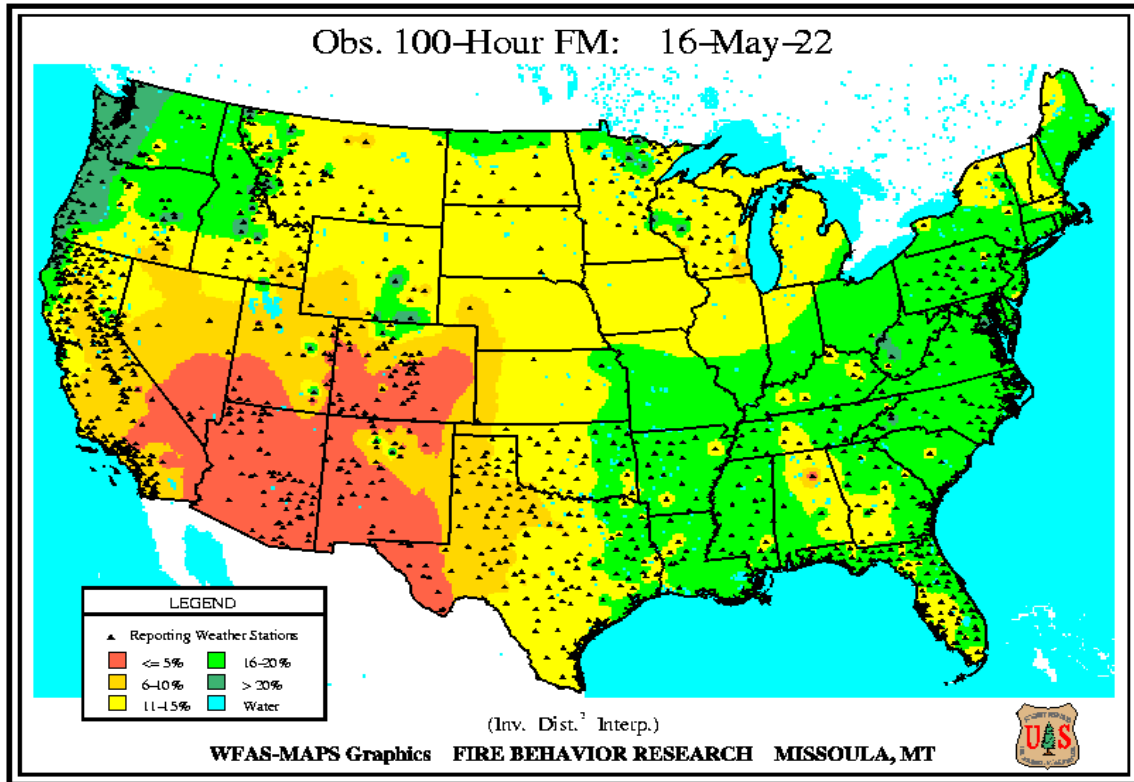
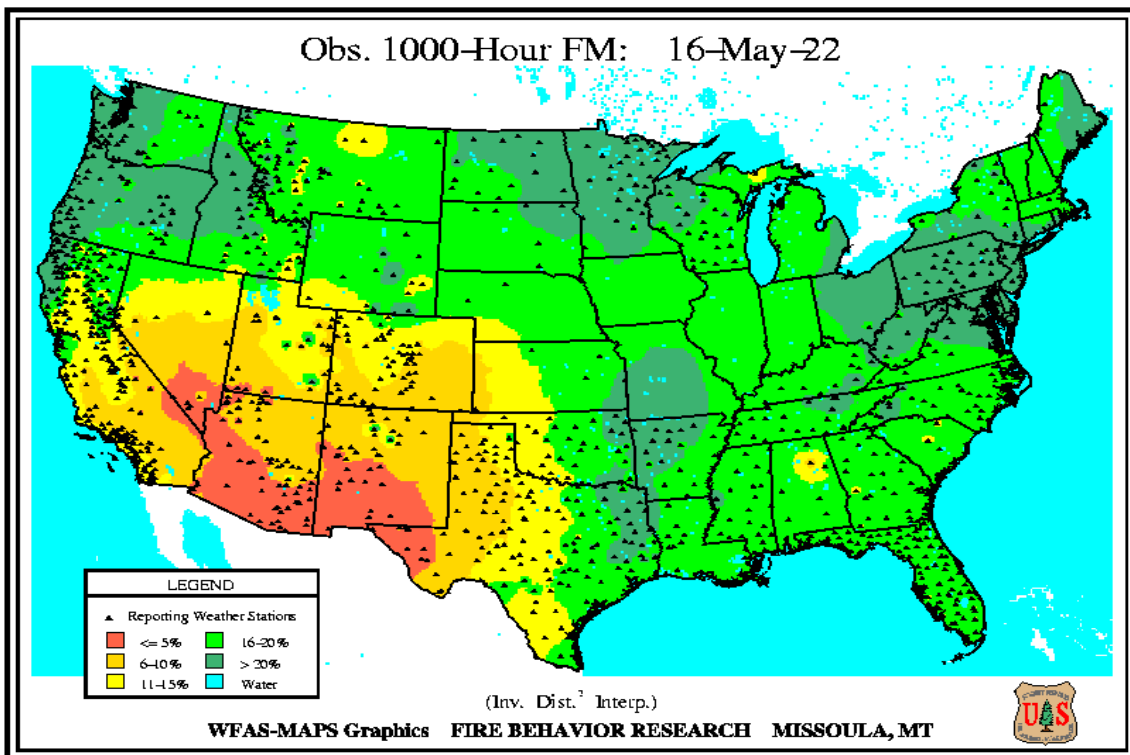


Figure 76: 1000-Hour Dead Fuel Mixture Map, May 16, 2022



The critical moisture values for these maps for fires are six to 30 percent for the 10-hour dead fuel mixture shown in Figures 73 and 74 depending on the source. Values lower than six percent indicate it is too dry for favorable fire conditions and over 30 percent indicate it is too wet for fire conditions. As Sangamon County is generally within the six to 15 percent range on these maps, an interpretation is that there is a favorable potential for wildfires on the day of these maps.

The second index used by the NWS website is the Haines Index or Lower Atmosphere Severity Index. The goal of this index is to contrast stable conditions with conditions prevalent during fire outbreaks. Figure 77 shows interpretations of the Haines Index score with larger scores indicating a greater potential for wildfires. The NWS daily fire forecasts for the area reference Haines Index scores.

Figure 77: Haines Index Score Categories

Score	Interpretation - Potential for Large Fire
2 or 3	Very Low
4	Low
5	Moderate
6	High

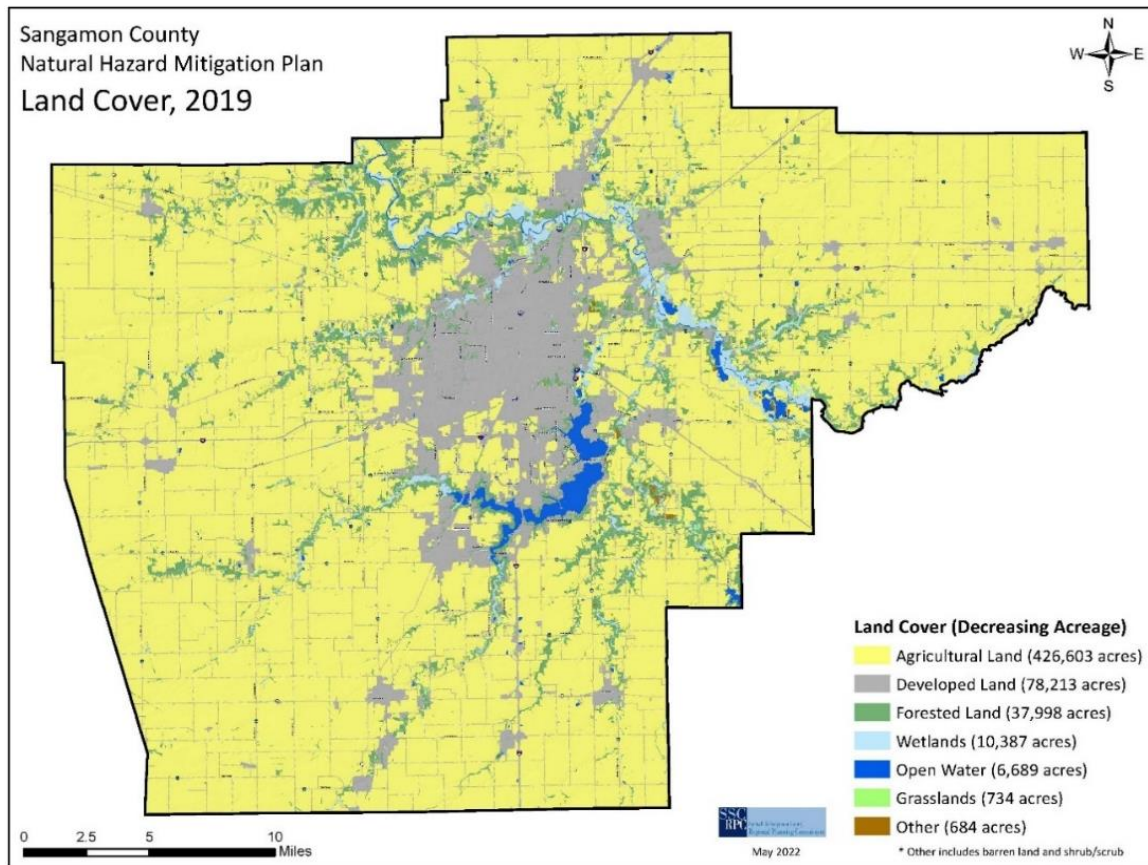
PROFILE

What locations are affected by wildfires?

All parts of Sangamon County have the potential for wildfire outbreaks. Areas that may face particular exposure are agricultural lands, forested areas, and grasslands. Wildfires in cropland could be economically devastating for a farmer as there is economic value tied to the crops produced and the farm buildings and equipment that may be near the cropland.

Two datasets were reviewed to gain an understanding of how much ground is in agricultural use and could potentially be subject to a wildfire. First, the draft 2040 Sangamon County Comprehensive Plan has approximately 450,000 acres, or 92 percent of unincorporated Sangamon County, in agricultural land use, defined as cropland, pasture, farmsteads, and timber. Second, according to the 2019 land use cover data from the Multi-Resolution Land Characteristics Consortium of the federal government, agricultural lands in Sangamon County are approximately 389,225 acres of cropland and 37,378 acres of hay or pasture land. In addition, approximately 37,998 acres are forested and 734 acres are grassland. Figure 78 shows the 2019 Land Cover Data for Sangamon County from the National Land Cover Data (NLCD) set. Approximately 82 percent of Sangamon County is agricultural lands, forested areas, and grasslands according to the NLCD data set. Both of these datasets use slightly different definitions, and therefore have slightly different figures.

Figure 78: Sangamon County Land Cover Map, 2019



The extent of previous wildfires in Sangamon County

The National Centers for Environmental Information lists one wildfire event in its storm events database for Sangamon County between 1996 and 2022. On July 27, 2012, a wildfire burned 350 acres of grassland near Rochester. The exact cause was unknown but the fire was likely aided by very dry conditions and northwesterly winds gusting to 25 miles per hour. A barn was destroyed by the fire, a small shed was damaged, and several pieces of fire equipment were severely damaged or destroyed. Property damage was \$2,100,000 according to the storm events database.

Probability of wildfire events

There was one wildfire in the 26 years from 1996 to 2022, which is a probability of approximately four percent.

ASSESSING VULNERABILITY

All of Sangamon County is vulnerable to wildfires. Wildfires can be caused by several different sources including but not limited to human error, prescribed burns that become uncontrolled, equipment failure, and lightning. Wildfires tend to occur on undeveloped land including farmland, timbered areas, and grasslands. It is difficult to pinpoint where wildfires are more likely to occur as there are many areas of Sangamon County near forested areas and crop fields. A large fire on the edge of a municipality could cause result in significant damage. Likewise, a wildfire in a subdivision near forested land, cropland, or grasslands may damage residences, non-residential buildings, and infrastructure.

CLIMATE CHANGE

Research regarding climate change and wildfires is anecdotal and does not appear to allow firm conclusions to be drawn at the local level. The lack of wildfire events in Sangamon County does not allow firm conclusions as to whether climate change is causing wildfire potential to increase or decrease.

According to the CMRA website Sangamon County's average number of dry days is projected to increase from approximately 160 days to approximately 161 days under a lower emission scenario (RCP 4.5) and from approximately 161 days to approximately 165 days as shown in Figure 79. This information is highlighted in red in the table. Other extreme heat information from the CMRA website is also in this table. This figure is broken into two different emissions scenarios similar to the Illinois Climate Assessment where the higher emissions scenario (RCP 8.5) considers a future where emissions keep increasing whereas the lower emissions scenario (RCP 4.5) assumes that emissions begin to level off in approximately the year 2040.

Figure 79: Wildfire Projection Information for Sangamon County to the Year 2099

	Emissions Scenario					
	Lower Emissions (RCP4.5)			Higher Emissions (RCP8.5)		
Category	Early (2015-'44)	Mid (2035-'64)	Late (2070-'99)	Early	Mid	Late
Annual days max temp > 100	4.7	9	14.3	5.8	13.7	38.8
Annual days max temp > 90	54.4	66.4	77	58.4	76.1	107.7
Average daily min temp (F)	45.9	47	48.1	46.1	48	51.7
Average daily max temp (F)	66.7	68	69.3	66.9	68.9	73
Annual single highest max temp (F)	102.3	104.2	105.6	102.8	105.4	110.4
Annual highest max temp avg over 5 days (F)	98.7	100.4	101.9	99.3	101.8	106.7
Average number of dry days	160.7	161.4	161.5	161.3	162.6	165.6
Average number of days with measurable precipitation (wet days)	204.3	203.6	203.5	203.7	202.4	199.4
Maximum number of consecutive dry days	15.1	15.4	15.8	15.4	15.7	16.4
Maximum number of consecutive wet days	10.6	10.7	10.7	10.7	10.7	10.7

Source: <https://livingatlas.arcgis.com/assessment-tool/explore/details>

WINTER STORM HAZARD

DESCRIPTION

What is a winter storm?

Winter storms in Sangamon County consist of snow and ice and at times result in blizzard conditions. Winter storms can produce flooding, storm surge, closed highways, blocked roads, downed power lines and hypothermia.

In 2022, it was determined the NCDC Storm Events Database had changed categories from how the previous plans had determined winter storms. For this plan update, the Task Force defined the winter storm hazard to include these events from the Storm Events Database that are common to Sangamon County: blizzard, cold wind chill, extreme cold wind chill, heavy snow, ice storm, sleet, winter storm, and winter weather. Definitions for these events are below and come from the National Weather Service Instruction 10-1605 dated July 26, 2021 with local amendments provided by the National Weather Service in Lincoln, Illinois.

- **Blizzard.** A winter storm which produces the following conditions for three (3) consecutive hours or longer: (1) sustained winds or frequent gusts 30 knots (35 mph) or greater, and (2) falling and/or blowing snow reducing visibility frequently to less than 1/4 mile.
- **Cold/Wind Chill.** Period of low temperatures or wind chill temperatures reaching or exceeding locally/regionally defined advisory (typical value is – 18 degrees Fahrenheit or colder) conditions. Locally, this means a wind chill advisory at -15 degrees Fahrenheit to -24 degrees Fahrenheit.
- **Extreme Cold/Wind Chill.** A period of extremely low temperatures or wind chill temperatures reaching or exceeding locally/regionally defined warning criteria. of -25 degrees Fahrenheit or colder for a wind chill warning.
- **Heavy Snow.** Snow accumulation meeting or exceeding locally/regionally defined 12 and/or 24-hour warning criteria. This could mean values such as 4, 6, or 8 inches or more in 12 hours or less, or 6, 8, or 10 inches in 24 hours or less. Locally, this means six inches of snow in 12 hours or eight inches of snow in 24 hours.
- **Ice Storm.** Ice accretion meeting or exceeding locally/regionally defined warning criteria (typical value is ¼ or ½ inch or more). Locally, an ice storm warning means 0.25 inches or more of ice accretion.
- **Sleet.** Sleet accumulations meeting or exceeding locally/regionally defined warning criteria (typical value is ½ inch or more). Locally, this means 0.25 inches or more.
- **Winter Storm.** A winter weather event that has more than one significant hazard (i.e., heavy snow and blowing snow; snow and ice; snow and sleet; sleet and ice; or snow, sleet, and ice) and meets or exceeds locally/regionally defined 12 and/or 24-hour warning criteria for at least one of the precipitation elements. Locally, this means six inches of snow in 12 hour/eight inches of snow in 24 hours and/or 0.25 inches of sleet and/or 0.25 inches of ice accretion and blowing snow reducing visibility to ¼ mile.
- **Winter Weather.** A winter precipitation event that causes a death, injury, or a significant impact to commerce or transportation, but does not meet locally/regionally defined warning criteria. A Winter Weather event could result from one or more winter precipitation types (snow, or blowing/drifted snow, or freezing rain/drizzle). The Winter Weather event can also be used to document out-of-season and other unusual or rare occurrences of snow, blowing/drifted snow, or freezing rain/drizzle. Locally, a winter weather advisory is issued for three to five inches of snow in 12 hours, 0.10 inches to 0.25 inches of ice accretion, or sleet less than 0.25 inches. There is no specific blowing snow criteria.

The information in Figure 80 was obtained from the National Weather Service in Lincoln, IL, and shows historical snow data for Springfield (the only NOAA observing site in Sangamon County). This snow data is averaged using the period 1991-2020 because this is the available data.

Figure 80: Average Monthly Snow Data (Normal Snowfall 1991-2020) – Annual 21.8”

Month	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
Inches	6.7”	6.1”	3.1”	0.3”	0.0”	0.0”	0.0”	0.0”	0.0”	0.1”	1.2”	4.3”

The Springfield area can expect about 18 days with snowfall per winter with the largest amount coming in January and February (see Figure 81). Of the ten largest snowstorms in Springfield between 1881 and 2022, 40 percent of the storms occurred in February, 20 percent occurred in December or January, and 10 percent occurred in March or January and February (see Figure 82).

Figure 81: Snow Data for Springfield (1881-2022)

Amount (in.)	0.1”-1”	1”-2”	2”-4”	4”-6”	6”	TOTAL
Frequency	12 days per year	3 days per year	2 days per year	1 day per year	Once every 2 years	About 18 days per year

Figure 82: 10 Biggest Snowstorms (24 HR) (1881-2022)

Date	Mar. 24-25, 2013	Feb. 28, 1900	Jan. 1-2, 1999	Jan. 30-31, 1914	Jan. 31-Feb. 1, 2008	Feb. 12-13, 2007	Dec. 19, 1973	Feb. 12, 1894
Amount	17.4”	15.0”	13.3”	12.6”	11.3”	11”	10.9”	10.7”

PROFILE

The locations affected by winter storms.

Winter storms generally occur throughout Central Illinois during any single event and the entire County is affected.

The extent of previous occurrences of winter storms in Sangamon County.

Figure 83 presents data on winter storms in Sangamon County over the 26 years from January 1, 1996, to May 31, 2022. Sixteen of these 26 years had more than one event. In this 26-year period, the two winters with the greatest number of distinct winter weather events (five) were in 2009-2010 and 2013-2014.

The amount of snow that falls can vary throughout the county for any one winter storm event (see Figure 83). Of the snowstorms cited, the amount of snow ranged from 1” to 18”. Along with the snow, heavy winds can create whiteout conditions and drifting. Wind speeds of between 20 and 50 mph have been recorded during snowstorms in Sangamon County. Sixteen of these storms included ice or freezing rain.

Previous occurrences of winter storms in Sangamon County.

Winter storms create treacherous conditions for travel and dangerous situations when power outages also occur. Figure 83 shows data on winter storms in Sangamon County. As the NCDC Storm Events database uses January 1, 1996, as the first date for winter weather events, they are reported from January 1, 1996, to May 31, 2022. Using methods described in the previously cited National Weather Service Instruction from 2021, the four deaths shown in the following table were attributed to Sangamon County. Two were exposed to the elements, one was a vehicular accident, and one was from a heart attack while shoveling snow. The 2008 plan and the 2015 plan update showed 11 people died and 47 people suffered injuries from winter storms in the multiple county Central Illinois area. However, this analysis was completed using local newspaper articles as records, which were not readily available for this plan update.

Figure 83: Winter Storm Events in Sangamon County from January 1, 1996 – May 31, 2022

Winter Season	Type	Date	Time Range	Deaths	Injuries	Property Damage	Extent
1995-1996	Winter Storm	1/4/1996	3:00 AM - 7:00 PM	-	-	\$ -	2-7" snow
	Winter Storm	1/18/1996 - 1/19/1996	10:00 AM - 6:00 AM	-	-	\$ -	Rain changed to ice then snow, 25-35 mph winds, wind chill -40°
	Cold/Wind Chill	2/2/1996 - 2/4/1996	12:00 AM - 11:59 PM	1	-	\$ -	Low temperatures
1996-1997	Heavy Snow	1/8/1997 - 1/9/1997	9:00 PM - 1:00 PM	-	3	\$ -	3-11" snow
	Winter Storm	1/15/1997 - 1/17/1997	3:00 AM - 4:00 AM	1	-	\$ -	4-6" snow, 20-30 mph winds, blowing snow, wind chill -40°
	Winter Storm	1/24/1997	7:00 AM - 4:00 PM	-	-	\$ -	Mix rain, freezing rain, sleet, and snow, 2" snow, 0.5" ice
	Winter Storm	1/26/1997 - 1/27/1997	5:00 AM - 9:00 PM	-	3	\$ -	2-9" snow
1997-1998	Heavy Snow	12/9/1997 - 12/10/1997	3:00 PM - 2:00 AM	-	-	\$ -	5" snow
	Heavy Snow	12/30/1997	8:00 AM - 4:00 PM	-	-	\$ -	3-6" snow
	Winter Storm	1/14/1998	6:00 AM - 10:00 PM	-	-	\$ -	Freezing rain, sleet, and snow
	Winter Storm	3/8/1998 - 3/9/1998	10:00 PM - 10:00 PM	-	-	\$ -	Freezing rain and snow, 2-6" snow, 50 mph winds, blowing snow
1998-1999	Heavy Snow	1/1/1999 - 1/3/1999	12:00 PM - 6:00 PM	-	-	\$ -	6-14" snow, wind chill, blowing snow
	Cold/Wind Chill	1/5/1999	5:00 AM - 8:00 AM	-	-	\$ -	Low temperatures
	Heavy Snow	3/8/1999 - 3/9/1999	12:00 PM - 12:00 PM	-	-	\$ -	6.3" snow, light freezing rain
1999-2000	Heavy Snow	3/11/2000	4:00 PM - 12:00 PM	-	-	\$ -	6-8" snow, blowing and drifting snow
2001-2002	Heavy Snow	2/26/2002	1:00 AM - 4:00 PM	-	-	\$ -	5.5-7" snow, 15-40 mph wind, blowing and drifting snow

	Winter Storm	3/25/2002 - 3/26/2002	9:00 PM - 9:00 AM	-	-	\$ -	0.25-0.5" ice, freezing rain changed to sleet then snow, 4-7" snow, blowing and drifting snow
2002-2003	Winter Storm	2/15/2003 - 2/16/2003	4:00 AM - 3:00 AM	-	-	\$ -	4-8" snow, 0.25" ice, 30-50 mph wind, blowing and drifting snow
2004-2005	Winter Storm	11/24/2004	3:00 PM - 6:00 PM	-	4	\$ -	4-6" snow, 20-50 mph wind, blowing and drifting snow
2005-2006	Blizzard	3/21/2006	4:30 AM - 10:00 AM	-	-	\$ -	6-10" snow, blizzard conditions 45 mph wind
2006-2007	Winter Storm	11/30/2006 - 12/1/2006	9:00 AM - 12:00 PM	-	-	\$4,000,000	0.25-1.5" ice, 0.5-2.2" sleet, 3-8" snow
	Ice Storm	1/12/2007 - 1/13/2007	7:30 PM - 10:00 AM	-	-	\$ -	Freezing rain, 0.25-0.5" ice
	Blizzard	2/12/2007 - 2/13/2007	10:00 PM - 10:00 PM	-	-	\$ -	9-15" snow, blizzard conditions 35-45 mph wind
2007-2008	Ice Storm	12/8/2007 - 12/9/2007	12:00 PM - 1:00 PM	-	-	\$ -	Freezing rain, 0.3-0.4" ice
	Heavy Snow	12/15/2007 - 12/16/2007	3:00 AM - 2:30 AM	-	-	\$ -	6-9" snow
	Heavy Snow	1/31/2008 - 2/1/2008	1:00 PM - 9:30 AM	-	-	\$ -	9-12.9" snow
	Sleet	2/3/2008	4:30 PM - 6:00 PM	-	-	\$ -	0.5" of sleet in Springfield
2008-2009	Winter Weather	12/23/2008	12:00 AM - 12:00 PM	-	4	\$ -	Snow, sleet, and freezing rain
	Winter Weather	1/25/2009	12:00 AM - 11:59 PM	-	2	\$ -	1-2" snow
	Winter Weather	3/29/2009	12:00 AM - 6:00 AM	-	-	\$ -	5.8" snow
2009-2010	Winter Weather	12/19/2009	12:00 AM - 12:00 PM	1	-	\$ -	1" snow
	Winter Weather	12/25/2009 - 12/27/2009	6:00 PM - 6:00 PM	-	-	\$ -	3-5" snow
	Winter Weather	1/6/2010 - 1/7/2010	8:00 PM - 12:00 PM	-	-	\$ -	5-7" snow, blowing and drifting snow

	Winter Weather	1/20/2010 - 1/21/2010	7:00 AM - 5:00 AM	-	2	\$ -	Freezing rain, 0.1-0.25" ice
	Winter Weather	2/8/2010 - 2/9/2010	1:00 PM - 10:00 AM	-	-	\$ -	3-5" snow
2010-2011	Winter Weather	12/12/2010 - 12/13/2010	3:00 AM - 3:00 PM	-	-	\$ -	2-4" snow, 50 mph wind, below 0° wind chill
	Winter Weather	1/20/2011	4:30 AM - 3:00 PM	-	-	\$ -	3-4" snow
	Blizzard	2/1/2011 - 2/2/2011	9:30 AM - 11:00 AM	1	-	\$350,000	9-15" snow, 40-50 mph wind, blizzard conditions
2011-2012	Winter Weather	1/12/2012 - 1/13/2012	3:00 AM - 9:00 AM	-	-	\$ -	2-3" snow
2012-2013	Blizzard	12/20/2012	1:30 PM - 11:30 PM	-	-	\$ -	1" snow, > 50 mph wind
	Winter Storm	2/21/2013 - 2/22/2013	2:30 PM - 2:30 AM	-	-	\$ -	5-6" snow, <0.25" ice
	Heavy Snow	3/24/2013	2:00 AM - 10:30 PM	-	-	\$ -	12-18" snow
2013-2014	Winter Weather	12/13/2013 - 12/14/2013	5:00 PM - 12:00 PM	-	-	\$ -	5-7" snow
	Winter Weather	12/21/2013 - 12/22/2013	8:00 PM - 2:00 AM	-	-	\$ -	0.1-0.25" freezing rain
	Heavy Snow	1/5/2014	9:00 AM - 11:00 PM	-	-	\$ -	6-10" snow, blowing and drifting snow
	Extreme Cold/Wind Chill	1/6/2014 - 1/7/2014	12:00 AM - 12:00 PM	-	-	\$ -	Low temperatures (-10 to -20°), dangerous wind chills -35 to -45°
	Heavy Snow	2/4/2014 - 2/5/2014	7:00 PM - 12:00 PM	-	-	\$ -	6-8" snow
2014-2015	Heavy Snow	2/20/2015 - 2/21/2015	8:30 PM - 7:30 AM	-	-	\$ -	6-12" snow
	Winter Weather	2/28/2015 - 3/1/2015	2:40 PM - 11:45 AM	-	-	\$ -	5-9" snow
2016-2017	Winter Weather	12/16/2016 - 12/17/2016	2:00 PM - 4:00 PM	-	-	\$ -	Freezing drizzle, 0.1" ice
2018-2019	Heavy Snow	1/11/2019 - 1/13/2019	8:00 PM - 3:30 AM	-	-	\$ -	10-13" snow
2019-2020	Winter Weather	12/15/2019 - 12/17/2019	2:30 PM - 12:00 AM	-	-	\$ -	4-6" snow
2020-2021	Winter Weather	1/1/2021	6:00 AM - 1:00 PM	-	-	\$ -	0.1-0.2" ice

	Heavy Snow	2/15/2021 - 2/16/2021	12:30 AM - 2:00 AM	-	-	\$ -	6-10" snow
2021- 2022	Winter Storm	2/2/2022 - 2/3/2022	12:00 AM - 3:00 PM	-	-	\$ -	8-15" snow, blowing and drifting snow
	Heavy Snow	2/17/2022	11:00 AM - 7:00 PM	-	-	\$ -	5-7" snow, blowing and drifting snow
			TOTALS	4	18	\$4,350,000	

In March 1978 an ice storm hit Sangamon County that was accompanied by strong winds bringing the area to a halt for many days. Just venturing outdoors was dangerous with power lines and trees falling due to the weight of the ice. The utility line damage was so overwhelming that restoring power took two weeks.

Three additional winter storms of significance occurred in Sangamon County since the adoption of the Natural Hazard Mitigation Plan. Other recent events of significance include the February 1-2, 2011, snowstorm that dumped approximately 15 inches of snow on portions of Sangamon County. This strong storm occurred over two days and caused many problems statewide, not just in Sangamon County. In addition, the largest snowfall in one 24-hour period occurred during the March 24-25, 2013, snowstorm. This snow event included approximately 17.4 inches of snow, as indicated by Figure 82. On February 2-3, 2022, Springfield Capital Airport reported 12 inches of snow with 8-15 inches of snow occurring throughout Sangamon County. Figure 84 shows the snowfall amounts in the Central Illinois multi-county region from this snowfall event.

Probability of future events.

Winter storms are expected in Sangamon County. During the 26 years from 1996-2022, 55 winter storms occurred during 23 winter seasons. (There were no winter storms recorded during three winter seasons.) This indicates an 88 percent probability that in any given year at least one winter storm will occur. During 16 winter seasons, more than one winter storm event occurred. This indicates a 61 percent probability that in any given year more than one winter storm will hit Sangamon County.

ASSESSING VULNERABILITY

Winter storms are very disruptive to a community. Roads can become impassable or extremely dangerous. Buses, trains, and airplanes can be canceled or delayed. With transportation networks disrupted, emergency response can become delayed or non-existent, mail is not delivered, and shipments of food and other consumer items can be delayed. Schools close, businesses close, and some (or all) government services are not available.

There is a toll that can be taken on people related to treacherous road conditions, snow shoveling exertion, and extremely low temperatures. About 70 percent of injuries caused by winter storms are the result of vehicle accidents while 25 percent of injuries occur to people caught out in the storm. Of the 11 deaths that occurred in the larger Central Illinois region during 1995-2014 nine, or 82 percent, were due to vehicle accidents, one was due to exposure, and one occurred when a garage overhang collapsed.

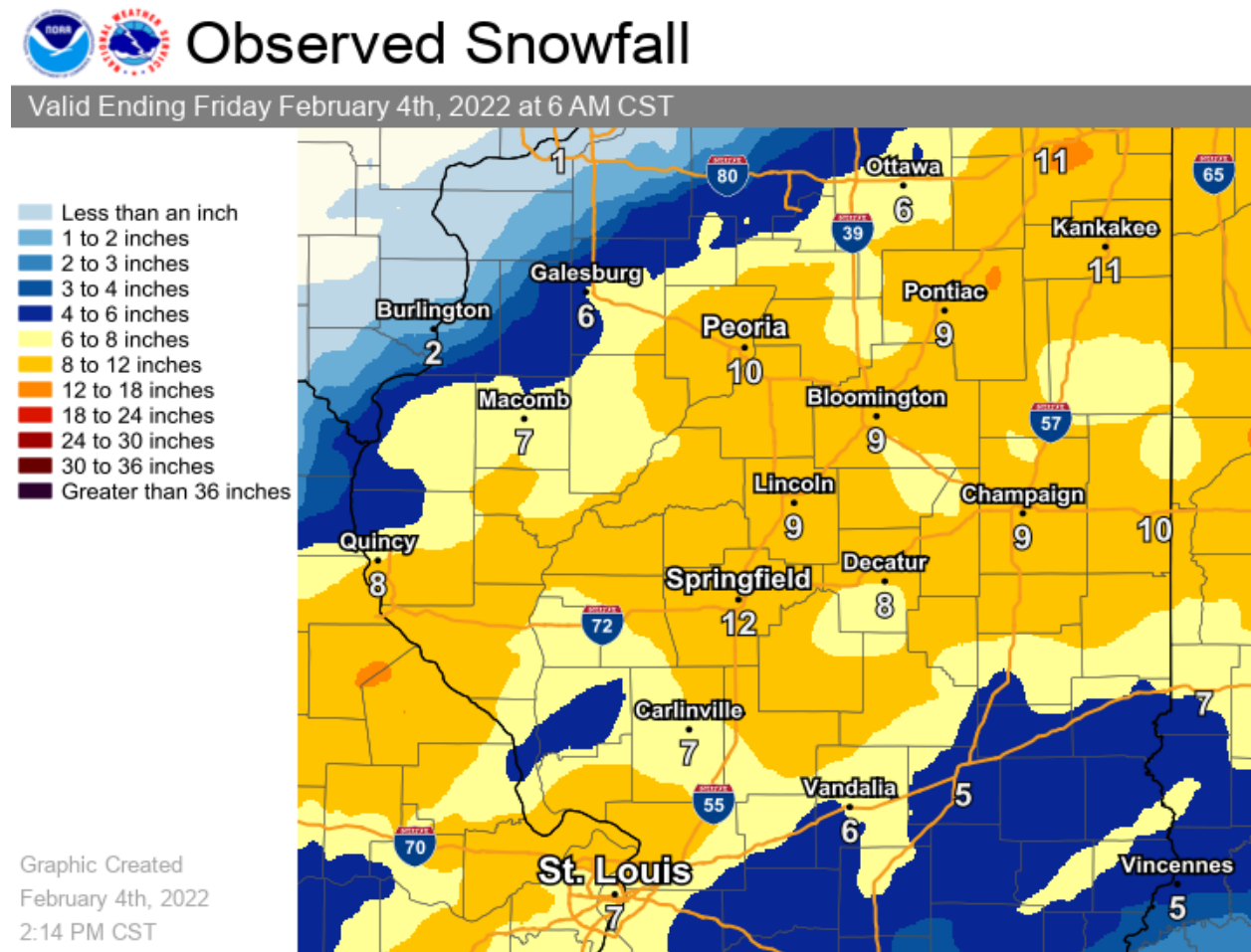
Generally, buildings are not damaged on a large scale during a winter storm although a heavy snow could cause roof damage and the accumulation of ice in gutters can cause building damage. The roof snow load for structures in Sangamon County is 30 pounds per square foot. Any building constructed in a community that has adopted building codes must meet this standard.

There is a large cost to road departments for the removal of snow. For the storm of February 2-3, 2022, which had approximately 12 inches of snow at the Springfield airport and is shown in Figure 84, are the Sangamon County Highway Department spent \$83,325 for snow removal. In February 2022 when two large snow events occurred, the City of Springfield spent \$1,350,000 on snow removal and Sangamon County spent \$194,425 on snow removal. The winter storm of February 1-2, 2011 produced between 9 and 15 inches of snow, as shown in Figure 85. The Sangamon County Highway Department expended \$90,534 for snow removal for that winter storm alone while the City of Springfield expended over \$276,072. The Sangamon County Highway Department spent \$126,000 to remove the eight inches of snow that fell during the December 15, 2007 snowstorm.

The damage caused to power and communication lines can be extensive with the ability to bring them back on line delayed because of the adverse conditions. The cost of repair can be high and the consequences can range from being inconvenient to life-threatening.

Presidential Disaster Declaration 1681 included Sangamon County and was issued on February 9, 2007 after the massive snow storm that hit a large area of central Illinois. Area snowfall impacts from this storm are indicated in Figure 86.

Figure 84: Storm Total Snowfall, February 1-4, 2022



Source: National Weather Service

Figure 85: Storm Total Snowfall, February 1- 2, 2011

National Weather Service - Lincoln, IL
Groundhog Day Blizzard 2011 - Official Storm Total Snowfall (2/1-2/2)

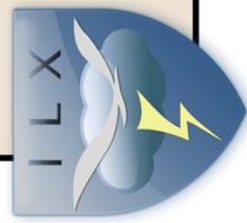
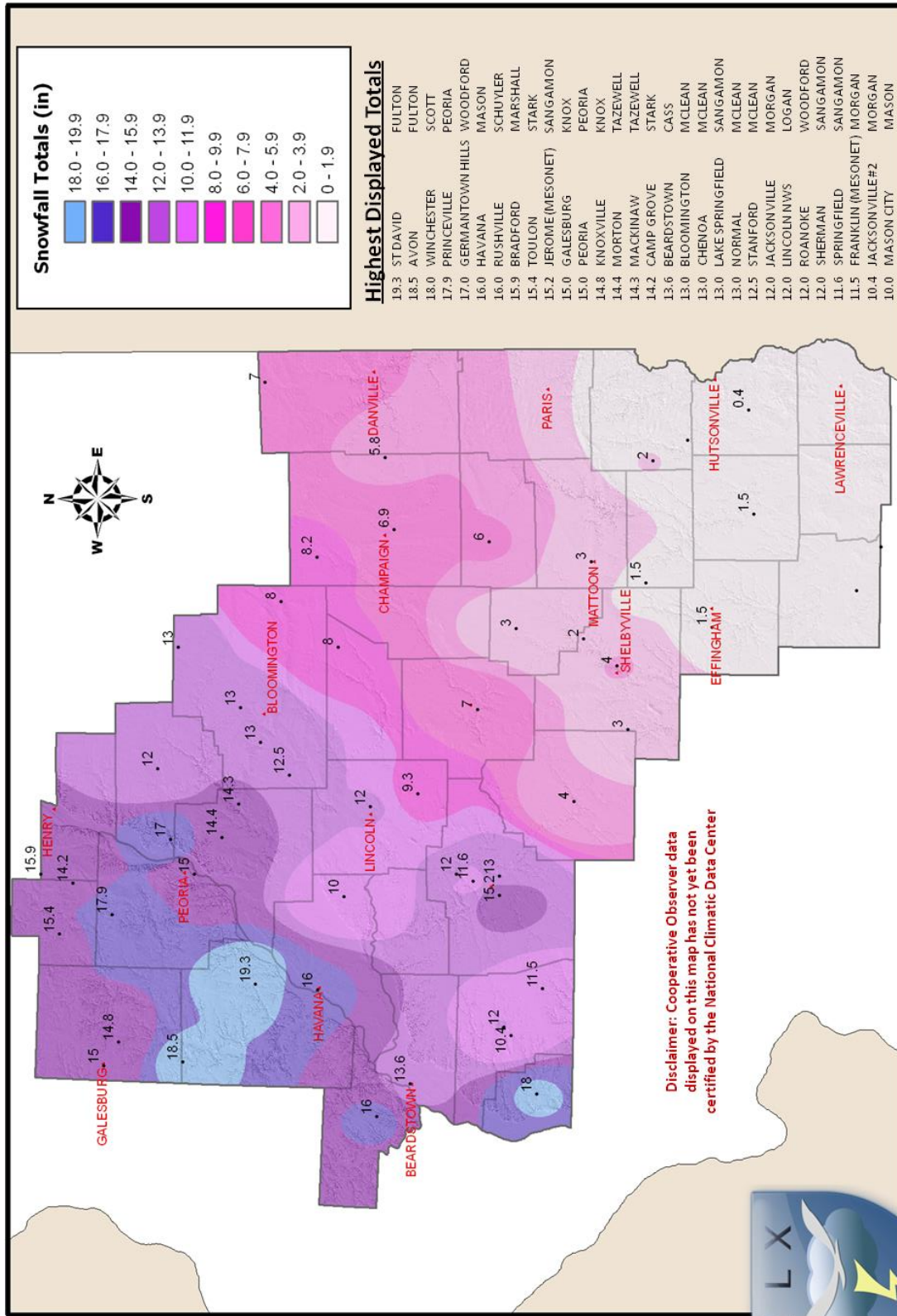
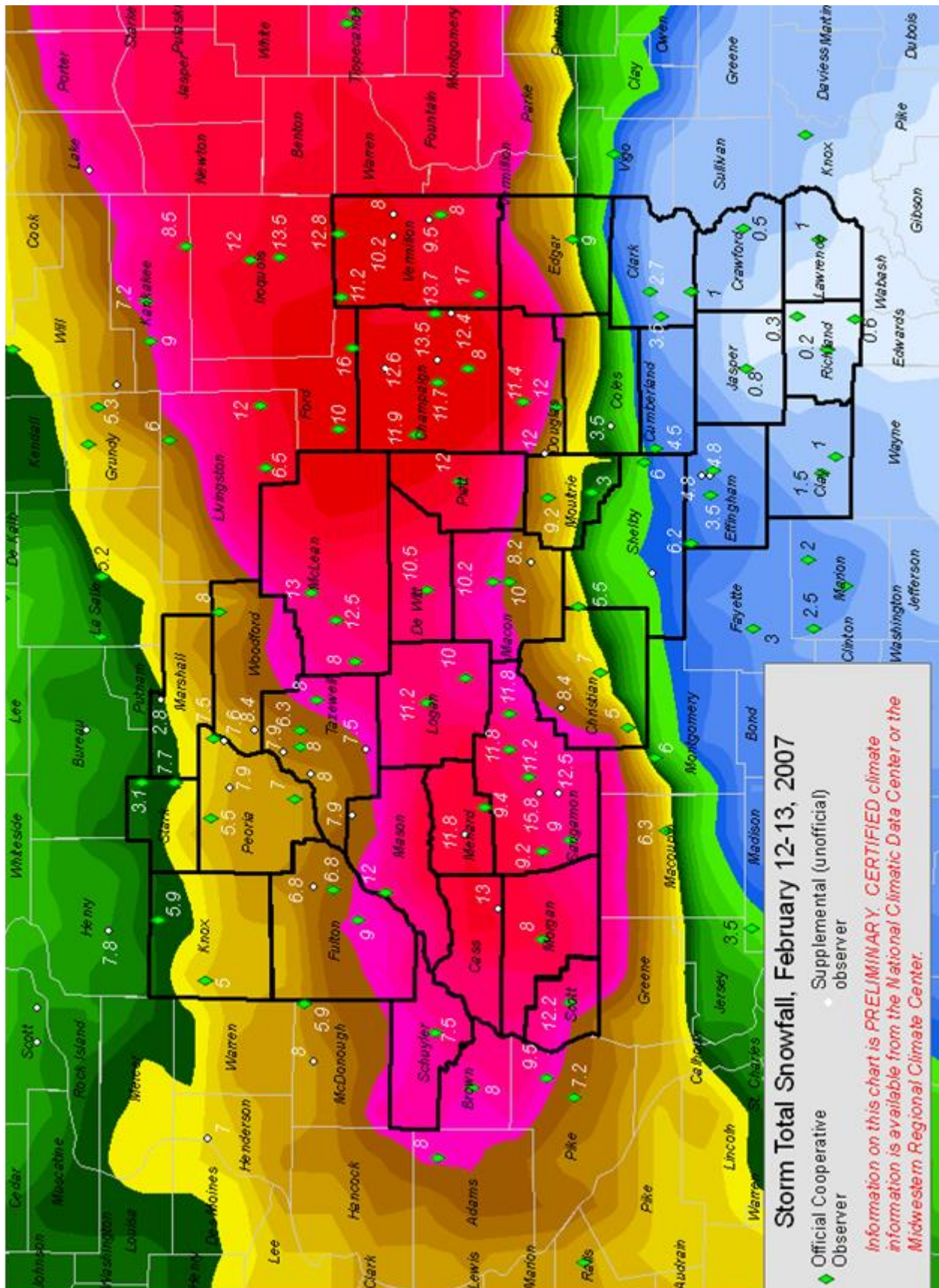


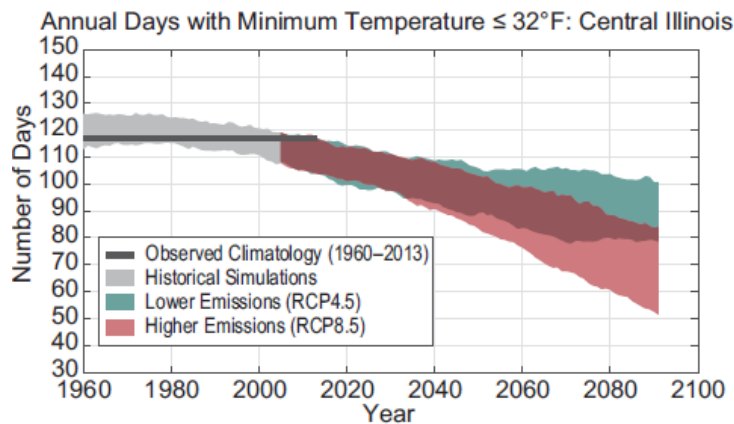
Figure 86: Storm Total Snowfall, February 12–13, 2007



CLIMATE CHANGE

The climate change effects on winter weather may be mixed with winters potentially becoming warmer and less snowy. According to the Illinois Climate Assessment, the number of nighttime temperatures below the 32-degree Fahrenheit freezing mark may decline in the future. The projected declines are from 85 nights per year with a low below freezing to 80 to 100 days in a lower emissions scenario (RCP 4.5) and 50 to 85 days in a higher emissions scenario (RCP 8.5). Figure 87 shows this decline for Central Illinois. The red shading indicates a higher emissions scenario (RCP 8.5) detailed in the report and the teal shading indicates a lower emissions scenario (RCP 4.5) that is also detailed in the report. Gray is historical simulations from 1960-2005 while the black line indicates observed climatological values averaged for the period 1960-2013.

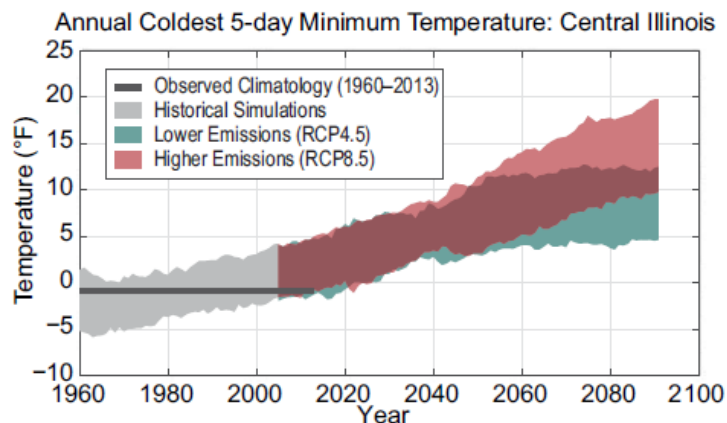
Figure 87: Annual Days with Min. Temp. Less than or Equal to 32 Degrees Fahrenheit, Central Illinois, 1960-2100



Source: Illinois Climate Assessment, p. 47

Likewise, the annual five-day minimum temperatures will increase for Central Illinois from -2 degrees Fahrenheit to between 5 and 12 degrees Fahrenheit under a lower emissions scenario (RCP 4.5) and from -2 degrees Fahrenheit to between 10 and 20 degrees Fahrenheit under a higher emissions scenario (RCP 8.5) to the year 2100. This is shown in Figure 88. Again, the red shading indicates a higher emissions scenario detailed in the report and the teal shading indicates a lower emissions scenario (RCP 4.5) that is also detailed in the report. Gray is historical simulations from 1960-2005 while the black line indicates observed climatological values averaged for the period 1960-2013.

Figure 88: Annual Coldest 5-Day Minimum Temperatures, Central Illinois, 1960-2100



Source: Illinois Climate Assessment, p. 45

Snowfall may migrate northward as winter temperatures warm according to the Illinois Climate Assessment. This loss of snow cover will be most pronounced at the beginning and end of the season in November, March, and April. Declines in snow cover may occur in the second half of the 21st century with Illinois potentially being snow free by 2100 according to the Illinois Climate Assessment (p. 31).

VULNERABILITY OF FUTURE BUILDINGS

Dam failure: the dam failure inundation areas are generally coterminous with the floodplain areas downstream. Future structures will be subject to the building protection requirements of local flood ordinances.

Drought: buildings are not generally affected by drought.

Earthquakes: there is no way to pinpoint where earthquake damage could occur and the probability of occurrence is low. The vulnerability of future buildings to earthquake damage is similar to that of existing buildings.

Extreme heat: buildings are not generally affected by extreme heat.

Floods: all communities in Sangamon County that experience flooding have flood ordinances that require the lowest floor of all new buildings to be elevated to at least one foot above the base flood elevation or any non-residential building to be flood-proofed below the base flood elevation. Floodplain ordinances are strictly enforced by the applicable local jurisdictions.

Mine subsidence: much of the plan area has been undermined for coal. There is no pattern to the occurrence of mine subsidence so specific vulnerability cannot be pinpointed.

Pandemic: The entire County is vulnerable to pandemics. Pandemics generally do not affect buildings and infrastructure.

Severe storms: the entire County is vulnerable to severe storms. Those communities that have or will adopt building codes will lessen the vulnerability for new structures.

Tornadoes: the entire County is vulnerable to tornadoes. Those communities that have or will adopt building codes will lessen the vulnerability for new structures.

Wildfire: The entire County is vulnerable to wildfires. There is no pattern to the occurrence of wildfires so the specific vulnerability cannot be pinpointed.

Winter storms: the entire County is vulnerable to winter storms. Those communities that have or will adopt building codes will lessen the vulnerability for new structure.

Section IV- Mitigation Strategy

2008 Development of Hazard Mitigation Goal, Objectives, and Mitigation Actions

The 2008 Task Force formulated goals and objectives for the plan through the use of a small group brainstorming session. The group and the public members in attendance broke into six small groups led by Planning Commission staff. To generate ideas, participants were asked to write down the many ways they would end the sentence “During a natural hazard event a prepared community is a place where.....” Small group members grouped the responses through discussion and consensus according to the common themes. Goal statements were created for each grouping.

The six small groups then reconvened and reported to the full Task Force the results of the group exercise. Four common themes were expressed and identified to serve as goals. Following the meeting, Planning Commission staff refined the goals and developed objectives based on the discussion from the meeting. The goals and objectives were approved by the Task Force at the following meeting.

Following adoption of the goals and objectives, the 2008 Task Force members and others from the general public who were in attendance spent ten minutes writing ideas down on post-it notes for mitigation projects. Everyone then placed their ideas on large sheets of paper hanging on the walls designated with a specific objective under one of the goals. Those in attendance then broke out into four groups (one group per goal) led by Planning Commission staff to discuss the relationship between the projects and the goals and objectives.

Following the meeting, Planning Commission Staff created a project list by goal and objective showing all the suggestions submitted. The list was then sent to all Task Force members. It was suggested to the community representatives that the list be used as a basis for discussion with community leaders on projects that would be appropriate for their village or city.

2015 Task Force Review of Hazard Mitigation Goals and Objectives

The 2015 Task Force broke into groups to review the 2008 goals and objectives. The groups were asked to evaluate each goal and objective to determine if they were still applicable to the hazards identified in Sangamon County. Groups were also asked to identify any additional goals and/or objectives to be considered by the Task Force.

Following the small group discussions, the Task Force reconvened to discuss potential changes. After a thorough discussion, the Task Force voted to adopt changes to the 2008 Goals and Objectives. The 2015 Plan Update Goals & Objectives are listed within the goals and objectives listed below. They are not called out separately from the 2022 amendments.

2022 Plan Update of Goals, Objectives, and Mitigation Strategies

The 2022 Task Force broke into groups to review the 2015 plan update goals and objectives. The groups were asked to evaluate each goal and objective to determine whether it was still adequate or whether any additions, modifications, or deletions were necessary. There were no members of the public aside from Task Force members who were at the meetings where goals and objectives were discussed and decided.

Following the small group discussions, the Task Force discussed potential changes. The Task Force discussed climate change and the consensus was to add climate change to two of the goals and to the applicable parts of the Risk Assessment part of the plan in Section III. After a thorough discussion of all the goals and objectives, the Task Force voted to adopt several changes to the 2015 goals and objectives. The 2022 plan update goals

and objectives are listed below with the modifications and additions from the 2015 plan update *highlighted in red*. The list below also includes the active 2022 mitigation action items by goal and objective.

Goal # 1: Maintain and improve communication and cooperation between Sangamon County residents and public, private, and not-for-profit entities.

Objective 1.a. Establish adequate warning systems to alert the community to impending natural hazard events.

- Provide Additional Storm Sirens – Auburn
- Signs to warn of storm hazards – Auburn
- Lightning signs at baseball, football fields and parks – Auburn
- Utilize Village website to post all hazards alerts, safety and preparedness information – Auburn
- Create email notifications to warn about natural hazards events – Auburn
- Use e-alert system to educate and alert the community to impending natural hazard events as well as to transfer information after the storm – Buffalo
- Installation of storm sirens – Curran
- Identify a community emergency alert system – Grandview
- Notify residents of availability of police building to be used as an emergency information center – Jerome
- Acquire and install one additional remote operated storm siren – Illiopolis
- Purchase two additional storm warning sirens – Mechanicsburg
- Upgrade, replace or purchase outdoor emergency alert sirens – Riverton
- Provide weather alert radios to businesses and critical facilities. Also provide weather radios to citizens that cannot afford them – Riverton
- Continue to encourage citizens and municipalities to sign up for and utilize the county mass notification system, SAM – Sangamon County
- Provide weather radios to citizens who can't afford them – Southern View

Objective 1.b. Provide a system to monitor developing natural hazard event situations.

- Develop protocol for more regular contact with citizen hazard spotters – Auburn
- Procurement of equipment for Emergency Operations Center to allow for seamless, multi-agency, multi-governmental coordination and communication during response and recovery operations – Chatham
- Increase participation in Sangamon County Alert System (SAM) – Riverton, Southern View
- Working to upgrade County Rural Fire Radio System – Sangamon County
- Monitor sensitive areas, then perform alternate analysis to address sewer capacity issues – Springfield

Objective 1.c. Establish a method of communicating with the community before/during and after a natural hazard event.

- Utilize Village website to post all hazards alerts, safety and preparedness information – Auburn
- Create email notifications to warn about natural hazards events – Auburn
- Create list of at-risk residents that need to be checked on during hazard event – Buffalo

- Development and Build of new multi-functional Municipal Building to house municipal offices, Police Department, Emergency Management Agency, Utilities Offices, and Emergency Operations Center – Chatham
- Procurement of equipment for Emergency Operations Center to allow for seamless, multi-agency, multi-governmental coordination and communication during response and recovery operations – Chatham
- Identify a community emergency alert system – Grandview
- Create a list of at-risk and elderly residents paired with advocates – Illiopolis
- Purchase additional radios for emergency responders – Mechanicsburg
- Improve communication technology issues between fire department and Sangamon County – Mechanicsburg
- Create a list of at-risk residents who need to be checked on during a hazard related event – Mechanicsburg
- Establish protocol for mobile command center to respond to natural hazard events – Mechanicsburg
- Educate public on County's Road Condition warning system – Sangamon County
- Continue to encourage citizens and municipalities to sign up for and utilize the county mass notification system, SAM – Sangamon County
- Supplement to civil defense siren system – Southern View
- Purchase computers for remote operations – Southern View
- Utilize newsletter/website/alert system/SAM to provide information on natural hazard events and situations – Williamsville

Objective 1.d. Coordinate response plans with all levels of public, private and not-for-profit entities.

- Development and Build of new multi-functional Municipal Building to house municipal offices, Police Department, Emergency Management Agency, Utilities Offices, and Emergency Operations Center – Chatham
- Procurement of equipment for Emergency Operations Center to allow for seamless, multi-agency, multi-governmental coordination and communication during response and recovery operations – Chatham
- Development and Establishment of Resource Management Program – Chatham
- Development of Evacuation Plan Template for Village – Chatham
- Develop Natural Hazard Response Plans for the Village of Grandview – Grandview
- Create community emergency resource listing – Illiopolis
- Establish protocol for mobile command center to respond to natural hazard events – Mechanicsburg
- Maintain current working response groups – Sangamon County
- Identify and develop an Evacuation Plan – Southern View
- Identify and develop an Emergency Resource Management Plan – Southern View

Objective 1.e. Establish public information/outreach programs in regards to natural hazard event situations.

- Utilize Village website to post all hazards alerts, safety and preparedness information – Auburn
- Create email notifications to warn about natural hazards events – Auburn

- Continuing Education Program for Village Employees and Village Residents of Hazard Mitigation Efforts – Chatham
- Educate citizens, local businesses and others regarding proper actions to take to mitigate and prepare for natural hazards – Grandview
- Produce educational materials to teach residents the importance of maintaining a free flowing culvert and drainage system – Leland Grove
- Produce educational materials to inform residents who own property in the floodplain about regulatory requirements and encourage those residents to maintain private bridges and culverts – Leland Grove
- Continue to encourage citizens and municipalities to sign up for and utilize the county mass notification system, SAM – Sangamon County

Goal # 2: Protect the lives, health, property, and safety of the people of Sangamon County and property from the impact and effects of natural hazards and climate change.

Objective 2.a. Identify location of storm shelters and cooling/warming centers for residents in need from natural hazard events and add new locations as needed.

- Construct new municipal center building able to withstand severe weather – Auburn
- Storm/tornado shelter to hold 100 people – Auburn
- Construct lightning and storm shelter for all parks – Auburn
- Develop agreements with churches and businesses with basements to be used as storm shelters – Auburn
- Provide central storm shelter: reinforce/upgrade Village Hall to survive storm disaster situations and be able to handle needs of citizens using building as shelter – Buffalo
- Provide alternate storm shelters utilizing the Buffalo Fire Station and Village Hall – Buffalo
- Establish warming/cooling stations at Village Hall, Tri-City Library – Buffalo
- Assessment of Facilities to act as Warming/Cooling centers during hazardous weather events – Chatham
- Assessment of Facilities for possible use as Community Storm Shelters – Chatham
- Development of Storm Shelter for Municipal Building to support Village Employees and ensure Continuity of Government – Chatham
- Construct new village hall with safe room – Curran
- Build storm/tornado shelter – Dawson
- Establish, install or identify storm shelters for residents – Grandview
- Construct two storm shelters with generators and potable water supply – Illiopolis
- Notify residents of availability of police building to be used as an emergency information center – Jerome
- Purchase backup generators for Village Hall and fire station – Mechanicsburg
- Emergency generator for high school emergency shelter – New Berlin
- Storm shelter – Pawnee
- Create storm shelter(s) or safe room(s) for use in severe weather – Riverton
- Establish warming and cooling centers in the Village – Riverton
- Safe room in new village hall – Sherman

- Design and construct a new public works and police department building to withstand severe weather – Southern View
- Emergency generator to provide a warming/cooling center at Municipal Building to help aid emergency operations – Southern View
- Build a new Village Hall with a Storm Room – Spaulding
- Establish, install or identify storm shelters for existing mobile home developments – Springfield
- Replace Community Center Roof – Williamsville

Objective 2.b. Educate residents on the steps to take to protect themselves and their property.

- Educate residents to protect themselves and property – Auburn
- Utilize Village website to post all hazards alerts, safety and preparedness information – Auburn
- Continue educational program in schools and for other citizens – Auburn
- Provide disaster preparedness materials to the residents of Buffalo – Buffalo
- Continuing Education Program for Village Employees and Village Residents of Hazard Mitigation Efforts – Chatham
- Distribute and educate community with brochures on all hazards – Dawson, Leland Grove, New Berlin, Pawnee, Sherman, Southern View, Sangamon County Water Reclamation District
- Educate residents who own property in the floodplain about regulatory requirements – Divernon
- Educate citizens, local businesses and others regarding proper actions to take to mitigate and prepare for natural hazards – Grandview
- Distribute mitigation information through Neighborhood Watch or through newsletter or Jerome website – Jerome
- Educate residents and local businesses on steps they can take to protect their lives and property in a natural hazard event – Illiopolis
- Produce educational materials to teach residents the importance of maintaining a free flowing culvert and drainage system – Leland Grove
- Produce educational materials to inform residents who own property in the floodplain about regulatory requirements and encourage those residents to maintain private bridges and culverts – Leland Grove
- Erect signage “Ballparks to be evacuated during periods of lightning” for baseball, football, soccer, tennis courts, basketball courts and parks – Riverton
- Complete and submit “Storm Ready Community” application to NWS – Riverton
- Educate residents to protect themselves and property from natural hazards – Riverton
- Prepare mine subsidence information materials – Sangamon County
- Danger tree mitigation – Southern View
- Create brochure specific to Southern View with information regarding preparation and recovery related to natural hazards – Southern View
- Educate citizens regarding proper actions to take to mitigate and prepare for natural hazards – Springfield

Objective 2.c. Educate local businesses on the steps to take to protect their employees, assets, and property.

- Continuing Education Program for Village Employees and Village Residents of Hazard Mitigation Efforts – Chatham

- Educate citizens, local businesses and others regarding proper actions to take to mitigate and prepare for natural hazards – Grandview

Objective 2.d. Identify the most vulnerable populations in the community.

- Collect names/addresses of elderly/special needs citizens for wellness checks and potential need for additional resources – Auburn
- Create list of at-risk residents that need to be checked on during hazard event – Buffalo
- Assessment of facilities that house the elderly, physically challenged, and/or mentally/medically challenged populations – Chatham
- Identify residents with special needs/concerns during hazardous weather events – Divernon
- Identify at-risk populations within the community and establish a list to create a plan to help vulnerable population – Grandview
- Create list of at-risk residents who need to be checked on during a hazard related event – Mechanicsburg
- Use GIS and the latest aerial photography to review and update inundation impact below the Lake Sangchris Dam – Sangamon County
- Identify residents with special needs – Sherman
- Implement GIS – Sherman
- Identify residents with special needs and coordinate with neighborhood watch lists to provide assistance in seeking shelter and during recovery – Southern View
- Identify at-risk populations within the community and establish a list – Springfield

Objective 2.e. Support volunteer mitigation efforts that allow residents/businesses/agencies to work together in neighborhoods and the community to assist those who are vulnerable.

- Develop plans and update drainage infrastructure/Develop a storm water master plan and regulations – Grandview
- Create a task force for residents/businesses/agencies to work together in the Village to assist those who are vulnerable – Pleasant Plains
- Create volunteer network for checking on citizens with disabilities during storm/inclement weather – Riverton
- Generator and/or transfer switches for critical facilities – Sherman
- Identify residents with special needs – Sherman
- Develop a storm water master plan and regulations – Springfield
- Perform recommended improvements from future storm water master plan – Springfield

Objective 2.f. Remove and/or limit placement of structures in the known paths of natural hazards such as flood, dam failure, and mine subsidence.

- Procurement of equipment for Emergency Operations Center to allow for seamless, multi-agency, multi-governmental coordination and communication during response and recovery operations – Chatham
- Build new Water Treatment plant outside of floodplain – Dawson
- Identify at-risk populations within the community and establish a list to create a plan to help vulnerable population – Grandview

- Develop plans and update drainage infrastructure/Develop a storm water master plan and regulations – Grandview
- Acquire flood prone or damaged properties – Riverton
- Acquire repetitively damaged or flood prone properties – Sangamon County, Springfield
- Backup water supply line to Villages – Sherman
- Perform recommended improvements from future storm water master plan – Springfield
- Develop a storm water master plan and regulations – Springfield
- Update Land Subdivision Ordinance and Comprehensive Plan – Springfield

Objective 2.g. Maximize immunity to natural hazards for critical facilities and services.

- Improve storm drainage in Western Acres – Auburn
- Improve storm drainage South of Jackson Street – Auburn
- Provide flood protection for sanitary lift station at Divernon Road – Auburn
- Grade and clean all storm water drainage ditches and culverts – Auburn
- Lining of sewer lines to stop ground water infiltration – Buffalo
- Bury power lines going to critical facilities – Chatham, Sherman
- Development and Build of new multi-functional Municipal Building to house municipal offices, Police Department, Emergency Management Agency, Utilities Offices, and Emergency Operations Center – Chatham
- Procurement of equipment for Emergency Operations Center to allow for seamless, multi-agency, multi-governmental coordination and communication during response and recovery operations – Chatham
- Develop electrical GIS system – Chatham
- Land procurement to allow for Strategic Positioning of Resources in support of the required/recommended evacuation due to risks associated with hazard/threat – Chatham
- Development of Collection Pond for environmental protection, property damage reduction, and reduced or eliminated infrastructure damage – Chatham
- Improve Drainage System to run-off from fields and reduce impacts of flash flooding due to heavy rainfall – Chatham
- Build new Water Treatment plant outside of floodplain – Dawson
- Build a dike to protect water plant from flooding – Dawson
- Improve Storm water drainage – Divernon
- Purchase backup generators for Village Hall and fire station – Mechanicsburg
- 36"-48" storm sewer from Horse Creek west to 10th Street – Pawnee
- Provide shatterproof glass at Village Hall – Riverton/Sherman
- Acquire backup generators for all critical Village infrastructure – Riverton
- Generator for critical facilities – Rochester
- Flood protection for southwest sewage pumping station – Rochester
- Lining of sewer manholes to stop groundwater infiltration – Rochester
- Add emergency sirens – Rochester
- Construct critical facilities – Rochester
- Generator at Public Works Garage – Rochester
- Clearing of North Park annex on Black Branch Creek – Rochester
- Provide safe rooms in new county facilities – Sangamon County
- Work with CWLP and Lake Sangchris Dam owner on dam safety, EAP – Rochester
- Backup water supply line to Villages – Sherman

- Clean out flood swale at critical facilities – Sherman
- Provide shatter proof glass liner at critical facilities – Sherman
- Update water supply system size and loops – Sherman
- Personal Protective Equipment - identify and purchase Personal Protective Equipment for hazard event – Southern View
- Storm Water drainage issues – identify issues and create an action plan for drainage relief in the Village – Southern View
- Identify Testing and Vaccination Sites –Southern View
- Develop a storm water master plan and regulations – Springfield
- Perform improvements from future storm water master plan – Springfield
- Improve local drainage areas prone to flooding – Springfield
- Improve facilities plan – Springfield
- Backup water supply to Villages – Williamsville
- Replace Community Center roof – Williamsville
- Repair leak in lake spillway – Williamsville
- Dangerous tree mitigation – Sangamon County Water Reclamation District
- Update Sugar Creek Plant to handle combined sewer overloads – Sangamon County Water Reclamation District
- Upgrade pump stations in collection system and add backup generators – Sangamon County Water Reclamation District
- Chlorine Cylinder Containment System Planning, Design and Construction – Sangamon County Water Reclamation District
- Spring Creek Plant Floodwall replacement to 500 Year level – Sangamon County Water Reclamation District

Goal # 3: Protect and enhance existing critical facilities and infrastructure and design new critical facilities and infrastructure to be resilient to the effects of natural hazards and climate change.

Objective 3.a. Assure all utilities are available for essential services.

- Bury power lines going to critical facilities – Chatham, Sherman
- Develop electrical GIS system – Chatham
- Development of Storm Shelter for Municipal Building to support Village Employees and ensure Continuity of Government – Chatham
- Build new Water Treatment plant outside of floodplain – Dawson
- Acquire a generator for water plant – Dawson
- Update water mains to ensure all are up to code and to reduce number of water main breaks – Grandview
- Install generator to the Village of Grandview’s main building that consists of the Police Department, Water Department and Maintenance Department – Grandview
- Update infrastructure to GIS – Illiopolis
- Purchase and install back-up generator for Village Hall – Illiopolis
- Purchase backup generator for municipal center – Jerome
- Purchase backup generators for Village Hall and fire station – Mechanicsburg
- Enhancement to Village’s Emergency Water Connection with Curran-Gardner – Pleasant Plains
- Bury power lines to critical infrastructure and Village facilities – Riverton

- Upgrade or replace gas, water and sewer mains as needed to improve resiliency and reduce the effects of damage during disaster – Riverton
- Provide flood protection for main lift station – Riverton
- Acquire emergency pumps for storm, sewer and flood pumping – Riverton
- Develop and utilize GIS system for all utilities – Riverton
- Loop water, gas, and electric mains to connect North & South side of I-72 near Overpass Road – Riverton
- Work with CWLP and Lake Sangchris Dam owner on dam safety, EAP – Sangamon County
- Backup water supply line to Villages – Sherman
- Generator at new village hall – Sherman
- Upgrade water supply system size and loops – Sherman
- Dangerous tree mitigation (trimming) – Sherman
- Wildfire vegetation mitigation – Sherman
- Ensure Utilities are available for essential services – Southern View
- Obtain back-up generator at Village Hall – Spaulding
- Install generator for Public Works facilities – Springfield
- Backup water supply to Villages – Williamsville
- Replace Community Center Roof – Williamsville
- Sugar Creek Plant Backup Generators – SCWRD

Objective 3.b. Assure potable water is available in case of drought.

- Develop Emergency Action Plan in the event of a loss of the City water supply – Grandview
- Connect Griffith Creek Subdivision to city water by installing 1.2 miles of 6" water line – Mechanicsburg
- Improve water supply from Auburn to Pawnee (16" water pipe +/-) – Pawnee
- 10" water main loop around square to 8th Street – Pawnee
- Water main encompassing Sherman, 4th Street, 5th Street and Highway 104 – Pawnee
- Backup water supply line to Villages – Sherman
- Ensure Potable water is available – Southern View
- Pursue supplemental water supply – Springfield
- Backup water supply to Villages – Williamsville

Objective 3.c. Build and maintain roads and bridges to provide safe passage of vehicles.

- Improve drainage and retrofit storm sewer – Buffalo, Curran
- Improve Storm water drainage – Divernon
- Create a plan to update and maintain roads – Grandview
- Improve drainage in areas that are flood prone on the northwest side of town and in Griffith Creek Subdivision – Mechanicsburg
- Install storm sewer from 10th Street to Horse Creek – Pawnee
- Relocate sanitary lift station on Hwy 104 East that is located in the floodplain – Pawnee
- Southwest sewer project – repair and maintenance – Pleasant Plains
- Increase installation of snow fences along problem stretches of road – Sangamon County
- Clean out silted village storm water drainage ditches, culverts and ponds – Sherman

- Clean out flood swale at critical facilities – Sherman
- Maintain roads - in and out of the Village to ensure roads are accessible for first responders in the event of a hazard – Southern View
- Develop a storm water master plan and regulations – Springfield
- Perform recommended improvements from future storm water master plan – Springfield
- Implement facilities plan – Springfield
- Improve local drainage areas prone to flooding – Springfield
- Update Land Subdivision Ordinance and Comprehensive Plan – Springfield

Objective 3.d. Establish an inspection and maintenance program that monitors the condition of infrastructure.

- Grade and clean all storm water drainage ditches and culverts - Auburn
- Monitor condition of culverts – Buffalo, Rochester
- Insist that Ameren does better maintenance work on trees close to power lines – Buffalo
- Trim trees of excessive height and remove dead material – Curran
- Install water level gauge near water plant for more accurate readings – Dawson
- Update water mains to ensure all are up to code and to reduce number of water main breaks – Grandview
- Develop plans and update drainage infrastructure/ Develop a storm water master plan and regulations – Grandview
- Create a plan to update and maintain roads – Grandview
- Develop a maintenance and inspection plan rating public infrastructure – Grandview
- Improve storm drains village-wide – Illiopolis
- Better drainage by keeping culverts clean – Jerome
- Maintain Jacksonville branch by dredging, trimming trees, removing brush, and cleaning culverts and coordinate activities with Jerome and Springfield – Leland Grove
- Maintain and improve the Town & Country storm water drainage system between MacArthur Blvd. and Jacksonville Branch and coordinate activities with Jerome and Springfield – Leland Grove
- Deepen, grade and clean all storm water drainage ditches and culverts and coordinate all activities with Jerome and Springfield – Leland Grove
- Improve drainage areas that are flood prone on the northwest side of town and the Griffith Creek Subdivision – Mechanicsburg
- Establish an inspection and maintenance program that monitors the condition of infrastructure – Pleasant Plains
- Continue ongoing program of tree trimming near electric lines and maintaining ROW – Riverton
- Drainage improvements in ditches and culverts throughout Village – Riverton
- Clean out and maintain creek that runs through town to ensure proper drainage and to reduce chance of flooding – Riverton
- Clean and repair other storm sewers and culverts – Rochester
- Create volunteer network to monitor condition of road culverts (modified to communicate with Township Commissioners) – Sangamon County
- Work with CWLP and Lake Sangchris Dam owner on dam safety, EAP – Sangamon County

- Implement GIS – Sherman
- Develop a storm water master plan and regulations – Springfield
- Perform recommended improvements from future storm water master plan – Springfield
- Continue tree trimming efforts around power lines – Springfield
- Develop a maintenance and inspection plan rating public infrastructure – Springfield
- Construct storm water drainage system – Williamsville

Goal # 4: Incorporate natural hazard mitigation into community plans and regulations.

Objective 4.a. Adopt regulations that protect buildings (such as building codes).

- Update ordinance to adopt current building codes – Buffalo
- Assess Local Building Codes and update as needed – Divernon
- Develop plans and update drainage infrastructure/Develop a storm water master plan and regulations – Grandview
- Promote the adoption of International Building Codes in Sangamon County communities and provide opportunity to enter into an inter-governmental agreement with the County Building Dept. for enforcement – Sangamon County
- Assess local regulations (building codes, zoning ordinances, subdivision ordinances, public health codes, etc.) to determine how they can better address the impacts of Natural Hazards – Sherman
- Dangerous tree mitigation (trimming) – Sherman
- Wildfire vegetation mitigation – Sherman
- Develop a storm water master plan and regulations – Springfield
- Perform recommended improvements from future storm water master plan – Springfield
- Adopt Building Codes to ensure safe structures – Williamsville

Objective 4.b. Assure flood ordinance meets or exceeds minimum requirements for participation in the National Flood Insurance Program.

- Adopt Floodplain Ordinance – Mechanicsburg
- Shoot elevations of buildings in the FEMA floodplain – Sangamon County
- Continue participation in the Community Rating System – Sangamon County
- Provide information to NFIP communities about the CRS program – Sangamon County
- Participate in the Community Rating System – Springfield

Objective 4.c. Assess local regulations (building codes, zoning ordinances, subdivision ordinances, public health codes, etc.) to determine how they can better address the impacts of natural hazards.

- Convene county-wide Task Force to develop storm water, drainage and erosion control practices – Sangamon County
- Adopt storm water resolution – Sangamon County
- Upgrade building codes – Southern View
- Participate in the Community Rating System – Springfield
- Assess local regulations to determine how they can better address the impacts of natural hazards – Williamsville
- Update sewer ordinance – Sangamon County Water Reclamation District

Objective 4.d. Consider natural hazards when updating/creating plans for the community.

- Develop plans and update drainage infrastructure/Develop a storm water master plan and regulations – Grandview
- Create plan to update and maintain roads – Grandview
- Install generator to the Village of Grandview’s main building that consists of the Police Department, Water Department and Maintenance Department – Grandview
- Include natural hazards mitigation information in future changes and update to county comprehensive plan – Sangamon County
- Implement GIS – Sherman
- Identify debris and disposal of vegetation on Railroad Property – Southern View
- Farm field mitigation – identify and create a plan for potential issues and remedies to prevent wildfire and severe storm hazards – Southern View
- Update and Evaluate the Natural Hazards Mitigation Projects – Southern View
- Develop storm water master plan and regulations – Springfield
- Perform recommended improvements from future storm water master plan – Springfield
- Include natural hazard mitigation ideas in future changes and updates to Springfield Comprehensive Plan – Springfield
- Implement facilities plan – Springfield

Objective 4.e. Update/create a response plan that addresses each natural hazard that could affect the community.

- Development of Evacuation Plan Template for Village – Chatham
- Develop Natural Hazard Response Plans of Village of Grandview – Grandview
- Develop plans and update drainage infrastructure/Develop a storm water master plan and regulations – Grandview
- Develop alternate safety route for highway traffic diversion – Illiopolis
- Develop a comprehensive emergency preparedness plan – Illiopolis
- Assess local regulations (building codes, zoning ordinances, subdivision ordinances, public health codes, etc.) to determine how they can better address the impacts of Natural Hazards – Sherman
- Personal Protective Equipment (PPE) – Sherman
- Dangerous tree mitigation (trimming) – Sherman
- Wildfire vegetation mitigation – Sherman
- Replace response mobile radios – Sherman
- Update Emergency Management Plan – Southern View
- Create a taskforce between Southern View, Woodside Township, and the City of Springfield – identify resources and update plan for a hazard event – Southern View
- Create a taskforce between the village and Springfield Fire District to identify resources – Southern View
- Develop storm water master plan and regulations – Springfield
- Perform recommended improvements from future storm water master plan – Springfield
- Update Overflow Emergency Response Plan – Springfield
- Implement facilities plan – Springfield

Goal # 5: Manage and protect the waterways and floodplains of Sangamon County.

Objective 5.a. Establish a county-wide task force to develop a storm water drainage and erosion control master plan.

- Convene/participate in county-wide task force to develop a storm water drainage and control master plan – Buffalo, Jerome, Leland Grove, Mechanicsburg, Sangamon County, Southern View
- Develop plans and update drainage infrastructure/Develop a storm water master plan and regulations – Grandview
- Adopt storm water resolution – Sangamon County
- Develop storm water master plan and regulations – Springfield
- Perform recommended improvements from future storm water master plan – Springfield

Objective 5.b. Assure water is available in case of drought.

- Update water mains to ensure all are up to code and to reduce number of water main breaks – Grandview
- Develop plans and update drainage infrastructure/Develop a storm water master plan and regulations – Grandview
- Maintain Jacksonville branch by dredging, trimming trees, removing brush, and cleaning culverts and coordinate activities with Jerome and Springfield – Leland Grove
- Maintain and improve the Town & Country storm water drainage system between MacArthur Blvd. and Jacksonville Branch and coordinate activities with Jerome and Springfield – Leland Grove
- Deepen, grade and clean all storm water drainage ditches and culverts and coordinate all activities with Jerome and Springfield – Leland Grove
- Backup water supply line to Villages – Sherman
- Pursue supplemental water supply – Springfield
- Backup water supply to Villages – Williamsville

Mitigation Actions – Priorities and Implementation

The 2008 Project Prioritization Committee created the following method for prioritizing actions. It is important to recognize that the implementation of all actions is desirable regardless of prioritized order. Actions assigned to Priority A have a permanent or more far-reaching affect than actions under Priority B, although both address the most significant natural hazards in the county. Priority C actions all address the less significant natural hazards. Priority J actions are ready for implementation within the next year and can be accomplished within existing budgets. All actions will aid in the mitigation effort and should be implemented as opportunities arise.

Project Prioritization Method (2008 plan, 2015 plan update, and 2022 plan update)

Priority A: projects permanently eliminate property damages and/or eliminate or reduce injuries and deaths in a specific area OR have a high probability to systematically reduce property damages, injuries and deaths across a wide area. Priority A projects address the most significant natural hazards – extreme heat, flood, severe storm, tornado, and winter storm (2008 and 2015 plans); extreme heat, flood, pandemic, severe storm, tornado, and winter storm (2022 plan).

Priority B: projects reduce property damages in a specific area OR have the potential to reduce property damages, injuries and deaths across a wide area OR educate the public on disaster preparedness and mitigation. Priority B projects address the most significant natural hazards – extreme heat, flood, severe storm,

tornado, and winter storm (2008 and 2015 plans); extreme heat, flood, pandemic, severe storm, tornado, and winter storm (2022 plan).

Priority C: projects eliminate or reduce property damages, injuries and deaths from the less significant natural hazards OR educate the public on disaster preparedness and mitigation related to the less significant natural hazards – dam failure, drought, earthquake and mine subsidence (2008 and 2015 plans); dam failure, earthquake, mine subsidence, and wildfire (2022 plan).

Priority J: projects can “just be done” without requiring outside funding and are able to be implemented within one year of Plan adoption. These can be one-time projects or ongoing projects and may address any hazard.

The 2015 Task Force reviewed the previously utilized project prioritization method and found it effective. The 2022 Task Force reviewed the previously utilized project prioritization method and made changes based upon the reordering of the hazards discussed in Section III.

Cost/Benefit Analysis

A cost/benefit analysis will be needed for any of these projects to be implemented. A cost/benefit analysis will be performed at the time of project selection. In 2022, SSCRPC staff reiterated that an in-depth cost/benefit analysis will be required for each project-specific grant application.

For planning purposes, the Task Force in 2022 decided to use general cost/benefit descriptions of high, medium, and low. The Task Force also decided that these descriptions do not correspond to particular dollar amounts but rather are provided to give a relative comparison between the action items identified by each community. This planning cost/benefit analysis is included in the active mitigation action items list provided by each community.

Mitigation Action Items List

The following tables (see Figure 89) represent a comprehensive range of mitigation projects as selected by each participating community. The mitigation action items consider the risks identified by the Task Force for the 2022 plan update.

The project lists are the mitigation action plan for each community. They also are an evaluation of projects that communities believe they are capable of considering each community’s unique capacities, which builds upon the Community Documents table in Section II.

Other organizations and/or communities are also shown for historic continuity despite not meeting the participation requirements in the most recent plan update. Communities and/or technical partner organizations that did not meet the participation requirements have projects with an Unknown status and blank benefit/cost columns.

Active mitigation action items have all columns shown, where known. Inactive items, i.e. those with completed, deleted, and removed statuses, do not have priorities, benefit/cost, or implementation responsibility shown. The Task Force decided that blanks or N/A would appear in these fields due to inactive status of the projects. These projects are in the tables solely for historical tracking.

Figure 89: Table of Mitigation Action Items by Community

Hazard	Priority	Benefit/ Cost	Project	Implementation Responsibility	Funding Sources	Time Frame	Goal	Status
SS, T	A	High	Construct new municipal center building able to withstand severe weather	Auburn City Council	75% Federal 25% City	3 yrs.	2.a.	Ongoing
SS, T	A	Low	Provide additional storm siren	Auburn City Council	City	3 yrs.	1.a.	Reprioritized
SS, T	B	Low	Storm/tornado shelter to hold 100 people	Auburn City Council	75% Federal 25% City	3 yrs.	2.a.	Deferred (Funding)
SS, T	B	Medium	Construct lightning and storm shelters for all parks	Auburn City Council	City	3 yrs.	2.a.	Planning
SS, F	B	High	Improve storm drainage in Western Acres	Auburn City Council	75% Federal 25% City	3 yrs.	2.g.	Deferred (Funding)
SS, F	B	High	Improve storm drainage South of Jackson Street	Auburn City Council	75% Federal 25% City	3 yrs.	2.g.	Deferred (Funding)
F	B	Low	Provide flood protection for sanitary lift station at Divernon Rd.	Auburn City Council	75% Federal 25% City	3 yrs.	2.g.	Ongoing
F	B	High	Grade and clean all storm water drainage ditches and culverts	Auburn City Council	City	Ongoing	2.g. 3.d.	Ongoing
SS, T	B	Low	Signs to warn of storm hazards	Auburn City Council	75% Federal 25% City	2 yrs.	1.a.	Deferred (Funding)
SS	J	Low	Lightning signs at baseball, football fields and parks	Auburn City Council	City	2 yrs.	1.a.	Deferred (Funding)
ALL	J	High	Educate residents to protect themselves & property	Auburn City Council	City	Ongoing	2.b.	Ongoing
ALL	J	High	Utilize Village website to post all hazards alerts, safety and preparedness information	Auburn City Council	City	1 yr.	1.a. 1.c. 1.e. 2.b.	Ongoing
ALL	J	Medium	Continue educational program in schools and for other citizens	Auburn City Council	City	Ongoing	2.b.	Ongoing
ALL	J	High	Collect names and addresses for elderly and special needs citizens for wellness checks and potential need for additional resources	Auburn City Council	City	Ongoing	2.d.	Ongoing
SS, T	J	High	Develop agreements with churches & businesses with basements to be used as storm shelters	Auburn City Council	City	1 yr.	2.a.	Ongoing
ALL	J	Low	Develop protocol for more regular contact with citizen hazard spotters	Auburn City Council	City	1 yr.	1.b.	Ongoing
ALL	J	Medium	Create email notifications to warn about natural hazards events	Auburn City Council	City	1 yr.	1.a. 1.c. 1.e.	Ongoing
ALL			Develop unified dispatch for Fire, EMS, ambulance, Police & utilities available to citizens 24/7		City	1 yr.	1.d. 1.e. 2.e.	Completed
SS, T, F			Purchase generator for fire department, police, dispatch, and City Garage		75% Federal 25% City	3 yrs.	3.a.	Completed
ALL			Purchase mobile generator for lift stations		75% Federal 25% City	3 yrs.	3.a.	Completed
D			Install water loop line to serve the Route 4 and Route 104 areas		75% Federal 25% City	3 yrs.	3.b.	Completed
SS, T, F			Develop protocol for local EMS, police, fire & dispatch to more closely monitor National Weather Service, County OEM & dispatch alerts		City	1 yr.	1.b.	Completed
SS, T			Pursue local activation of storm sirens based on use of additional weather alert radios tuned to Auburn's alert frequency		City	1 yr.	1.a.	Completed
ALL			Investigate utilizing a Groupcast notification system to warn residents		City	1 yr.	1.a. 1.c. 1.e.	Completed
SS, T			Shatter-proof glass for municipal building		75% Federal 25% City	3 yrs.	2.a.	Deleted. Planning to build a new building

AUBURN

BUFFALO	Hazard	Priority	Benefit/ Cost	Project	Implementation Responsibility	Funding Sources	Time Frame	Goal	Status
	SS, T, WS	A	Medium	Provide central storm shelter: reinforce upgrade Village Hall to survive storm disaster situations and be able to handle needs of citizens using building as a shelter	Buffalo Village Board, Buffalo Fire District	75% Federal 25% Village	3yrs.	2.a.	Deferred (space & funding)
	SS, F	A	Medium	Improve drainage and retrofit storm sewer	Buffalo Village Board	DCEO Grant Awarded; Village of Buffalo	10 yr.	3.c.	NEW (Pending DCEO disbursement for Phase 1)
	SS, F	A	Medium	Monitor condition of culverts	Buffalo Village Board	Village	1 yr.	3.d.	NEW
	SS, T, WS	C	Medium	Use e-alert system to educate and alert the community to impending natural hazard events as well as to transfer information after the storm	Buffalo Village Board	Village	1 yr.	1.a.	NEW
	SS, T, WS	J	High	Provide alternate storm shelters utilizing the Buffalo Fire Station and Village Hall	Buffalo Village Board, Buffalo Fire District	No cost	1 yr.	2.a.	Implemented. Need to provide shelter location to new residents
	SS, T, WS	J	Medium	Provide disaster preparedness materials to the residents of Buffalo	Buffalo Village Board	Village Board	1 yr.	2.b.	Deferred (Funding)
	EH, WS	J	High	Establish warming/cooling stations at Village Hall, Tri-City Library	Buffalo Village Board	No cost	1 yr.	2.a.	Implemented. Need to provide station locations to new residents.
	F	J	Medium	Lining of Sewer lines to stop groundwater infiltration	Buffalo Village Board	Dawson- Buffalo- Mechanicsburg Sewer Commission	Multi-Year	2.g.	Ongoing
	F	J	High	Participate in county-wide task force to develop a storm water drainage and erosion control master plan	Buffalo Village Board	No cost	1 yr.	5.a.	NEW
EA, F, SS, WS, T	J	Medium	Update Ordinance to Adopt current Building Codes	Buffalo Village Board	Village	1 yr.	4.a.	NEW	
ALL	J	High	Create list of at-risk residents who need to be checked on during hazard event	Buffalo Village Board	No Cost	1 yr.	1.c. 2.d.	NEW	
SS, T, WS	J	High	Insist that Ameren does better maintenance work on trees close to power lines	Buffalo Village Board	No Cost	1 yr.	3.d.	NEW	

CANTRALL	Hazard	Priority	Benefit/ Cost	Project	Implementation Responsibility	Funding Sources	Time Frame	Goal	Status
	F	B		Look at improving drainage water coming from new school	Cantrall Village Board	Village	2 yrs.	3.d.	Unknown
	SS, T, WS	J		Provide weather radios to those in need	Cantrall Village Board	Village	Ongoing	1.a.	Unknown
	EA, F, SS, WS, T	J		Adopt Building Codes	Cantrall Village Board	Village	1 yr.	4.a.	Unknown

Hazard	Priority	Benefit/ Cost	Project	Implementation Responsibility	Funding Sources	Time Frame	Goal	Status
SS, T, WS	A	Med	Bury power lines going to critical facilities	Electric Dept.	75% Federal 25% Village	1 yr.	2.g. 3.a.	Ongoing
F	A	High	Development and Build of new multi-functional Municipality Building to house municipal offices, Police Department, Emergency Management Agency, Utilities Offices, and Emergency Operations Center	Village Manager/ Chatham EMA/ Police Department	75% Federal 25% Village	2 yrs.	1.c. 1.d. 2.g.	New
ALL	A	High	Procurement of Equipment for Emergency Operations Center to allow for seamless, multi-agency, multi-governmental coordination and communication during response and recovery operations	Chatham EMA	75% Federal 25% Village	2 yrs.	1.b. 1.c. 1.d. 2.f. 2.g.	New
SS, T, WS	B	Medium	Develop electrical GIS system	Electric Dept/GIS	75% Federal 25% Village	1 yr.	2.g. 3.a.	Ongoing
SS, T, WS	B	Medium	Land Procurement to Allow for Strategic Positioning of Resources in Support of a Required/Recommended Evacuation Due to Risks Associated with a Hazard/Threat	Village Manager, Chatham EMA	75% Federal 25% Village	3 yrs.	2.g.	New
F	B	Low	Development of Collection Pond for environmental protection, property damage reduction, and reduced or eliminated infrastructure damage	Streets & Water Dept	75% Federal 25% Village	3 yrs.	2.g.	New
F	B	Medium	Improve Drainage System to support run-off from fields and reduce impacts of flash flooding due to heavy rainfall	Streets & Water Dept	75% Federal 25% Village	3 yrs.	2.g.	New
SS, T, WS	B	Medium	Assessment of Facilities to act as Warming/Cooling Centers during hazardous weather events	Chatham EMA	75% Federal 25% Village	3 yrs.	2.a.	New
SS, T, WS	B	Medium	Assessment of Facilities for possible use as Community Storm Shelters	Chatham EMA	75% Federal 25% Village	3 yrs.	2.a.	New
SS, T, WS	B	Medium	Development of Storm Shelter for Municipal Building to support Village Employees and ensure Continuity of Government	Village Manager/ Chatham EMA	75% Federal 25% Village	1 yr.	2.a. 3.a.	New
ALL	B	Low	Development and Establishment of Resource Management Program	Chatham EMA	75% Federal 25% Village	2 yrs.	1.d.	New
SS, T, WS	B	Medium	Development of Evacuation Plan Template for Village	Chatham EMA	75% Federal 25% Village	2 yrs.	1.d. 4.e.	New
ALL	J	High	Assessment of facilities that house the elderly, physically challenged, and/or mentally/medically challenged populations	Chatham EMA	75% Federal 25% Village	1 yr.	2.d.	New
ALL	J	High	Continuing Education Program for Village Employees and Village Residents of Hazard Mitigation Efforts	Chatham EMA	75% Federal 25% Village	1 yr.	1.e. 2.b. 2.c.	New
ALL			Utilize automated telephone system to notify residents of impending hazards as well as information after storm		Village	3 yrs.	1.a. 1.c.	Complete

CHATHAM

Hazard	Priority	Benefit/ Cost	Project	Implementation Responsibility	Funding Sources	Time Frame	Goal	Status
ALL	A	High	Construct new village hall with safe room	Curran Village Board	75% Federal 25% Local	5 yrs.	2.a.	New
SS, T	B	Medium	Installation of storm siren	Curran Village Board	Village	1 yr.	1.a.	Deferred for completion of village hall
F	B	High	Improve drainage and retrofit storm sewer	Curran Village Board	Village	1 yr.	3.c.	Waiting for engineering
SS, T, WS	J	Low	Trim trees of excessive height and remove dead material	Curran Village Board	Village	1 yr.	3.d.	Ongoing
SS, T			Construction of safe room		75% Federal 25% Village	2 yrs.	2.a.	Deleted for village hall and safe room combination

CURRAN

DAWSON	Hazard	Priority	Benefit/ Cost	Project	Implementation Responsibility	Funding Sources	Time Frame	Goal	Status
	F	A	High	Build New Water Treatment plant out of flood plain	Dawson Village Board	State Revolving Fund (SRF) Loan	<1 yr.	2.f. 2.g. 3.a.	In construction
	SS, T, F	A	High	Build storm/tornado shelter	Dawson Village Board	75% Federal 25% Village	3 yrs.	2.a.	Planning
	F	B	Medium	Build a dike to protect water plant from flooding	Dawson Village Board	75% Federal 25% Village	3 yrs.	2.g.	Unnecessary with new plant being constructed
	F	B	Low	Install water level gauge near water plant for more accurate readings	Dawson Village Board	75% Federal 25% Village	2 yrs.	3.d.	Unnecessary with new plant being constructed
	All	B	Low	Distribute and educate community with brochures on all hazards	Dawson Village Board	Village	2 yr.	2.b.	New
	SS,T,F	J	Medium	Acquire a generator for water plant	Dawson Public Works	Village	1 yr.	3.a.	Will have one at new plant
	SS, T, WS			Put power lines underground at Village Hall		75% Federal 25% Village	2 yrs.	3.a.	Completed
	SS, T, WS			Insist Ameren does better maintenance work on trees close to power lines		No cost	1 yr.	3.d.	Completed
	SS,T,F			Increase number of functioning sirens from 1 to 3		Village	1 yr.	1.a.	Completed

DIVERNON	Hazard	Priority	Benefit/ Cost	Project	Implementation Responsibility	Funding Sources	Time Frame	Goal	Status
	F, SS	B	Medium	Improve Storm water Drainage	Public Works Department	Village	5 yr.	2.g. 3.c.	New
	All	B	Low	Assess Local Building Codes and Update as needed	Divernon Village Board	Village	2 yr.	4.a.	New
	F	J	Low	Educate residents who own property in the floodplain about regulatory requirements	Divernon Village Board	Village	1 yr.	2.b.	Ongoing
	All	J	Medium	Identify residents with special needs/concerns during hazardous weather events	Police Department/Divernon Village Board	Village	Continuous	2.d.	New
	SS, T, WS			Give away weather radios to those in need		Village	1 yr.	1.a.	Completed
	ALL			Brochures/newsletters sent out for weather emergencies, heating cooling places and what to do in case of emergency		Village	1 yr.	2.b.	Completed
	SS, T, WS			Use e-alert system to educate and alert the community to impending natural hazard events as well as to transfer information after the storm		Village	1 yr.	1.a.	Completed

GRANDVIEW	Hazard	Priority	Benefit/ Cost	Project	Implementation Responsibility	Funding Sources	Time Frame	Goal	Status
	DR, EH, F, MS, SS, T, WS	A	Medium	Establish, install or identify storm shelters for residents	Grandview Village Board	75% Federal 25% Village	2 yrs.	2.a.	New
	DR, EH, P, SS, WS	A	Medium	Update water mains to ensure all are up to code and to reduce number of water main breaks	Grandview Village Board	75% Federal 25% Village	Ongoing	3.a. 3.d. 5.b.	New
	All	A	High	Educate citizens, local businesses, and others regarding proper actions to take to mitigate and prepare for natural hazards	Grandview Village Board	75% Federal; 25% Village	Ongoing	1.e. 2.b. 2.c.	New
	All	A	Medium	Identify a community emergency alert system	Grandview Village Board and Staff	75% Federal 25% Village	2 yrs.	1.a. 1.c.	New
	All	A	High	Develop Natural Hazard Response Plans for the Village of Grandview	Grandview Village Board and Staff	75% Federal 25% Village	2 yrs.	1.d. 4.e.	New
	All	A	High	Identify at-risk populations within the community and establish a list and create plan to help vulnerable population	Grandview Village Board and Staff	75% Federal 25% Village	2 yr.	2.d. 2.f.	New
	F, SS, T, WS	B	Medium	Develop plans and update drainage infrastructure/ Develop a storm water master plan and regulations	Grandview Village Board	75% Federal 25% Village	Ongoing	2.e. 2.f. 3.d. 4.a. 4.d. 4.e. 5.a 5.b.	New
	DR, EH, F, P, SS, T, WS	B	Medium	Create a plan to update and maintain roads	Grandview Village Board	75% Federal 25% Village	4 yrs	3.c. 3.d. 4.d.	New
	All	B	Medium	Install generator to the Village of Grandview's main building that consists of the Police Department, Water Department, and Maintenance Department	Grandview Village Board	75% Federal 25% Village	2 yrs	3.a. 4.d.	New
DR, EH, MS, SS, TT, WS	B	High	Develop Emergency Action Plan in the event of a loss of the City water supply	Grandview Village Board and Staff	Village	2 yrs.	3.b.	New	
All	B	High	Develop a maintenance and inspection plan rating public infrastructure	Grandview Village Board and Staff	75% Federal 25% Village	2 yr.	3.d.	New	

ILLIOPOLIS	Hazard	Priority	Benefit/ Cost	Project	Implementation Responsibility	Funding Sources	Time Frame	Goal	Status
	T, SS, WS	A	Low	Construct two storm shelters with generators & potable water supply.	Illioipolis Village Board	75% Federal 25% Village	3 yrs.	2.a.	New
	T, SS	A	Medium	Acquire & install one additional remote operated storm siren	Illioipolis Village Board	75% Federal 25% Village	3 yrs.	1.a.	New
	ALL	B	Medium	Educate residents and local businesses on steps they can take to protect their lives and property in a natural hazard event	Illioipolis Village Board	Village	1 yr.	2.b.	Ongoing
	SS, F	B	High	Improve storm drains village-wide	Illioipolis Village Board	75% Federal 25% Village	3 yrs.	3.d.	New, Ongoing
	ALL	B	Medium	Update infrastructure to GIS	Illioipolis Village Board	75% Federal 25% Village	2 yrs.	3.a.	New, Ongoing
	ALL	J	Medium	Purchase & install back-up generator for Village Hall	Illioipolis Village Board	Village	1 yr.	3.a.	Deferred (Will move extra generator)
	ALL	J	Medium	Create a list of at-risk & elderly residents paired with advocates	Illioipolis Village Board	Village	1 yr.	1.c.	New
	ALL	J	Low	Develop an alternate safety route for highway traffic diversion	Illioipolis Village Board	Village	1 yr.	4.e.	New
	ALL	J	High	Develop a comprehensive emergency preparedness plan	Illioipolis Village Board	75% Federal 25% Village	2 yrs.	4.e.	New
ALL	J	High	Create a community emergency resource listing	Illioipolis Village Board	Village	2 yrs.	1.d.	New	

Hazard	Priority	Benefit/ Cost	Project	Implementation Responsibility	Funding Sources	Time Frame	Goal	Status	
JEROME	EH, SS, T, WS	B	High	Purchase backup generator for municipal center	Jerome Village Board	75% Federal 25% Village	1 yr.	3.a.	Ongoing
	ALL	J	Medium	Distribute mitigation information through Neighborhood Watch or through Jerome Newsletter or Jerome website	Jerome Police Department	Village	1 yr.	2.b.	Ongoing
	F	J	Medium	Better drainage by keeping culverts clean	Jerome Public Works	Village	1 yr.	3.d.	Ongoing (Annual)
	ALL	J	Low	Notify residents of availability of police building to be used as an emergency information center	Jerome Village Board	Village	1 yr.	1.a., 2.a.	Added to Jerome Newsletter and on Jerome website
	F	J	Medium	Participate in county-wide task force to develop a storm water drainage and erosion control master plan	Jerome Village Board, Jerome Public Works	Village	1 yr.	5.a.	Ongoing

Hazard	Priority	Benefit/ Cost	Project	Implementation Responsibility	Funding Sources	Time Frame	Goal	Status	
LELAND GROVE	F, SS	B	High/ Low	Maintain Jacksonville Branch by dredging, trimming trees, removing brush, and cleaning culverts and coordinate activities with Jerome and Springfield	Public Works	75% Federal 25% City	Cont.	3.d. 5.b.	Ongoing
	F, SS	B	High/ Low	Maintain and improve the Town & Country storm water drainage system between MacArthur Blvd and Jacksonville Branch and coordinate activities with Jerome and Springfield	Public Works	75% Federal 25% City	Cont.	3.d. 5.b.	Ongoing
	F, SS	B	High/ Medium	Deepen, grade and clean all storm water drainage ditches and culverts and coordinate activities with Jerome and Springfield	Public Works	75% Federal 25% City	Cont.	3.d. 5.b.	Ongoing
	F, SS	B	Medium/ Low	Produce educational materials to teach residents the importance of maintaining a free flowing culvert and drainage system	City Administrator	75% Federal 25% City	1 yr.	1.e. 2.b.	One-time expenditure
	F, SS	B	High/ Low	Produce educational materials to inform residents who own property in the floodplain about regulatory requirements and encourage those residents to maintain private bridges and culverts	City Administrator	75% Federal 25% City	1 yr.	1.e. 2.b.	One-time expenditure
	ALL	B	Low	Distribute and educate community with brochures on all hazards	City Administrator	City	2 yr.	2.b.	New
	F, SS	J	High/ Low	Participate in county-wide task force to develop a storm water drainage and erosion control master plan	Alderpersion and/or Public Works	City	1 yr.	5.a.	Ongoing

MECHANICSBURG	Hazard	Priority	Benefit/ Cost	Project	Implementation Responsibility	Funding Sources	Time Frame	Goal	Status
	SS, T, F, WS	B	Medium	Improve drainage in areas that are flood prone on the northwest side of town and in Griffith Creek Subdivision.	Village of Mechanicsburg	75% Federal 25% Village	5 yrs.	3.c., 3.d.	Ongoing
	ALL	B	Medium	Purchase additional radios for emergency responders	Village of Mechanicsburg	75% Federal 25% Village	5 yrs.	1.c.	Ongoing
	ALL	B	High	Improve communication technology issues between fire department and Sangamon County agencies	Village of Mechanicsburg Fire Dept.	75% Federal 25% Village	5 yrs.	1.c.	Ongoing
	ALL	B	High	Purchase backup generators for Village Hall and fire station	Village of Mechanicsburg Fire Dept.	75% Federal 25% Village	5 yrs.	2.a., 2.g., 3.a	Ongoing
	T	B	Medium	Purchase two additional storm warning sirens	Village of Mechanicsburg	75% Federal 25% Village	3 yrs.	1.a.	Ongoing
	DR	B	Medium	Connect Griffith Creek Subdivision to city water by installing 1.2 miles of 6" water line	Village of Mechanicsburg	75% Federal 25% Village	3 yrs.	3.b.	Ongoing
	ALL	B	Medium	Create list of at-risk residents who need to be checked on during a hazard related event	Village of Mechanicsburg	Village	2 yrs.	1.c., 2.d.	Ongoing
	F	J	Medium	Adopt Floodplain Ordinance	Village of Mechanicsburg	Village	1 yr.	4.b.	Ongoing
	F	J	High	Participate in county-wide Task Force to develop storm water drainage and erosion control plan	Village of Mechanicsburg	Village	1 yr.	5.a.	Ongoing
ALL	J	High	Establish protocol for mobile command center to respond to natural hazard events	Village of Mechanicsburg	Village	1 yr.	1.c., 1.d.	Ongoing	

NEW BERLIN	Hazard	Priority	Benefit/ Cost	Project	Implementation Responsibility	Funding Sources	Time Frame	Goal	Status
	SS, T, WS	A	High	Emergency generator for high school emergency shelter	New Berlin School Dist.	New Berlin School District	2 yr.	2.a.	Deferred (Budget)
	ALL	B	Low	Distribute and educate community with brochures on all hazards	Village Board	Village	2 yr.	2.b.	New
	SS, T			Outdoor siren for west end of Village limits (new residential & commercial area)		Village	1 yr.	1.a.	Completed

PAWNEE	Hazard	Priority	Benefit/ Cost	Project	Implementation Responsibility	Funding Sources	Time Fram	Goal	Status
	F	A	High	Install storm sewer from 10th Street to Horse Creek	Pawnee Village Board	75% Federal 25% Village	1 yr.	3.c.	Ongoing
	WS, SS, T	A	Low	Storm shelter	Pawnee Village Board	75% Federal 25% Village	1-3 yrs.	2.a	NEW
	DR	A	High	Improved water supply from Auburn to Pawnee (16" water pipe +/-)	Pawnee Village Board & Otter Lake Water	75% Federal 25% Village & Otter Lake Water	1 yr.	3.b	NEW, Engineering complete at I-55
	F	B	Medium	Relocate sanitary lift station on Hwy 104 East that is located in the floodplain	Pawnee Village Board	75% Federal 25% Village	3 yrs.	3.c.	Ongoing
	F	B	High	36"-48" storm sewer from Horse Creek west to 10th Street	Pawnee Village Board	75% Federal 25% Village	1-3 yrs	2.g	NEW, Engineering complete
	DR	B	High	10" water main loop around square to 8th St.	Pawnee Village Board	75% Federal 25% Village	1-2 yrs	3.b	NEW
	DR	B	Medium	Water main encompassing Sherman, 4th, 5th and Highway 104	Pawnee Village Board	75% Federal 25% Village	1-2 yr	3.b	NEW, Engineering started
	ALL	B	Low	Distribute and educate community with brochures on all hazards	Pawnee Village Board	Village	2 yr.	2.b.	NEW
F			Sidewalk and storm sewer replacement		State, Village	1 yr.	3.c.	Completed	

PLEASANT PLAINS	Hazard	Priority	Benefit/ Cost	Project	Implementation Responsibility	Funding Sources	Time Frame	Goal	Status
	F	B	Low	Southwest sewer project – repair & maintenance	Pleasant Plains Village Board	75% Federal 25% Village	2 yrs.	3.c.	Deferred (Budget)
	ALL	B	Medium	Enhancement to Villages Emergency Water Connection with Curran-Gardner	Public Works	75% Federal 25% Village	3 yrs.	3.a	New
	ALL	J	Medium	Create a taskforce for residents/businesses/agencies to work together in Village to assist those who are vulnerable	Village President	Village	Cont.	2.e	New
	ALL	J	Medium	Establish an inspection and maintenance program that monitors the condition of infrastructure	Public Works	Village	Cont.	3.d	New

RIVERTON	Hazard	Priority	Benefit/ Cost	Project	Implementation Responsibility	Funding Sources	Time Frame	Goal	Status
	F	A	High	Acquire flood prone or damaged properties	Village	100% Federal	5 yrs.	2.f.	New
	SS, T, WS	B	High	Create storm shelter(s) or safe room(s) for use in severe weather	Public Safety	75% Federal 25% Village	2 yrs.	2.a.	Deferred (funding)
	SS,T	B	High	Upgrade, replace, or purchase outdoor emergency alert sirens	Public Safety	75% Federal 25% Village	3 yrs.	1.a.	New
	SS,T,WS	B	Medium	Continue ongoing program of tree trimming near electric lines and maintaining ROW	Electric Dept.	Village	Cont.	3.d.	Ongoing
	SS, T, WS, F, DF, E	B	High	Bury power lines to critical infrastructure and Village facilities	Electric Dept.	Village	5 yrs.	3.a.	New
	SS, F	B	Medium	Drainage improvements in ditches and culverts throughout Village	Public Works	Village	5 yrs.	3.d.	New
	All	B	Low	Provide weather alert radios to businesses, critical facilities. Also provide weather radios to citizens that can't afford weather radio	Public Safety	Village or grant	3 yrs.	1.a.	New
	SS, T, MS, E	B	High	Upgrade or replace gas, water and sewer mains as needed to improve resiliency and reduce the effects of damage during disaster	Utility Depts.	Village, grants, loans, & bonds	5 yrs.	3.a.	New
	F	B	High	Provide flood protection for main lift station	Public Works	75% Federal 25% Village	5 yrs.	3.a.	New
	F, SS	B	Medium	Clean out and maintain creek that runs through town to ensure proper drainage and to reduce chance of flooding	Public Works	Village	Cont.	3.d.	New
	SS, T, MS, E	B	High	Loop water, gas, and electric mains to connect North & South side of 172 near Overpass Rd	Utilities Dept.	Village, loans, grants, & bonds	5 yrs.	3.a.	New
	SS, T	B	Medium	Provide shatter proof glass at Village Hall	Village	Village	3 yrs.	2.g.	New
	F, SS	B	High	Acquire emergency pumps for storm, sewer, and flood pumping	Public Works	75% Federal 25% Village	5 yrs.	3.a.	New
	All	B	High	Acquire backup generators for all critical Village infrastructure	Public Works	75% Federal 25% Village	5 yrs.	2.g.	New
SS, T, MS, E	B	Medium	Develop and utilize GIS system for all utilities	Utilities Dept.	Village	3 yrs.	3.a.	Ongoing	
SS	J	Low	Erect signage "Ballparks to be evacuated during periods of lightning" for baseball, football, soccer, tennis courts, basketball courts, and parks.	Public Works	Village	6 mo.	2.b.	New	

RIVERTON (continued)

ALL	J	Low	Create volunteer network for checking on citizens with disabilities during storm / inclement weather	Public Safety	Village	6 mo.	2.e.	Planning
ALL	J	Low	Complete & submit "Storm Ready Community" application to NWS	Public Safety	Village	1 yr.	2.b.	New
ALL	J	Low	Increase participation in Sangamon County Alert System (SAM)	Public Safety	Village	Cont.	1.b.	Ongoing
WS, EH,	J	Medium	Establish warming and cooling centers in Village	Public Safety	Village	1 yr.	2.a.	New
ALL	J	Low	Educate residents to protect themselves and property from natural hazards	Public Safety	Village	1 yr.	2.b.	New
SS, T, WS			Bury power lines to Village wells		75% Federal 25% Village	1 yr.	3.a.	Completed
F			Drainage improvements in 200 block of Blackburn		Village School District	1 yr.	3.c.	Completed
F, SS,T,WS			Permanently mounted generator for power back-up at main sewer lift station and wells		Village	6 mos.	3.a.	Completed
F, SS,T,WS			Purchased 4 trailer mounted generators for power back-up for Village Hall, Water Plant and other lift stations		Village	2 yrs.	3.a.	Completed
F,SS,T,WS			Purchased emergency pump for back-up pumping capabilities for main sewer lift station or other lift stations		Village	1 yr.	3.a.	Completed
F,SS			Sealed conduit ducts on transformer for main sewer lift station to prevent water for shorting out pumps		Village	1 yr.	3.a.	Completed
ALL			Joint project between Village of Riverton, Riverton FD, & Clear Lake Township to subscribe to E-Lert system for notification of citizens by text message of emergencies		Village	1 yr.	1.e.	Completed
F,SS,T,WS			Installed permanently mounted generator inside water plant for back-up		Village	6 mos.	3.a.	Completed
EH,SS,T,WS			Install permanently mounted generator at Village Hall		Village	6 mos.	3.a.	Completed
DF,F			Move transformer at Main Sewer Lift Station to higher ground		Village	6 mos.	3.a.	Completed

ROCHESTER	Hazard	Priority	Benefit/ Cost	Project	Implementation Responsibility	Funding Sources	Time Frame	Goal	Status
	All	A	High	Generators for critical facilities	Rochester Public Works	75% Federal 25% Village	5 yr.	2.g.	New
	F	A	High	Flood protection for southwest sewage pumping station	Rochester Public Works	75% Federal 25% Village	5 yr.	2.g.	Ongoing
	F	B	Medium	Clean and repair other storm sewers and culverts	Rochester Public Works	Village Public Works Dept	Ongoing	3.d.	Ongoing
	F	B	Medium	Lining of Sewer Manholes to stop groundwater infiltration	Rochester Public Works	Village	Multi Year	2.g.	Ongoing
	T, SS	B	Medium	Add emergency sirens	Rochester Fire Protection Dist, Village of Rochester	75% Federal 25% Village	5 yrs.	2.g.	New
	All	B	High	Construct critical facilities	Rochester Public Works	75% Federal 25% Village	5 yrs.	2.g.	New
	F	J	Medium	Monitor condition of culverts	Rochester Public Works	Village	Ongoing	3.d.	Ongoing
	ALL	J	High	Generator at Public Works Garage	Rochester Public Works	75% Federal 25% Village	5 yr.	2.g.	Ongoing
	F	J	High	Clearing of N. Park Annex on Black Branch Creek	Rochester Public Works	Village	1 yr.	2.g.	Ongoing
	SS, T			Safe room in middle school		75% Federal 25% School District	6 mo	2.a.	Removed
	EH, WS			Establish warming/cooling stations in Village		Village Citizen Corps	1 yr.	2.a.	Deleted (Budget)
	All			Trying to join the SAM System		Village	6 mos.	1.c.	Completed. Have joined SAM within last couple years.
	F			Storm sewer repair on N. Walnut		Village Public Works Dept	1 yr.	2.g.	Completed
	F, T			Community information on potential flooding		75% Federal 25% Village		1.a.	Completed
	F			Shifting main sewer line due to flooding erosion		75% Federal 25% Village	1 yr.	2.g.	Completed
	F			Flood protection for sewage pump house in Rochester Community Park		Village	1 yr.	2.g.	Completed

	Benefit/ Cost		Project	Implementation Responsibility	Funding Sources	Time Frame	Goal	Status	
	Priorit								
SANGAMON COUNTY	F	A	High	Acquire repetitively damaged flood prone properties	Regional Planning Commission	75% Federal 25% County	Ongoing	2.f.	Ongoing
	SS, T	A	Low	Provide safe rooms in new county facilities	Sangamon County Board	75% Federal 25% County	Ongoing	2.g.	In discussion
	WS	C	Low	Increase installation of snow fences along problem stretches of road	Sangamon County Highway Dept.	75% Federal 25% County	2 yrs.	3.c.	Deferred (Budget & Timing) Issues with earlier planting in areas of install
	F	C	Medium	Shoot elevations of buildings in the FEMA floodplain	Sangamon County GIS Department	75% Federal 25% County	3 yrs.	4.b.	Deferred (Budget)
	F, DF	C	High	Work with CWLP and Lake Sangchris Dam owner on dam safety, EAP	Sangamon County Board, Sangamon County Highway Dept., Dam owners	65-75% Federal, 25-35% Local	5 yrs	2.g. 3.a. 3.d.	NEW/Ongoing
	EA, F, SS, T, WS	J	High	Promote the adoption of International Building Codes in Sangamon County communities & provide opportunity to enter into an inter-governmental agreement with the County Building Dept. for enforcement	Sangamon County Building Dept.	75% Federal, 25% County, Permit fees	Ongoing	4.a.	Ongoing. Sangamon County adopted updated building codes effective 2022.
	F	J	Medium	Create volunteer network to monitor condition of road culverts (modified to communicate with Township Commissioners)	Sangamon County Highway Dept.	County	3 yrs.	3.d.	Ongoing
	WS	J	Medium	Educate public on County's Road condition warning system	Sangamon County Board Office, Sangamon County Highway Dept.	County	1 yr.	1.c.	Ongoing
	MS	J	Medium	Prepare mine subsidence informational materials	Sangamon County Building Department, Regional Planning Commission	County	1 yr.	2.b.	Deferred (Budget)
	F	J	High	Continue participation in the Community Rating System	Regional Planning Commission	County	Ongoing	4.b.	Ongoing
	ALL	J	High	Maintain current working response groups	Sangamon County OEM	County	Ongoing	1.d.	Ongoing
	F	J	Low	Convene county-wide Task Force to develop storm water, drainage and erosion control practices plan.	Sangamon County Board, Regional Planning Commission, Sangamon County Highway Dept.	County	3 yrs.	4.c. 5.a.	Ongoing
	F	J	Medium	Provide information to NFIP communities about the CRS program	Regional Planning Commission	County	3 yrs.	4.b.	Ongoing
	DF	J	Medium	Use GIS and latest aerial photography to review and update inundation impact below the Lake Sangchris Dam	Sangamon County GIS Dept.	County	2 yrs.	2.d.	Plan recently updated
	ALL	J	Medium	Include natural hazards mitigation information in future changes and updates to county comprehensive plan	Sangamon County Board	County	3 yrs.	4.d.	Ongoing. Natural hazards information is in the draft Sangamon County Comp Plan.
	ALL	J	High	Continue to encourage citizens and municipalities to sign up for and utilize the county mass notification system, SAM	Sangamon County OEM	County	Ongoing	1.a. 1.c. 1.e.	Ongoing
	ALL	J	High	Working to upgrade County Rural Fire Radio System	Sangamon County OEM	County	5 yrs	1.b.	Ongoing
	F, SS	J	Medium	Adopt Storm water Resolution	Sangamon County Board, Sangamon County Highway Dept.	County	5 yrs	4.c. 5.a.	NEW

SANGAMON COUNTY (continued)	EA, F, MS, SS, T, WS			Create education program for builders and home owners regarding building designs that will provide protection during hazard events		75% Federal 25% Springfield Area Home-builders assoc. and Energy Education Council	1 yr.	2.b.	Deleted (Budget)
	ALL			Create and present school programs regarding the many aspects of natural hazards		75% Federal 25% County	1 yr.	2.b.	Completed
	DF, EA, F, MS, SS, T, WS			Provide a mobile building permit department to be activated in damaged areas after a natural hazard		County	3 yrs.	4.c.	Deleted Use other Co. unit
	F			Create education materials regarding the importance of erosion control		County	1 yr.	2.b.	Deleted (Budget)
	F			Create award program to recognize good erosion control practices		County	1 yr.	4.c.	Deleted (Budget)
	F			Adopt Erosion Control Ordinance		County	6 mo.	4.c.	Completed
	SS, T, WS			Create educational program regarding use of weather radios		County	6 mo.	1.a.	Completed
	SS, T			Work with state legislators to provide business tax credit for manufactured home parks that install storm shelters		County	1 yr.	2.a.	Deleted (Budget)
	ALL			Work with local humane groups to explore creating accommodations for pets displaced by natural hazard events in Sangamon County		County	3 yrs.	2.a.	Completed
	ALL			Develop response plans to ensure that all small communities are involved		County	2 yrs.	1.d.	Completed

Hazard	Priority	Benefit/ Cost	Project	Implementation Responsibility	Funding Sources	Time Frame	Goal	Status
F,SS	A	High	Clean out silted Village storm water drainage ditches, culverts, and ponds	Sherman Village Board	75% Federal 25% Village	5 yrs.	3.c.	Deferred (Budget)
DR,EA, EH,F,M S,SS,T	A	High	Backup water supply line to Villages	Williamsville Water District (Sherman/Williamsville)	75% Federal 25% Village	5 yrs.	2.f. 2.g. 3.a. 3.b. 5.b.	Deferred (Budget)
F,SS	B	High	Clean out flood swale at critical facilities	Sherman Village Board	75% Federal 25% Village	5 yrs.	2.g. 3.c.	Planning
All	B	Low	Generator at New Village Hall	Sherman Village Board	75% Federal 25% Village	5 yrs.	3.a.	Planning
EA,F,SS ,T,WF, WS	B	Low	Safe Room in New Village Hall	Sherman Village Board	75% Federal 25% Village	5 yrs.	2.a.	Planning
ALL	B	Low	Replace response mobile radios	Sherman Village Board	75% Federal 25% Village	5 yrs.	4.e.	Planning
ALL	B	High	Generator and/or transfer switches for critical facilities	Sherman Village Board	75% Federal 25% Village	5 yrs.	2.e.	Planning
EA,MS, SS,T,W F,WS	B	Low	Bury power lines to critical facilities	Sherman Village Utilities	75% Federal 25% Village	5 yrs.	2.g. 3.a.	Planning
EA,SS,T	B	Low	Provide shatter proof glass liner at critical facilities	Village	75% Federal 25% Village	5 yrs.	2.g.	Planning
WF	B	Medium	Upgrade water supply system size & loops	Williamsville Water District (Sherman/Williamsville)	75% Federal 25% Village	5 yrs.	2.g. 3.a.	Deferred (Budget)
ALL	B	Medium	Assess local regulations (building codes, zoning ordinances, subdivision ordinances, public health codes, etc.) to determine how they can better address the impacts of Natural hazards.	Sherman Village Board, Sangamon County Board	75% Federal 25% Village	5 yrs.	4.a. 4.e.	Planning
P	B	Low	Personal Protective Equipment (PPE)	Sherman Village Board	75% Federal 25% Village	5 yrs.	4.e.	Planning
ALL	B	High	Identify residents with special needs	Sherman EMA/PD	75% Federal 25% Village	5 yrs.	2.d. 2.e.	Planning
ALL	C	Medium	Dangerous tree mitigation (trimming)	Sherman Village Board	75% Federal 25% Village	5 yrs.	3.a. 4.a. 4.e.	Planning
EH,WF	C	Low	Wildfire vegetation mitigation	Sherman Village Board	75% Federal 25% Village	5 yrs.	3.a. 4.a. 4.e.	Planning
ALL	C	Low	Implement GIS	Sherman Village Board	75% Federal 25% Village	5 yrs.	2.d. 3.d. 4.d.	Planning
ALL	C	Low	Distribute and educate community with brochures on all hazards	Sherman EMA	Village	2 yr.	2.b.	New, replaces two previous brochure projects
SS, T			Provide shelter in Waldrop Park		75% Federal 25% Village	2 yrs	2.a.	Deleted (Budget & in Flood Plain)
WS			Implement natural barrier area for Route 124 and Business Route 55 to mitigate blizzard road conditions		75% Federal 25% Village	Ongoing	3.c. 4.d.	Deleted (not needed)
ALL			Provide weather radios to Village residents and public buildings including businesses		Village	1 yr.	1.a. 1.b. 1.e.	Deleted (SAM system available)

SHERMAN

SOUTHERN VIEW	Hazard	Priority	Benefit/ Cost	Project	Implementation Responsibility	Funding Sources	Time Frame	Goal	Status
	SS, T, WF, WS	A	High	Design and construct a new public works and police department building to withstand severe weather	Southern View Administration	75% Federal 25% Village	5 yrs.	2.a.	New
	EA, EH, SS, T, WF, WS	A	Medium	Emergency generator to provide a warning and cooling center at our Municipal Building to help aid the Emergency Operations at this location	Southern View Administration	75% Federal 25% Village	3 yr.	2.a.	New
	DR, SS, T, WF, WS	A	Medium	Identify debris and disposal of vegetation on Railroad Property	Southern View Administration/ Public Works	75% Federal 25% Village	3 yr.	4.d.	New
	T, P, WF, WS	A	Medium	Personal Protective Equipment – identify & purchase PPE for hazard event	Southern View Administration	75% Federal 25% Village	1 yr.	2.g.	New
	WF, SS	A	Low	Farm Field Mitigation – identify and create a plan for potential issues and remedies to prevent wildfire and severe storm hazards	Southern View Administration	75% Federal 25% Village	1 yr.	4.d.	New
	SS, T, WS	A	Medium	Storm Water drainage issues identify issues and create an action plan for drainage relief in the Village	Southern View Administration/ Public Works	75% Federal 25% Village	1 yr.	2.g.	Ongoing, New
	ALL	A	Low	Ensure Utilities are available for essential services	Southern View Administration	Village	1 yr.	3.a.	New
	ALL	A	Low	Ensure Potable water is available	Southern View Administration	Village	1 yr.	3.b.	New
	ALL	A	High	Maintain roads – in and out of the Village to ensure roads are accessible for first responders in the event of a hazard	Southern View Administration/ Public Works	75% Federal 25% Village	3 yr.	3.c.	New
	ALL	A	Low	Update and Evaluate the Natural Hazards Mitigation Projects	Southern View Administration	Village	1 yr.	4.d.	Ongoing, New
	ALL	A	Low	Update Emergency Management Plan	Southern View Administration	Village	1 yr.	4.e.	New
	ALL	A	Low	Increase participation and utilization of SAMS (Sangamon County Alert Messaging System)	Southern View Administration	Village	1 yr.	1.b.	New
	SS, WS	A	Low	Participate in county-wide task force to develop a storm water drainage and erosion control master plan	Southern View Administration	Village	1 yr.	5.a.	New
	DR, EH, SS, T, WF	B	Medium	Danger Tree Mitigation	Southern View Administration/ Public Works	75% Federal 25% Village	2 yr.	2.b.	New
	SS, T, EA, WS	B	Low	Supplement to civil defense siren system	Southern View Administration	Village	3 yrs.	1.c.	Enrolled in SAMS which residents may elect to be notified of emergencies
	SS, T, WS, EA	B	Low	Provide weather radios to citizens who can't afford them	Southern View Administration	Village	3 yrs.	1.a.	Enrolled in SAMS which residents may elect to be notified of emergencies
	EA, EH, MS, P, SS, T, WF, WS	B	Low	Identify residents with special needs and coordinate with neighborhood watch lists to provide assistance in seeking shelter and during recovery	Southern View Administration/ Police	Village	3 yrs.	2.d.	Ongoing
	EA, P, SS, T, WF, WS	B	Medium	Purchase computers for remote operations	Southern View Administration	Village	2 yr.	1.c.	New
	ALL	B	Low	Distribute and educate community with brochures on all hazards	Southern View Administration	Village	2 yr.	2.b.	New
EA, EH, MS, P, SS, T, WF, WS	J	Low	Create brochure specific to Southern View with information regarding preparation and recovery related to natural hazards	Southern View Administration	Village	1 yr.	2.b.	In process	
SS, T, WF, WS	J	Low	Create a taskforce between Southern View, Woodside Township and the City of Springfield - identify resources and update plan for a hazard event	Southern View Administration	Village	1 yr.	4.e.	New	
EA, MS, SS, T, WF, WS	J	Low	Upgrade building codes	Southern View Administration	Village	1 yr.	4.c.	New	

SOUTHERN VIEW (continued)	EA, SS, T, WF, WS	J	Low	Identify and develop an Evacuation Plan	Southern View Administration	Village	1 yr.	1.d	New
	EA, P, SS, T, WF, WS	J	Low	Identify and develop an Emergency Resource Management Plan	Southern View Administration	Village	1 yr.	1.d.	New
	WF	J	Low	Create a taskforce between the Village and Springfield Fire District to identify resources	Southern View Administration/ Police	Village	1 yr.	4.e	New
	P	J	Low	Identify Testing and Vaccination Sites	Southern View Administration	Village	1 yr.	2.g.	New
	SS, T, WS			Design and construct a new municipal building to withstand severe weather		75% Federal 25% Village	3 yrs	2.g	Completed in 2009

SPAULDING	Hazard	Priority	Benefit/ Cost	Project	Implementation Responsibility	Funding Sources	Time Frame	Goal	Status
	ALL	A	High	Build a New Village Hall with a Storm Room	Spaulding Village Board	75% Federal 25% Village	10 yrs.	2.a.	New
	ALL	B	Medium	Obtain back-up generator at Village Hall.	Spaulding Village Board	75% Federal 25% Village	1 yr.	3.a.	New
	WS			Obtain a new plow truck to serve as back-up		Village	2 yrs.	3.c.	Completed

SPRINGFIELD	Hazard	Priority	Benefit/ Cost	Project	Implementation Responsibility	Funding Sources	Time Frame	Goal	Status
	SS, T	A	Medium	Establish, install or identify storm shelters for existing mobile home developments	Office of Public Works	75% Federal 25% City	1 yr.	2.a.	Ongoing
	F	A	Low	Acquire repetitively flood-damaged properties in the floodplain	Office of Public Works	75% Federal 25% City	Ongoing	2.f.	Ongoing
	SS, WS, F	A	Medium	Develop a storm water master plan and regulations	Office of Public Works	75% Federal 25% City	2 yrs.	2.e., 2.f., 2.g., 3.c., 3.d., 4.a., 4.d., 4.e., 5.a.	Selected engineering consultant in planning stage
	SS, WS, F	A	Medium	Perform recommended improvements from future storm water master plan	Office of Public Works	75% Federal 25% City	2 yrs.	2.e., 2.f., 2.g., 3.c., 3.d., 4.a., 4.d., 4.e., 5.a.	NEW
	SS, WS	A	Medium	Update Overflow Emergency Response Plan	Office of Public Works	75% Federal 25% City	Ongoing	4.e.	Ongoing. Update periodically.
	ALL	A	Medium	Install generator for Public Works Facilities	Office of Public Works	75% Federal 25% City	1 yr.	3.a.	Ongoing. New Streets and Traffic Facility Under Design.
	DR	A	Medium	Pursue supplemental water supply	CWLP-Water Division	City	Ongoing	3.b., 5.b.	Ongoing
	ALL	B	Medium	Educate citizens regarding proper actions to take to mitigate and prepare for natural hazards	Springfield Homeland Security	75% Federal 25% City	1 yr.	2.b.	Ongoing
	SS, WS	B	High	Monitor sensitive areas, then perform alternatives analysis to address sewer capacity issues	Office of Public Works	City	Ongoing	1.b.	Focusing on monitoring N.E. Area, pilot project underway
	F	B	High	Improve local drainage areas prone to flooding	Office of Public Works	City	Ongoing	2.g., 3.c.	Ongoing. Average 25-50 improvements per year.
	ALL	J	Medium	Identify at-risk populations within the community and establish a list	Springfield Community Relations and Homeland Security	City Staff	1 yr.	2.d.	Ongoing

ALL	J	Medium	Include natural hazards mitigation ideas in future changes and updates to Springfield Comprehensive plan	Office of Public Works	City Staff	Ongoing	4.d.	Completed (see 2017 Comprehensive Plan)
SS, T, WS	J	Medium	Continue tree trimming efforts around power lines	CWLP-Electric Division	City	Ongoing	3.d.	Ongoing
F, SS, WS	J	Low	Participate in the Community Rating System	Office of Public Works	City	1 yr.	4.b., 4.c.	Deferred (Minimal impact)
F, SS, WS	J	High	Develop a maintenance and inspection plan rating public infrastructure	Office of Public Works	City	2 yrs.	3.d.	Ongoing. Using NASSCO Rating for sewer infrastructure and PASER Rating for road infrastructure. Ongoing
F, SS, WS	J	Medium	Implement facilities plan	Office of Public Works	City	Ongoing	2.g., 3.c., 4.d., 4.e.	Ongoing
ALL	J	Medium	Update Land Subdivision Ordinance and Comprehensive Plan	Office of Public Works	City	2 yrs.	2.f., 3.c.	Comprehensive Plan update completed, Land Subdivision Ordinance update ongoing
ALL			Explore possibility of developing and purchasing a reverse 911 system for the City, Sangamon County and E-911		City, County, E-911	1 yr.	1.a.	Completed (use Alert Sense)
F, SS			Install signage for flood prone areas with elevation markers		City	1 yr.	1.a., 2.g., 3.c.	Completed
DF			Develop Emergency Action Plan in the event of a breach of Spaulding and/or Saddle Dams		City	1 yr.	4.d.	Completed
DR			Develop Emergency Action Plan in the event of a loss of the City water supply		City	1 yr.	3.b.	Completed
ALL			Develop and purchase a text messaging and email alert system		City	1 yr.	1.a.	Completed (use Alert Sense)
SS, T, WS			Bury power lines to critical infrastructure facilities		75% Federal 25% City	1 yr.	3.a.	Deleted (Budget)

THAYER	Hazard	Priority	Benefit/ Cost	Project	Implementation Responsibility	Funding Sources	Time Frame	Goal	Status
	SS, T	A		Have an engineer evaluate the Headstart School Building and Community Center for a safe area	Thayer Village Board	75% Federal 25% Village	1 yr.	2.a.	Unknown
	SS, T, WS	B		Bury power lines to critical facilities	Thayer Village Board	75% Federal 25% Village	2 yrs.	3.a.	Unknown
	ALL	B		Backup generator for safe haven	Thayer Village Board	Village	2 yrs.	2.a.	Unknown
	SS, T	J		Siren testing once a month	Thayer Village Board	Village	1 mo.	1.a.	Unknown
	ALL	J		Prepare a list of at-risk citizens	Thayer Village Board	Village	3 mo.	2.d.	Unknown
	ALL	J		Develop a list of supplies to have on hand	Thayer Village Board	Village	3 mo.	2.b.	Unknown
	ALL	J		Construct "Okay/Need Help" signs for residents to put in their windows during a natural disaster	Thayer Village Board	Village	6 mo.	2.e.	Unknown
	ALL	J		Have an ESDA Plan	Thayer Village Board	Village	3 mo.	4.e.	Unknown

WILLIAMSVILLE	Hazard	Priority	Benefit/ Cost	Project	Implementation Responsibility	Funding Sources	Time Frame	Goal	Status
	DR,EA, EH,F, MS,SS, T	A	High	Backup water supply to Villages	Williamsville/ Sherman Water District	75% Federal 25% Village	3 yrs.	2.g. 3.a. 3.b. 5.b.	New
	ALL	A	High	Replace Community Center Roof	Williamsville Village Board	75% Federal 25% Village	1 yr.	2.a. 2.g. 3.a.	New
	F	B	Medium	Construct Storm Water Drainage System	Williamsville Village Board	75% Federal 25% Village	1 yr.	3.d.	New
	DF	C	Medium	Repair leak in lake spillway	Williamsville Village Board	75% Federal 25% Village	1 yr.	2.g.	New
	ALL	J	Medium	Adopt Building Codes to ensure safe structures	Williamsville Village Board	Village	1 yr.	4.a.	Planning
	ALL	J	Medium	Assess local regulations to determine how they can better address the impacts of natural hazards	Williamsville Village Board	75% Federal 25% Village	1 yr.	4.c.	Planning
	EA, EH, SS, T, WS	J	Medium	Utilize newsletter/ website/alert system/SAM to provide information on natural hazard events and situations	Williamsville Village Board	Village	1 yr.	1.c.	Ongoing
	SS, T			Install new storm siren and relocate existing siren to enhance coverage area		Village	1 yr.	1.a.	Completed
	MS			Educate public on underground mines		Village	6 mo.	2.b.	Completed
SS, T, WS			Assistance to public (priority to special needs) to obtain emergency radios		Village	1 yr.	1.a.	Completed	
EA, EH, SS, T, WS			Let people know where to go when power is out		Village	6 mo.	2.a.	Completed	
EA, EH, SS, T, WS			Increase enrollment and utilization of existing electronic alerting system		Village	1 yr.	1.a.	Completed	

AMERICAN RED CROSS	Hazard	Priority	Benefit/ Cost	Project	Implementation Responsibility	Funding Sources	Time Frame	Goal	Status
	ALL	B		Take the lead on educating residents to take steps to protect themselves	Colleen Stone	75% Federal 25% Red Cross	6 mo.	2.b.	Unknown
	ALL	B		Take the lead on educating local businesses on steps to take to protect their employees	Kyle Belz	75% Federal 25% Red Cross	6 mo.	2.c.	Unknown
	SS, T, WS	J		Assist with obtaining bulk purchasing of crank weather radios	Colleen Stone	75% Federal 25% Red Cross	6 mo.	1.a.	Unknown

SANGAMON COUNTY WATER RECLAMATION DISTRICT	Hazard	Priority	Benefit/ Cost	Project	Implementation Responsibility	Funding Sources	Time Frame	Goal	Status
	F	A	Low	Update Sewer Use Ordinance	SCWRD	SCWRD	1 yr.	4.c.	New
	SS, T, WS	A	Medium	Dangerous Tree Mitigation	SCWRD	SCWRD	2 yr.	2.g.	New
	F, SS	B	Medium	Upgrade Sugar Creek Plant to handle combined sewer overloads	SCWRD	SCWRD	10 yr.	2.g.	New Plant was completed in 2018 However CSO project is in design process
	F, SS, T, WS	B	Medium	Upgrade pump stations in collection system and add backup generators	SCWRD	SCWRD	5 yr.	2.g.	Ongoing process as capital improvements allow
	F, SS, T, WS	B	High	Sugar Creek Plant Backup Generators	SCWRD	75% Federal, 25% SCWRD	5	3.a.	New
	SS, T, E	B	High	Chlorine Cylinder Containment System Planning, Design and Construction	SCWRD	75% Federal, 25% SCWRD	5 yr.	2.g.	New
	ALL	B	Low	Distribute and educate the community with brochures on all hazards	SCWRD	SCWRD	2 yr.	2.b.	New
	F,SS	B	Medium	Spring Creek Plant Floodwall Replacement to 500 Year Level	SCWRD	75% Federal, 25% SCWRD	5 yr.	2.g.	New
	F			Emergency pumps for storm, sewer, and flood pumping		SCWRD	1 yr.	2.g.	Completed
	F			Provide Vactor sewer cleaning trucks for emergency drain cleaning and flood cleanup		SCWRD	6 mo.	2.g.	Completed
	F			Install monitors at Combined Sewer Overflows to assist with flood tracking and warnings		SCWRD	2 mo.	1.b.	Completed
EA, F, SS, T, WS			Establish tiered system for supply of fuel (gasoline and diesel) for generators, pump stations, and plant operations		SCWRD	6 mo.	2.g.	Completed	
SS, T, WS			Establish back-up power agreement with CWLP and Ameren to ensure continued sewer plant operations		SCWRD	6 mo.	2.g.	Completed	

SMTD	Hazard	Priority	Benefit/ Cost	Project	Implementation Responsibility	Funding Sources	Time Frame	Goal	Status
	EA, SS, T	A			Include wind resistance and seismic activity in design and construction of multi-modal center	SMTD Board	75% Federal 25% SMTD	7 yrs.	2.g.
SS, T, WS	A			Bury power lines to existing mass transit facility	SMTD Board	75% Federal 25% SMTD TRC	1 yr.	3.a.	Unknown

	Hazard	Priority	Benefit/ Cost	Project	Implementation Responsibility	Funding Sources	Time Frame	Goal	Status
SPRINGFIELD PARK DISTRICT	SS, T	A		Construct safe shelters at Centennial Park and Southwind Park	Springfield Park District Board	75% Federal 25% Park District	1-3 yrs.	2.a.	Unknown
	SS, T	A		Construct lightning/storm shelters on golf course and parks	Springfield Park District Board	75% Federal 25% Park District		2.a.	Unknown
	SS, T	A		Install severe weather warning signage in parks, golf courses, and ball fields	Springfield Park District Board	75% Federal 25% Park District		2.b.	Unknown
	SS, T	B		Provide educational display at Southwind Park	Springfield Park District Board	75% Federal 25% Park District	1 yr.	2.b.	Unknown
	SS	B		Provide lightning warning signage through Park District	Springfield Park District Board	75% Federal 25% Park District	1 yr.	2.a, 2.b.	Unknown
	SS, T	J		Trim trees of excessive height and remove dead material	Springfield Park District Board	Park District		3.d.	Unknown

Section V – Monitoring, Evaluating & Updating

The 2022 Natural Hazards Mitigation Plan Update is an action document based on the assessment of risks to the participating communities. It contains projects to be implemented, but also serves as a tool to integrate the concept of natural hazards mitigation into comprehensive planning efforts and regulatory structures on a regionalized basis. However, as communities grow, weather patterns change, or other variables take on a modified significance, the Hazard Mitigation Plan will need to be reviewed and updated.

Plan Adoption, Implementation and Maintenance

The Task Force approved the draft plan and recommended it to be released for public comment at its January 26, 2023, meeting. A public hearing was held on February 27, 2023, at which time the Task Force reviewed public comment, took action on the comments to be incorporated in the plan, and formally adopted the plan. The Regional Planning Commission submitted the draft plan to the IEMA and FEMA for review. Upon receiving final approval from FEMA, jurisdictions adopted resolutions adopting the Plan Update.

Each project included in the plan has been assigned to specific communities, or by groups of communities for implementation. Some of the mitigation action items can be implemented by the jurisdictions with relative ease through ensuring that hazard mitigation planning efforts become part of every facet of local government. For example, several communities worked together to develop an action item to explore the development of a cross-jurisdictional storm water management plan. However, other action items that focus on improving physical infrastructure require funding resources that are not readily available. As those resources become available, communities will proceed with the implementation of the action items.

The strategy for monitoring and evaluating the Plan is the formation of a Workgroup consisting of all community representatives and technical partners who volunteered to continue their involvement. Upon adoption of the Plan, the initial Workgroup will be structured as shown on the next page.

The Workgroup members will be responsible for monitoring and documenting the implementation of the Plan by their communities. Monitoring the Plan assures that the many parties identified for the implementation of projects remain aware of their responsibilities and that community leaders will continue to integrate natural hazards mitigation into local planning mechanisms. Workgroup members will also evaluate the Plan in relation to changing circumstances.

The Workgroup will meet at least twice a year to review the progress of the communities in implementing the Plan and to prepare a progress report to be submitted to the governing bodies of all communities. The report will include an evaluation of the Plan and identify any areas that may need to be revisited. In the process to create this annual report, participating communities may make modifications to existing projects and add other projects. Additional mitigation action items will result in notification to IEMA and FEMA as applicable provided it is through the process to create the annual report. Non-participating communities and organizations shall wait until the five-year plan update to provide status report updates or to modify existing projects. The report year will start on the date the first community adopts the final Plan. Each meeting will provide time for the Workgroup members to network and explore opportunities for working together in mitigation efforts.

Every five years the Plan will be updated taking into account changing circumstances and risks. The Workgroup may schedule additional meetings for this process which needs to start early enough to provide adequate time for the review, concurrence, and adoption of each community and the approval of FEMA by the five-year anniversary date of the first community's adoption of the Plan.

Any non-participating community may choose to join the Multi-jurisdictional Plan during the 5-year update and will be responsible for providing all information needed to be integrated into the Plan. Non-participating communities may join the plan after passage using procedures outlined by FEMA. However, local funds and an intergovernmental agreement will be required from the non-participating community for SSCRPC assistance in this process.

Public participation will remain a vital part of the planning process. The website established by the SSCRPC will be maintained, meetings will be open to the public, meeting notices will be posted in communities, and the media will be notified of meetings and Plan reports and updates.

Maintenance Workgroup of the 2022 Sangamon County
Multi-jurisdictional Natural Hazards Mitigation Plan

Auburn – John Edie
Buffalo – Daniel Miller
Chatham – Trent Thompson
Curran – Tim Thomas
Dawson – Tyler Abbott
Divernon – Chuck Apgar
Grandview – Maria Ray
Illiopolis – Sam Rogers
Jerome – Dale Lael
Leland Grove – Lance Cull
Mechanicsburg – Larry Hamlin
New Berlin – Stephen Knox
Pawnee – Dave Skinner
Pleasant Plains – Craig Held
Riverton – Joe Bartley/Regina Rusciolelli/Tom Rader
Rochester – Matt Butcher/Stacia Munroe
Sherman – Mike Moos
Southern View – Robert Eskew/Lisa Cave
Spaulding – Jean Hillyer
Springfield – Nate Bottom
Williamsville – John Brennan
Sangamon County – Brian Davis
SCWRD – Gregg Humphrey
Springfield Homebuilders Association – Steve Sturm
Sangamon County Office of Emergency Management – Bill Lee