
Champaign County Multi-Jurisdictional Hazard Mitigation Plan

2020 Update



Champaign County
Department of

**PLANNING &
ZONING**



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The 2020 Update to the Champaign County Multi-Jurisdictional Hazards Mitigation Plan was funded by the Illinois Emergency Management Agency, with a local match provided by Champaign County, Illinois. The project was facilitated by the Champaign County Planning and Zoning Department, and technical assistance provided by the Champaign County GIS Consortium.

The 2015 Update to the Champaign County Multi-Jurisdictional Hazards Mitigation Plan was funded by the Federal Emergency Management Agency through the Illinois Emergency Management Agency State-Local Hazard Mitigation Grant Program, with a local match provided by Champaign County, Illinois and plan update project facilitation provided by Champaign County Regional Planning Commission, and technical assistance provided by the Champaign County GIS Consortium.

The preparation of the Champaign County Multi-Jurisdictional Natural Hazard Mitigation Plan, during 2007-2009, was funded through a Pre-Disaster Mitigation Grant Program Planning Grant from the Federal Emergency Management Agency, with the local match provided by Champaign County, and project facilitation provided by Champaign County Regional Planning Commission.

1 Introduction

Plan Purpose

The *Champaign County Multi-Jurisdictional Hazard Mitigation Plan Update 2020* (HMP Update) identifies and prioritizes community policies, actions, and tools to implement to reduce potential risk and potential for future losses associated with the occurrence of selected natural and technical hazards. The HMP Update is developed to be useful to each participating local government agency and institution and can be used to increase awareness of potential natural hazards and technical hazards; and to understand potential losses from hazard events.

The HMP Update meets the planning criteria of the Disaster Mitigation Act of 2000 including specific planning objectives established by the Federal Emergency Management Agency (FEMA): coordination among agencies, integration with other planning efforts & existing programs, and state coordination of local mitigation planning.

Organization of Plan

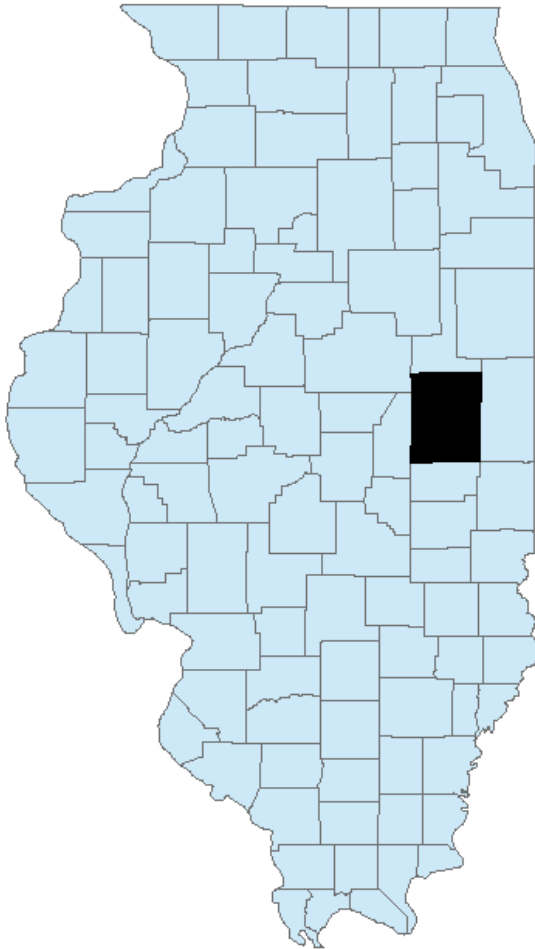
The HMP Update includes the following information specific to the Plan Area:

- Profiles of selected natural and technical hazards;
- Hazards risk assessments;
- Hazard mitigation goals;
- Jurisdiction- and institution-specific mitigation action implementation schedule;
- Schedule to monitor, evaluate and update the HMP; and
- Information regarding opportunities for continued public involvement.

Plan Area

Located in East Central Illinois, the Plan Area encompasses the geographic area of unincorporated Champaign County and 24 municipalities situated wholly or partially within Champaign County, and includes the main campus areas of Parkland College and the University of Illinois at Urbana-Champaign (Figure 1-1). The total surface area of the Plan Area is approximately 998.4 square miles, consisting of an estimated 995.8 square miles of land and approximately two square miles of water surface.

Figure 1-1. Plan Area



Source: Champaign County GIS Consortium

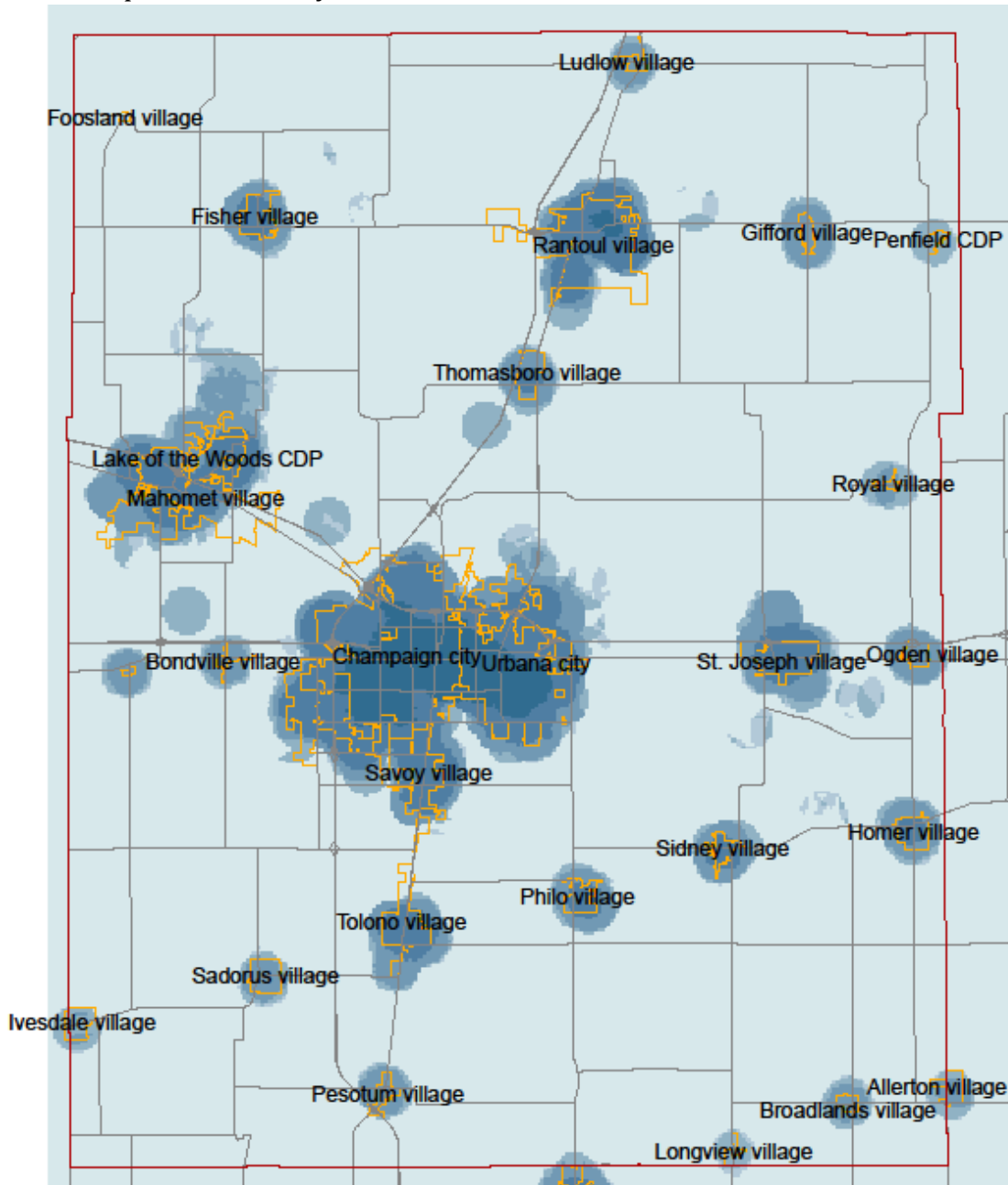
Population and Growth

The U.S. Census Bureau Vintage 2019 population estimate total for Champaign County is 209,689.¹ Population projections are that the Plan Area population will total approximately 250,000 people by the year 2040.²

Moderate but stabilized population growth has occurred in the Plan Area, with a focus on growth in the urban areas since about 1980. While some population growth has occurred in core areas of the largest municipalities, a significant amount has also occurred on the fringes of these municipalities, converting rural land for urban uses. Some unincorporated areas have experienced recent population growth. This is especially noted in townships closest to the larger municipalities.

Figure 1-2 is a population density map of the Plan Area.

Figure 1-2. Population Density of Plan Area



Source: ESRI Municipal Population Data, 2013

People Per Square Mile

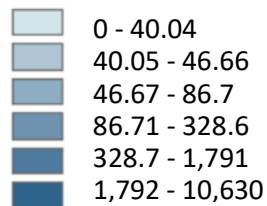
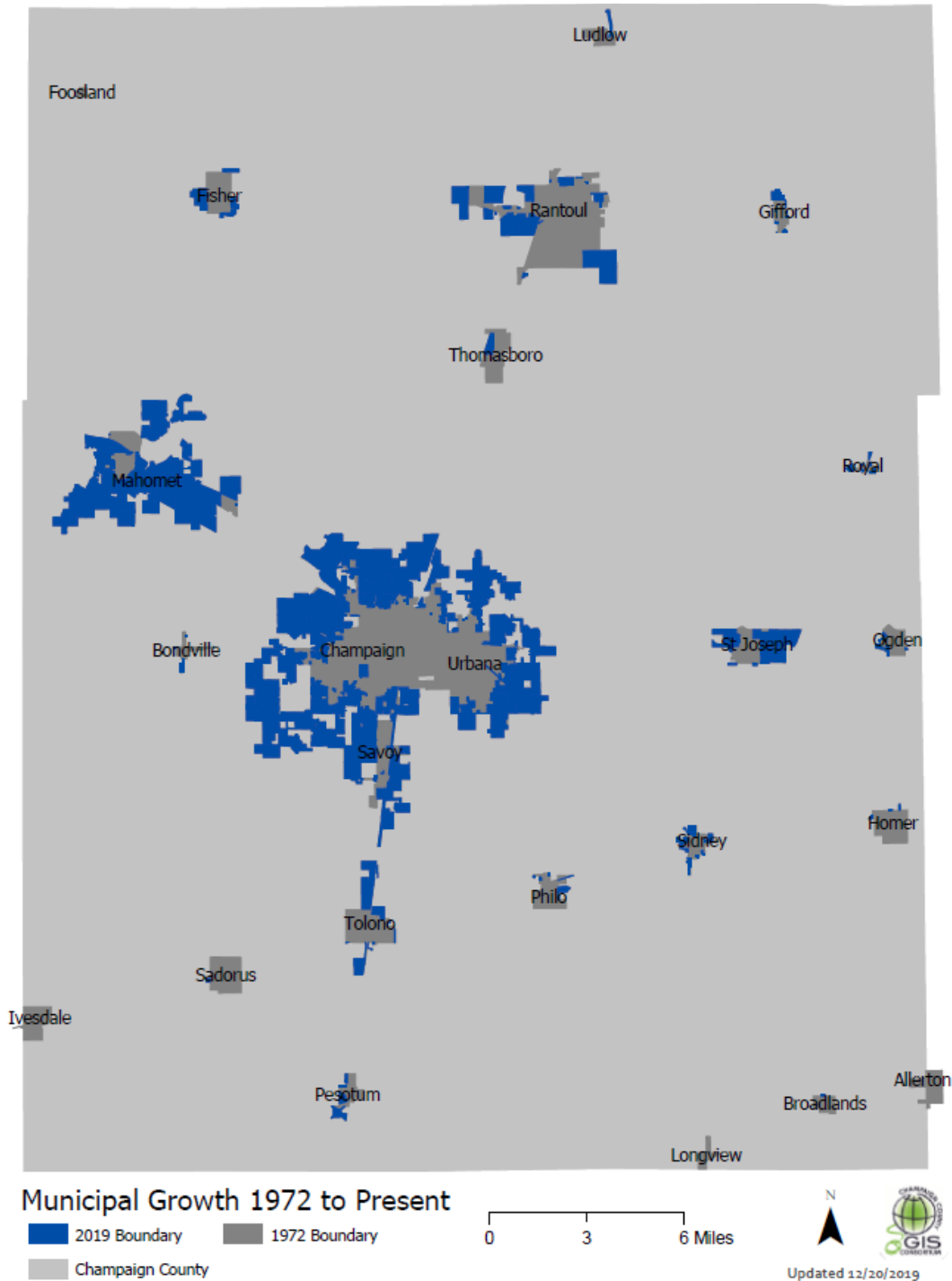


Figure 1-3 is a map of the growth of municipal areas in the Plan Area occurring between 1972 and 2020. Since 1972, the acreage of Plan Area surface located within the corporate limits of a municipality has increased by 156 percent.

Figure 1-3. Growth of Municipalities within Plan Area



Source: Champaign County GIS Consortium

Land Use and Future Development Trends

Agriculture:

Farmlands (cropland) constitute the largest share of land use by acreage within the Plan Area (Figure 1-4). An estimated 76 percent of soils within the Plan Area are considered “Best Prime Farmland.”³ Farm development trends are that the number of farms is declining as the average farm size has increased, with the largest percentage of farms continuing to be farms that are 100 to 499 acres.

Commercial and Industrial Development:

Most commercial and industrial development within and near Champaign County occurs within urban areas. That general trend is not expected to change, given the County’s policies to limit development within agricultural areas and to preserve agricultural areas. In the rural zoning districts, County zoning regulations allow only for establishment of certain types of low intensity commercial and industrial development that do not require public sanitary sewer, do not create traffic conflicts, and that are compatible with agricultural operations and other neighboring land uses.

Limits on Residential Development in Rural Areas:

With certain permit limitations in place since 1999, piecemeal residential development continues to occur in rural areas. This type of development can create issues for adjacent lands, the transportation network, services infrastructure, natural environment, and wildlife habitat, among others. The limited available of groundwater in portions of the Plan Area often presents challenges for large rural subdivisions. Since 1999, development of rural residential subdivisions has been regulated by County “Rural Residential Overlay” requirement which entails a public hearing and detailed review of the residential development proposal as it relates to site suitability and agricultural compatibility.

Public Safety and Emergency Services:

Remote rural locations in the Plan Area which are located more than five miles from fire protection services and necessarily receive a different level of service for fire protection and emergency services. Fire protection and infrastructure provision are important in protecting the health and safety of residents. Maintaining the shortest distance to these services is important.

Future Land Use:

Adopted municipal comprehensive plans are available for 12 municipalities in the Plan Area. The *Champaign County Land Resource Management Plan* includes a future land use map and land use management areas map for unincorporated Champaign County. These land use plans are intended to guide decisions regarding

accommodating expected housing, commercial, industrial land, and infrastructure requirements of an increasing population base.

Buildings and Critical Facilities

Inventory of Structures

All structures within the Plan Area were grouped into seven general categories based on occupancy type and use:

- Residential Single family dwellings, multi-family dwellings, mobile homes, temporary lodging, institutional dormitories, and nursing homes
- Commercial Structures used for retail trade, wholesale trade, personal and repair services, professional/technical/business services, banks, hospitals, medical offices/clinics, entertainment & recreation, theaters, and parking
- Industrial Structures used for light industry, heavy industry, food/drug/chemical production, high technology, and construction
- Agricultural Structures whose main purpose is to support agricultural production
- Religion Houses of worship (e.g., churches, temples, mosques) and some non-profit organizations
- Government Government buildings providing general services
- Education Schools, libraries, colleges, and universities

Table 1-1. Structures in Plan Area by General Occupancy Type

	Total Structures	Residential	Commercial	Industrial	Agricultural	Religion	Government	Education
Plan Area Total	66,297	60,331	3,794	814	604	389	135	230
Village of Allerton	134	128	3	0	1	1	1	0
Village of Bondville	222	203	10	4	3	1	0	1
Village of Broadlands	164	150	9	0	2	1	1	1
City of Champaign	23,776	21,544	1,585	278	68	153	46	102
Village of Fisher	740	696	26	5	7	4	1	1
Village of Foosland	49	44	4	0	0	0	1	0
Village of Gifford	393	367	16	4	3	0	2	1
Village of Homer	556	496	35	8	6	6	3	2
Village of Ivesdale	137	127	5	2	2	0	1	0
Village of Longview	71	68	1	1	1	0	0	0
Village of Ludlow	175	168	2	0	1	1	1	2
Village of Mahomet	2,758	2,545	140	32	18	15	1	7
Village of Ogden	346	320	15	3	3	2	1	2
Village of Pesotum	261	246	4	4	4	0	2	1
Village of Philo	591	543	24	8	8	4	2	2
Village of Rantoul	4,675	4,248	300	56	16	33	7	15
Village of Royal	144	136	1	2	4	0	0	1
Village of Sadorus	197	182	8	3	0	1	2	1
Village of Savoy	2,490	2,360	92	16	5	12	2	3
Village of Sidney	515	475	23	9	3	3	1	1
Village of St Joseph	1,477	1,391	55	11	5	8	3	4
Village of Thomasboro	507	475	15	7	5	1	3	1
Village of Tolono	1,293	1,238	31	11	4	5	2	2
Unincorporated	13,834	12,443	668	238	404	48	15	18
City of Urbana	10,792	9,738	722	112	31	90	37	62
University of Illinois at Urbana-Champaign and Parkland College ¹								

Source: HAZUS 4.2 Software, based on 2010 U.S. Census data and 2017 HAZUS General Building Stock

Table 1-1 Note:

- Structures owned by the University of Illinois and Parkland College are omitted from Table 1.1 data.

Table 1-2. Estimated Structure Replacement Cost by Occupancy Type

	Average Cost Per Square Foot (dollars)	Average Size ¹ (square feet)	Average Replacement Cost (dollars)
Residential			
Single Family Dwelling <i>(Refer to Table 1-3)</i>			
Manufactured Housing	48.86	1,475	72,069
Multi Family Dwelling <i>(Refer to Table 1-4)</i>			
Temporary Lodging	182.28	135,000	24,607,800
Institutional Dormitory	199.63	25,000	4,990,750
Nursing Home	215.91	25,000	5,397,750
Commercial			
Retail Trade	114.47	110,000	12,591,700
Wholesale Trade	120.00	30,000	3,600,000
Personal and Repair Services	139.88	10,000	1,398,800
Professional/Technical/Business	176.29	80,000	14,103,200
Banks	261.33	4,100	1,071,453
Hospital	302.35	55,000	16,629,250
Medical Office/Clinic	226.54	7,000	1,585,780
Entertainment & Recreation	227.53	5,000	1,137,650
Theaters	190.95	12,000	2,291,400
Parking	80.59	145,000	11,685,550
Industrial			
Heavy	133.03	30,000	3,990,900
Light	120.00	30,000	3,600,000
Food/Drugs/Chemicals	180.47	45,000	8,121,150
Metals/Minerals Processing	180.47	45,000	8,121,150
High Technology	180.47	45,000	8,121,150
Construction	120.00	30,000	3,600,000

Continued

Table 1-2. Estimated Structure Replacement Cost by Occupancy Type (Continued)

	Average Cost Per Square Foot (dollars)	Average Size ¹ (square feet)	Average Replacement Cost (dollars)
House of Worship	190.53	30,000	5,715,900
Agricultural	120.00	17,000	2,040,000
Government			
General Services	149.83	11,000	1,648,130
Emergency Response	254.23	11,000	2,796,530
Education			
Schools and Libraries	201.63	130,000	26,211,900
Colleges and Universities	171.05	50,000	8,552,500

Source: HAZUS 4.2 Software, based on 2014 RS Means Data

Table 1-2 Note:

1. Average size derived from data from the U.S. Energy Information Administration and 2010 U.S. Census for residential data, and adjusted Hazus-MH 2006 square footage data for non-residential data.

Table 1-3. Estimated Average Replacement Costs for Single Family Dwellings

Home Type	No Basement	Finished Basement	Unfinished Basement
Average Replacement Cost per Square Foot (dollars)			
1 Story Economy	97.61	26.45	9.55
2 Story Economy	104.04	15.20	6.30
3 Story Economy	104.04	15.20	6.30
Split Level Economy	96.69	15.20	6.30
1 Story Average	116.66	32.80	11.25
2 Story Average	122.75	21.05	7.40
3 Story Average	127.94	16.65	5.80
Split Level Average	113.66	21.05	7.40
1 Story Custom	159.51	53.65	21.65
2 Story Custom	163.95	30.90	12.90
3 Story Custom	168.69	22.55	9.60
Split Level Custom	153.15	30.90	12.90
1 Story Luxury	188.84	59.00	22.65
2 Story Luxury	194.94	34.55	13.85
3 Story Luxury	201.09	25.50	10.40
Split Level Luxury	181.61	34.55	13.85

Source: HAZUS 4.2 Software, based on 2014 RS Means Data

Table 1-4. Estimated Average Replacement Costs for Multi-Family Dwellings

Home Type	Average Replacement Cost Per Square Foot (dollars)	Average Size ¹ (square feet)	Average Replacement Cost (dollars)
Duplex	124.25	2,200	273,350
Triplex/Quads	109.66	4,400	482,504
Apartment 5-9 Units	201.33	8,000	1,610,640
Apartment 10-19 Units	187.75	15,000	2,816,250
Apartment 20-49 Units	188.48	40,000	7,539,200
Apartment 50+ Units	174.53	80,000	13,962,400

Source: HAZUS 4.2 Software, based on 2014 RS Means Data

Table 1-4 Note:

1. Average size derived from data from the U.S. Energy Information Administration and 2010 U.S. Census for residential data, and adjusted Hazus-MH 2006 square footage data for non-residential data.

Critical Facilities

Critical facilities are buildings or infrastructure considered as vital to protect from the adverse impacts of a natural hazard by means of mitigation. In the Plan Area if a facility met one or more of the following criteria, it was identified as a critical facility:

- Facility essential to managing and responding to a hazard event;
- Facility housing or containing vulnerable populations, specifically children or the elderly;
- Large place of assembly; or
- Facility containing hazardous materials.

Critical facilities in the Plan Area are listed in their general categories as follows:

- **Essential Facilities** Emergency Facilities, including police stations; fire stations; hospitals, emergency management agencies/emergency service and disaster agencies
- **Utility Lifelines** Potable water facilities (e.g., water tower, public well station), wastewater facilities (e.g., public sewage treatment plant), electrical substations, natural gas facilities, natural gas pipelines, radio, and television stations
- **Transportation Lifelines** Railway facilities, railway bridges, bus facilities, highway bridges, airports, and heliports
- **High Potential Loss Facilities** Military installations, dams, levees, and hazardous material facilities
- **Facilities of Local Facilities** Schools (excluding residential home schools); day care centers; nursing homes; retirement, assisted and supported living facilities; subsidized senior apartments; senior centers; libraries; movie

theaters; stadiums; correctional facilities; selected government buildings

Table 1-5. Critical Facilities within Participating Jurisdictions

	Essential Facilities	Utility Lifelines	Transportation Lifelines	High Potential Loss Facilities	Total Count of Critical Facilities
Plan Area Total ¹	303	125	905	147	1480
Unincorporated Champaign County	15	46	769	42	872
Village of Allerton	1	0	0	0	1
Village of Bondville	1	0	0	0	1
Village of Broadlands	2	1	3	0	6
City of Champaign	103	23	55	48	229
Village of Fisher	8	3	8	1	20
Village of Foosland	1	0	0	0	1
Village of Gifford	4	0	0	2	6
Village of Homer	7	1	1	0	9
Village of Ivesdale	3	2	2	2	9
Village of Longview	1	0	0	0	1
Village of Ludlow	3	1	0	0	4
Village of Mahomet	16	3	13	1	33
Village of Ogden	3	1	1	0	5
Village of Pesotum	2	1	2	0	5
Village of Philo	5	1	0	1	7
Village of Rantoul	25	21	9	11	66
Village of Royal	2	1	1	2	6
Village of Sadorus	2	1	1	0	4
Village of Savoy	11	1	1	1	14
Village of Sidney	4	1	5	0	10
Village of St. Joseph	10	2	5	1	18
Village of Thomasboro	3	1	2	0	6
Village of Tolono	7	1	1	4	13
City of Urbana	64	13	26	31	134
University of Illinois at Urbana-Champaign ²					744
Parkland College ³					10

Table 1-5 Notes:

1. The Plan Area Total excludes University of Illinois and Parkland College critical facilities.
2. The total number of University of Illinois critical facilities is based on data from the University of Illinois Facilities and Services Building List.
3. The total number of Parkland College critical facilities was provided by the Parkland Public Safety Director.

Chapter 1 Notes:

1. Champaign County, Illinois comprises the entire Plan Area except for the portion of the Village of Ivesdale located in neighboring Piatt County, and the portion of Allerton located in neighboring Vermilion County. Note that the entire corporate areas of the Village of Ivesdale and the Village of Allerton are within the Plan Area.
2. The population projection estimate is based on the Champaign-Urbana Urbanized Area Transportation Study, Long Range Transportation Plan: Sustainable Choices 2040, CCRPC Champaign-Urbana Urbanized Area Transportation Study, December 2014.
<https://lrtp.cuuats.org/>.
3. These are prime farmland soils identified in the Champaign County Land Evaluation and Site Assessment System that under optimum management have 91% to 100% of the highest soil productivities in Champaign County, on average, as report in the *Bulletin 811 Optimum Crop Productivity Ratings for Illinois Soils*.

2 Planning Process

Planning Process

The planning process to develop and update the HMP Update encompassed multiple tasks, with opportunities provided for citizen input public participation throughout. Table 2-1 is a summary of the major planning process tasks, including HMP Update project staff and HMP Planning Team efforts to involve participating jurisdictions and encourage citizen input and public participation.

In addition to encouraging citizen input and public participation throughout the HMP Update planning process, during the planning process, HMP project staff encouraged local officials and representatives of Champaign County, adjacent counties, and local officials, representatives of 24 municipalities located wholly or partially within Champaign County, and key public safety representatives of the University of Illinois at Urbana-Champaign and Parkland College to provide ideas and feedback regarding the HMP development and update efforts.

Table 2-1: Outline and Summary of HMP Planning Process

<p><u>Determine Plan Area and Organize Resources</u></p> <ul style="list-style-type: none"> ○ Encourage local government jurisdictions and institutions of higher education to participate <ul style="list-style-type: none"> ▪ Project staff, consisting of project manager, planning intern, and administrative support staff, publicized HMP development to Champaign County, neighboring counties, all municipal jurisdictions situated within or partially within Champaign County, University of Illinois at Urbana-Champaign, and Parkland College. ▪ Project staff solicited and obtained agreement of 27 jurisdictions (including 25 local government jurisdictions and two higher education institutions) to participate in HMP development and subsequent update.
<p><u>Build HMP Planning Team and Advisory Group</u></p> <ul style="list-style-type: none"> ○ Recruit planning team and recruit advisory group <ul style="list-style-type: none"> ▪ Project staff recruited Planning Team members and Advisory Group members.
<p><u>Create an Outreach Strategy</u></p> <ul style="list-style-type: none"> ○ Publicize project ○ Encourage public participation throughout HMP development and update <ul style="list-style-type: none"> ▪ To encourage public participation throughout the development and HMP update, the Planning Team agreed to a multi-faceted outreach strategy that encompassed use of an interactive website, interviews, newsletters, press releases, area-specific meetings, and outreach via the Play It Safe community event, and project review open houses. Project staff developed templates of outreach materials for use by all participants. ○ Establish and maintain interactive website <ul style="list-style-type: none"> ▪ Project staff established and continues to maintain the HMP Update website.

(continued)

Table 2-1: Outline and Summary of HMP Planning Process (continued)

<p><u>Profile Hazards & Assess Risks</u></p> <ul style="list-style-type: none"> o Identify hazards <ul style="list-style-type: none"> ▪ Planning Team selected natural hazards to include in 2009 HMP and agreed to add selected technical hazards to HMP update. o Profile hazard events o Inventory assets and estimate potential losses o Review findings with Planning Team, Advisory Group, public, and participating jurisdictions <ul style="list-style-type: none"> ▪ Project staff updated natural hazards profiles and provided hazards profiles for technical hazards selected by Planning Team. ▪ Champaign County GIS Consortium staff coordinated use of HAZUS-MH software and related digital data collection for risk assessments and subsequent risk assessments updates conducted for riverine flood events and earthquake events. ▪ With input from Champaign County GIS Consortium, project staff compiled data and drafted risk assessment descriptions for HMP. ▪ Planning Team and Advisory Group reviewed and provided comments regarding draft hazards profiles and risk assessment data. ▪ Public Opinion Survey distributed to invite input regarding selected hazards and perceived risks. o Develop newsletter updates and press releases <ul style="list-style-type: none"> ▪ Project staff developed press releases, newsletters, and display posters regarding current hazards profiles and risk assessments information.
<p><u>Review Community Capabilities</u></p> <ul style="list-style-type: none"> o Review capabilities of each jurisdiction <ul style="list-style-type: none"> ▪ Project staff and Planning Team researched existing programs, plans, ordinances, and documents for each participating jurisdiction relevant to HMP development and to implementation of potential mitigation actions. ▪ Project staff interviewed key representative(s) of each participating municipal jurisdiction to provide updates and obtain feedback regarding HMP development and update.
<p><u>Develop Mitigation Strategy</u></p> <ul style="list-style-type: none"> o Formulate goal & determine objectives o Conduct public survey or otherwise encourage public input regarding possible mitigation ideas <ul style="list-style-type: none"> ▪ During HMP development, project staff developed and publicized a public preference survey to receive input regarding potential mitigation action preferences. o Identify & prioritize mitigation actions <ul style="list-style-type: none"> ▪ Project staff provided Planning Team a review of survey results, background information regarding identification of goals and objectives, types of mitigation actions, and a proposal for prioritizing mitigation actions. o Review and update implementation strategy <ul style="list-style-type: none"> ▪ Planning Team rated various mitigation options and provided feedback to project staff. ▪ Based on Planning Team input, project staff drafted HMP review document containing current goals and objectives, proposed HMP mitigation actions, and implementation strategy. ▪ Project staff invited Planning Team and Advisory Group review and comment of proposed draft HMP, followed by a public review and comment period.

(continued)

Table 2-1: Outline and Summary of HMP Planning Process (continued)

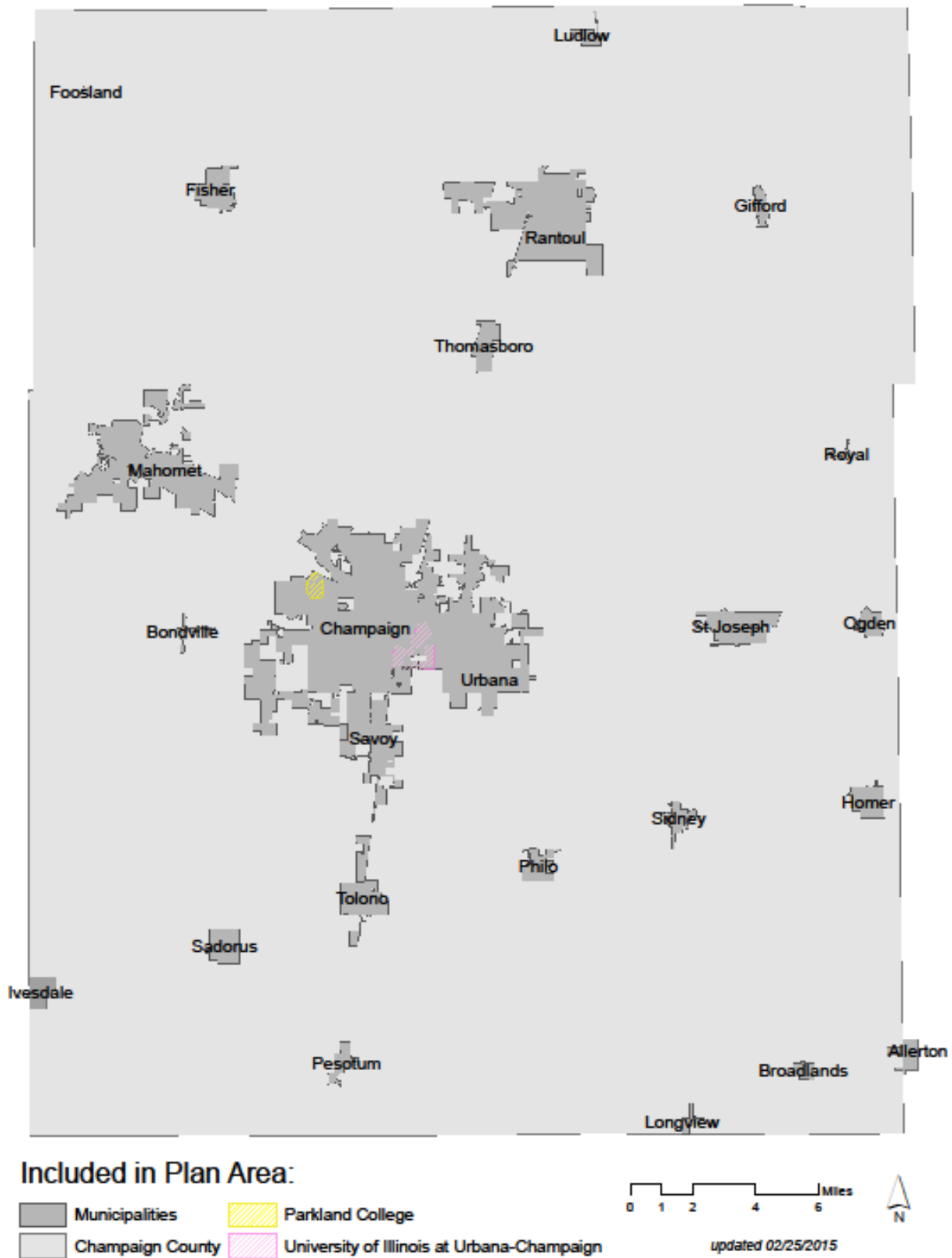
<p><u>Develop Mitigation Strategy (continued)</u></p> <ul style="list-style-type: none"> ▪ Project staff met with representatives of each participating local government, the University of Illinois at Urbana-Champaign, and Parkland College to review status of existing mitigation actions, and to consider proposed new mitigation actions.
<p><u>Implement HMP & Monitor Progress</u></p> <ul style="list-style-type: none"> ○ Review and update options for HMP maintenance <ul style="list-style-type: none"> ▪ Project staff reviewed options for HMP maintenance with Planning Team members. ▪ Planning Team members reached consensus regarding a preferred HMP maintenance schedule.
<p><u>Review and Adopt Plan</u></p> <ul style="list-style-type: none"> ○ Disseminate information regarding proposed mitigation actions for each jurisdiction, invite additional comments and input, and request plan review <ul style="list-style-type: none"> ▪ Project staff updated draft HMP document for review of Planning Team and Advisory Group prior to a public review and comment period. ▪ Project staff and Planning Team reviewed ‘Local Mitigation Plan Review Tool’ regarding draft HMP update prior to submitting HMP update for initial state and FEMA plan review. ○ Based on review comments and input received, make final HMP revisions as appropriate <ul style="list-style-type: none"> ▪ Project staff received FEMA issued ‘approvable pending adoption’ letter regarding draft HMP update. ▪ Planning Team members requested local government jurisdictions which they represented during HMP development and update process to review and adopt HMP. ▪ Project staff requested local government jurisdictions which they represented on Planning Team during HMP development and update process to review and adopt HMP. ○ Finalize revisions to HMP as need be <ul style="list-style-type: none"> ▪ On an as-needed basis, project staff incorporated final revisions to HMP, only per request of the local government jurisdiction prior its adoption of HMP, and specific only to the participating jurisdiction.

Participating Jurisdictions and Institutions

Each of the 25 local government bodies agreed to participate in HMP development, and each were requested to provide a resolution indicating their intent to participate in HMP development and review and potentially adopt the HMP Update. The invited public safety representatives of the University of Illinois at Urbana-Champaign and Parkland College agreed to participate in the HMP development and update process.

Figure 2-1 is a map indicating participating jurisdictions within the Plan Area.

Figure 2-1. Participating Jurisdictions within Plan Area



Planning Team

The HMP project manager selected a ‘combination’ approach to represent participating jurisdictions on the Planning Team. This approach allowed for the direct representation of the seven largest populated local government jurisdictions (an estimated 90% of Plan Area population as of 2010) on the Planning Team, and for the HMP project planner to serve as an authorized representative of the 20 smaller municipalities on the Planning Team (an estimated 10% of Plan Area population based on the 2010 U.S. Census Bureau estimates. Table 2-2 lists all participating jurisdictions and their estimated populations.

For the development of the HMP and subsequent HMP updates, Planning Team members were chosen to represent the most densely populated participating jurisdictions in the Plan Area. Duties of HMP Planning Team members included providing data and information about their respective jurisdictions, participating in the development and update of the HMP, and, as applicable, to bring forward the HMP for review and to request adoption by their respective local government jurisdictions.

Table 2-3 lists HMP Planning Team members who represented each local government jurisdiction within the Plan Area, specifically the jurisdiction represented and the person’s position or title and agency within the jurisdiction.

Table 2-4 lists HMP Planning Team members, and their respective position or title, representing the two participating institutions of higher education, namely UIUC and Parkland College.

Advisory Group

Project staff recruited an HMP Advisory Group to support the HMP Planning Team in their review of the draft HMP document and to provide their additional input at key stages during the project. HMP Advisory group members included public service providers, private service providers, and selected government agency representatives. Table 2-5 lists the HMP Advisory Group members and their affiliation.

Table 2-2. Representation of Participating Local Government Agencies and Participating Institutions on Planning Team

Key

	Jurisdiction directly represented on Planning Team.
	Jurisdiction represented by CCRPC project staff on Planning Team.

	Participating Local Government Agency or Institution	2010 Population
1	University of Illinois at Urbana-Champaign	44,942 students ¹
2	Parkland College	9,715 students ¹
3	Unincorporated area of Champaign County	29,066
4	City of Champaign	81,055
5	City of Urbana	41,250
6	Village of Rantoul	12,941
7	Village of Savoy	7,280
8	Village of Mahomet	10,170 ²
9	Village of St. Joseph	3,967
10	Village of Tolono	3,447
11	Village of Fisher	1,881
12	Village of Philo	1,466
13	Village of Thomasboro	1,126
14	Village of Homer	1,193
15	Village of Sidney	1,233
16	Village of Gifford	975
17	Village of Ogden	810
18	Village of Pesotum	551
19	Village of Bondville	443
20	Village of Sadorus	416
21	Village of Ludlow	371
22	Village of Broadlands	349
23	Village of Ivesdale	267
24	Village of Allerton	277
25	Village of Royal	293
26	Village of Longview	153
27	Village of Foosland	101

Source: U.S. Bureau of the Census Population Estimates, State and County Quick Facts

Table 2-2 Notes

1. Student enrollment figures as of Fall 2013 are based on the UIUC Common Data Set 2013-2014 for Institutional Enrollment as of October 15, 2013, and

Parkland College Office of Admissions and Enrollment Management estimate accessed online during 2015. The student population is counted as part of the most current population estimates indicated for the underlying participating municipal jurisdictions.

2. Lake of the Woods, a Census Designated Place, is included as part of the Village of Mahomet 2010 Census Population estimate.

Table 2-3. HMP Planning Team Members Representing Participating Local Government Agencies

Jurisdiction	Local Government Agency Representatives on HMP Planning Team
Champaign County	2007-2009: Director, Champaign County Emergency Management Agency Emergency Response Planner, Champaign-Urbana Public Health District 2014-2015: Coordinator, Champaign County Emergency Management Agency Deputy Coordinator, Champaign County Emergency Management Agency Emergency Preparedness Planner, Champaign-Urbana Public Health District 2019-2020: Coordinator, Champaign County Emergency Management Agency Deputy Coordinator, Champaign County Emergency Management Agency Emergency Preparedness Planner, Champaign-Urbana Public Health District
City of Champaign	2007-2009: Emergency Management Coordinator, Champaign Fire Dept. Acting Deputy Chief, Champaign Fire Department Assistant Planning Director, Planning & Development Dept. 2014-2015: Fire Marshall, Champaign Fire Dept. Deputy Chief/Training Officer, Champaign Fire Dept. 2019-2020: Deputy Chief of Operations, Champaign Fire Dept.
Village of Mahomet	2007-2009: Village Planner 2014-2015: Community Development Director 2019-2020: Planner
Village of Rantoul	2007-2009: Chief Inspector 2014-2015: Superintendent, Inspections, Planning & Zoning 2019-2020: Emergency Services and Disaster Agency Representative

(continued)

Jurisdiction	Local Government Agency Representatives on HMP Planning Team
Village of Savoy	2007-2009: Public Education & Prevention Coordinator, Savoy Fire Dept. 2014-2015: Lieutenant/EMT-Intermediate, Savoy Fire Dept. 2019-2020: Lieutenant/EMT-Intermediate, Savoy Fire Dept.
Village of St. Joseph	2007-2009: Village of St. Joseph Trustee 2014-2015: Fire Chief, St. Joseph-Stanton Fire Department & Emergency Services ¹
City of Urbana	2007-2009: Division Chief, Prevention and Education, Urbana Fire Dept. Planning Manager, Community Development Services 2014-2015: Division Chief, Urbana Fire Dept. Interim Planning Manager, Community Development Services 2019-2020: Sustainability and Resilience Officer Division Chief, Fire Department
Village of Allerton Village of Bondville Village of Broadlands Village of Fisher Village of Foosland Village of Gifford Village of Homer Village of Ivesdale Village of Longview Village of Ludlow Village of Ogden Village of Pesotum Village of Philo Village of Royal Village of Sadorus Village of Sidney Village of St. Joseph Village of Thomasboro Village of Tolono	2007-2009: Authorization Provided by Village Board of Trustees to Champaign County Regional Planning Commission HMP Project Staff to Represent Jurisdiction on Planning Team 2014-2015: Authorization Provided by Village Board of Trustees to Champaign County Regional Planning Commission HMP Project Staff to Represent Jurisdiction on Planning Team ¹ 2019-2020: Authorization Provided by Village Board of Trustees to Champaign County HMP Project Staff to Represent Jurisdiction on Planning Team

Table 2-3 Note

1. The HMP Planning team member representing the Village of St. Joseph died midway through the 2015 HMP Update project. The HMP project planner worked with the Village for the remaining portion of the 2015 Update project, and then again worked with the Village regarding the 2020 HMP Update.

Table 2-4. HMP Planning Team Members Representing Participating Institutions of Higher Education

	Representative on HMP Planning Team
Parkland College	2007-2009: Public Safety Lieutenant Public Safety Director 2014-2015: Director of Public Safety/Chief of Police 2019-2020: Director of Public Safety/Chief of Police Public Safety Officer
University of Illinois at Urbana-Champaign	2007-2009: Director, Office of Campus Emergency Planning 2014-2015: Police Lieutenant, Division of Public Safety Emergency Planning Coordinator, Division of Public Safety 2019-2020: Emergency Management Coordinator

Table 2-5. HMP Advisory Group Members

<p>HMP Advisory Group Members: 2007-2009:</p> <ul style="list-style-type: none"> Executive Director, Housing Authority of Champaign County County Engineer, Champaign County Highway Department Emergency Services Coordinator, Central IL Chapter, American Red Cross Director of Information Technology, Champaign School District Manager of Marketing and Public Relations, Provena Medical Director of Emergency Preparedness, Carle Foundation Hospital Superintendent, Heritage Community Unit School District Senior Hydro geologist and Assistant to Director for Environmental Initiatives, Illinois State Geological Survey, University of Illinois at Urbana-Champaign Executive Director, Urbana-Champaign Sanitary District Superintendent, Ludlow Community Consolidated School District School Resource Officer, St. Joseph-Ogden Community High School District Superintendent, Mahomet-Seymour Community Unit School District Assistant Superintendent, Urbana School District Superintendent, St. Joseph Community Consolidated School District Planning Director, Champaign County Forest Preserve District Superintendent, Thomasboro Community Consolidated School District Superintendent, Rantoul Township High School District Superintendent, Gifford Community Consolidated School District Superintendent, Tolono Community Unit School District Regional Coordinator, Illinois Emergency Management Agency Parts Administrator, Champaign-Urbana Mass Transit District Resource Conservationist, Champaign County Soil and Water Conservation District Superintendent, Fisher Community Unit School District Superintendent, Prairieview Community Consolidated School District
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Table 2-5. HMP Advisory Group Members (continued)

<p>HMP Advisory Group Members: 2014-2015:</p> <ul style="list-style-type: none"> Executive Director, Housing Authority of Champaign County County Engineer, Champaign County Highway Department Business Development & Strategic Services, Presence Medical Center Director of Emergency Preparedness, Carle Foundation Hospital Superintendent, Heritage Community School District #8 Superintendent, St. Joseph-Ogden Community High School District #305 Superintendent, Mahomet-Seymour Community Unit School District Superintendent, Urbana School District #116 Superintendent, Gifford Community Consolidated School District #188 Safety and Training Director, Champaign-Urbana Mass Transit District Research Conservationist, Champaign County Soil and Water Conservation District Illinois State Climatologist, Illinois State Water Survey Emergency Services Coordinator, Central Illinois Chapter, American Red Cross
<p>HMP Advisory Group Members: 2019-2020:</p> <ul style="list-style-type: none"> Planning and Zoning Director, Champaign County Illinois State Climatologist, Illinois State Water Survey Principal Scientist-Engineering Geologist, Illinois State Geological Survey Senior Professional Scientist, Illinois State Water Survey Water Supply Engineer, Acting Chief of Engineering Studies, Illinois Department of Natural Resources

Planning Team Meetings

During the period April 2008 to May 2009, the Planning Team held seven meetings to initially guide and review each stage of HMP development.

Meeting One:

The initial meeting of Planning Team members included an introduction to the HMP development process, and the setting of guidelines for participation as an HMP Planning Team member. An overview of required HMP elements was provided, including means of encouraging public participation throughout HMP development, within project budget. The idea to form an Advisory Group received support of the Planning Team, and the HMP timeline was reviewed.

Meeting Two:

Existing programs, plans, ordinances, and documents of participating jurisdictions were reviewed as they related to HMP development. The use of HAZUS-MH software was described for the Risk Assessment stage. The methods used to identify buildings,

infrastructure, and critical facilities were reviewed. Hazard identification and hazard profiling were reviewed.

Meeting Three:

Review of Risk Assessment findings occurred. An overview of the Mitigation Plan Development Stage was provided. The Planning Team formulated HMP goal statements.

Meeting Four:

Plans for a public preference survey regarding mitigation actions were discussed. Planning Team members began the process of identifying existing and proposed mitigation actions for their jurisdiction.

Meeting Five:

Planning Team members continued review of existing and proposed mitigation actions. Results of the HMP public preference survey were reviewed. Planning Team members decided on a method for prioritizing mitigation actions.

Meeting Six:

Planning Team members prioritized the ongoing and proposed mitigation actions selected for each of their jurisdictions. Members discussed the HMP maintenance process and reached consensus regarding a method to monitor, evaluate, and update the HMP.

Meeting Seven:

Planning Team members offered review comments of the HMP Review Draft and planned the public HMP review meeting.

During the period August 2015 to June 2015, the HMP Planning Team held five public meetings during the HMP update.

Meeting One:

Planning Team members reviewed the purpose of the HMP update project, project scope, stages of the HMP update process, proposed project timeline and a tentative schedule of Planning Team meetings. Planning Team members considered options for an effective outreach strategy to encourage public participation during the HMP update process. The Planning Team discussed various technical hazards to potentially include in the HMP update and supported again forming an HMP Advisory Group to assist in review of the draft update to the HMP.

Meeting Two:

Planning Team members selected technical hazards to include in the HMP update, reviewed preliminary updates to hazards profiles for natural hazards, and received a progress report on updated risk assessments underway. Planning Team members agreed on a proposed outreach strategy for the update project.

Meeting Three:

Planning Team members reviewed preliminary risk assessment update findings, status of capability assessment updates for the participating jurisdictions, potential types of updates to adopted goals and objectives. Members agreed to include the concept of resiliency where applicable in HMP goals and objectives. Members discussed general progress of implementation of mitigation actions identified for each participating jurisdiction.

Meeting Four:

Project staff briefed Planning Team members regarding Advisory Group and public review open comment period beginning for the Draft Hazard Profiles and Risk Assessment sections, status of capability assessment updates, and reviewed a revised version of proposed adjustments to the HMP goals and objectives. Planning Team members provided input regarding the proposed HMP goals and objectives to include climate change and resiliency concerns. Planning Team members continued review of status and updates to mitigation actions.

Meeting Five:

Planning Team members reached consensus on a draft of final proposed updates to the HMP goals and objectives. Project staff updated members regarding status of revisions to address remaining updates to the full HMP and reviewed the timeline for review and adoption of the draft HMP. Planning Team members agreed to an HMP maintenance plan and discussed open house and outreach opportunities at present stages of the draft HMP open public review and comment period.

During the period July 2019 to June 2020, the HMP Planning Team held three public meetings during development of the HMP update and planned for additional public meetings to take place at the time of final review and approval at each of the participating government agencies.

Meeting One:

Planning Team members reviewed the role of the HMP planning team, reviewed the HMP update process, proposed project timeline and a tentative schedule of Planning Team meetings.

Meeting Two:

The Planning Team reviewed additional technical hazards to potentially include in the HMP update. Planning Team members considered preferred options for an effective outreach strategy to encourage public participation during each stage of the HMP update process. The project team, consisting of HMP Update project planner, project assistant, and Champaign County GIS Consortium Technician, reviewed the Risk Assessment stage of the update.

Meeting Three:

Planning Team members reviewed preliminary risk assessment update findings, status of capability assessment updates for the participating jurisdictions, potential types of updates to adopted goals and objectives. The project team invited members to review the prioritization process implemented for prioritizing the implementation of mitigation actions identified for each participating jurisdiction.

Public Participation

Providing continuous opportunities for citizen input and participation during the development of the HMP and during the subsequent HMP update is a priority for the Planning Team and project staff. The outreach strategy and related efforts are described below.

Initial HMP Development and Review: March 2008 through June 2009

Outreach:

Key representatives of all municipalities in or partially in the County were invited to participate in developing a multi-jurisdictional HMP. Each municipal jurisdiction placed the request to participate in developing an HMP on its Council or Trustee public meeting agenda. By request, HMP project staff reviewed benefits of mitigation planning with Village Trustees at public meetings in the Villages of Tolono, Pesotum, and Sadorus.

Interactive HMP Website:

During the Organization Stage, the HMP website was created to both share information with the public about development of the HMP and to provide an interactive means to allow public feedback regarding the HMP during its development. The website included agendas and minutes of each HMP Planning Team meeting, plus related documents, and links. Participating jurisdictions were encouraged to include a link to the HMP website from their own websites.

Invitation to Adjacent Local Government Agencies:

Project staff contacted County administrators and emergency management coordinators of counties adjacent to the Plan Area to inform them regarding the development of the HMP, to solicit their input regarding any aspect of the multijurisdictional HMP project. These contacts were made to representatives of Ford, McLean, Piatt, Douglas, and Vermilion Counties.

Press Releases:

Press releases were issued during the risk assessment, mitigation planning, and implementation stages of HMP development. The press releases included information about opportunities for public participation in development of the HMP.

Information Displays:

Posters informing the public about ways to participate in HMP development were displayed at public libraries within the HMP area. Posters included information about: types of natural hazards reviewed, types of risks assessed, ongoing mitigation planning efforts, information about an opportunity to provide feedback in a preference survey about hazard mitigation measures, who to contact for additional information, and date, time and location of the public meeting scheduled to occur toward the end of the HMP development process.

Public Preference Survey:

In December 2008 and through mid-January 2009, a preference survey regarding selected mitigation measures under consideration for each jurisdiction was made available to members of all participating jurisdictions online. Paper copies of the preference survey were provided to the primary contact for each participating jurisdiction and were made available upon request.

Public Meetings:

Public meetings were held with the governing bodies of each local government participating in HMP to review and to consider adoption of the proposed HMP. Comments and questions from local government officials and the public were addressed by HMP Planning Team members or project staff at these meetings.

HMP Update and Review: June 2014 through October 2015

Invitations to Participate:

Key representatives of all municipalities in or partially in the County were invited to participate in the five-year update of HMP. Each municipal jurisdiction placed the request to participate in developing an HMP on its Council or Trustee public meeting agenda. HMP project staff reviewed the five-year HMP update and benefits of mitigation planning with Village Trustees at public meetings upon request.

Interactive HMP Website:

An improved HMP website was developed to both share information with the public about the planning process and update of the HMP and to provide an interactive means to allow public feedback regarding the HMP update. The website included agendas and minutes of each HMP Planning Team meeting, plus related documents and links. Participating jurisdictions were encouraged to include a link to the HMP website from their own websites.

Invitation to Adjacent Local Government Jurisdictions:

Project staff contacted County administrators and emergency management coordinators of counties adjacent to the Plan Area to inform them of the planned update of the HMP, and to welcome their participation and input regarding any aspect of the HMP update project. These contacts were made to representatives of Ford, McLean, Piatt, Douglas, and Vermilion Counties.

Newsletters:

Twice during the HMP update process, and once during the HMP update open public review comment period, a newsletter was mailed to the top local government official of each participating local government for sharing or noting at their City Council or Village Board of Trustees. The newsletters contained timely information regarding topics under current review by the HMP Planning Team at the time during the update process. Each newsletter contained an invitation to the public to attend and provide input or questions at HMP Planning Team meetings. Contact information and the HMP website URL were provided in the newsletter.

Community Event:

HMP Planning Team Chairperson and HMP project staff attended a 'Play It Safe' community event to share information about the HMP update and answer questions. This event took place prior to the open public review period.

Open Houses:

HMP project staff and HMP Planning Team hosted three promoted and advertised open house sessions to share information about the HMP update, answer questions, and receive public input. These open house sessions occurred during the public review period.

Public Meetings:

Public meetings were held with the governing bodies of each local government participating in HMP, on an as-needed basis during the HMP update, and following development of the Draft Update of the HMP to review and to consider adoption of the proposed HMP. Comments and questions from local government officials and the

public were addressed by HMP Planning Team members or project staff at these meetings.

HMP Update and Review: July 2019 through June 2020

Invitations to Participate:

Key representatives of all municipalities in or partially in the County were invited to participate in the five-year update of HMP. Each municipal jurisdiction placed the request to participate in developing an HMP on its Council or Trustee public meeting agenda. HMP project staff reviewed the five-year HMP update and benefits of mitigation planning with Village Trustees at public meetings upon request.

Community Outreach:

HMP Update project staff attended local farmers' markets on six weekends during Fall 2019 to share information about the HMP update, answer questions, and invite public comments.

Invitation to Adjacent Local Government Jurisdictions:

Project staff contacted County administrators and emergency management coordinators of counties and municipalities adjacent to the Plan Area to inform them of the planned update of the HMP, and to welcome their participation and input regarding any aspect of the HMP update project. These contacts were made to representatives of Ford, McLean, Piatt, Douglas, and Vermilion Counties.

Newsletters:

Once during the HMP update process, and once during the HMP update open public review comment period, a newsletter was mailed to the top local government official of each participating local government for sharing or noting at their City Council or Village Board of Trustees. The newsletters contained timely information regarding topics under current review by the HMP Planning Team at the time during the update process. Each newsletter contained an invitation to the public to attend and provide input or questions at HMP Planning Team meetings. Contact information and the HMP website URL were provided in the newsletter.

Public Opinion Survey:

February 2020 and through mid-April 2020, a public opinion survey regarding selected hazards and preferred types of mitigation measures was distributed throughout the Plan Area. Appendix L contains detailed Public Survey results.

Public Review Invited of Preliminary Draft:

HMP project staff published a notice in *The News-Gazette* to invite public review and comments regarding a Preliminary Draft of the HMP Update between May 11, 2020 and May 22, 2020. During this time, the Preliminary Draft was available online at the CCHMP website at the following URL: <https://champaigncountyhmp.info>. A limited number of paper copies of the Preliminary Draft were available to distribute for purposes of public review upon request on a first-come, first-served basis.

HMP project staff notified the Planning Team members about the two-week public review opportunity for the Preliminary Draft dated May 10, 2020 and encouraged each Planning Team member to share that information with their respective councils and trustees.

HMP project staff separately mailed the Village Presidents of Allerton, Bondville, Broadlands, Fisher, Foosland, Gifford, Homer, Ivesdale, Longview, Ludlow, Ogden, Pesotum, Philo, Royal, Sadorus, Sidney, St. Joseph, Thomasboro, and Tolono to share the information about the two-week public review opportunity for the Preliminary Draft dated May 10, 2020.

Public Meetings:

Three open Planning Team meetings were held during the Plan Update review process. A public meeting was planned to take place at time of final review and approval at each governing body of local governments participating in HMP. Comments and questions from local government officials and the public are addressed by HMP Planning Team members at these meetings.

3 Community Capability

Review of Plans, Studies Reports, and Technical Information

Project staff consulted Planning Team members, local government officials, and representatives of each participating local government agency and participating institution to identify and to provide updated information regarding existing plans, studies, reports, and technical information specific to each participating jurisdiction. The comprehensive plans and reports specific to each participating local government jurisdiction reviewed later in this Chapter. Resources reviewed with relevance to more than one participating jurisdiction in the Plan Area included the following:

FEMA Flood Insurance Study: Champaign County, Illinois and Incorporated Areas, dated October 2, 2013 (Flood Insurance Study Number 17019CV000A) is a reference regarding flood risk data based on updated digital flood insurance rate maps for local government jurisdictions participating in the HMP within the Plan Area.

- *Hazardous Materials and Commodity Flow Study for Champaign County*, Champaign County Regional Planning Commission, October 20, 2015.
- *FEMA Discovery Report, Upper Sangamon Watershed*, 07130006, Champaign, Christian, DeWitt, Ford, Logan, Macon, McLean, Piatt, Sangamon, and Shelby Counties, Illinois, Report Number 01, Updated 2/19/2015.
- *Climate Atlas of Illinois*, Illinois State Water Survey, March 2004.
- *Illinois Human-Caused Hazard Mitigation Plan*, 2007.
- *Illinois Technological Hazards Mitigation Plan*, 2007.
- *Illinois Natural Hazard Mitigation Plan*, 2018.
- *Pandemic Influenza Preparedness and Response Plan*, Version 5.00, May 2014, State of Illinois Department of Public Health.
- *2018: Midwest*, in *Impacts, Risks, and Adaptation in the United States: Fourth National Climate Assessment*, Volume II, 2917
- *The Drought of 2012, A Report of the Governor's Drought Response Task Force*, Illinois Department of Natural Resources, and Illinois Environmental Protection Agency.
- *State of Illinois Drought Preparedness and Response Plan*, October 12, 2011, and *Drought-Ready Communities: A Guide to Community Drought Preparedness*, May 2011.
- *Urban Flooding: Moving Towards Resilience: A Summary Report Based on the 6th Assembly of the Gilbert F. White National Flood Policy Forum*, 2019.

- *Rural Champaign County Area Safety Plan*, Champaign County Regional Planning Commission, December 2019.
- *Champaign-Urbana Urbanized Area Human Services Transportation Plan*, June 20, 2018.
- *The Illinois Climate Action Plan*, University of Illinois at Urbana-Champaign, 2015.
- *Frequency Distributions of Heavy Precipitation in Illinois: Updated Bulletin 70*, March 2019.
- *Cyber-Attacks: Trends, Patterns and Security Countermeasures*, 7th International Conference on Financial Criminology, 2015.

Incorporation of Plans, Studies, Reports, and Technical Information

The planning mechanisms for participating 25 local government jurisdictions are variable, with the three largest municipalities being home-rule, and remaining 22 local government jurisdictions as non-home rule and subject to powers specified in the State constitution.

Fewer than half of participating local government jurisdictions within the Plan Area have an adopted a comprehensive land use plan, and not all have adopted a building code. The adopted codes, ordinances, and regulations are unique to each participating local government jurisdictions. Certain existing regional or multi-jurisdictional programs and guidelines relevant to accomplishing hazard mitigation actions are described in the next section.

The participating local government agencies and participating institutions of higher education most able to include the prioritized hazard mitigation actions identified for their community or institution in the local government or institution capital improvement plan are those that will be most likely to succeed in implementing prioritized mitigation actions.

As the HMP Update is reviewed annually, the Planning Team will be aware of and suggest potential opportunities for incorporating the HMP Update into local planning mechanisms on behalf of each participating jurisdiction, such as proposing that prioritized hazard mitigation actions be considered for inclusion in an adopted local government comprehensive land use plan, sustainability plan, and subarea plans, such as a watershed improvement plan, as these are reviewed and updated.

Authorities, Policies, Programs, and Resources Available to Accomplish Hazard Mitigation

Outdoor Warning Siren Systems

Outdoor Warning Siren Systems, regardless of the local government jurisdiction in which they are located or which agency activates them, has but one purpose: to warn people who are located outdoors that a tornado is approaching and they must seek shelter. The sirens are not and have never been designed to inform people indoors of a tornadic event. Within the Plan Area, outdoor warning sirens are positioned in certain highly populated areas. The City of Champaign, City of Urbana, University of Illinois, and Savoy serve as one node. The following villages operate and maintain their sirens independent of one another: Rantoul, Mahomet, St. Joseph, Gifford, Tolono, Thomasboro, Philo, Ogden, Sadorus, Sidney, Broadlands, Royal, Homer, Pesotum, Ivesdale, and Fisher.

Unincorporated areas of the County and the outlying communities of Bondville, Fooseland, Ludlow, Longview, Allerton, Seymour, and Penfield are not served by an outdoor tornado warning siren.

Emergency Warning Radios

In the Plan Area, most large employers, retailers, schools and places of public assembly, and facilities that house vulnerable populations (e.g., hospitals, nursing homes, jails) area have acquired one or more NOAA emergency warning radios to provide warning of severe storms, tornados, dangerous winter storm conditions and other hazards.

Severe Weather Spotters

The Champaign County Emergency Management Agency supports the volunteer efforts of the National Weather Service (NWS) Severe Weather Spotters (aka “Storm Spotters”) throughout the County. The NWS utilizes the information provided by Spotters to support its severe weather warning operations, e.g., to verify radar-indicated or public reports of severe weather.

StormReady® Designation

In the Plan Area, Champaign County, City of Champaign, City of Urbana, Village of Savoy, and Village of Mahomet are designated StormReady® communities, and Parkland College is a StormReady® campus, meeting StormReady® requirements established by the NWS, including:

- Establish a 24-hour emergency operations center;
- Have more than one way to receive severe weather warnings and forecasts and to alert the public;

- Create a system that monitors weather conditions locally;
- Meet criteria established by NWS regarding promoting the importance of public readiness; and
- Develop a formal hazardous weather plan, including training of severe weather spotters and emergency exercises.

Building Code Standards

Certain larger HMP jurisdictions have adopted versions of the International Residential Code (for one- and two-family dwellings) and the International Building Code (for all other buildings). The 2006 International Code Series building codes feature fire- and life-safety provisions that address wind and roof construction standards (for snow load). Safe rooms (e.g., tornado shelters) are not addressed in the 2006 International Code series. The 2009 International Building Code addresses storm shelters and references the new International Code Council's ICC 500 Standard for Storm Shelters.

Local government jurisdictions within the Plan Area with no adopted building code are subject to requirements of the Illinois Residential Building Code Act (815 ILCS 670/1 et seq.). This Act requires the identification of a building code as new homes are constructed. Notably, the Act does not obligate a local government jurisdiction to enforce the requirements contained within the Act.

Manufactured Home Safety

Within the Plan Area, and throughout Illinois, federal and state programs are in place to regulate construction of and installation (tie-down) of manufactured homes. A manufactured home is subject to separate construction standards established by the U.S. Department of Housing and Urban Development (HUD). Manufactured homes constructed after June 15, 1976 are required to comply with the National Manufactured Home Construction and Safety Standards, as established by HUD.

In Illinois, no federal or state requirements require that a safe room or a shelter be provided for a manufactured home or a manufactured home park. A local government jurisdiction may adopt a requirement that a safe room or a shelter be provided or regulate the location of manufactured homes or require added on-site inspection procedures; however, the HUD construction standards may not be altered. The Act requires that equipment and installation standards must be met, including a requirement that installation be completed in accordance with manufacturer specifications. Certification that installation complies with the state Tie-Down Code is required to be filed with IDPH following installation. Additional certification requirements apply to manufactured school classroom units.

The Illinois Department of Public Health (IDPH) enforces the Illinois Mobile Home Act and Manufactured Home Tie down Code only upon receipt of a complaint once a manufactured home is in place.

Public Utilities Protection

Ameren Illinois, a primary supplier of electricity to customers in the Plan Area, operates a tree-trimming and tree-removal program in urban areas in an effort to ensure that above-ground electric wires are clear of tree limbs and falling tree dangers.

The larger Plan Area jurisdictions have adopted subdivision code regulations requiring new developments to bury electrical service and other utilities underground to lessen vulnerability of utilities (e.g., during a tornado or during an ice storm).

Local Media Outreach

Local television and radio stations provide emergency warning and public service announcements in advance of severe storms and severe winter storm events. Local television and radio stations provide emergency warning and public service announcements to warn motorists of flash flood potential and warn of flooded roadways.

Road Treatment in Advance of Expected Ice Condition

The Illinois Department of Transportation and the larger jurisdictions maintain fleets of trucks and drivers to spread bulk rock salt (or other anti-icing agents) on major roads in advance of (and during) severe storms expected to produce icing on roads. Typically, arterial roads are completed first, followed by collector roads, sub-collector roads and school zone areas that may not be situated along these more heavily traveled roadways. Additional areas receiving rock salt applications prior to and during winter storm events include roadway curves, hills, and local street intersections.

Local Government Comprehensive Land Use Plans and University/College Campus Plans

Twelve municipalities, as noted in Table 3-2, have adopted a comprehensive land use plan. The County has adopted a land resource management plan. The more recently updated comprehensive land use plans tend to designate stream corridors for open space or recreational use.

The University of Illinois at Urbana-Champaign has adopted Campus Master Plans and is in the process of updating its 2015 Illinois Climate Action Plan. Parkland College has adopted a comprehensive Strategic Plan for Excellence.

Zoning and Subdivision Regulations

The adopted zoning regulations of municipal and county jurisdictions within the Plan Area typically include minimum setback requirements along streams or rivers. The adopted subdivision regulations of the municipal and county jurisdictions within the Plan Area typically address minimum building site and drainageway standards (e.g., that each lot have a building site of sufficient size above the 100-year floodplain; or that roads leading to a development site meet minimum access standards).

Mutual Aid Agreements

The participating local government jurisdictions of the Plan Area entered into intergovernmental mutual or automatic aide agreements. All fire departments within the Plan Area participate in mutual or automatic aid agreements.

Fire Protection and Emergency Services

The provision of fire protection and emergency ambulance services is an important consideration during the review of proposed rural residential subdivisions.

The Plan Area is divided into Fire Protection Districts (FPDs) serving smaller villages and the unincorporated areas and municipal fire departments which serve the cities of Champaign, Urbana, Rantoul, Savoy and Bondville.

Fire suppression capability of each FPD and municipal fire department is rated by the Insurance Services Office (ISO) Commercial Risk Services Incorporated, and is based on the Fire Suppression Rating Schedule, a national standard to determine fire suppression capabilities of individual fire protection districts or fire departments. ISO ratings measure on a scale of 1-10, with 1 being the best and 10 representing no fire protection, the ability of a fire protection district to suppress fire and minimize damage. ISO ratings measure three features of fire protection: fire alarms, engine companies (fire departments), and water supply.

Smaller FPDs within the Plan Area have a dual rating. The first number is the rating for fire protection in urban areas and up to five miles travel distance from the fire station. The second number refers to fire protection beyond the five-mile radius. Table 3-1 lists ISO ratings for Fire Protection Districts and Fire Departments within the Plan Area.

Table 3-1. ISO Ratings for Fire Protection Districts and Fire Departments within Plan Area

Department/District	Station Location(s)	ISO Rating
Allerton FPD	Village of Allerton	8/9
Broadlands-Longview	Village of Broadlands/Village of Longview	7
Carroll FPD	City of Urbana (1)	5/9
Champaign FD	City of Champaign (6)	2
Corn Belt FPD	Village of Mahomet	5/9
Eastern Prairie FPD	City of Champaign (1)	7/9
Edge-Scott FPD	Urbana Township	4/7
Gifford FPD	Village of Gifford	6/9-10
Homer FPD	Village of Homer (2)	7/9
Ivesdale FPD	Village of Ivesdale	5/8
Ludlow FPD	Village of Ludlow	7/9
Ogden-Royal FPD	Village of Ogden, Royal	6
Pesotum FPD	Village of Pesotum	8/9
Philo FPD	Village of Philo	6
Rantoul FD	Village of Rantoul (2/1 satellite)	4/9
Sadorus FPD	Village of Sadorus	8/9
Sangamon Valley FPD	Villages of Fisher, Dewey, Foosland (3)	7/9
Savoy FD	Village of Savoy	3
Scott FPD	Scott Township	6/9
Sidney FPD	Village of Sidney	7
St. Joseph-Stanton FPD	Village of St. Joseph	5/9
Thomasboro FPD	Village of Thomasboro	6/9
Tolono FPD	Village of Tolono (2)	6/9
Urbana FD	City of Urbana (4)	2

Source: FPD Chiefs and HMP Planning Team 2019-2020

Documentation of Community Capabilities

Table 3.2 is a list of current potential hazard mitigation implementation capabilities associated with each participating jurisdiction.

Table 3-2. Local Government Agency Authorities, Plans, Programs, and Resources

Participating Local Government Jurisdiction	Local Government Authorities, Programs, and Resources	
Village of Allerton	Regular monthly meetings of the Village Board of Trustees are held the 3 rd Tuesday of the month at 7:00 pm at the Village Hall, 108 N. Vermilion, Allerton	
	Building Code	No
	Comprehensive Land Use Plan	No
	Zoning Code	Yes
	Floodplain Development Regulations	Yes
	FEMA National Flood Insurance Program	Yes
Village of Bondville	Regular monthly meetings of the Village Board of Trustees are held the 2 nd Monday of the month at 7:00 pm at the Village Hall, 102 S. Walnut, Bondville	
	Building Code	No
	Comprehensive Plan	Yes
	Zoning Code	Yes
	Floodplain Development Regulations	No
	FEMA National Flood Insurance Program	No
Village of Broadlands	Regular monthly meetings of the Village Board of Trustees are held on the 1 st Wednesday of the month at 7:00pm at the Village Hall, 107 S. Lincoln, Broadlands. Website: https://broadlandsspectator.wordpress.com	
	Building Code	No
	Comprehensive Land Use Plan	No
	Zoning Code	Yes
	Floodplain Development Regulations	Yes
FEMA National Flood Insurance Program participant	Yes	

(continued)

Participating Local Government Jurisdiction	Local Government Authorities, Programs, and Resources	
Unincorporated Champaign County	Regular meetings of the Champaign County Environment and Land Use Committee are typically held at 6:30 pm on the first Thursday after the first Monday of the month at Brookens Administrative Center, 1776 E. Washington, Urbana. Website: www.co.champaign.il.us	
	Building Code	No
	Champaign County Land Resource Management Plan	Yes
	Zoning Code	Yes
	Minimum Subdivision Standards in Subdivision Ordinance	Yes
	Floodplain Development Regulations	Yes
	FEMA National Flood Insurance Program participant	Yes
	National Weather Service StormReady® community	Yes
City of Champaign	Regular City Council meetings are held on the 1st & 3rd Tuesdays of the month at 7:00pm. City Council Study Sessions are held on the 2nd & 4th Tuesdays of the month at 7:00 pm at the City Building: 102 N. Neil, Champaign. Website: www.ci.champaign.il.us	
	Building Code: 2006 International Residential Code and 2006 International Building Code	Yes
	Champaign Tomorrow Comprehensive Plan	Yes
	Zoning Code	Yes
	Champaign Growing Greener - Environmental Sustainability Plan	Yes
	Stormwater Management Regulations	Yes
	Floodplain Development Regulations	Yes
	FEMA National Flood Insurance Program participant	Yes
FEMA Community Rating System program participant	Yes	
Village of Fisher	Regular monthly meetings of the Village Board of Trustees are held the 2nd Thursday of each month at 7:00 pm at the Village of Fisher Community Center, 100 E. School St., Fisher. Website: www.fisher.il.us	
	Building Code	No
	Comprehensive Plan	Yes
	Zoning Code	Yes
	Floodplain Development Regulations	Yes
	FEMA National Flood Insurance Program participant	Yes
Stormwater Management Regulations in Municipal Code	Yes	

(continued)

Participating Local Government Jurisdiction	Local Government Authorities, Programs, and Resources	
Village of Foosland	Regular monthly meetings of the Village Board of Trustees are held on the 2nd Monday of the month at 7:00 pm at the Village Community Center, 10 Third St, Foosland	
	Building Code	No
	Comprehensive Land Use Plan	No
	Zoning Code	No
	Floodplain Development Regulations	Yes
	FEMA National Flood Insurance Program participant	Yes
Village of Gifford	Regular monthly meetings of the Village Board of Trustees are held on the 1st Thursday of each month at 7:00 pm at the Gifford State Bank Board Room, 304 S. Main St., Gifford. Website: www.villageofgifford.com	
	Building Code	Yes
	Comprehensive Land Use Plan	No
	Zoning Code	Yes
	Stormwater Management Regulations in Subdivision Ordinance	Yes
	Floodplain Development Regulations	No
FEMA National Flood Insurance Program	No	
Village of Homer	Regular monthly meetings of the Village Board of Trustees are held on the second Monday of each month at 7:00 pm at the Village Hall: 500 E. Second St., Homer. Website: www.homervillage.com	
	Building Code	No
	Comprehensive Land Use Plan	No
	Zoning Code	Yes
	Stormwater Management Regulations in Subdivision Ordinance	Yes
	Floodplain Development Regulations	No
FEMA National Flood Insurance Program	No	

(continued)

Participating Local Government Jurisdiction	Local Government Authorities, Programs, and Resources	
Village of Ivesdale	Regular monthly meetings of the Village Board of Trustees are held on the 3rd Monday of the month at 7:00pm CST and 7:30 DST, at the Ivesdale Village Hall in downtown Ivesdale.	
	Building Code	No
	Comprehensive Land Use Plan	No
	Zoning Code	Yes
	Floodplain Development Regulations	Yes
	FEMA National Flood Insurance Program	Yes
Village of Longview	Regular monthly meetings of the Village Board of Trustees are held on the 3rd Wednesday of the month at 7:00pm at the Village Community Building, 202 E. Logan, Longview.	
	Building Code	No
	Comprehensive Land Use Plan	No
	Zoning Code	Yes
	Floodplain Development Regulations	Yes
	National Flood Insurance Program	Yes
Village of Ludlow	Regular monthly meetings of the Village Board of Trustees are held on the 1st Monday of the month at 7:00 pm at the Ludlow Community Center, 202 E. Thomas, Ludlow.	
	Building Code	No
	Comprehensive Land Use Plan	No
	Zoning Code	Yes
	Floodplain Development Regulations	Yes
	FEMA National Flood Insurance Program	Yes
Village of Mahomet	Regular monthly meetings of the Village Board of Trustees are held the 4th Tuesday of the month at 6:00 pm at the Village Administration Building, 503 E. Main Street, Mahomet. Website: http://mahomet.govoffice.com	
	Building Code	No
	Comprehensive Plan	Yes
	Zoning Code	Yes
	Stormwater Management Regulations in Subdivision Ordinance	Yes
	Floodplain Development Regulations	Yes
	FEMA National Flood Insurance Program	Yes

Participating Local Government Jurisdiction	Local Government Authorities, Programs, and Resources										
<p>Village of Ogden</p>	<p>Regular monthly meetings of the Village Board of Trustees are held the 1st Thursday of the month at 7:00 pm at the Village Hall, 101 W. Main Street, Ogden.</p> <table border="1" data-bbox="516 443 1422 653"> <tr> <td>Building Code</td> <td>No</td> </tr> <tr> <td>Comprehensive Plan</td> <td>Yes</td> </tr> <tr> <td>Zoning Code</td> <td>Yes</td> </tr> <tr> <td>Floodplain Development Regulations</td> <td>Yes</td> </tr> <tr> <td>FEMA National Flood Insurance Program</td> <td>Yes</td> </tr> </table>	Building Code	No	Comprehensive Plan	Yes	Zoning Code	Yes	Floodplain Development Regulations	Yes	FEMA National Flood Insurance Program	Yes
Building Code	No										
Comprehensive Plan	Yes										
Zoning Code	Yes										
Floodplain Development Regulations	Yes										
FEMA National Flood Insurance Program	Yes										
<p>Village of Pesotum</p>	<p>Regular monthly meetings of the Village Board of Trustees are held on the 1st Wednesday of the month at 6:30 pm at the Village Hall, 103. E. Lincoln Street, Pesotum. Website: www.pesotum.org</p> <table border="1" data-bbox="516 825 1422 1066"> <tr> <td>Building Code: National Building Code of the Building Officials and Code Administrator (BOCA)</td> <td>Yes</td> </tr> <tr> <td>Comprehensive Land Use Plan</td> <td>No</td> </tr> <tr> <td>Zoning Code</td> <td>Yes</td> </tr> <tr> <td>Floodplain Development Regulations</td> <td>No</td> </tr> <tr> <td>National Flood Insurance Program</td> <td>No</td> </tr> </table>	Building Code: National Building Code of the Building Officials and Code Administrator (BOCA)	Yes	Comprehensive Land Use Plan	No	Zoning Code	Yes	Floodplain Development Regulations	No	National Flood Insurance Program	No
Building Code: National Building Code of the Building Officials and Code Administrator (BOCA)	Yes										
Comprehensive Land Use Plan	No										
Zoning Code	Yes										
Floodplain Development Regulations	No										
National Flood Insurance Program	No										
<p>Village of Philo</p>	<p>Regular monthly meetings of the Village Board of Trustees are held the 2nd Wednesday of the month at 7:00 pm at the Village Hall, 127 W. Washington, Philo. Website: www.villageofphilo.com</p> <table border="1" data-bbox="516 1236 1422 1446"> <tr> <td>Building Code</td> <td>No</td> </tr> <tr> <td>Comprehensive Plan</td> <td>Yes</td> </tr> <tr> <td>Zoning Code</td> <td>Yes</td> </tr> <tr> <td>Floodplain Development Regulations</td> <td>No</td> </tr> <tr> <td>National Flood Insurance Program</td> <td>No</td> </tr> </table>	Building Code	No	Comprehensive Plan	Yes	Zoning Code	Yes	Floodplain Development Regulations	No	National Flood Insurance Program	No
Building Code	No										
Comprehensive Plan	Yes										
Zoning Code	Yes										
Floodplain Development Regulations	No										
National Flood Insurance Program	No										
<p>Village of Rantoul</p>	<p>Regular monthly meetings of the Village Board of Trustees are held on the 2nd Tuesday of the month at 6:15 pm at the Village Hall, 333 S. Tanner Street, Rantoul. Website: www.village.rantoul.il.us</p> <table border="1" data-bbox="516 1619 1422 1860"> <tr> <td>Building Code: 2006 International Residential Code And 2006 International Building Code</td> <td>Yes</td> </tr> <tr> <td>Comprehensive Land Use Plan</td> <td>Yes</td> </tr> <tr> <td>Zoning Code</td> <td>Yes</td> </tr> <tr> <td>Floodplain Development Regulations</td> <td>Yes</td> </tr> <tr> <td>FEMA National Flood Insurance Program</td> <td>Yes</td> </tr> </table>	Building Code: 2006 International Residential Code And 2006 International Building Code	Yes	Comprehensive Land Use Plan	Yes	Zoning Code	Yes	Floodplain Development Regulations	Yes	FEMA National Flood Insurance Program	Yes
Building Code: 2006 International Residential Code And 2006 International Building Code	Yes										
Comprehensive Land Use Plan	Yes										
Zoning Code	Yes										
Floodplain Development Regulations	Yes										
FEMA National Flood Insurance Program	Yes										

Participating Local Government Jurisdiction	Local Government Authorities, Programs, and Resources	
Village of Royal	Regular monthly meetings of the Village Board of Trustees are held on the 1st Monday of the month at 6:00 pm at the Village Hall in downtown Royal.	
	Building Code	No
	Comprehensive Land Use Plan	No
	Zoning Code	Yes
	Floodplain Development Regulations	Yes
	FEMA National Flood Insurance Program	Yes
Village of Sadorus	Regular monthly meetings of the Village Board of Trustees are held on the 1st Wednesday of the month at 7:00 pm at the Village Hall, 115 E. Market Street, Sadorus. Website: www.sadorus.com	
	Building Code	No
	Comprehensive Land Use Plan	No
	Zoning Code	Yes
	Floodplain Development Regulations	No
	National Flood Insurance Program	No
Village of Savoy	The Village Board of Trustees meet on the First & Third Wednesdays of the month at 7:00 pm, with a Village Board of Trustees Study Session on the Second Wednesday of each month at 7:00 pm. Meeting location is the Savoy Municipal Center, 611 N. Dunlap, Savoy. Website: www.village.savoy.il.us	
	Building Code: 2003 International Residential Code and 2003 International Building Code	Yes
	Comprehensive Land Use Plan	Yes
	Zoning Code	Yes
	Floodplain Development Regulations	No
	FEMA National Flood Insurance Program	No
	National Weather Service StormReady® community	Yes

(continued)

Participating Local Government Jurisdiction	Local Government Authorities, Programs, and Resources	
Village of Sidney	Regular monthly meetings of the Village Board of Trustees are held the 1st Monday of the month at 7 pm at the Sidney Village Community Building, 221 S. David Street, Sidney. Website: http://villageofsidney.com	
	Building Code: 2006 International Residential Code and 2006 International Building Code	Yes
	Comprehensive Plan	Yes
	Zoning Code	Yes
	Floodplain Development Regulations	Yes
	FEMA National Flood Insurance Program	Yes
Village of St. Joseph	Regular monthly meetings of the Village Board of Trustees are held the 2nd and 4th Tuesdays of the month at 7:00 pm at the Village Hall, 207 E. Lincoln, St. Joseph. Website: www.stjosephillinois.org	
	Building Code	No
	Comprehensive Plan	Yes
	Zoning Code	Yes
	Floodplain Development Regulations	Yes
	FEMA National Flood Insurance Program	Yes
Village of Thomasboro	Regular monthly meetings of the Village Board of Trustees are held the 1st Monday of the month at 7:00 pm at the Village Hall, 101 W. Main Street, Thomasboro. Website: www.thomasboro.us	
	Building Code	No
	Comprehensive Land Use Plan	No
	Zoning Code	Yes
	Floodplain Development Regulations	Yes
	National Flood Insurance Program	Yes
Village of Tolono	Regular monthly meetings of the Village Board of Trustees are held on the 1st and 3rd Tuesdays of the month at 6:30 pm at the Village Hall, 507 W. Strong Street, Tolono. Website: www.villageoftolono.info	
	Building Code	No
	Comprehensive Plan	Yes
	Zoning Code	Yes
	Floodplain Development Regulations	No
	FEMA National Flood Insurance Program	No

(continued)

Participating Local Government Jurisdiction	Local Government Authorities, Programs, and Resources		
City of Urbana	Regular meetings of the City of Urbana Council are held on the 1st and 3rd Mondays of the month at 7:00 pm at the City Hall, 400 S. Vine Street, Urbana Website: www.city.urbana.il.us		
	<table border="1"> <tr> <td data-bbox="509 445 1295 516">Building Code: 2009 International Residential Code and 2009 International Building Code</td> <td data-bbox="1295 445 1419 516">Yes</td> </tr> </table>	Building Code: 2009 International Residential Code and 2009 International Building Code	Yes
	Building Code: 2009 International Residential Code and 2009 International Building Code	Yes	
	Comprehensive Land Use Plan	Yes	
	Zoning Code	Yes	
	Sustainable Water Management Plan (2013-2020)	Yes	
	Climate Action Plan (2015-2020)	Yes	
	Floodplain Development Regulations	Yes	
FEMA National Flood Insurance Program	Yes		

Table 3.3 is a list of current potential hazard mitigation implementation capabilities associated with participating institutions of higher education.

Table 3-3. Institutions of Higher Education Authorities, Programs, and Resources

Participating Institutions of Higher Education	Authorities, Programs, and Resources
University of Illinois at Urbana-Champaign	Public Safety Program supported by UIUC Board of Trustees Subject to 2006 International Residential Code and 2006 International Building Code. ¹
Parkland College	Public Safety Program supported by Parkland College Board of Trustees Subject to 2006 International Residential Code and 2006 International Building Code. ¹

Table 3-3 Notes

1. The University of Illinois at Urbana-Champaign and Parkland College do not have the legislative authority to produce a comprehensive land use plan.
2. The Illinois Capital Development Board (CDB) is the construction management agency for state construction projects including university and college buildings. CDB has adopted the International Building Codes for use. Building construction at the University of Illinois at Urbana-Champaign and at Parkland College is generally exempt from County or municipal construction permitting requirements.

4 Risk Assessment

Hazards Categories

The HMP Update addresses selected potential hazards that are categorized as natural hazards, human-caused hazards, or threats.¹ The Federal Emergency Management Agency (FEMA) descriptions of the categories are as follows:

Natural hazard: a source of harm or difficulty created by a meteorological, environmental, or geological event.

Human-caused hazard: a hazard caused by tools, machines and substances used in everyday life.

Threat: an intentional action of an adversary, such as a threatened or actual chemical or biological attack or cyberattack event.

Included Hazards

The HMP Update addresses only selected potential hazards to affect the Plan Area, as described in Table 4-1.

Table 4-1. Overview of Hazards Included in Risk Assessment

Year Added	Hazards	Status	Hazards Type
2009	Severe Storm (Thunderstorm Winds; Damaging Lightning; Hailstorm)	Continued	Natural
2009	Severe Winter Storm (Blizzard; Heavy Snowstorm Ice Storm)	Continued	Natural
2009	Tornadoes	Continued	Natural
2009	Extreme Heat	Continued	Natural
2009	Flooding (Riverine/Overbank Flood or Flash Flood/ Ponding)	Continued	Natural
2009	Earthquake	Continued	Natural
2009	Drought	Continued	Natural
2015	Hazardous Materials Storage/Transport Release or Spill	Continued	Human-caused
2015	Active Shooter	Continued	Threat
2020	Pandemic	New	Natural
2020	Cyberattack	New	Threat/ Human-caused

Natural Hazards Ratings

The 2018 Illinois Natural Hazard Mitigation Plan (INHMP) includes county-specific ratings of each of the following natural hazards: severe storms, tornadoes, floods, severe winter storms, drought, extreme heat, and earthquakes. The following criteria were the basis for the INHMP rating methodology:

- Historical/Probability (frequency);
- Vulnerability (percentage of people);
- Severity of Impact (injuries, fatalities, personal property and infrastructure); and
- Population (number in jurisdiction and percentage of increase).

Table 4-2 contains the available updated INHMP ratings for selected natural hazards in the Plan Area.²

Table 4-2. INHMP Natural Hazards Ratings for Champaign County

Primary Natural Hazard	2018 INHMP Ratings ¹
Severe storms	Severe
Severe winter storms	High
Tornadoes	High
Drought	Medium
Extreme heat	Medium
Earthquakes	Medium
Floods	Low

Source: 2018 INHMP

Table 4-2 Note

1. INHMP ratings for natural hazards occurring in each adjacent county (Piatt County and Vermilion County) and as listed for Champaign County in Table 4-2 are the same, with the one exception being the following INHMP natural hazards rating for tornadoes:

Champaign County	High
Piatt County	Medium
Vermilion County	High

Disaster and Emergency Declarations

In the event of a major disaster, and depending on several factors, the U.S. President may issue a Major Disaster Declaration or an Emergency Declaration that allows for potential supplemental federal disaster assistance to address impacts of the disaster.³

Table 4-3 lists the Major Disaster Declarations and Emergency Declarations for natural hazards disaster events occurring in the Plan Area to date. Appendix A provides additional information regarding each declaration.

Table 4-3. Federal Disaster Declarations and Emergency Declarations Applicable in Plan Area

Year	Disaster Declaration #	Natural Hazard Event Type
1968	DR-242	Severe Storms, Floods, Tornadoes
1974	DR-427	Tornadoes
1990	DR-860	Ice Storm, Freezing Rains, Severe Winds
1994	DR-1025	Torrential Rains, Thunderstorms, Flash Floods
1996	DR-1110	Tornadoes, Severe Storms
2002	DR-1416	Severe Storms, Tornadoes, Floods
2013	DR-4157	Severe Storms, High Winds, Tornadoes
2020	DR-4489	Covid-19 Pandemic
	Emergency Declaration #	
1999	EM-3134	Winter Snowstorm
2020	EM-3435	Covid-19

Source: FEMA, <https://www.fema.gov/disasters/#>

Table 4-3 Notes

1. FEMA was established in 1979. Declarations issued prior to 1979 were based on recommendations by the Office of Emergency Preparedness, the predecessor of FEMA.
2. 'DR' denotes a 'Major Disaster Declaration and 'EM' denotes an 'Emergency Declaration.'
3. That portion of the Village of Ivesdale located in Piatt County was not included in Disaster Declarations DR-427, DR-1110, and DR-4157.

Risk Assessment Factors

The 2020 HMP Update profiles each included hazard based the following factors:

Location is the geographic area within the Plan Area that are affected by each subject hazard. The entire Plan Area may be uniformly affected by some hazards, such as drought or winter storm. The HMP Update uses maps and narrative to illustrate location for the subject hazards.

Extent is a general description of the characteristics of the hazard, regardless of the people and property it affects. Depending on the subject hazard, extent measures may be potential magnitude, strength, speed of onset, or duration.

Previous Occurrences are the history of previous hazard events for each hazard.

Future Probability is the likelihood of each subject hazard occurring in the future. HMP Update utilizes available data, general descriptions or rankings from a variety of sources to describe future probability.

The vulnerability assessment for each hazard includes a review of impacts as follows:

Impact is a review of the consequences or effect of the hazard on the community and its assets, including the population, structures, facilities, or activities that have value to the community. Impact categories that may be featured are: Health and Safety; Damage to Buildings; Critical Facilities and Infrastructure; and Economic Impact.

Significant Changes in Development since the HMP Update 2015 and Possible Impacts to Vulnerability describes relevant significant changes in development occurring since the HMP Update 2015 and an explanation of how that development may potentially impact each participating jurisdiction's vulnerability to the hazard considered.

Overall Summary of Vulnerability is a general description of the hazard's impact for each jurisdiction.

Multi-jurisdictional differences, as may be applicable, are noted for each featured hazard.

Appendix B contains an Overall Summary of Vulnerability Matrix with hazards and each participating community jurisdiction, to indicate where high, medium, low, or no vulnerability exists.

Severe Storms

The natural hazard ‘Severe Storms’ received the INHMP highest rating of “Severe” for Illinois counties included in the Plan Area, principally Champaign County. A ‘severe storm’ is one that either produces hail at least one inch in diameter, has winds of 58 miles per hour or higher, or produces a tornado. Damaging lightning is often featured as a characteristic of thunderstorm winds in a severe storm.

Location

The entire Plan Area is equally at risk from severe storms.

Extent

The following sections describe general characteristics of the each of the noted types of severe storms that may be experienced in the Plan Area: thunderstorm wind; damaging lightning; and hailstorms.

Thunderstorm Winds:

The *Climate Atlas of Illinois* defines a thunderstorm as “...a local storm produced by cumulonimbus clouds and always accompanied by lightning and thunder, and often by strong gusts, heavy rain, and hail.”⁴ The NWS estimates that 10 percent of thunderstorms are severe storms, which produce hail at least one inch in diameter, consecutive wind gusts that are 58 miles per hour or greater, or produce a tornado.

In Illinois, thunderstorms typically occur as warm, moist air from the Gulf of Mexico comes in contact with cool air moving east from the Rocky Mountains. Thunderstorms are most likely to occur in the spring and summer months and usually in the late afternoon or evening. They can form in single cells, in clusters, or in lines and are typically 15 miles in diameter.

To characterize intensity or magnitude of thunderstorm winds, the wind speed values listed are either estimated by damage caused, or measured by official NWS approved calibrated anemometers, with one knot equal to 1.152 miles per hour. Thunderstorm wind measurements utilized by NWS are: Measured Gust, Measured Sustained, Estimated Gust or Estimated Sustained.

Damaging Lightning:

Lightning is caused when electrical energy builds up and is discharged between positively and negatively charged areas. According to the NWS, lightning can strike up to ten miles away from where it is raining. Only 25 percent of lightning strikes are cloud-to-ground; however, lightning still poses a significant threat during severe storms.

SEVERE WEATHER 101

Frequently Asked Questions About Lightning (*Excerpt*)**Is it possible to have thunder without lightning?**

No, it is not possible to have thunder without lightning. Thunder is a direct result of lightning. However, it IS possible that you might see lightning and not hear the thunder because it was too far away. Sometimes this is called “heat lightning” because it occurs most often in the summer. (Illinois State Climatologist Trent Ford additionally notes that heat lightning is not actually caused by heat, although that is a common misconception.)

Is lightning always produced by a thunderstorm?

Thunderstorms always have lightning (thunder is caused by lightning, and you can't have a thunderstorm without thunder), but you can have lightning without a thunderstorm. Lightning can also be seen in volcanic eruptions, extremely intense forest fires, surface nuclear detonations, and in heavy snowstorms.

What causes thunder?

Thunder is caused by lightning. The bright light of the lightning flash caused by the return stroke mentioned above represents a great deal of energy. This energy heats the air in the channel to above 50,000 degrees F in only a few millionths of a second! The air that is now heated to such a high temperature had no time to expand, so it is now at a very high pressure. The high pressure air then expands outward into the surrounding air compressing it and causing a disturbance that propagates in all directions away from the stroke. The disturbance is a shock wave for the first 10 yards, after which it becomes an ordinary sound wave, or thunder. Thunder can seem like it goes on and on because each point along the channel produces a shock wave and sound wave.

Source: NSSL,
<https://www.nssl.noaa.gov/education/svrwx101/lightning/faq/>

The publicly available National Oceanic and Atmospheric Administration (NOAA) National Centers for Environmental Information (NCEI) lightning data are lightning events that result in fatality, injury and/or property and crop damage. These events are reported to the National Weather Service (NWS) for inclusion in the Storm Events Database. NCEI is developing several derived products to be publicly available that will include summaries of lightning flashes by county and state as well as gridded lightning frequency products.

Hailstorms:

Severe storms are capable of producing round balls of frozen rain called hail, which occur when water droplets are carried above the freezing level by updrafts. The water droplets freeze and once the updraft can no longer support their weight, the hailstones drop.

Table 4-4 indicates hail classifications. The magnitude or intensity of a hailstorm is hail size in inches and hundredths of inches. These values are assigned a size in inches from their appearance.

Table 4-4. Hail Size Classification

Size (Inches)	Description
$\frac{1}{2}$	Marble Size
$\frac{3}{4}$	Penny Size
$\frac{7}{8}$	Nickel Size
1	Quarter Size
$1\frac{1}{4}$	Half Dollar Size
$1\frac{1}{2}$	Ping Pong Ball Size
$1\frac{3}{4}$	Golf Ball Size
2	Egg Size
$2\frac{1}{2}$	Tennis Ball Size
$2\frac{3}{4}$	Baseball Size
3	Teacup Size
4	Grapefruit Size
$4\frac{1}{2}$	Softball Size

Source: NWS

Previous Occurrences

Four Federal Disaster Declarations featured severe storms in the Plan Area: DR-242, DR-1025, DR-1110, and DR-1416. Appendix A provides information regarding each declaration.

Table 4-5 summarizes the NOAA National Centers for Environmental Information (NCEI) Storm Events Database frequency data for hailstorm events, damaging lightning, and thunderstorm wind in the Plan Area over a 69-year period December 1950 through December 2019.

Table 4-5. Frequency of Severe Storm Events in Plan Area

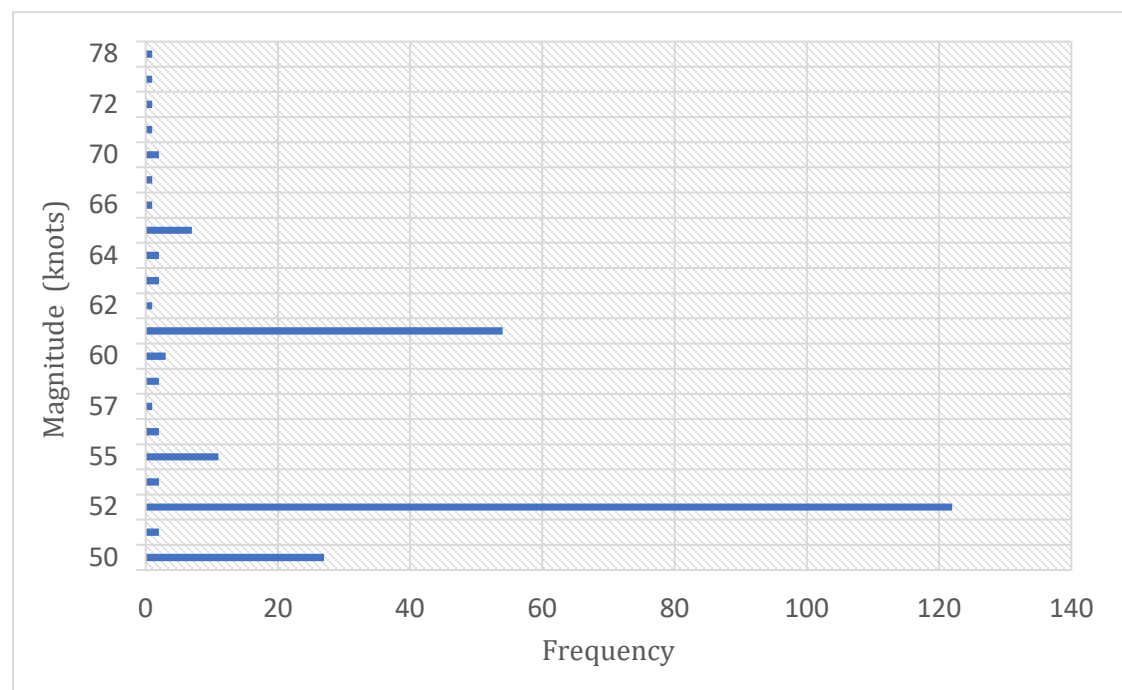
Event Type	Number of Events Historical Database 12/1950-12/2019	Number of Events 10-Year Period 12/2009-12/2019	Annual Average 12/2009-12/2019
Thunderstorm Wind	191	54	5
Lightning	12	7	1
Hailstorms	115	38	4

Source: NCEI

Thunderstorm Winds:

Based on the NOAA NCEI Storm Events Database, a total of 311 thunderstorm wind events were reported as occurring in the Plan Area on 191 days between April 1956 and December 2019. Appendix C is a summary of these events that includes dates, locations, and magnitude measures. Figure 4-1 displays the magnitude wind speed data provided for most of the thunderstorm wind events. The magnitude measures are knots, with one knot equal to 1.15 mile per hour wind speed.

Figure 4-1. Thunderstorm Wind Event Magnitudes in Plan Area



The largest magnitude thunderstorm wind was measured at 78 knots, equal to a wind speed of 89.8 miles per hour. This thunderstorm wind event was reported as beginning near Ludlow on July 13, 2004. The most frequently reported wind magnitude of 52 knots (equivalent to 59.8 mile per hour wind speed) was reported for 122 of the events.

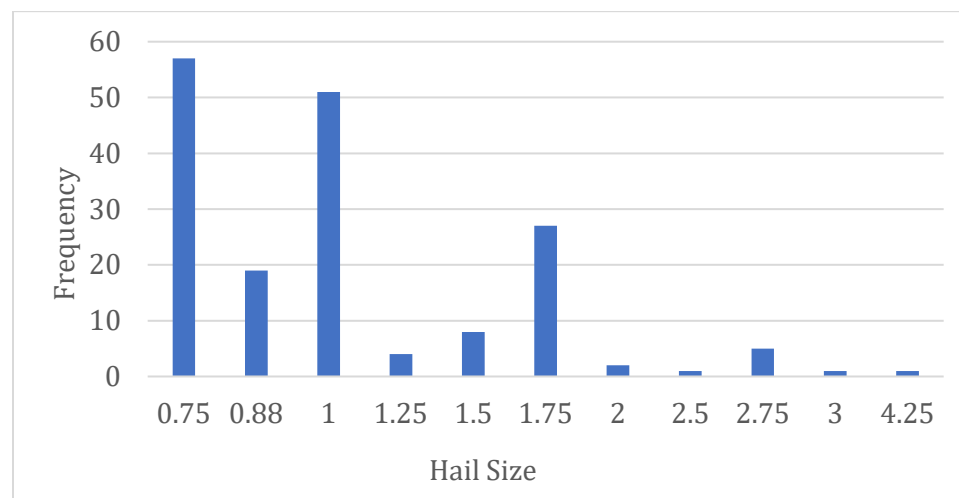
Lightning:

Based on the NOAA NCEI Storm Events Database, a total of 12 lightning events were reported as occurring in the Plan Area on 12 days between July 1997 and December 2019. At present, only lightning events that result in fatality, injury, or property and crop damage are reported to the NWS for inclusion into the Storm Events Database.⁵ Illinois State Climatologist Trent Ford noted that the 12 events reported are far fewer than the actual number of lightning events in Champaign County. Appendix D is a summary of these events that includes dates, locations, and magnitude measures of reported lightning events in the Plan Area.

Hailstorms:

Based on the NOAA NCEI Storm Events Database, a total of 176 hailstorm events were reported as occurring in the Plan Area on 115 days between June 1956 and December 2019. Appendix E is a summary of these events that includes dates, locations, and hail size. Figure 4-2 displays the hail sizes reported for hailstorms occurring in the Plan Area.

Figure 4-2. Hail Size for Hailstorms in Plan Area



The largest hail size reported was 4.25 inches (between grapefruit size and softball size) for the hailstorm located in Philo on May 30, 2008.

Overall, 1.15 inches is the average hail size for the 176 reports of hailstorms in the Plan Area.

Future Probability of Severe Storms Events

An estimate of the probability of future occurrences of a severe storms event in the Plan Area is 100 percent for any given year, based on the history of occurrences of severe storms.

Based on a recent Illinois State Water Survey (ISWS) study, temperatures in Illinois have warmed by about 1.2 degrees Fahrenheit over the past century, which results in storms having more water available for precipitation and longer warm seasons. This trend supports increased opportunities for thunderstorms.⁶

U.S. Global Change Research Program observations of changing climate patterns across the United States projects precipitation patterns for the Midwest region as follows:

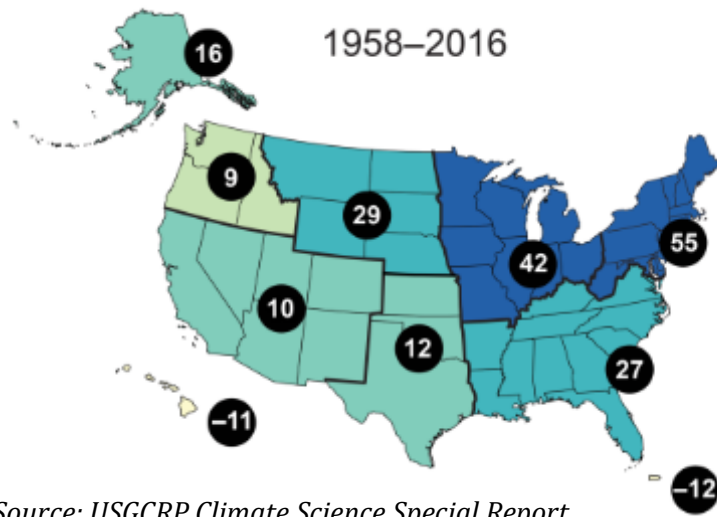
Annual average precipitation has increased by 4% since 1901 across the entire United States ... The greatest precipitation changes are projected to occur in winter and spring, with similar geographic patterns.

The largest observed increases have occurred and are projected to continue to occur in the Northeast and Midwest, where additional increases exceeding 40% are projected for these regions by 2070–2099 relative to 1986–2015. These increases are linked to observed and projected increases in the frequency of organized clusters of thunderstorms and the amount of precipitation associated with them.

The *Fourth National Climate Assessment* report indicates that extreme precipitation has increased across much of the United States. Projected increases were based on reported observations of change in the rate of heavy precipitation events, defined as the heaviest one percent of all daily precipitation events from 1958-2016.

Figure 4-3 illustrates, for the Midwest region, that a 42 percent increase in heavy precipitation events—a larger than natural variation--can be expected.⁷

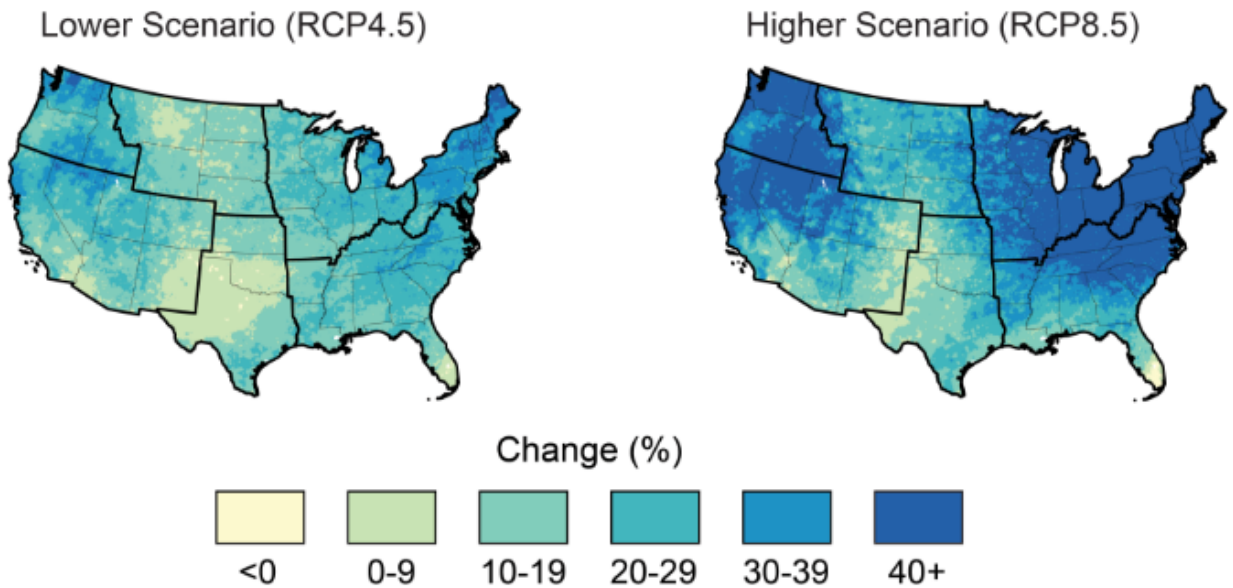
Figure 4-3. Observed Change in Total Annual Precipitation Falling in the Heaviest 1% of Events



Source: USGCRP Climate Science Special Report

The same report projects that with continued carbon dioxide (CO₂) emissions increases as would be seen in the RCP8.5 scenario, the state of Illinois can expect to experience another 40 or more percent increase in heavy precipitation events by 2081-2100, compared to 1981-2000. Even with rapid reductions in CO₂ emissions, Illinois could experience a 20 to 30 percent increase in heavy precipitation events in the same period.

Figure 4-4. Projected Change in Heavy Precipitation Events



Source: USGCRP Climate Science Special Report

Impact

This section reviews consequences or effects of severe storms events in the Plan Area. Due to multiple hazard elements, severe storms events have a wide array of potential consequences.

Heavy Rain: As a typical hazard element of a severe storm, heavy rain is associated with reduced visibility which can lead to an increase in vehicular accidents, storm water system backup, flooding, and crop damage.

Thunderstorm Winds: Thunderstorm winds can cause downed power lines, injury, fatalities, and damage to property, trees, and crops.

Of the total 311 recorded thunderstorm wind events recorded as occurring within the Plan Area between December 1950 and December 2019, four thunderstorm wind events caused injury, 62 resulted in property damage, and 2 caused crop damage. Appendix C lists details regarding these damaging thunderstorm winds events.

The most damaging thunderstorm winds event in the Plan Area with regard to property damage occurred on September 13, 2004 in the Village of Ludlow, causing \$2.2 million in property damage. The most harmful thunderstorm wind event resulting in personal injury occurred on June 29, 1987 at an unspecified Plan Area location, with five persons injured as a direct result of the event.

Damaging Lightning: Lightning can damage property, start fires, cause power outages, and cause injury or death.

The following is the narrative description on record for the only reported incident of damaging lightning causing personal injury in the Plan Area:

Lightning struck a television antenna on a home in Mahomet on July 14, 1997. It traveled through the roof and knocked a man out of his wheelchair. He only suffered minor injuries and was treated and released from a local hospital. The lightning strike caused approximately \$3,500 in damage to the roof.

A total of 12 reported damaging lightning events in the Plan Area have occurred between July 1997 and July 2013, causing an estimated total of \$628,500 in property damage. The most damaging lightning event in the Plan Area to date occurred April 19, 2011, in unincorporated Champaign County, causing an estimated \$300,000 in property damage.

Some Advisory Group reviewers observed that damaging lightning strikes often burn buildings or destroy electrical devices in buildings throughout the Plan Area, and that damaging lightning is typically under-reported.

Hailstorms: Hail is known to damage buildings, vehicles, and crops, and known to be damaging or deadly to livestock. In rare cases a hailstorm may cause human injury. Hail can cause slick surfaces, creating a risk of personal injury and vehicular accidents.

The hailstorm that occurred on May 18, 2000, in Champaign and Vermilion Counties was one of two reported hail events on record as causing property damage in the Plan Area. This event was estimated to result in over 4 million dollars of damage, \$24,000 of which was within the Plan Area. Thousands of cars sustained heavy damage including broken windshields, and hundreds of homes suffered broken windows or damaged siding. A high school located in nearby Vermilion County (outside the Plan Area) sustained an estimated \$300,000 in damage, and the Illinois State Patrol vehicles housed in Pesotum (within the Plan Area) suffered an estimated \$24,000 in damages. There were no reported personal injuries related to this hailstorm.

The hailstorm that occurred on May 21, 2014, resulted in significant hail damage at Willard Airport in Savoy, including damage to several vehicles as well as minor damage to a B-17 aircraft. Property damage as a result of that hail event was an estimated \$800,000.

Significant Changes in Development since the HMP Update 2015 and Possible Impacts to Vulnerability to a Severe Storm

Since the HMP Update 2015, no significant changes in development occurred in any of the participating jurisdictions to apparently impact the vulnerability of a participating jurisdiction to a severe storm.

Overall Summary of Vulnerability

As an overview to describe the vulnerability of Illinois counties to severe storms, Chris Miller, Warning Coordination Meteorologist, National Weather Service (NWS), Lincoln, Illinois, stated:

Illinois averages more than 500 reports of wind damage and nearly 375 reports of large hail annually. Approximately 80% of the severe thunderstorms are multicellular or a supercell hybrid, which can produce damaging wind and/or large hail over approximately a 400 to

500 square mile area. The remainder of severe thunderstorms are squall lines, which can produce damage over 100% of the of the affected counties. ... The vulnerability to severe thunderstorms should be high (greater than 25% of the population affected) in each county across Illinois.⁸

The populations and structures situated within all Plan Area jurisdictions share similar or equal risks to damages or injuries associated with 'Severe Storms' events.

Potential Health and Safety Threat

Both hailstorms and damaging lightning are capable of injuring anyone who is outside during a severe storm. Though it is rare for hail to cause injury or death, damaging lightning is known to cause both as well as start fires which can lead to secondary threats. Damaging lightning is also capable of traveling through electrical outlets and striking people or objects indoors.

Potential Damage to Property

All structures in the Plan Area are vulnerable to severe storms.

Hailstorms most notably may damage vehicles causing dents in the body of the vehicle, cracking or smashing windows, or scratching paint. Hailstorms can create dents or soft spots on roofs with shingles, which can lead to water damage to underlying structures.

Lightning strikes can cause fires which can destroy a structure. The maximum potential damage to a structure, therefore, is equal to its full replacement cost.

Strong winds associated with severe storms are capable of snapping branches off trees, causing damage to property.

In Champaign County (the Plan Area), INHMP estimates that, overall, as of 2017, the average amount of crop and property damage losses per severe storm event is \$25,650, and the estimated annual crop and property damage due to severe storm events is \$102,598.⁹

Potential Economic Impacts

The types of potential economic impacts that can result from severe storms in the Plan Area include:

- Cost of emergency response and cleanup (thunderstorm winds; hailstorms; damaging lightning);

- Loss of revenue for an economic establishment that is partially or destroyed by fire (damaging lightning);
- Loss of revenue for economic establishments whose power service is interrupted as a result of fallen limbs and downed power lines (thunderstorm winds; damaging lightning);
- Disruption of transportation routes as a result of downed tree debris (thunderstorm winds; damaging lightning);
- Loss of revenue for an economic establishment while they repair broken windows and/or roofs (hailstorms);
- Loss of revenue for economic establishments which depend on vehicles that are considered inoperable as the result of broken windows (hailstorms); and
- Crop production (trends toward warmer, wetter, and more humid conditions are expected to challenge field work, increase disease and pest pressure, and reduce yields to an extent that these challenges can be only partially overcome by technology);¹⁰
- Crop damage (hailstorms); and
- Critical Infrastructure (transportation and stormwater systems will need to be adapted to more frequent episodes of extreme precipitation).¹¹

Tornadoes

The National Weather Service (NWS) categorizes tornadoes as the most destructive of all atmospheric phenomena on a local scale. NWS defines a tornado as “a violently rotating column of air” formed during a thunderstorm by the change in wind direction. Before a thunderstorm event, a change in wind direction and speed creates a “horizontal spinning effect in the lower atmosphere,” and during the thunderstorm an updraft causes a vertical shift in the rotating air, creating a two-to six-mile wide area of rotation perfect for the formation of a tornado.

Location

The entire Plan Area is equally at risk from tornadoes.

Extent

The “extent” of a tornado refers to the magnitude and descriptive characteristics of a tornado hazard regardless of the people and property it affects.

Tornadoes are most common in the Midwest and southeastern parts of the country. Tornadoes most frequently occur between March and August but can occur any time of the year. The intensity of tornadoes, including their wind speed and the type of damage they cause, are categorized by the Enhanced Fujita Scale, created and implemented by the NWS in February 2007.

Table 4-6. Enhanced Fujita Scale

Category	Wind Speed (mph)	Description
EF0	65-85	Light damage. Peels surface of off some roofs; some damage to gutters or siding; branches broken off trees; shallow rooted trees pushed over.
EF1	86-110	Moderate damage. Roofs severely stripped; Mobile homes overturned or badly damaged; loss of exterior doors; windows and other glass broken.
EF2	111-135	Considerable damage. Roofs torn off well-constructed houses; foundations of frame homes shifted; mobile homes completely destroyed; large trees snapped or uprooted; light-object missiles generated; cars lifted off ground.
EF3	136-165	Severe damage. Entire stories of well-constructed houses destroyed; severe damage to large buildings such as shopping malls; trains overturned; trees debarked; heavy cars lifted off the ground and thrown; structures with weak foundations blown away some distance.

Continued

Category	Wind Speed (mph)	Description
EF4	166-200	Devastating damage. Well-constructed houses and whole frame houses completely leveled; cars thrown and small missiles generated.
EF5	> 200	Incredible damage. Strong frame houses leveled off foundations and swept away, automobile-sized missiles fly through the air in excess of 100 m (109 yd); high-rise buildings have significant structural deformation; incredible phenomena will occur.

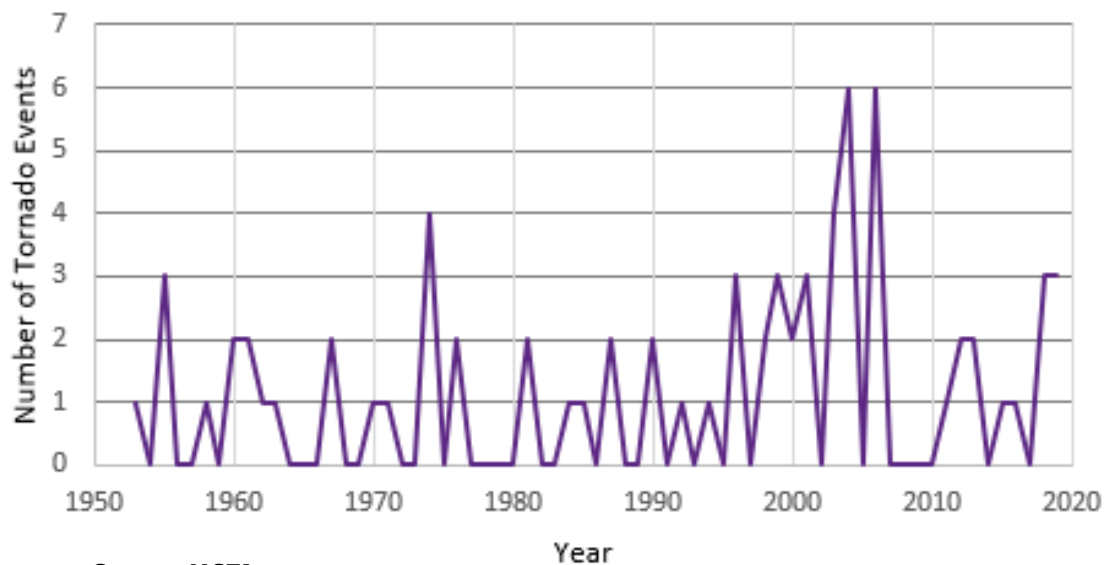
Source: NWS

Previous Occurrences

Based on Table 4-3, four Federal Disaster Declarations were made that featured tornadoes, in combination with one or more natural hazards, as occurring in the Plan Area: DR-242, DR-1025, DR-1110, DR-1416, and DR-4157; and one Federal Disaster Declaration was made that featured a tornado alone as occurring in the Plan Area: DR 427.

Based on the NOAA NCEI Storm Events Database, a total of 73 tornadoes were reported as occurring in the Plan Area on 53 days between April 1953 and June 2019. Figure 4-5 indicates the number of tornado events by year within the Plan Area.

Figure 4-5. Number of Tornado Events by Year in Plan Area



Source: NCEI

The NCEI Storm Data website clarifies that tornadoes reported in the Storm Data and the Storm Events Database are in segments, and that tornadoes may contain multiple segments. A tornado that lifts off the ground for less than 5 minutes or 2.5 miles is considered a separate segment. If the tornado lifts off the ground for greater than 5 minutes or 2.5 miles, it is considered a separate tornado.¹²

Table 4-7 is a summary of the number and intensity of tornadoes occurring in the Plan Area. Tornadoes occurring between 1953 and 2006 were recorded using the F scale. Tornadoes occurring since 2007 were recorded using the EF scale. The F and EF scales differ regarding speed.

Illinois state Climatologist Trent Ford additionally noted that total tornado counts have increased since the early part of the record because of better spotting and radar techniques, and that it is likely that the pre-1970s record undercounts small tornadoes.

Table 4-7. Tornado Event Intensity in Plan Area

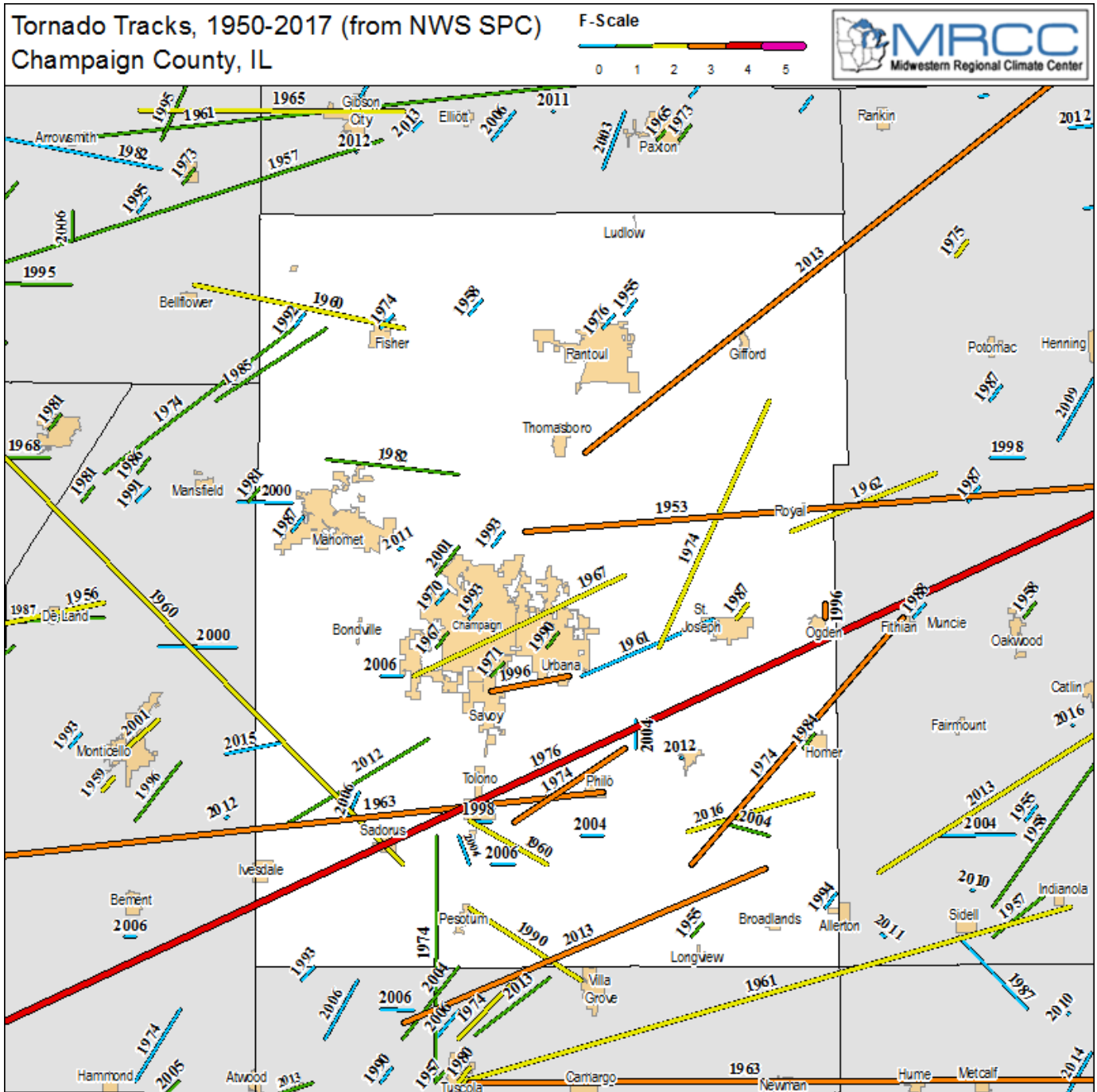
1950 – 2006	Wind Speed (Miles per Hour)	Number of Occurrences
F0	40 - 72	34
F1	73 - 112	10
F2	113- 157	8
F3	158 - 207	6
F4	208 - 260	1
2007 – 2009	Wind Speed (Miles per Hour)	Number of Occurrences
EF0	65 - 85	5
EF1	86 - 110	5
EF2	111 - 135	2
EF3	136 - 165	1

Source: NCEI

Figure 4-6 displays a MRCC map to depict NOAA NCEI Storm Event data of the travel paths of reported tornado event occurring in the Plan Area between 1953 and through 2017. Since 2017, two EF0 tornadoes and three EF1 tornadoes have additionally been reported as occurring in the Plan Area.

Appendix F contains a summary of available NOAA NCEI Storm Event data for tornado events in the Plan Area through December 2019 that includes dates, locations, and intensity.

Figure 4-6. Travel Paths of Tornadoes in Plan Area



Source: MRCC

Future Probability of Tornado Events

Based on the historical frequency of tornadoes in the Plan Area, an estimated probability of future occurrences of a tornado within the Plan Area is 100 percent for any given year.¹³

Impact

This section describes the effects a tornado can be expected to have on the Plan Area and its assets. Table 4-8 is a summary of all tornadoes or tornado segments on record as occurring within the Plan Area beginning in 1950 and through 2014.

Table 4-8. Impacts of Tornadoes in Plan Area (1950–2019)

Decade	# of Tornadoes	Injuries	Fatalities	Property Damage (\$ Estimate)
1950s	5	5	0	25.0 M
1960s	8	11	0	852.5 K
1970s	8	11	1	3.5 M
1980s	6	0	0	575.0 K
1990s	12	26	1	11.5 M
2000s	21	2	0	540.0 K
2010s	13	6	0	61.8 M

Source: NCEI

1996 – On April 19, 1996, a tornado touched down near Savoy, and then in Ogden. The National Weather Service (NWS) reported that the tornado briefly touched down one mile north of Savoy destroying three homes under construction, before touching down again one mile south of Urbana. In Urbana, the tornado destroyed 30 homes, damaged 83 homes and five businesses, and injured 12 people. Damages from this portion of the event were an estimated \$7 to \$11 million.

The tornado continued toward Ogden, touching down half a mile southwest of the village, where it continued traveling through the center of Ogden. The tornado destroyed 68 homes, 12 businesses, three churches, a library, and a grade school. This portion of the event left one woman dead and 13 people injured.

2013 – On November 17, 2013, a tornado touched down near Thomasboro and then in Gifford. NWS described the most recent tornado event:

A tornado touched down in an open field about one mile southeast of Thomasboro at 12:45 PM CST and rapidly moved to the northeast. In less than a minute it increased in intensity, causing damage to three nearby farms and pushing two farmhouses off their foundations. The tornado moved through open fields for about two miles at which time

it widened to nearly ¼-mile wide and became wrapped in rain. It destroyed three homes, several outbuildings, and damaged a few other homes before it moved into the town of Gifford. The rain-wrapped tornado was about ½-mile wide when it moved through the center of Gifford. Nearly 30 homes were destroyed, more than 40 suffered major damage, and around 125 had minor damage. Around 15 businesses sustained moderate to major damage and the roof of a school was peeled back. Hundreds of vehicles were damaged or destroyed. The tornado tracked for another five miles to the northeast, destroying three homes and numerous outbuildings, damaging several other homes, and snapping many trees and power poles. Six people were injured in Champaign County, with damage estimated around \$60 million.

Figure 4-7. Damage to Gifford by EF-3 Tornado, November 18, 2013 Photograph



Source: Photo by IEMA on NOAA website,
<http://www.crh.noaa.gov/images/ilx/events/17nov13/iema-gifford.jpg>

Significant Changes in Development since the HMP Update 2015 and Possible Impacts to Vulnerability to a Tornado

Since the HMP Update 2015, a total of 39 outdoor warning sirens centrally located in Champaign County were upgraded to modernize the system from analog to digital communications. These warning sirens will be capable of being automatically activated when a tornado warning is issued by the National Weather Service. The specific participating jurisdictions impacted by the improved upgraded warning sirens are: Parkland College, University of Illinois at Urbana-Champaign, City of Champaign, City of Urbana, and Village of Savoy.

Overall Summary of Vulnerability

The populations and structures situated within all Plan Area jurisdictions share similar or equal risks to damages or injuries associated with tornado events. Residents living in mobile homes or prefabricated homes, and those without basements or internal rooms, are at a higher vulnerability or risk of injury.

Potential Health and Safety Threat

Tornadoes can cause injury or the death of people living in any part of the Plan Area. Tornadoes possess the power to throw a person a long distance, turn ordinary objects into projectiles, and cause the collapse of structures providing shelter to those in its path.

Potential Damage to Property

Tornadoes are capable of minimal to complete destruction of residential homes, businesses, and infrastructure. The maximum potential damage to a structure, therefore, is equal to its full replacement cost.

In Champaign County (the Plan Area), INHMP estimates that, overall, as of 2017, the average amount of crop and property damage losses per tornado event is \$1,549,418, and the estimated annual crop and property damage due to severe storm events is \$1,572,894.¹⁴

Potential Economic Impact

The types of potential economic impacts that can result from a tornado in the Plan Area include:

- Financial hardships endured by survivors as a result of loss of lives during a tornado event;
- Financial hardships due to personal injuries or animal injuries resulting from a tornado;

- Cost of emergency response and cleanup as a result of tornado damage;
- Loss of revenue for economic establishments that are damaged or destroyed by a tornado;
- Loss of revenue for economic establishments whose utility services are interrupted as a result of a tornado; and
- Disruption of transportation routes due to debris.

Severe Winter Storms

A 'severe winter storm' is one that is particularly strong. Three Severe Winter Storm categories are: Blizzards, Ice Storms, and Heavy Snowstorms.

Location:

The entire Plan Area is equally at risk from severe winter storms.

Extent:

"The Cold, Hard Facts about Winter Storms" describes the severe winter storms in Illinois and indicates that the Central Illinois area is ideally situated for potential severe freezing rain or ice storms to occur.¹⁵

Blizzards:

Blizzards are dangerous winter storms that are a combination of blowing snow and wind resulting in very low visibilities. NWS defines a blizzard as a storm which contains large amounts of snow or blowing snow, with winds in excess of 35 mph and visibilities of less than 1/4 mile for an extended period of time (at least 3 hours). When these conditions are expected, the NWS will issue a "Blizzard Warning". When these conditions are not expected to occur simultaneously, but one or two of these conditions are expected, a "Winter Storm Warning" or "Heavy Snow Warning" may be issued.

Ice Storms:

Ice storms occur when precipitation freezes immediately upon contact. NWS defines an ice storm as one that results in the accumulation of at least 0.25 inches of ice on exposed surfaces. An ice storm creates hazardous driving and walking conditions and tree branches and powerlines can easily snap under the weight of the ice.

Heavy Snowstorms:

NWS defines a heavy snowstorm as one producing six inches or more of snow in less than 48 hours.

The INHMP describes the extent of severe winter storm types across the state. A blizzard is one of the most dangerous of all winter storms, combining low temperatures, heavy snowfall, and winds of at least 35 miles per hour, reducing visibility to less than a quarter mile. In the central Illinois area, a heavy snowstorm will typically produce eight inches or more of snow in 12 hours or less.¹⁶

Table 4-9 is a summary of IEMA guidelines for advisories, watches and warnings regarding severe winter storms.

Table 4-9. Guidelines for Severe Winter Storm Advisories, Watches and Warnings

Freezing Rain	Rain that freezes when it falls onto ground-based objects, creating a coating of ice (glaze) on roads, walkways, trees, and power lines.
Sleet	Rain that freezes to ice pellets before reaching the ground. Sleet also causes roads to freeze and become slippery.
Winter Storm Watch	Potentially significant winter weather, including heavy snow, ice, sleet, and/or blowing snow is expected within the next day or two.
Winter Storm Warning	Heavy snow, blowing snow, sleet or a combination of winter weather hazards are expected to cause a significant impact to life or property.
Ice Storm Warning	Heavy accumulations of ice, usually greater than ¼" in thickness, are expected to cause a significant impact to life or property, resulting in hazardous travel conditions, tree damage and extended power outages.
Blizzard Warning	Strong winds (35 mph or greater) will produce blinding snow and near zero visibility, resulting in potentially life-threatening conditions – particularly for travelers. Blizzards can occur with minimal accumulations of snow.
Freeze Warning	Below freezing temperatures are expected during the growing season, which will cause damage to local vegetation.
Winter Weather Advisory	Snow, blowing snow, ice and/or sleet is expected to produce potentially dangerous travel conditions within the next 12 to 36 hours.

Source: IEMA Winter Weather Preparedness Guide, November 2017

Previous Occurrences

One Federal Disaster Declaration was made for the ice storm occurring in 1990 (DR-860), and one Federal Emergency Declaration was made for the winter snowstorm occurring in 1999 (EM-3134).

The NOAA NCEI Storm Events Database regarding winter storm events indicates that a total of 41 winter storm events have been reported as occurring in the Plan Area between January 1996 and February 2019. These reported events include: 17 winter storm events, 17 heavy snow events, three blizzard events, and four ice storm events.¹⁷

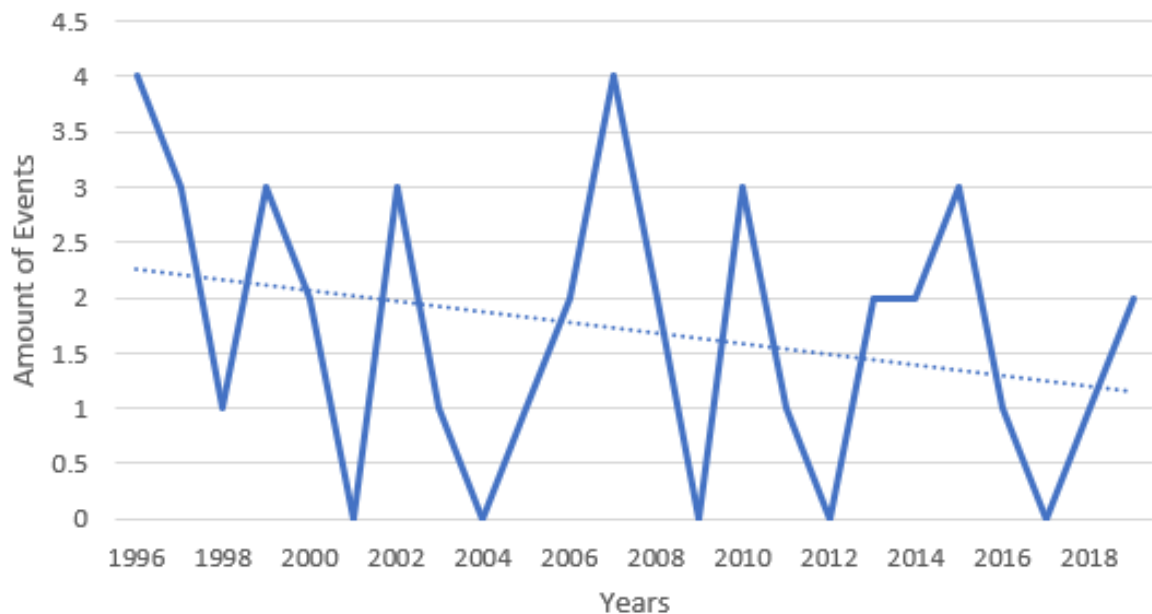
Future Probability of Severe Winter Storm Events

Based on the reported NOAA NCEI Storm Events Database of severe winter storms events for the Plan Area and the region, the INHMP indicates that the annual

probability of a severe winter storm event in Champaign County (the Plan Area) is 24 percent.¹⁸

Figure 4-8 contains a graph of hazardous winter weather events in the Plan Area across a 23-year period and features a trendline with a negative slope. Based on the downward trend in this graph, there could be approximately 1.15 fewer hazardous winter weather events on average by 2025. However, due to the short data range, anomalies, lower or higher, could skew the data.

Figure 4-8. Total Hazardous Winter Weather Events Per Year in Plan Area

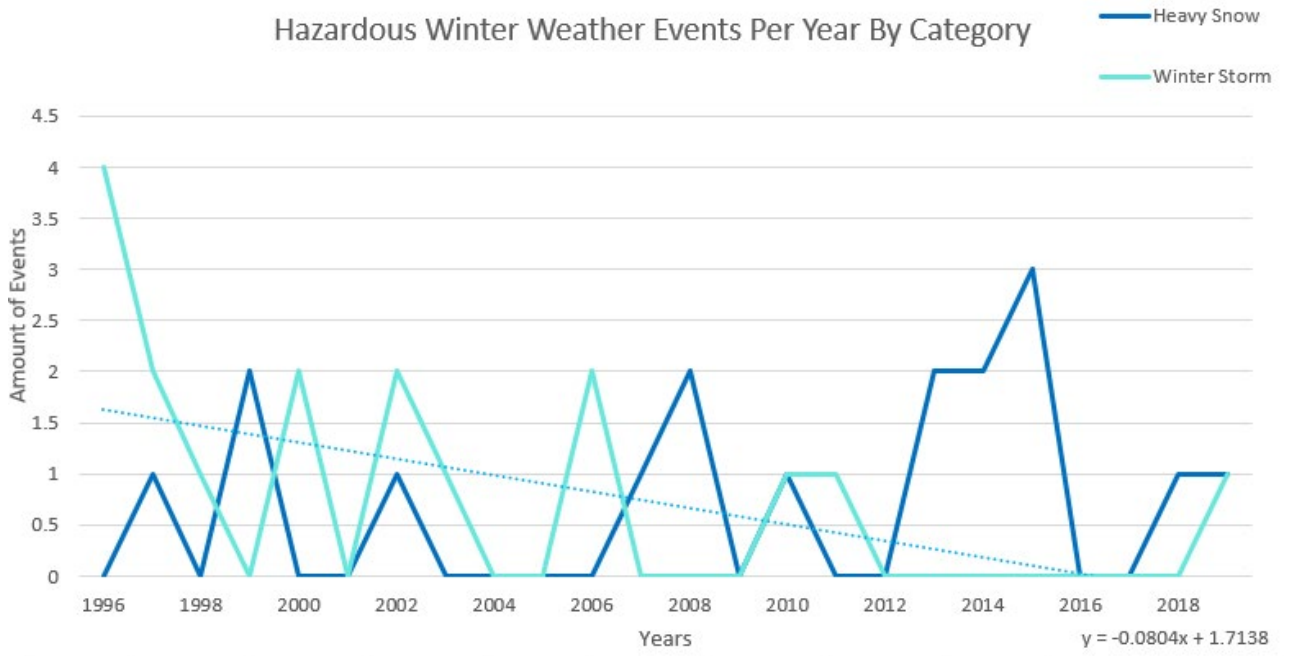


Source: NCEI

Figures 4-9 and 4-10 depict the reported winter weather events over the same 23-year period in the Plan Area by category, specifically heavy snow, and winter storm weather events. Figure 4-9 contains a downward-sloped trendline for winter storm events, which would appear to imply that fewer winter storm events may be expected in years to come. Figure 4-10 contains a positive-sloped trendline for heavy snow events, which may imply that there could be more heavy snow events in the years to come. Illinois State Climatologist Trent Ford has suggested that the contrasting slopes are likely due to increased winter temperatures, which decrease the frequency of winter storms, but increase the frequency of heavy snow due to increased water content in the air. This makes it so that the storms have more water to precipitate, and we get heavier snowfall.

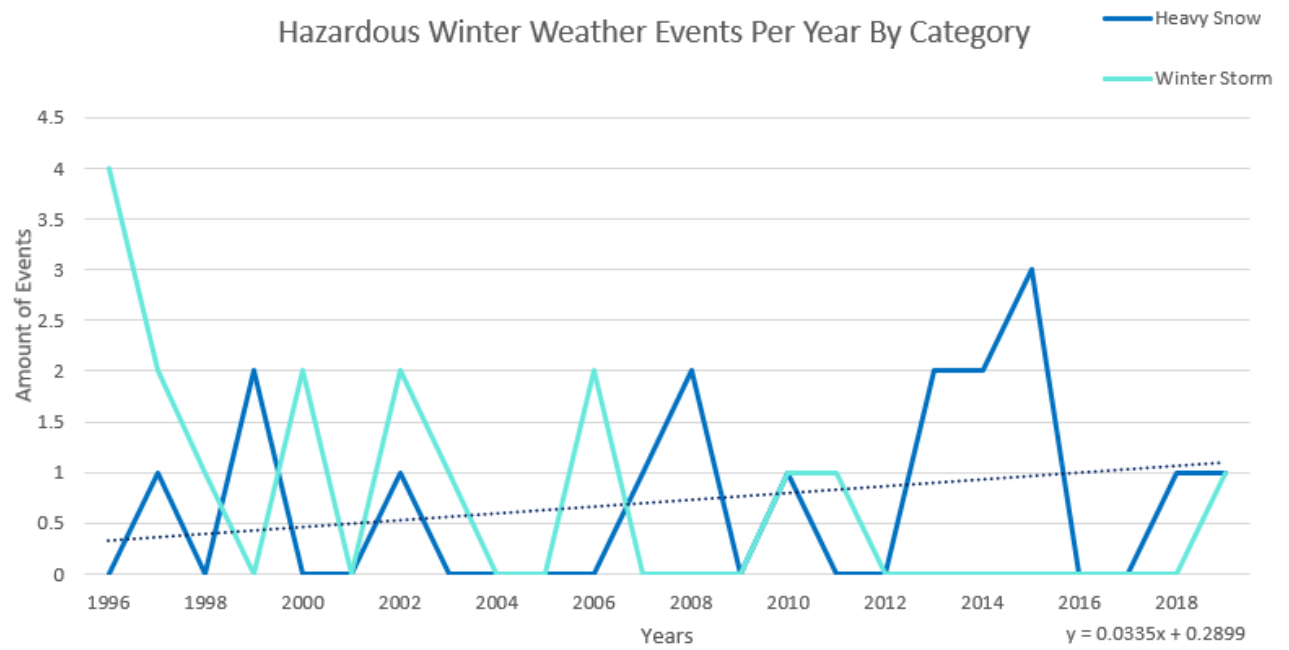
Additional data is needed to draw improved projections about the frequency of future severe winter storm events.

Figure 4-9. Winter Storm Events Per Year in Plan Area by Category with Winter Storm Trendline



Source: NCEI

Figure 4-10. Winter Storm Events Per Year in Plan Area by Category with Heavy Snow Trendline



Source: NCEI

Impact

Deaths from dangerously low temperatures, and injuries and fatalities from hazardous driving conditions are the main threats posed by severe winter storms. Winter storms are also capable of causing property damage, including costly damage to electrical utilities. Destruction of electrical utility infrastructure not only affects the utility companies but can cause loss of revenue for businesses if they experience power service interruption.

The Cold, Hard Facts About Winter Storms describes characteristics and magnitude of severe winter storms in Illinois and claims that severe winter storms in Illinois produce more total damage than any other form of short-term severe weather, including tornadoes, lightning, and hail.¹⁹

Severe winter storm events are capable of being a contributing cause of accidents and cold-weather exposure fatalities and injuries. One fatality occurred in the Plan Area on December 31, 2017, during an extreme cold/wind chill event. The NCEI Storm Events Database narrative describes the event as follows:

An Arctic cold front plunged through central Illinois on December 29, 2017...setting the stage for a prolonged period of extremely cold conditions from December 30, 2017 through January 2, 2018. The coldest temperatures occurred on the early morning of January 2 when readings bottomed out between -10F and -15F along and north of the I-74 corridor. Wind-chill values through the period generally ranged from -15F to -25F. ... An 89-year old woman wandered outside a nursing home and died of hypothermia in Champaign during the early morning hours of December 31st. Temperatures were around zero and wind-chill readings ranged from -10F to -20F when she was found.

The NCEI Storm Events Database includes reports of winter storm, blizzard, ice storm, and heavy snow events as of January 1996. To date, the one severe winter storm event on record as having caused property damage in the Plan Area resulted from the reported winter storm on February 1, 2011, estimated to have caused \$50,000 in property damage and resulting in one indirect fatality. The narrative description of this event follows:

Weather observers across Champaign County measured 1 to 4 inches of sleet along with 6 to 8 inches of snow. Snow-covered and icy roads resulted in numerous traffic accidents. In addition, a 39-year old Champaign man died on February 1st of cardiac arrest suffered while trying to shovel snow at his home.

Significant Changes in Development since the HMP Update 2015 and Possible Impacts to Vulnerability to a Severe Winter Storm

Since the HMP Update 2015, no significant changes in development occurred in any of the participating jurisdictions to apparently impact the vulnerability of the participating jurisdictions to a severe winter storm.

Overall Summary of Vulnerability

The populations and structures situated in the Plan Area share similar or equal risks to damages or injuries associated with Severe Winter Storms events.

Potential Health and Safety Threat

Winter storms, especially the heavy snow fall and the cold temperatures associated with them, can cause injury or death. All residents of the Plan Area are potentially vulnerable to the effects of severe winter storms. These storms can include extremely low temperatures which are harmful to the human body with prolonged exposure. Those who are homeless in the Plan Area carry a much higher vulnerability to winter storms and extreme cold.

Winter storms can also involve accumulation of snow and/or ice which can create slick, dangerous roads. Vehicular accidents are common after winter storms which produce significant amounts of snow and particularly ice. Blizzards reduce visibility, making travel even more dangerous.

Potential Damage to Property

All structures in the Plan Area are exposed to the threat of winter storms. When temperatures are below zero degrees, water pipes can freeze and burst, causing expensive water damage to buildings. Ice storms can cause build ups of ice which destroys trees and causes damage to overhead power lines.

In Champaign County (the Plan Area), INHMP estimates that, overall, as of 2017, the average amount of crop and property damage losses per winter storm event is \$3,125, and the estimated annual crop and property damage due to severe winter storms is \$758.²⁰

Potential Economic Impact

The types of potential economic impacts that can result from a severe winter storm event in the Plan Area are described below:

- Costs of clearing roads of snow and ice;
- Cleanup costs of trees downed in ice storms;

- Repair costs of electrical utility lines downed in ice storms;
- Loss of revenue for economic establishments whose power service is interrupted as a result of ice or snowstorms; and
- Disruption of transportation routes.

Floods

A simple definition of flooding is an overflow of water onto land that is normally dry. The National Weather Service (NWS) identifies the flood types: river floods (commonly referred to as “riverine floods” or “overbank floods”), and flash floods (also referred to as “overland floods”).

Location

The entire Plan Area is at risk from flash floods. The Plan Areas considered at risk from riverine floods are those portions of the Plan Area situated within the 1% floodplain, based on Federal Emergency Management Agency (FEMA) digital Flood Insurance Rate Maps (FIRMs). The digital FIRMs for Champaign County became effective in 2013. However, the engineering studies that are the basis of the mapping are much older and most are classified as unverified by FEMA.²¹

Extent

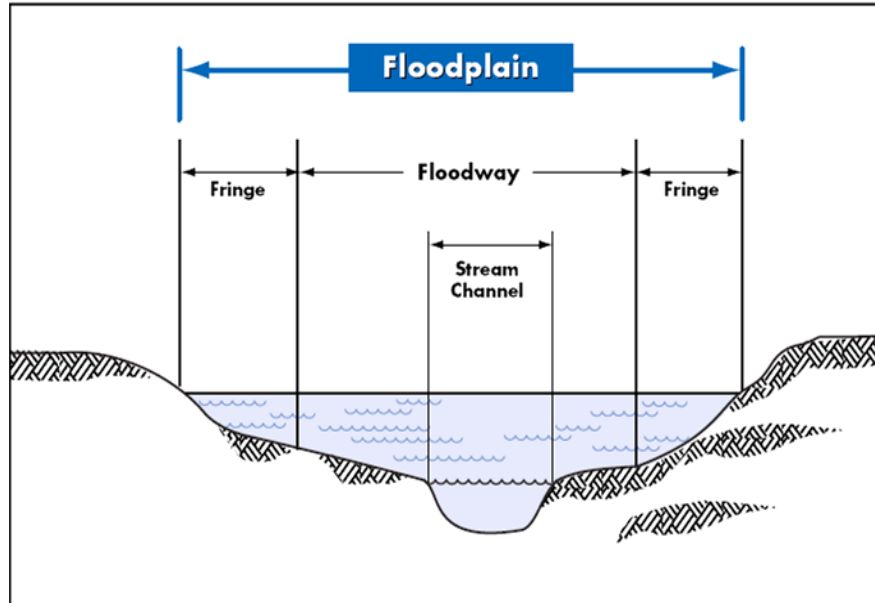
Riverine Floods:

Riverine or overbank floods occur when water from rainfall or snow melt flows at a quantity and speed that a river, stream, or creek cannot absorb. The result is that the areas immediately surrounding these bodies of water can become inundated with water. Riverine floods may develop slowly over the course of several days or weeks, as precipitation accumulates. Riverine flooding can also happen in a matter of hours.

The 1% annual chance flood (also referred to as the ‘1% flood,’ ‘100-year flood,’ or ‘base-flood’) is the standard used by the National Flood Insurance Program (NFIP) in determining whether flood insurance is required. FEMA’s digital FIRMs indicate the 1% floodplain as ‘Zone A’ or ‘Zone AE.’

Figure 4-11 shows the relationship between a river and its floodplain.

Figure 4-11. One Percent Floodplain



Source: IDNR

The United States Geological Survey (USGS) indicates that variable factors determine whether a 100-year precipitation event will produce a 100-year flood, including:

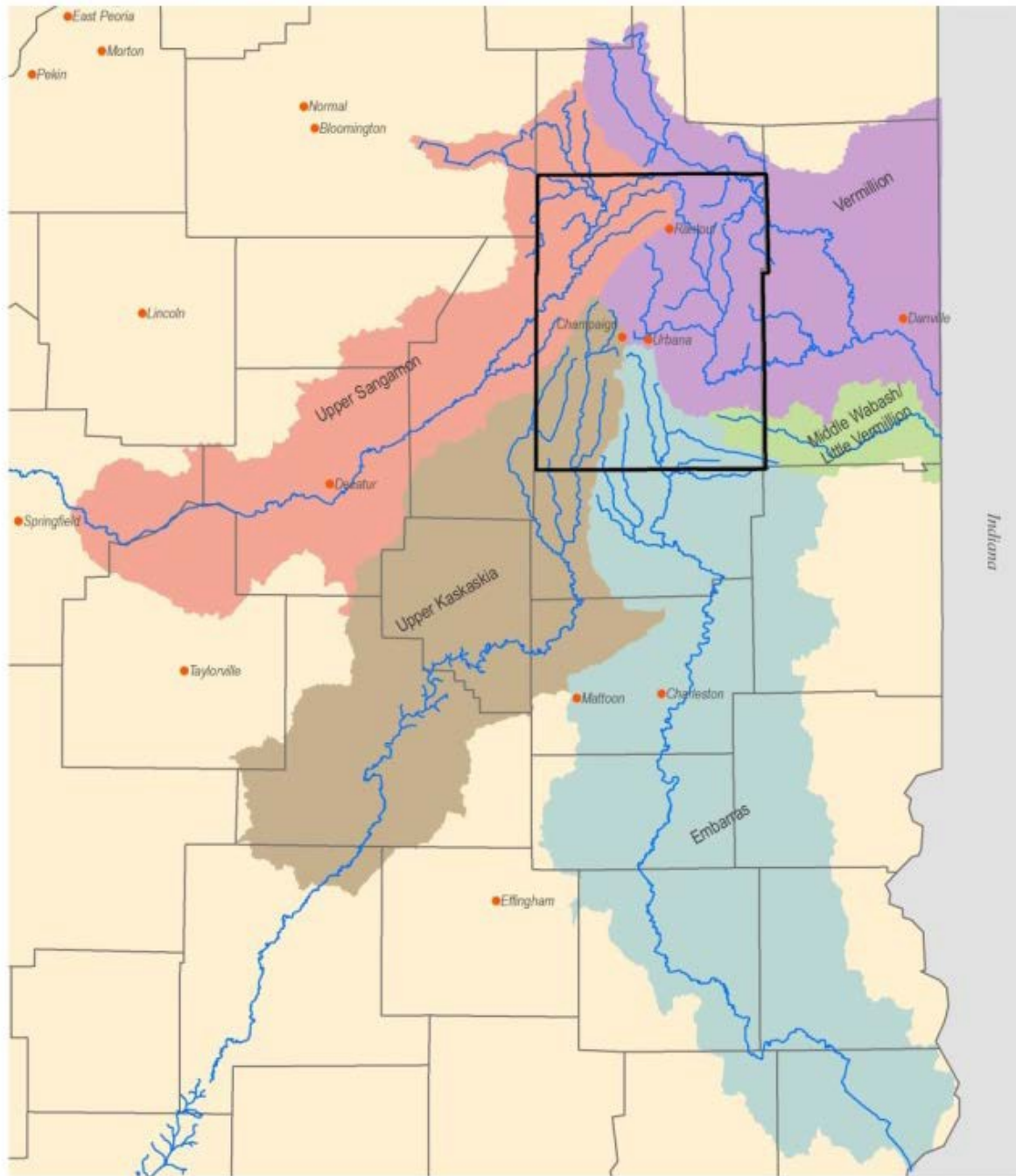
- Extent of rainfall in the watershed;
- Soil saturation before the storm; and
- Relation between the size of the watershed and duration of the storm.²²

Stream gaging stations that measure discharge coupled with precipitation gages provide information that is used in watershed hydrologic models. Hydrologic models are calibrated based on observed precipitation and stream flow, then used to model flood events with an expected frequency of occurrence.

The Plan Area contains the headwaters of five different watersheds: Kaskaskia River, Vermillion River (Wabash Basin), Wabash River, Embarras River, and Sangamon River.





Figure 4-12 indicates the location of watersheds in the Plan Area and within the broader regional context of central Illinois.

Figure 4-12. Five Watersheds in Plan Area



Extents of Streams and Watersheds
Champaign County and Watershed Extents

Legend

-  Streams Flowing Through Champaign County
-  County Boundary
-  Champaign County
-  Municipality

CHAMPAIGN COUNTY
LRMP
Local Resource Management Plan

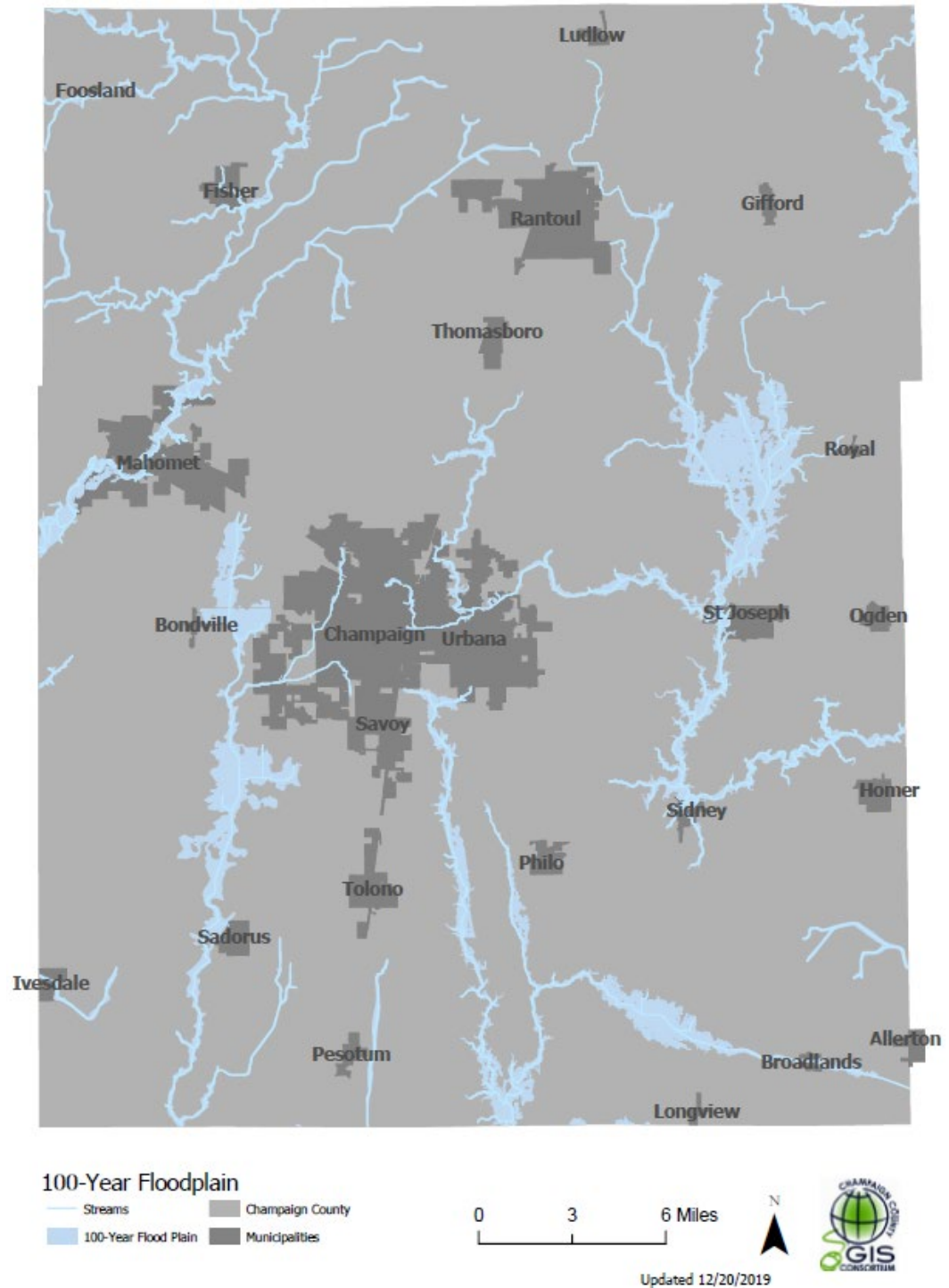


Date Map Prepared:
October, 2007

Source: Champaign County LRMP

Figure 4-13 is a map of the 1% Floodplain (also referred to as 100-Year Floodplain) within the Plan Area based on FEMA digital FIRMs effective as of October 2, 2013.

Figure 4-13. One Percent Floodplain Areas in Plan Area



Source: Champaign County GIS Consortium

Flash Floods:

Flash floods are quickly developing floods that occur as the result of the rapid accumulation of large quantities of precipitation, usually from intense thunderstorms. Flash floods are particularly dangerous because of their quick onset and possibility of occurring with little warning. While intense precipitation is the most common cause of flash flooding, dam failure can cause the most catastrophic flash floods. Figure 4-14 depicts an aftermath of a quick onset flash flood and how a road can be rendered impassable.

Figure 4-14. Local Example of Flash Flooding



Source: The News-Gazette, 2008

Overland Floods and Ponding:

Overland floods and ponding occur outside of rivers or streams as the result of water accumulating in poorly draining soils or in low lying areas. Overland flooding may be the result of heavy precipitation, snow melt, or broken water lines, amongst other causes.

Overland flooding can lead to the accumulation and pooling of water, a phenomenon known as ponding. Figure 4-15 depicts an example of ponding in a wooded area. If identified on a FIRM, the areas may be shown as 'Zone AO' (sheet runoff) or 'Zone AH' (ponding) if an analysis has been conducted, or simply 'Zone A.'

Portions of the Plan Area are at risk from some amount of flash flooding and overland flooding, depending on local ground elevations and the ability of stormwater sewers to handle large amounts of precipitation. The low relief of the Plan Area, its position at the intersection of drainage divides, and its glacially derived soils cause it to be poorly drained.

Figure 4-15. Example of Ponding

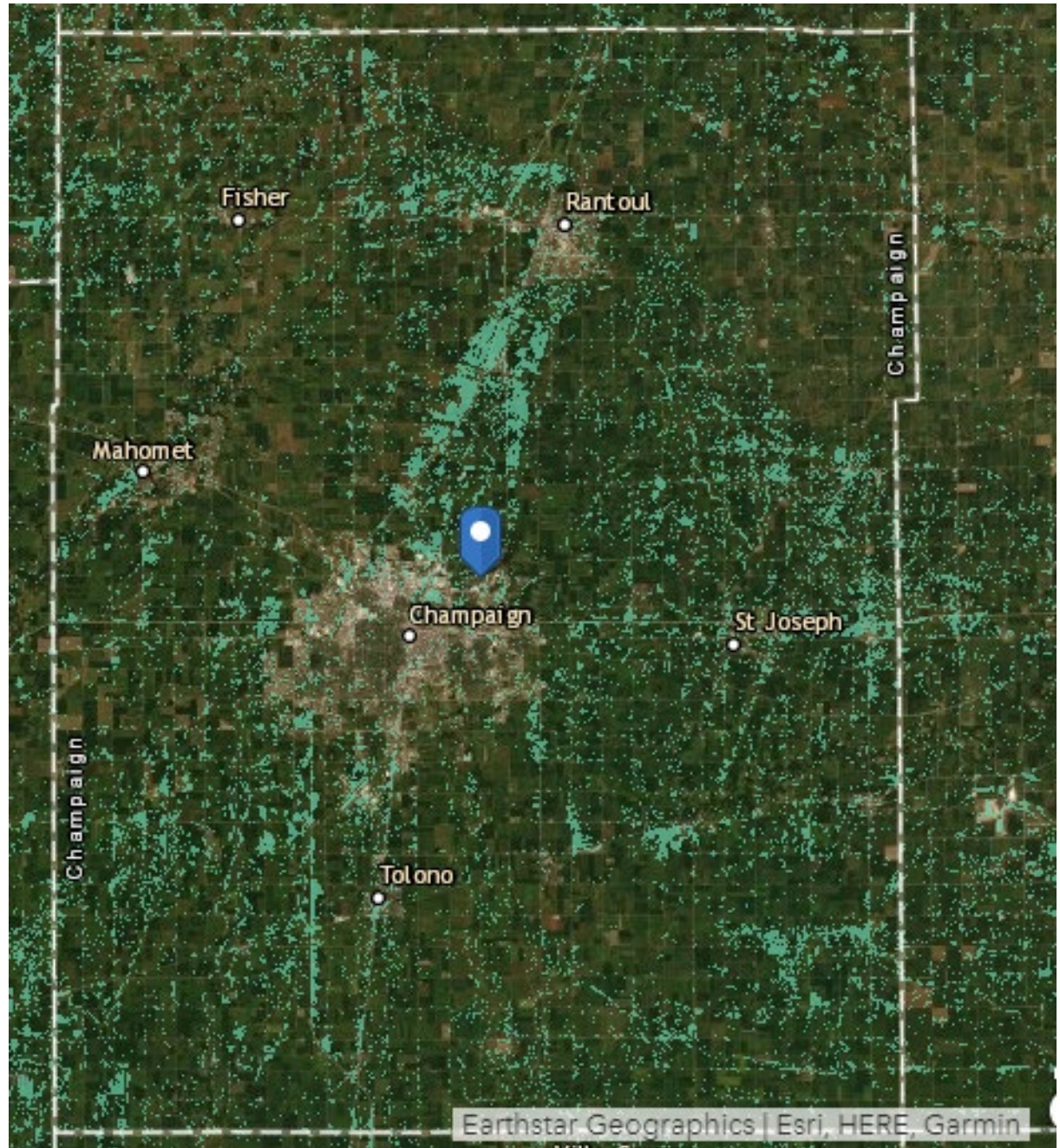


Source: Medina County SWCD

Low lying areas which may be subject to ponding can be identified using the Topographic Wetness Index (TWI). The TWI is a physically based index or indicator of the effect of local topography on runoff flow direction and accumulation. The index is a function of both the slope and the upstream contributing area.²³ Figure 4-16 shows the TWI for the Plan Area, calculated

using topographic data derived from Light Detection and Ranging (LiDAR) collected in April 2008.

Figure 4-16. Plan Area Topographic Wetness Index based on 2008 LiDAR



Source: Illinois State Water Survey, <http://illinoisfloodmaps.org/twi.aspx>

When flash flooding or overland floods occur, flood depths in most impacted areas typically are less than five feet.

Previous Occurrences

The Plan Area has been a part of three federally declared flood disasters:

- In June 1968, severe storms, floods, and tornadoes occurred in Central Illinois areas including the Plan Area (DR-242).
- In 1994, large scale flooding in 16 Illinois counties, including Champaign, Piatt, and Vermilion Counties, led to a federal emergency declaration. Heavy rains fell over a two-day period in April of that year and resulted in excess of \$50 million in damages to homes, businesses, and property in the County. This was the most damaging flood in recent years affecting the Plan Area and other Central Illinois areas (DR-1025).
- Between April 21 and May 3, 2002, a series of severe storms produced tornadoes and flooding that caused widespread damage to 68 counties in Central and Southern Illinois, including Champaign, Piatt, and Vermilion Counties (DR-1416).

A total of 53 flood events are on record as occurring in the Plan Area, including five flood events between May 2002 and March 2018, and 48 flash flood events between May 1996 and March 2018. Appendix G contains a summary of available data regarding flood events and flash flood events that have occurred in the Plan Area.²⁴

Future Probability of Flood Events

The INHMP assigned a “Low” Flood Hazard Rating to Champaign County (the Plan Area), based on these criteria:

- Historical/Probability (frequency);
- Vulnerability (percentage of people);
- Severity of Impact (injuries, fatalities, personal property and infrastructure); and
- Population (number in jurisdiction and percentage of increase).

The INHMP indicates that generally it is rural counties and communities located along Illinois’s larger rivers that have greatest vulnerability to flooding (e.g., in portions of southern Illinois bordering the Mississippi and Ohio Rivers).²⁵

Illinois State Water Survey Senior Professional Scientist Sally McConkey reported that, using decades of additional precipitation observations in Illinois, an updated analyses of frequency distributions of heavy rainfall

events was published in March 2020.²⁶ In Champaign County the expected 24-hour 1% annual chance event has increased to a rainfall depth of 7.43 inches a 0.82 inch increase from previous values. Increases in the depth of rainfall for all frequencies and durations is reported for Champaign County (comprising the vast majority of the Plan Area).

Based on trending increased precipitation weather patterns and on the history of flood events in the Plan Area, it is most reasonable to assume that flooding will continue to occur in the Plan Area.

Flash Floods or Ponding Floods:

Portions of the Plan Area especially at risk from flash flooding and overland flooding are:

- low relief surface areas,
- poorly drained soils,
- lower ground elevation areas, or
- areas where the ability of stormwater sewers to handle large amounts of precipitation is limited.

An estimate of the probability of future occurrences of a flash flood or ponding flood event occurring is 100 percent for any given year in areas that currently endure the types of challenges mentioned above, based on recorded frequencies of flash flood and ponding events,

Riverine Floods:

It is possible to have two 100-year flood events (1% annual chance flood), or even two 500-year flood events (0.2% annual chance flood) occur within years, or even months, of each other. The Illinois Department of Natural Resources (IDNR) Office of Water Resources “Floodplain Management in Illinois Quick Guide” warns:

Many people don’t understand just how risky the floodplain can be. There is a 26% chance that a home in the Floodplain will flood during a 30-year mortgage period. The chance that a major fire will occur during the same period is only 1%!²⁷

Tables 4-10 and 4-11 indicate terms used to describe the frequencies and expected probabilities that a riverine or overbank flood may occur.

Table 4-10. Riverine Flood Recurrence Intervals and Probabilities of Occurrences

Recurrence interval (years)	Probability of occurrence in any given year	Percent chance of occurrence in any given year
100	1 in 100	1
50	1 in 50	2
25	1 in 25	4
10	1 in 10	10
5	1 in 5	20
2	1 in 2	50

Source: USGS

Table 4-11. Interchangeable Terms for Flood Events

Common Term	Term Based on Probability
10-year flood	10% flood
50-year flood	2% flood
100-year flood	1% flood
500-year flood	0.2 % flood

Source: IDNR

Impact

Flash Flood or Ponding:

Flash flood waters move at extremely rapid speeds. They can damage crops, move boulders, uproot trees, destroy bridges and infrastructure, and cause severe erosion. Ponding, which is caused by overland flooding, can damage crops and contribute to erosion, as well as disrupt transportation by making roads impassable.

Riverine or Overbank Flood:

Principal flood problems that tend to occur in the Plan Area because of riverine or overbank floods are described in detail in the FEMA *Flood Insurance Study: Champaign County, Illinois and Incorporated Areas*.²⁸

Appendix H contains the *Champaign County Flood Insurance Study* review of 'Principal Flood Problems' describing flood impacts to be expected in the Plan Area.

National Floodplain Insurance Program (NFIP) Insured Structures Repetitively Damaged by Floods:

Table 4-12 displays generalized data regarding location, type, and quantities of repetitive loss structures and severe loss structures in flood hazard areas within the Plan Area.

Repetitive Loss Structure:

'Repetitive Loss Structure' is a NFIP-insured structure that has had at least two paid flood losses of more than \$1,000 each in any ten-year period since 1978.

Severe Repetitive Loss Structures

A 'Severe Repetitive Loss' designation applies to an NFIP-insured property after 1978 meeting at least one of the following paid flood loss criteria: (1) four or more separate claim payments where each payment is greater than \$5,000; or (2) two or more separate claim payments (building payments only) where the total payments exceed the current value of the property. In either case, two of the claim payments must have occurred within 10 years of each other.

FEMA Guidance specifies that NFIP flood insurance claim information is subject to The Privacy Act of 1974, as amended. The Act prohibits public release of policy holder names, or names of financial assistance recipients and the amount of the claim payment or assistance.

Table 4-12. Repetitive Loss and Severe Repetitive Loss Structures in Plan Area

Type of Structure	Number of Repetitive Loss Structures	Number of Severe Repetitive Loss Structures	Location (within or nearby the jurisdiction shown below)
Single Family Residence	1	0	Village of Broadlands
	4	1	City of Champaign
	1	0	Village of Fisher
	2	0	Village of Sidney
	4	1	Village of St. Joseph
Other Type of Residential	5	1	City of Champaign
Multi-Family Residential	3	0	Village of St. Joseph
Non-Residential	5	2	City of Champaign

Source: FEMA

Significant Changes in Development since the HMP Update 2015 and Possible Impacts to Vulnerability to a Flood

Since the HMP Update 2015, the City of Champaign has completed significant upgrades to its stormwater infrastructure, including street reconstruction and piping improvements to newly developed watershed basins: Preservation Pond and Glenn Park Basin, located in west and northwest portion of the city. This new infrastructure is expected to lessen the both riverine flooding along the Copper Slough area and flash flooding in west and northwest portions of the city in the event of future heavy rainfall events (e.g., a rainfall event with 7" or more of rain).

Overall Summary of Vulnerability

Flash Floods or Ponding:

Certain portions of the Plan Area are at risk from some amount of flash flooding and overland flooding, especially low relief surface areas, poorly drained soils, lower ground elevation areas, or at areas where the ability of stormwater sewers to handle large amounts of precipitation is limited.

Riverine Floods:

The HAZUS Version 4.2 Level 2 loss estimation model based on user-defined data and general building stock data was used to estimate losses associated with a 1% flood event in Plan Area floodplain areas. A separate HAZUS analysis resulting in the HAZUS Flood Global Risk Report used only general building stock data to estimate loss data associated with a 1% flood event in the Plan Area. Appendix I contains the HAZUS Global Risk Report. Highlights of the HAZUS loss estimate analyses are provided below:

Potential Building Damage in Plan Area

Table 4-13 displays the number of buildings that HAZUS estimates will be damaged in a 1% flood event, grouped by occupancy type and by percentage of damage to the structure. HAZUS estimates that, overall, approximately 22% of buildings located in the floodplain will sustain no damage or less than 1% building damage.

Table 4-13. Building Damage by General Occupancy Type in Plan Area Floodplain

General Occupancy Type	1-10%	11-20%	21-30%	31-40%	41-50%	50%+	Buildings Damaged (% of Total Buildings in Floodplain)	Total Buildings in Floodplain
Agricultural	16	25	2	1	2	1	47 (48.9%)	96
Commercial	14	1	0	0	0	0	15 (32.6%)	46
Government	1	1	0	0	0	0	2 (100%)	2
Industrial	1	0	0	0	0	0	1 (12.5%)	8
Religion	0	1	0	0	0	0	1 (50%)	2
Residential	150	148	47	41	8	7	401 (90.3%)	444
Total	182	176	49	42	10	8	467 (78%)	598

Source: Hazus Version 4.2 Level 2

Potential Damage to Critical Facilities

HAZUS estimates that 15 critical facilities, or 3.3% of the total number of 445 critical facilities located within the Plan Area floodplain, will sustain damage in the 1% flood event. Table 4-14 provides the estimated count of critical facilities damaged and available damage data for each category.

Table 4-14. Damage to Critical Facilities in Plan Area Floodplain

Critical Facility Type	Number Damaged	Damage Estimate
Transportation Lifelines	13	Highway bridges affected with a damage estimate totaling \$33,396
Utility Lifelines	2	Water treatment pool locations, each estimated to sustain damage of less than 30%
Total Critical Facilities Damaged	15	
Total Critical Facilities in Plan Area Floodplain	445	

Source: HAZUS Version 4.2 Level 2

Potential Economic Impact

Building losses are broken into two categories: direct building losses and business interruption losses.

- Direct building losses are the estimated costs to repair or replace the damage caused to the building and its contents.
- Business interruption losses are the losses associated with inability to operate a business because of damage sustained during the flood. Business interruption losses also include the temporary living expenses for those people displaced from their homes because of the flood.

The total direct building losses in the Plan Area floodplain were estimated at \$46,138,000, with approximately 18.3% of these estimated losses related to the business interruption in the Plan Area floodplain.

Residential occupancies accounted for approximately 47.2% of the estimated total loss.

Considering potential economic impacts, Table 4-16 provides a summary of the losses associated with the building damage.

Table 4-15. Building Loss Counts and Values in Plan Area Floodplain

Category	Area	Residential	Commercial	Industrial	Others	Total
User Defined Facilities Loss, 2018 Champaign County Assessor valuations (Thousands of Dollars)						
	Building	8,426	230	997	60	9,713
	Content	4,935	756	3,023	399	9,114
	Inventory	0	1,544	10,483	11	12,038
	Subtotal	13,361	2,529	14,503	471	30,865
General Building Stock Loss, Census 2010 (Thousands of Dollars)						
	Income	6,203	520	77	91	6,891
	Relocation	54	2,169	22	179	2,644
	Rental Income	2,068	373	0	8	2,449
	Wage	129	2,615	88	457	3,289
	Subtotal	8,454	5,677	407	735	15,273
All	Total	21,815	8,206	14,910	1,206	46,138

Source: HAZUS Version 4.2 Level 2

Jurisdiction-Specific 1% Flood Event Impacts:

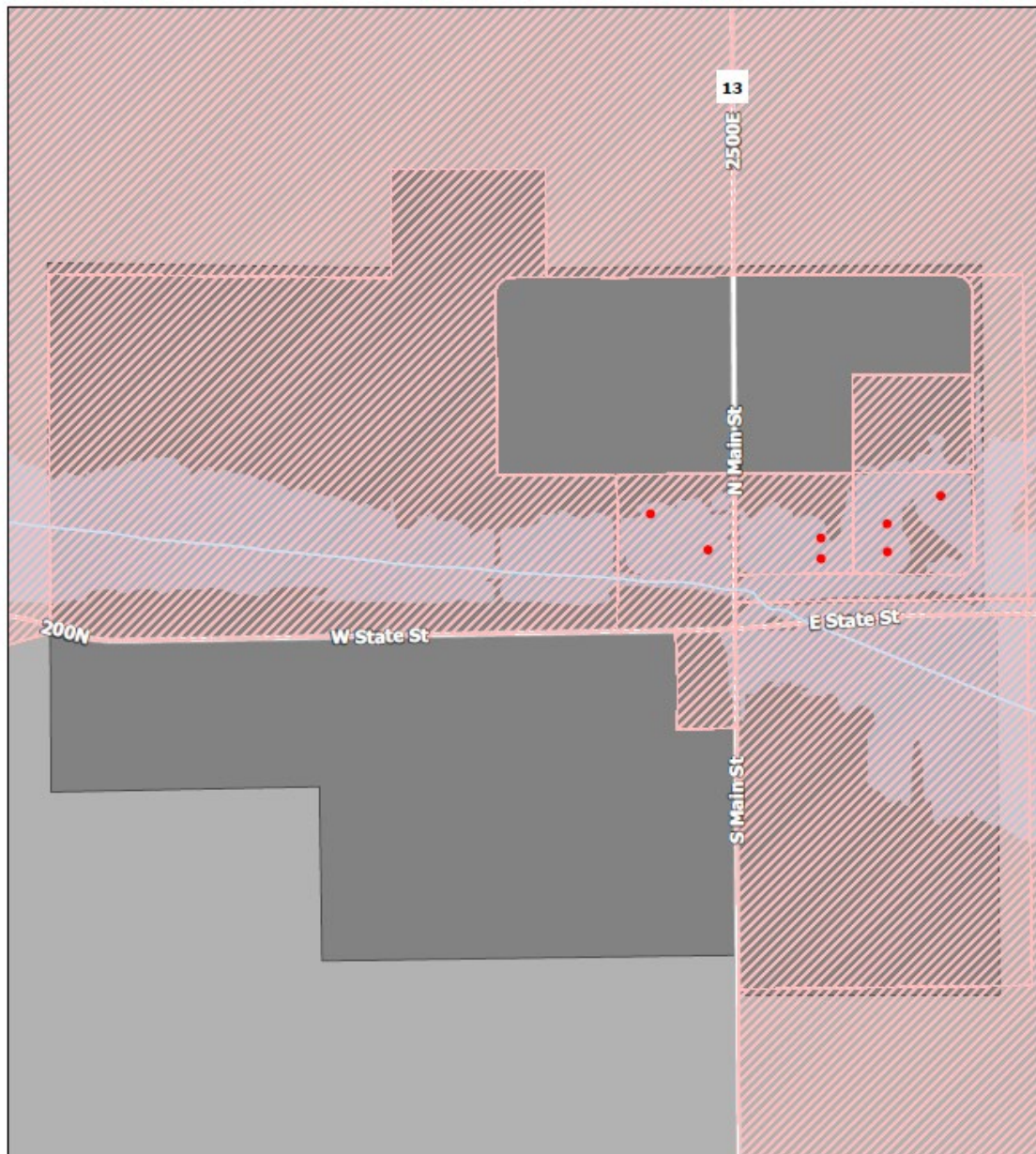
The risk of a riverine or overbank flood event is greatest for the following jurisdictions within the Plan Area:

- Village of Broadlands
- City of Champaign
- Village of Fisher
- Village of Ivesdale
- Village of Mahomet
- Village of Sidney
- Village of St. Joseph
- City of Urbana
- Unincorporated Champaign County

The following section includes a jurisdiction-specific HAZUS loss estimation summary regarding estimated vulnerability associated with a 1% flood occurrence at each of the above-noted at-risk Plan Area jurisdictions. As supplemental information, 1% flood HAZUS loss estimation maps and highlights are included for participating institutions of higher education: Parkland College and the University of Illinois at Urbana-Champaign.

Village of Broadlands HAZUS Loss Estimation Summary: 1% Flood Event Impacts

Figure 4-17. Village of Broadlands HAZUS Map



Broadlands

- Buildings Sustaining Damage
- Streams
- Census Block in Flood Plain
- 100-Year Flood Plain
- Champaign County
- Municipality

0 0.05 0.1 Miles



Updated 12/26/2019

Shelter Needs in Broadlands:

HAZUS estimates that 39 people will be displaced as a result of flood damage, and that no persons will seek temporary shelter.

Critical Facility Damage in Broadlands:

The HAZUS model does not predict that critical facilities in Broadlands will sustain damage.

Debris Generation in Broadlands:

The HAZUS model predicts that a total of 7.9 tons of debris will be generated as a result of the flood. Of this debris, 7.8 tons will be finishing materials (e.g., dry wall, insulation), 0.1 ton will be foundation material (concrete slab, concrete block, rebar), and 0.06 tons will be structural materials (e.g., wood, brick).

Building Damage by General Occupancy Type:

Table 4-16 displays the number of buildings, grouped by occupancy type and by the percentage of damage to the structure, that HAZUS predicts will be damaged in a 1% flood event.

Table 4-16. Building Damage by General Occupancy Type in Broadlands

	1-10%	11-20%	21-30%	31-40%	41-50%	50%+	Total
Residential	0	5	2	0	0	0	7

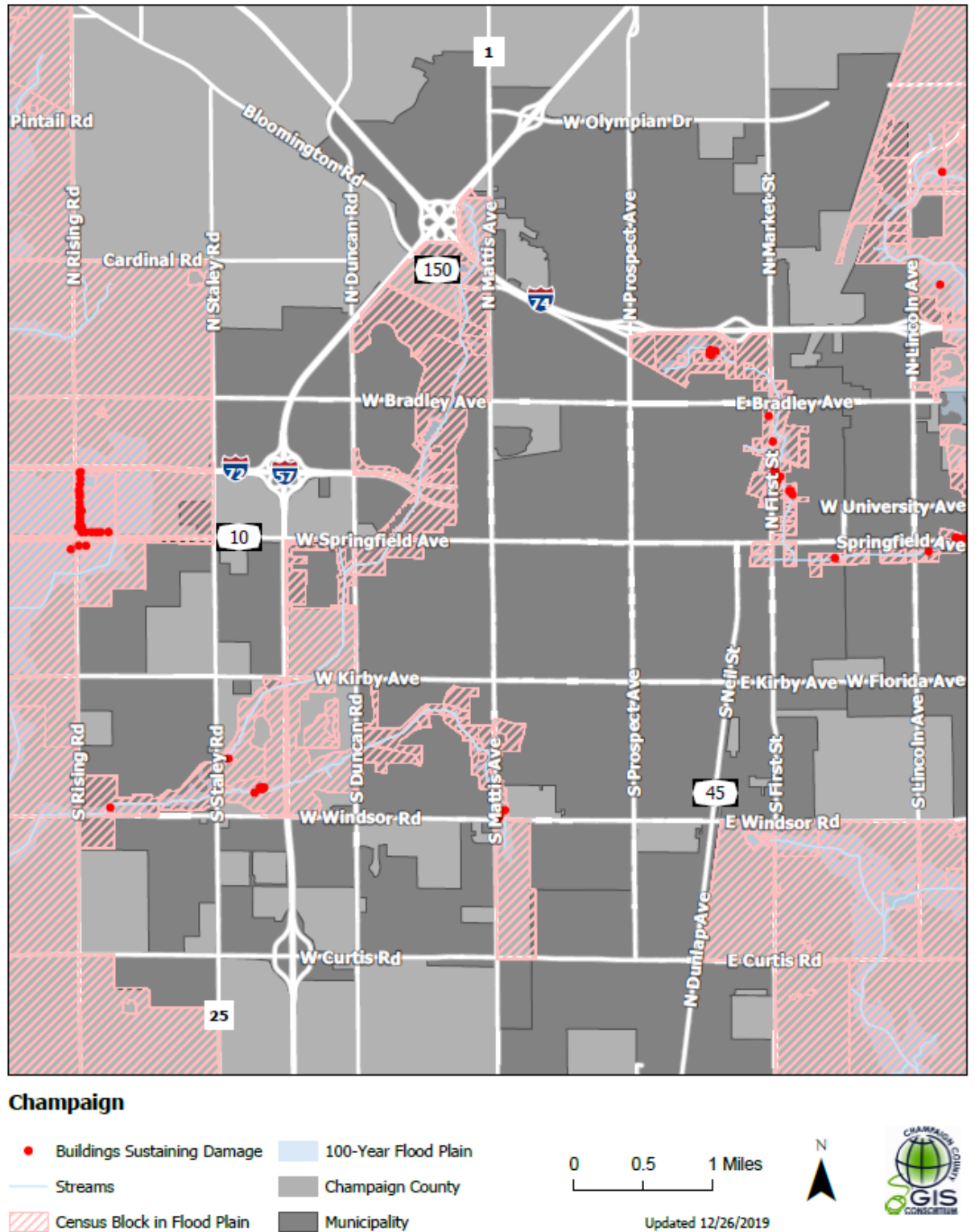
Considering potential economic impacts, Table 4-17 displays HAZUS direct building loss and business interruption loss estimates as a result of a 1% flood event in Broadlands that total approximately \$227,000.

Table 4-17. Building Loss Counts and Values in Broadlands

User Defined Facilities Loss, 2018 Champaign County Assessor Valuations (Thousands of Dollars)						
Category	Area	Residential	Commercial	Industrial	Others	Total
	Building	39	0	0	0	39
	Content	23	0	0	0	23
	Inventory	0	0	0	0	0
	Subtotal	62	0	0	0	62
General Building Stock Loss, Census 2010 (Thousands of Dollars)						
Category	Area	Residential	Commercial	Industrial	Others	Total
	Relocation	130	0	0	0	130
	Income	0	0	0	0	0
	Rental Income	35	0	0	0	35
	Wage	0	0	0	0	0
	Subtotal	165	0	0	0	165
All	Total	227	0	0	0	227

City of Champaign HAZUS Loss Estimation Summary: 1% Flood Event Impacts

Figure 4-18. City of Champaign HAZUS Map



Shelter Needs in Champaign:

HAZUS estimates that 1,525 people will be displaced as a result of flood damage, and that 159 persons will seek temporary shelter.

Critical Facility Damage in Champaign:

The HAZUS model does not predict that critical facilities in Champaign will sustain damage.

Debris Generation in Champaign:

The HAZUS model predicts that a total of 422.6 tons of debris will be generated as a result of the flood. Of this debris, 291.2 tons will be finishing materials (e.g., dry wall, insulation), 55.9 tons will be foundation material (concrete slab, concrete block, rebar), and 75.4 tons will be structural materials (e.g., wood, brick).

Building Damage by General Occupancy Type:

Table 4-18 displays the number of buildings, grouped by occupancy type and by the percentage of damage to the structure, that HAZUS predicts will be damaged in a 1% flood event.

Table 4-18. Building Damage by General Occupancy Type in Champaign

	1-10%	11-20%	21-30%	31-40%	41-50%	50%+	Total
Commercial	2	0	0	0	0	0	2
Industrial	1	0	0	0	0	0	1
Residential	13	0	0	0	0	0	13
Total	16	0	0	0	0	0	16

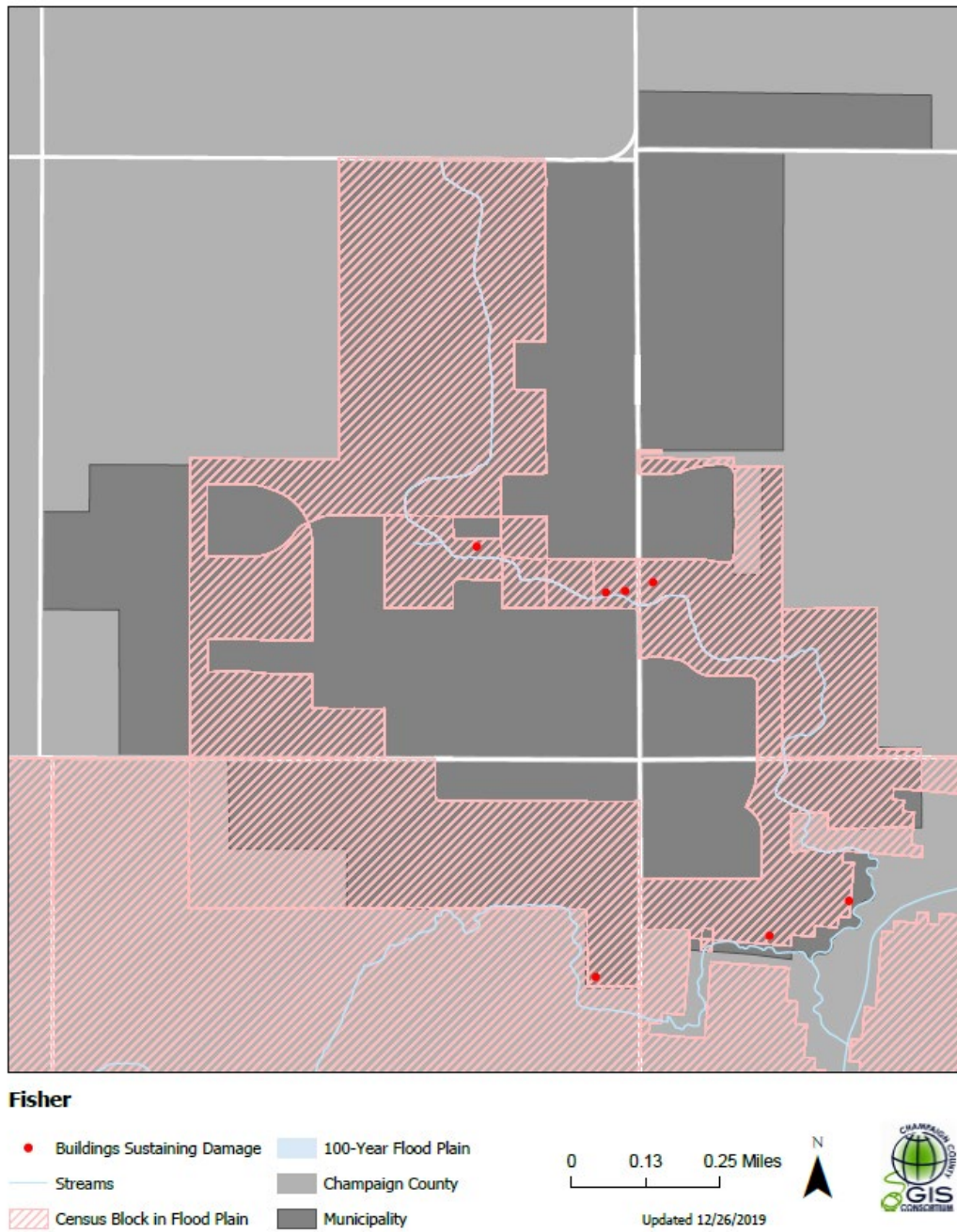
Considering potential economic impacts, Table 4-19 displays HAZUS direct building loss and business interruption loss estimates as a result of a 1% flood event in Champaign that total approximately \$11,973,000.

Table 4-19. Building Loss Counts and Values in Champaign

User Defined Facilities Loss, 2018 Champaign County Assessor Valuations (Thousands of Dollars)						
Category	Area	Residential	Commercial	Industrial	Others	Total
	Building	18	20	1	0	39
	Content	12	57	0	0	69
	Inventory	0	280	11	0	291
	Subtotal	30	357	12	0	399
General Building Stock Loss, Census 2010 (Thousands of Dollars)						
Category	Area	Residential	Commercial	Industrial	Others	Total
	Relocation	2,744	736	13	0	3,493
	Income	74	2,747	4	0	2,825
	Rental Income	1,397	539	1	0	1,937
	Wage	181	3,126	12	0	3,319
	Subtotal	4,396	7,148	30	0	11,574
All	Total	4,426	7,505	42	0	11,973

Village of Fisher HAZUS Loss Estimation Summary: 1% Flood Event Impacts

Figure 4-19. Village of Fisher HAZUS Map



Shelter Needs in Fisher:

HAZUS estimates that 118 people will be displaced as a result of flood damage, and that two persons will seek temporary shelter.

Critical Facility Damage in Fisher:

The HAZUS model does not predict that critical facilities in Fisher will sustain damage.

Debris Generation in Fisher:

The HAZUS model predicts that a total of 28.2 tons of debris will be generated as a result of the flood. Of this debris, 25.1 tons will be finishing materials (e.g., dry wall, insulation), 1.8 tons will be foundation material (concrete slab, concrete block, rebar), and 1.3 tons will be structural materials (e.g., wood, brick).

Building Damage by General Occupancy Type:

Table 4-20 displays the number of buildings, grouped by occupancy type and by the percentage of damage to the structure, that HAZUS predicts will be damaged in a 1% flood event.

Table 4-20. Building Damage by General Occupancy Type in Fisher

	1-10%	11-20%	21-30%	31-40%	41-50%	50%+	Total
Residential	5	1	0	1	0	0	7

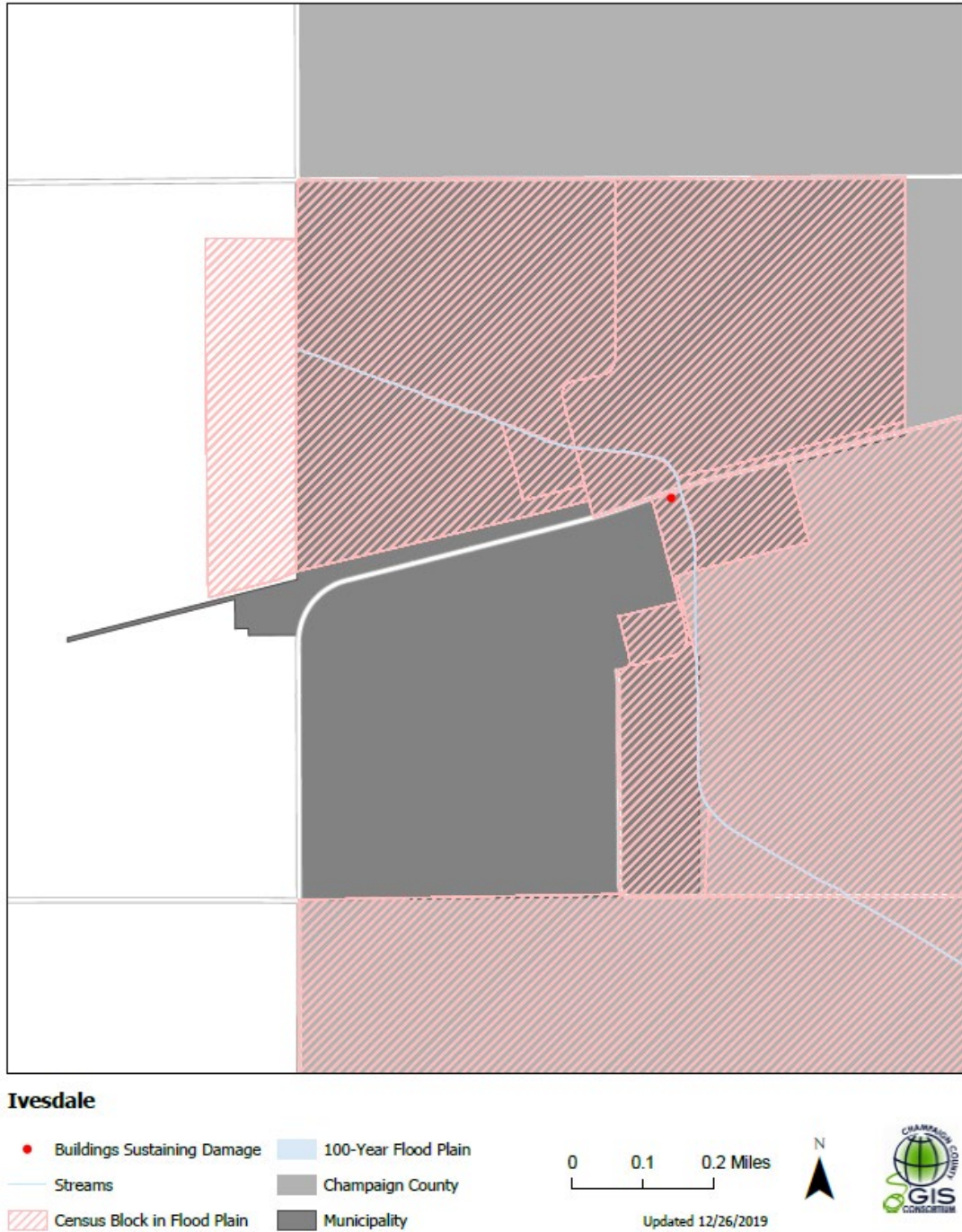
Considering potential economic impacts, Table 4-21 displays HAZUS direct building loss and business interruption loss estimates as a result of a 1% flood event in Fisher that total approximately \$303,000.

Table 4-21. Building Loss Counts and Values in Fisher

User Defined Facilities Loss, 2018 Champaign County Assessor Valuations (Thousands of Dollars)						
Category	Area	Residential	Commercial	Industrial	Others	Total
	Building	68	0	0	0	68
	Content	41	0	0	0	41
	Inventory	0	0	0	0	0
	Subtotal	109	0	0	0	109
General Building Stock Loss, Census 2010 (Thousands of Dollars)						
Category	Area	Residential	Commercial	Industrial	Others	Total
	Relocation	150	0	0	0	150
	Income	0	0	0	0	0
	Rental Income	44	0	0	0	44
	Wage	0	0	0	0	0
	Subtotal	194	0	0	0	194
All	Total	303	0	0	0	303

Village of Ivesdale HAZUS Loss Estimation Summary: 1% Flood Event Impacts

Figure 4-20. Village of Ivesdale HAZUS Map



Shelter Needs in Ivesdale:

HAZUS estimates that 118 people will be displaced as a result of flood damage, and that two persons will seek temporary shelter.

Critical Facility Damage in Ivesdale:

The HAZUS model does not predict that critical facilities in Ivesdale will sustain damage.

Debris Generation in Ivesdale:

The HAZUS model predicts that a total of 28.2 tons of debris will be generated as a result of the flood. Of this debris, 25.1 tons will be finishing materials (e.g., dry wall, insulation), 1.8 tons will be foundation material (concrete slab, concrete block, rebar), and 1.3 tons will be structural materials (e.g., wood, brick).

Building Damage by General Occupancy Type:

Table 4-22 displays the number of buildings, grouped by occupancy type and by the percentage of damage to the structure, that HAZUS predicts will be damaged in a 1% flood event.

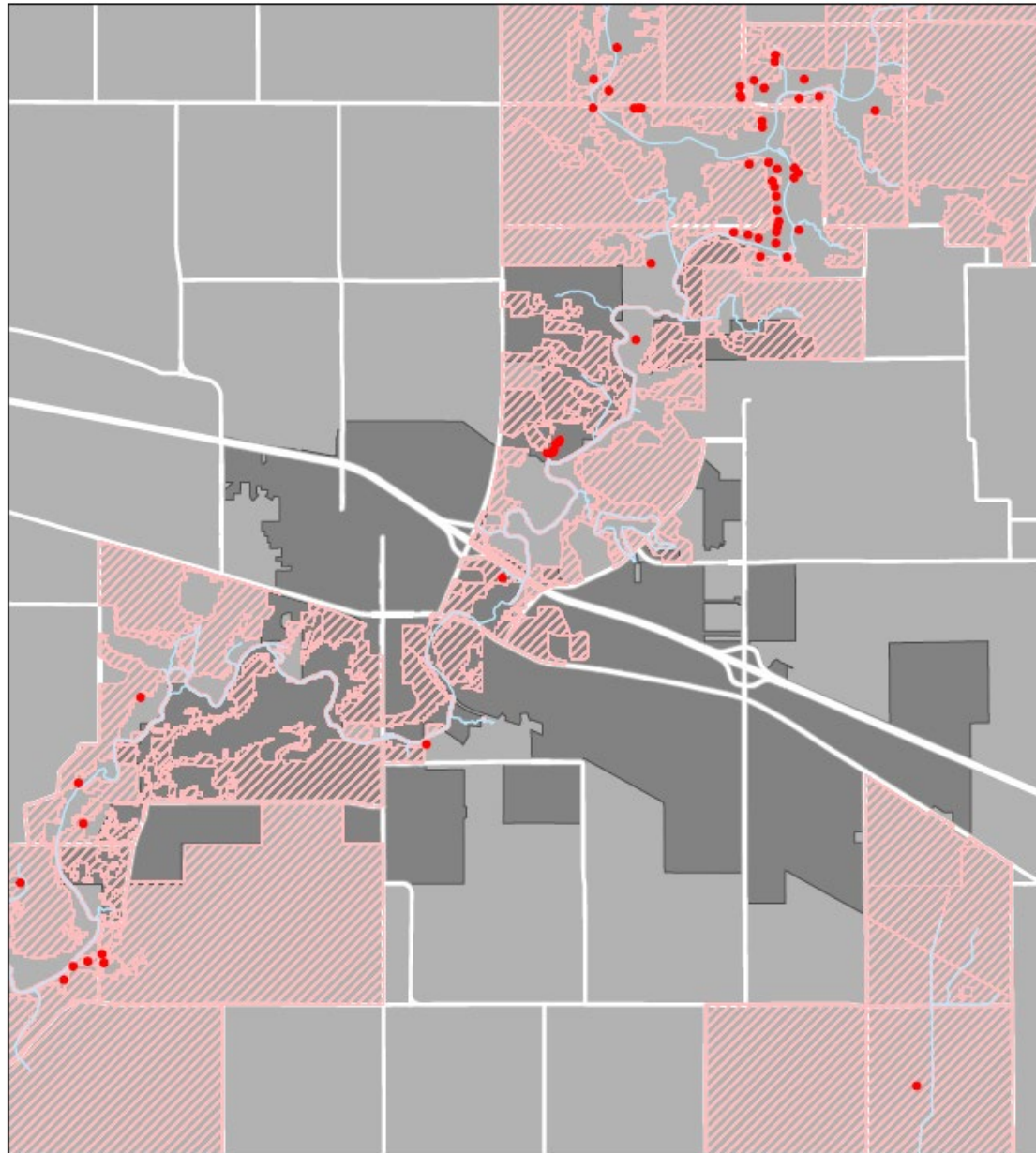
Table 4-22. Building Damage by General Occupancy Type in Ivesdale

	1-10%	11-20%	21-30%	31-40%	41-50%	50%+	Total
Government	1	0	0	0	0	0	1

Considering potential economic impacts, the HAZUS direct building loss and business interruption loss estimates as a result of a 1% flood event in Ivesdale totaled less than \$1,000.

Village of Mahomet HAZUS Loss Estimation Summary: 1% Flood Event Impacts

Figure 4-21. Village of Mahomet HAZUS Map



Mahomet

- Buildings Sustaining Damage
- Streams
- ▨ Census Block in Flood Plain
- 100-Year Flood Plain
- Champaign County
- Municipality

0 0.5 1 Miles



Updated 12/26/2019

Shelter Needs in Mahomet:

HAZUS estimates that 303 people will be displaced as a result of flood damage, and that five persons will seek temporary shelter.

Critical Facility Damage in Mahomet:

The HAZUS model does not predict that critical facilities in Mahomet will sustain damage.

Debris Generation in Mahomet:

The HAZUS model predicts that a total of 265.9 tons of debris will be generated as a result of the flood. Of this debris, 155.5 tons will be finishing materials (e.g., dry wall, insulation), 43.4 tons will be foundation material (concrete slab, concrete block, rebar), and 66.9 tons will be structural materials (e.g., wood, brick).

Building Damage by General Occupancy Type:

Table 4-23 displays the number of buildings, grouped by occupancy type and by the percentage of damage to the structure, that HAZUS predicts will be damaged in a 1% flood event.

Table 4-23. Building Damage by General Occupancy Type in Mahomet

	1-10%	11-20%	21-30%	31-40%	41-50%	50%+	Total
Commercial	0	1	0	0	0	0	1
Residential	1	0	2	3	1	0	7
Total	1	1	2	3	1	0	8

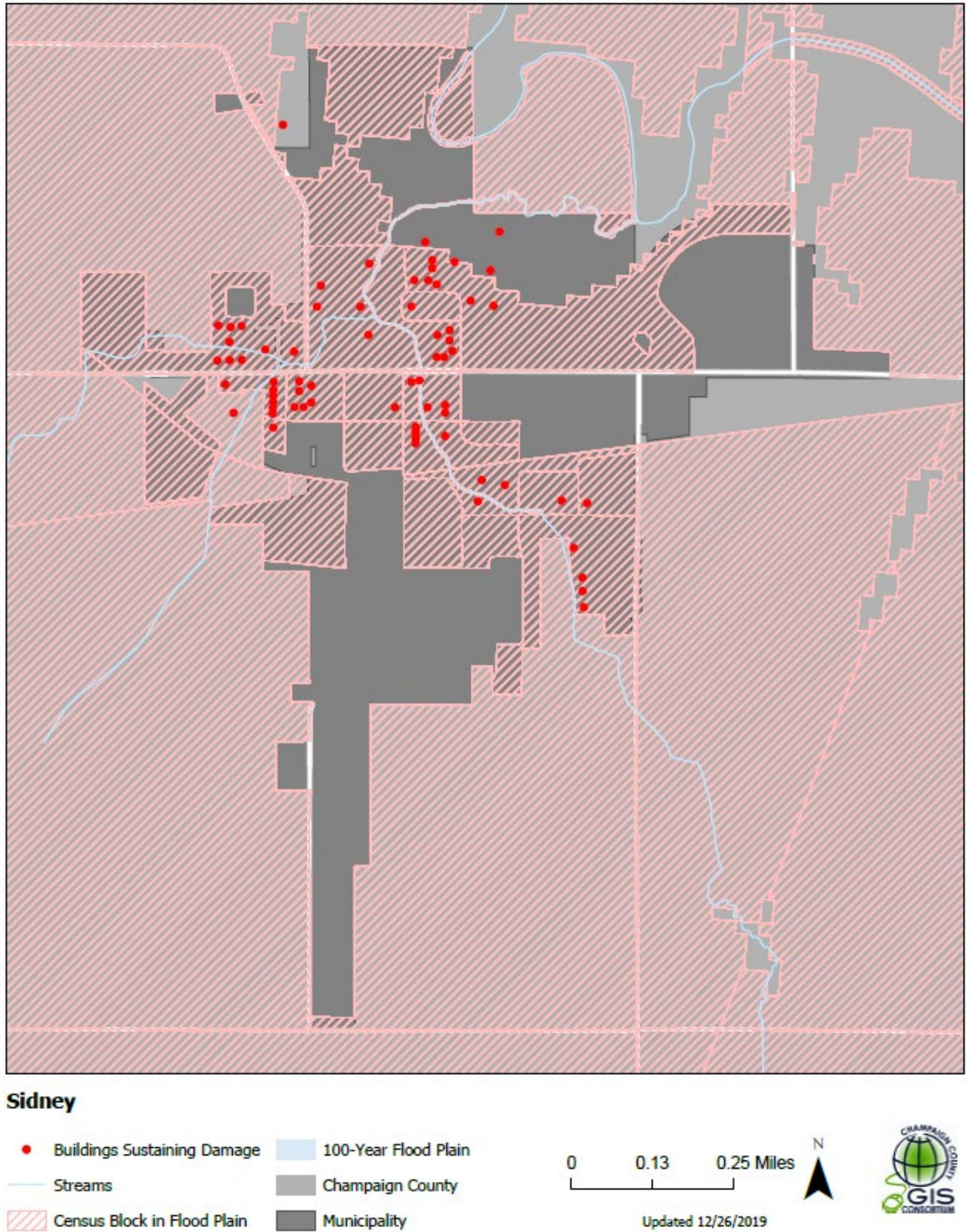
Considering potential economic impacts, Table 4-24 displays HAZUS direct building loss and business interruption loss estimates as a result of a 1% flood event in Mahomet that total approximately \$ 4,334,000.

Table 4-24. Building Loss Counts and Values in Mahomet

User Defined Facilities Loss, 2018 Champaign County Assessor Valuations (Thousands of Dollars)						
Category	Area	Residential	Commercial	Industrial	Others	Total
	Building	329	94	0	0	423
	Content	183	367	0	0	550
	Inventory	0	681	0	0	681
	Subtotal	512	1,142	0	0	1,654
General Building Stock Loss, Census 2010 (Thousands of Dollars)						
Category	Area	Residential	Commercial	Industrial	Others	Total
	Relocation	1,201	52	0	0	1,253
	Income	0	412	0	0	412
	Rental Income	397	34	0	0	431
	Wage	0	584	0	0	584
	Subtotal	1,598	1,082	0	0	2,680
All	Total	2,110	2,224	0	0	4,334

Village of Sidney HAZUS Loss Estimation Summary: 1% Flood Event Impacts

Figure 4-22. Village of Sidney HAZUS Map



Shelter Needs in Sidney:

HAZUS estimates that 254 people will be displaced as a result of flood damage, and that four persons will seek temporary shelter.

Critical Facility Damage in Sidney:

The HAZUS model does not predict that critical facilities in Sidney will sustain damage.

Debris Generation in Sidney:

The HAZUS model predicts that a total of 62.6 tons of debris will be generated as a result of the flood, and that all the debris will consist of finishing materials (e.g., dry wall, insulation).

Building Damage by General Occupancy Type:

Table 4-25 displays the number of buildings, grouped by occupancy type and by the percentage of damage to the structure, that HAZUS predicts will be damaged in a 1% flood event.

Table 4-25. Building Damage by General Occupancy Type in Sidney

	1-10%	11-20%	21-30%	31-40%	41-50%	50%+	Total
Commercial	8	0	0	0	0	0	8
Residential	33	16	7	4	0	0	60
Total	41	16	7	4	0	0	68

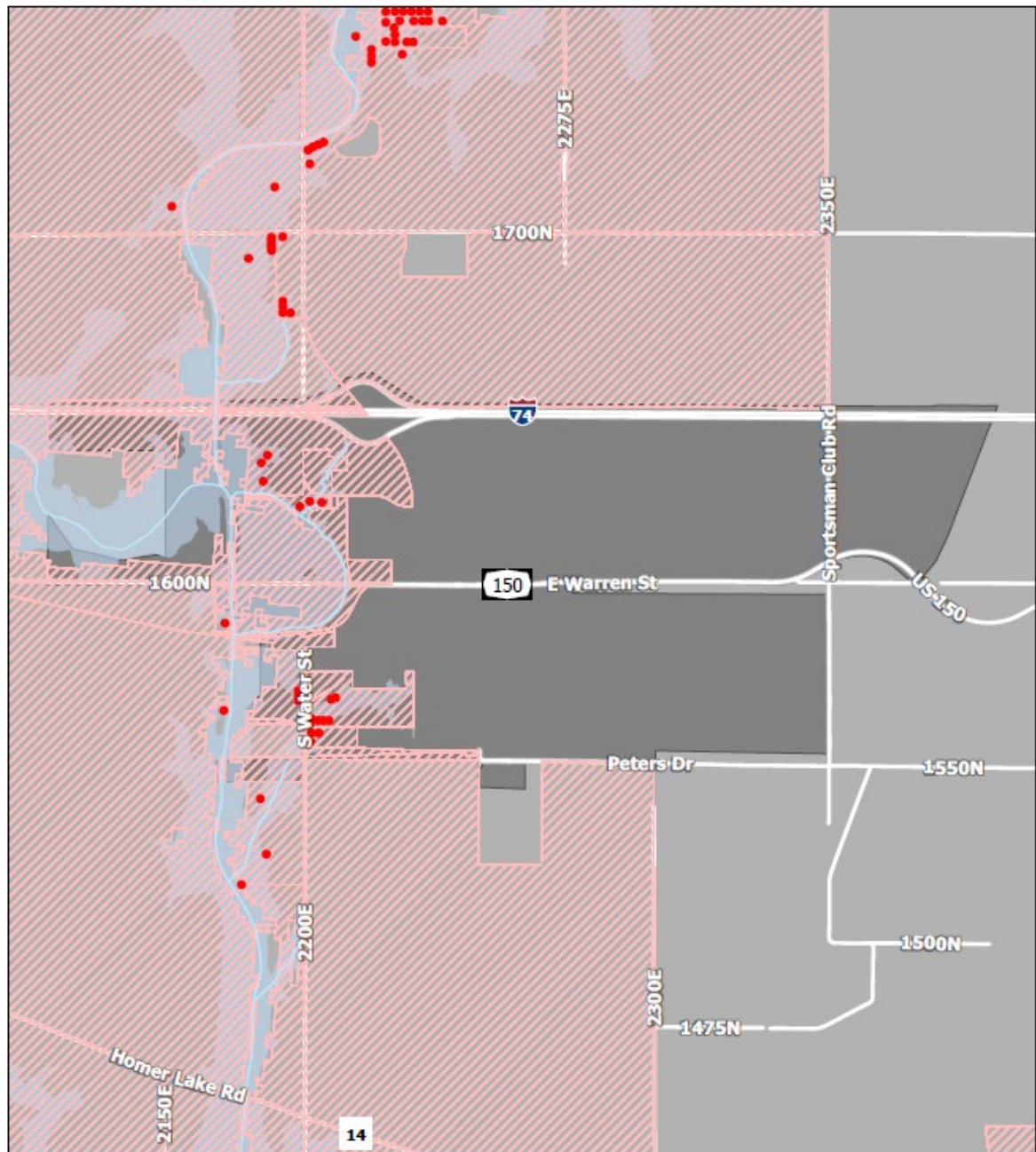
Considering potential economic impacts, Table 4-26 displays HAZUS direct building loss and business interruption loss estimates as a result of a 1% flood event in Sidney that total approximately \$3,311,000.

Table 4-26. Building Loss Counts and Values in Sidney

User Defined Facilities Loss, 2018 Champaign County Assessor Valuations (Thousands of Dollars)						
Category	Area	Residential	Commercial	Industrial	Others	Total
	Building	547	3	0	0	550
	Content	346	6	0	0	352
	Inventory	0	224	0	0	224
	Subtotal	893	233	0	0	1,126
General Building Stock Loss, Census 2010 (Thousands of Dollars)						
Category	Area	Residential	Commercial	Industrial	Others	Total
	Relocation	730	143	0	0	873
	Income	0	390	0	0	390
	Rental Income	211	98	0	0	309
	Wage	0	613	0	0	613
	Subtotal	941	1,244	0	0	2,185
All	Total	1,834	1,477	0	0	3,311

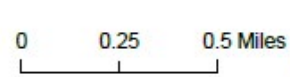
Village of St. Joseph HAZUS Loss Estimation Summary: 1% Flood Event Impacts

Figure 4-23. Village of St. Joseph HAZUS Map



St Joseph

- Buildings Sustaining Damage
- Streams
- ▨ Census Block in Flood Plain
- 100-Year Flood Plain
- Champaign County
- Municipality



Updated 12/26/2019

Shelter Needs in St. Joseph:

HAZUS estimates that 221 people will be displaced as a result of flood damage, and that six persons will seek temporary shelter.

Critical Facility Damage in St. Joseph:

The HAZUS model does not predict that critical facilities in St. Joseph will sustain damage.

Debris Generation in St. Joseph:

The HAZUS model predicts that a total of 13.7 tons of debris will be generated as a result of the flood. Of this debris, 10.4 tons will be finishing materials (e.g., dry wall, insulation), 1.4 tons will be foundation material (concrete slab, concrete block, rebar), and 1.9 tons will be structural materials (e.g., wood, brick).

Building Damage by General Occupancy Type:

Table 4-27 displays the number of buildings, grouped by occupancy type and by the percentage of damage to the structure, that HAZUS predicts will be damaged in a 1% flood event.

Table 4-27. Building Damage by General Occupancy Type in St. Joseph

	1-10%	11-20%	21-30%	31-40%	41-50%	50%+	Total
Residential	18	1	0	0	0	0	19

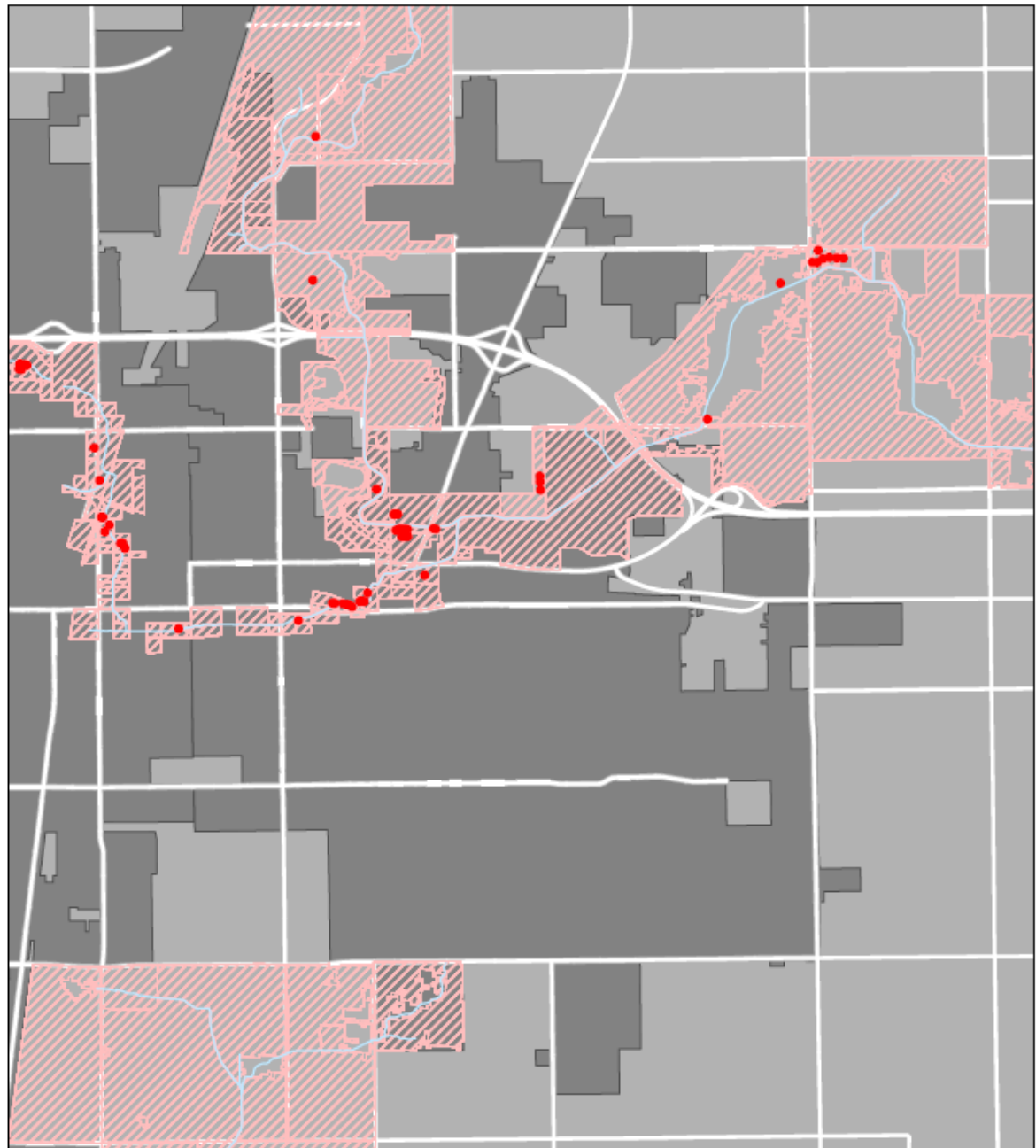
Considering potential economic impacts, Table 4-28 displays HAZUS direct building loss and business interruption loss estimates because of a 1% flood event in St. Joseph that total approximately \$316,000.

Table 4-28. Building Loss Counts and Values in St. Joseph

User Defined Facilities Loss, 2018 Champaign County Assessor Valuations (Thousands of Dollars)						
Category	Area	Residential	Commercial	Industrial	Others	Total
	Building	114	0	0	0	114
	Content	74	0	0	0	74
	Inventory	0	0	0	0	0
	Subtotal	188	0	0	0	188
General Building Stock Loss, Census 2010 (Thousands of Dollars)						
Category	Area	Residential	Commercial	Industrial	Others	Total
	Relocation	99	0	0	0	99
	Income	1	0	0	0	1
	Rental Income	25	0	0	0	25
	Wage	3	0	0	0	3
	Subtotal	128	0	0	0	128
All	Total	316	0	0	0	316

City of Urbana HAZUS Loss Estimation Summary: 1% Flood Event Impacts

Figure 4-24. City of Urbana HAZUS Map



Urbana

- Buildings Sustaining Damage
- Streams
- ▨ Census Block in Flood Plain
- 100-Year Flood Plain
- Champaign County
- Municipality

0 0.5 1 Miles



Updated 12/26/2019

Shelter Needs in Urbana:

HAZUS estimates that 946 people will be displaced as a result of flood damage, and that 96 persons will seek temporary shelter.

Critical Facility Damage in Urbana:

The HAZUS model does not predict that critical facilities in Urbana will sustain damage.

Debris Generation in Urbana:

The HAZUS model predicts that a total of 70.5 tons of debris will be generated as a result of the flood. Of this debris, 66.9 tons will be finishing materials (e.g., dry wall, insulation), 1.5 tons will be foundation material (concrete slab, concrete block, rebar), and 2.1 tons will be structural materials (e.g., wood, brick).

Building Damage by General Occupancy Type:

Table 4-29 displays the number of buildings, grouped by occupancy type and by the percentage of damage to the structure, that HAZUS predicts will be damaged in a 1% flood event.

Table 4-29. Building Damage by General Occupancy Type in Urbana

	1-10%	11-20%	21-30%	31-40%	41-50%	50%+	Total
Commercial	2	0	0	0	0	0	2
Residential	24	11	0	0	0	0	35
Total	26	11	0	0	0	0	37

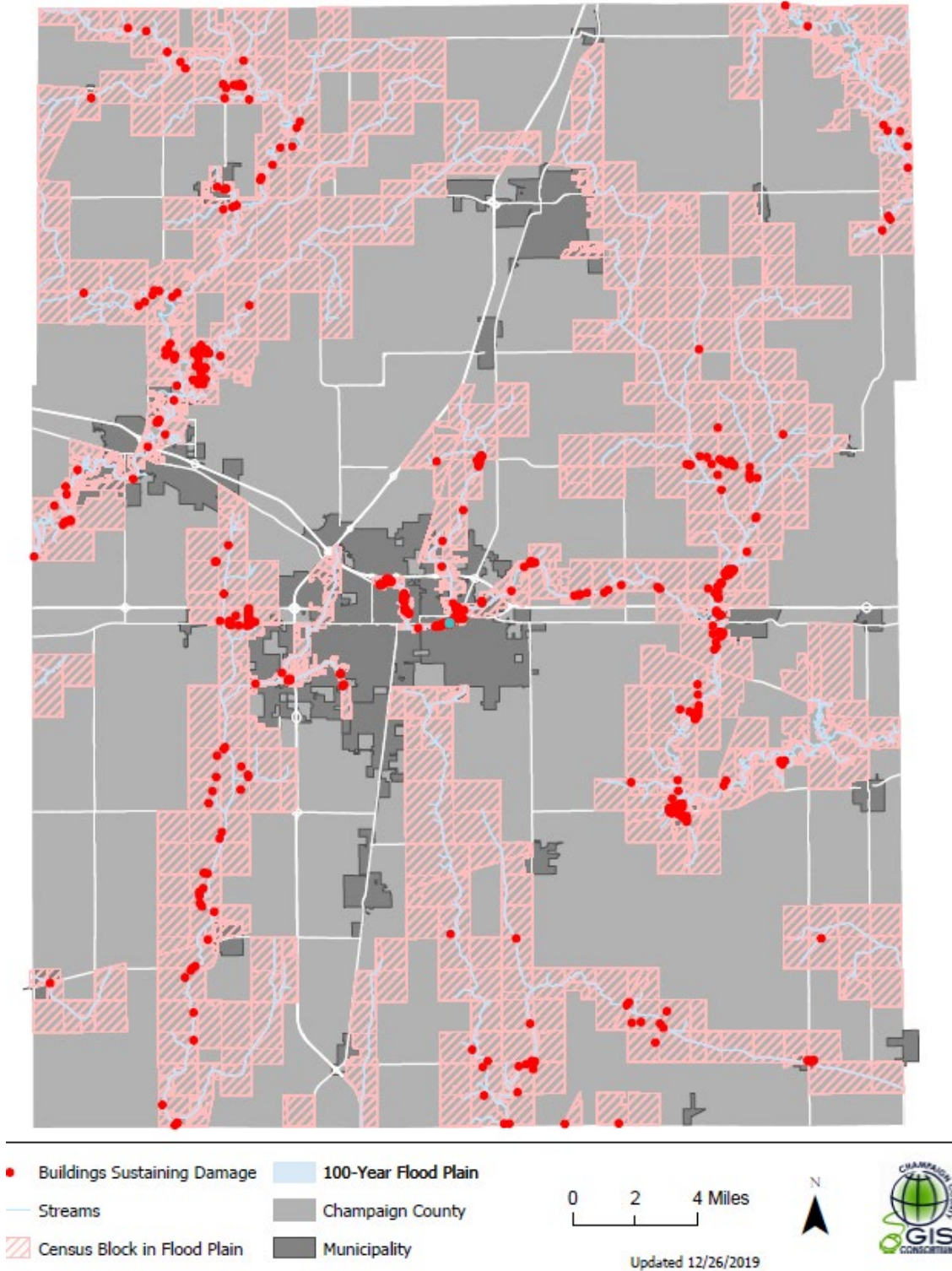
Considering potential economic impacts, Table 4-30 displays HAZUS direct building loss and business interruption loss estimates because of a 1% flood event in Urbana that total approximately \$9,420,000.

Table 4-30. Building Loss Counts and Values in Urbana

User Defined Facilities Loss, 2018 Champaign County Assessor Valuations (Thousands of Dollars)						
Category	Area	Residential	Commercial	Industrial	Others	Total
	Building	385	111	0	0	496
	Content	292	323	0	0	615
	Inventory	0	294	0	0	294
	Subtotal	677	728	0	0	1,405
General Building Stock Loss, Census 2010 (Thousands of Dollars)						
Category	Area	Residential	Commercial	Industrial	Others	Total
	Relocation	427	841	0	0	1,268
	Income	4	3,052	0	0	3,056
	Rental Income	1,078	629	0	0	1,707
	Wage	11	1,973	0	0	1,984
	Subtotal	1,520	6,495	0	0	8,015
All	Total	2,197	7,223	0	0	9,420

Unincorporated Champaign County HAZUS Loss Estimation Summary: 1% Flood Event Impacts

Figure 4-25. Unincorporated Champaign County HAZUS Map



Shelter Needs in Unincorporated Champaign County:

HAZUS estimates that 1,684 people will be displaced as a result of flood damage, and that 25 persons will seek temporary shelter.

Critical Facility Damage in Unincorporated Champaign County:

The HAZUS model does not predict that critical facilities in Champaign County will sustain damage.

Debris Generation in Unincorporated Champaign County:

The HAZUS model predicts that a total of 2,050.7 tons of debris will be generated as a result of the flood. Of this debris, 1,097.7 tons will be finishing materials (e.g., dry wall, insulation), 391.7 tons will be foundation material (concrete slab, concrete block, rebar), and 561.4 tons will be structural materials (e.g., wood, brick).

Building Damage by General Occupancy Type:

Table 4-31 displays the number of buildings, grouped by occupancy type and by the percentage of damage to the structure, that HAZUS predicts will be damaged in a 1% flood event.

Table 4-31. Building Damage by General Occupancy Type in Unincorporated Champaign County

	1-10%	11-20%	21-30%	31-40%	41-50%	50%+	Total
Agricultural	16	25	2	1	2	1	47
Commercial	2	0	0	0	0	0	2
Government	0	1	0	0	0	0	1
Religion	0	1	0	0	0	0	1
Residential	56	114	36	33	7	7	253
Total	74	141	38	34	9	8	304

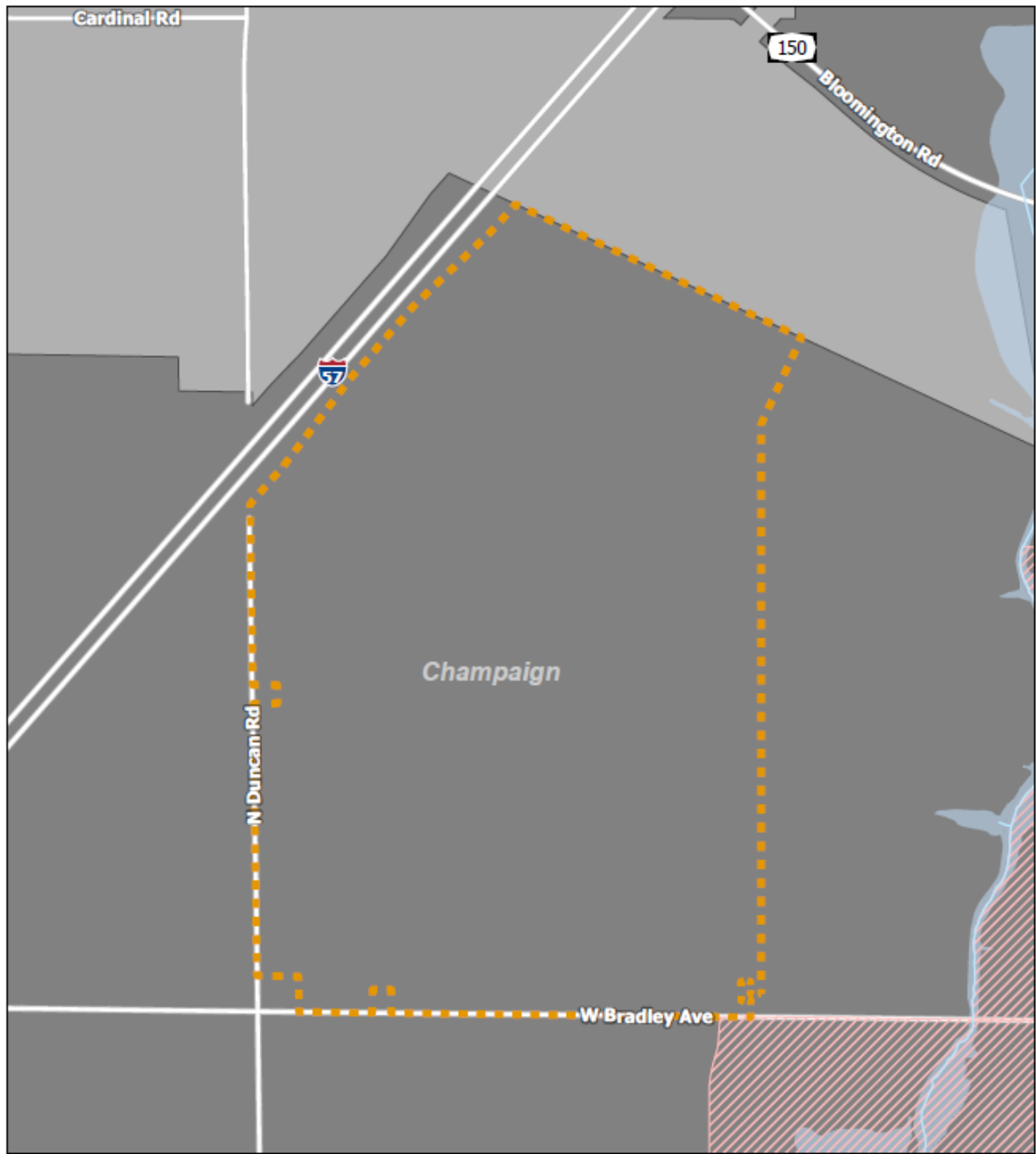
Considering potential economic impacts, Table 4-32 displays HAZUS direct building loss and business interruption loss estimates as a result of a 1% flood event in unincorporated Champaign County that total approximately \$34,620,000.

Table 4-32. Building Loss Counts and Values in Unincorporated Champaign County

User Defined Facilities Loss, 2018 Champaign County Assessor Valuations (Thousands of Dollars)						
Category	Area	Residential	Commercial	Industrial	Others	Total
	Building	6,926	2	0	1,056	7,984
	Content	3,964	3	0	3,422	7,389
	Inventory	0	64	0	10,483	10,547
	Subtotal	10,890	69	0	14,961	25,920
General Building Stock Loss, Census 2010 (Thousands of Dollars)						
Category	Area	Residential	Commercial	Industrial	Others	Total
	Relocation	4,467	137	0	168	4,772
	Income	6	706	0	421	1,133
	Rental Income	1,324	102	0	8	1,434
	Wage	15	802	0	544	1,361
	Subtotal	5,812	1,747	0	1,141	8,700
All	Total	16,702	1,816	0	16,102	34,620

Parkland College HAZUS Loss Estimation Summary: 1% Flood Event Impacts

Figure 4-26. Parkland College HAZUS Map



Parkland College

- Buildings Sustaining Damage
- Streams
- College Main Campus Area
- Census Block in Flood Plain
- 100-Year Flood Plain
- Champaign County
- Municipality

0 0.07 0.15 Miles



Updated 9/18/2020

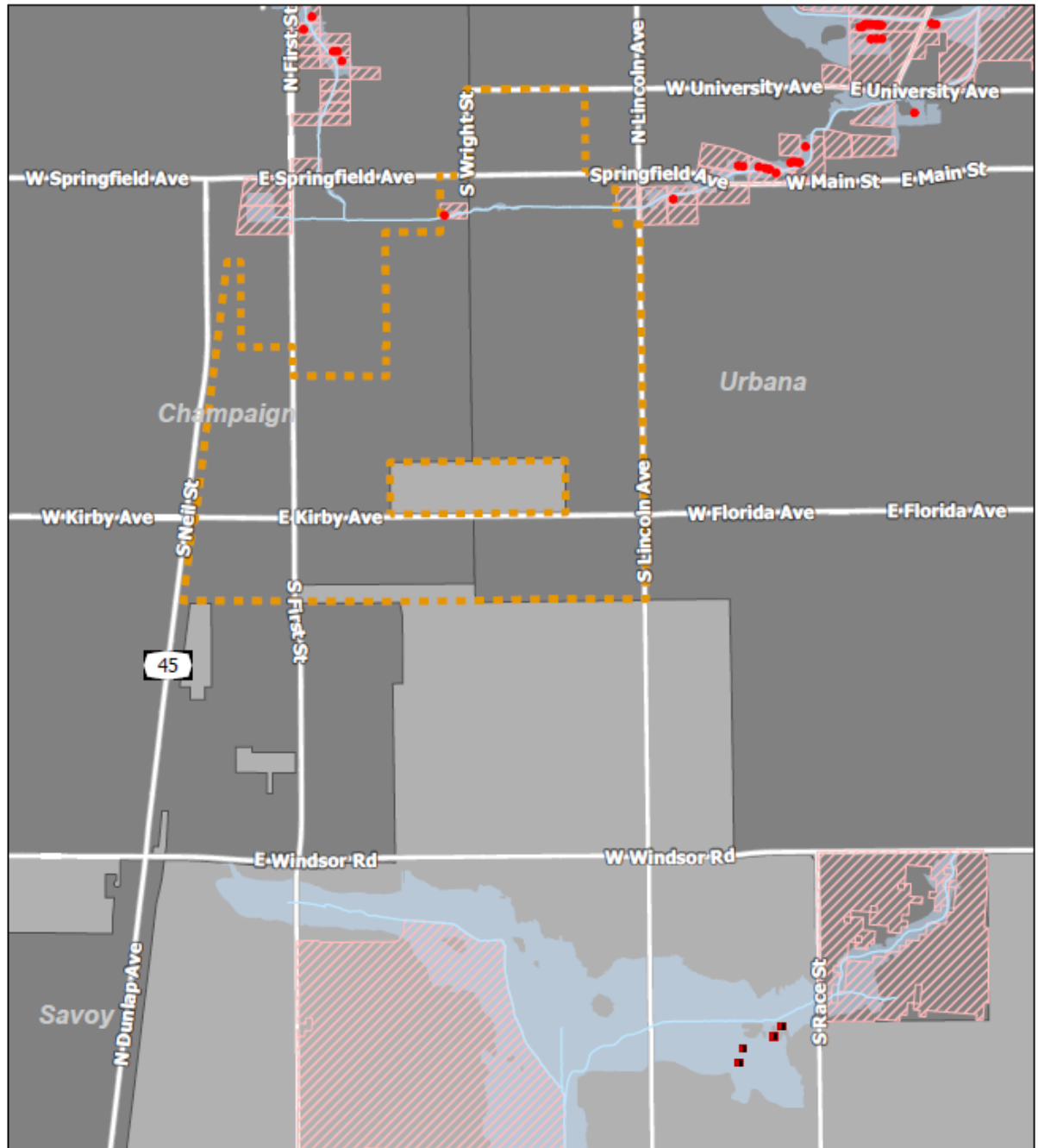
Parkland College Critical Facility Damage:

A total of ten buildings are located on the Parkland College campus. Based on the HAZUS user-defined facility approach (Level 2 analysis), no buildings owned by or leased by Parkland College are located within the floodplain. The HAZUS loss estimation summary of vulnerability associated with a 1% flood occurrence at the Parkland College campus indicates that no buildings will sustain damages.

No students live on the Parkland College campus and there are no residential buildings on campus.

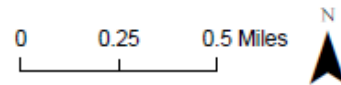
University of Illinois at Urbana-Champaign HAZUS Loss Estimation Summary: 1% Flood Event Impacts

Figure 4-27. University of Illinois at Urbana-Champaign HAZUS Map



University of Illinois - Urbana Champaign

- Buildings Sustaining Damage
- UIUC Building with Content Loss
- Streams
- College Main Campus Area
- ▨ Census Block in Flood Plain
- 100-Year Flood Plain
- Champaign County
- Municipality



Updated 9/18/2020



University of Illinois at Urbana-Champaign Critical Facility Damage:

Within the Plan Area, the University of Illinois at Urbana-Champaign owns or leases a total of 996 structures.

Using the user-defined facility approach (HAZUS Level 2 analysis), a total of four agricultural buildings owned or leased by the University of Illinois at Urbana-Champaign are located within the flood plain. The analysis reported that, in total, these four buildings would sustain an estimated content loss of \$92,000 in value.

No other losses were estimated.

Earthquakes

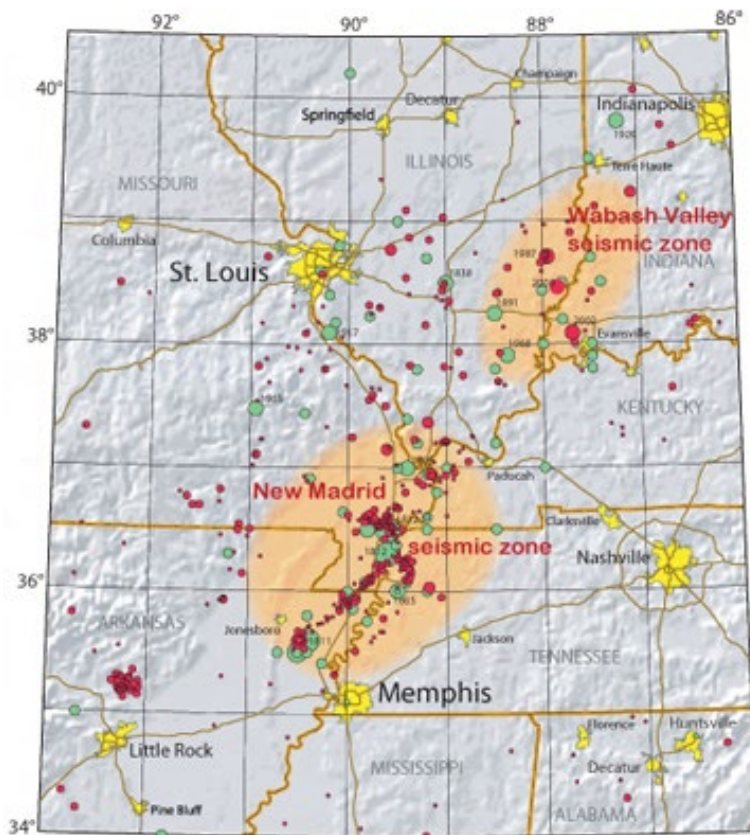
Earthquakes occur when there is an abrupt shift in massive rock plates along fractures in the earth called faults. When these massive sections of rock move along a fault, the energy released causes the earth to shake. The point at which an earthquake occurs beneath the surface of the earth is called the hypocenter. The epicenter of an earthquake is located directly above the hypocenter on the surface of the earth.²⁹

Location

The Plan Area is at equal risk to seismic hazards associated with a large earthquake occurring in the New Madrid Seismic Zone (situated southwest of Illinois) and the Wabash Valley Seismic Zone (situated along the southeastern edge of Illinois).

Figure 4-28 shows some earthquakes of the Central U.S. and the general location of the New Madrid and Wabash Valley seismic zones. Red circles indicate earthquakes that occurred from 1974 to 2002 with magnitudes larger than 2.5. Green circles denote earthquakes that occurred prior to 1974. Larger earthquakes are represented by larger circles.³⁰

Figure 4-28. Earthquakes in Central U.S. and General Locations of the New Madrid and Wabash Valley Seismic Zones



Source: USGS

Extent

Earthquake events are described in two ways: by magnitude and intensity. Magnitude is a measure of the seismic energy generated from an earthquake. The 2018 INHMP summarizes magnitude measurements as follows:

[Magnitude] is calculated from measurements of the ground vibrations recorded by seismographs. Earthquake magnitudes are reported in logarithmic increments which means that a magnitude 7 earthquake has about 32 times greater energy than a 6 and an increase of 0.2 means twice as much energy is released. The Richter Scale is one of several magnitude scales that is used for reporting the size of an earthquake. Each scale uses a different formula/method to calculate the magnitude from the recorded vibrations.³¹

Illinois State Geological Survey Engineering Geologist Robert Bauer indicates that reported felt earthquakes are usually above magnitude 2, and the largest recorded event was a magnitude 9.5 in Chile in 1960.³²

An earthquake can have only one measure of magnitude, unlike measures of intensity. Intensity measures of an earthquake are based on the subjective observations of people in the impacted area, and not on calculations or instrument readings. There will be many intensities per earthquake event, with these intensity measures depending on where the observers are located and their site conditions.

In the U.S., the Modified Mercalli Intensity Scale is used to report intensities for an earthquake event. Table 4-33 describes Modified Mercalli Intensity Scale levels. The lower numbers of the intensity scale generally deal with how the earthquake is felt by people. The higher numbers of the scale are based on observed structural damage. Structural engineers typically contribute information for assigning intensity values of VIII or above.³³

Table 4-33. Abbreviated Description of Modified Mercalli Intensity Levels

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

Source: USGS

Previous Occurrences

To date, there is no record of an earthquake occurring with an epicenter located within the Plan Area. Figures 4-29 and 4-30 display the epicenters of earthquakes on record in proximity to the Plan Area over the period 1795–2017.

USGS records indicate that approximately 200 earthquakes with an epicenter in Illinois have occurred since 1795.

The earthquake events listed below are the largest earthquakes on record regionally and as otherwise noted:

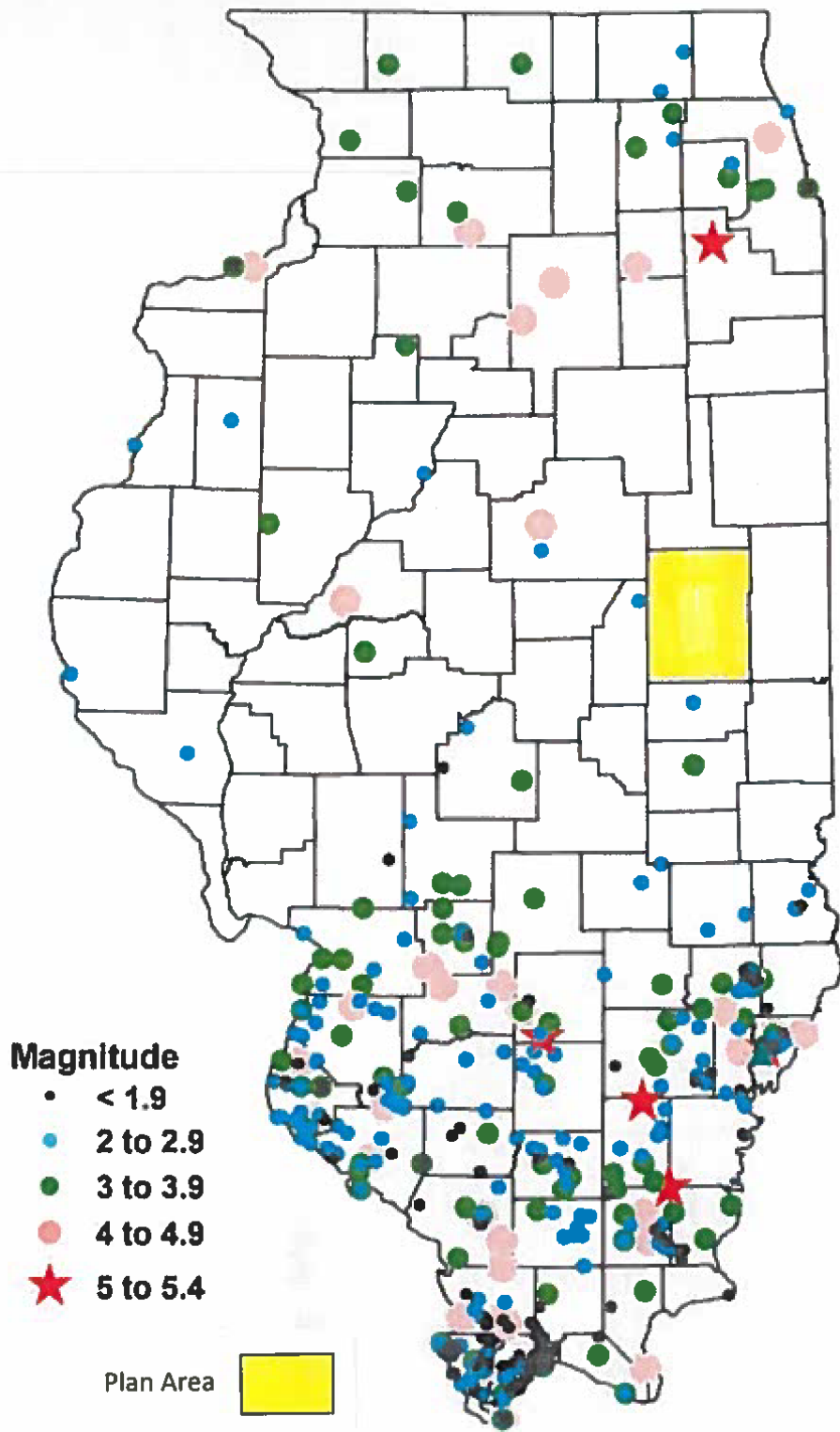
In Central Illinois: A 4.8 estimated magnitude earthquake that occurred in July of 1909 at a location between Petersburg, Illinois and Havana, Illinois.

In the U.S. Midwest: A 5.3 magnitude earthquake that occurred near McLeansboro, Illinois in November of 1968. This was the largest earthquake in the Midwest during the 20th century.³⁴

In the continental U.S.: The approximately 7.5 magnitude earthquake that occurred in the New Madrid Seismic Zone during the winter of 1811-1812.³⁵ The earthquake was one of a series of four 7-7.5 magnitude earthquake events occurring within a three-month period.

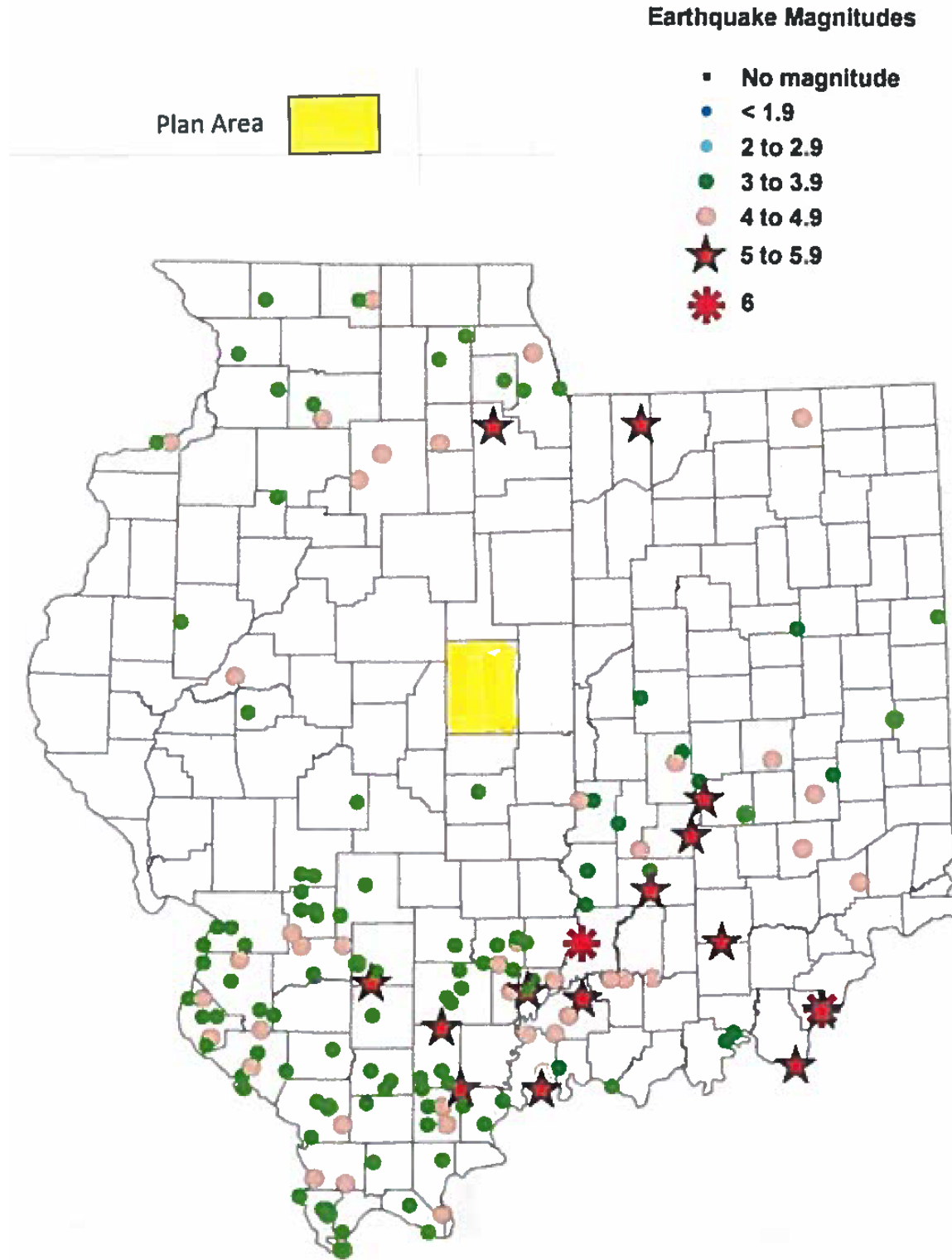
Regarding earthquake intensity records, over 600 earthquakes have been reported by persons in Illinois over the past 200 plus years. Most of these earthquake events originated in the southern third of the state.³⁶

Figure 4-29. Earthquake Events (1795–2017) in Illinois Relative to Plan Area



Source: IGS Catalogue

Figure 4-30. Magnitude 3+ Earthquakes on Record (1795–2017) Relative to Plan Area



Source: Illinois and Indiana Geological Surveys

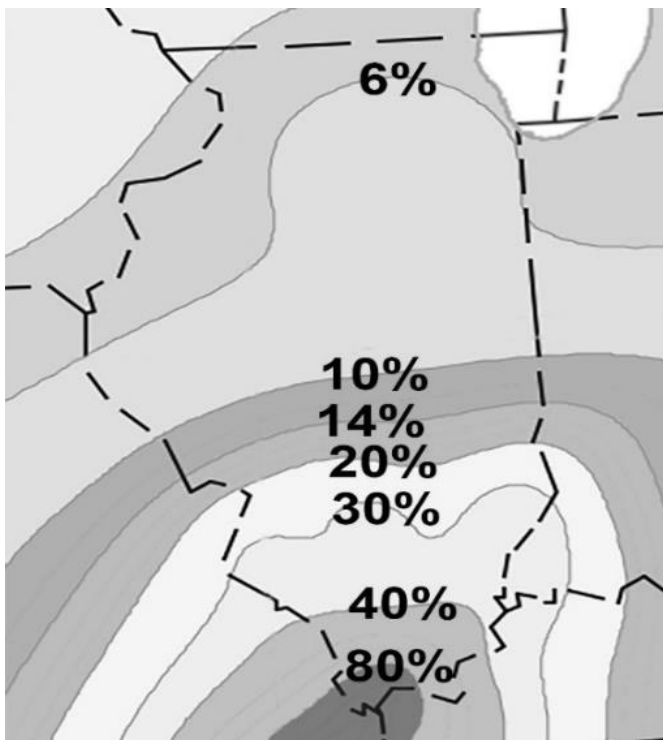
Future Probability of Earthquake Events

The ISGS produced a factsheet in 1995 that indicated future probability of earthquake events in the Central U.S. provided by the USGS.³⁷

- The likelihood of an earthquake of magnitude 6.3 or greater occurring somewhere in the Central US within the next 15 years is 40 to 63% and 86 to 97% within the next 50 years.
- The probability of a major earthquake (magnitude 7.5 or greater) is only 5 to 9% within the next 15 years, and 19 to 29% within the next 50 years.

Figure 4-31 is the USGS National Seismic Hazards Mapping Project 2014 map of earthquake risk for Illinois based on maximum accelerations with a 2% probability of being exceeded within a 50-year window, representing a one chance in 2,475 of it being exceeded in any year.³⁸

Figure 4-31. Earthquake Risk for Illinois



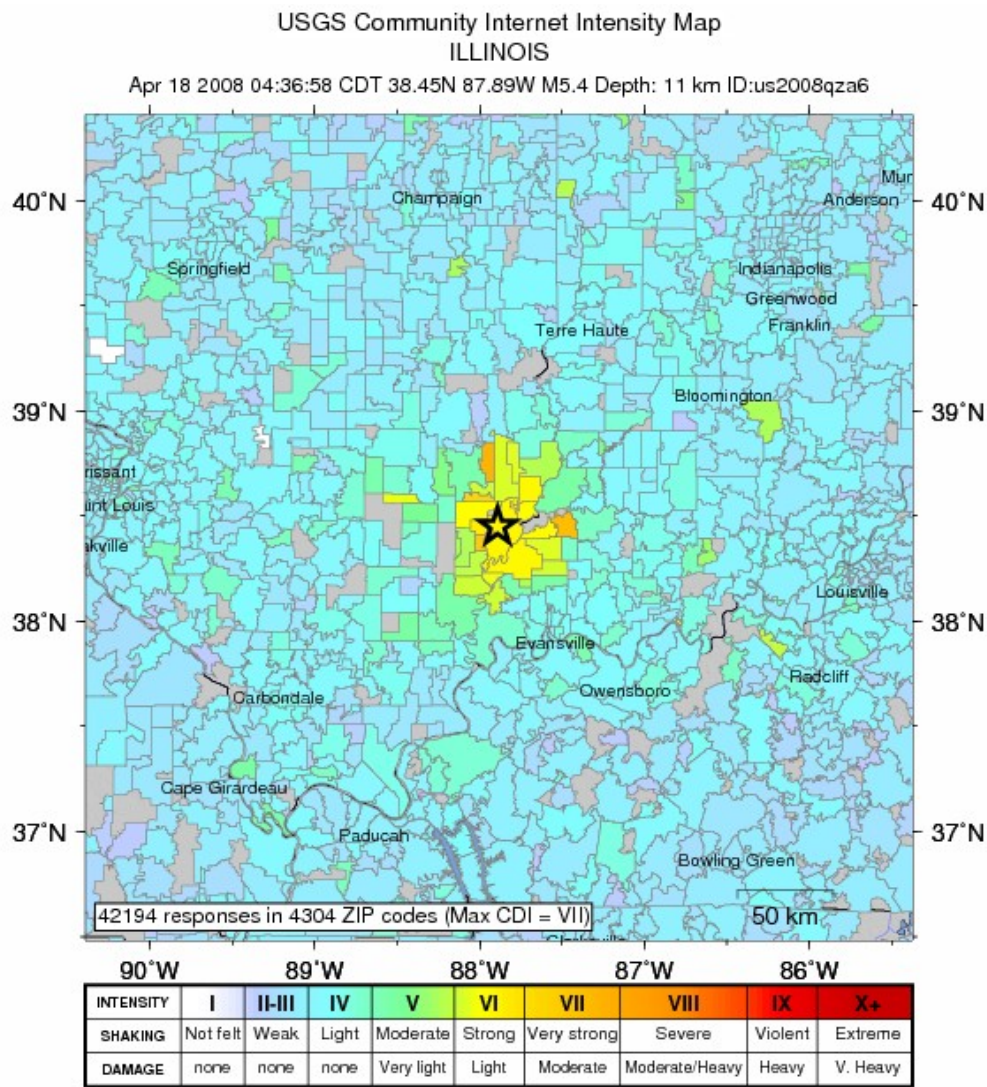
Source: USGS

Some have observed that there appears to be a 400-500 year cycle of major (with a magnitude from 7.0 to 7.9) earthquakes in the New Madrid Seismic Zone region, and approximately 200 years have passed since the last significant series of major earthquakes occurred in this region.

Impact

The example of the April 2008 5.2 magnitude earthquake event occurring in the Wabash Valley Seismic Zone is used to describe its impact to persons in the Plan Area. The subject earthquake was felt in the Plan Area and across 28 states and Canada. Figure 4-32 depicts the intensity experienced by persons in the Plan Area because of this earthquake as ranging from weak to light.

Figure 4-32. "Did You Feel It" Reports for April 18, 2008 Earthquake in Wabash County, Illinois



Source: USGS

The USGS earthquake hazard maps for a 2% chance of being exceeded in 50 years (a one chance in 2,475 in any year) closely represents the shaking at locations in Illinois from a repeat of a 7.5 magnitude New Madrid earthquake, which is similar to what was experienced in the 1811-1812 New Madrid series of earthquakes. The following

is the USGS description is of a potential rare large magnitude earthquake, perceived as an Intensity VI event, as it would likely be experienced by persons in the Plan Area:

Felt by all. Many frightened and run outdoors. Persons walk unsteadily. Windows, dishes, glassware broken. Knickknacks, books, etc., off shelves. Pictures off walls. Furniture moved or overturned. Weak plaster and masonry D (Masonry D: Weak materials, such as adobe; poor mortar; low standards of workmanship; weak horizontally) is cracked. Small bells ring (church, school). Trees, bushes shaken (visibly, or heard to rustle).³⁹

Significant Changes in Development since the HMP Update 2015 and Possible Impacts to Vulnerability to an Earthquake

Since the HMP Update 2015, no significant changes in development occurred in any of the participating jurisdictions to apparently impact the vulnerability of a participating jurisdiction to an earthquake.

Overall Summary of Vulnerability

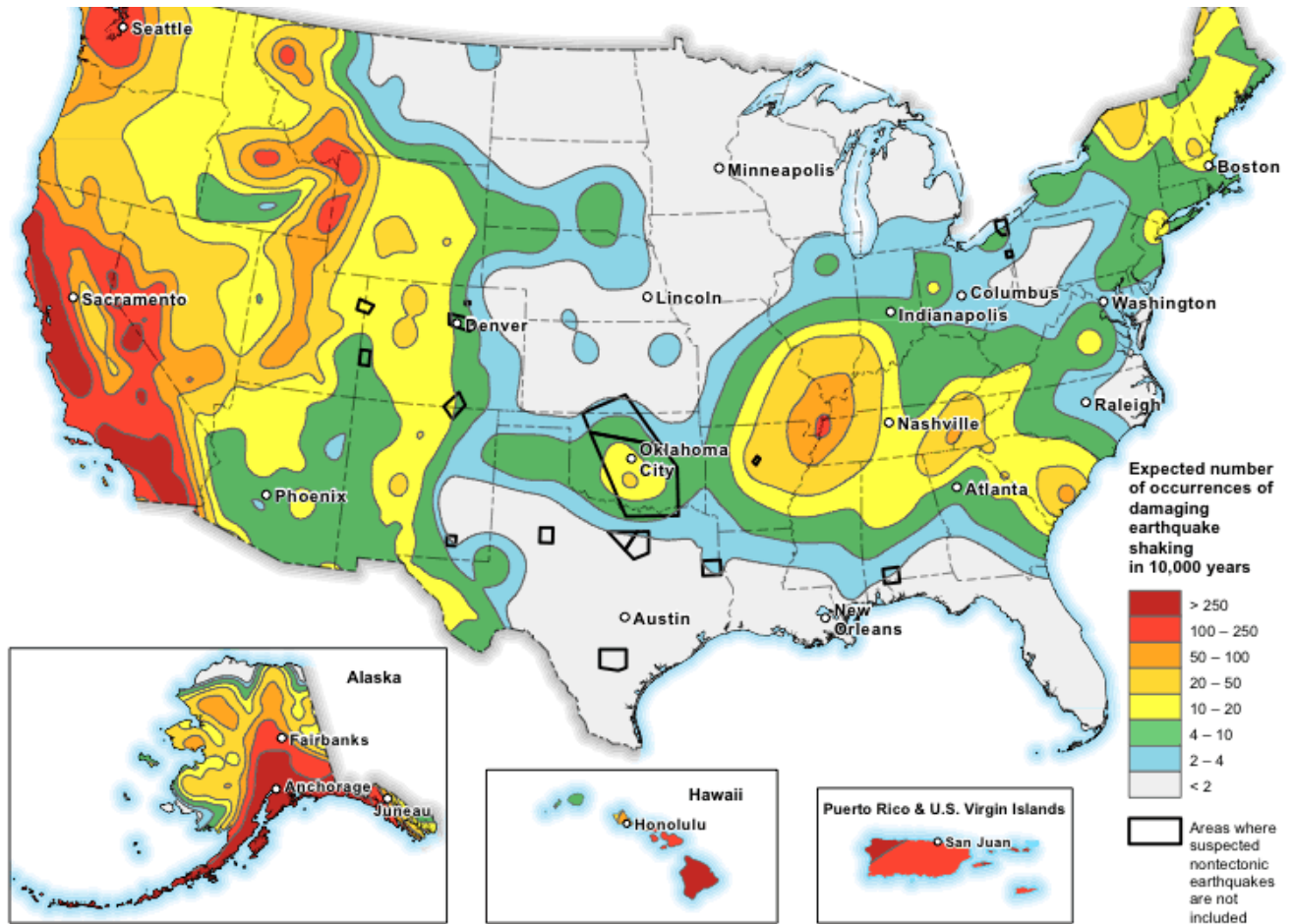
The INHMP assigned a “Medium” Earthquake Hazard Rating to Champaign County (the Plan Area), based on these criteria:

- Historical/Probability (frequency);
- Vulnerability (percentage of people);
- Severity of Impact (injuries, fatalities, personal property and infrastructure); and
- Population (number in jurisdiction and percentage of increase).³⁸

Figure 4-33 features a USGS map that indicates 4 to 10 occurrences of damaging earthquake shaking can be expected within the Plan Area over a period of 10,000 years.

The 2018 INHMP indicates that an earthquake from the New Madrid Seismic Zone will more than likely impact Illinois more than an earthquake event occurring in the Wabash Valley Seismic Zone.

Figure 4-33. Frequency of Damaging Earthquake Shaking Around U.S.

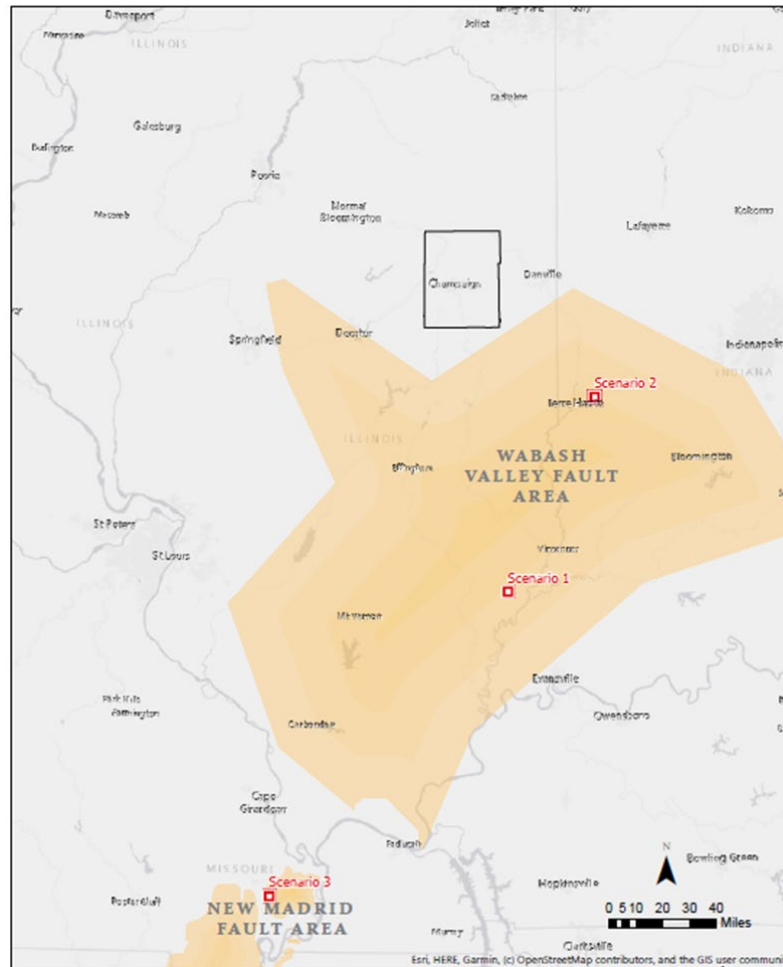


Source: USGS <https://www.usgs.gov/media/images/frequency-damaging-earthquake-shaking-around-us>

HAZUS Regional Loss Estimation Model

The FEMA HAZUS Level 1 Model was used to obtain an analysis of Plan Area vulnerability to selected earthquake events, based on three earthquake event scenarios that are highlighted in Figure 4-34.

Figure 4-34. HAZUS Earthquake Scenarios



Appendix I contains loss estimation results for the three earthquake scenarios. A summary of HAZUS loss estimates in the Plan Area for each scenario follows:

- Scenario 1 Magnitude 5.2 Mt Carmel Earthquake, Wabash Valley Seismic Zone

The HAZUS model predicts no building damage or building-related economic loss because of the earthquake and only minimal, if any, damage to essential facilities. No injuries as a result of the earthquake are predicted. All essential facilities are expected to function at greater than or equal to 50% at Day One. It is estimated no household will be without electric power as a result of the earthquake. Some leaks and breaks to utility systems will occur. Estimated direct economic losses for utilities will be: \$40,000 to potable water systems; \$20,000 to wastewater systems, and \$10,000 to natural gas systems. The HAZUS model predicts no direct economic losses for transportation lifelines as a result of the earthquake. The HAZUS model predicts no debris will be generated, no household will be displaced, and no persons will seek temporary shelter in public shelters due to the earthquake.

- Scenario 2 Magnitude 5.1 Scenario Earthquake, Placed Near One of the Largest Historical Earthquakes Closest to the Plan Area

The HAZUS model predicts mostly slight and moderate building damage, mostly to single family occupancy buildings. Building-related economic loss will total \$2,370,000. HAZUS predicts some leaks and breaks to utility systems. Estimated direct economic losses for utilities will be: \$40,000 to potable water systems; \$20,000 to wastewater systems, and \$10,000 to natural gas systems.

Three persons will sustain Level 1 injuries. All essential facilities are expected not to sustain significant damage but may not function at greater than or equal to 50% at Day One.

The HAZUS model predicts \$10,000 damage to railway facilities in the Plan Area.

The HAZUS model predicts the earthquake will generate 1,000 tons of debris (40 truckloads) mostly comprised of wood and brick. The HAZUS model estimates that one household will be displaced due to the earthquake and that no persons (out of a total population of 207,704) will seek temporary shelter in public shelters due to the earthquake.

- Scenario 3 Magnitude 7.5 Missouri Earthquake, New Madrid Seismic Zone

The HAZUS model predicts mostly slight and moderate building damage, mostly to single family occupancy buildings. Building-related economic loss will total \$11,460,000. HAZUS predicts leaks and breaks to utility systems. Estimated direct economic losses for utilities will be: \$20,000 to potable water systems; \$10,000 to wastewater systems, and \$30,000 to natural gas systems.

Twelve persons will sustain Level 1 injuries, and one person will sustain Level 2 injuries. All essential facilities are expected not to sustain significant damage, and all essential facilities will have 50% or greater functionality at Day One.

The HAZUS model predicts \$50,000 damage to highway bridges and \$10,000 damage to railway facilities in the Plan Area.

The HAZUS model predicts the earthquake will generate 6,000 tons of debris (240 truckloads) mostly comprised of wood and brick. The HAZUS model estimates eight households will be displaced due to the earthquake and that six persons will seek temporary shelter in public shelters due to the earthquake.

Vulnerability Assessment Observations

Damage to Buildings and Critical Infrastructure: Historic and masonry buildings could be damaged by a large magnitude earthquake originating in the New Madrid Seismic Zone or Wabash Valley Seismic Zone. Most other building, and especially those built under a building code would have little or no damage. Some content damage can be expected where items fall from shelves.

Health and Safety: Health and safety concerns due to earthquakes for persons within the Plan Area is low.

Economic Impacts: Potential for business loss due to earthquakes is low, however environmental impacts of earthquakes can be numerous, particularly if indirect impacts are considered. Some examples are shown below, but are unlikely to occur in the Plan Area:

- Induced flooding or landslides;
- Poor water quality;
- Damage to vegetation;
- Breakage in sewage or toxic material containment, and
- Breakage of natural gas and other pipelines that serve the Plan Area.

Multi-Jurisdictional Differences: All Plan Area jurisdictions can be impacted by earthquakes.

Drought

The *Climate Atlas of Illinois* defines drought as “a period of abnormally dry weather sufficiently long to cause serious impacts on agriculture, water supplies, and other activities in the affected area.”⁴⁰

Location

All communities and locales in the Plan Area are at equal risk from drought. Most often, drought affects geographical areas that are larger than the Plan Area.

Extent

Drought is a temporary and natural climatic phenomenon which can affect small areas or entire regions, caused by a lower than average amount of precipitation over an extended period. Weather conditions, soil moisture, runoff, water table conditions, water quality and streamflow are all-natural factors that are important in determining drought. High temperature, high wind and low humidity can significantly aggravate its severity. There is no single universally accepted definition of drought. Table 4-34 lists the four operational definitions of drought in the INHMP.

Table 4-34. Operational Drought Definitions

• Meteorological Drought	A period of well-below-average precipitation that spans from a few months to a few years
• Agricultural Drought	A period when soil moisture is inadequate to meet the demands for crops to initiate and sustain plant growth
• Hydrological Drought	A period of below-average streamflow and/or depleted reservoir storage (i.e., streamflow, reservoir and lake levels, ground water)
• Economic Drought	A reference to the supply and demand of water. Some years there is an ample supply of water and in other years there is not enough to meet human and environmental needs

Source: INHMP, 2018

Illinois State Climatologist Trent Ford shared an additional relatively new drought category worth including due to the importance of natural ecosystems in the Plan Area:

• Ecological Drought	An episodic deficit in water availability that drives ecosystems beyond thresholds of vulnerability, impacts ecosystem services, and triggers feedbacks in natural and/or human systems.
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The Palmer Drought Severity Index is one index that is used to assess the severity of dry or wet spells of weather. The index is based on the principles of a balance between moisture supply and demand, excluding human-made changes.

Palmer Drought Severity Index values generally ranges from -6 to +6, with values in the magnitude of +7 or -7 only rarely occurring. Negative index values denote dry spells and positive values indicating wet spells. Index values to indicate 'normal' to 'extreme drought' conditions are as follows:

- 0 to -0.5 = Normal;
- 0.5 to -1.0 = Incipient Drought;
- 1.0 to -2.0 = Mild Drought;
- 2.0 to -3.0 = Moderate Drought;
- 3.0 to -4.0 = Severe Drought; and
- Greater than - 4.0 = Extreme Drought

Previous Occurrences

The NOAA NCEI Storm Events Database indicates three occurrences of drought on record for the Plan Area, with all reported occurrences in 2012.⁴¹ Table 4-35 contains the database narratives for the three recorded drought occurrences. For a broader context, see Appendix K, which contains U.S. Drought Monitor maps of drought conditions across the U.S. over the past 10 years, 2010 through 2019.⁴²

Illinois drought conditions, including recorded "extreme drought" occurrences (with an index value of greater than -4.0) are indicated on the Palmer Drought Severity Index shown in Figure 4-35, which spans 120 years.

Additionally, Illinois State Climatologist Trent Ford has noted that the frequency of extreme drought is much lower over the last 50 years than in the early part of the 20th century, and that this is a consistent trend in the Midwest, with fewer long-lasting, extreme droughts.

Figure 4-35. Illinois Statewide Palmer Drought Severity Index

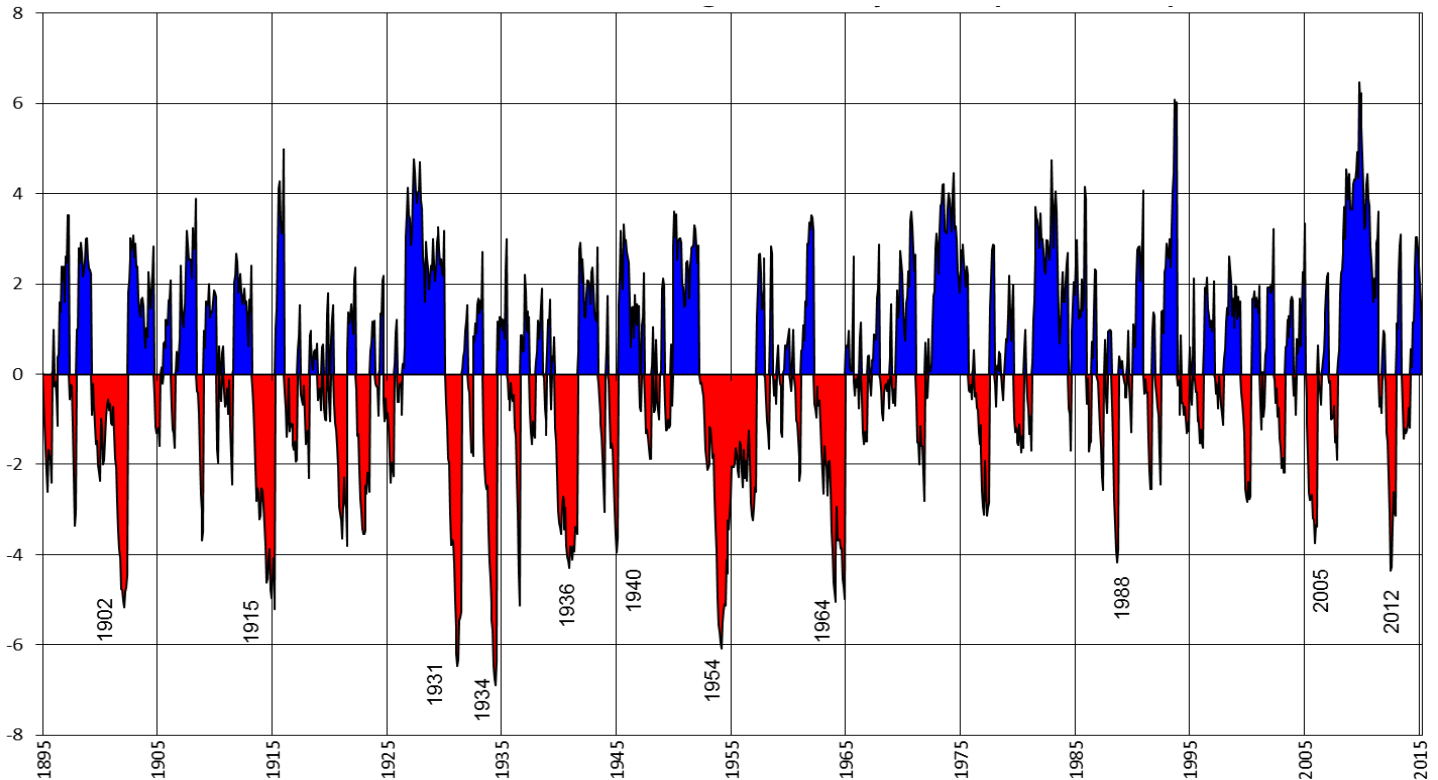


Figure 4-33 Note: Blue means wet; red means dry; noteworthy droughts labeled.

Source: Illinois State Water Survey, 2015

Table 4-35. Narratives of Drought Occurrences in 2012 in Plan Area

Event Narrative (Specific to Plan Area)	Regional Episode Narrative
Beginning Date: 7/3/2012	
<p>Only 0.61 of rain fell in Urbana, making it the 5th driest July on record. The flow along Boneyard Creek in Urbana dropped to the 12th lowest on record. Extreme heat in excess of 100 degrees occurred during the first week of the month. Due to the hot and dry conditions, a ban on open burning was instituted by local officials. Crop stress was extreme for corn and soybeans. Champaign County was classified in a Severe Drought on July 10th, then upgraded to Extreme Drought on July 24th.</p>	<p>An extended period of dry weather continued to worsen across central and southeast Illinois during the month of July...with most locations reporting monthly rainfall deficits of 2 to 4 inches. Due to an abnormally warm and dry spring, yearly rainfall deficits since January 1st grew to as much as 8 to 13 inches in July. The prolonged period of dry weather caused nearly all central and southeast Illinois to be upgraded to the Extreme Drought Category (D3). Severe Drought (D2) persisted along and north of a Peoria to Minonk line...while Lawrence and Crawford counties in southeast Illinois worsened</p>

Beginning Date: 8/1/2012	
Extreme Drought conditions improved to Severe Drought during the month of August in Champaign County. The flow along the Salt Fork near St. Joseph dropped to the lowest on record. Despite recent rainfall that helped ease the drought conditions somewhat, a ban on open burning remained in place. Crop stress was extreme for both corn and soybeans.	An extended period of dry weather continued to worsen across central and southeast Illinois during the month of August. Despite near normal monthly rainfall totals of 3 to 4 inches in many locations...yearly deficits since January 1st remained in the 8 to 13-inch range. The prolonged period of dry weather caused nearly all central and southeast Illinois to be upgraded to the Extreme Drought Category (D3)...while Lawrence and Crawford counties in southeast Illinois persisted in an Exceptional Drought (D4).
Beginning Date: 9/1/2012	
Thanks to beneficial rainfall of 2 to 4 inches from the remnants of Hurricane Isaac, Champaign County was downgraded to the Moderate Drought category (D1) on September 6th. Total damage to the corn crop was estimated at \$72.6 million.	Extreme (D3) to Exceptional (D4) drought conditions that had been ongoing across central and southeast Illinois since June eased significantly during the month of September. Remnants of Hurricane Isaac brought widespread rain totals of 2 to 4 inches from September 1st through 3rd. This was followed by additional rainfall throughout the month that resulted in much of the area being downgraded to the Moderate Drought category (D1) or better. Eight west-central Illinois counties along and northwest of a Marshall to Lincoln line remained in the Severe Drought category (D2) through the end of the month. Total crop losses from the extended drought across central and southeast Illinois was estimated to be \$1.2 billion.

Source: NOAA NCEI

Future Probability of Drought Events

Former Illinois State Climatologist James Angel indicated that a drought is difficult to forecast with present technology and available knowledge:

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. On the longer scale of multi-decades, no skill has been shown in forecasting drought, even with the application of so-called drought/solar cycles. As global and regional

climate models improve, we may begin to realize the ability to predict changes in frequency, intensity, or location of drought.⁴³

The INHMP estimate of annual probability of a drought event in the Central Illinois region including the Plan Area is 5 percent.⁴⁴

Impact

In the Plan Area, the main impacts of drought are the potential damage it can cause to crops and the reduction of water supply. Drought is recognized as threatening to the Plan Area since it contains a large amount of agricultural land. Additional Plan Area drought impacts may include:

- Poor surface water quality;
- Scarce drinking water supplies/rationing;
- Recreation opportunities lost; and
- Transportation problems.

As mentioned in Table 4-36, within the Plan Area, the total damage to the corn crop as a result of the drought occurrences in 2012 was estimated at \$72.6 million. For each drought event in the Plan Area, the INHMP estimates losses in crop and property damage at \$42,420,000, on average. The INHMP indicates an estimated annual loss of \$110,000 because of droughts in the Plan Area.⁴⁵

Significant Changes in Development since the HMP Update 2015 and Possible Impacts to Vulnerability to a Drought

Since the HMP Update 2015, no significant changes in development occurred in any of the participating jurisdictions to apparently impact the vulnerability of a participating jurisdiction to a drought.

Overall Summary of Vulnerability

A significant number of outlying rural residents in the Plan Area rely on private water wells to shallow aquifers that are vulnerable to drought conditions. Rural residents with no alternate plan for obtaining water during a drought may need to haul water in the event their well runs dry.

The USGCRP report *Climate Change Impacts in the United States: Fourth National Climate Assessment* includes an assessment of vulnerability of the Midwest U.S. to drought conditions:

Across much of the United States, surface soil moisture is projected to decrease as the climate warms, driven largely by increased

evaporation rates due to warmer temperatures. This means that, all else being equal, future droughts in most regions will likely be stronger and potentially last longer. and though by some measures drought has decreased over much of the continental United States in association with long-term increases in precipitation ..., there is yet no detectable change in long-term U.S. drought statistics.⁴⁶

Potential Health and Safety Threat

Droughts may pose health and safety risks to those in the Plan Area who rely on well water. For those residents and businesses, a temporary alternative water source must be found. Scarce drinking water supplies and water rationing may become necessary during a drought. The State of Illinois Drought Preparedness and Response Plan contains the following summary regarding vulnerability of groundwater supplies In the Plan Area:

Regarding groundwater supplies, withdrawing sufficient water from aquifers to meet demands to 2050 results in increasing drawdown of heads in wells finished in the aquifers, expanding cones of depression, a reversal of groundwater flow in some areas, and reduced baseflow in many streams. The bull's eye of concern is in Champaign County, where drawdown could lower head in some wells to less than 50 feet above the top of the Mahomet Aquifer in some scenarios. Some shallow aquifers increasingly are dewatered locally, wells finished in these aquifers go dry, and water levels in other wells drop below the pumps and will require pumps to be lowered to sustain yields.⁴⁷

Potential Damage to Property

Droughts do not pose a direct threat to structures in the Plan Area, but the dry conditions can increase the risk of fires. Most of the damage from drought is crop damage. All agricultural land in the Plan Area is vulnerable to droughts.

Potential Economic Impact

The potential economic impacts of drought include the loss of revenue for farmers whose crops are destroyed by drought.

Extreme Heat

The INHMP defines “extreme heat” as “...temperatures that hover 10 degrees or more above the average high temperature for several weeks.” The INHMP defines a “heat wave” as a period of at least three consecutive days above 90 degrees.

Location

The entire Plan Area is equally at risk from extreme heat.

Extent

Extreme heat is a natural hazard with deadly potential, since it can kill by pushing the human body beyond its limits. Extreme heat is most dangerous to children, the elderly, and those with preexisting health conditions or co-morbidities. Heat becomes dangerous when it exceeds the body’s ability to cool itself by sweating. This is especially common with conditions of high humidity level plus extreme heat. Table 4-36 describes common heat-related terms.

Table 4-36. Extreme Heat Terms

Heat Wave	Prolonged period of excessive heat, often combined with excessive humidity.
Heat Index	A number in degrees Fahrenheit (F) that tells how hot it feels when relative humidity is added to the air temperature. Exposure to full sunshine can increase the heat index by 15 degrees.
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	Heat stroke 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.
Sun Stroke	Another term for heat stroke.

Source: FEMA

NWS uses the following categories for the purposes of issuing early warnings, which is important for minimizing the impacts of extreme heat:

Excessive Heat Outlook: When the potential exists for an excessive heat event in the next three to seven days. An outlook is used to indicate that a heat event may develop. It is intended to provide information to those who need considerable lead time to prepare for the event, such as public utilities, emergency management and public health officials.

Excessive Heat Watch: When conditions are favorable for an excessive heat event in the next 12 to 48 hours. A watch is used when the risk of a heat wave has increased, but its occurrence and timing is still uncertain. It is intended to provide enough lead time so those who need to set their plans in motion can do so, such as those in charge of implementing individual city excessive heat event mitigation plans.

Excessive Heat Warning/Advisory: When an excessive heat event is expected in the next 36 hours. Both are issued when an excessive heat event is occurring, is imminent, or has a very high probability of occurrence. The warning is used for conditions posing a threat to life or property. An advisory is for less serious conditions that cause significant discomfort or inconvenience and, if caution is not taken, could lead to a threat to life and/or property.

Heat index is the perceived temperature that is felt when factoring in the air temperature and the relative humidity. Figure 4-36 is the NWS Heat Index chart depicting likelihood of heat disorders because of exposure to heat and humidity.

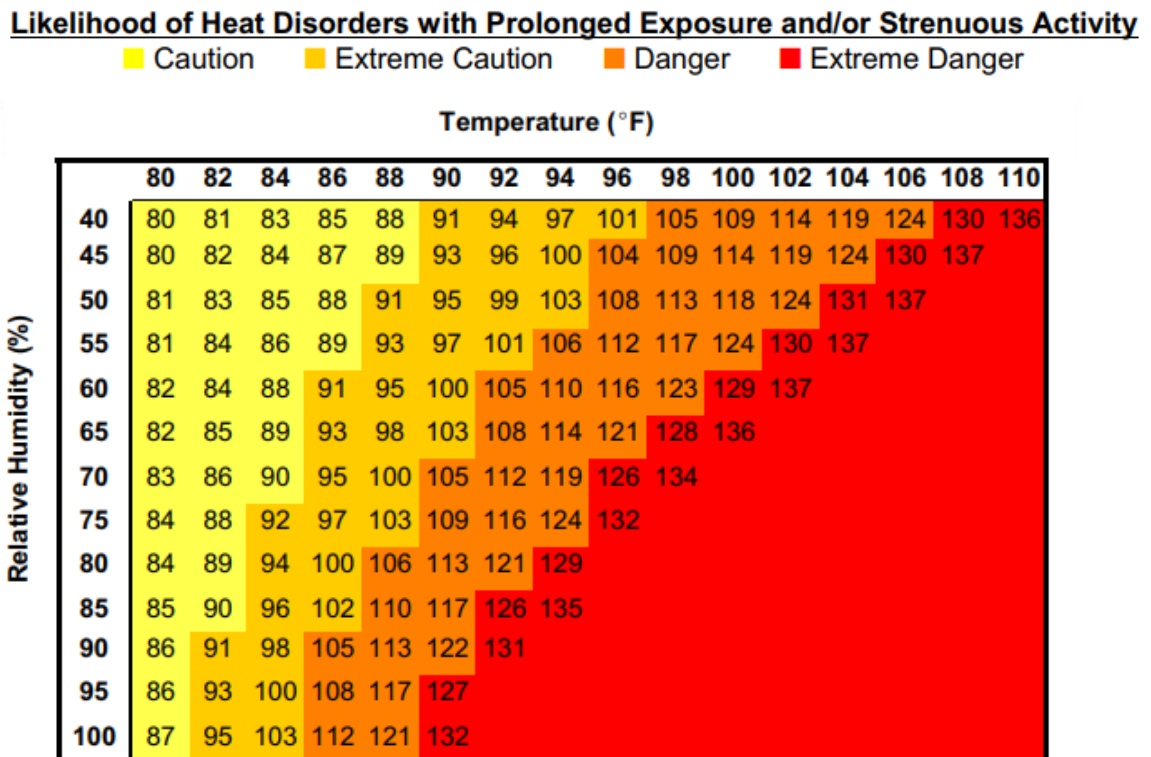
Table 4-37 lists the heat index levels associated with heat-related illnesses.

Table 4-37. Heat Index and Heat Sickness

Heat Index	Possible Heat Disorders for People in Higher Risk Groups
130° or higher	Heat stroke/sun stroke, highly likely with continued exposure.
106° - 130°	Sun stroke/heat cramps or heat exhaustion likely, and heat stroke possible with prolonged exposure and/or physical activity.
90° -108°	Sun stroke, heat cramps and heat exhaustion possible with prolonged exposure and/or physical activity.
80° - 90°	Fatigue possible with prolonged exposure and/or physical activity.

Source: NWS

Figure 4-36. National Weather Service Heat Index Chart



Previous Occurrences

NOAA NCEI Storm Events Database records indicate that from 2010 through 2012, four “excessive heat” events occurred in the Central Illinois area including in the Plan Area. Seven “heat” events occurred between 1997 and 2006 across Central Illinois and including the Plan Area.

Future Probability of Extreme Heat Events

Climate scientists continue to predict increased occurrences of excessive heat in the Midwest U.S. in future years. An excerpt from the *Impacts, Risks, and Adaption in the United States: Fourth National Climate Assessment, Volume II*, follows:

Humidity is increasing... These represent increases of approximately 5% and 4% per decade, respectively. Automated Surface Observing Stations in Iowa having dew point records of this length and season show dew point temperature increases of about 1°F per decade. Brown and DeGaetano (2013) show increasing dew points in all seasons throughout the Midwest. .. future projected changes in annual average temperature (Vose et al. 2017, Table 6.4),

as well as in both warmest day of the year and warmest 5-day 1-in-10 year events (Vose et al. 2017, Table 6.5), are higher for the Midwest than in any other region of the United States.⁴⁸

Impact

Tables 4-38 and 4-39 contain narrative descriptions about impacts of the “excessive heat” and “heat” occurrences, respectively, across east Central Illinois, including the Plan Area.⁴⁹

Table 4-38. Narratives of Excessive Heat Occurrences in Plan Area

Event Narrative (Specific to Plan Area)	Regional Episode Narrative
Dates: 8/3/2010 through 8/4/2010	
Heat index readings exceeded 105 degrees across Champaign County on August 3rd and 4th.	A large upper-level ridge of high pressure over the southern U.S. produced an extended period of hot and humid weather across central Illinois. With actual air temperatures well into the 90s and dewpoints in the upper 70s...heat index readings soared above 105 degrees....with the highest values noted along and south of a Rushville...to Lincoln...to Danville line.
Dates: 8/9/2010 through 8/14/2010	
Heat index readings exceeded 105 degrees across Champaign County.	A large upper-level ridge of high pressure over the southern U.S. produced an extended period of hot and humid weather across central Illinois from August 9th through August 14th. With actual air temperatures well into the 90s and dewpoints in the upper 70s...heat index values soared above 105 degrees....with readings occasionally in excess of 110 degrees along and south of a Shelbyville to Paris line.
Dates: 6/29/2012 through 7/7/2012	
	An extended period of excessive heat and humidity occurred across central and southeast Illinois from June 29th through July 7th. Afternoon high temperatures ranged from 95 to 105 degrees...while overnight lows generally remained in the 70s. Peak heat index values approached 110 degrees on many days. One person died as a result of the intense heat in Chillicothe on July 5th.

Source: NOAA NCEI

Table 4-39. Regional Episode Narratives of Heat Occurrences Across Central Illinois, including Plan Area

Date: 7/26/1997
<p>A brief heat wave hit Central Illinois persisting for a little less than 48 hours from July 26th to July 27th. Temperatures ranged from 95 to 100 degrees both days with heat index values ranging from 105 to 115 degrees. One man died while working in farm fields near Danville (Vermilion County) and an elderly woman died in her home in Bloomington (McLean County). There were numerous reports of heat related injuries in most area hospitals. Also, there were numerous reports of roads buckling due to the high temperatures.</p>
Date: 6/26/1998
<p>A hot and humid airmass built in across Central Illinois late in June. High temperatures on June 26th and 27th climbed into the middle and upper 90s. This combined with the high humidity values produced heat indices of 105 to 110 degrees at times. Several heat related illnesses were reported in area hospitals due to the heat. One death was reported in Peoria and was confirmed to be heat related as a woman died in her home on June 27th. Also, several highways in the area had sections of roadway buckle due to the excessive heat.</p>
Date: 7/20/1999
<p>The excessive heat wave began on the 20th of July and continued for most of the area through the 26th. Temperatures were in the lower to middle 90s with heat index values in the 105 to 110 degree range each day. Northern sections of the area did cool down some by the 25th as a front moved through the area...so the heat advisory was cancelled in those areas. During this time period four heat related deaths were reported in Central Illinois. In Atlanta (Logan County), two young boys (2 1/2 and 1 1/2 years old) wandered away on the afternoon of the 20th and were found about an hour later in their parents' car. Both were reported dead shortly thereafter. In West Peoria (Peoria County), an elderly woman was found in her apartment on the 24th. All the windows were closed, and the air conditioner was broken. In Springfield (Sangamon County), a 62-year-old woman was found in her home on the 25th. Again, all the windows were closed and there were no fans or air conditioning.</p>
Date: 7/28/1999
<p>The heat returned to Central Illinois after a two-day break. Temperatures rose into the lower to middle 90s again with heat index values in the 105 to 110-degree range. One heat related death occurred during this time. A 50-year-old woman in Danville (Vermilion County) died on the 30th. She was found in her apartment. By the 30th a cold front began to move through the area, so the heat advisory was cancelled for northern sections of the area, but the excessive heat persisted in the rest of Central Illinois through the 31st.</p>

(continued)

Table 4-39. Regional Episode Narratives of Heat Occurrences Across Central Illinois, including Plan Area (continued)

Date: 7/22/2005
A period of excessive heat and humidity developed across all central and southeast Illinois from July 22nd through the 25th. Daytime high temperatures ranged from the middle 90s to around 100 degrees daily, with overnight low temperatures only falling into the middle and upper 70s. The high humidity values pushed afternoon and early evening heat indices into the 105 to 115-degree range. The heat wave resulted in one direct fatality. An elderly woman was found dead in Springfield in her mobile home with malfunctioning air conditioning.
Date: 7/30/2006
An extended period of heat and humidity occurred across central and southeast Illinois from July 30th to August 2nd. Afternoon high temperatures ranged from 94 to 100 degrees most afternoons, with afternoon heat indices ranging from 105 to 110. Overnight lows only fell into the mid-70s. A 39-year-old male from Mapleton (Peoria County) suffered a heart attack and died in his mobile home. The death was attributed to the heat. However, the home was not air conditioned and he was taking a medication that prevented him from sweating.
Date: 8/1/2006
An extended period of heat and humidity occurred across central and southeast Illinois from July 30th to August 2nd. Afternoon high temperatures ranged from 94 to 100 degrees most afternoons, with afternoon heat indices ranging from 105 to 110. Overnight lows only fell into the mid-70s.

Source: NOAA NCEI

Significant Changes in Development since the HMP Update 2015 and Possible Impacts to Vulnerability to Extreme Heat

Since the HMP Update 2015, no significant changes in development occurred in any of the participating jurisdictions to apparently impact the vulnerability of a participating jurisdiction to extreme heat.

Overall Summary of Vulnerability

Climate Change Impacts in the United States: The Third National Climate Assessment describes the impacts of climate change for the United States. The assessment indicates that the average temperature in most areas of the United States has increased more than 1.5 degrees Fahrenheit from 1991 to 2012. The average temperature for the Plan Area increased by 1 to 1.5 degrees over the 22- year period 1991-2012.⁵⁰

The report projects surface air temperature increases for the United States under two different scenarios. The results represent the average increase from 2071 to 2099

relative to 1970-1999. The first scenario involves a significant reduction in heat trapping gases, and the second assumes continuing trends in global emissions. In the case of substantial emissions reductions, the entire state of Illinois is projected to have an increased surface air temperature of four to five degrees Fahrenheit, and in the case of continued emissions that increase becomes 8 to 9 degrees Fahrenheit.⁵¹

The report includes projections to indicate, that under circumstances of rapid reductions in heat trapping gases, the Plan Area could see a 7 to 8 degree Fahrenheit increase on the coldest days, and an increase of up to three degrees Fahrenheit on the hottest days in 2081-2100 relative to 1986-2005. If emissions continue to increase, the Plan Area could see an increase of more than 15 degrees Fahrenheit on the coldest days and 10 to 15 degrees Fahrenheit on the hottest days.⁵²

Potential Health and Safety Threat

All Plan Area residents are at risk from an extreme heat event. Extreme heat can cause fatigue, heat cramps, sun stroke, and even death. Elderly populations and small children are most vulnerable when it comes to extreme temperatures. Also, more vulnerable are those without access to air conditioning or other reprieve from the heat. Often this vulnerability is elevated in the poorest population.

Poorest Populations. The poorest populations within the Plan Area may be described based on estimates of per capita income and median household income, as shown in Tables 4-40 and 4-41. These tables indicate estimated amounts of persons in poverty in the Plan Area overall, and within individual participating Plan Area municipalities.

Table 4-40. Estimates of Persons in Poverty in Plan Area Specific to Champaign County

	Median Household Income (in 2018 dollars), 2014-2018	Per Capita Income in past 12 months (in 2018 dollars) 2014-2018	Population Estimate July 1, 2019 (V2019)	Persons in Poverty ¹ (%)
Champaign County ²	\$51,692	\$29,683	209,689	19.2

Source: U.S. Census Bureau, QuickFacts, <https://www.census.gov/quickfacts/fact/table/urbanacityillinois,rantoulvillageillinois,mahometvillageillinois,savoyvillageillinois,champaigncountyillinois,champaigncityillinois/INC910218>

Table 4-41. Estimates of Persons in Poverty in Plan Area by Municipality

Municipalities Within or Partially Within HMP Plan Area	Percent below poverty ¹ (%)	Percent below poverty (%): MOE ³	Assessed Population	Assessed population: MOE ³
Allerton	10.2	6.9	284	51
Bondville	20.4	7.6	470	98
Broadlands	19.8	11.4	364	72
Champaign	26.9	1.7	77,991	446
Fisher	7.7	4	1,852	253
Foosland	0.8	1.9	130	63
Gifford	6.5	4.1	796	110
Homer	9.9	6.6	1,336	169
Ivesdale	12.4	8.2	258	66
Longview	18.8	10.1	133	34
Ludlow	26.4	11.7	439	94
Mahomet	4.9	3.3	8,168	26
Ogden	4.1	2.6	774	142
Pesotum	5.1	5.1	511	96
Philo	0.9	0.7	1,574	221
Rantoul	19.8	3.8	12,693	343
Royal	8.3	7.4	300	79
Sadorus	8.7	5.4	321	65
St. Joseph	6	3	4,292	321
Savoy	15.3	3.9	8,412	392
Sidney	4.6	2.8	1,426	161
Thomasboro	9	4.3	1,082	148
Tolono	13.7	7.7	2,870	373
Urbana	31.9	2.1	34,958	502

Source: U.S. Census Bureau; American Community Survey, 2013-2017 American Community Survey 5-Year Estimates, Table S1701; generated by Champaign County Regional Planning Commission staff using American FactFinder; <<http://factfinder2.census.gov>>; (11 December 2018).

Tables 4-40 and 4-41 Notes

1. Following the Office of Management and Budget's Statistical Policy Directive 14, the U.S. Census Bureau uses a set of money income thresholds that vary by family size and composition to determine who is in poverty. If a family's total income is less than

the family's threshold, then that family and every individual in it is considered in poverty. The official poverty thresholds do not vary geographically, but they are updated for inflation using Consumer Price Index. The official poverty definition uses money income before taxes and does not include capital gains or noncash benefits (such as public housing, Medicaid, and food stamps).

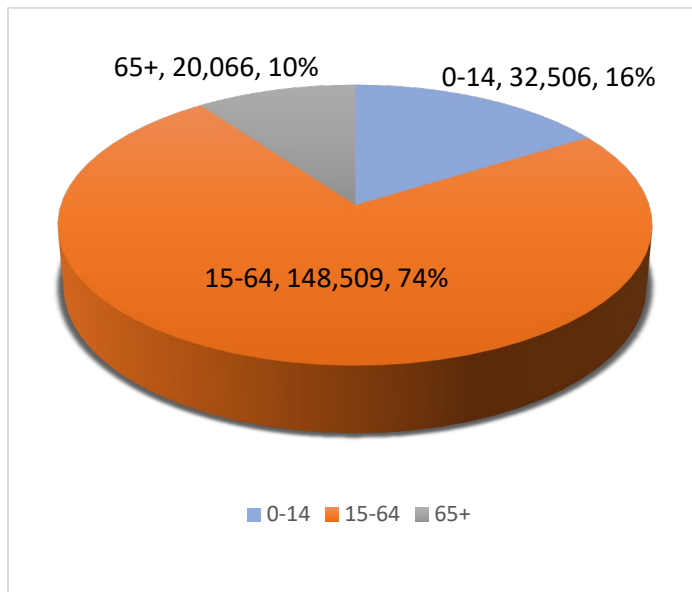
2. Regarding the U.S. Census Bureau's Small Area Income and Poverty Estimates program provides annual estimates of income and poverty statistics for all school districts, counties, and states. The main objective of this program is to provide estimates of income and poverty for the administration of federal programs and the allocation of federal funds to local jurisdictions. These estimates combine data from administrative records, postcensal population estimates, and the decennial census with direct estimates from the American Community Survey to provide consistent and reliable single-year estimates.
3. MOE is Margin of Error. Elderly populations and small children are most vulnerable when it comes to extreme temperatures.

Based on available U.S. Census Bureau estimates, the overall proportion of the Plan Area population—small children and the elderly-- considered most vulnerable when it comes to extreme temperatures can be broadly estimated. Table 4-42 and Figure 4-37 illustrate that an estimated 16 percent of the Plan Area population is between the ages of 1-14, and an estimated 10 percent of the Plan Area population is over age 65.

Table 4-42. Age Cohorts of Vulnerable Populations in Champaign County

Cohort	Subtotals	Group Totals
0-4	11,658	32,506 16%
5-9	10,637	
10-14	10,211	
65-69	5,820	20,066 10%
70-74	4,460	
75-79	3,792	
80-84	3,014	
85+	2,980	

Figure 4-37. Proportion of Vulnerable Populations in Champaign County Based on Age Alone



Sources: U.S. Census Bureau; Census 2000, Summary File 1, Table P12; generated by CCRPC staff; using American FactFinder; <<http://factfinder2.census.gov>>; (30 December 2015), U.S. Census Bureau; Census 2010, Summary File 1, Table P12; generated by Champaign County Regional Planning Commission staff; using American FactFinder; <<http://factfinder2.census.gov>>; (30 December 2015).

Potential Damage to Property

Extreme heat does not usually damage structures.

Prolonged periods of extreme heat often lead to very dry conditions, which can damage crops and cause issues with livestock stress. The combination of extreme heat and dry weather during corn pollination or during the flowering and pod fill stages of soybean crops, can cause significant yield losses.

Potential Economic Impact

The potential impacts include heightened energy demands and utility costs to cool structures during periods of extreme heat.

Pandemic

The World Health Organization describes a pandemic as “the worldwide spread of a new infectious disease.” Pandemics are identified by their geographic scale rather than the severity of illness. For example, in contrast to annual seasonal influenza epidemics, pandemic influenza is defined as “when a new influenza virus emerges and spreads around the world, and most people do not have immunity.”⁵³

Location

A pandemic will occur across multiple geographic areas worldwide and affect a significant portion of the general population. In the event of a pandemic, a significant portion of Plan Area population is vulnerable.

Extent

The *Illinois Pandemic Influenza Preparedness and Response Plan* includes the following description of phases of an influenza pandemic.⁵⁴

Table 4-43. Phases of a Pandemic

Phase	Definition
1	No new influenza virus subtypes have been detected in humans. However, a circulating animal influenza virus subtype poses a substantial risk of human disease.
2	No new influenza virus subtypes have been detected in humans. An influenza virus subtype that has caused human infection may be present in animals. If present in animals, the risk of human infection or disease is considered to be low.
3	Human infection(s) with a new subtype, but no human-to-human spread, or at most rare instances of spread to a close contact.
4	Small cluster(s) with limited human-to-human transmission, but spread is highly localized, suggesting the virus is not well adapted to humans.
5	Larger cluster(s) but human-to-human spread still localized, suggesting the virus is becoming increasingly better adapted to humans, but may not yet be fully transmissible (substantial pandemic risk).
6	Pandemic: increased and sustained transmission in general population.

Source: Illinois Pandemic Influenza Preparedness and Response Plan, 2014

The extent and characteristics of a pandemic vary based on several factors including availability of vaccines and effective treatments for the infectious pandemic disease.

About COVID-19

Coronaviruses are a large family of viruses, some causing illness in people, and others that circulate among animals, including camels, cats, and bats. Rarely animal coronaviruses can evolve and infect people and then spread between people.

Human coronaviruses are common throughout the world and commonly cause mild to moderate illness in people worldwide. However, the emergence of novel (new) coronaviruses, such as SARS and MERS, have been associated with more severe respiratory illness.

Symptoms

Common human coronaviruses usually cause mild to moderate upper-respiratory tract illnesses, like the common cold. These illnesses usually only last for a short amount of time.

Symptoms may include

- Fever
- Cough
- Shortness of breath

Human coronaviruses can sometimes cause lower-respiratory tract illnesses, such as pneumonia or bronchitis.

Transmission

Human coronaviruses most commonly spread from an infected person to others through

- The air by coughing and sneezing
- Close personal contact, such as touching or shaking hands
- Touching an object or surface with the virus on it, then touching your mouth, nose, or eyes before washing your hands
- Rarely, fecal contamination

Prevention

The following can help prevent the spread of coronaviruses and protect yourself from becoming infected.

- Wash your hands often with soap and water for at least 20 seconds
- Avoid touching your eyes, nose, or mouth with unwashed hands
- Avoid close contact with people who are sick

There are currently no vaccines to protect against human coronavirus infection

Treatment

There are no specific treatments. To help relieve symptoms

- Take pain and fever medications
- Drink plenty of liquids
- Stay home and rest

Source: Illinois Department of Public Health, About COVID-19, <http://dph.illinois.gov/topics-services/diseases-and-conditions/diseases-a-z-list/coronavirus/symptoms-treatment#tab-0-0>

Previous Occurrences

The CDC has documented the following past pandemics:

1918 Influenza Pandemic:

Considered the most severe pandemic in recent history, this pandemic was caused by an H1N1 virus. During 1918-1919, estimates are that approximately one-third of the world's population became infected with this virus. The number of deaths was estimated at 50 million worldwide, with approximately 675,000 fatalities in the United States. Mortality was high in people younger than 5 years of age, 20-40 years old, and 65 years and older. The high mortality in healthy people, including those in the 20-40 age group was a unique feature of this pandemic.

At the time of this pandemic, there was no vaccine to protect against influenza infection and no antibiotics to treat secondary bacterial infections. Control efforts included isolation, quarantine, good personal hygiene, use of disinfectants, and limitations of public gatherings.



Photo: Centers for Disease Control and Prevention, National Center for Immunization and Respiratory Diseases (NCIRD)

1957-58 Asian Flu Pandemic:

In February 1957, a new influenza A (H2N2) virus emerged in East Asia, triggering a pandemic ("Asian Flu"). It was first reported in Singapore in

February 1957, Hong Kong in April 1957, and in coastal cities in the United States in summer 1957. The estimated number of deaths was 1.1 million worldwide and 116,000 in the United States.

1968 Pandemic (H3N2 Virus):

The 1968 pandemic was caused by an influenza A (H3N2) virus. It was first noted in the United States in September 1968. The estimated number of deaths was 1 million worldwide and about 100,000 in the United States. Most excess deaths were in people 65 years and older. H3N2 viruses circulating today are descendants of the H3N2 virus that emerged in 1968.

2009 H1N1 Pandemic (H1N1pdm09 virus):

In the spring of 2009, a novel influenza A (H1N1) virus emerged. It was detected first in the United States and spread quickly across the United States and the world. This new H1N1 virus contained a unique combination of influenza genes not previously identified in animals or people. This virus was designated as influenza A (H1N1)pdm09 virus. The CDC estimates are that from April 12, 2009 to April 10, 2010, there were 60.8 million cases, 274,304 hospitalizations, and 12,469 deaths in the United States due to the (H1N1)pdm09 virus. The 2009 H1N1 Pandemic: Summary Highlights, April 2009-April 2010 summarizes the United States' complex, multi-faceted and long-term response to the pandemic.⁵ The (H1N1)pdm09 virus continues to circulate as a seasonal flu virus, and cause illness, hospitalization, and deaths worldwide every year.

2019-2020 COVID-19 Pandemic:

COVID-19 has spread throughout the world, including the United States, since it was detected and was declared a public health emergency for the U.S. on January 31, 2020 to aid the nation's healthcare community in responding to the threat. The WHO announced March 11, 2020 that the spread of coronavirus qualifies as a global pandemic.

At the time of this writing, the Illinois Department of Public Health, local health departments, and public health partners throughout Illinois, and federal agencies, including the Centers for Disease Control and Prevention, are responding to an outbreak of respiratory illness caused by a novel coronavirus called COVID-19 that was first identified in December 2019 during an outbreak in Wuhan, China.

Federal Disaster Declaration and Federal Emergency Declaration:

On March 13, 2020, President Trump declared a nationwide emergency pursuant to Sec. 501(b) of Stafford Act to avoid governors needing to request

individual emergency declarations. All 50 states, the District of Columbia, and 4 territories have been approved for major disaster declarations to assist with additional needs identified under the nationwide emergency declaration for COVID-19. Additionally, 32 tribes are working directly with FEMA under the emergency declaration.

Future Probability of Pandemic Events

Pandemics remain rare and uncertain events. WHO experts characterize the occurrence of influenza pandemics as unpredictable.

Evidence now suggests that the likelihood of pandemics has increased over the past century as a result of increased global travel and integration, urbanization, changes in land use, and greater exploitation of the natural environment.⁵⁵

Impact

The following points about impacts of a pandemic event are excerpts from the publication *Disease Control Priorities: Improving Health and Reducing Poverty*:⁵⁶

- Pandemics can cause significant, widespread increases in morbidity and mortality.
- Pandemics can cause economic damage through multiple channels, including short-term fiscal shocks and longer-term negative shocks to economic growth.
- Individual behavioral changes, such as fear-induced aversion to workplaces and other public gathering places, are a primary cause of negative shocks to economic growth during pandemics.
- Some pandemic mitigation measures can cause significant social and economic disruption.

Significant Changes in Development since the HMP Update 2015 and Possible Impacts to Vulnerability to Extreme Heat

Since the HMP Update 2015, no significant changes in development occurred in any of the participating jurisdictions to apparently impact the vulnerability of a participating jurisdiction to a pandemic.

Overall Summary of Vulnerability

The following points about pandemic risk are excerpts from the publication *Disease Control Priorities: Improving Health and Reducing Poverty*:⁵⁷

- Pandemics have occurred throughout history and appear to be increasing in frequency, particularly because of the increasing emergence of viral disease from animals.
- Pandemic risk is driven by the combined effects of spark risk (where a pandemic is likely to arise) and spread risk (how likely it is to diffuse broadly through human populations).
- Probabilistic modeling and analytical tools such as exceedance probability (EP) curves are valuable for assessing pandemic risk and estimating the potential burden of pandemics.
- Influenza is the most likely pathogen to cause a severe pandemic. EP analysis indicates that in any given year, a one percent probability exists of an influenza pandemic that causes nearly six million pneumonia and influenza deaths or more globally.

Hazardous Materials Storage/Transport Release or Spill

Hazardous materials hazards are technological (meaning non-natural hazards created or influenced by humans) events that involve large-scale accidental or intentional releases of chemical, biological, or radiological (nuclear) materials. Under this broad hazards category, hazardous materials storage or transport release or spill incidents are a threat to public health and the environment.

The term “hazardous materials” refers generally to hazardous substances, petroleum, natural gas, synthetic gas, and acutely toxic chemicals. The term “Extremely Hazardous Substance” (EHS) is used in Title III of the Superfund Amendments and Reauthorization Act of 1986 to refer to those chemicals that could cause serious health effects following short-term exposure from accidental releases.⁵⁸

Location

Hazardous materials can pose a threat where they are manufactured, stored, transported, or used. Hazardous materials are used in most manufacturing operations, and by retailers, service industries, and homeowners.

Extent

Hazardous materials spills or release events involve incidents at fixed-site facilities that manufacture, store, process, or otherwise handle hazardous materials or along transportation routes such as major highways, railways, and pipelines.

The severity of a hazardous materials release depends upon the type of material released, the amount of the release, and the proximity to populations or sensitive areas like wetlands or waterways and environmental factors such as wind velocity and direction and sunlight. The release of materials can lead to injuries or evacuation of thousands of nearby residents.⁵⁹

Some hazardous materials are harmful to inhale, ingest or touch. Other hazardous materials can cause a secondary hazard such as a fire or explosion. In some cases, there is a high cost associated with the clean-up of contaminated soil and groundwater.

Fixed facility storage leak or spill incidents:

Hazardous materials storage leak or spill incidents at fixed sites may be contained to the facility itself because of strict regulations and precautionary measures in place in case of such an event. For these incident types, the immediate concern is the safety of individuals at the site of the accident, followed by the safety of emergency responders and anyone near the incident site.

As of 2019, 132 facilities in the Plan Area have reported storing at least one “Extremely Hazardous Substance” (EHS) on site. The highest numbers of EHS facilities are in the City of Champaign (approximately 45 EHS facilities) followed by the Village of Rantoul (approximately 15 EHS facilities), and the City of Urbana (approximately 13 EHS facilities).⁶⁰

Transportation incidents:

Based on data from the *2007 Commodity Flow Survey (CFS)*, nationwide 53.9 percent of hazardous materials was moved by trucks, 28.2 percent by pipelines, 6.7 percent by water, and 5.8 percent by rail.⁶¹ Railroads are increasingly used for goods movement as long-distance rail transportation is cheaper and considered as reliable. Table 4-44 is a summary of available CFS data to indicate how hazardous materials were shipped.

Table 4-44. U.S. Hazardous Materials Shipment Characteristics by Hazard Class

Class	Hazardous Materials	Tons (Thousands)	Percentage
1	Explosives	3,047	0.1
2	Gases	250,506	11.2
3	Flammable Liquids	1,752,814	78.6
4	Flammable Solids	20,408	0.9
5	Oxidizers and Organic Peroxides	14,959	0.7
6	Toxic Materials and Infectious Substances	11,270	0.5
7	Radioactive Materials	515	0.0
8	Corrosive Materials	114,441	5.1
9	Miscellaneous Dangerous Goods	63,173	2.8
Total		2,231,133	100

Source: CFS

Highlights of CFS nationwide data from 2007:

- Approximately 79% of hazardous materials are classified as Class 3: Flammable Liquids (e.g., gasoline); and
- Trucks are the most common carriers for hazardous materials, with approximately 54% of hazardous material carried by trucks.

Transport of Hazardous Materials in Plan Area:

Data from the *Hazardous Materials and Commodity Flow Study for Champaign County (HMCFS)* is provided in the following section.⁶²

Trucks:

Truck traffic volume on Interstate Highways in the Plan Area are approximately 20 to 30 percent of the total daily traffic volumes. On US Routes in the Plan Area, the range of truck traffic volume is between 4 and 9 percent of total daily traffic volumes.

Railroads:

Five railroad companies own most of the railroad tracks in the Plan Area: Canadian National, Union Pacific, Penn Central, CSX Transportation, and Norfolk Southern. Canadian National Railroad Company (CN) is owner of the longest stretch of railroad tracks in the Plan Area, followed by Norfolk Southern (NS), and Union Pacific (UP).

CN provided data regarding percentages of the type of hazardous materials transported in 2013: 48% was 'Class 3: Flammable and Combustible Liquids', followed by 19% of 'Class 2: Gases', and 17% of 'Class 8: Corrosive.'

UP provided data regarding percentages of the type of hazardous materials transported in 2013: 37% was 'Class 3: Flammable and Combustible Liquids', followed by 26% of 'Class 2: Gases' and 23% of 'Class 8: Corrosive.'

Table 4-45 features the descriptions of the types of hazardous material commodities shipped by NS via rail through the Plan Area in 2013.

Table 4-45. Types of Hazardous Material Commodities Shipped via Rail

Hazardous Materials Shipping Name	
<i>Elevated Temperature Liquid</i>	<i>Flammable Liquid</i>
Alcohols	Methyl Methacrylate
Petroleum Gases	Propane
Flammable Liquid	Isobutene
Phosphoric Acid Solution	Pentanes
Solid Hazardous Waste	Heptane
Vinyl Acetate, Stabilized	Ferric Chloride
Petroleum Crude Oil	Nitric Acid
Butane	Gasoline
Butyl Acrylates	Environmentally Hazardous
Hydrogen Peroxide	

Source: HMCFS

Pipeline:

Hazardous material transported through pipelines are predominantly used for energy generation. The most common hazardous materials transported through pipelines include crude oil, natural gas, and liquefied natural gas. Information available on the quantity of hazardous materials transported through pipelines was not available.

Previous Occurrences

During the period October 21, 1987 through March 2, 2020, a total of 805 minor hazardous materials release or spill incidents are on record as occurring in the Plan Area.⁶³

Figure 4-38 is an overview of hazardous material release or spill incidents reported in the Plan Area during this period.

Approximately two-thirds of the 805 reported minor hazardous materials release incidents in the Plan Area took place at a fixed facility. Nearly 48% of these minor spill or release incidents involved underground storage.

Over half (52%) of reported transportation hazardous material spills or leaks incidents in the Plan Area occurred on a roadway as opposed to railway, or other means of transport.

Future Probability of Hazardous Materials Storage/Transport Release or Spill Events

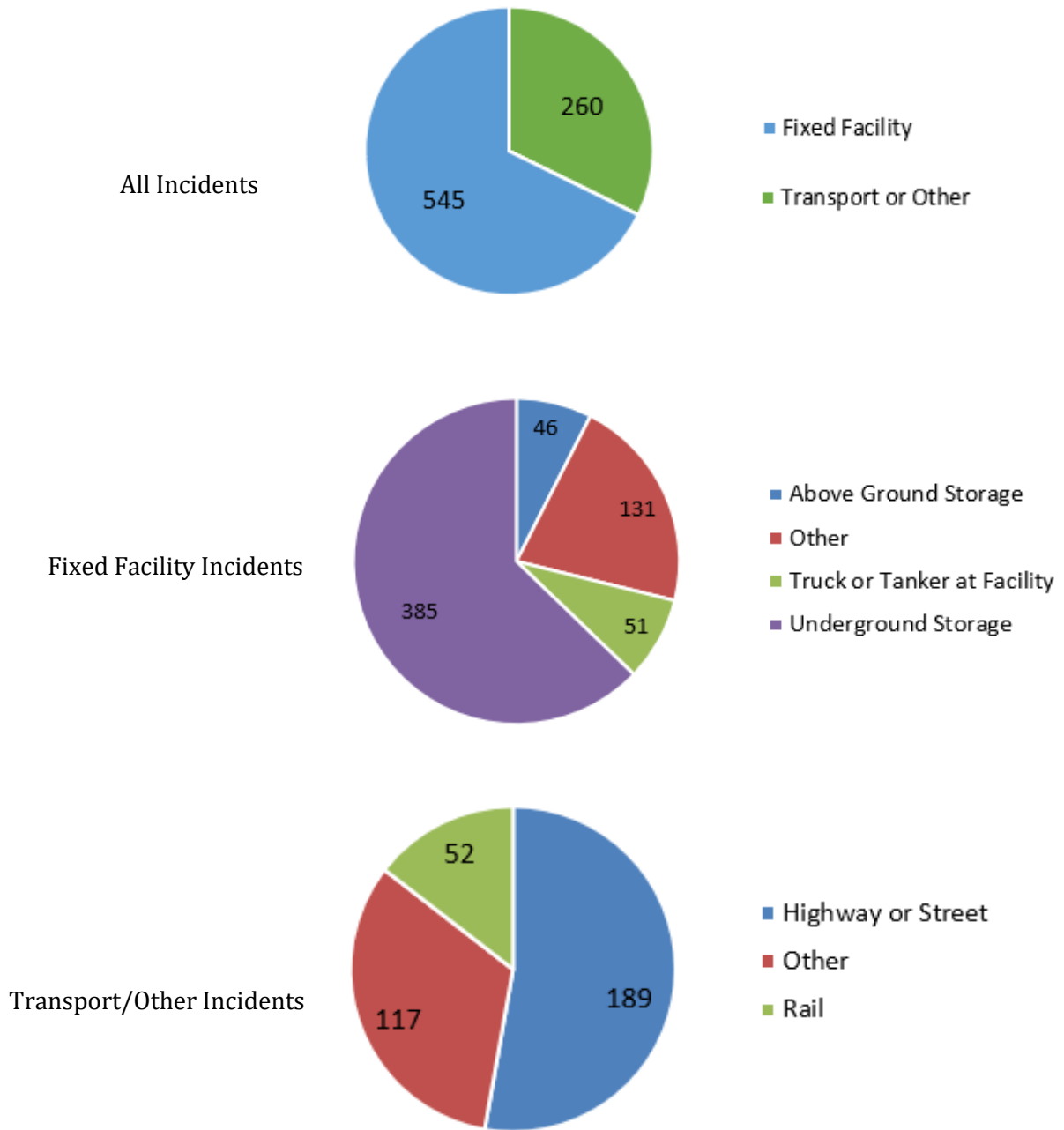
The probability of future occurrences of a hazardous materials incident is not determined. Hazardous materials incidents may often be attributed to human error in the sealing of containers, failure to thoroughly inspect equipment, or vehicular accidents. These factors are nearly impossible to predict.

Impact

The impact of each hazardous material storage or transport release or spill incident and resulting response is variable and based on factors that include: quantity and specific characteristics of the material; the conditions of the release; weather conditions in the area of the release; and area/population centers involved.

The effects of a hazardous materials spill or release event could be limited to the incident site or quickly spread by wind or water for many miles.

Figure 4-38. Hazardous Material Release and Spill Incidents



Source: Champaign County EMA

Significant Changes in Development since the HMP Update 2015 and Possible Impacts to Vulnerability to a Hazardous Materials Release or Spill Incident

Since the HMP Update 2015, no significant changes in development occurred in any of the participating jurisdictions to apparently impact the vulnerability of a participating jurisdiction to a hazardous materials release or spill incident.

Overall Summary of Vulnerability

All Plan Areas are susceptible to hazardous materials release or spill incidents. Those areas in closer proximity to roadway network (Interstate 57, Interstate 74, and Interstate 72 and several other major US and State routes including US Route 45, US Route 150, IL Route 10, IL Route 47, and IL Route 130) or in closer proximity to railroad tracks may be more at risk to be impacted by an hazardous materials release or spill incident.

Potential Health and Safety Threat

Hazardous material incidents can cause short-term or long-term health concerns and, in some instances, death. The release of certain hazardous materials requires evacuation of residents in close vicinity as a safety precaution.

Potential Economic Impact

Based on the scale and severity of each hazardous materials release incident, local law enforcement personnel, firefighters, hazardous materials response teams, and emergency management personnel must respond to try to stabilize the release and protect the public health and safety of citizens. The types of potential economic impacts that can result from a hazardous material incident in the Plan Area include:

- Cost of emergency response and cleanup of site;
- Cost of remediation in rare cases;
- Disruption of transportation routes; and
- Cost of repairs or replacement of property and infrastructure.

Active Shooter

An “active shooter” is an individual engaged in killing or attempting to kill people in a confined space or a populated area. An active shooter incident typically involves the use of firearms, a bomb, or other sort of weapon that can injure, kill, and otherwise bring harm and terror to individuals threatened by the event.

Location

Active shooter incidents typically occur in public spaces where many people gather. Plan Area public space locations are susceptible to such an incident.

Extent

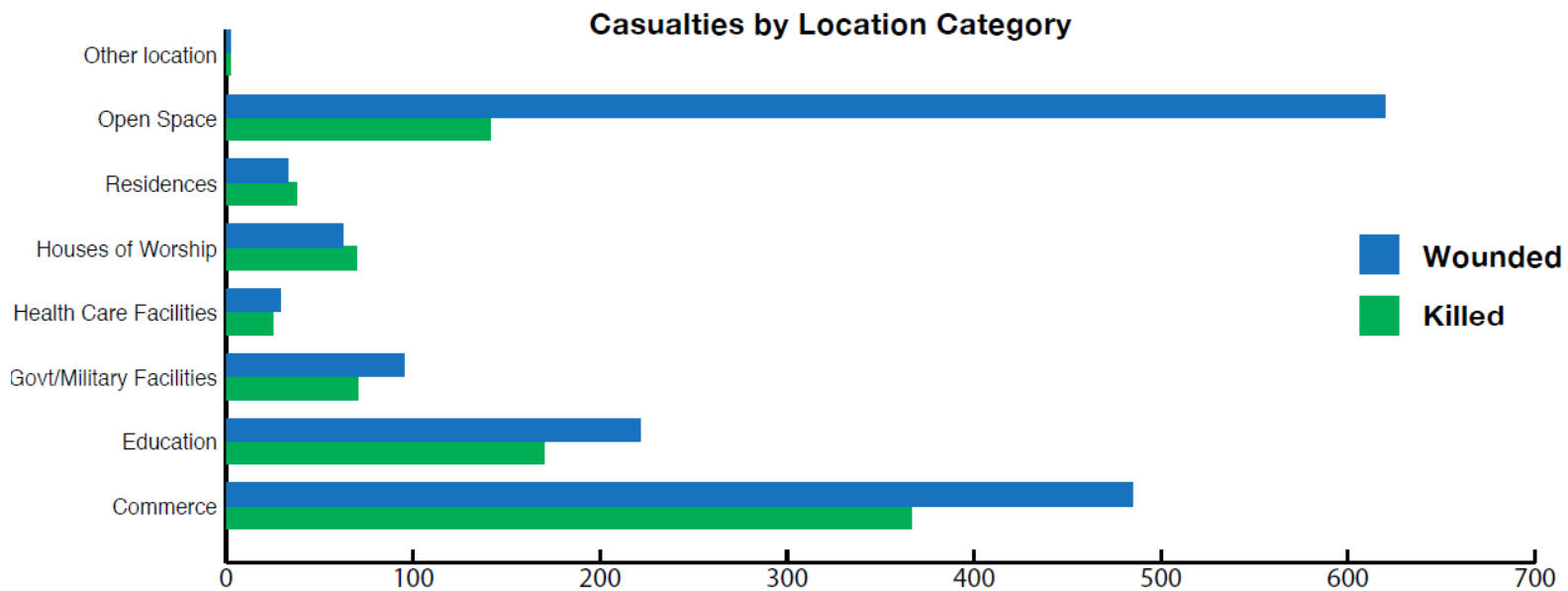
The foremost consequence of an active shooter event is injury or death resulting from the actions of the perpetrator. Costly property damage is another result of such an attack. In addition to these initial impacts, active shooter events instill fear and grief in a community. These feelings persist long after the event takes place, and are devastating to individuals, families, and communities.

In its report *Active Shooter Incidents in the United States: 2000-2018*, the Federal Bureau of Investigation reviewed statistical data regarding 277 active shooter incidents involving 282 shooters occurring in the U.S. during that time period. In those incidents, there were 2,430 casualties (884 killed and 1,45 wounded). Law enforcement personnel made up 104 of the total casualties and 2,326 of the casualties were civilians.⁶⁴

Highlights of the FBI report follow:

- Shooters are most likely to be apprehended by law enforcement. Shooter suicide comes in a close second.
- Most incidents happen in commerce areas, followed by educational settings.
- Only four incidents out of 277 had multiple shooters.

Figure 4-39. Active Shooter Casualties by Location (2000-2018)



Other: Wounded-1 Killed-1. Open Space: Wounded-618, Killed-140. Residences: Wounded-37, Killed-40. Houses of Worship: Wounded-60, Killed-71. Health Care Facilities: Wounded-30, Killed-25. Govt/Military Facilities: Wounded-94, Killed-71. Education: Wounded-220, Killed-171. Commerce: Wounded-486, Killed-365.

Source: FBI

Previous Occurrences

There have been no active shooter events in the Plan Area.

The nearest active shooter event occurred in 2008 at Northern Illinois University in DeKalb, Illinois, 120 miles north of the Plan Area.

In the U.S., the deadliest active shooter event to date took place on October 2, 2017, with the target as attendees at the Route 91 Harvest country music festival near the Mandalay Bay Resort and Casino on the Las Vegas Strip. The shooter killed 59 civilians and injured 500 others before committing suicide.⁶⁵

Future Probability of Active Threat/Shooter Events

The active shooter incident hazard is much more difficult to predict than natural hazards. An active shooter event can happen anywhere and anytime.

Impact

Impacts to entities and persons in the Plan Area have included:

- Continued increasing awareness of the active shooter threat at public locations, schools, and public events; and

- Significant costs to implement added security and safety measures at vulnerable locations.

Significant Changes in Development since the HMP Update 2015 and Possible Impacts to Vulnerability to an Active Shooter

Since the HMP Update 2015, no significant changes in development occurred in any of the participating jurisdictions to apparently impact the vulnerability of a participating jurisdiction to an active shooter.

Overall Summary of Vulnerability

FEMA warns that “recent national tragedies remind us that the risk is real.”⁶⁶

Table 4-46 contains information from the FBI report about the 12 types of locations where the public was most at risk during an active shooter incident.⁶⁷

Table 4-46. Locations Where Public Was Most at Risk During Active Shooter Incident

Location Type	Number of Active Shooter Incidents Occurring between 2000-2018
Businesses Open to Pedestrian Traffic	74
Schools (Pre-K-12)	42
Open Spaces	37
Businesses Closed to Pedestrian Traffic	37
Government Properties	19
Institutes of Higher Education	15
Health Care Facilities	12
Residences	12
Houses of Worship	11
Malls	10
Military Properties	7
Other Location	1

Source: FBI

Potential Health and Safety Threat

Active shooter scenarios lead to injuries and often death. On top of physical injuries, victims and witnesses are left with emotional damage.

Potential Damage to Property

Active shooter events cause damage to property in the form of shattered windows and doors, compromised structural components, and building contents as a result of stray bullets.

Potential Economic Impact

The types of potential economic impacts that can result from an active shooter scenario in the Plan Area are described below:

- Cost of emergency response and cleanup of the scene;
- Cost of repairs to the building, or complete demolition and rebuilding as may be needed; and
- Medical bills and/or funeral costs for victims or victims' families.

Cyberattack

A cyberattack is a malicious attempt to access or damage a computer system. A cyberattack is an assault using one or more computers against a single or multiple computers or networks. A cyberattack can disable computers, steal data, or use a breached computer as a launch point for other attacks. Cybercriminals use a variety of methods to launch a cyberattack, including malware, phishing, ransomware, or denial of service.⁶⁸

Location

A cyberattack can harm computer systems or computer networks at any location.

Extent

Cyber infrastructure includes electronic information and communications systems, and the information contained in those systems such as sensitive security information or personal data.⁶⁹

A cyberattack can compromise the confidentiality, integrity, or availability of data and systems or affect physical system components.

A cyberattack can shut down an entire facility and of impacting ability of first responders and emergency operations center personnel.

Excerpt from “Cyber-Attacks: Trends, Patterns and Security Countermeasures,” containing a review of cyberattacks reported world-wide between 2012-2015.⁷⁰

... The most common types of attacks granted unauthorized access to information comprising of: full names, birth dates, personal IDs, full addresses, medical records, phone numbers, financial data, e-mail addresses, credentials (usernames, passwords), and insurance information.

The study revealed interesting results, trends and patterns. First of all, the results outline a relative correlation between the business sector and the types of attacks; ... cyber espionage is most likely aiming Government, Media, and Law Enforcement sectors. The results for the last three years outline a relatively strong correlation between the types of attacks and industries The correlation shows that while the public sector (government, law enforcement, education, etc.) is most likely the target of cyber espionage, cyber war and hacktivism techniques, cyber-crime targets all business sectors.

.. The results also show that attacks are not totally due to outside hackers but split between them and company-related factors (partners, current or former employees, management, etc.).

.. it was noted that there is a continuous increase in the mobile attacks, which the authors believe to be natural considering the spread of smartphones, which may prove to be an easy target due to almost permanent connection to the internet, use of a series of social network and other applications, as well as the facts that they are barely switched off and contain/retain a lot of personal information (from name, phone number and location to the most recent networks the device was connected to, etc.

Previous Occurrences

The Information Technology (IT) Departments of several HMP Plan participating municipalities and institutions are tasked to be vigilant in deterring cyberattacks, utilizing currently available cyber security measures.

In the Plan Area, cyberattacks of government or institution computer network systems are attempted and blocked on a daily or weekly basis.

As one example, a recent cyberattack incident at the Champaign County Regional Planning Commission at Champaign County facilities occurred in January 2020. The disruption consisted of a computer virus outbreak that resulted in a temporary break in computer access.

Future Probability of Cyberattack Event

The future probability of cyberattacks that succeed is not known.

Impact

The impacts of a cyberattack can be detrimental and harm individuals, businesses, industries, and government institutions.

As noted above, cyber infrastructure includes electronic information and communications systems and the information contained in those systems such as sensitive security information or personal data, such as unauthorized access to information comprising of: full names, birth dates, personal IDs, full addresses, medical records, phone numbers, financial data, e-mail addresses, credentials (usernames, passwords), and insurance information.

A cyberattack can compromise the confidentiality, integrity, or availability of data and systems or affect physical system components.

A cyberattack can shut down an entire facility and of impacting ability of first responders and emergency operations center personnel.

Significant Changes in Development since the HMP Update 2015 and Possible Impacts to Vulnerability to a Cyberattack

Since the HMP Update 2015, no known significant changes in development occurred in any of the participating jurisdictions to apparently impact the vulnerability of a participating jurisdiction to a cyberattack.

Overall Summary of Vulnerability

Plan Area essential and emergency services, including most critical infrastructures, rely on the uninterrupted use of the Internet and communications systems, data, monitoring, and control systems that comprise the cyber infrastructure. A cyberattack that succeeds could be debilitating to these and other systems.

Chapter 4 Notes

1. The Department of Homeland Security Risk Lexicon, 2010 Edition, <http://www.dhs.gov/xlibrary/assets/dhs-risk-lexicon-2010.pdf>, contains definitions for the following terms:
 ‘hazard’ is defined as a natural or man-made source of cause of harm or difficulty.
 Annotation: A hazard differs from a threat in that a threat is directed at an entity, asset, system, network, or geographic area, while a hazard is not directed.
 ‘natural hazard’ is a source of harm or difficulty created by a meteorological, environmental, or geological phenomenon or combination of phenomena.
 ‘threat’ is defined as a natural or man-made occurrence, individual, entity, or action that has or indicates the potential to harm life, information, operations, the environment, and/or property.
2. The 2018 Illinois Natural Hazard Mitigation Plan (INHMP) dated October 2018, https://www2.illinois.gov/iema/Mitigation/Documents/Plan_IllMitigationPlan.pdf provides ratings of Low, Medium, High, and Severe for selected natural hazards potentially impacting Champaign County. The Plan Area includes the geographic area of two villages partially outside of Champaign County. The Village of Ivesdale is situated in Champaign County with a portion of its geographic area within Piatt County; and the Village of Allerton is situated partially in Champaign County with most of its geographic area within Vermilion County.
3. The Robert T. Stafford Disaster Relief and Emergency Assistance Act, as amended, provides for Emergency Declarations and Major Disaster Declarations. FEMA Fact Sheet ‘Disaster Declaration Process’ contains information about assistance available from a Major Disaster Declaration and from an Emergency Declaration.
https://www.fema.gov/pdf/media/factsheets/dad_disaster_declaration.pdf.
4. Climate Atlas of Illinois, Stanley A. Changnon, James R. Angel, Kenneth E. Kunkel, and Christopher M.B. Lehmann, Illinois State Water Survey, March 2004.
5. From NOAA National Centers for Environmental Information, Storm Data FAQ Page, Why is there no lightning strike information?, <https://www.ncdc.noaa.gov/stormevents/faq.jsp>.
6. Illinois State Water Survey (ISWS) Contract Report 2019-05, Frequency Distributions of Heavy Precipitation in Illinois Updated Bulletin 70, James Angel and Momcilo Markus, March 2019, p. 5. <https://www.ideals.illinois.edu/handle/2142/103172>.
7. Angel, J., C. Swanston, B.M. Boustead, K.C. Conlon, K.R. Hall, J.L. Jorns, K.E. Kunkel, M.C. Lemos, B. Lofgren, T.A. Ontl, J. Posey, K. Stone, G. Takle, and D. Todey. Midwest. In Impacts, Risks, and Adaptation in the United States: Fourth National Climate Assessment, Volume II. (DOI:10.7930/NCA4.2018.CH21) (2018). <https://nca2018.globalchange.gov/chapter/21/>.
8. Excerpt of a quote from Chris Miller, 2018 Illinois Natural Hazard Mitigation Plan (INHMP) dated October, 2018, p. III-7,
https://www2.illinois.gov/iema/Mitigation/Documents/Plan_IllMitigationPlan.pdf.
9. The 2018 Illinois Natural Hazard Mitigation Plan (INHMP) dated October 2018, p. III-39, https://www2.illinois.gov/iema/Mitigation/Documents/Plan_IllMitigationPlan.pdf.
10. Angel, J., C. Swanston, B.M. Boustead, K.C. Conlon, K.R. Hall, J.L. Jorns, K.E. Kunkel, M.C. Lemos, B. Lofgren, T.A. Ontl, J. Posey, K. Stone, G. Takle, and D. Todey. Midwest. In Impacts, Risks, and Adaptation in the United States: Fourth National Climate Assessment, Volume II. (DOI:10.7930/NCA4.2018.CH21) (2018). <https://nca2018.globalchange.gov/chapter/21/>.

Chapter 4 Notes (continued)

11. Ibid.
12. From NOAA National Centers for Environmental Information, Storm Data FAQ Page, How are Tornados Counted?, <https://www.ncdc.noaa.gov/stormevents/faq.jsp>.
13. The 2018 Illinois Natural Hazard Mitigation Plan (INHMP) dated October 2018, p. III-36, https://www2.illinois.gov/iema/Mitigation/Documents/Plan_IllMitigationPlan.pdf.
14. Ibid.
15. 'Cold Hard Facts about Winter Storms, Illinois State Climatologist Office, Illinois State Water Survey, Prairie Research Institute, University of Illinois at Champaign-Urbana, <https://www.isws.illinois.edu/statecli/winter/coldhard.htm>.
16. The 2018 Illinois Natural Hazard Mitigation Plan (INHMP) dated October 2018, p. III-107, https://www2.illinois.gov/iema/Mitigation/Documents/Plan_IllMitigationPlan.pdf.
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5 Hazards Mitigation Strategy

Introduction

Planning Team members identified the following broad goal statement as a guideline regarding the HMP Update long-term intent:

Protect life and properties within the Plan Area from:

- the natural hazards of a severe storm, severe winter storm, tornado, flood, extreme heat, drought, earthquake, or pandemic;
- the human-caused hazard of a hazardous materials storage or transport release or spill; and
- the threat or human-caused incident of a cyberattack.

Planning Team members reached consensus on four goals to describe the long-term ideals and intentions of the HMP Update:

- Goal 1. Minimize avoidable deaths and injuries due to the specified hazards or threat.
- Goal 2. Protect existing and new infrastructure from impacts of the specified hazards or threat.
- Goal 3. Include the specified hazards or threat mitigation in local government plans and regulations.
- Goal 4. Coordinate the specified hazards or threat mitigation efforts of participating jurisdictions.

Planning Team members identified objectives to provide specific implementation steps for achieving each goal.

As a part of the HMP update in 2015, in keeping with *FEMA FY15 Hazard Mitigation Assistance Guidance*, the Planning Team expanded the HMP Goals and Objectives to acknowledge and incorporate community resilience and climate change considerations.

As a part of the HMP update in 2020, the Planning Team expanded the HMP Goals and Objectives to be inclusive of the specified hazards and threat addressed in the HMP update in 2020.

Plan Goals and Objectives

- Goal 1 Minimize avoidable injuries and deaths due to natural and human-caused hazards or threats, including adverse effects associated with climate change.

- Objective 1-a Evaluate and strengthen the communication and mobility of emergency services.
- Objective 1-b Conduct a needs assessment to identify vulnerability of critical facilities to potential impacts of natural or human-caused hazards or threats or potential impacts associated with climate change and identify a strategy to address identified vulnerabilities.
- Objective 1-c Develop an ongoing strategy to educate the population regarding methods of protecting self and property from adverse impacts of natural or human-caused hazards or threats including impacts associated with climate change.
- Objective 1-d Establish and maintain adequate warning and notification systems for natural or human-caused hazards or threats.
- Objective 1-e Encourage the provision of storm shelters, warming centers, and cooling centers for vulnerable populations.

Goal 2 Reduce or eliminate potential losses by encouraging local policies that break the cycle of damage, reconstruction, and repeated damage of infrastructure, once damaged or destroyed from impacts of natural or human-caused hazards or threats.

- Objective 2-a Monitor infrastructure conditions for needed maintenance or improvements.

Goal 3 Improve the capability of participant populations to rapidly recover from disruption caused by natural or human-caused hazards or threats and adverse impacts associated with climate change.

- Objective 3-a Update and improve the Champaign County Multi-Jurisdictional Hazard Mitigation Plan information base.
- Objective 3-b Improve the capability to rapidly recover from natural, human-caused hazards or threats.
- Objective 3-c Develop a strategy to ensure that water is available in the event of a drought.

Goal 4 Encourage interagency cooperation to foster community and regional resiliency with regard to planning to mitigate potential adverse impacts of natural or human-caused hazards or threats, and impacts associated with climate change.

Objective 4-a Improve communication regarding ongoing efforts of participating jurisdictions to implement mitigation actions.

Objective 4-b Update the Champaign County Multi-Jurisdictional Hazard Mitigation Plan every five years.

Potential Impacts of Hazard Mitigation Actions

Comprehensive Range of Specific Mitigation Actions for Identified Hazards

Planning Team members reviewed a comprehensive range of specific mitigation actions for each hazard and jurisdiction by reviewing groups of mitigation actions suggested by FEMA:

- Preventive
- Property protection
- Natural resource protection
- Structural projects
- Public education and awareness

Preventive Measures

FEMA recommends preventive mitigation actions be considered as administrative or regulatory actions or processes to influence the way land and buildings are developed and built. Examples of preventive mitigation actions follow:

Multi-Hazard

- Adopt the latest International Building Codes.
- Conduct tree trimming program for street trees so that they do not become safety hazards.

Severe Storms

- Adopt higher wind resistant building codes.
- Provide subsidies for wind resistant construction.
- Provide subsidies for construction of safe rooms in existing buildings.
- Require that all newly constructed buildings have at least one safe room.
- Modify building code to require stronger tie-down and anchoring methods for mobile homes.
- Require underground utilities for new construction.

Floods

- Adopt development regulations which limit building in the 100-year flood plain and in areas prone to ponding.
- Acquire undeveloped land within the flood plain.
- Acquire development rights within the flood plain.
- Obtain updated floodplain map.
- Develop drainage system maintenance standards.
- Participate in Community Rating System for reduced flood insurance premiums through NFIP.

Severe Winter Storms

- Require underground utilities for new construction.
- Use tree or vegetation plantings along roadways as a natural barrier to snow drifts.
- Apply anti-icing or de-icing substance to road surfaces prior to imminent ice storm.

Drought

- Prepare and implement drought contingency plans to consider actions and needs during drought
- events, including a plan to ensure that rural residents who rely on shallow wells will have
- enough water during periods of drought.
- Map areas with limited water supply and discourage development there.

Extreme Heat

- Distribute fans.
- Create a program to repair fans and air conditioners.
- Encourage voluntary neighbor check programs.

Earthquakes

- Adopt up-to-date seismic resistant building codes.
- Incorporate structural and non-structural seismic strengthening actions into on-going capital improvement planning efforts.

Property Protection

FEMA describes property protection mitigation actions that involve the modification of existing buildings or infrastructure to protect them from a hazard or removal from

the hazard area. Examples of property protection mitigation actions considered by HMP participating jurisdictions include:

Multi-Hazard

- Structural retrofits
- Storm shutters
- Shatter-resistant glass

Floods

- Acquisition
- Elevation
- Relocation

Natural Resource Protection

Natural resource protection mitigation actions are those that, in addition to minimizing hazard losses, also preserve or restore the functions of natural systems. Examples include:

Floods

- Sediment and erosion control
- Stream corridor restoration
- Watershed management
- Forest and vegetation management
- Wetland restoration and preservation

Emergency Services

Emergency services mitigation actions, as described by FEMA, are actions that protect people and property during and immediately after a disaster or hazard event. HMP participating jurisdictions considered the following ongoing or potential emergency service mitigation actions:

Multi-Hazard

- Install outdoor warning sirens
- Use NOAA all-hazard radios
- Voluntary text messaging alert systems

Structural Control Projects

FEMA defines a mitigation action category of 'structural control projects' as actions that involve the construction of structures to reduce the impact of a hazard. HMP participating jurisdictions considered the following as ongoing or potential structural control projects:

Multi-Hazard

- Install emergency back-up generators in critical facilities

Floods

- Storm sewer system improvements
- Improvements to bridges, culverts, and roads in flood-prone areas

Public Education and Awareness

FEMA recommends public education and awareness mitigation actions. Public education and awareness mitigation actions inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them.

Multi-Hazard

- Outreach programs
- Hazard information centers
- School-age and adult education programs

Floods

- Disclose real estate flood hazard information

Review and Prioritization of Potential Mitigation Actions

For review purposes, a spreadsheet was developed for each participating jurisdiction to list all known ongoing natural hazard mitigation actions and proposed natural hazard mitigation actions, categorized into the six FEMA categories, noted in the above section. Planning team members and project staff indicated whether each mitigation action listed addressed the effects of natural hazards on new buildings and infrastructure, existing buildings, and infrastructure, or both.

Potential Impact to New Buildings and Infrastructure

Planning Team members reviewed specific mitigation actions for each participating jurisdiction that could address the impacts of hazards on *new buildings and infrastructure*. A review of the ongoing and proposed mitigation actions for each participating jurisdiction was undertaken to provide the status of each mitigation action, propose any adjustments to mitigation actions, and to consider whether the following types of mitigation actions could be included:

- Develop and adopt a comprehensive land use plan
- Support or participate in development and implementation of watershed management plan(s)
- Enact subdivision requirement that utilities serving new developments must be underground
- Adopt International Residential Code and International Building Code with most current standards for: wind- and seismic- resistance, maximum snow load, and safe rooms / shelters.
- Prohibit or limit development in 100-Year Floodplain
- On participating jurisdiction website, provide online links to and/or otherwise disseminate available information regarding natural hazard preparedness and mitigation measures, including effective construction standards
- Encourage individual and business use of NOAA All Hazard Radios

Potential Impact to Existing Buildings and Infrastructure

Planning Team members reviewed specific mitigation actions that could address the impacts of hazards on existing buildings and infrastructure for each participating jurisdiction. As applicable and if considered as feasible for each participating jurisdiction, the following or other similar mitigation actions were included on each participating jurisdiction's list of ongoing and proposed mitigation actions:

- Participate in National Flood Insurance Program
- Participate in the Community Rating System Program
- Continue regular maintenance of street trees
- Become a Tree City or a Tree Campus
- Become an NWS StormReady® Community
- Develop a partnership with nonprofit or private agencies to establish or provide shelter or safe room use
- Develop a plan for improvements to protect infrastructure situated within a 100-Year Floodplain (bridges, culverts, or roads)
- On a participating jurisdiction website, provide online links to disseminate available information regarding natural hazard preparedness and mitigation measures, including effective construction standards
- Encourage individual and business use of NOAA All Hazard Radios

Mitigation Actions Preference Survey

During development of the HMP, the *Champaign County Mitigation Measures Preference Survey* was publicized to gather public input about potential hazard mitigation actions. The survey was placed online at the HMP website and copies of the survey were provided to the primary contact of each participating jurisdiction. The primary contact for each participating jurisdiction was encouraged to place a link to the survey on the municipal website and to otherwise publicize the

opportunity to complete the survey. The survey was available online over an eight-week period, November 2008 through mid-January 2009.

The survey contained 40 questions. Participants were asked to indicate whether they “strongly agree,” “agree,” “disagree,” or “strongly disagree” with a series of natural hazard mitigation actions.

Fifty-seven responses to the survey were received. Respondents most preferred implementing public awareness and public education mitigation actions; actions to protect critical facilities; and adopting building codes to require safe rooms and other standards to strengthen structures to be wind resistant.

National Flood Insurance Program Compliance

The FEMA National Flood Insurance Program (NFIP) provides flood insurance to homeowners, renters and businesses in communities which participate in the NFIP. Home and business owners may buy coverage for their buildings and contents, and renters can purchase insurance to cover personal property. NFIP flood insurance is intended for residents and business owners, whether or not they live in a floodplain, as long as their community participates in the program—since approximately 25% of flooding insurance claims occur in areas not readily recognized as being vulnerable to flooding because they are outside mapped flood zones. Some private insurance companies and agents sell and service the policies which are backed by the federal government under FEMA’s NFIP.

Participation in NFIP is based on an agreement between a community and FEMA. NFIP promotes three flood-related programs:

- *Floodplain Identification and Mapping*
NFIP participation requires community adoption of flood maps. Mapping flood hazards creates broad-based awareness of the flood hazards and provides the data needed to administer floodplain management programs and to actuarially rate new construction for flood insurance.
- *Floodplain Management*
To participate in the NFIP, a community is required to adopt and enforce minimum floodplain management regulations that help mitigate the effects of flooding on new and improved structures.
- *Flood Insurance*
Community participation in the NFIP enables property owners to purchase insurance as a protection against flood losses in exchange for State and community floodplain management regulations that reduce future flood damages.

Table 5-1 indicates the 15 local government jurisdictions within the Plan Area that participate in the NFIP. Each participating community has agreed to adopt and enforce sound floodplain management practices to reduce future flood damage.

Table 5-1 lists 10 local government jurisdictions that have opted not to participate in the NFIP. Each community not participating in NFIP have reviewed and considered the level of flood risk as minimal and of insufficient concern overall, based on the history of virtually no incidents of riverine flooding occurring within their corporate limits and based on the FEMA Flood Maps designation for each jurisdiction as entirely or primarily designated Zone X 'Area of Minimal Flood Hazard'. Figure 5-1 depicts that each of the 10 non-participating communities appear to be primarily outside the 1% floodplain.

Table 5-1. Participation in NFIP and Location within Floodplain

Jurisdiction	Does Jurisdiction Participate in NFIP?	Is Jurisdiction Within 100-Year floodplain?	Data from FEMA Community Status Book Report ¹			
			CID ²	Initial FHBM Identified ³	Initial FIRM Identified ⁴	Current Effective Map Date
Unincorporated Champaign County	Yes	Partially	170894#	12/30/77	03/01/84	10/02/13
Village of Allerton	Yes	No	170660#	11/22/74	05/16/12	(NSFHA) ⁵
Village of Broadlands	Yes	No	170025#	08/30/74	10/02/13(M) ⁶	03/09/84
City of Champaign	Yes	Partially	170026#	05/03/74	01/16/81	10/02/13
Village of Fisher	Yes	Partially	170027#	03/22/74	04/03/84	10/02/13
Village of Foosland	Yes	No	170028#	03/29/74	10/02/13	(NSFHA)
Village of Ivesdale	Yes	Partially	170907#	--	06/16/11	10/03/13(M)
Village of Ludlow	Yes	No	170979#	--	10/02/13	(NSFHA)
Village of Mahomet	Yes	Partially	170029#	11/23/73	06/15/83	10/02/13
Village of Ogden	Yes	No	170030#	--	10/02/13	(NSFHA)
Village of Rantoul	Yes	Partially	170031#	04/12/74	10/02/13	10/02/13(M)
Village of Sidney	Yes	Partially	170033#	01/16/74	01/17/86	10/02/13
Village of St. Joseph	Yes	Partially	170032#	11/23/73	11/16/83	10/02/13
Village of Royal	Yes	Partially	170892#	--	10/02/13	10/02/13(M)
City of Urbana	Yes	Partially	170035#	05/03/74	01/16/81	10/02/13
Village of Bondville	No	Partially ⁷	170909#	--	10/02/13	10/02/13
Village of Gifford	No	No	170921# ⁸	Zone X Area of Minimal Flood Hazard		
Village of Homer	No	No	-- ⁹	Zone X Area of Minimal Flood Hazard		
Village of Longview	No	No	-- ¹⁰	Zone X Area of Minimal Flood Hazard		
Village of Pesotum	No	No	-- ¹¹	Zone X Area of Minimal Flood Hazard		
Village of Philo	No	No	-- ¹²	Zone X Area of Minimal Flood Hazard		
Village of Sadorus	No	Partially	-- ¹³	Zone X Area of Minimal Flood Hazard		
Village of Savoy	No	No	-- ¹⁴	Zone X Area of Minimal Flood Hazard		
Village of Thomasboro	No	No	-- ¹⁵	Zone X Area of Minimal Flood Hazard		
Village of Tolono	No	Partially	-- ¹⁶	Zone X Area of Minimal Flood Hazard		

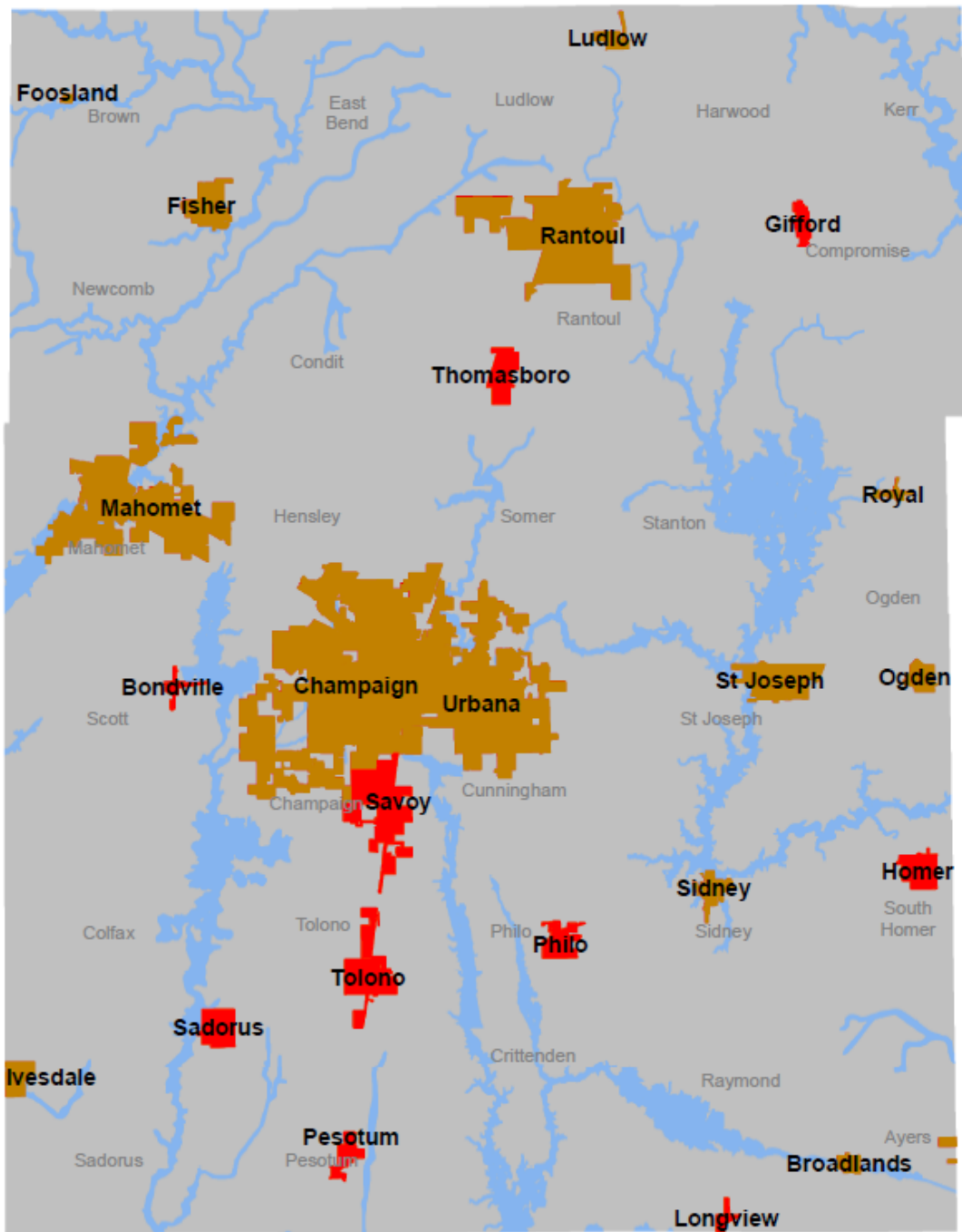
(continued)

Table 5-1 Notes

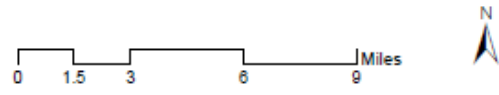
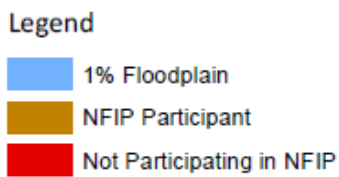
1. FEMA Community Status Book Report, Illinois Communities Participating in the National Flood Program and Communities Not in the National Flood Program as of 11/10/2020, <https://www.fema.gov/cis/IL.html>.
2. CID is 'Community Identification Number', a 6-digit designation identifying each NFIP community. The first 2 numbers are the state code. The next 4 are the FEMA-assigned community number. An alphabetical suffix is added to a community number to identify revisions in the Flood Insurance Rate Map (FIRM) for that community. NFIP Terminology Index dated July 18, 2020, <https://www.fema.gov/flood-insurance/terminology-index>
3. FHBM is 'Flood Hazard Boundary Map', an official map of a community issued by FEMA, where the boundaries of the flood and related areas having special hazards have been designated. NFIP Terminology Index dated July 18, 2020, <https://www.fema.gov/flood-insurance/terminology-index>.
4. FIRM is 'Flood Insurance Rate Map', an official map of a community on which FEMA has delineated the Special Flood Hazard Areas (SFHAs), the Base Flood Elevations (BFEs) and the risk premium zones applicable to the community. NFIP Terminology Index dated July 18, 2020, <https://www.fema.gov/flood-insurance/terminology-index>.
5. NSFHA is 'No Special Flood Hazard Area - All Zone C' from the Legend for the FEMA Community Status Book Report.
6. M is 'No Elevation Determined - All Zone A, C and X' from the Legend for the FEMA Community Status Book Report.
7. The Village of Bondville NFIP Sanction Date is 10/02/14. The Bondville area flood map number is 17019C0425D, effective 10/02/2013.
8. Gifford area flood map number is 17019C0225D, effective 10/02/2013.
9. Homer area flood map number is 17019C0500D, effective 10/02/2013.
10. Longview area flood map number is 17019C0600D, effective 10/02/2013.
11. Sadorus area flood map number is 17019C0550D, effective 10/02/2013.
12. Savoy area flood map numbers are: 17019C0409D, 17019C0425D, 17019C0428D, and 17019C0450D, all effective 10/02/2013.
13. Pesotum area flood map number is 17019C0550D, effective 10/02/2013.
14. Philo area flood map numbers are: 17019C0450D and 17019C0575D, both effective 10/02/2013.
15. Thomasboro area flood map numbers are 17019C0325D and 17019C02005D, both effective 10/02/2013.
16. Tolono area flood map numbers are: 17019C0425D, 17019C0550D, and 17019C0575D, all effective 10/02/2013.

Figure 5-1 is a map to illustrate location of the 100-Year Floodplain and NFIP participation of municipalities within the Plan Area.

Figure 5-1. NFIP Participation within Plan Area



NFIP Participation within Plan Area



Date Map Revised
November 9, 2020

Source: Champaign County GIS Consortium

Figure 5-1 Note

1. The Village of Allerton is a NFIP participant, although not entirely visible in Figure 5.1.

Incorporation of Previous Mitigation Planning Efforts

As of November 1, 2020, the following participating jurisdictions had not identified or otherwise have had an opportunity to incorporate the HMP Update 2015 efforts into other planning mechanisms.

Village of Allerton	Village of Ogden
Village of Bondville	Village of Pesotum
Village of Broadlands	Village of Philo
Village of Fisher	Village of Sadorus
Village of Foosland	Village of Sidney
Village of Gifford	Village of St. Joseph
Village of Homer	Village of Royal
Village of Ivesdale	Village of Thomasboro
Village of Longview	Village of Tolono
Village of Ludlow	

The remaining participating jurisdictions made progress toward incorporating previous mitigation planning efforts as described below:

City of Champaign

- The City is a regional leader in achieving a low FEMA Community Rating System rating, allowing Champaign residents to benefit from the NFIP flood insurance policy premium discounts.
- City staff continue to include acquisition of flood-prone properties as a priority in its annual Capital Development Plan.
- City engineers will utilize updated data regarding expected rainfall amounts for selected storm durations, based on Illinois State Water Survey reports.
- City planners continue to base updates to the Comprehensive Land Use Plan to guide growth and development to suitable locations and to include policies consistent with the HMP Update.
- The City will support planning for year-round emergency shelters.

Village of Mahomet

- Village planners continue to base updates to the Comprehensive Land Use Plan to guide growth and development to suitable locations and to include policies consistent with the HMP Update.
- The Village will participate in a planned needs assessment regarding community shelter options for vulnerable populations.

- The Village plans to update its subdivision ordinance to utilize current data regarding expected rainfall amounts for selected storm durations, based on Illinois State Water Survey reports.

Village of Rantoul

- The Village will participate in a planned feasibility assessment for cooling and warming shelters for vulnerable populations.

Village of Savoy

- The Village recently updated its Comprehensive Land Use Plan to be consistent with HMP Update goals and objectives.
- The Village intends to update Village ordinances to include current expected rainfall amounts for selected storm durations and return periods as published by the Illinois State Water Survey.

City of Urbana

- The City will participate in a planned feasibility assessment for cooling and warming shelters for vulnerable populations.
- The City engineers will adopt, incorporate, and utilize the most recent expected rainfall amounts for selected storm durations and return periods as published by the Illinois State Water Survey.
- The City will continue to acquire flood-prone properties along the Boneyard Creek to expand greenways.
- As part of its ongoing Comprehensive Plan Update, City staff will study, develop plans and implement programs to increase the city's resilience amidst expected climate change impacts, including considering several hazard mitigation actions.

Unincorporated Champaign County

- Champaign County planners will update the county Storm Water Management and Erosion Control Ordinance to include expected rainfall amounts for storm durations and return periods as published in the Illinois State Water Survey in Bulletin 75.
- Champaign County planners will facilitate a planned needs assessment regarding cooling and warming shelters and community shelter options for tornados for vulnerable populations.

Parkland College

- Parkland College will develop and implement a campus biodiversity plan to increase biological diversity within ecosystems to enhance campus resilience to expected climate change impacts.

University of Illinois at Urbana-Champaign

- The Institute of Sustainability and Energy Efficiency at the University of Illinois at Urbana-Champaign spearheaded planning efforts over two years to update its Illinois Climate Action Plan (ICAP). Local experts reviewed HMP Update 2015 content and consulted HMP Update planning team members as part of the ICAP update process.

Method Used to Prioritize Hazard Mitigation Actions

Planning Team members agreed to use a prioritizing method that involves a 3-step analysis of each mitigation action. The analysis was completed by Planning Team members and project staff to prioritize all mitigation actions identified for each participating jurisdiction.

The prioritization method involved allocating points to each mitigation action. Each mitigation action was scored using the 3-step method, with each step yielding up to 14 points each. The maximum total score for any one mitigation action could be 42.

Step 1

The first analysis is one that assesses an “action scope” for the mitigation action. Up to 14 points were allocated based on which category fits the subject mitigation action. Planning Team members determined which level each mitigation action fit into to: Level 1, Level 2, or Level 3. Next, if the mitigation action was determined to be a Level 1 or a Level 2 action, points were assigned based on Planning Team members’ expertise and judgment as to the effectiveness of the mitigation action. Because Level 3 actions permanently eliminate or reduce property damages, injuries, or deaths in a specific area, Level 3 actions were assigned the highest amount of 14 points automatically.

A description of “action scope” levels and the points to be assigned to each level follows:

Level 1 Actions Potential Score: 1 to 14 points

- Eliminate or reduce property damages, injuries, and deaths from less significant natural hazards; or
- Educate the public on disaster preparedness and mitigation related to the less significant natural hazards (e.g., drought, or earthquake)

Level 2 Actions Potential Score: 8 to 14 points

- 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 disaster on preparedness and mitigation

Level 3 Actions Score: 14 points

- 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.

Step 2 Cost Effectiveness Rating Potential Score: 1 to 14 points
 Members ranked each mitigation action qualitatively and subjectively, based on perceived cost-effectiveness of the mitigation action. In rating cost-effectiveness, a score of 14 points was possible, with lower scores denoting less cost-effectiveness and higher scores denoting greater cost-effectiveness.

Step 3 Feasibility Rating Potential Score: 1 to 14 points
 Each action was assessed along 14 dimensions using a shortened version of FEMA’s STAPLEE framework, referred to here as the “STAPL Feasibility Chart.” If the action was generally positive in a certain dimension, it was given a point. Total points available in the STAPL Feasibility Chart ranges from 1 to 14. Figure 4-2 illustrates the STAPL Feasibility Chart used for the Step 3 feasibility rating.

Figure 5-2: STAPL Feasibility Chart Used in Step 3 of Prioritization Method

S (Social)		T (Technical)			A (Administrative)			P (Political)			L (Legal)		
Community Acceptance	Effect on Segment of Population	Technically Feasible	Long-Term Solution	Secondary Impacts	Staffing	Funding Allocation	Maintenance/Operations	Political Support	Local Champion	Public Support	State Authority	Existing Local Authority	Potential Legal Challenge

Total Score

A total score was assigned to each mitigation action based on the 3-step prioritization process described above. Mitigation actions receiving the highest scores were rated as Priority 1; those receiving mid-range scores were rated as Priority 2; and mitigation actions receiving the lowest range of scores were rated as Priority 3.

Total Score: 0-27 = Priority 3 28-35 = Priority 2 36-42 = Priority 1

Statements of Interest regarding Primary Hazards of Concern

The following series of tables includes a statement of interest regarding primary hazards of concern within each participating jurisdiction and for the institutions of higher education.

Listings of Prioritized Hazard Mitigation Actions

Each participating local government jurisdiction and participating institution of higher education is responsible for voluntarily implementing the listed hazard mitigation actions.

The following series of tables includes the lists of identified hazard mitigation actions prioritized by each participating jurisdiction. The tables indicate: status of each mitigation action, partly responsible for implementing the mitigation action; potential funding Source; implementation status of listed mitigation actions, and a suggested timeframe for implementation. The HMP Update recognizes implementation of mitigation actions is dependent on the available resources of each participating jurisdiction. The tables begin on the following page.

A key to hazards abbreviations used in the tables with prioritized hazard mitigation actions for each participating jurisdiction or institution follows:

Key to Hazards Addressed

SS	Severe Storm (Thunderstorm Winds; Damaging Lightening; Hailstorm)
SWS	Severe Winter Storm (Blizzard; Heavy Snowstorm Ice Storm)
F	Flooding (Riverine/Overbank Flood or Flash Flood/ Ponding)
T	Tornadoes
E	Earthquake
EH	Extreme Heat
All	Severe Storm (Thunderstorm Winds; Damaging Lightning; Hailstorm) Severe Winter Storm (Blizzard; Heavy Snowstorm; Ice Storm) Tornadoes Extreme Heat Flooding (Riverine/Overbank Flood or Flash Flood/ Ponding) Earthquake Drought Hazardous Materials Storage/Transport Release or Spill Active Shooter Pandemic Cyberattack

Appendix M identifies the status of previous hazard mitigation actions from the HMP Update 2015 that are no longer included in the HMP Update 2020.

Table 5-2: Primary Hazards of Concern to Champaign County

1	Due to changing climate conditions over the next several years, Champaign County can expect to experience more frequent episodes of extreme precipitation, severe weather events, and extreme temperatures.
2	Flash flooding on paved impervious areas can occur due to more frequent extreme precipitation events.
3	Riverine flooding may occur more frequently as a result of short, intense thunderstorms along portions of rivers and streams in unincorporated areas of the County, such as along the Saline Branch Drainage Ditch, McCullough Creek, Salt Fork, and along the Sangamon River.
4	The main threats posed by severe winter storms will be injuries or deaths from dangerously low temperatures and accidents, injuries, or fatalities from hazardous driving conditions.
5	Certain natural hazards (e.g., tornado or earthquake) may occur with little or no warning.
6	The unknown and unpredictable aspects of potential human-caused hazards (i.e., active shooter, cyberattack, or hazardous materials storage/transport release or spill) will continue.

Table 5-3: Prioritized Hazard Mitigation Actions for Champaign County

Hazards Addressed	Priority		Hazard Mitigation Action	Status	Implementation Notes
All	1	1)	Educate public and disseminate information regarding all hazards and preventative and preparedness safety procedures to population via community meetings, presentations to groups, displays, press, and media	ONGOING	CCEMA disseminates timely preventative measures and preparedness information on its official website; CUPHD sponsors 'Champaign County Prepares' website. Responsible Parties: CCEMA and CUPHD Funding Source: Federal, state, local or grant
All	1	2)	Promote the use of an area-wide warning text message system such as Alert Sense®, the American Red Cross tornado warning application, or others.	ONGOING	Promoted by CCEMA on its official website and, as possible, at public venues. Responsible Party: CCEMA Funding Source: Federal, state, local or grant
T, SS, SWS	1	3)	Participate in the National Weather Service StormReady® program.	ONGOING	Champaign County is a StormReady® county. Responsible Party: CCEMA Funding Source: Federal, state, local or grant

F	1	4)	Update the Storm Water Management and Erosion Control Ordinance to include expected rainfall amounts for selected storm durations and return periods as published in Illinois State Water Survey in Bulletin 75.	NEW	Responsible Party: CC ELUC, CCPZ Funding Source: Federal, state, local or grant
D	2	5)	Promote voluntary conservative water use measures to reduce potable water usage during times of drought.	NEW	Responsible Party: CC ELUC, CCPZ Funding Source: Federal, state, local or grant
All	2	6)	Encourage use of NOAA all-hazard radios in residences and businesses throughout unincorporated area.	ONGOING	CCEMA encourages use of all-hazard radios on its official website and, as possible, at public venues. Responsible Party: CCEMA Funding Source: federal, state, local or grant
All	2	7)	When appropriate as determined by CCEMA, provide information to local public radio and television stations regarding emergency warning and public service announcements.	ONGOING	CCEMA provides information, when deemed appropriate by the CCEMA coordinator. Responsible Party: CCEMA Funding Source: Federal, state, local or grant
T, SS	2	8)	Coordinate the countywide voluntary Storm Spotter program.	ONGOING	CCEMA coordinates the program. Responsible Party: CCEMA Funding Source: Federal, state, local, or grant
F	2	9)	Participate in National Flood Insurance Program (NFIP).	ONGOING	Champaign County participates, providing NFIP options to residents and businesses in unincorporated county areas. Responsible Party: CC ELUC, CCPZ Funding Source: Federal, state, local or grant
T, SWS, EH	2	10)	Conduct a needs assessment regarding appropriate cooling and warming shelters, and community shelter options for tornados for vulnerable populations in unincorporated county.	ONGOING	Responsible Party: CC ELUC, CCPZ Funding Source: Federal, state, local, or grant Suggested Timeframe: within one year of FEMA approval of HMP Update
All	2	11)	Identify a strategy to improve transportation options available to vulnerable populations in unincorporated county.	ONGOING	Responsible Party: CC EMA, Human Services Transportation Plan Representative Funding Source: Federal, state, local, or grant
All	3	12)	Improve the countywide integrated information base for use in assessing risk from natural and human-caused hazards or threats featured in the HMP Update 2020.	ONGOING	Added as an ongoing mitigation action. Responsible Party: CCGIS Consortium Funding Source: Federal, state, local, or grant

F	3	13)	Review costs and benefits of County participation in FEMA Community Rating System voluntary incentive program.	PENDING	Responsible Party: CC ELUC , CCPZ Funding Source: Federal, state, local or grant Suggested Timeframe: within two years of FEMA approval of HMP Update
T, SS, SWS, E	3	14)	Make a recommendation to the Champaign County Environment and Land Use Committee regarding County adoption of building regulations requiring wind-resistant and seismic resistance construction for new critical facilities.	PENDING	Responsible Party: CC ELUC , CCPZ Funding Source: Federal, state, local or grant Suggested Timeframe: within 2 years of FEMA approval of HMP Update
F	3	15)	Identify and prioritize needed improvements to County maintained roads that flood in heavy rainstorms, blocking or impairing road use and through access by vehicular traffic.	PENDING	Responsible Party: CCHD Funding Source: Federal, state, local or grant Suggested Timeframe: within 2 to 5 years of FEMA approval of HMP update
All	3	16)	Inventory mutual aid agreement terms for Plan Area communities and encourage participation of communities.	PENDING	Responsible Party: CCEMA Funding Source: Federal, state, local or grant Suggested Timeframe: within 2 years of FEMA approval of HMP update
All	3	17)	Develop a business continuity plan for Champaign County local government operations.	NEW	Responsible Party: CC Administrative Services Funding Source: Federal, state, local, or grant Suggested Timeframe: within 2 to 5 years of FEMA approval of HMP update.
F	3	18)	Obtain a FEMA update to the Flood Insurance Study for unincorporated Champaign County and incorporated areas in or partially within Champaign County that have special flood hazard areas.	NEW	Responsible Party: CC ELUC , CCPZ Funding Source: Federal, state, local or grant Suggested Timeframe: within 2 to 5 years of FEMA approval of HMP Update
D, EH, F, SS, T	3	19)	Encourage planting of tree canopies to help manage storm water, air quality, reduce Co2, and to curb heat island effect in parking lots.	NEW	Responsible Party: CC ELUC , CCPZ Funding Source: Federal, state, local or grant Suggested Timeframe: within 2 to 5 years of FEMA approval of HMP Update
D, EH, F, SS	3	20)	Encourage the use of native plantings and pest management practices to support pollinator, insect predator and bird habitats.	NEW	Responsible Party: CC ELUC , CCPZ Funding Source: Federal, state, local or grant Suggested Timeframe: within 2 to 5 years of FEMA approval of HMP Update

Table 5-4: Primary Hazards of Concern to Village of Allerton

1	Due to changing climate conditions over the next several years, the Village of Allerton can expect to experience more frequent episodes of extreme precipitation, severe weather events, and extreme temperatures.
2	Flash flooding on paved impervious areas can occur due to more frequent extreme precipitation events.
3	The main threats posed by severe winter storms will be injuries or deaths from dangerously low temperatures and accidents, injuries, or fatalities from hazardous driving conditions.
4	Certain natural hazards (e.g., tornado or earthquake) may occur with little or no warning.
5	The unknown and unpredictable aspects of potential human-caused hazards (i.e., active shooter, cyberattack, or hazardous materials storage/transport release or spill) will continue.

Table 5-5: Prioritized Hazard Mitigation Actions for Village of Allerton

Hazards Addressed	Priority	Hazard Mitigation Action	Status	Implementation Notes
All	1	1) Encourage Village of Allerton residents and businesses to purchase and use a NOAA all-hazard radio.	ONGOING	Interest in discount for buying radios in bulk and explore interest in cost-share options. Responsible Party: Village Board of Trustees Funding Source: Federal, state, local or grant
F	2	2) Participate in the National Flood Insurance Program.	ONGOING	Responsible Party: Village Board of Trustees Funding Source: Federal, state, local or grant
All	2	3) Improve communication to population regarding preventative protective measures to take prior to occurrence of natural and human-caused hazards or threats featured in the HMP Update 2020.	PENDING	Interest expressed in brochures/mailings, and poster displayed at Allerton post office. Responsible Party: Village Board of Trustees Funding Source: Federal, state, local or grant Suggested Timeframe: within 1 year of FEMA approval of HMP update

Table 5-6: Primary Hazards of Concern to Village of Bondville

1	Due to changing climate conditions over the next several years, the Village of Bondville can expect to experience more frequent episodes of extreme precipitation, severe weather events, and extreme temperatures.
2	Flash flooding on paved impervious areas can occur due to more frequent extreme precipitation events.
3	The main threats posed by severe winter storms will be injuries or deaths from dangerously low temperatures and accidents, injuries, or fatalities from hazardous driving conditions.
4	Certain natural hazards (e.g., tornado or earthquake) may occur with little or no warning.
5	The unknown and unpredictable aspects of potential human-caused hazards (i.e., active shooter, cyberattack, or hazardous materials storage/transport release or spill) will continue.

Table 5-7: Prioritized Hazard Mitigation Actions for Village of Bondville

Hazards Addressed	Priority	Hazard Mitigation Action	Status	Implementation Notes
All	1	1) Encourage Village of Bondville residents and businesses to purchase and use a NOAA all-hazard radio.	ONGOING	Interest in discount for buying radios in bulk and explore interest in cost-share options. Responsible Party: Village Board of Trustees Funding Source: Federal, state, local or grant
F	2	2) Review cost and benefits of Village of Bondville participation in the National Flood Insurance Program.	PENDING	Responsible Party: Village Board of Trustees Funding Source: Federal, state, local or grant Suggested Timeframe: within 2 years of FEMA approval of HMP update
All	2	3) Improve communication to population regarding preventative protective measures to take prior to occurrence of natural and human-caused hazards or threats featured in the HMP Update 2020.	NEW	Responsible Party: Village Board of Trustees Funding Source: Federal, state, local or grant Suggested Timeframe: within 1 year of FEMA approval of HMP update

Table 5-8: Primary Hazards of Concern to Village of Broadlands

1	Due to changing climate conditions over the next several years, the Village of Broadlands can expect to experience more frequent episodes of extreme precipitation, severe weather events, and extreme temperatures.
2	Flash flooding on paved impervious areas can occur due to more frequent extreme precipitation events.
3	The main threats posed by severe winter storms will be injuries or deaths from dangerously low temperatures and accidents, injuries, or fatalities from hazardous driving conditions.
4	Certain natural hazards (e.g., tornado or earthquake) may occur with little or no warning.
5	The unknown and unpredictable aspects of potential human-caused hazards (i.e., active shooter, cyberattack, or hazardous materials storage/transport release or spill) will continue.

Table 5-9: Prioritized Hazard Mitigation Actions for Village of Broadlands

Hazards Addressed	Priority	Hazard Mitigation Action	Status	Implementation Notes
All	1	1) Encourage Village of Broadlands residents and businesses to purchase and use a NOAA all-hazard radio.	ONGOING	Interest in discount for buying radios in bulk and explore interest in cost-share options. Responsible Party: Village Board of Trustees Funding Source: Federal, state, local or grant
F	2	2) Participate in the National Flood Insurance Program.	ONGOING	Responsible Party: Village Board of Trustees Funding Source: Federal, state, local or grant
All	2	3) Improve communication to population regarding preventative protective measures to take prior to occurrence of natural and human-caused hazards or threats featured in the HMP Update 2020.	NEW	Responsible Party: Village Board of Trustees Funding Source: Federal, state, local or grant Suggested Timeframe: within 1 year of FEMA approval of HMP update
F	3	4) Review hazard mitigation options regarding repetitive flood loss property in Broadlands.	PENDING	Interest expressed in exploring FEMA/HMGP options. Responsible Party: Village Board of Trustees Funding Source: Federal, state, local or grant Suggested Timeframe: within 2 years of FEMA approval of HMP update

Table 5-10: Primary Hazards of Concern to City of Champaign

1	Due to changing climate conditions over the next several years, the City of Champaign can expect to experience more frequent episodes of extreme precipitation, severe weather events, and extreme temperatures.
2	Flash flooding on paved impervious areas can occur due to more frequent extreme precipitation events.
3	Riverine flooding may be exacerbated in remaining unimproved portions of the Boneyard Creek, Copper Slough, and Phinney Creek drainage basins.
4	The main threats posed by severe winter storms will be injuries or deaths from dangerously low temperatures and accidents, injuries, or fatalities from hazardous driving conditions.
5	Certain natural hazards (e.g., tornado or earthquake may occur with little or no warning.
6	The unknown and unpredictable aspects of potential human-caused hazards (i.e., active shooter, cyberattack, or hazardous materials storage/transport release or spill) will continue.

Table 5-11: Prioritized Hazard Mitigation Actions for City of Champaign

Hazards Addressed	Priority		Hazard Mitigation Action	Status	Implementation Notes
F	1	1)	Continue to require with City's Manual of Practice, the use of Illinois State Water Survey (ISWS) Circular 172, ISWS Bulletin 75, or most recent ISWS equivalent.	ONGOING	Responsible Party: City Public Works Department Funding Source: Federal, state, local, or grant
D, EH, F, SS, T	1	2)	Develop an Urban Biodiversity Plan for increasing biological diversity within our ecosystems to enhance our community's resilience to expected climate changes	NEW	Responsible Party: City Planning & Development Department Funding Source: Federal, state, local, or grant Suggested Timeframe: within 2 years of FEMA approval of HMP update
F	1	3)	Continue improvements to remove structures within the Boneyard Creek floodway and mitigate flooding hazards with adequate stormwater detention facilities in the Boneyard Creek watershed.	ONGOING	Responsible Party: City Public Works Department Funding Source: Federal, state, local, or grant

F	2	4)	Acquire properties located within the Boneyard Creek floodplain as funding allows and as the properties become available.	ONGOING	Responsible Party: City Public Works Department Funding Source: Federal, state, local, or grant
F	2	5)	Participate in National Flood Insurance Program.	ONGOING	Responsible Party: City Public Works Department Funding Source: Federal, state, local, or grant
F	2	6)	Continue review of City floodplain development regulations for compliance with FEMA National Flood Insurance Program requirements.	ONGOING	Responsible Party: City Public Works Department Funding Source: Federal, state, local, or grant
F	2	7)	Participate in the FEMA Community Rating System Program.	ONGOING	Responsible Party: City Public Works Department Funding Source: Federal, state, local, or grant
T, SS, SWS	2	8)	Participate in the National Weather Service StormReady® program.	ONGOING	Responsible Party: City Public Works and Building Safety Departments Funding Source: local
F	2	9)	Construct new buildings and new development in accordance with City floodplain development regulations.	ONGOING	Responsible Party: City Public Works Department Funding Source: Federal, state, local, or grant
F	2	10)	Conduct volunteer clean-up of Boneyard Creek as part of MS4 Stormwater Management Program bi-annual Community Cleanup Day event.	ONGOING	Responsible Party: City Public Works Department Funding Source: Federal, state, local, or grant
F	2	11)	Require construction of detention basins in accordance with City stormwater regulations.	ONGOING	Responsible Party: City Public Works Department Funding Source: Federal, state, local, or grant
F	2	12)	Require erosion control plans in accordance with City stormwater regulations to mitigate stormwater pollution.	ONGOING	Responsible Party: City Public Works Department Funding Source: Federal, state, local, or grant
All	2	13)	Adopt Comprehensive Land Use Plan that guides growth and development to suitable locations and includes goals, objectives, and policies consistent with HMP Update goals and objectives.	ONGOING	Responsible Party: City Planning & Development Department Funding Source: Federal, state, local, or grant
T, SS	2	14)	Maintain City's system of advance warning sirens.	ONGOING	Responsible Party: City Fire Department Funding Source: Federal, state, local, or grant
All	2	15)	Require back-up generators for public assembly buildings and buildings that house dependent populations.	ONGOING	Responsible Party: City Building Safety Department Funding Source: Federal, state, local, or grant

T, SS, E, F, SWS	2	16)	Require construction projects to conform to wind, snow load, and seismic provisions of the International Building and International Residential Codes.	ONGOING	Responsible Party: City Building Safety Department Funding Source: Federal, state, local, or grant
T, SS, SWS, EH	2	17)	Support the creation and sustainability of year-round emergency shelters in the City.	PENDING	Responsible Party: Neighborhood Services Department Funding Source: Federal, state, local, or grant Suggested Timeframe: within 2-4 years of FEMA approval of HMP update
All	3	18)	Disseminate public education information about preventative protective measures to take prior to occurrence of natural and human-caused hazards or threats featured in the HMP Update 2020 via internet, social media, print, and television.	ONGOING	Responsible Party: City Fire Department Funding source: Federal, state, local, or grant
EH, T, SS, SWS	3	19)	Prune or remove trees as needed in public right-of-way areas.	ONGOING	Responsible Party: City Public Works Department Funding Source: Federal, state, local, or grant
T, SS	3	20)	Review International Building Codes for adoption by the city as they are published every three years.	ONGOING	Responsible Party: City Building Safety Department Funding Source: Federal, state, local, or grant

Table 5-12: Primary Hazards of Concern to Village of Fisher

1	Due to changing climate conditions over the next several years, the Village of Fisher can expect to experience more frequent episodes of extreme precipitation, severe weather events, and extreme temperatures.
2	Flash flooding on paved impervious areas can occur due to more frequent extreme precipitation events.
3	Riverine flooding may be exacerbated along developed areas adjacent to Owl Creek.
4	The main threats posed by severe winter storms will be injuries or deaths from dangerously low temperatures and accidents, injuries, or fatalities from hazardous driving conditions.
5	Certain natural hazards (e.g., tornado or earthquake) may occur with little or no warning.
6	The unknown and unpredictable aspects of potential human-caused hazards (i.e., active shooter, cyberattack, or hazardous materials storage/transport release or spill) will continue.

Table 5-13: Prioritized Hazard Mitigation Actions for Village of Fisher

Hazards Addressed	Priority		Hazard Mitigation Action	Status	Implementation Notes
All	1	1)	Encourage Village of Fisher residents and businesses to purchase and use a NOAA all-hazard radio.	PENDING	Interest in discount for buying radios in bulk and explore interest in cost-share options. Responsible Party: Village Board of Trustees Funding Source: Federal, state, local, or grant
F	2	2)	Participate in the National Flood Insurance Program.	ONGOING	Responsible Party: Village Board of Trustees Funding Source: Federal, state, local or grant
All	2	3)	Improve communication to population regarding preventative protective measures to take prior to occurrence of natural and human-caused hazards or threats featured in the HMP Update 2020.	PENDING	Responsible Party: Village Board of Trustees Funding Source: Federal, state, local, or grant Suggested Timeframe: within 2 years of FEMA approval of HMP update
F	2	4)	Review hazard mitigation options regarding repetitive flood loss property in Fisher.	PENDING	Interest expressed in exploring FEMA/HMGP options. Responsible Party: Village Board of Trustees Funding Source: Federal, state, local, or grant Suggested Timeframe: within 2 years of FEMA approval of HMP update

Table 5-14: Primary Hazards of Concern to Village of Foosland

1	Due to changing climate conditions over the next several years, the Village of Foosland can expect to experience more frequent episodes of extreme precipitation, severe weather events, and extreme temperatures.
2	Flash flooding on paved impervious areas can occur due to more frequent extreme precipitation events.
3	The main threats posed by severe winter storms will be injuries or deaths from dangerously low temperatures and accidents, injuries, or fatalities from hazardous driving conditions.
4	Certain natural hazards (e.g., tornado or earthquake) may occur with little or no warning.
5	The unknown and unpredictable aspects of potential human-caused hazards (i.e., active shooter, cyberattack, or hazardous materials storage/transport release or spill) will continue.

Table 5-15: Prioritized Hazard Mitigation Actions for Village of Foosland

Hazards Addressed	Priority	Hazard Mitigation Action	Status	Implementation Notes
All	1	1) Improve communication to population regarding preventative protective measures to take prior to occurrence of natural and human-caused hazards or threats featured in the HMP Update 2020.	PENDING	Considering town meeting or local newsletter as means. Responsible Party: Village Board of Trustees Funding Source: Federal, state, local, or grant Suggested Timeframe: within 1 year of FEMA approval of HMP update
All	1	3) Encourage Village of Foosland residents and businesses to purchase and use a NOAA all-hazard radio.	ONGOING	Interest in discount for buying radios in bulk and explore interest in cost-share options. Responsible Party: Village Board of Trustees Funding Source: Federal, state, local, or grant
F	2	3) Participate in the National Flood Insurance Program.	ONGOING	Responsible Party: Village Board of Trustees Funding Source: Federal, state, local, or grant

Table 5-16: Primary Hazards of Concern to Village of Gifford

1	Due to changing climate conditions over the next several years, the Village of Gifford can expect to experience more frequent episodes of extreme precipitation, severe weather events, and extreme temperatures.
2	Flash flooding on paved impervious areas can occur due to more frequent extreme precipitation events.
3	The main threats posed by severe winter storms will be injuries or deaths from dangerously low temperatures and accidents, injuries, or fatalities from hazardous driving conditions.
4	Many residents do not have basements. Certain natural hazards (e.g., tornado or earthquake) may occur with little or no warning.
5	The unknown and unpredictable aspects of potential human-caused hazards (i.e., active shooter, cyberattack, or hazardous materials storage/transport release or spill) will continue.

Table 5-17: Prioritized Hazard Mitigation Actions for Village of Gifford

Hazards Addressed	Priority	Hazard Mitigation Action		Status	Implementation Notes
All	1	1)	Encourage Village of Gifford residents and businesses to purchase and use a NOAA all-hazard radio.	ONGOING	Interest in discount for buying radios in bulk and explore interest in cost-share options. Responsible Party: Village Board of Trustees Funding Source: Federal, state, local, or grant
T, SS	1	2)	Arrange to designate a local facility as a storm shelter.	PENDING	Responsible Party: Village Board of Trustees Funding Source: Federal, state, local, or grant Suggested Timeframe: within 1 year of FEMA approval of HMP update.
F	2	3)	Review cost and benefits of Village participation in National Flood Insurance Program.	PENDING	ESDA contact expressed interest in receiving information about NFIP participation. No localized areas of flooding. Responsible Party: Village Board of Trustees Funding Source: Federal, state, local, or grant Suggested Timeframe: within 2 years of FEMA approval of HMP update
All	2	4)	Improve communication to population regarding preventative protective measures to take prior to occurrence of natural and human-caused hazards or threats featured in the HMP Update 2020.	PENDING	Post on website and distribute brochures and display posters for residents with no internet access. Responsible Party: Village Board of Trustees Funding Source: Federal, state, local, or grant Suggested Timeframe: within 2 years of FEMA approval of HMP update

Table 5-18: Primary Hazards of Concern to Village of Homer

1	Due to changing climate conditions over the next several years, the Village of Homer can expect to experience more frequent episodes of extreme precipitation, severe weather events, and extreme temperatures.
2	Flash flooding on paved impervious areas can occur due to more frequent extreme precipitation events.
3	The main threats posed by severe winter storms will be injuries or deaths from dangerously low temperatures and accidents, injuries, or fatalities from hazardous driving conditions.
4	Certain natural hazards (e.g., tornado or earthquake) may occur with little or no warning.
5	The unknown and unpredictable aspects of potential human-caused hazards (i.e., active shooter, cyberattack, or hazardous materials storage/transport release or spill) will continue.

Table 5-19: Prioritized Hazard Mitigation Actions for Village of Homer

Hazards Addressed	Priority		Hazard Mitigation Action	Status	Implementation Notes
All	1	1)	Encourage Village of Homer residents and businesses to purchase and use a NOAA all-hazard radio.	ONGOING	Newsletter suggested as an effective means. Interest in discount for buying radios in bulk and explore interest in cost-share options. Responsible Party: Village Board of Trustees Funding Source: Federal, state, local, or grant
F	2	2)	Review cost and benefits of Village participation in National Flood Insurance Program.	PENDING	Responsible Party: Village Board of Trustees Funding Source: Federal, state, local, or grant Suggested Timeframe: within 1 year of FEMA approval of HMP update
All	2	3)	Improve communication to population regarding preventative protective measures to take prior to occurrence of natural and human-caused hazards or threats featured in the HMP Update 2020.	PENDING	Suggested a brochure for Village to distribute. Responsible Party: Village Board of Trustees Funding Source: Federal, state, local, or grant Suggested Timeframe: within 1 year of FEMA approval of HMP update

Table 5-20: Primary Hazards of Concern to Village of Ivesdale

1	Due to changing climate conditions over the next several years, the Village of Ivesdale can expect to experience more frequent episodes of extreme precipitation, severe weather events, and extreme temperatures.
2	Flash flooding on paved impervious areas can occur due to more frequent extreme precipitation events.
3	The main threats posed by severe winter storms will be injuries or deaths from dangerously low temperatures and accidents, injuries, or fatalities from hazardous driving conditions.
4	Certain natural hazards (e.g., tornado or earthquake) may occur with little or no warning.
5	The unknown and unpredictable aspects of potential human-caused hazards (i.e., active shooter, cyberattack, or hazardous materials storage/transport release or spill) will continue.

Table 5-21: Prioritized Hazard Mitigation Actions for Village of Ivesdale

Hazards Addressed	Priority		Hazard Mitigation Action	Status	Implementation Notes
All	1	1)	Encourage Village of Ivesdale residents and businesses to purchase and use a NOAA all-hazard radio.	ONGOING	Interest in discount for buying radios in bulk and explore interest in cost-share options. Responsible Party: Village Board of Trustees Funding Source: Federal, state, local, or grant
F	2	2)	Participate in the National Flood Insurance Program.	ONGOING	Responsible Party: Village Board of Trustees Funding Source: Federal, state, local, or grant
All	2	3)	Improve communication to population regarding preventative protective measures to take prior to occurrence of natural and human-caused hazards or threats featured in the HMP Update 2020.	PENDING	Responsible Party: Village Board of Trustees Funding Source: Federal, state, local, or grant Suggested Timeframe: within 2 years of FEMA approval of HMP update

Table 5-22: Primary Hazards of Concern to Village of Longview

1	Due to changing climate conditions over the next several years, the Village of Longview can expect to experience more frequent episodes of extreme precipitation, severe weather events, and extreme temperatures.
2	Flash flooding on paved impervious areas can occur due to more frequent extreme precipitation events.
3	The main threats posed by severe winter storms will be injuries or deaths from dangerously low temperatures and accidents, injuries, or fatalities from hazardous driving conditions.
4	Certain natural hazards (e.g., tornado or earthquake) may occur with little or no warning.
5	The unknown and unpredictable aspects of potential human-caused hazards (i.e., active shooter, cyberattack, or hazardous materials storage/transport release or spill) will continue.

Table 5-23: Prioritized Hazard Mitigation Actions for Village of Longview

Hazards Addressed	Priority		Hazard Mitigation Action	Status	Implementation Notes
All	1	1)	Encourage Village of Longview residents and businesses to purchase and use a NOAA all-hazard radio.	ONGOING	Interest in discount for buying radios in bulk and explore interest in cost-share options. Responsible Party: Village Board of Trustees Funding Source: Federal, state, local, or grant
F	2	2)	Review cost and benefits of Village participation in National Flood Insurance Program.	PENDING	Responsible Party: Village Board of Trustees Funding Source: Federal, state, local, or grant Suggested Timeframe: within 2 years of FEMA approval of HMP update
All	2	3)	Improve communication to population regarding preventative protective measures to take prior to occurrence of natural and human-caused hazards or threats featured in the HMP Update 2020.	PENDING	Responsible Party: Village Board of Trustees Funding Source: Federal, state, local, or grant Suggested Timeframe: within 2 years of FEMA approval of HMP update

Table 5-24: Primary Hazards of Concern to Village of Ludlow

1	Due to changing climate conditions over the next several years, the Village of Ludlow can expect to experience more frequent episodes of extreme precipitation, severe weather events, and extreme temperatures.
2	Flash flooding on paved impervious areas can occur due to more frequent extreme precipitation events.
3	The main threats posed by severe winter storms will be injuries or deaths from dangerously low temperatures and accidents, injuries, or fatalities from hazardous driving conditions.
4	Certain natural hazards (e.g., tornado or earthquake) may occur with little or no warning.
5	The unknown and unpredictable aspects of potential human-caused hazards (i.e., active shooter, cyberattack, or hazardous materials storage/transport release or spill) will continue.

Table 5-25: Prioritized Hazard Mitigation Actions for Village of Ludlow

Hazards Addressed	Priority		Hazard Mitigation Action	Status	Implementation Notes
All	1	1)	Encourage Village of Ludlow residents and businesses to purchase and use a NOAA all-hazard radio.	ONGOING	Interest in discount for buying radios in bulk and explore interest in cost-share options. Responsible Party: Village Board of Trustees Funding Source: Federal, state, local, or grant
F	2	2)	Participate in the National Flood Insurance Program.	ONGOING	Responsible Party: Village Board of Trustees Funding Source: Federal, state, local, or grant
All	2	3)	Improve communication to population regarding preventative protective measures to take prior to occurrence of natural and human-caused hazards or threats featured in the HMP Update 2020.	PENDING	Responsible Party: Village Board of Trustees Funding Source: Federal, state, local, or grant Suggested Timeframe: within 2 years of FEMA approval of HMP update

Table 5-26: Primary Hazards of Concern to Village of Mahomet

1	Due to changing climate conditions over the next several years, the Village of Mahomet can expect to experience more frequent episodes of extreme precipitation, severe weather events, and extreme temperatures.
2	Flash flooding on paved impervious areas can occur due to more frequent extreme precipitation events.
3	Increased riverine flooding may occur along the Sangamon River within Village limits because of more frequent, intense precipitation.
4	The main threats posed by severe winter storms will be injuries or deaths from dangerously low temperatures and accidents, injuries, or fatalities from hazardous driving conditions.
5	Certain natural hazards (e.g., tornado or earthquake) may occur with little or no warning.
6	The unknown and unpredictable aspects of potential human-caused hazards (i.e., active shooter, cyberattack, or hazardous materials storage/transport release or spill) will continue.

Table 5-27: Prioritized Hazard Mitigation Actions for Village of Mahomet

Hazards Addressed	Priority	Hazard Mitigation Action	Status	Implementation Notes
F	1	1) Update subdivision ordinance to include current expected rainfall amounts for selected storm durations and return periods as published by the Illinois State Water Survey.	NEW	Responsible Party: Village Community Development Department Funding Source: Federal, state, local, or grant Suggested timeframe: within 1 year of FEMA approval of HMP update
D, EH, F, SS, T	1	2) Update subdivision ordinance to encourage low impact stormwater management systems and features by land developers for public infrastructure detention requirements.	NEW	Responsible Party: Village Community Development Department Funding Source: Federal, state, local, or grant Suggested timeframe: within 2 years of FEMA approval of HMP update
F	1	3) Participate in the National Flood Insurance Program.	ONGOING	Responsible Party: Village Community Development Department Funding Source: Federal, state, local, or grant

F	1	4)	Administer and periodically update the Mahomet Code of Ordinances provisions relevant to addressing potential flood issues: Development within Floodplain Areas, Subdivisions, and Stormwater Management.	ONGOING	Responsible Party: Village Community Development Department Funding Source: Federal, state, local, or grant
All	1	5)	Conduct a needs assessment regarding community shelter options for vulnerable populations in the Village.	PENDING	Responsible Party: Village Community Development Department Funding Source: Federal, state, local, or grant Suggested timeframe: within 2 years of FEMA approval of HMP update
T, SS	1	6)	Maintain advance warning sirens.	ONGOING	Responsible Party: Village ESDA/Village Police Department Funding Source: Federal, state, local, or grant
D, EH, F, SS, T	2	7)	Encourage private property tree planting in parking lots and near sidewalks to produce canopies to help manage storm water, air quality, reduce Co2, and to curb heat island effect in parking lots.	NEW	Responsible Party: Village Community Development Department Funding Source: Federal, state, local, or grant Suggested Timeframe: within 2 to 3 years of FEMA approval of HMP update
EH, F, SS	2	8)	Encourage site developers/builders to use rain gardens to meet site landscaping requirements and manage stormwater urban areas.	NEW	Responsible Party: Village Community Development Department Funding Source: Federal, state, local, or grant Suggested Timeframe: within 2 to 3 years of FEMA approval of HMP update
D, EH, F, SS	2	9)	Encourage the use of native plantings and pest management practices to support pollinator, insect predator and bird habitats.	NEW	Responsible Party: Village Community Development Department Funding Source: Federal, state, local, or grant Suggested Timeframe: within 2 to 3 years of FEMA approval of HMP update
D	2	10)	Promote voluntary conservative water use measures to reduce potable water usage during times of drought.	NEW	Responsible Party: Village Community Development Department Funding Source: Federal, state, local, or grant Suggested Timeframe: within 2 to 3 years of FEMA approval of HMP update

T, SS, SWS, E, F	2	11)	Review benefits and costs of adopting International Building Code and review and assess the impact of the adopted International Residential Code.	PENDING	Responsible Party: Village Community Development Department Funding Source: Federal, state, local, or grant Suggested Timeframe: within 2 to 3 years of FEMA approval of HMP update
D	2	12)	Review the Mahomet Code of Ordinance provisions 'Conservation of Water During High Use Periods and Restrictions During Water Shortage' for potential updates needed.	PENDING	Responsible Party: Village Community Development Department Funding Source: Federal, state, local, or grant Suggested Timeframe: within 2 to 3 years of FEMA approval of HMP update
All	2	13)	Educate public regarding preventative protective measures to take prior to occurrence of natural and natural and human-caused hazards or threats featured in the HMP Update 2020.	ONGOING	Responsible Party: Village ESDA/Village Police Department Funding Source: Federal, state, local, or grant
All	3	14)	Update the Mahomet Comprehensive Land Use Plan to include goals, objectives, and policies consistent with HMP goals and objectives.	ONGOING	Responsible Party: Village Community Development Department Funding Source: Federal, state, local, or grant
F	3	15)	Acquire flood-prone properties for open space use in accordance with the Mahomet Stormwater Master Plan.	ONGOING	Responsible Party: Village Community Development Department Funding Source: Federal, state, local or grant Suggested Timeframe: within 2 to 5 years of FEMA approval of HMP update

Table 5-28: Primary Hazards of Concern to Village of Ogden

1	Due to changing climate conditions over the next several years, the Village of Ogden can expect to experience more frequent episodes of extreme precipitation, severe weather events, and extreme temperatures.
2	Flash flooding on paved impervious areas can occur due to more frequent extreme precipitation events.
3	The main threats posed by severe winter storms will be injuries or deaths from dangerously low temperatures and accidents, injuries, or fatalities from hazardous driving conditions.
4	Certain natural hazards (e.g., tornado or earthquake) may occur with little or no warning.
5	The unknown and unpredictable aspects of potential human-caused hazards (i.e., active shooter, cyberattack, or hazardous materials storage/transport release or spill) will continue.

Table 5-29: Prioritized Hazard Mitigation Actions for Village of Ogden

Hazards Addressed	Priority	Hazard Mitigation Action		Status	Implementation Notes
All	1	1)	Encourage Village of Ogden residents and businesses to purchase and use a NOAA all-hazard radio	ONGOING	Place message about NOAA radios on water bills to residents. Interest in discount for buying radios in bulk and explore interest in cost-share options. Responsible Party: Village Board of Trustees. Funding Source: Federal, state, local, or grant
F	2	2)	Participate in the National Flood Insurance Program.	ONGOING	Responsible Party: Village Board of Trustees Funding Source: Federal, state, local, or grant
All	2	3)	Improve communication to population regarding preventative protective measures to take prior to occurrence of natural and human-caused hazards or threats featured in the HMP Update 2020.	PENDING	Responsible Party: Village Board of Trustees Funding Source: Federal, state, local, or grant Suggested Timeframe: within 2 years of FEMA approval of HMP update
F	3	4)	Review costs and benefits of Village of Ogden participation in FEMA Community Rating System voluntary incentive program.	PENDING	Responsible Party: Village Board of Trustees Funding Source: Federal, state, local, or grant Suggested Timeframe: within 1 to 2 years of FEMA approval of HMP update

Table 5-30: Primary Hazards of Concern to Village of Pesotum

1	Due to changing climate conditions over the next several years, the Village of Pesotum can expect to experience more frequent episodes of extreme precipitation, severe weather events, and extreme temperatures.
2	Flash flooding on paved impervious areas can occur due to more frequent extreme precipitation events.
3	The main threats posed by severe winter storms will be injuries or deaths from dangerously low temperatures and accidents, injuries, or fatalities from hazardous driving conditions.
4	Certain natural hazards (e.g., tornado or earthquake) may occur with little or no warning.
5	The unknown and unpredictable aspects of potential human-caused hazards (i.e., active shooter, cyberattack, or hazardous materials storage/transport release or spill) will continue.

Table 5-31: Prioritized Hazard Mitigation Actions for Village of Pesotum

Hazards Addressed	Priority	Hazard Mitigation Action		Status	Implementation Notes
All	1	1)	Encourage all Village of Pesotum residents and businesses to purchase and use a NOAA all-hazard radio	ONGOING	Interest in discount for buying radios in bulk and explore interest in cost-share options. Responsible Party: Village Board of Trustees. Funding Source: Federal, state, local, or grant
F	2	2)	Review cost and benefits of Village participation in National Flood Insurance Program.	PENDING	Responsible Party: Village Board of Trustees. Funding Source: Federal, state, local, or grant Suggested Timeframe: within 1 year of FEMA approval of HMP update
All	2	3)	Improve communication to population regarding preventative protective measures to take prior to occurrence of natural and human-caused hazards or threats featured in the HMP Update 2020.	PENDING	Interest in considering distributing a brochure. Responsible Party: Village Board of Trustees. Funding Source: Federal, state, local, or grant Suggested Timeframe: within 2 years of FEMA approval of HMP update

Table 5-32: Primary Hazards of Concern to Village of Philo

1	Due to changing climate conditions over the next several years, the Village of Philo can expect to experience more frequent episodes of extreme precipitation, severe weather events, and extreme temperatures.
2	Flash flooding on paved impervious areas can occur due to more frequent extreme precipitation events.
3	The main threats posed by severe winter storms will be injuries or deaths from dangerously low temperatures and accidents, injuries, or fatalities from hazardous driving conditions.
4	Certain natural hazards (e.g., tornado or earthquake) may occur with little or no warning.
5	The unknown and unpredictable aspects of potential human-caused hazards (i.e., active shooter, cyberattack, or hazardous materials storage/transport release or spill) will continue.

Table 5-33: Prioritized Hazard Mitigation Actions for Village of Philo

Hazards Addressed	Priority		Hazard Mitigation Action	Status	Implementation Notes
All	1	1)	Encourage all Village of Philo residents and businesses to purchase and use a NOAA all-hazard radio	ONGOING	Interest in discount for buying radios in bulk and explore interest in cost-share options. Responsible Party: Village Board of Trustees. Funding Source: Federal, state, local, or grant
F	2	2)	Review cost and benefits of Village participation in National Flood Insurance Program.	PENDING	Responsible Party: Village Board of Trustees. Funding Source: Federal, state, local, or grant Suggested Timeframe: within 1 year of FEMA approval of HMP update
All	2	3)	Improve communication to population regarding preventative protective measures to take prior to occurrence of natural and human-caused hazards or threats featured in the HMP Update 2020.	PENDING	Interest in considering distributing brochure. Responsible Party: Village Board of Trustees. Funding Source: Federal, state, local, or grant Suggested Timeframe: within 2 years of FEMA approval of HMP update

Table 5-34: Primary Hazards of Concern to Village of Rantoul

1	Due to changing climate conditions over the next several years, the Village of Rantoul can expect to experience more frequent episodes of extreme precipitation, severe weather events, and extreme temperatures.
2	Flash flooding on paved impervious areas can occur due to more frequent extreme precipitation events.
3	The main threats posed by severe winter storms will be injuries or deaths from dangerously low temperatures and accidents, injuries, or fatalities from hazardous driving conditions.
4	Certain natural hazards (e.g., tornado or earthquake) may occur with little or no warning.
5	The unknown and unpredictable aspects of potential human-caused hazards (i.e., active shooter, cyberattack, or hazardous materials storage/transport release or spill) will continue.

Table 5-35: Prioritized Hazard Mitigation Actions for Village of Rantoul

Hazards Addressed	Priority	Hazard Mitigation Action	Status	Implementation Notes
SS, T	1	1) Maintain Weather Warn System in all-call format to set off all tornado sirens when NWS issues a Tornado Warning for Village of Rantoul.	ONGOING	Polygonal Alerting System automatically activates sirens located inside NWS- designated area with an active tornado warning. Responsible Party: Village ESDA Representative, Police Department, Public Works Funding Source: Federal, state, local, or grant
All	1	2) Maintain redundancy in power grid, capability of Village to generate its own power, and backup power generating capabilities for operation of the Village stormwater, wastewater, and municipal buildings.	ONGOING	Responsible Party: Village Public Works Department Funding Source: Federal, state, local, or grant
EH, SWS	1	3) Identify cooling and warming shelters for vulnerable populations within the Village.	PENDING	Responsible Party: Village Inspection Department Funding Source: Federal, state, local, or grant Suggested Timeframe: within 2 years of FEMA approval of HMP update

T, SS	1	4)	Encourage the construction of storm shelters for existing manufactured home developments. Require the construction of storm shelters for new manufactured homes.	PENDING	Responsible Party: Village Inspection Department Funding Source: Federal, state, local, or grant Suggested timeframe: within 2 to 3 years of FEMA approval of HMP update
All	1	5)	Administer a rental inspection program to inspect all rental properties for structural weaknesses, overcrowding, utilities, and roofing.	ONGOING	Entering 13 th year of program implementation. Responsible Party: Village Inspection Department Funding Source: Federal, state, local, or grant
F	1	6)	Participate in the National Flood Insurance Program.	ONGOING	Added as an ongoing mitigation action. Responsible Party: Village Inspection Department Funding Source: Federal, state, local, or grant
T, SS, SWS, E, EH	1	7)	Require construction projects to conform to surge protection, energy efficiency, wind, snow load, and seismic provisions of the International Building and International Residential Codes.	ONGOING	Responsible Party: Village Inspection Department Funding Source: Federal, state, local, or grant
T, SS	1	8)	Maintain advance warning sirens.	ONGOING	Responsible Party: Village ESDA representative, Police Department, and Public Works Department Funding Source: Federal, state, local, or grant
D, EH, F, SS, T	2	9)	Plant tree canopies to help manage storm water, air quality, reduce Co2, and to curb heat island effect in parking lots.	NEW	Responsible Party: Village Planning and Zoning Department, Village Board of Trustees Funding Source: Federal, state, local, or grant Suggested Timeframe: within 1-2 years of FEMA approval of HMP update
EH, F, SS	2	10)	Encourage developers to install green roofs and rain gardens.	NEW	Responsible Party: Village Planning and Zoning Department, Village Board of Trustees Funding Source: Federal, state, local, or grant Suggested Timeframe: within 2-4 years of FEMA approval of HMP update
D, EH, F, SS	2	11)	Encourage the use of native plantings and pest management practices to support pollinator, insect predator and bird habitats.	NEW	Responsible Party: Village Planning and Zoning Department, Village Board of Trustees, Village public Works Department Funding Source: Federal, state, local, or grant Suggested Timeframe: within 1-4 year of FEMA approval of HMP update

D	2	12)	Promote voluntary conservative water use measures to reduce potable water usage during times of drought.	NEW	Responsible Party: Village Planning and Zoning Department, Village Board of Trustees Funding Source: Federal, state, local, or grant Suggested Timeframe: within 2-4 years of FEMA approval of HMP update
All	2	13)	Encourage Village of Rantoul residents and businesses to purchase and use a NOAA all-hazard radio.	PENDING	Responsible Party: Village Inspection Department Funding Source: Federal, state, local or grant Suggested Timeframe: within 1 year of FEMA approval of HMP update
All	2	14)	Maintain fiber optic connections to Village wastewater, stormwater, electric and municipal facilities to allow their remote operation in the event they become inaccessible.	ONGOING	Responsible Party: Village Public Works Department Funding Source: Federal, state, local, or grant
T, SS, SWS	2	15)	Conduct tree trimming and removal program in public right of way areas to prevent damage to overhead electric lines.	ONGOING	Responsible Party: Village Public Works Department Funding Source: Federal, state, local, or grant
T, SS, SWS	2	16)	Require new developments to bury electrical utilities underground.	ONGOING	Responsible Party: Village Inspection Department Funding Source: Federal, state, local, or grant
T, SS, SWS	2	17)	Ensure that anchoring requirements are in place for mobile homes.	ONGOING	Responsible Party: Village Inspection Department Funding Source: Federal, state, local, or grant
T, SS	2	18)	Notify ESDA Director, monitor Doppler radar, and send lookouts to monitor tornados when a Tornado Warning is issued.	ONGOING	Responsible Party: Village ESDA Representative, Village Police Department Funding Source: Federal, state, local, or grant
All	2	19)	Improve communication to population regarding preventative protective measures to take prior to occurrence of natural and human-caused hazards or threats featured in the HMP Update 2020.	ONGOING	Responsible Party: Village Inspection Department Funding Source: Federal, state, local, or grant
E	2	20)	Conduct rapid visual screening to identify structural and non-structural hazards.	ONGOING	Partially begun, with plans to fully implement as resources allow. Responsible Party: Village Inspection Department Funding Source: Federal, state, local, or grant

All	2	21)	Review International Building Codes for adoption by the Village as they are published every three years.	ONGOING	Responsible Party: Village Inspection Department Funding Source: Federal, state, local, or grant
All	2	22)	Update Comprehensive Land Use Plan to include goals, objectives, and policies consistent with HMP goals and objectives.	PENDING	Responsible Party: Village Planning and Zoning Department, Village Board of Trustees Funding Source: Federal, state, local, or grant Suggested timeline: within 2 to 4 years of FEMA approval of update
F	2	23)	Require construction of detention basins pursuant to Village stormwater detention requirements.	ONGOING	Responsible Party: Village Inspection and Public Works Departments Funding Source: Federal, state, local, or grant
F	3	24)	Review costs and benefits of Village of Rantoul participation in FEMA Community Rating System voluntary incentive program.	PENDING	Responsible Party: Village Inspection Department Funding Source: Federal, state, local, or grant Suggested Timeframe: within 2 to 3 years of FEMA approval of HMP update
T, SS, SWS, F	3	25)	Conduct quarterly meetings of storm drainage committee to identify, prioritize and oversee drainage improvements.	ONGOING	Responsible Party: Village Inspection Department Funding Source: Federal, state, local, or grant
T, SS	3	26)	Use public address systems in police and fire vehicles to warn citizens if the advance warning sirens fail.	ONGOING	Responsible Party: Village Police Department Funding Source: Federal, state, local, or grant

Table 5-36: Primary Hazards of Concern to Village of Royal

1	Due to changing climate conditions over the next several years, the Village of Royal can expect to experience more frequent episodes of extreme precipitation, severe weather events, and extreme temperatures.
2	Flash flooding on paved impervious areas can occur due to more frequent extreme precipitation events.
3	The main threats posed by severe winter storms will be injuries or deaths from dangerously low temperatures and accidents, injuries, or fatalities from hazardous driving conditions.
4	Certain natural hazards (e.g., tornado or earthquake) may occur with little or no warning.
5	The unknown and unpredictable aspects of potential human-caused hazards (i.e., active shooter, cyberattack, or hazardous materials storage/transport release or spill) will continue.

Table 5-37: Prioritized Hazard Mitigation Actions for Village of Royal

Hazards Addressed	Priority		Hazard Mitigation Action	Status	Implementation Notes
All	1	1)	Encourage Village of Royal residents and businesses to purchase and use a NOAA all-hazard radio	ONGOING	Interest in discount for buying radios in bulk and explore interest in cost-share options. Responsible Party: Village Board of Trustees Funding Source: Federal, state, local, or grant
F	2	2)	Participate in the National Flood Insurance Program.	ONGOING	Responsible Party: Village Board of Trustees. Funding Source: Federal, state, local, or grant
All	2	3)	Improve communication to population regarding preventative protective measures to take prior to occurrence of natural and human-caused hazards or threats featured in the HMP Update 2020.	PENDING	Interest in considering distributing brochure. Responsible Party: Village Board of Trustees. Funding Source: Federal, state, local, or grant Suggested Timeframe: within 2 years of FEMA approval of HMP update

Table 5-38: Primary Hazards of Concern to Village of Sadorus

1	Due to changing climate conditions over the next several years, the Village of Sadorus can expect to experience more frequent episodes of extreme precipitation, severe weather events, and extreme temperatures.
2	Flash flooding on paved impervious areas can occur due to more frequent extreme precipitation events.
3	The main threats posed by severe winter storms will be injuries or deaths from dangerously low temperatures and accidents, injuries, or fatalities from hazardous driving conditions.
4	Certain natural hazards (e.g., tornado or earthquake) may occur with little or no warning.
5	The unknown and unpredictable aspects of potential human-caused hazards (i.e., active shooter, cyberattack, or hazardous materials storage/transport release or spill) will continue.

Table 5-39: Prioritized Hazard Mitigation Actions for Village of Sadorus

Hazards Addressed	Priority	Hazard Mitigation Action	Status	Implementation Notes
All	1	1) Encourage Village of Sadorus residents and businesses to purchase and use a NOAA all-hazard radio.	ONGOING	Distributing a brochure is preferred means. Interest in discount for buying radios in bulk and explore interest in cost-share options. Responsible Party: Village Board of Trustees Funding Source: Federal, state, local, or grant
All	2	2) Improve communication to population regarding preventative protective measures to take prior to occurrence of natural and human-caused hazards or threats featured in the HMP Update 2020.	PENDING	Interest in distributing a brochure. Responsible Party: Village Board of Trustees Funding Source: Federal, state, local, or grant Suggested Timeframe: within 2 years of FEMA approval of HMP update

Table 5-40: Primary Hazards of Concern to Village of Savoy

1	Due to changing climate conditions over the next several years, the Village of Savoy can expect to experience more frequent episodes of extreme precipitation, severe weather events, and extreme temperatures.
2	Flash flooding on paved impervious areas can occur due to more frequent extreme precipitation events.
3	The main threats posed by severe winter storms will be injuries or deaths from dangerously low temperatures and accidents, injuries, or fatalities from hazardous driving conditions.
4	Certain natural hazards (e.g., tornado or earthquake) may occur with little or no warning.
5	The unknown and unpredictable aspects of potential human-caused hazards (i.e., active shooter, cyberattack, or hazardous materials storage/transport release or spill) will continue.

Table 5-41: Prioritized Hazard Mitigation Actions for Village of Savoy

Hazards Addressed	Priority		Hazard Mitigation Action	Status	Implementation Notes
F	1	1)	Update Village ordinances to include current expected rainfall amounts for selected storm durations and return periods as published by the Illinois State Water Survey.	NEW	Responsible Party: Village Zoning Administrator, Village Board of Trustees Funding Source: Federal, state, local, or grant Suggested Timeframe: within 1 year of FEMA approval of HMP update
D, EH, F, SS, T	1	2)	Develop an Urban Biodiversity Plan to increase biological diversity of ecosystems to enhance Village of Savoy resilience to expected climate changes.	NEW	Responsible Party: Village Board of Trustees Funding Source: Federal, state, local, or grant Suggested Timeframe: within 2 years of FEMA approval of HMP update
All	1	3)	Encourage Village of Savoy residents and businesses to purchase and use a NOAA all-hazard radio.	ONGOING	Interest in discount for buying radios in bulk and explore interest in cost-share options. Responsible Party: Village Board of Trustees Funding Source: Federal, state, local, or grant

F	2	4)	Review cost and benefits of Village participation in National Flood Insurance program.	PENDING	Responsible Party: Village Board of Trustees Funding Source: Federal, state, local, or grant Suggested Timeframe: within 2 years of FEMA approval of HMP update
F	2	5)	Review costs and benefits of Village of Savoy participation in FEMA Community Rating System voluntary incentive program.	PENDING	Responsible Party: Village Planning and Economic Development Director Funding Source: Federal, state, local, or grant Suggested Timeframe: within 2 to 3 years of FEMA approval of HMP update
All	2	6)	Administer Building Code for new and replacement development construction.	ONGOING	Responsible Party: Village Zoning Administrator Funding Source: Federal, state, local, or grant
T, SS, SWS	2	7)	Participate in the National Weather Service StormReady® program.	ONGOING	Savoy is a StormReady® community. Responsible Party: Village Board of Trustees Funding Source: Federal, state, local, or grant

Table 5-42: Primary Hazards of Concern to Village of Sidney

1	Due to changing climate conditions over the next several years, the Village of Sidney can expect to experience more frequent episodes of extreme precipitation, severe weather events, and extreme temperatures.
2	Flash flooding on paved impervious areas can occur due to more frequent extreme precipitation events.
3	Increased riverine flooding may occur along developed areas adjacent to the Right Bank Tributary of Salt Fork and Left Branch of Right Bank Tributary of Salt Fork because of more frequent, intense precipitation. Most of Sidney's flood hazard areas include residential structures and some downtown businesses.
4	The main threats posed by severe winter storms will be injuries or deaths from dangerously low temperatures and accidents, injuries, or fatalities from hazardous driving conditions.
5	Certain natural hazards (e.g., tornado or earthquake) may occur with little or no warning.
6	The unknown and unpredictable aspects of potential human-caused hazards (i.e., active shooter, cyberattack, or hazardous materials storage/transport release or spill) will continue.

Table 5-43: Prioritized Hazard Mitigation Actions for Village of Sidney

Hazards Addressed	Priority	Hazard Mitigation Action	Status	Implementation Notes
All	1	1) Encourage Village of Sidney residents and businesses to purchase and use a NOAA all-hazard radio.	ONGOING	Interest in discount for buying radios in bulk and explore interest in cost-share options. Responsible Party: Village Board of Trustees Funding Source: Federal, state, local, or grant
F	2	2) Participate in the National Flood Insurance Program.	ONGOING	Responsible Party: Village Board of Trustees. Funding Source: Federal, state, local, or grant
All	2	3) Improve communication to population regarding preventative protective measures to take prior to occurrence of natural and human-caused hazards or threats featured in the HMP Update 2020.	PENDING	Interest in considering distributing brochure. Responsible Party: Village Board of Trustees. Funding Source: Federal, state, local, or grant Suggested Timeframe: within 2 years of FEMA approval of HMP update
F	3	4) Review costs and benefits of Village of Sidney participation in FEMA Community Rating System voluntary incentive program.	PENDING	Responsible Party: Village Board of Trustees Funding Source: Federal, state, local, or grant Suggested Timeframe: within 1 to 2 years of FEMA approval of HMP update

Table 5-44: Primary Hazards of Concern to Village of St. Joseph

1	Due to changing climate conditions over the next several years, the Village of St. Joseph can expect to experience more frequent episodes of extreme precipitation, severe weather events, and extreme temperatures.
2	Flash flooding on paved impervious areas can occur due to more frequent extreme precipitation events.
3	Increased riverine flooding may occur along areas adjacent to the Salt Fork because of more frequent, intense precipitation.
4	The main threats posed by severe winter storms will be injuries or deaths from dangerously low temperatures and accidents, injuries, or fatalities from hazardous driving conditions.
5	Certain natural hazards (e.g., tornado or earthquake) may occur with little or no warning.
6	The unknown and unpredictable aspects of potential human-caused hazards (i.e., active shooter, cyberattack, or hazardous materials storage/transport release or spill) will continue.

Table 5-45: Prioritized Hazard Mitigation Actions for Village of St. Joseph

Hazards Addressed	Priority	Hazard Mitigation Action	Status	Implementation Notes
All	1	1) Encourage Village of St. Joseph residents and businesses to purchase and use a NOAA all-hazard radio.	ONGOING	Interest in discount for buying radios in bulk and explore interest in cost-share options. Responsible Party: Village Board of Trustees Funding Source: Federal, state, local, or grant
F	2	2) Participate in the National Flood Insurance Program.	ONGOING	Responsible Party: Village Board of Trustees. Funding Source: Federal, state, local, or grant
All	2	3) Improve communication to population regarding preventative protective measures to take prior to occurrence of natural and human-caused hazards or threats featured in the HMP Update 2020.	PENDING	Potential for distributing brochure. Responsible Party: Village Board of Trustees Funding Source: Federal, state, local, or grant Suggested Timeframe: within 2 years of FEMA approval of HMP update
F	3	4) Review costs and benefits of Village of St. Joseph participation in FEMA Community Rating System voluntary incentive program.	PENDING	Responsible Party: Village Board of Trustees Funding Source: Federal, state, local, or grant Suggested Timeframe: within 2 to 3 years of FEMA approval of HMP update

Table 5-46: Primary Hazards of Concern to Village of Thomasboro

1	Due to changing climate conditions over the next several years, the Village of Thomasboro can expect to experience more frequent episodes of extreme precipitation, severe weather events, and extreme temperatures.
2	Flash flooding on paved impervious areas can occur due to more frequent extreme precipitation events.
3	The main threats posed by severe winter storms will be injuries or deaths from dangerously low temperatures and accidents, injuries, or fatalities from hazardous driving conditions.
4	Certain natural hazards (e.g., tornado or earthquake) may occur with little or no warning.
5	The unknown and unpredictable aspects of potential human-caused hazards (i.e., active shooter, cyberattack, or hazardous materials storage/transport release or spill) will continue.

Table 5-47: Prioritized Hazard Mitigation Actions for Village of Thomasboro

Hazards Addressed	Priority		Hazard Mitigation Action	Status	Implementation Notes
All	1	1)	Encourage Village of Thomasboro residents and businesses to purchase and use a NOAA all-hazard radio.	ONGOING	Interest in discount for buying radios in bulk and explore interest in cost-share options. Responsible Party: Village Board of Trustees. Funding Source: Federal, state, local, or grant
F	2	2)	Review cost and benefits of Village participation in National Flood Insurance Program.	PENDING	Responsible Party: Village Board of Trustees Funding Source: Federal, state, local, or grant Suggested Timeframe: within 1 to 3 years of FEMA approval of HMP update
All	2	3)	Improve communication to population regarding preventative protective measures to take prior to occurrence of natural and human-caused hazards or threats featured in the HMP Update 2020.	PENDING	Link EMA online resources to Village website. Interest in providing brochure and other physical resources available. Responsible Party: Village Board of Trustees Funding Source: Federal, state, local, or grant Suggested Timeframe: within 1 to 3 years of FEMA approval of HMP update

Table 5-48: Primary Hazards of Concern to Village of Tolono

1	Due to changing climate conditions over the next several years, the Village of Tolono can expect to experience more frequent episodes of extreme precipitation, severe weather events, and extreme temperatures.
2	Flash flooding on paved impervious areas can occur due to more frequent extreme precipitation events.
3	The main threats posed by severe winter storms will be injuries or deaths from dangerously low temperatures and accidents, injuries, or fatalities from hazardous driving conditions.
4	Certain natural hazards (e.g., tornado or earthquake) may occur with little or no warning.
5	The unknown and unpredictable aspects of potential human-caused hazards (i.e., active shooter, cyberattack, or hazardous materials storage/transport release or spill) will continue.

Table 5-49: Prioritized Hazard Mitigation Actions for Village of Tolono

Hazards Addressed	Priority		Hazard Mitigation Action	Status	Implementation Notes
All	1	1)	Encourage Village of Tolono residents and businesses to purchase and use a NOAA all-hazard radio	ONGOING	Interest in discount for buying radios in bulk and explore interest in cost-share options. Responsible Party: Village Board of Trustees Funding Source: Federal, state, local, or grant
F	2	2)	Review cost and benefits of Village participation in National Flood Insurance Program.	PENDING	Responsible Party: Village Board of Trustees Funding Source: Federal, state, local, or grant Suggested Timeframe: within 1 to 3 years of FEMA approval of HMP update
All	2	3)	Improve communication to population regarding preventative protective measures to take prior to occurrence of natural and human-caused hazards or threats featured in the HMP Update 2020.	PENDING	Responsible Party: Village Board of Trustees Funding Source: Federal, state, local, or grant Suggested Timeframe: within 1 to 3 years of FEMA approval of HMP update

Table 5-50: Primary Hazards of Concern to City of Urbana

1	Due to changing climate conditions over the next several years, the City of Urbana can expect to experience more frequent episodes of extreme precipitation, severe weather events, and extreme temperatures.
2	Flash flooding on paved impervious areas can occur due to more frequent extreme precipitation events.
3	Riverine flooding may be exacerbated in remaining unimproved portions of the Boneyard Creek drainage basin within City limits, and along McCullough Creek, which flows through southern Urbana before joining the Embarras River and is known to experience overbank flooding as a result of short, intense thunderstorms
4	The main threats posed by severe winter storms will be injuries or deaths from dangerously low temperatures and accidents, injuries, or fatalities from hazardous driving conditions, and severe tree damage.
5	Certain natural hazards (e.g., tornado or earthquake) may occur with little or no warning.
6	The unknown and unpredictable aspects of potential human-caused hazards (i.e., active shooter, cyberattack, or hazardous materials storage/transport release or spill) will continue.

Table 5-51: Prioritized Hazard Mitigation Actions for City of Urbana

Hazards Addressed	Priority	Hazard Mitigation Action	Status	Implementation Notes
F	1	1) Study, develop plans, implement programs, and/or make improvements to repurpose flood-prone properties along the Boneyard Creek to expand greenways	NEW	Responsible Party: City Community Development Services and Public Works Department, City Council Funding Source: Federal, state, local, or grant
F	1	2) Study, develop plans, implement programs, and/or make improvements to green and grey stormwater infrastructure where stormwater modeling demonstrates a flooding potential.	NEW	Responsible Party: City Community Development Services and Public Works Department, City Council Funding Source: Federal, state, local, or grant
D, EH, F, SS, T	1	3) Study, develop plans, implement programs, and/or make improvements to support nature and urban biodiversity to enhance our community's resilience amidst expected climate change impacts. Consider these hazard mitigation actions:	NEW	Responsible Party: City Community Development Services and Public Works Department, City Council Funding Source: Federal, state, local, or grant

			<p>a) Encourage public and private sector development of convenient access to green spaces including but not limited to green roofs, green walls, and rain gardens in high-traffic urban areas.</p> <p>b) Promote voluntary conservative water use measures to reduce potable water usage during times of drought.</p> <p>c) Expand and maintain tree canopies to help manage storm water, air quality, reduce Co2 shade sidewalks and bike lanes, and to curb heat island effect in parking lots and large paved areas.</p> <p>d) Encourage use of synthetic-free lawn care, native plantings, and integrated pest management practices to support pollinator, insect predator and bird habitats.</p>		
SWS, EH	1	4)	Study, develop plans, implement programs and/or improvements to ensure appropriate cooling and warming shelters for vulnerable populations.	NEW	Responsible Party: City Community Development Services and Public Works Department, City Council Funding Source: Federal, state, local, or grant
F	1	5)	Adopt, incorporate, or utilize the most recent expected rainfall amounts for selected storm durations and return periods as published by the Illinois State Water Survey.	NEW	Responsible Party: City Community Development Services and Public Works Department, City Council Funding Source: Federal, state, local, or grant
SWS, SS, EH, T, E	1	6)	Complete installation of emergency back-up power systems for remaining essential City facilities.	PENDING	Recommended for inclusion in a future list of capital projects. Responsible Party: City Fire Department and Public Works Department Funding Source: Federal, state, local, or grant Suggested Timeframe: within 1 year of FEMA approval of HMP update as resources allow
All	1	7)	Contribute to countywide integrated information base for use in assessing risk from natural and human-caused hazards or threats featured in the HMP Update 2020.	ONGOING	Responsible Party: City Community Development Services, Public Works, Fire Department Funding Source: Federal, state, local, or grant
SWS, SS, EH, T, E	1	8)	Identify existing buildings as shelters.	ONGOING	Responsible Party: City Fire Department Funding Source: Federal, state, local, or grant
All	1	9)	Offer and promote the use of area-wide warning text message system (e.g., Alert Sense).	ONGOING	Responsible Party: City Fire Department Funding Source: Federal, state, local, or grant

All	1	10)	Maintain an advance outdoor warning siren system.	ONGOING	Outdoor siren warning system is tested the first Tuesday of each month Responsible Party: City Fire Department Funding Source: Federal, state, local, or grant
All	1	11)	Use Risk Watch program in schools.	ONGOING	Responsible Party: City Fire Department Funding Source: Federal, state, local, or grant
SWS, SS, EH, T, E	1	12)	Educate the public--especially seniors and the disabled--on methods to ensure critical documents can be easily retrieved in case of emergency.	ONGOING	Responsible Party: City Fire Department Funding Source: Federal, state, local, or grant
E	1	13)	Periodically review and update International Building Code requirements concerning seismic resistance.	ONGOING	2009 International Building Code adopted. Video on City website promotes wind resistant construction techniques. Responsible Party: City Building Safety Division Funding Source: Federal, state, local, or grant
SS, T	1	14)	Periodically review and update International Building Code requirements concerning high wind resistance.	ONGOING	Responsible Party: City Public Works Department Funding Source: Federal, state, local, or grant
F	1	15)	Require developers to pre-approve a tax benefit district to include properties served by a detention basin if a property owner association fails to maintain it.	ONGOING	Responsible Party: City Community Development Services and Public Works Department Funding Source: Federal, state, local, or grant
F	1	16)	Continue to require a minimum of one-foot freeboard above the 100-year floodplain for new construction.	ONGOING	Responsible Party: City Community Development Services and Public Works Department Funding Source: Federal, state, local, or grant
F	2	17)	Participate in the National Flood Insurance Program.	ONGOING	Responsible Party: City Public Works Department Funding Source: Federal, state, local, or grant
SS, SWS, T	2	18)	Participate in the National Weather Service StormReady® program.	ONGOING	Responsible Party: City Fire Department Funding Sources: Federal, state, local, or grant
F	2	19)	Offer zoning transfer of development rights as a tool within Boneyard Creek District.	ONGOING	Responsible Party: City Community Development Services Funding Sources: Federal, state, local, or grant
E, T, SS	2	20)	Monitor and target financial assistance to improve safety of existing buildings in TIF districts through redevelopment incentive programs.	ONGOING	Responsible Party: City Community Development Services Funding Sources: Federal, state, local, or grant

T, SS, SWS	2	21)	Trim and tree removal program to reduce limb and tree hazards. Trees are rated based on risk using a scale of 1 to 10 with 10 being the highest risk. All level 10 risk trees have been removed.	ONGOING	Trees are rated based on risk using a scale of 1 to 10 with 10 being the highest risk. All level 10 risk trees. Anticipate completing removal of risk level 9 and 8 trees in 2015. Responsible Party: City Public Works Department Funding Sources: Federal, state, local, or grant
D, T, SS, SWS	2	22)	Improve maintenance and proper species selection in urban forestry.	ONGOING	Reducing the number of maples in our inventory by attrition. Other than maples the urban forest has good diversity among tree species. Responsible Party: City Public Works Department Funding Sources: Federal, state, local, or grant
F	3	23)	Acquire flood-prone properties along the Boneyard Creek to expand greenways.	ONGOING	Applied for an IEMA grant to purchase an additional flood prone property along Boneyard Creek but did not receive grant. Responsible Party: City Public Works Department Funding Sources: Federal, state, local, or grant
All	3	24)	Develop a Facilities Plan to provide technical support and funding or subsidies to upgrade critical facilities.	PENDING	Responsible Party: City Community Development Services and Public Works Department Funding Sources: Federal, state, local, or grant Suggested Timeframe: within 3 to 5 years of FEMA approval of HMP update

Table 5-52: Primary Hazards of Concern to Parkland College

1	Due to changing climate conditions over the next several years, Parkland College can expect to experience more frequent episodes of extreme precipitation, severe weather events, and extreme temperatures.
2	Flash flooding on paved impervious areas can occur due to more frequent extreme precipitation events.
3	The main threats posed by severe winter storms will be injuries or deaths from dangerously low temperatures and accidents, injuries, or fatalities from hazardous driving conditions.
4	Certain natural hazards (e.g., tornado or earthquake) may occur with little or no warning.
5	The unknown and unpredictable aspects of potential human-caused hazards (i.e., active shooter, cyberattack, or hazardous materials storage/transport release or spill) will continue.

Table 5-53: Prioritized Hazard Mitigation Actions for Parkland College

Hazards Addressed	Priority		Hazard Mitigation Action	Status	Implementation Notes
EH, SS, SWS, D, T	1	1)	Develop and implement a campus biodiversity plan to increase biological diversity within ecosystems to enhance Parkland College campus resilience to expected climate change impacts.	NEW	Responsible Party: Parkland College Board of Trustees and Administration Funding Source: Federal, state, local, or grant Suggested Timeframe: within 2 to 5 years of FEMA approval of HMP update
All	1	2)	Offer and promote the use of an area-wide warning text message system such as IRIS.	ONGOING	Responsible Party: Parkland College Public Safety Funding Source: Federal, state, local, or grant
EH, SS, SWS, D, T	1	3)	Participate as a StormReady® campus.	ONGOING	Responsible Party: Parkland College Public Safety Funding Source: Federal, state, local, or grant
All	1	4)	Use Parkland College public safety website and social media to communicate to campus population regarding preventative protective measures to take prior to occurrence of natural and human-caused hazards or threats featured in the HMP Update 2020.	ONGOING	Responsible Party: Parkland College Public Safety Funding Source: Federal, state, local, or grant

All	1	5)	Review benefits of Parkland College participation in the “Ready to Respond Campus” program.	PENDING	Responsible Party: Parkland College Public Safety Funding Source: Federal, state, local, or grant Suggested Timeframe: within 1 year of FEMA approval of HMP update
All	1	6)	Conduct classroom outreach talks to students, staff, and faculty each semester and upon request to address preventive protective measures prior to occurrence of natural and human-caused hazards or threats featured in the HMP Update 2020.	ONGOING	Responsible Party: Parkland College Public Safety Funding Source: Federal, state, local, or grant
All	1	7)	Distribute “Emergency Procedure Guide” throughout the campus.	PENDING	Responsible Party: Parkland College Public Safety Funding Source: Federal, state, local, or grant Suggested Timeframe: within 1 year of FEMA approval of HMP update
All	1	8)	Conduct a needs assessment regarding back-up generators to serve campus premises.	PENDING	Responsible Party: Parkland College Public Safety Funding Source: Federal, state, local, or grant Suggested Timeframe: within 2 years of FEMA approval of HMP update

Table 5-54: Primary Hazards of Concern to University of Illinois at Urbana-Champaign

1	Due to changing climate conditions over the next several years, the University of Illinois at Urbana-Champaign can expect to experience more frequent episodes of extreme precipitation, severe weather events, and extreme temperatures.
2	Flash flooding on paved impervious areas can occur due to more frequent extreme precipitation events.
3	The main threats posed by severe winter storms will be injuries or deaths from dangerously low temperatures and accidents, injuries, or fatalities from hazardous driving conditions.
4	Certain natural hazards (e.g., tornado or earthquake) may occur with little or no warning.
5	The unknown and unpredictable aspects of potential human-caused hazards (i.e., active shooter, cyberattack, or hazardous materials storage/transport release or spill) will continue.

Table 5-55: Prioritized Hazard Mitigation Actions for University of Illinois at Urbana-Champaign

Hazards Addressed	Priority		Hazard Mitigation Action	Status	Implementation Notes
EH, SS, SWS, D, T	1	1)	Support efforts to implement the <i>University of Illinois at Urbana-Champaign Illinois Climate Action Plan</i> .	NEW	Responsible Party: Institute for Sustainability, Energy, and Environment, University of Illinois at Urbana-Champaign Funding Source: Federal, state, local, or grant Suggested Timeframe: within 1-2 years of FEMA approval of HMP update
All	1	2)	Update and expand the Office of Campus Emergency Planning Website.	ONGOING	Responsible Party: Office of Campus Emergency Management Funding Source: Federal, state, local, or grant
All	1	3)	Utilize nine emergency notification systems to alert the campus community.	ONGOING	Responsible Party: Office of Campus Emergency Management Funding Source: Federal, state, local, or grant

All	1	4)	Continue assignment of Building Emergency Coordinators to assist in creation and maintenance of Building Emergency Action Plans to address natural and human-caused hazards or threats featured in the HMP Update 2020.	ONGOING	Responsible Party: Office of Campus Emergency Management Funding Source: Federal, state, local, or grant
All	1	5)	Continue to update and implement the Building Emergency Plan template to be used by campus buildings.	ONGOING	Responsible Party: Office of Campus Emergency Management Funding Source: Federal, state, local, or grant
F	1	6)	Continue to update and implement the Kualu Continuity of Operations Plan template.	ONGOING	Responsible Party: Office of Campus Emergency Management Funding Source: Federal, state, local, or grant
All	1	7)	Establish a training and/or review program to ensure employees are trained on their respective Building Emergency Action Plan(s).	ONGOING	Responsible Party: Office of Campus Emergency Management Funding Source: Federal, state, local, or grant
All	1	8)	Create online emergency response training programs for the campus.	ONGOING	Responsible Party: Office of Campus Emergency Management Funding Source: Federal, state, local, or grant

6 Plan Use and Maintenance

Introduction

Chapter 6 includes the following HMP components:

- Description of method and schedule for monitoring, evaluating, and updating the mitigation plan within a five-year cycle. *FEMA Requirement § 201.6(c)(4)(i)*
- Description of how the HMP will be incorporated into local planning mechanisms for each jurisdiction. *FEMA Requirement §201.6(c)(4)(ii)*
- Description of how public involvement will be continued in the HMP maintenance process. *FEMA Requirement § 201.6(c)(4)(i)*

Monitoring, Evaluating, and Updating the Plan

FEMA requires the HMP Update be reviewed and revised to reflect changes in development, progress in local mitigation efforts, and changes in its priorities, and resubmit it for approval within five years in order to continue to be eligible for mitigation project grant funding.

Because the HMP Update is a multi-jurisdictional effort, the Planning Team recommends it be reviewed on an annual basis. Annual reviews will facilitate improved tracking and record-keeping of progress toward implementation, and allow for an easier, more efficient five-year update. Additional Planning Team recommendations regarding how to monitor, evaluate and update the HMP Update within a five-year cycle follow:

- The HMP Planning Team, structured as described in Chapter One, be retained as the ongoing organization to maintain the HMP Update, with Planning Team vacancies filled on an as-needed basis.
- Continue to use the ‘combination’ approach to represent all participating jurisdictions for the annual HMP Update review and the five-year update. The combination approach allows for direct representation of the seven largest populated jurisdictions and the two higher education institutions on the Planning Team, and for authorized representation of the 19 smaller municipalities on the Planning Team, with the Champaign County HMP Project Manager serving on the Planning Team as authorized representative of the 19 smaller municipalities participating in HMP development and update.
- To facilitate the annual HMP Update review, use a survey format to canvass Planning Team members and key municipal representatives of participating jurisdictions

regarding changing circumstances, and progress toward implementing mitigation actions for each participating jurisdiction. Feedback from representatives of each participating jurisdiction will be encouraged to report on any changing circumstances impacting the priority of selected mitigation actions for each jurisdiction or make suggestions regarding potential mitigation actions.

- The Champaign County HMP Project Manager continue to coordinate the annual review of the HMP and the HMP update on a five-year cycle.
- The HMP Planning Team meet at least once a year to review the progress of participating jurisdictions toward implementing the HMP mitigation actions. The annual meeting will provide an opportunity for Planning Team members to brainstorm and discuss ways to improve the coordination of participating jurisdictions' efforts toward implementing HMP mitigation actions.
- The outcome of the HMP annual review be a brief report regarding: 1) significant changing circumstances within the HMP planning area related to natural hazard risk assessment; and 2) an update regarding efforts by jurisdictions toward implementing selected mitigation actions over the preceding year, and new mitigation action proposals.
- The five-year plan review and update cycle begins at the time of FEMA acceptance of the HMP update. So participating jurisdictions remain eligible for potential mitigation project grant funding opportunities, the schedule to complete the five-year update commence 18 months prior to the end of the five-year cycle.

Table 6-1. Standard Review Process for 5-Year Update

	Participating Jurisdiction	At beginning of 18-month HMP update	Once HMP update is approved by FEMA
1) 2)	Parkland College University of Illinois at Urbana-Champaign	These participating jurisdictions will be directly represented on the Planning Team.	The University of Illinois Administration and Board of Trustees will be requested to review and adopt the HMP Update. Parkland College Administration and Board of Trustees will be requested to review and adopt the HMP Update.
3) 4) 5) 6) 7) 8)	Champaign County City of Champaign City of Urbana Village of Rantoul Village of Mahomet Village of Savoy	These participating jurisdictions will be directly represented on the Planning Team.	The County Board, City Council, or Village Board of each participating local government jurisdiction will be requested to review and adopt the HMP update. Planning Team members will bring the request to review and adopt the HMP update forward for consideration.
9) 10) 11) 12) 13) 14) 15) 16) 17) 18) 19) 20) 21) 22) 23) 24) 25) 26) 27)	Village of Allerton Village of Bondville Village of Broadlands Village of Fisher Village of Foosland Village of Gifford Village of Homer Village of Ivesdale Village of Longview Village of Ludlow Village of Ogden Village of Pesotum Village of Philo Village of Royal Village of Sadorus Village of Sidney Village of St. Joseph Village of Thomasboro Village of Tolono	These participating jurisdictions will be requested to re-affirm and authorize the HMP Project Manager to represent the jurisdiction on the Planning Team.	

Continued Public Involvement

Ongoing opportunities for citizen input will remain an essential component of the HMP Update maintenance process. Efforts to inform the public and to allow for their effective participation as the HMP Update is reviewed and updated are described as follows:

Interactive HMP Website

The HMP website, <https://champaigncountyhmp.info>, established by Champaign County will be maintained, providing a means to both share information with the public about development of the HMP updates and to allow public feedback regarding the HMP Update. The website will continue to include agendas and minutes of the annual Planning Team meeting, and meetings related to the five-year HMP updates, and expanded to include documents and links to information regarding preventative protective measures to take prior to occurrence of natural and technical hazards and hazard mitigation planning.

Public Service Announcements and Press Releases

Public service announcements and press releases that include information about opportunities for public participation in the HMP Update review and five-year updates will be issued.

Public Meetings

Public meetings are a key forum for continued public input regarding the adopted HMP and continued discussion regarding possible implementation of hazard mitigation actions.

Participating local government agencies have either identified and prioritized a mitigation action to improve communications to their population regarding preventative protective measures to take prior to occurrence of natural and technical hazards or a mitigation action to provide key information, or links to key information, regarding hazard mitigation planning on their respective local government website.

During the HMP update process, review and adoption processes, communications regarding Planning Team review and progress regarding HMP update efforts are shared with local governing bodies regarding HMP Planning Team meetings throughout the update process, with questions from each governing body and public input at each Planning Team meeting or with HMP project staff encouraged.

Prior to the end of the five-year HMP update cycle, a public meeting to review and adopt the HMP Update will be held before the local governing body of each participating local government jurisdiction. As a matter of course, comments and questions from the public regarding the review and adoption of the HMP Update will be accepted at each of these meetings.

Federal Disaster Declarations and Emergency Declarations Applicable in Plan Area

FEDERAL DISASTER DECLARATIONS

1968 Severe Storms, Floods, Tornadoes (Declaration #: FEMA 242-DR)

The first recorded Federal Disaster Declaration that included Champaign County occurred on June 5, 1968. No further information is provided, probably due to the fact that this was one of the first federally documented declarations.

1974 Tornadoes (Declaration #: FEMA 427-DR)

This disaster was declared on April 11, 1974, and much like the previous declaration, there is no further information regarding this event.

1990 Ice Storms, Freezing Rains, Severe Winds (Declaration #: FEMA 860-DR)

On February 14, 1990 Champaign County, along with nine other counties in Illinois, was hit by an ice storm. A total of 1.8 inches of rain fell over a 10- to 12-hour period, resulting in between 0.5 and 0.75 inches of ice accumulating on exposed surfaces. According to a report prepared by Richard J. Hauer, et al., more than 18,000 homes in Champaign-Urbana lost power, some for as long as eight days. Ice-laden tree branches that fell on power lines were the main causes of the power outages. The City of Urbana Hazard Mitigation Plan notes that over half of the trees in Champaign-Urbana were damaged in the storm. Falling tree branches were also responsible for causing damage to houses and automobiles. The City of Urbana incurred \$768,000 in costs for emergency response and clean-up. The NOAA estimates that the storm caused in excess of \$12 million in damages in Champaign County.

1994 Torrential Rains, Thunderstorms, Flash Floods (Declaration #: FEMA 1025-DR)

In 1994, the large scale flooding that occurred in 16 Illinois counties, including Champaign County, led to the second recorded Federal Disaster Declaration for Champaign County. Heavy rains fell over a two-day period in April of that year and resulted in excess of \$50 million in damages to homes, businesses, and property in the County.

1996 Tornadoes, Severe Storms (Declaration #: FEMA 1110-DR)

In April of 1996, a series of tornados swept through Central Illinois, triggering a Federal Disaster Declaration that included Champaign County and four other counties. The tornados caused significant damage in the County, particularly in the Village of Savoy, City of Urbana and the Village of Ogden. The damage done in Savoy and Urbana was estimated at \$9 million. The Village of Ogden sustained even heavier damage, with more than 200 homes receiving major damage, 80 homes completely destroyed and 13 people suffering minor injuries (from the Village of Ogden website at [http://ww2010.atmos.uiuc.edu/\(Gh\)/arch/cases/960419/dmg/home.rxml](http://ww2010.atmos.uiuc.edu/(Gh)/arch/cases/960419/dmg/home.rxml)).

Federal Disaster Declarations and Emergency Declarations Applicable in Plan Area

FEDERAL DISASTER DECLARATIONS (continued)

2002 Severe Storms, Tornadoes, Floods (Declaration #: FEMA 1416-DR)

This Federal Disaster Declaration resulted after a series of severe storms occurred between April 21-May 3, 2002, producing tornadoes and flooding that caused widespread damage to Champaign County and 67 other Central Illinois counties.

2013 Severe Storms, High Winds, Tornadoes (Declaration #: FEMA 4157-DR)

This Federal Disaster Declaration was the result of a tornado which developed from severe storms in November 2013. According to the National Weather Service, the rain-wrapped tornado was about 1/2 mile wide when it moved through the center of Gifford. Nearly 30 homes were destroyed, more than 40 suffered major damage, and around 125 had minor damage. Around 15 businesses sustained moderate to major damage and the roof of a school was peeled back. Hundreds of vehicles were damaged or destroyed. Six people were injured in Champaign County, with damage estimated around \$60 million.

2020 Covid-19 Pandemic (Declaration #: FEMA 4489-DR)

On March 13, 2020, President Trump declared a nationwide emergency pursuant to Sec. 501(b) of Stafford Act to avoid governors needing to request individual emergency declarations. All 50 states, the District of Columbia, five territories and 23 tribes are working directly with FEMA under the nationwide emergency declaration for COVID-19.

FEDERAL EMERGENCY DECLARATIONS

1999 Winter Snow Storm (Declaration #: FEMA 3134-EM)

A Snow Emergency Declaration was issued on January 8, 1999 for 34 counties in Central and Northern Illinois, including Champaign County. A National Weather Service report described the storm as follows:

“A major winter storm paralyzed much of the region, during the first few days of 1999. Snow began falling across portions of Central Illinois before noon on New Year's Day, and continued at moderate to heavy rates for most of the following 24 hour period. Areas from Charleston southward also saw the snow mixed with rain or freezing rain at times. Once the snow ended, high winds developed, causing severe blowing and drifting snow, and dangerous wind chills. The heaviest snow band extended from near Quincy, to Virginia, then through the Peoria and Bloomington areas to Champaign, where 14 or more inches of snow were common. The weight of the heavy snow caused many roofs and porches to collapse, causing one death and one injury.”

Federal Disaster Declarations and Emergency Declarations Applicable in Plan Area

FEDERAL EMERGENCY DECLARATIONS (continued)

2020 Covid-19 (*Declaration #: FEMA 3435-EM*)

On March 13, 2020, the President declared the ongoing Coronavirus Disease 2019 (COVID-19) pandemic of sufficient severity and magnitude to warrant an emergency declaration for all states, tribes, territories, and the District of Columbia pursuant to section 501 (b) of the Robert T. Stafford Disaster Relief and Emergency Assistance Act, 42 U.S.C. 5121-5207 (the "Stafford Act"). State, Territorial, Tribal, local government entities and certain private non-profit organizations are eligible to apply for Public Assistance.

Overall Summary of Vulnerability Matrix for Each Participating Jurisdiction/Institution

The Overall Summary of Vulnerability Matrix shown on the following page displays ratings for each included hazard (severe, high, medium, or low) for each participating community or institution in the Plan Area.

Key:

Hazard	Description	Rating
A	Severe Storm (Thunderstorm Winds; Damaging Lightening; Hailstorm)	Severe
B	Severe Winter Storm (Blizzard; Heavy Snowstorm Ice Storm)	High
C	Tornadoes	High
D	Extreme Heat	Medium
E	Flooding (Riverine/Overbank Flood or Flash Flood/Ponding)	Low
F	Earthquake	Medium
G	Drought	Medium
H	Hazardous Materials Storage/Transport Release or Spill	Medium
J	Active Shooter	Medium
K	Pandemic	Medium
L	Cyber Security Attack or Disruption	Medium

Severe	Severe
High	High
Medium	Medium
Low	Low

Overall Summary of Vulnerability Matrix for Each Participating Jurisdiction/Institution

Included Hazards	A	B	C	D	E	F	G	H	I	J	K	L
Parkland College	Red	Light Purple	Light Purple	Yellow	Green	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
University of Illinois*	Red	Light Purple	Light Purple	Yellow	Green	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
Village of Allerton	Red	Light Purple	Light Purple	Yellow	Green	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
Village of Bondville	Red	Light Purple	Light Purple	Yellow	Green	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
Village of Broadlands	Red	Light Purple	Light Purple	Yellow	Green	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
City of Champaign	Red	Light Purple	Light Purple	Yellow	Green	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
Village of Fisher	Red	Light Purple	Light Purple	Yellow	Green	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
Village of Foosland	Red	Light Purple	Light Purple	Yellow	Green	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
Village of Gifford	Red	Light Purple	Light Purple	Yellow	Green	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
Village of Homer	Red	Light Purple	Light Purple	Yellow	Green	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
Village of Ivesdale	Red	Light Purple	Light Purple	Yellow	Green	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
Village of Longview	Red	Light Purple	Light Purple	Yellow	Green	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
Village of Ludlow	Red	Light Purple	Light Purple	Yellow	Green	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
Village of Mahomet	Red	Light Purple	Light Purple	Yellow	Green	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
Village of Ogden	Red	Light Purple	Light Purple	Yellow	Green	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
Village of Pesotum	Red	Light Purple	Light Purple	Yellow	Green	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
Village of Philo	Red	Light Purple	Light Purple	Yellow	Green	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
Village of Rantoul	Red	Light Purple	Light Purple	Yellow	Green	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
Village of Royal	Red	Light Purple	Light Purple	Yellow	Green	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
Village of Sadorus	Red	Light Purple	Light Purple	Yellow	Green	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
Village of Savoy	Red	Light Purple	Light Purple	Yellow	Green	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
Village of Sidney	Red	Light Purple	Light Purple	Yellow	Green	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
Village of St. Joseph	Red	Light Purple	Light Purple	Yellow	Green	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
Village of Thomasboro	Red	Light Purple	Light Purple	Yellow	Green	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
Village of Tolono	Red	Light Purple	Light Purple	Yellow	Green	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
City of Urbana	Red	Light Purple	Light Purple	Yellow	Green	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
Champaign County	Red	Light Purple	Light Purple	Yellow	Green	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow

*University of Illinois at Urbana-Champaign

Thunderstorm Wind Events in Plan Area

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Location	Date	Magnitude	Measure	Direct Injuries	Property Damage	Crop Damage
Champaign County	4/29/1956	0		0	\$0	\$0
Champaign County	4/25/1957	0		0	\$0	\$0
Champaign County	4/30/1960	0		0	\$0	\$0
Champaign County	6/4/1960	0		0	\$0	\$0
Champaign County	6/23/1960	65		0	\$0	\$0
Champaign County	3/6/1961	63		0	\$0	\$0
Champaign County	8/1/1961	50		0	\$0	\$0
Champaign County	8/1/1961	0		0	\$0	\$0
Champaign County	4/30/1962	65		0	\$0	\$0
Champaign County	4/30/1962	75		0	\$0	\$0
Champaign County	4/30/1962	0		0	\$0	\$0
Champaign County	5/18/1962	50		0	\$0	\$0
Champaign County	6/10/1963	55		0	\$0	\$0
Champaign County	6/10/1963	65		0	\$0	\$0
Champaign County	7/17/1965	65		0	\$0	\$0
Champaign County	8/25/1965	60		0	\$0	\$0
Champaign County	9/22/1965	0		0	\$0	\$0
Champaign County	12/8/1966	60		0	\$0	\$0
Champaign County	6/14/1968	50		0	\$0	\$0
Champaign County	8/18/1968	55		0	\$0	\$0
Champaign County	6/22/1969	50		0	\$0	\$0
Champaign County	4/19/1970	50		0	\$0	\$0
Champaign County	7/2/1970	50		0	\$0	\$0
Champaign County	6/20/1971	57		0	\$0	\$0
Champaign County	3/12/1972	0		0	\$0	\$0
Champaign County	6/18/1973	60		0	\$0	\$0
Champaign County	11/15/1973	50		0	\$0	\$0
Champaign County	3/4/1974	0		0	\$0	\$0
Champaign County	5/29/1974	0		0	\$0	\$0
Champaign County	5/30/1974	50		0	\$0	\$0
Champaign County	6/6/1974	51		0	\$0	\$0
Champaign County	6/19/1974	56		0	\$0	\$0
Champaign County	8/10/1974	0		0	\$0	\$0
Champaign County	3/23/1975	0		0	\$0	\$0
Champaign County	5/19/1975	0		0	\$0	\$0
Champaign County	11/9/1975	0		0	\$0	\$0
Champaign County	11/10/1975	0		0	\$0	\$0
Champaign County	11/10/1975	0		0	\$0	\$0
Champaign County	11/30/1975	0		0	\$0	\$0
Champaign County	5/31/1976	0		0	\$0	\$0
Champaign County	6/15/1976	0		0	\$0	\$0
Champaign County	5/4/1977	0		0	\$0	\$0
Champaign County	7/20/1977	0		0	\$0	\$0
Champaign County	7/21/1977	0		0	\$0	\$0
Champaign County	8/11/1977	0		0	\$0	\$0

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Champaign County	7/1/1978	50		0	\$0	\$0
Champaign County	6/29/1979	50		0	\$0	\$0
Champaign County	10/1/1979	0		0	\$0	\$0
Champaign County	6/15/1980	64		0	\$0	\$0
Champaign County	7/5/1980	0		0	\$0	\$0
Champaign County	7/5/1980	0		0	\$0	\$0
Champaign County	4/4/1981	0		0	\$0	\$0
Champaign County	4/4/1981	0		0	\$0	\$0
Champaign County	4/13/1981	50		0	\$0	\$0
Champaign County	4/13/1981	52		0	\$0	\$0
Champaign County	6/15/1981	52		0	\$0	\$0
Champaign County	6/15/1981	0		0	\$0	\$0
Champaign County	6/21/1981	0		0	\$0	\$0
Champaign County	8/9/1981	54		0	\$0	\$0
Champaign County	10/5/1981	55		0	\$0	\$0
Champaign County	4/2/1982	0		0	\$0	\$0
Champaign County	8/31/1982	0		0	\$0	\$0
Champaign County	8/31/1982	0		0	\$0	\$0
Champaign County	5/1/1983	58		0	\$0	\$0
Champaign County	5/1/1983	0		0	\$0	\$0
Champaign County	8/27/1983	52		0	\$0	\$0
Champaign County	5/6/1986	0		0	\$0	\$0
Champaign County	5/6/1986	0		0	\$0	\$0
Champaign County	9/29/1986	0		0	\$0	\$0
Champaign County	5/21/1987	0		0	\$0	\$0
Champaign County	6/2/1987	0		0	\$0	\$0
Champaign County	6/25/1987	50		0	\$0	\$0
Champaign County	6/29/1987	0		5	\$0	\$0
Champaign County	6/29/1987	50		0	\$0	\$0
Champaign County	7/15/1987	63		0	\$0	\$0
Champaign County	5/25/1989	0		0	\$0	\$0
Champaign County	8/31/1989	0		0	\$0	\$0
Champaign County	6/17/1990	0		0	\$0	\$0
Champaign County	10/4/1991	0		0	\$0	\$0
(CMI)WILLARD FLD CHA	4/19/1996	65		0	\$0	\$0
(CMI)WILLARD FLD CHA	4/25/2008	58	MG	0	\$0	\$0
(CMI)WILLARD FLD CHA	5/26/2019	52	EG	0	\$0	\$0
(CMI)WILLARD FLD CHA	7/14/2019	66	MG	0	\$15,000	\$0
BLOCK	8/13/2011	70	EG	0	\$0	\$100,000
BLOCK	8/9/2012	61	EG	0	\$50,000	\$0
BLOCK	7/13/2016	61	EG	0	\$45,000	\$0
BLOCK	7/13/2016	61	EG	0	\$20,000	\$0
BLOCK	6/10/2018	61	EG	0	\$20,000	\$0
Bondville	6/20/1995	0		0	\$0	\$0
BONDVILLE	6/9/1999			0	\$0	\$0
BONDVILLE	4/2/2006	64	MG	0	\$0	\$0
BONDVILLE	8/4/2009	52	EG	0	\$15,000	\$0

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BONDVILLE	8/20/2019	52	EG	0	\$10,000	\$0
BONGARD	6/10/2018	61	EG	0	\$15,000	\$0
BROADLANDS	6/29/2003	55	EG	0	\$0	\$0
BROADLANDS	8/9/2012	61	EG	0	\$350,000	\$0
BROADLANDS	5/10/2015	52	EG	0	\$50,000	\$0
BROADLANDS	6/10/2018	61	EG	0	\$0	\$0
Champaign	4/26/1994	0		0	\$0	\$0
CHAMPAIGN	10/29/1996			0	\$0	\$0
CHAMPAIGN	8/15/1997			0	\$0	\$0
CHAMPAIGN	8/2/2000	52	E	0	\$0	\$0
CHAMPAIGN	5/26/2001	50	E	0	\$0	\$0
CHAMPAIGN	7/4/2001	50	E	0	\$0	\$0
CHAMPAIGN	7/23/2001	52	E	0	\$15,000	\$0
CHAMPAIGN	7/8/2003	52	EG	0	\$0	\$0
CHAMPAIGN	7/21/2005	50	EG	0	\$0	\$0
CHAMPAIGN	7/26/2005	50	EG	0	\$0	\$0
CHAMPAIGN	9/19/2005	55	EG	0	\$0	\$0
CHAMPAIGN	5/15/2007	52	EG	0	\$0	\$0
CHAMPAIGN	10/18/2007	56	EG	0	\$2,000	\$0
CHAMPAIGN	7/21/2008	52	EG	0	\$30,000	\$0
CHAMPAIGN	7/21/2008	52	EG	0	\$15,000	\$0
CHAMPAIGN	6/19/2009	52	EG	0	\$100,000	\$0
CHAMPAIGN	6/19/2009	52	EG	0	\$40,000	\$0
CHAMPAIGN	8/4/2009	52	EG	0	\$15,000	\$0
CHAMPAIGN	10/26/2010	52	EG	0	\$40,000	\$0
CHAMPAIGN	8/9/2012	61	EG	0	\$60,000	\$0
CHAMPAIGN	5/30/2013	52	EG	0	\$30,000	\$0
CHAMPAIGN	5/31/2013	52	EG	0	\$0	\$0
CHAMPAIGN	6/25/2013	52	EG	0	\$2,000	\$0
CHAMPAIGN	6/4/2014	52	EG	0	\$1,000	\$0
CHAMPAIGN	7/14/2014	52	EG	0	\$1,500	\$0
CHAMPAIGN	6/7/2015	61	EG	0	\$35,000	\$0
CHAMPAIGN	6/18/2015	52	EG	0	\$40,000	\$0
CHAMPAIGN	5/11/2016	61	EG	0	\$3,000	\$0
CHAMPAIGN	6/20/2016	52	EG	0	\$2,000	\$0
CHAMPAIGN	6/19/2017	52	EG	0	\$0	\$0
CHAMPAIGN	7/11/2017	52	EG	0	\$90,000	\$0
CHAMPAIGN	5/9/2018	52	EG	0	\$10,000	\$0
CHAMPAIGN	5/9/2018	61	EG	0	\$15,000	\$0
CHAMPAIGN	8/17/2018	52	EG	0	\$0	\$0
CHAMPAIGN	5/23/2019	52	EG	0	\$0	\$0
CHAMPAIGN	6/30/2019	52	EG	0	\$0	\$0
CHAMPAIGN	6/30/2019	61	EG	0	\$60,000	\$0
CHAMPAIGN	6/30/2019	61	EG	0	\$0	\$0
CHAMPAIGN	8/20/2019	52	EG	0	\$0	\$0
CHANUTE AFB	6/16/2012	61	EG	0	\$15,000	\$0
CHANUTE AFB	6/30/2019	61	EG	0	\$40,000	\$0

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COUNTYWIDE	6/29/1998	72		2	\$500,000	\$0
COUNTYWIDE	6/14/2000			0	\$0	\$0
COUNTYWIDE	6/23/2000			0	\$0	\$0
COUNTYWIDE	5/25/2004	52	EG	0	\$0	\$0
DEWEY	10/26/2010	52	EG	0	\$12,000	\$0
FISHER	6/28/1998	52		0	\$0	\$0
FISHER	7/21/2008	52	EG	0	\$20,000	\$0
FISHER	7/29/2008	52	EG	0	\$15,000	\$0
FISHER	4/11/2011	52	EG	0	\$1,000	\$0
FISHER	6/24/2013	52	EG	0	\$6,000	\$0
FISHER	7/14/2014	52	EG	0	\$1,000	\$0
FISHER	5/9/2018	61	EG	0	\$18,000	\$0
FISHER	5/23/2019	52	EG	0	\$0	\$0
FOOSLAND	4/8/2015	52	EG	0	\$50,000	\$0
FOOSLAND	12/23/2015	61	EG	0	\$65,000	\$0
FOOSLAND	8/8/2019	52	EG	0	\$10,000	\$0
GIFFORD	7/21/2005	50	EG	0	\$0	\$0
HOMER	6/12/1998			1	\$0	\$0
HOMER	7/21/2005	50	EG	0	\$0	\$0
HOMER	5/13/2009	61	EG	0	\$30,000	\$0
HOMER	7/13/2016	61	EG	0	\$55,000	\$0
HOMER	7/11/2017	52	EG	0	\$0	\$0
HOMER ARPT	7/26/2014	52	EG	0	\$12,000	\$0
HOMER ARPT	5/26/2019	52	EG	0	\$0	\$0
ILLINI ARPT	7/14/2014	52	EG	0	\$1,500	\$0
ILLINI ARPT	6/7/2015	61	EG	0	\$25,000	\$0
Ivesdale	5/13/1995	0		0	\$0	\$0
IVESDALE	2/11/1999	52		0	\$0	\$0
IVESDALE	6/24/2002	50	E	0	\$0	\$0
IVESDALE	5/19/2019	52	EG	0	\$0	\$0
IVESDALE	6/30/2019	52	EG	0	\$0	\$0
LUDLOW	7/13/2004	78	EG	0	\$2,200,000	\$0
LUDLOW	6/14/2017	52	EG	0	\$0	\$0
MAHOMET	6/25/1997			0	\$0	\$0
MAHOMET	8/24/1997			0	\$700,000	\$0
MAHOMET	4/8/1999	69		0	\$0	\$0
MAHOMET	6/1/1999	65		0	\$0	\$0
MAHOMET	8/18/2001	62	E	0	\$0	\$0
MAHOMET	10/24/2001	61	E	0	\$0	\$0
MAHOMET	5/9/2002	50	E	0	\$0	\$0
MAHOMET	7/9/2003	52	EG	0	\$0	\$0
MAHOMET	7/13/2004	61	EG	0	\$0	\$0
MAHOMET	6/13/2005	55	EG	0	\$0	\$0
MAHOMET	4/2/2006	55	EG	0	\$0	\$0
MAHOMET	11/14/2011	61	EG	0	\$27,000	\$0
MAHOMET	6/24/2013	52	EG	0	\$3,000	\$0
MAHOMET	6/25/2013	52	EG	0	\$12,000	\$0

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MAHOMET	7/10/2013	52	EG	0	\$0	\$0
MAHOMET	11/17/2013	71	EG	0	\$7,000	\$0
MAHOMET	11/17/2013	61	EG	0	\$60,000	\$0
MAHOMET	11/17/2013	61	EG	0	\$50,000	\$0
MAHOMET	6/4/2014	52	EG	0	\$1,500	\$0
MAHOMET	7/26/2014	52	EG	0	\$4,000	\$0
MAHOMET	6/20/2016	52	EG	0	\$1,000	\$0
MAHOMET	6/20/2016	52	EG	0	\$1,000	\$0
MAHOMET	5/9/2018	61	EG	0	\$25,000	\$0
MAHOMET	5/9/2018	52	EG	0	\$0	\$0
MAHOMET	5/9/2018	52	EG	0	\$0	\$0
MAHOMET	5/23/2019	52	EG	0	\$0	\$0
MAHOMET	5/23/2019	61	EG	0	\$0	\$0
MAHOMET	8/20/2019	52	EG	0	\$0	\$0
MAHOMET/CHAMPAIGN	1/18/1996	61		0	\$0	\$0
MAYVIEW	7/25/2015	52	EG	0	\$15,000	\$0
MIRA STATION	7/13/2016	61	EG	0	\$1,000	\$0
OGDEN	10/18/2007	50	MG	0	\$31,000	\$0
OGDEN	6/13/2010	52	EG	0	\$8,000	\$0
OGDEN	5/25/2011	52	EG	0	\$30,000	\$0
OGDEN	6/7/2015	61	EG	0	\$45,000	\$0
PESOTUM	5/24/2006	52	EG	0	\$0	\$0
PESOTUM	5/25/2011	52	EG	1	\$15,000	\$0
PESOTUM	5/25/2011	52	EG	0	\$15,000	\$0
PESOTUM	11/17/2013	61	EG	0	\$75,000	\$0
PHILO	3/28/1998			0	\$90,000	\$0
PHILO	4/9/2001	54	M	0	\$0	\$0
PHILO	11/5/2005	50	EG	0	\$0	\$0
PHILO	5/30/2008	61	EG	0	\$15,000	\$0
PHILO	3/8/2009	52	EG	0	\$20,000	\$0
PHILO	8/9/2012	61	EG	0	\$0	\$0
PHILO	6/10/2018	61	EG	0	\$45,000	\$0
PHILO	6/10/2018	61	EG	0	\$25,000	\$0
PHILO	6/30/2019	52	EG	0	\$0	\$0
PROSPECT	4/18/2013	61	EG	0	\$60,000	\$0
RANTOUL	7/22/1998			0	\$0	\$0
RANTOUL	4/20/2000			0	\$0	\$0
RANTOUL	8/18/2001	50	E	0	\$0	\$0
RANTOUL	7/11/2003	65	EG	0	\$0	\$0
RANTOUL	12/27/2008	52	EG	0	\$12,000	\$0
RANTOUL	5/6/2012	52	EG	0	\$12,000	\$0
RANTOUL	6/20/2016	61	EG	0	\$95,000	\$0
RANTOUL	6/17/2017	61	EG	0	\$0	\$0
RANTOUL	5/31/2018	52	EG	0	\$25,000	\$0
RANTOUL	6/30/2019	52	EG	0	\$0	\$0
RISING	5/9/2018	52	EG	0	\$0	\$0
ROYAL	7/5/2003	55	EG	0	\$0	\$0

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ROYAL	7/21/2005	55	EG	0	\$0	\$0
ROYAL	5/26/2010	52	EG	0	\$12,000	\$0
ROYAL	5/26/2019	52	EG	0	\$0	\$0
SADORUS	8/23/1996			0	\$5,000	\$0
SADORUS	5/18/2000	52	E	0	\$0	\$0
SADORUS	5/31/2006	52	EG	0	\$0	\$0
SADORUS	5/25/2011	52	EG	0	\$12,000	\$0
SADORUS	5/9/2018	52	EG	0	\$10,000	\$0
SADORUS	5/26/2019	52	EG	0	\$0	\$0
SAVOY	3/8/2009	52	EG	0	\$8,000	\$0
SAVOY	8/4/2009	52	EG	0	\$20,000	\$0
SAVOY	5/21/2014	52	EG	0	\$100,000	\$0
SAVOY	7/11/2017	61	EG	0	\$60,000	\$0
SAVOY	6/10/2018	61	EG	0	\$50,000	\$0
SAVOY	6/10/2018	61	EG	0	\$80,000	\$0
SAVOY	5/26/2019	52	EG	0	\$0	\$0
SEYMOUR	11/10/1998			0	\$0	\$0
SEYMOUR	4/16/2006	52	EG	0	\$0	\$0
SEYMOUR	6/15/2008	52	EG	0	\$15,000	\$0
SEYMOUR	6/7/2015	61	EG	0	\$62,000	\$0
SEYMOUR	9/29/2019	52	EG	0	\$10,000	\$0
SIDNEY	7/14/1997			0	\$0	\$0
SIDNEY	6/15/2008	52	EG	0	\$15,000	\$0
SIDNEY	6/18/2009	61	EG	0	\$3,000	\$0
SIDNEY	8/4/2009	61	EG	0	\$35,000	\$0
SIDNEY	8/9/2012	61	EG	0	\$20,000	\$0
SIDNEY	8/9/2012	61	EG	0	\$8,000	\$0
SIDNEY	8/9/2012	61	EG	0	\$15,000	\$35,000
SIDNEY	7/18/2016	52	EG	0	\$10,000	\$0
SIDNEY	7/11/2017	52	EG	0	\$40,000	\$0
SIDNEY	6/10/2018	61	EG	0	\$60,000	\$0
ST JOSEPH	7/21/2005	52	EG	0	\$0	\$0
ST JOSEPH	6/21/2011	52	EG	0	\$15,000	\$0
ST JOSEPH	8/16/2012	52	EG	0	\$10,000	\$0
ST JOSEPH	7/10/2013	52	EG	0	\$0	\$0
STALEY	10/26/2010	52	EG	0	\$4,000	\$0
STALEY	4/19/2011	61	EG	0	\$20,000	\$0
STALEY	3/30/2017	52	EG	0	\$0	\$0
STALEY	3/30/2017	52	EG	0	\$0	\$0
STALEY	6/29/2017	52	EG	0	\$10,000	\$0
STALEY	5/9/2018	52	EG	0	\$10,000	\$0
STALEY	6/10/2018	70	EG	0	\$15,000	\$0
THOMASBORO	7/26/2005	55	EG	0	\$0	\$0
THOMASBORO	6/10/2018	52	EG	0	\$0	\$0
THOMASBORO	8/20/2019	52	EG	0	\$10,000	\$0
TIPTON	5/31/2018	61	EG	0	\$120,000	\$0
Tolono	5/13/1995	0		0	\$0	\$0

Thunderstorm Wind Events in Plan Area

Appendix C

TOLONO	6/18/1998			0	\$0	\$0
TOLONO	7/22/1998			0	\$0	\$0
TOLONO	5/30/2008	61	EG	0	\$40,000	\$0
TOLONO	5/13/2009	52	EG	0	\$50,000	\$0
TOLONO	7/24/2009	52	EG	0	\$3,000	\$0
TOLONO	6/13/2010	52	EG	0	\$1,000	\$0
TOLONO	5/21/2014	52	EG	0	\$30,000	\$0
TOLONO	6/12/2015	52	EG	0	\$2,000	\$0
TOLONO	7/13/2016	61	EG	0	\$60,000	\$0
TOLONO	7/11/2017	52	EG	0	\$60,000	\$0
TOLONO	5/26/2019	52	EG	0	\$0	\$0
TOLONO	6/30/2019	52	EG	0	\$0	\$0
TOLONO	7/3/2019	52	EG	0	\$0	\$0
UNIV ILL WILLARD ARP	7/11/2017	61	EG	0	\$175,000	\$0
URBANA	5/9/2000			0	\$0	\$0
URBANA	7/22/2002	50	E	0	\$0	\$0
URBANA	6/13/2005	51	MG	0	\$0	\$0
URBANA	6/27/2005	50	EG	0	\$0	\$0
URBANA	7/18/2007	55	EG	0	\$2,000	\$0
URBANA	8/24/2007	50	EG	0	\$0	\$0
URBANA	8/16/2009	52	EG	0	\$15,000	\$0
URBANA	5/25/2011	52	EG	0	\$90,000	\$0
URBANA	5/25/2011	52	EG	0	\$30,000	\$0
URBANA	6/21/2011	52	EG	0	\$50,000	\$0
URBANA	5/30/2013	52	EG	0	\$0	\$0
URBANA	6/24/2013	52	EG	0	\$10,000	\$0
URBANA	7/26/2014	52	EG	0	\$22,000	\$0
URBANA	7/26/2014	52	EG	0	\$9,000	\$0
URBANA	5/23/2019	52	EG	0	\$0	\$0
URBANA	5/26/2019	52	EG	0	\$0	\$0
URBANA	6/30/2019	61	EG	0	\$80,000	\$0
Total:				9	\$7,391,500	\$135,000

https://www.ncdc.noaa.gov/stormevents/listevents.jsp?eventType=%28C%29+Thunderstorm+Wind&beginDate_mm=12&beginDate_dd=01&beginDate_yyyy=1950&endDate_mm=12&endDate_dd=31&endDate_yyyy=2019&county=CHAMPAIGN%3A19&hailfilter=0.00&tornfilter=0&windfilter=000&sort=DT&submitbutton=Search&statefips=17%2CILLINOIS#

Lightening Events in Plan Area

Appendix D

Location	Date	Injuries Direct	Property Damage	Event Narrative
PESOTUM	7/14/1997	1	\$3,500	Lightning struck a television antenna on a home in Mahomet. It travelled through the roof and knocked a man out of his wheelchair. He only suffered minor injuries and was treated and released from a local hospital. The lightning strike caused approximately \$3,500 in damage to the roof.
PESOTUM	7/7/2008	0	\$25,000	Lightning struck a garage in Pesotum and set it ablaze. The garage and its contents were destroyed.
CHAMPAIGN	7/24/2009	0	\$40,000	Lightning struck the roof of a house, causing a fire in the attic. Four people in the house escaped without injury. The fire was contained in the attic and did minor damage to second floor rooms.
SAVOY	8/27/2009	0	\$45,000	A thunderstorm, with very heavy rainfall also produced a lightning strike which started a fire at a house near Savoy. The fire started on the roof and spread to the attic and ceiling of the uppermost floor of the house. Three people were in the house at the time of the lightning strike, and they all escaped uninjured.
STALEY	10/1/2009	0	\$20,000	A six unit apartment building on the west side of Champaign was struck by lightning, which caused a fire. Walls in one of the apartments were damaged, as well as a furnace. All of the occupants of the building escaped unharmed.
OGDEN	6/9/2010	0	\$50,000	Lightning struck an antenna attached to a garage in the village of Ogden. The fire engulfed the garage and spread to the attic of the house. There were no injuries to the occupants of the house.
THOMASBORO	11/25/2010	0	\$10,000	Lightning started a fire in a house between the kitchen and garage. The damage was confined to the area near the lightning strike. There were no injuries reported.
MIRA STATION	4/19/2011	0	\$300,000	Lightning struck the roof of a home, starting a fire in the attic and the electrical system of the house. The house sustained significant damage. No injuries were reported.
PHILO	5/28/2011	0	\$20,000	A late afternoon thunderstorm produced a lightning strike which damaged a garage and automobile. The vehicle sustained minor damage, but the garage and its contents had major fire damage.
FISHER	8/23/2011	0	\$10,000	An auto body shop in the town of Fisher was struck by lightning, which ignited a fire. The building sustained minor damage. There was one person in the building, but they escaped without injury.
UNIV ILL WILLARD ARP	4/10/2013	0	\$5,000	A car was struck by lightning on County Road 900 North about a half mile east of US-45. Damage occurred to the vehicle and a large hole was blown into the pavement.
OGDEN	7/10/2013	0	\$100,000	Lightning struck a house in Ogden. The house was destroyed by the resulting fire.

https://www.ncdc.noaa.gov/stormevents/listevents.jsp?eventType=%28C%29+Lightning&beginDate_mm=12&beginDate_dd=01&beginDate_yyyy=1950&endDate_mm=12&endDate_dd=31&endDate_yyyy=2019&county=CHAMPAIGN%3A19&haifilter=0.00&torfilter=0&windfilter=000&sort=DT&submitButton=Search&statefips=17%2CILLINOIS

Hailstorm Events in Plan Area

Appendix E

BEGINNING LOCATION	DATE	MAGNITUDE	PROPERTY	
			DAMAGE	EVENT_NARRATIVE
	6/19/1956	1.75	\$0	
	6/10/1958	0.75	\$0	
	6/10/1958	0.75	\$0	
	8/7/1958	1	\$0	
	5/6/1961	2.75	\$0	
	5/6/1961	1.5	\$0	
	7/22/1962	0.75	\$0	
	4/17/1963	1.75	\$0	
	6/13/1963	1	\$0	
	1/19/1964	1.25	\$0	
	4/18/1964	1	\$0	
	4/11/1965	1.5	\$0	
	4/3/1974	0.75	\$0	
	4/3/1974	0.75	\$0	
	6/14/1974	1.75	\$0	
	6/29/1976	1	\$0	
	6/29/1976	1.75	\$0	
	5/4/1977	1.75	\$0	
	8/11/1977	1.75	\$0	
	9/30/1977	1.5	\$0	
	5/12/1978	1.75	\$0	
	7/30/1979	0.75	\$0	
	7/30/1979	1	\$0	
	8/20/1979	1	\$0	
	4/10/1981	1.75	\$0	
	4/13/1981	0.75	\$0	
	5/1/1983	1	\$0	
	5/1/1983	1	\$0	
	3/15/1984	1.75	\$0	
	7/9/1985	1	\$0	
	5/6/1986	1.75	\$0	
	5/7/1986	0.75	\$0	
	5/7/1986	0.75	\$0	
	7/2/1992	0.75	\$0	
	8/26/1992	1.75	\$0	
Broadlands	4/26/1994	1.75	\$0	
Champaign	6/20/1995	0.75	\$0	
CHAMPAIGN	4/19/1996	1.75	\$0	
CHAMPAIGN	5/24/1996	1	\$0	
RANTOUL	4/30/1997	1.5	\$0	
MAHOMET	8/24/1997	1	\$0	
CHAMPAIGN	8/24/1997	1	\$0	
IVESDALE	5/12/1998	1.75	\$0	
MAHOMET	5/23/1998	1.75	\$0	
PHILO	6/18/1998	1	\$0	
MAHOMET	4/8/1999	1	\$0	
MAHOMET	4/10/1999	0.75	\$0	
TOLONO	4/10/1999	1	\$0	
CHAMPAIGN	8/12/1999	0.75	\$0	
ST JOSEPH	3/8/2000	1	\$0	
TOLONO	5/12/2000	0.75	\$0	
ST JOSEPH	5/12/2000	1.75	\$0	
IVESDALE	5/18/2000	1.75	\$0	

Hailstorm Events in Plan Area

Appendix E

CHAMPAIGN UF	5/18/2000	0.75	\$0
SADORUS	5/18/2000	2.75	\$24,000
CHAMPAIGN	5/18/2000	2.75	\$0
IVESDALE	8/2/2000	1.75	\$0
RANTOUL	4/9/2001	1.25	\$0
	8/18/2001	1	
RANTOUL			\$0
	8/18/2001	1.75	
IVESDALE			\$0
CHAMPAIGN	10/24/2001	1	\$0
URBANA	6/4/2002	0.88	\$0
MAHOMET	4/4/2003	1.75	\$0
IVESDALE	4/4/2003	0.88	\$0
FISHER	4/4/2003	0.75	\$0
MAHOMET	5/8/2003	0.75	\$0
IVESDALE	5/30/2003	0.75	\$0
OGDEN	6/29/2003	0.75	\$0
RANTOUL	8/2/2003	0.75	\$0
SEYMOUR	8/2/2003	0.75	\$0
MAHOMET	5/18/2004	0.75	\$0
MAHOMET	5/30/2004	1.75	\$0
OGDEN	7/5/2004	0.88	\$0
MAHOMET	7/13/2004	1	\$0
MAHOMET	3/30/2005	0.88	\$0
PHILO	5/13/2005	0.75	\$0
CHAMPAIGN	6/25/2005	1	\$0
FISHER	3/12/2006	2.75	\$0
SIDNEY	4/2/2006	0.75	\$0
IVESDALE	4/14/2006	1	\$0
PESOTUM	4/14/2006	0.88	\$0
CHAMPAIGN	4/16/2006	0.75	\$0
GIFFORD	4/16/2006	0.88	\$0
MAHOMET	4/19/2006	1	\$0
PHILO	6/26/2006	0.88	\$0
PESOTUM	3/1/2007	0.75	\$0
MAHOMET	3/14/2007	0.75	\$0
MAHOMET	3/22/2007	0.88	\$0
MAHOMET	4/3/2007	0.88	\$0
CHAMPAIGN	4/3/2007	0.75	\$0
URBANA	4/3/2007	0.75	\$0
OGDEN	4/3/2007	1	\$0
URBANA	7/17/2007	1	\$0
CHANUTE AFB	5/2/2008	0.75	\$0
MAHOMET	5/13/2008	0.75	\$0
SADORUS	5/30/2008	2.75	\$0
PHILO	5/30/2008	4.25	\$0
PHILO	5/30/2008	2.5	\$0
SADORUS	5/30/2008	2	\$0
FISHER	6/3/2008	1	\$0
THOMASBORO	6/3/2008	0.88	\$0
RANTOUL	6/3/2008	0.75	\$0
CHAMPAIGN	5/15/2009	0.75	\$0
MAHOMET	6/19/2009	1	\$0

Hail up to one inch in diameter fell in a swath from 2 miles north of Rantoul to 2 miles northeast of Rantoul. It covered the ground at the Brookhill Golf Course. Also, several homes sustained siding damage due to the hail.

Hail ranging from dime to golf ball size was reported in Ivesdale, Tolono, Pesotum, Philo and Broadlands.

Hailstorm Events in Plan Area

Appendix E

CHAMPAIGN	6/19/2009	0.75	\$0	
ROYAL	5/26/2010	1	\$0	Hail accumulated several inches deep, causing significant damage to a corn field northeast of Royal.
SEYMOUR	10/24/2010	0.75	\$0	
CHAMPAIGN	4/19/2011	1	\$0	
PESOTUM	4/19/2011	1	\$0	
SIDNEY	5/7/2011	1	\$0	
SIDNEY	5/7/2011	1.5	\$0	
ST JOSEPH	5/7/2011	1	\$0	
HOMER	5/7/2011	0.75	\$0	
PESOTUM	5/25/2011	1	\$0	
SEYMOUR	5/25/2011	1.75	\$0	
RANTOUL	11/14/2011	0.88	\$0	
GIFFORD	11/14/2011	1	\$0	
PHILO	3/23/2012	0.75	\$0	
URBANA	3/23/2012	0.75	\$0	
ST JOSEPH	5/1/2012	1	\$0	
HOMER	5/1/2012	1	\$0	
PHILO	5/20/2012	0.75	\$0	
SAVOY	5/28/2012	0.75	\$0	
CHAMPAIGN	5/28/2012	0.75	\$0	
URBANA	7/31/2012	0.88	\$0	
PHILO	8/9/2012	0.75	\$0	
SIDNEY	9/7/2012	1	\$0	
PHILO	9/21/2012	0.75	\$0	
MAHOMET	4/10/2013	0.75	\$0	
OGDEN	4/16/2013	0.88	\$0	
SIDNEY	4/17/2013	0.75	\$0	
FISHER	6/22/2013	1	\$0	
MAHOMET	6/25/2013	0.75	\$0	
CHAMPAIGN	5/21/2014	0.75	\$0	
SAVOY	5/21/2014	1.5	\$0	
TOLONO	5/21/2014	0.75	\$0	
CHAMPAIGN	5/21/2014	1.5	\$0	
	5/21/2014	1.75		Significant hail damage at Willard Airport in Savoy. Damage to several vehicles as well as minor damage to a B-17 aircraft.
(CMI)WILLARD I			\$800,000	
PHILO	5/21/2014	0.88	\$0	
PHILO	5/21/2014	1	\$0	
BROADLANDS	5/21/2014	1	\$0	
MAHOMET	5/21/2014	1	\$0	
MAHOMET	5/21/2014	1.75	\$0	
CHAMPAIGN	4/8/2015	0.75	\$0	
THOMASBORO	4/8/2015	1	\$0	
BROADLANDS	4/8/2015	1	\$0	
FISHER	4/8/2015	1	\$0	
SEYMOUR	4/9/2015	0.75	\$0	
MAHOMET	4/9/2015	1.75	\$0	
MAHOMET	4/9/2015	1.75	\$0	
MAHOMET	4/9/2015	3	\$0	
MAHOMET	4/9/2015	2	\$0	
DEWEY	4/9/2015	1	\$0	
CHAMPAIGN	6/7/2015	1	\$0	
LUDLOW	6/20/2015	0.75	\$0	
MAHOMET	9/4/2015	1	\$0	

Hailstorm Events in Plan Area

Appendix E

FOOSLAND	4/21/2016	1	\$0
FISHER	4/21/2016	0.75	\$0
CHAMPAIGN	5/31/2016	0.75	\$0
ST JOSEPH	3/20/2017	0.88	\$0
TOLONO	4/10/2017	0.88	\$0
TOLONO	4/29/2017	1.25	\$0
TOLONO	4/29/2017	1	\$0
IVESDALE	5/18/2017	1	\$0
SIDNEY	9/4/2017	0.75	\$0
CHAMPAIGN	5/9/2018	0.75	\$0
CHAMPAIGN	5/9/2018	0.75	\$0
FISHER	5/28/2018	0.75	\$0
CHAMPAIGN	8/17/2018	0.88	\$0
CHAMPAIGN	5/26/2019	1	\$0
CHAMPAIGN	5/26/2019	0.88	\$0
FISHER	5/28/2019	1.25	\$0
DEWEY	5/28/2019	1.5	\$0
PROSPECT	5/28/2019	1.75	\$0
RANTOUL	5/28/2019	0.88	\$0
SEYMOUR	9/29/2019	1	\$0

https://www.ncdc.noaa.gov/stormevents/listevents.jsp?hailfilter=4.00&sort=DT&statefips=17%2CILLINOIS&county=CHAMPAIGN%3A19&eventType=%28C%29+Hail&beginDate_yyyy=1950&beginDate_mm=12&beginDate_dd=01&endDate_yyyy=2019&endDate_mm=12&endDate_dd=31

Tornado Events in Plan Area

Appendix F

Beginning Location	Date	Tornado F or EF Scale	DEATHS DIRECT	INJURIES DIRECT	PROPERTY DAMAGE	CROPS DAMAGE	Length while on ground (tenths of a mile)	Width while on ground (feet)
	4/9/1953	F3	0	5	\$25,000,000	\$0	17.8	150
	8/29/1955	F0	0	0	\$0	\$0	0	33
	8/29/1955	F0	0	0	\$0	\$0	0	33
	11/15/1955	F1	0	0	\$0	\$0	0	33
	6/23/1958	F0	0	0	\$250	\$0	0.1	40
	6/5/1960	F2	0	1	\$250,000	\$0	9.7	20
	6/23/1960	F2	0	0	\$25,000	\$0	3.8	800
	3/4/1961	F0	0	0	\$25,000	\$0	6.2	50
	3/6/1961	F2	0	0	\$250,000	\$0	20.3	33
	7/2/1962	F2	0	0	\$25,000	\$0	6.9	50
	4/22/1963	F3	0	5	\$250,000	\$0	16.8	200
	1/24/1967	F2	0	5	\$25,000	\$0	10.4	50
	4/21/1967	F1	0	0	\$2,500	\$0	0	33
	7/19/1970		0	0	\$30	\$0	0.1	20
	12/10/1971	F1	0	0	\$250,000	\$0	0.1	30
	4/3/1974	F3	1	0	\$250,000	\$0	5.9	70
	4/3/1974	F3	0	0	\$250,000	\$0	14.9	350
	4/12/1974	F2	0	0	\$250,000	\$0	12.5	20
	6/19/1974	F0	0	0	\$0	\$0	0	33
	3/20/1976	F4	0	11	\$2,500,000	\$0	29.7	800
	5/15/1976	F0	0	0	\$250	\$0	0.1	3
	6/8/1981	F1	0	0	\$25,000	\$0	0	33
	6/8/1981	F1	0	0	\$25,000	\$0	0	33
	8/28/1984	F1	0	0	\$250,000	\$0	1	33
	11/19/1985	F1	0	0	\$250,000	\$0	3	40
	4/11/1987	F0	0	0	\$0	\$0	1	10
	6/2/1987	F2	0	0	\$25,000	\$0	0.1	10
	5/9/1990	F1	0	0	\$25,000	\$0	0.5	50
	6/20/1990	F2	0	0	\$2,500,000	\$0	5	100
	6/17/1992	F0	0	1	\$0	\$0	0.1	10
Broadlands	4/26/1994	F0	0	0	\$0	\$0	0.25	50
SAVOY	4/19/1996	F3	0	12	\$9,000,000	\$0	4	220
OGDEN	4/19/1996	F3	1	13	\$0	\$0	2	1500
CHAMPAIGN	5/28/1996	F0	0	0	\$0	\$0	0.3	40
TOLONO	5/2/1998	F0	0	0	\$0	\$0	0.1	10
TOLONO	6/29/1998	F0	0	0	\$0	\$0	0.6	20
MAHOMET	6/1/1999	F0	0	0	\$0	\$0	0.2	10
URBANA	6/4/1999	F0	0	0	\$0	\$0	0.1	20
URBANA	6/4/1999	F0	0	0	\$0	\$0	0.1	20
THOMASBORO	5/18/2000	F0	0	0	\$0	\$0	0.1	10
MAHOMET	6/20/2000	F0	0	0	\$20,000	\$0	1.1	50
OGDEN	8/18/2001	F0	0	0	\$0	\$0	0.1	20
PHILO	8/18/2001	F0	0	0	\$0	\$0	0.1	5
CHAMPAIGN	10/24/2001	F1	0	2	\$500,000	\$0	1	100
RANTOUL	5/14/2003	F0	0	0	\$0	\$0	0.1	10
ST JOSEPH	5/14/2003	F0	0	0	\$0	\$0	0.1	10
BROADLANDS	5/14/2003	F0	0	0	\$0	\$0	0.1	10

Tornado Events in Plan Area

Appendix F

CHAMPAIGN	7/9/2003	F0	0	0	\$0	\$0	0.1	10
PESOTUM	4/20/2004	F0	0	0	\$15,000	\$0	0.9	50
PHILO	4/20/2004	F0	0	0	\$0	\$0	0.1	50
TOLONO	6/10/2004	F0	0	0	\$0	\$0	0.7	10
PHILO	6/10/2004	F0	0	0	\$0	\$0	0.5	10
SIDNEY	6/10/2004	F1	0	0	\$5,000	\$0	3	30
SIDNEY	11/1/2004	F0	0	0	\$0	\$0	1.5	100
CHAMPAIGN	4/2/2006	F0	0	0	\$0	\$0	0.1	30
FLATVILLE	4/2/2006	F0	0	0	\$0	\$0	0.3	50
BONDVILLE	5/31/2006	F0	0	0	\$0	\$0	1.2	50
SADORUS	5/31/2006	F0	0	0	\$0	\$0	0.4	50
IVESDALE	5/31/2006	F0	0	0	\$0	\$0	0.5	50
TOLONO	5/31/2006	F0	0	0	\$0	\$0	0.4	50
RISING	5/25/2011	EF0	0	0	\$5,000	\$0	0.2	15
IVESDALE	5/1/2012	EF1	0	0	\$25,000	\$0	8.07	75
SIDNEY	5/1/2012	EF0	0	0	\$0	\$0	0.09	20
THOMASBORO	11/17/2013	EF3	0	6	\$60,000,000	\$0	14.67	880
BONGARD	11/17/2013	EF2	0	0	\$800,000	\$0	10.7	440
SEYMOUR	6/7/2015	EF0	0	0	\$85,000	\$3,000	1.18	25
BLOCK	9/9/2016	EF2	0	0	\$800,000	\$100,000	6.26	75
STALEY	6/10/2018	EF0	0	0	\$80,000	\$0	0.06	30
SAVOY	6/10/2018	EF0	0	0	\$20,000	\$0	0.06	20
CHANUTE AFB	6/26/2018	EF1	0	0	\$37,000	\$0	3.88	75
CHAMPAIGN	5/26/2019	EF1	0	0	\$0	\$0	0.9	250
URBANA	5/26/2019	EF1	0	0	\$0	\$0	0.85	250
TIPTON	5/26/2019	EF1	0	0	\$0	\$0	1.01	250
			2	61	\$61,852,000			

https://www.ncdc.noaa.gov/stormevents/listevents.jsp?eventType=%28C%29+Tornado&beginDate_mm=12&beginDate_dd=01&beginDate_yyyy=1950&endDate_mm=12&endDate_dd=31&endDate_yyyy=2019&county=CHAMPAIGN%3A19&hailfilter=0.00&tornfilter=0&windfilter=000&sort=DT&submitbutton=Search&statefips=17%2CILLINOIS

Flash Flood Events in Plan Area

Appendix G

Location	Date	Property Damage	EVENT_NARRATIVE
BROADLANDS	5/10/1996	\$200,000	
BROADLANDS	5/19/1998	\$80,000	
THOMASBORO	8/3/1998	\$0	A series of thunderstorms dumped up to 3 inches of rain over eastern Champaign County.
ROYAL	8/5/1998	\$0	Numerous roads were flooded and three homes had water in their basements in the Royal area. No injuries were reported.
COUNTYWIDE	2/24/2001	\$0	Local officials noted numerous roads in mainly the northern part of the county were flooded. Barricades were placed in many locations.
SOUTHEAST PORTION	4/19/2002	\$0	Over 6 inches of rain fell in a short amount of time in southeastern Champaign county, between Pesotum and Broadlands. Numerous roads in the area were flooded with several roads washed out. No structural damage was reported with the flooding and no injuries were reported.
BROADLANDS	5/7/2002	\$0	Several roads in the Broadlands area were flooded for a brief time due to heavy rains. No structural damage was reported.
SOUTH PORTION	5/12/2002	\$0	Between 2 and 4 inches of rain fell on already saturated ground causing flash flooding. Numerous roads were closed due to flooding and the Broadlands School had to have sandbags put around it to prevent flooding of the building. One car drove into a flooded section of road east of Sidney. The elderly couple had to be rescued by a nearby farmer. No injuries were reported.
CHAMPAIGN	5/28/2002	\$0	
NORTH PORTION	8/19/2002	\$0	
NORTH PORTION	8/22/2002	\$0	
COUNTYWIDE	5/10/2003	\$0	Very heavy rain fell on already saturated ground countywide. Numerous roads were flooded for a time due to the heavy rain.
COUNTYWIDE	7/9/2003	\$0	Very heavy rains fell for several hours over Champaign County. Many streets and roads were flooded. In Urbana, the fire department had to rescue a man from the roof of his car after he drove into a flooded underpass. No injuries were reported.
TOLONO	6/11/2004	\$0	Several roads were briefly flooded due to heavy rains.
CHAMPAIGN	7/13/2004	\$0	Very heavy rain fell over a short amount of time causing street flooding in Champaign and Urbana.
CHAMPAIGN	9/14/2004	\$0	2 to 3 inches of rain fell in the Champaign area in a short period of time. The heavy rainfall caused an underpass in Champaign to become impassible, with 3 to 4 feet of water on the roadway.
MAHOMET	1/13/2005	\$0	U.S. 150 had water flowing over the road.
RANTOUL	7/26/2006	\$0	U.S. Highway 136 underpass was flooded and impassible. Also, 3 to 4 inches of standing water was on several side streets.
CHAMPAIGN	7/27/2006	\$0	Several roads in town flooded and had to be closed, including Kirby, Neil and Vine streets.
SIDNEY	2/5/2008	\$0	Salt Fork River was over its banks near Sidney. Also, many streets in Sidney had over a foot of water flowing across them, causing multiple stalled cars.
UNIV ILL WILLARD ARP	6/3/2008	\$0	High water was over county roads in the southern part of Champaign County from Tolono to Philo to Sidney.
STALEY	7/29/2008	\$50,000	Flash flooding and high water was reported on numerous streets in Champaign and Urbana. Numerous basements were flooded as well.
PROSPECT	9/13/2008	\$0	Multiple roads in the city of Rantoul were closed due to high water.
STALEY	9/13/2008	\$85,000	More than 50 homes and basements were flooded in Champaign. In addition, numerous streets were flooded across the city due to heavy rain.
SEYMOUR	5/13/2009	\$0	Water was flowing across multiple roads in Champaign-Urbana.
IVESDALE	5/14/2009	\$0	Heavy rain of 2.50 to 4.00 inches within three hours produced significant flash flooding of most roads in extreme southern Champaign County.
MAHOMET	5/15/2009	\$0	Heavy rain of 1.50 to 2.50 inches fell within two hours across central parts of Champaign County. This produced extensive flash flooding. Numerous streets in the cities of Champaign and Urbana were flooded and impassible. Several vehicles were stranded in the flood waters, particularly in or near viaducts. There were no injuries.
FOOSLAND	8/27/2009	\$0	Widespread street flooding was reported in Champaign, with an estimated 8 inches of water covering Neil Street near the WCIA TV studios. In addition, several streets in the villages of Savoy and Mahomet had water running across them.
PENFIELD	5/21/2010	\$0	Training thunderstorm cells produced an area of flash flooding in northeast Champaign County. Rainfall rates of nearly 1.50 inches per hour for more than three hours were reported. Many rural roads were inundated by the flooding, particularly U.S. Route 136 east of Gifford.

Flash Flood Events in Plan Area

Appendix G

DILLSBURG	5/26/2010	\$0	A slow moving thunderstorm produced 2.50 inches of rain in one hour across part of northeast Champaign County. Most rural roads were impassable because of the flooding.
MAHOMET	6/14/2010	\$100,000	Spotters reported rainfall rates of one to two inches per hour from Champaign/Urbana east to the county line. Numerous main thoroughfares in Champaign were impassable due to more than six inches of flowing water or flooded viaducts. A few businesses from Champaign to St. Joseph sustained damage due to the flooding.
IVESDALE	7/15/2010	\$0	Slow moving thunderstorms produced rainfall rates of 1.50 per hour for nearly two in a small part of southern Champaign County. Several rural roads were flooded, as well as parts of U.S. Highway 45 between Pesotum and the county line.
TOLONO	8/10/2010	\$0	Isolated, slow moving thunderstorm produced copious amounts of rain in a small part of south central Champaign County. Rainfall rates of 1.50 to 2.00 inches of rain for nearly two hours produced flash flooding which inundated several rural roads and parts of U.S. Route 45 south of Tolono.
LUDLOW	4/10/2013	\$0	Rainfall rates of 1.50 to 2.00 inches per hour for nearly three hours resulted in flash flooding in Champaign County, including the cities of Champaign and Urbana. Several roads were impassable due to high water.
LUDLOW	6/22/2013	\$0	Scattered thunderstorms, with heavy rainfall amounts of 2 to 3 inches in one hour produced flash flooding in the northern part of Champaign County during the late morning. Many rural roads to the northeast of Mahomet and in the vicinity of Rantoul were impassable. The flooding subsided by mid-afternoon.
FOOSLAND	2/20/2014	\$0	Rainfall of 0.50 to 1.00 combined with 2 of snow depth and a frozen ground to produce flash flooding across most of Champaign County. Many streets in Champaign, Urbana, Sydney and Mahomet were flooded and most rural roads were impassable.
SEYMOUR	5/21/2014	\$0	Persistent rain from numerous thunderstorms tracking over the same areas produced 3.00 to 4.00 inches in less than two hours during the early evening hours. Numerous roads were impassable in Savoy, Tolono and rural areas of south central Champaign County. U.S. Highway 45 and State Route 130 were also significantly impacted and closed in spots.
SELLERS	5/21/2014	\$0	A second band of persistent rain from numerous thunderstorms tracking over the same areas in Champaign County produced 2.50 to 3.00 inches in less than two hours during the early evening hours east of Urbana. Most streets in St. Joseph and Ogden were flooded. Numerous rural roads in extreme east central Champaign County were impassable. State Highway 49 and Interstate 74 from mile post 191 to 198 were impacted and traffic was stopped at times.
FOOSLAND	7/12/2014	\$47,000,000	Periods of thunderstorms with heavy rainfall produced rain rates of 1 to 2.5 inches for at least two hours from 0630-0830 LST in northwest and central Champaign County - including the cities of Champaign and Mahomet/Lake of the Woods. The highest rain totals ranged between 6.00 to 7.00 inches from Mahomet to the village of Foosland. Nearly all rural roads in northwest Champaign County were flooded with at least a foot of water. Illinois Route 47 from Gibson City to Mahomet, U.S. Highway 150 from Mansfield to Mahomet, and U.S. Highway 136 near Fisher were closed due to flooding. Parts of Interstate 74 from milepost 168 to 173 were impassable. Numerous streets and viaducts in Mahomet and Champaign were also impassable. Many homes in Mahomet and Champaign also had significant basement flooding. Estimated flood damages in Champaign County were around \$47 Million.
FOOSLAND	6/7/2015	\$0	Thunderstorms with rainfall rates of 1.00 to 1.50 per hour for nearly three hours produced a total of 4.00 to 7.00 of rain in northern and east central Champaign County. Many roads were impassable in rural areas north of U.S. Highway 136 and along and north of I-74 from Urbana to Ogden.
DICKERSON	6/14/2015	\$0	Thunderstorms produced up to 2.00 of rain in less than one hour in northwest Champaign County during the mid-afternoon of June 14th. Several rural roads from Fisher to Mahomet were impassable until early evening.
MAHOMET	6/25/2015	\$0	Thunderstorms with heavy rainfall tracking over the same areas resulted in flash flooding across central Champaign County. Rain amounts of 2.00 to 3.50 were measured during the early morning hours of June 25th. Flash flooding of streets and viaducts was reported in the cities of Champaign and Urbana. Several rural roads between Urbana, Sidney and Homer were also impassable.
PROSPECT	6/26/2015	\$50,000	Slow moving, persistent thunderstorms produced 2.00 to 3.00 of rain in a small part of north central Champaign County. The heaviest rainfall and flash flooding was reported from Rantoul through Thomasboro to just northeast of Urbana. Parts of U.S. Highway 45 from Rantoul to Thomasboro were impassable. The Thomasboro Fire Department reported a bridge washed out over the Saline Branch west of the town.

MAHOMET	7/8/2015	\$0	Heavy rain of 2.00 to 2.50 inches during the late evening of July 8th produced flash flooding in areas where the soil was extremely saturated from rainfall in the latter half of June. Illinois Route 47 between Mahomet and I-72 was closed, U.S. Route 136 from Rantoul to Gifford was impassable in numerous spots, and many streets were flooded in Thomasboro. In addition, most rural roads in northern Champaign County were inundated due to the flooding. Numerous roads and viaducts in the cities of Champaign and Urbana were closed due to heavy rain. Observers reported more than 2.00 inches of rain in less than 45 minutes, resulting in the rapid onset of flash flooding. The flooded roads were reopened by late evening.
RISING	5/31/2016	\$0	
URBANA	4/29/2017	\$0	Rain amounts of 2.50 to 3.00 inches in about a two hour period during the evening hours, on already saturated ground, resulted in flash flooding across southern Champaign County. Several streets in Urbana were impassable. Numerous rural roads and highways in the southern part of the county from Pesotum to Broadlands were inundated.
PENFIELD	5/4/2017	\$0	Heavy rainfall of 1.50 to 2.50 inches during the early morning hours of May 4th, on already saturated ground, resulted in flash flooding across much of Champaign County. Officials reported that most roads were impassable and numerous creeks rapidly flooded, particularly south of I-74 and east of I-57. Numerous streets and viaducts in Champaign and Urbana were also flooded.
LUDLOW	2/20/2018	\$0	Around 1.00 to 1.75 inches of rain fell onto frozen ground late on February 19th. This set the conditions for rapid flash flooding to occur on February 20th into the 21st when 3.00 to 5.00 of rain occurred. Numerous creeks and streams rapidly flooded in central and eastern Champaign County. Numerous roads in Champaign, Urbana, Savoy, St. Joseph, Rantoul and Thomasboro were impassable.

https://www.ncdc.noaa.gov/stormevents/listevents.jsp?eventType=%28C%29+Flash+Flood&beginDate_mm=12&beginDate_dd=01&beginDate_yyyy=1950&endDate_mm=12&endDate_dd=31&endDate_yyyy=2019&county=CHAMPAIGN%3A19&hailfilter=0.00&tornfilter=0&windfilter=000&sort=DT&submitbutton=Search&statefips=17%2CILLINOIS

Flood Events in Plan Area

Appendix G

Location	DATE	Property Damage	Event Narrative
	5/12/2002	\$0	<p>Periods of thunderstorms with heavy rainfall produced rain rates of 1 to 2.5 inches for at least two hours from 0630-0830 LST in northwest and central Champaign County - including the cities of Champaign and Mahomet/Lake of the Woods. The highest rain totals ranged between 6.00 to 7.00 inches from Mahomet to the village of Foosland. Nearly all rural roads in northwest Champaign County were flooded with at least a foot of water. Illinois Route 47 from Gibson City to Mahomet, U.S. Highway 150 from Mansfield to Mahomet, and U.S. Highway 136 near Fisher were closed due to flooding. Parts of Interstate 74 from milepost 168 to 173 were impassable. Numerous streets and viaducts in Mahomet and Champaign were also impassable. Many homes in Mahomet and Champaign also had significant basement flooding. Estimated flood damages in Champaign County were around \$47 Million. Periods of additional rainfall during the early afternoon kept many roads closed through the late evening hours.</p>
FOOSLAND	7/12/2014	\$0	<p>Rain amounts of 2.50 to 3.00 inches in about a two hour period during the evening hours, on already saturated ground, resulted in flash flooding across southern Champaign County. Several streets in Urbana were impassable. Numerous rural roads and highways in the southern part of the county from Pesotum to Broadlands were inundated. An additional 1.00 to 2.00 inches of rain occurred on April 30th, keeping many roads flooded. As a result, areal flooding continued until the late morning hours of May 1st.</p>
URBANA	4/29/2017	\$0	<p>Rain amounts of 2.50 to 3.00 inches in about a two hour period during the evening hours, on already saturated ground, resulted in flash flooding across southern Champaign County. Several streets in Urbana were impassable. Numerous rural roads and highways in the southern part of the county from Pesotum to Broadlands were inundated. An additional 1.00 to 2.00 inches of rain occurred on April 30th, keeping many roads flooded. As a result, areal flooding continued until the late morning hours of May 1st.</p>
URBANA	5/1/2017	\$0	<p>Heavy rainfall of 1.50 to 2.50 inches during the early morning hours of May 4th, on already saturated ground, resulted in flash flooding across much of Champaign County. Officials reported that most roads were impassable and numerous creeks rapidly flooded, particularly south of I-74 and east of I-57. Numerous streets and viaducts in Champaign and Urbana were also flooded. Additional rainfall of 1.00 to 1.50 inches later in the day May 4th into May 5th caused creeks and roads to stay flooded for nearly 24 hours. Flood waters subsided by the afternoon on May 5th.</p>
PENFIELD	5/4/2017	\$0	<p>Around 1.00 to 1.75 inches of rain fell onto frozen ground late on February 19th. This set the conditions for rapid flash flooding to occur on February 20th into the 21st when 3.00 to 5.00 of rain occurred. Numerous creeks and streams rapidly flooded in central and eastern Champaign County. Numerous roads in Champaign, Urbana, Savoy, St. Joseph, Rantoul and Thomasboro were impassable. Additional rainfall on February 22nd and 23rd resulted in storm total amounts ranging from 4.25 to 7.00 inches in central and eastern Champaign County. Roads in St. Joseph, Ogden, Homer and Sidney remained flooded for three days. A person attempting to cross a flooded road near the Salt Creek, north of St. Joseph had to be rescued during the late morning of February 21st. No injuries were reported, but the vehicle sank into the Salt Creek. The flooding finally dissipated during the early morning of February 23rd.</p>
SELLERS	2/21/2018	\$1,000,000	

https://www.ncdc.noaa.gov/stormevents/listevents.jsp?eventType=%282%29+Flood&beginDate_mm=12&beginDate_dd=01&beginDate_yyy=1950&endDate_mm=12&endDate_dd=31&endDate_yyyy=2019&county=CHAMPAIGN%3A19&hailfilter=0.00&tornfilter=0&windfilter=000&sort=DT&submitButton=Search&statefips=17%2CILLINOIS

Excerpt from FEMA Flood Insurance Study for Champaign County and Incorporated Areas

Excerpt: Section 2.3 'Principal Flood Problems' from FEMA Flood Insurance Study
Champaign County and Incorporated Areas' effective October 2, 2013

"Flooding has been exacerbated in Champaign County by frequent development along the county's remaining floodplains (Reference 27). Large scale flooding in 1994 led to a Federal Disaster Declaration for the county, with heavy rains falling over a two-day period in April of that year and resulting in excess of \$50 million in damages to homes, businesses, and property. In 2002, another Federal Disaster Declaration for Champaign County resulted from severe storms that occurred between April 21-May 3, 2002, producing tornados and flooding that caused widespread damage in the county. Between 1993 and 2007, there were a total of 27 separate flood events occurring in ten different years in Champaign County. In the same time period, there were six different years in which there were more than one flood event in the county (Reference 24).

Copper Slough and Phinney Branch are two of the three main drainage systems within the City of Champaign along the Boneyard Creek. Of these three systems, Boneyard Creek has represented the main flood hazard. Problems associated with the creek date back to the initial development of the Champaign/Urbana area (Reference 28).

The Boneyard Creek basin is 100 percent urbanized and includes a large percentage of the University of Illinois campus as well as the downtown areas of Champaign and Urbana. Historically, flooding occurred on all reaches of the Boneyard Creek during major storm events. Upper Boneyard Creek has also experienced overbank flooding typically due to short, intense thunderstorms (Reference 28).

Copper Slough and Phinney Branch lie within the heavily developing southwestern portion of the City of Champaign, and flooding problems have increased with development along some reaches (Reference 25). The 2007 *Copper Slough Watershed Master Plan* reported that approximately two-thirds of the Copper Slough watershed were fully urbanized, and development has continued since that time. In addition, there are numerous industrial sites in the northern half of the watershed that have little to no stormwater detention, causing increased peak flows to Copper Slough (Reference 26).

The Village of St. Joseph is subject to flooding from the Salt Fork, with development pressure and encroachment into the Salt Fork floodplain adding to flooding concerns (Reference 29). Backwater from the Salt Fork causes flooding on both the Right Bank Tributary of Salt Fork and Left Branch of Right Bank Tributary of Salt Fork within the community of Sidney. Most of Sidney's flood hazard areas include residential structures and some downtown businesses, with flooding having occurred as often as three times per year (Reference 30).

Excerpt from FEMA Flood Insurance Study for Champaign County and Incorporated Areas

The Salt Fork flood of record at the gage near St. Joseph (USGS 03336900) is reported for February 6, 2008, with a gage height of 19.06 feet and discharge of 5,600 cfs (Reference 32, 33). However, a gap in gage data exists between 1991 and 2004. During this gap in reporting, FEMA communications dated April 25, 1994 and August 16, 2002 indicate that the Village of Sidney sustained flood damage at the time of both the 1994 and 2002 Federal Disaster Declarations.

Saline Branch Drainage Ditch flows through portions of Champaign County and the City of Urbana. The stream lies primarily outside of Urbana's developed city limits, running through a golf course, agricultural areas, and a few industrial areas. Flooding of the Saline Branch Drainage Ditch usually occurs during spring thaws, when runoff is accelerated by intense rainfalls (Reference 8, 34).

McCullough Creek, which flows through southern Urbana before joining the Embarras River, experiences overbank flooding typically due to short, intense thunderstorms (Reference 3).

Flooding from the Sangamon River has occurred within the Village of Mahomet, a community that has experienced above-average growth and development in recent years. Much of the development has taken place in the Sangamon River watershed, increasing the river's flow (Reference 6, 13). The Sangamon River flood of record occurred in 1994, with a gage height of 21.58 feet and discharge of 13,000 cfs (USGS 05570910). The second and third ranked floods were recorded in 2008 and 2005, with gage heights/discharges of 20.26 feet/9,030 cfs and 20.11 feet/9,850 cfs, respectively (Reference 32, 33).

Owl Creek forms the main floodplain area in the Village of Fisher, which flows through the middle of the community from west to east. The creek is completely lined with existing development (Reference 35). FEMA communication dated April 25, 1994 and IDNR communication dated May 14, 2002 indicate that Fisher sustained flood damage at the time of Federal Disaster Declarations in both 1994 and 2002."

Excerpt of References cited:

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Excerpt from FEMA Flood Insurance Study for Champaign County and Incorporated Areas

13. FEMA. *Flood Insurance Study: Village of Mahomet, Illinois, Champaign County*. Washington, D.C.: Rev. January 2, 2003.
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32. NOAA, NWS. *Advanced Hydrologic Prediction Service, River Observations*. [Cited February 2012]. Available from: <http://water.weather.gov/ahps2/index.php?wfo=lot>.
33. USGS. *Peak Streamflow for Illinois*. [Cited February 2012]. Available from: <http://nwis.waterdata.usgs.gov/il/nwis/peak>.
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35. IDNR. *Community Assistance Visit Narrative Report, Fisher, Illinois*. August 25, 2004.”



Hazus: Flood Global Risk Report

Region Name: Flood_2019

Flood Scenario: UDDG

Print Date: Monday, December 23, 2019

Disclaimer:

*This version of Hazus utilizes 2010 Census Data.
Totals only reflect data for those census tracts/blocks included in the user's study region.*

The estimates of social and economic impacts contained in this report were produced using Hazus loss estimation methodology software which is based on current scientific and engineering knowledge. There are uncertainties inherent in any loss estimation technique. Therefore, there may be significant differences between the modeled results contained in this report and the actual social and economic losses following a specific Flood. These results can be improved by using enhanced inventory data and flood hazard information.



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General Description of the Region

Hazus is a regional multi-hazard loss estimation model that was developed by the Federal Emergency Management Agency (FEMA) and the National Institute of Building Sciences (NIBS). The primary purpose of Hazus is to provide a methodology and software application to develop multi-hazard losses at a regional scale. These loss estimates would be used primarily by local, state and regional officials to plan and stimulate efforts to reduce risks from multi-hazards and to prepare for emergency response and recovery.

The flood loss estimates provided in this report were based on a region that included 3 county(ies) from the following state(s):

- Illinois

Note:

Appendix A contains a complete listing of the counties contained in the region.

The geographical size of the region is approximately 999 square miles and contains 7,292 census blocks. The region contains over 81 thousand households and has a total population of 201,372 people (2010 Census Bureau data). The distribution of population by State and County for the study region is provided in Appendix B.

There are an estimated 66,297 buildings in the region with a total building replacement value (excluding contents) of 27,174 million dollars. Approximately 91.00% of the buildings (and 79.30% of the building value) are associated with residential housing.





Building Inventory

General Building Stock

Hazus estimates that there are 66,297 buildings in the region which have an aggregate total replacement value of 27,174 million dollars. Table 1 and Table 2 present the relative distribution of the value with respect to the general occupancies by Study Region and Scenario respectively. Appendix B provides a general distribution of the building value by State and County.

Table 1
Building Exposure by Occupancy Type for the Study Region

Occupancy	Exposure (\$1000)	Percent of Total
Residential	21,548,315	79.3%
Commercial	3,532,956	13.0%
Industrial	652,847	2.4%
Agricultural	158,149	0.6%
Religion	426,602	1.6%
Government	169,285	0.6%
Education	686,049	2.5%
Total	27,174,203	100%

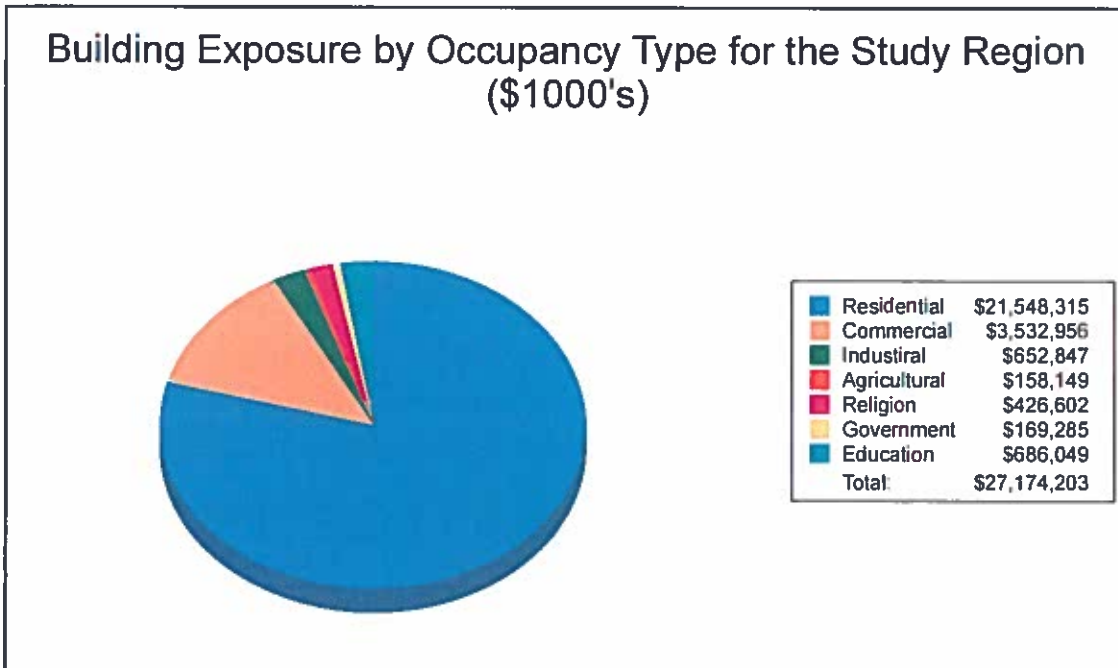
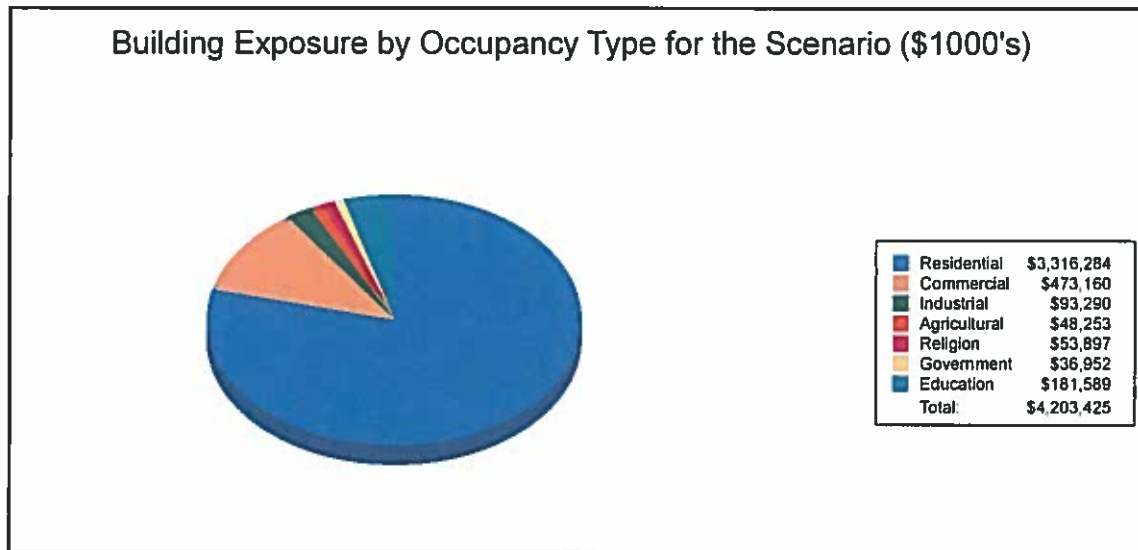




Table 2
Building Exposure by Occupancy Type for the Scenario

Occupancy	Exposure (\$1000)	Percent of Total
Residential	3,316,284	78.9%
Commercial	473,160	11.3%
Industrial	93,290	2.2%
Agricultural	48,253	1.1%
Religion	53,897	1.3%
Government	36,952	0.9%
Education	181,589	4.3%
Total	4,203,425	100%



Essential Facility Inventory

For essential facilities, there are 75 hospitals in the region with a total bed capacity of 2,069 beds. There are 162 schools, 40 fire stations, 17 police stations and 8 emergency operation centers.





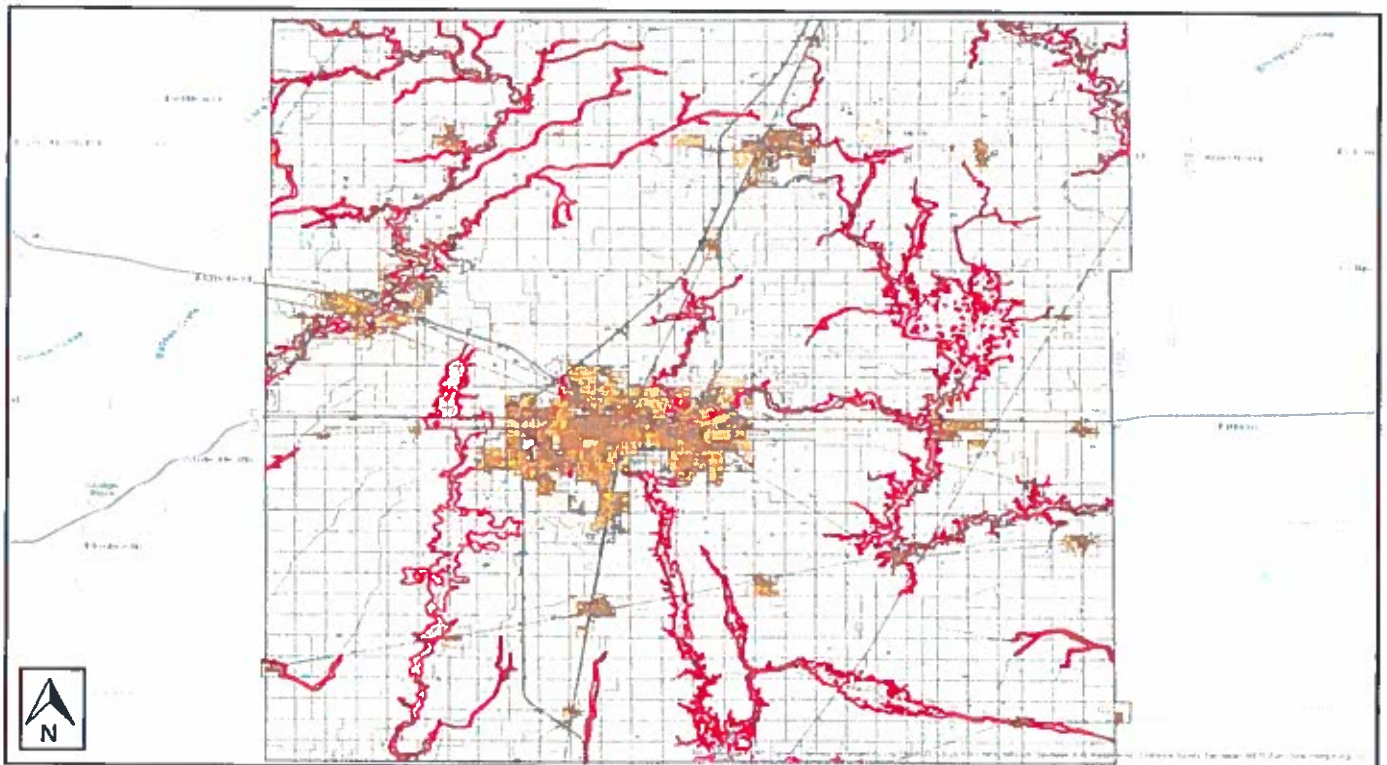
Flood Scenario Parameters

Hazus used the following set of information to define the flood parameters for the flood loss estimate provided in this report.

Study Region Name:	Flood_2019
Scenario Name:	UDDG
Return Period Analyzed:	100
Analysis Options Analyzed:	No What-Ifs

Study Region Overview Map

Illustrating scenario flood extent, as well as exposed essential facilities and total exposure





Building Damage

General Building Stock Damage

Hazus estimates that about 116 buildings will be at least moderately damaged. This is over 60% of the total number of buildings in the scenario. There are an estimated 9 buildings that will be completely destroyed. The definition of the 'damage states' is provided in the Hazus Flood Technical Manual. Table 3 below summarizes the expected damage by general occupancy for the buildings in the region. Table 4 summarizes the expected damage by general building type.

Total Economic Loss (1 dot = \$300K) Overview Map

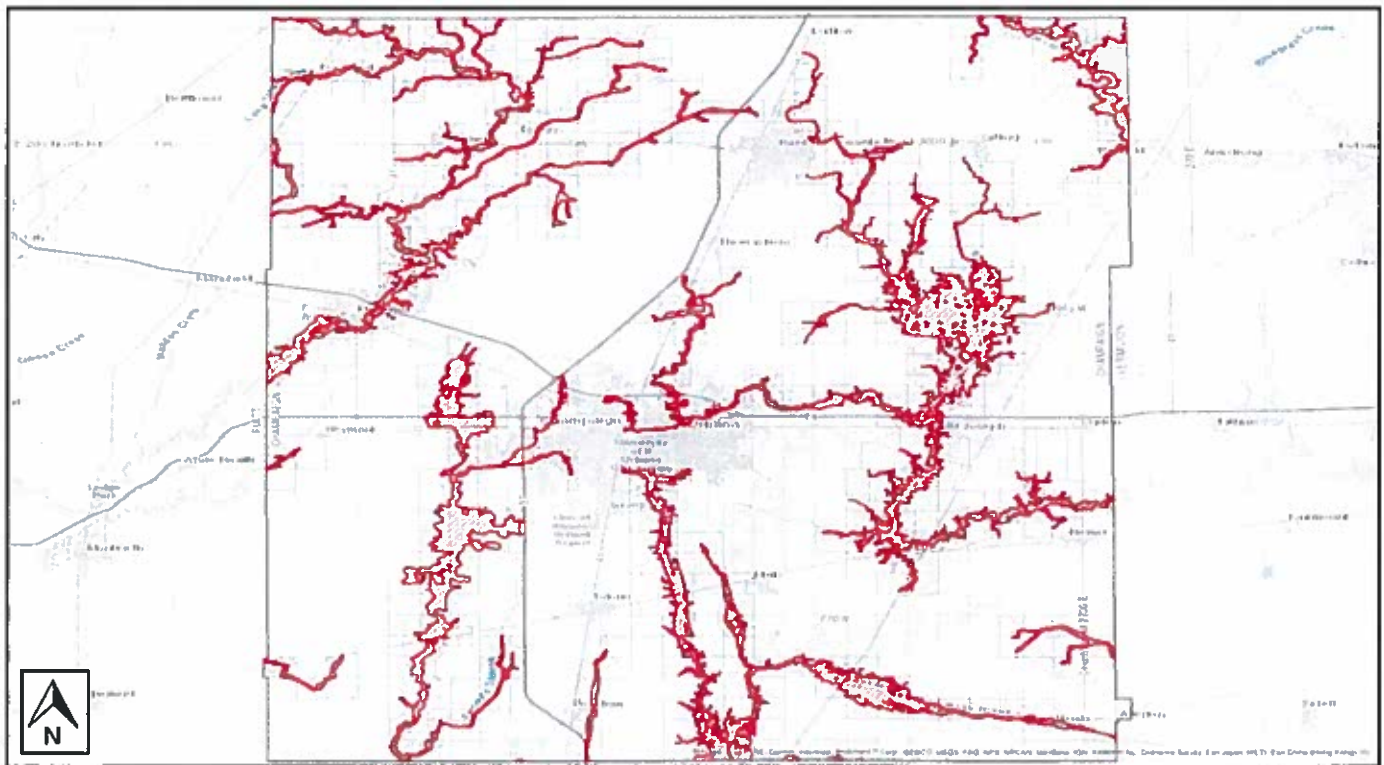




Table 3: Expected Building Damage by Occupancy

Occupancy	1-10		11-20		21-30		31-40		41-50		>50	
	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)
Agriculture	0	0	0	0	0	0	0	0	0	0	0	0
Commercial	0	0	0	0	0	0	0	0	0	0	0	0
Education	0	0	0	0	0	0	0	0	0	0	0	0
Government	0	0	0	0	0	0	0	0	0	0	0	0
Industrial	0	0	0	0	0	0	0	0	0	0	0	0
Religion	0	0	0	0	0	0	0	0	0	0	0	0
Residential	81	41	80	41	12	6	10	5	5	3	9	5
Total	81		80		12		10		5		9	

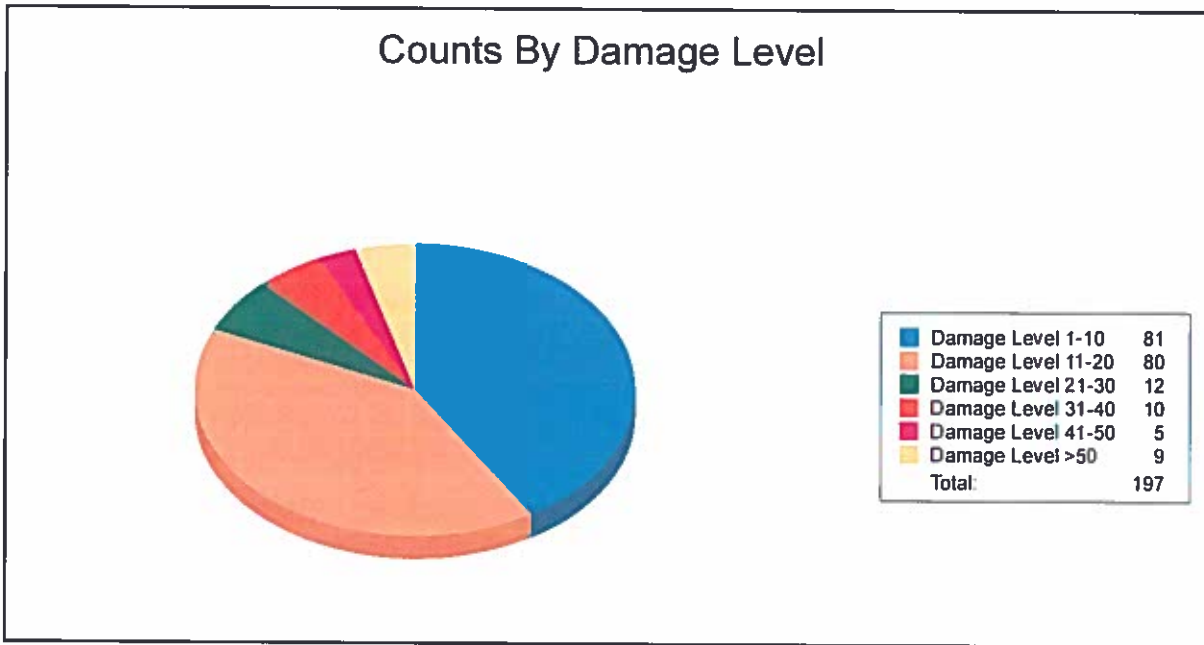




Table 4: Expected Building Damage by Building Type

Building Type	1-10		11-20		21-30		31-40		41-50		>50	
	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)
Concrete	0	0	0	0	0	0	0	0	0	0	0	0
ManufHousing	0	0	-1	100	0	0	0	0	0	0	0	0
Masonry	6	30	8	40	1	5	2	10	1	5	2	10
Steel	0	0	0	0	0	0	0	0	0	0	0	0
Wood	73	42	72	41	11	6	8	5	4	2	7	4





Essential Facility Damage

Before the flood analyzed in this scenario, the region had 2,069 hospital beds available for use. On the day of the scenario flood event, the model estimates that 2,069 hospital beds are available in the region.

Table 5: Expected Damage to Essential Facilities

Classification	Total	# Facilities		
		At Least Moderate	At Least Substantial	Loss of Use
Emergency Operation Centers	8	0	0	0
Fire Stations	40	0	0	0
Hospitals	75	0	0	0
Police Stations	17	0	0	0
Schools	162	0	0	0

If this report displays all zeros or is blank, two possibilities can explain this.

- (1) None of your facilities were flooded. This can be checked by mapping the inventory data on the depth grid.
- (2) The analysis was not run. This can be tested by checking the run box on the Analysis Menu and seeing if a message box asks you to replace the existing results.

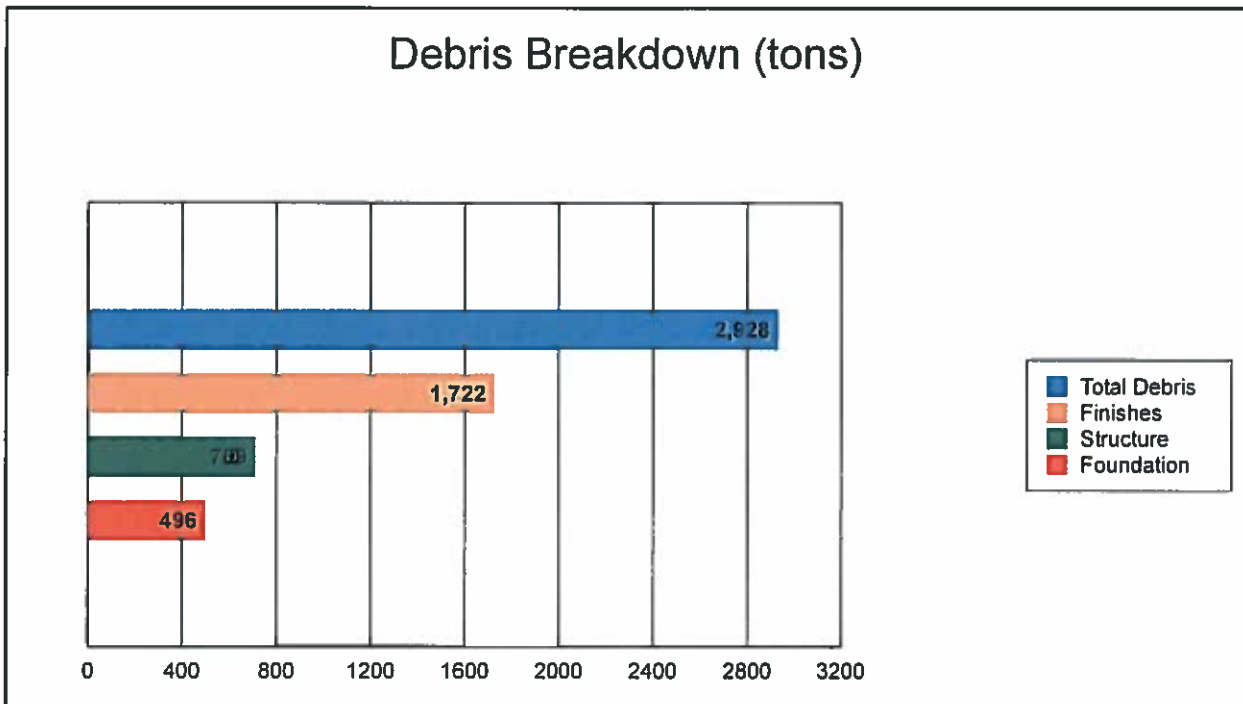




Induced Flood Damage

Debris Generation

Hazus estimates the amount of debris that will be generated by the flood. The model breaks debris into three general categories: 1) Finishes (dry wall, insulation, etc.), 2) Structural (wood, brick, etc.) and 3) Foundations (concrete slab, concrete block, rebar, etc.). This distinction is made because of the different types of material handling equipment required to handle the debris.



The model estimates that a total of 2,928 tons of debris will be generated. Of the total amount, Finishes comprises 59% of the total, Structure comprises 24% of the total, and Foundation comprises 17%. If the debris tonnage is converted into an estimated number of truckloads, it will require 118 truckloads (@25 tons/truck) to remove the debris generated by the flood.

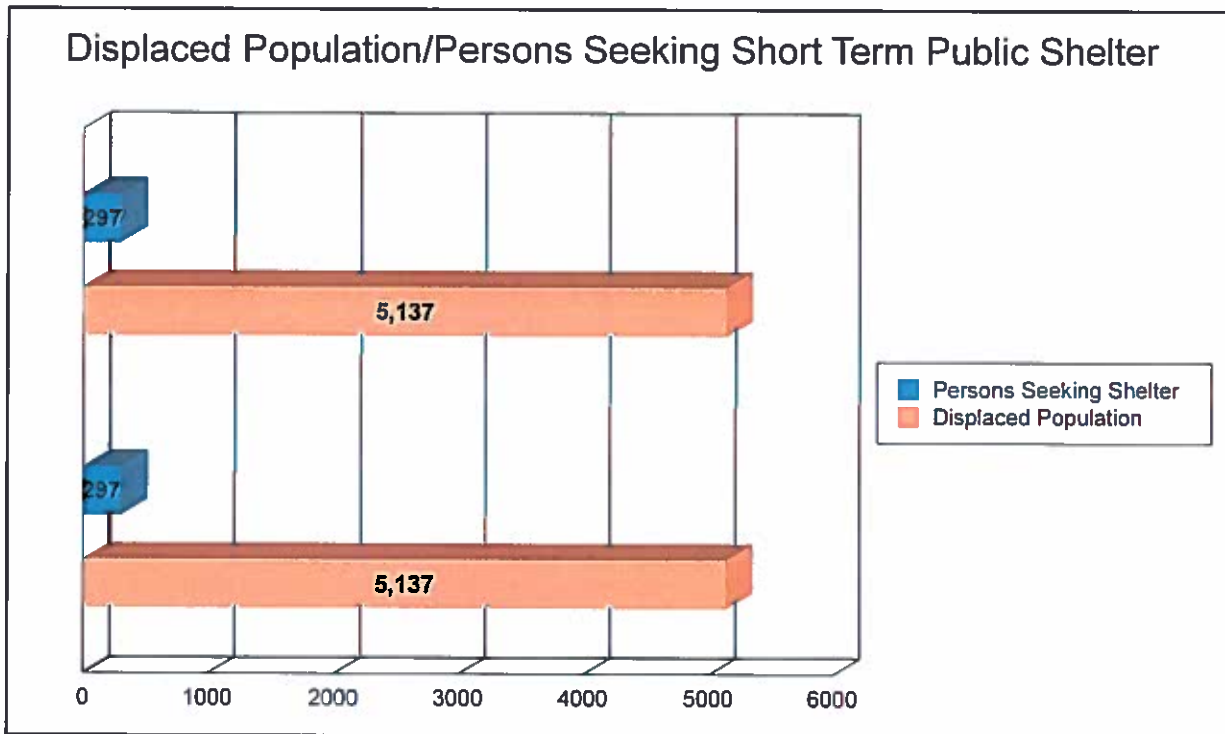




Social Impact

Shelter Requirements

Hazus estimates the number of households that are expected to be displaced from their homes due to the flood and the associated potential evacuation. Hazus also estimates those displaced people that will require accommodations in temporary public shelters. The model estimates 1,712 households (or 5,137 of people) will be displaced due to the flood. Displacement includes households evacuated from within or very near to the inundated area. Of these, 297 people (out of a total population of 201,372) will seek temporary shelter in public shelters.





Economic Loss

The total economic loss estimated for the flood is 142.50 million dollars, which represents 3.39 % of the total replacement value of the scenario buildings.

Building-Related Losses

The building losses are broken into two categories: direct building losses and business interruption losses. The direct building losses are the estimated costs to repair or replace the damage caused to the building and its contents. The business interruption losses are the losses associated with inability to operate a business because of the damage sustained during the flood. Business interruption losses also include the temporary living expenses for those people displaced from their homes because of the flood.

The total building-related losses were 70.22 million dollars. 51% of the estimated losses were related to the business interruption of the region. The residential occupancies made up 52.77% of the total loss. Table 6 below provides a summary of the losses associated with the building damage.



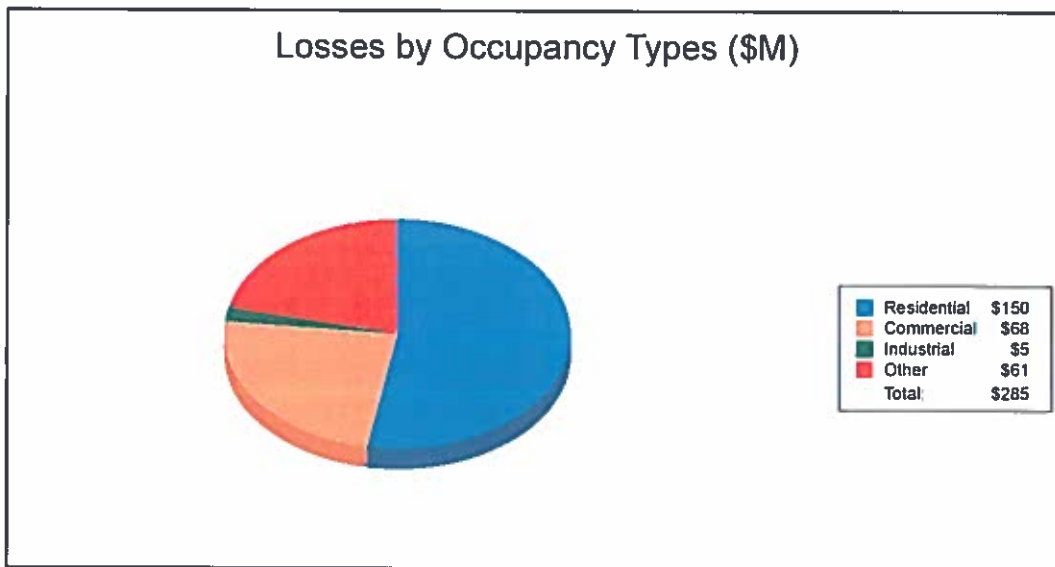
FEMA

RiskMAP
Increasing Resilience Together



Table 6: Building-Related Economic Loss Estimates
(Millions of dollars)

Category	Area	Residential	Commercial	Industrial	Others	Total
Building Loss						
	Building	71.54	3.94	1.58	1.46	78.52
	Content	37.75	12.73	2.74	8.04	61.25
	Inventory	0.00	0.16	0.33	0.18	0.68
	Subtotal	109.29	16.83	4.66	9.68	140.45
Business Interruption						
	Income	0.19	21.03	0.13	7.00	28.35
	Relocation	29.00	5.42	0.16	2.82	37.40
	Rental Income	11.43	3.96	0.02	0.29	15.70
	Wage	0.48	20.95	0.25	41.42	63.11
	Subtotal	41.11	51.36	0.56	51.52	144.55
ALL	Total	150.40	68.19	5.22	61.20	285.00





Appendix A: County Listing for the Region

Illinois

- Champaign
- Piatt
- Vermillion





Appendix B: Regional Population and Building Value Data

	Population	Building Value (thousands of dollars)		
		Residential	Non-Residential	Total
Illinois				
Champaign	201,081	21,508,409	5,623,118	27,131,527
Vermillion	291	39,906	2,770	42,676
Piatt	0	0	0	0
Total	201,372	21,548,315	5,625,888	27,174,203
Total Study Region	201,372	21,548,315	5,625,888	27,174,203



HAZUS Loss Estimation Model: Earthquake Scenarios in Plan Area

The HAZUS regional loss estimation model was used to estimate losses associated with various earthquake events occurring in the Plan Area. Data was extracted from HAZUS Version 4.2 using the 2014 RS Means, with Level 1 HAZUS general building stock updated in 2017, 2010 census tracts data, and adjusted to include critical facilities in the Plan Area.

Table F-1. Estimate of Plan Area Population and Building Value Data

Population	Building Value (millions of dollars)		
	Residential	Non-Residential	Total
207,704	22,206 (91%)	5,780 (9%)	27,988

Casualties

The HAZUS model indicated four possible categories of ‘Injury Severity’ due to the earthquake, and provided casualty estimates for three earthquake occurrences at three different times of day: at 2:00 a.m. when residential occupancy load is highest, 2:00 p.m., when educational, commercial and industrial sector loads are maximized, and 5:00 p.m., which represents peak travel time.

Table F-2. HAZUS Model Injury Severity Definitions and Results

Injury Severity	Injury Description	2 a.m. Scenario	2 p.m. Scenario	5 p.m. Scenario
1	Injuries requiring basic medical aid without requiring hospitalization	7	9	7
2	Injuries requiring a greater degree of medical care and hospitalization, but not expected to progress to a life-threatening status	1	1	1
3	Injuries that pose an immediate life-threatening condition if not treated adequately and expeditiously.	0	0	0
4	Instantaneously killed or mortally injured	0	0	0

Critical Facility Inventory

The HAZUS critical facilities inventory for the Plan Area consists essential facilities and high potential loss facilities. The essential facilities inventory includes hospitals, medical clinics, schools, fire stations, police stations and emergency operations facilities. The essential facilities inventory includes 75 health care facilities with a total bed capacity of 2,069 beds, 162 schools, 40 fire stations, 17 police stations, and eight emergency operation facilities. The high potential loss facilities inventory includes dams (none classified as ‘high hazard”), and hazardous material sites. The high potential loss inventory includes four dams and 145 hazardous material sites.

HAZUS Loss Estimation Model: Earthquake Scenarios in Plan Area

High Potential Loss Facilities and Facilities of Local Importance

The HAZUS methodology does not allow for the estimation for high potential loss facilities and Facilities of Local Importance, as these are unique across different locales, and HAZUS does not attempt to predict average characteristics for these facilities as it does with residences or other types of structures.

Lifeline Inventory: Transportation and Utility Systems

The HAZUS lifeline inventory for the Plan Area features transportation and utility systems. The transportation system inventory includes highways, railways, bus, and airports. The utility system inventory includes potable water, wastewater, natural gas, crude & refined oil, electric power and communications. Table F-3 provides estimates of the total replacement value of lifeline inventory in the Plan Area. The replacement value of the transportation and utility lifeline systems is estimated at approximately 4,148 and 4,158 (millions of dollars), respectively.

Table F-3. Lifeline Inventory Estimates

System	Component	# Locations/# Segments	Replacement value (millions of dollars)
Highway	Bridges	781	317.6422
	Segments	188	<u>332.3441</u> 3649.9863
Railways	Bridges	27	1.8524
	Facilities	3	7.9890
	Segments	154	<u>322.9009</u> 332.7423
Bus	Facilities	3	3.000
Airport	Facilities	4	106.4000
	Runways	6	<u>56.0000</u> 162.4000
Total:			4,148.10
Potable Water	Distribution Lines	n/a	248.5305
	Facilities	33	<u>656.450</u> 940.9805
Waste Water	Distribution Lines	n/a	149.1183
	Facilities	8	<u>1760.000</u> 1909.1183
Natural Gas	Distribution Lines	n/a	99.4122
	Facilities	4	<u>3.2599</u> 102.6721
Electrical Power	Facilities	61	1220.000
Communication	Facilities	11	22.000
Total:			4,158.10

HAZUS Loss Estimation Model: Earthquake Scenarios in Plan Area

Building Damage:

The HAZUS model provided an estimate for the number of buildings of each occupancy type that would be damaged in the Scenario 1 earthquake event. The model categorized damaged buildings into four damage categories: Slight; Moderate; Extensive; and Complete, with the definition of each of these damage categories variable based on construction type. Table F-4 describes levels of damage to wood, light frame buildings.

Table F-4. Levels of Damage to Wood, Light-Frame Buildings

Damage Level	Damage Description
Slight	Small plaster or gypsum board cracks at corners of door and window openings and wall- ceiling intersections; small cracks in masonry chimneys and masonry veneer.
Moderate	Large plaster or gypsum-board cracks at corners of door and window openings; small diagonal cracks across shear wall panels exhibited by small cracks in stucco and gypsum wall panels; large cracks in brick chimneys; toppling of tall masonry chimneys.
Extensive	Large diagonal cracks across shear wall panels or large cracks at plywood joints; permanent lateral movement of floors and roof; toppling of most brick chimneys; cracks in foundations; splitting of wood sill plates and/or slippage of structure over foundations; partial collapse of room-over-garage or other soft-story configurations; small foundations cracks.
Complete	Structure may have large permanent lateral displacement, may collapse, or be in imminent danger of collapse due to cripple wall failure or the failure of the lateral load resisting system; some structures may slip and fall off the foundations; large foundation cracks.

Building Inventory

Wood frame construction makes of 67% of the building inventory in the Plan Area. The remaining percentage is distributed between other general building types.

Fires Following the Earthquake

HAZUS estimates that there will be no fires in the Plan Area that result from the earthquake scenarios.

HAZUS Loss Estimation Model: Earthquake Scenarios in Plan Area

Scenario 1: Magnitude 5.2 Mt Carmel Earthquake, Wabash Valley Seismic Zone

Location: Latitude 38.452, Longitude -87.886, 110 miles south of Plan Area

Building Damage Reported

HAZUS reports no expected building damage to be reported in the Plan Area as a result of the earthquake.

Building-Related Economic Losses

HAZUS estimates no building-related economic loss as a result of the earthquake in the Plan Area.

Critical Facility Damage

Essential Facilities

Functionality of Essential Facilities at Day One following Scenario 1 Earthquake

Type of Facility	Number of Facilities	With At Least Moderate Damage >50%	With Functionality >50% at Day One
Police Station	17	0	17
Health Care Facilities	75	0	75
Emergency Operation Center	8	0	8
Fire Station	40	0	40
School	162	0	162

The estimated number of hospital beds in the Plan Area is 657. This number of beds includes beds that already in use by existing patients prior to the event.

Functionality of Hospitals following Scenario 1 Earthquake Event

	At Day 1		At Day 7	
	# of beds	%	# of beds	%
Total # of beds	641	98	652	99

HAZUS Model Injury Severity Definitions and Results

Injury Severity	Injury Description	2 a.m. Scenario	2 p.m. Scenario	5 p.m. Scenario
1	Injuries requiring basic medical aid without requiring hospitalization	0	0	0
2	Injuries requiring a greater degree of medical care and hospitalization, but not expected to progress to a life-threatening status	0	0	0

HAZUS Loss Estimation Model: Earthquake Scenarios in Plan Area

Injury Severity	Injury Description	2 a.m. Scenario	2 p.m. Scenario	5 p.m. Scenario
3	Injuries that pose an immediate life-threatening condition if not treated adequately and expeditiously.	0	0	0
4	Instantaneously killed or mortally injured	0	0	0

Utility Lifelines

Expected estimated number of leaks and breaks in utility system pipelines as a result of the earthquake.

System	Total Pipelines Length (km)	Number of Leaks	Number of Breaks
Potable Water	7,712	8	2
Wastewater	4,633	4	1
Natural Gas	3,089	1	0

The HAZUS model predicts that no households will be without electric power as a result of the earthquake. The following table is a summary of the expected economic cost of the damage to the various utility systems in the Plan Area.

Estimated Direct Economic Losses for Utilities (Values in Millions)

Potable Water	Wastewater	Oil System	Natural Gas	Electric Power	Communication	Total
\$0.04	\$ 0.02	\$ 0.00	\$ 0.01	\$ 0.00	\$ 0.00	\$ 0.06

Transportation Lifelines

The HAZUS model predicts no direct economic losses for transportation lifelines as a result of the earthquake.

Debris Generation

The HAZUS model predicts that the earthquake will generate no debris in the Plan Area.

Shelter Requirement

The HAZUS model estimates no households to be displaced due to the earthquake and that no persons (out of a total population of 207,704) will seek temporary shelter in public shelters due to the earthquake.

HAZUS Loss Estimation Model: Earthquake Scenarios in Plan Area

Scenario 2: Magnitude 5.1 Mock Earthquake, Wabash Valley Seismic Zone

Location: Latitude 34.499, Longitude -87.276, 40 miles southeast of Plan Area

Building Damage:

Number of Buildings for Each Damage Level

Occupancy Type	Slight	Moderate	Extensive	Complete	Total
Agricultural	4.74	1.48	0.16	0.01	6.39
Commercial	10.16	2.88	0.31	0.02	13.37
Education	0.59	0.18	0.02	0	0.79
Government	0.63	0.18	0.02	0	0.83
Industrial	3.1	0.9	0.1	0	4.1
Other Residential	36.39	9.2	0.31	0.01	45.91
Religion	1.21	0.38	0.04	0	1.63
Single Family	103.95	28.02	2.96	0.23	135.16
Plan Area Total	160.77	43.22	3.92	0.27	208.18

Building Related Economic Loss (Millions of Dollars)

Structure Damage Cost	\$0.74
Non-Structural Damage Cost	\$0.93
Content Damage Cost	\$0.08
Inventory Loss	\$0.00
Relocation Loss	\$0.34
Capital Related Loss	\$0.06
Wage Losses	\$0.07
Rental Income Loss	\$0.15
Total	\$2.37

Utility System Pipeline Damage

System	Total Pipelines Length (miles)	Number of Leaks	Number of Breaks
Potable Water	7721	9	2
Wastewater	4633	4	1
Natural Gas	3089	2	0

Estimated Direct Economic Losses for Utilities (Millions of Dollars)

Potable Water	Wastewater	Oil System	Natural Gas	Electric Power	Communication	Total
\$0.04	\$0.02	\$0.00	\$0.01	\$0.00	\$0.00	\$0.07

HAZUS Loss Estimation Model: Earthquake Scenarios in Plan Area

Critical Facility Damage

Essential Facilities

Functionality of Essential Facilities at Day One following Scenario 2 Earthquake

Type of Facility	Number of Facilities	With At Least Moderate Damage >50%	With Functionality >50% at Day One
Police Station	17	0	0
Health Care Facilities	75	0	0
Emergency Operation Center	8	0	0
Fire Station	40	0	0
School	162	0	0

The following table displays the total estimated number of beds for the hospitals in the Plan Area, as well as the number of beds estimated to be available at certain milestone dates after the earthquake.

Functionality of Hospitals following Scenario 2 Earthquake Event

Total # of beds	At Day 1		At Day 7	
	# of beds	%	# of beds	%
657	637	97	651	99

HAZUS Model Injury Severity Definitions and Results

	Injury Description	2 a.m. Scenario	2 p.m. Scenario	5 p.m. Scenario
1	Injuries requiring basic medical aid without requiring hospitalization	1	1	1
2	Injuries requiring a greater degree of medical care and hospitalization, but not expected to progress to a life-threatening status	0	0	0
3	Injuries that pose an immediate life-threatening condition if not treated adequately and expeditiously.	0	0	0
4	Instantaneously killed or mortally injured	0	0	0

HAZUS Loss Estimation Model: Earthquake Scenarios in Plan Area

Transportation Lifelines

The HAZUS model predicts some damage to railway facilities in the Plan Area, as summarized below:

	Highway	Railway	Bus Facility	Airport
Segments	\$ 0.00	\$ 0.00	-	-
Bridges	\$ 0.00	\$ 0.00	-	-
Facilities	\$ 0.00	\$ 0.01	\$ 0.00	\$ 0.00
Total	\$ 0.00	\$ 0.01	\$ 0.00	\$ 0.00

Debris Generation

The HAZUS model predicts that the earthquake will generate 1,000 tons of debris, comprised of 81% Brick/Wood and 19% Reinforced Concrete/Steel. This debris will require 40 truckloads, at 25 tons per truck, to clean up after the earthquake.

Shelter Requirement

The HAZUS model estimates that one household will be displaced due to the earthquake and that no persons (out of a total population of 207,704) will seek temporary shelter in public shelters due to the earthquake.

HAZUS Loss Estimation Model: Earthquake Scenarios in Plan Area

Scenario 3: Magnitude 7.5 Missouri Earthquake, New Madrid Seismic Zone

Location: Latitude 36.800, Longitude -89.500, 222 miles south of Plan Area

Building Damage:

Number of Buildings for Each Damage Level

Occupancy Type	Slight	Moderate	Extensive	Complete	Total
Agricultural	8.42	2.91	0.36	0.02	11.71
Commercial	48.85	14.55	1.68	0.09	65.17
Education	3.59	1.11	0.13	0.01	4.84
Government	1.73	0.52	0.06	0	2.31
Industrial	10.63	3.29	0.38	0.02	14.32
Other Residential	95.04	26.75	1.34	0.09	123.22
Religion	5.09	1.68	0.2	0.01	6.98
Single Family	321.6	85.46	9.67	0.91	417.64
Plan Area Total	494.95	136.27	13.82	1.15	646.19

Building Related Economic Loss (Millions of Dollars)

Structure Damage Cost	\$3.06
Non-Structural Damage Cost	\$4.25
Content Damage Cost	\$0.44
Inventory Loss	\$0.01
Relocation Loss	\$1.55
Capital Related Loss	\$0.53
Wage Losses	\$0.79
Rental Income Loss	\$0.84
Total	\$11.46

Functionality of Essential Facilities at Day One following Scenario 3 Earthquake

Type of Facility	Number of Facilities	With At Least Moderate Damage >50%	With Functionality >50% at Day One
Police Station	17	0	17
Health Care Facilities	75	0	75
Emergency Operation Center	8	0	8
Fire Station	40	0	40
School	162	0	162

The following table displays the total estimated number of beds for hospitals in the Plan Area, as well as number of beds estimated to be available at certain milestone dates after the earthquake.

HAZUS Loss Estimation Model: Earthquake Scenarios in Plan Area

Functionality of Hospitals following Scenario 2 Earthquake

	At Day 1		At Day 7	
	# of beds	%	# of beds	%
Total # of beds	626	95	647	99

HAZUS Model Injury Severity Definitions and Results

Injury Severity	Injury Description	2 a.m. Scenario	2 p.m. Scenario	5 p.m. Scenario
1	Injuries requiring basic medical aid without requiring hospitalization	3	5	4
2	Injuries requiring a greater degree of medical care and hospitalization, but not expected to progress to a life-threatening status	0	1	0
3	Injuries that pose an immediate life-threatening condition if not treated adequately and expeditiously.	0	0	0
4	Instantaneously killed or mortally injured	0	0	0

Utility System Pipeline Damage

System	Total Pipelines Length (miles)	Number of Leaks	Number of Breaks
Potable Water	7721	44	11
Wastewater	4633	22	6
Natural Gas	3089	8	2

Estimated Direct Economic Losses for Utilities (Millions of Dollars)

Potable Water	Wastewater	Oil System	Natural Gas	Electric Power	Communication	Total
\$0.20	\$0.10	\$0.00	\$0.03	\$0.00	\$0.00	\$0.33

Transportation Lifelines

The HAZUS model predicts moderate damage to transportation lifelines in the Plan Area.

	Highway	Railway	Bus Facility	Airport
Segments	\$ 0.00	\$ 0.00	-	-
Bridges	\$ 0.05	\$ 0.00	-	-
Facilities	\$ 0.00	\$ 0.01	\$ 0.00	\$ 0.00
Total	\$ 0.05	\$ 0.01	\$ 0.00	\$ 0.00

HAZUS Loss Estimation Model: Earthquake Scenarios in Plan Area

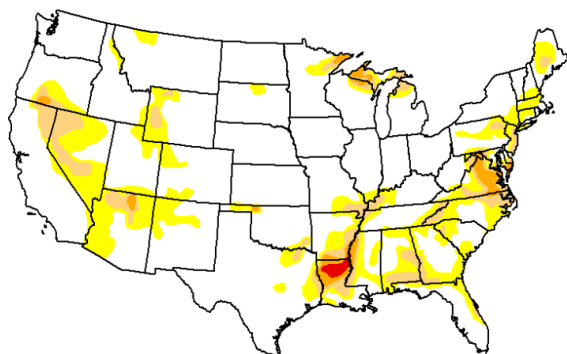
Debris Generation

The HAZUS model predicts that the earthquake will generate 6,000 tons of debris, comprised of 78% Brick/Wood and 19% Reinforced Concrete/Steel. This debris will require 240 truckloads, at 25 tons per truck, to clean up after the earthquake.

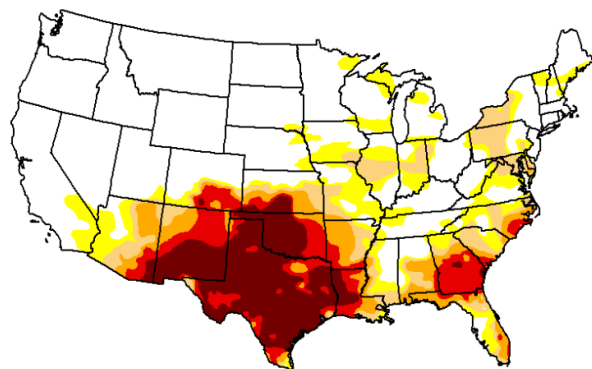
	Brick/Wood	Reinforced Concrete/Steel	Truckloads (@25 tons/truck)
Debris	78%	22%	240

Shelter Requirement

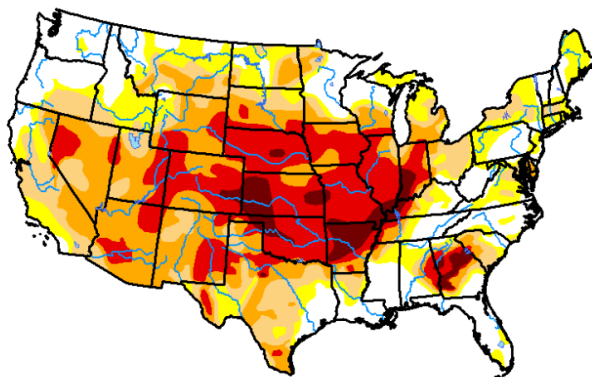
The HAZUS model estimates that eight household will be displaced due to the earthquake and that six persons (out of a total population of 207,704) will seek temporary shelter in public shelters due to the earthquake.



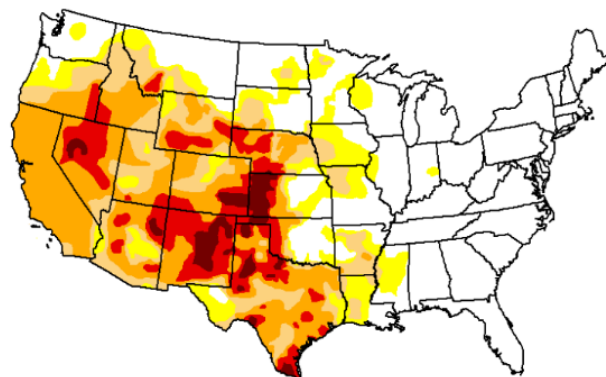
August 10, 2010 *None*



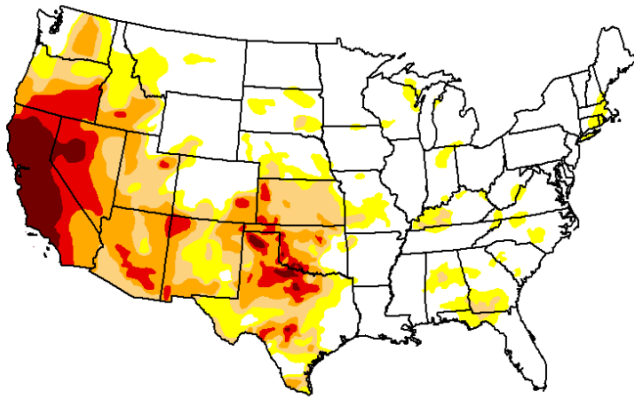
August 9, 2011 *Moderate Drought*



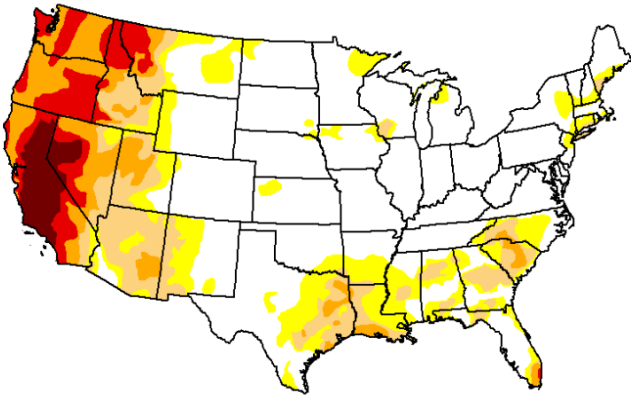
August 7, 2012 *Extreme Drought*



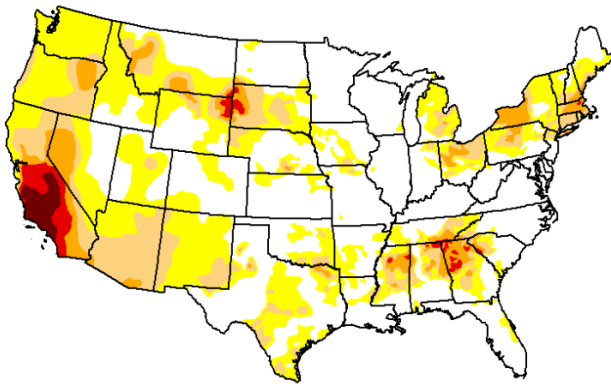
August 6, 2013 *None*



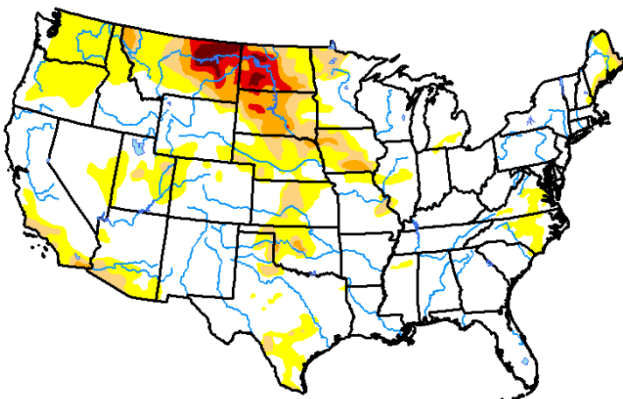
August 12, 2014 None



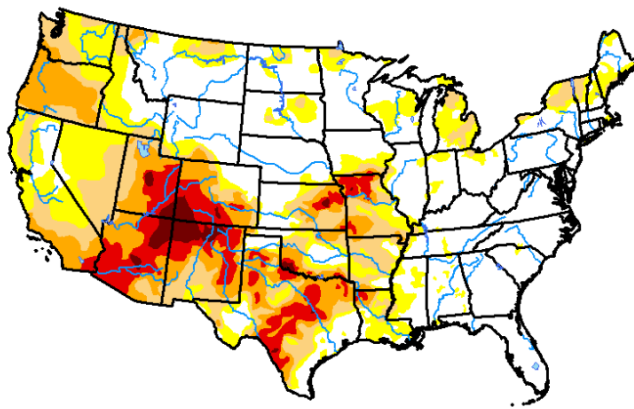
August 11, 2015 None



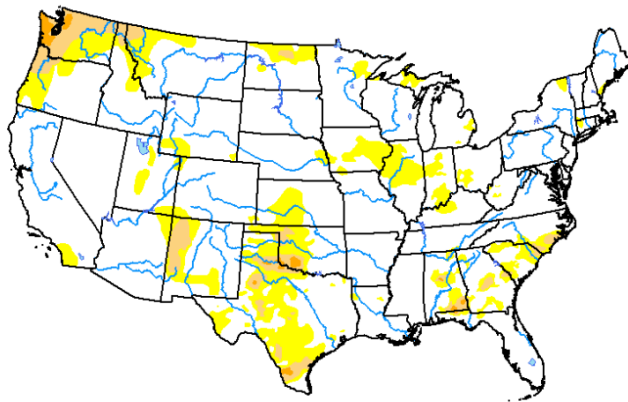
August 9, 2016 None



August 8, 2017 Abnormally Dry



August 7, 2018 None



August 6, 2019 Abnormally Dry

Source: <https://droughtmonitor.unl.edu/>

Public Opinion Survey – Summary, Charts, and Graphs

The *Champaign County Multi-Jurisdictional Hazard Mitigation Public Opinion Survey* was created as an outreach strategy during the planning process. Survey results will be used to influence the choices of possible hazard mitigation actions to propose for implementation.

Utilizing this survey, the Planning Team and HMP project staff were able to gather information from a random sample of persons from each participating local government jurisdiction within the Plan Area. An online survey and paper surveys were distributed via mail or email to randomly selected persons and to local officials of each participating jurisdiction represented by the HMP project manager on the Planning Team.

The data collected features the survey respondents' thoughts on various hazards, how the respondents were affected by selected hazards, and demographic information regarding the respondents.

A total of 248 survey responses were received. Most of the survey respondents were in the 30-39 and 60-69 age range and ~97% of the survey group were White or Caucasian. Approximately 85% of the survey group marked down as owning a home, 85% had homeowner's insurance, and around the same percentage live in a single-family household.

The survey asked which of the listed selected hazards have had an impact and in what ways. Open-ended questions were asked to invite comments about potential impacts of the hazards. Slightly more than half the survey respondents (~60%) have either directly or indirectly been impacted by a subject hazard. Severe Storms, Severe Winter Storms, and Extreme Heat were the top three hazards that have directly impacted the survey respondents. Tornadoes, Pandemics, and Hazardous Materials Release/Spill were the top three hazards to have indirectly impacted the survey respondents. Most of the survey respondents marked "Somewhat Concerned" for all the subject hazards, however, close to 50% of the survey group were "Not Concerned" about Droughts, and almost 70% of the survey group were "Not Concerned" about Earthquakes. The hazards that the survey respondents were most concerned about were Tornadoes, Severe Storms, Severe Winter Storms, Cyber Security Threats, and Pandemics.

The survey included questions about flooding. A total of 18% of survey respondents were "Very Concerned" about Flooding and 43% were "Somewhat Concerned" about Flooding. Only 2.4% of survey respondents indicated their location as being within a designated floodplain or zone, and 25% of survey respondents were unsure. Only 5.5% of the survey group had flood insurance, however almost 75% of the survey group marked this as not applicable.

The survey asked for input about which types of hazard mitigation actions might be

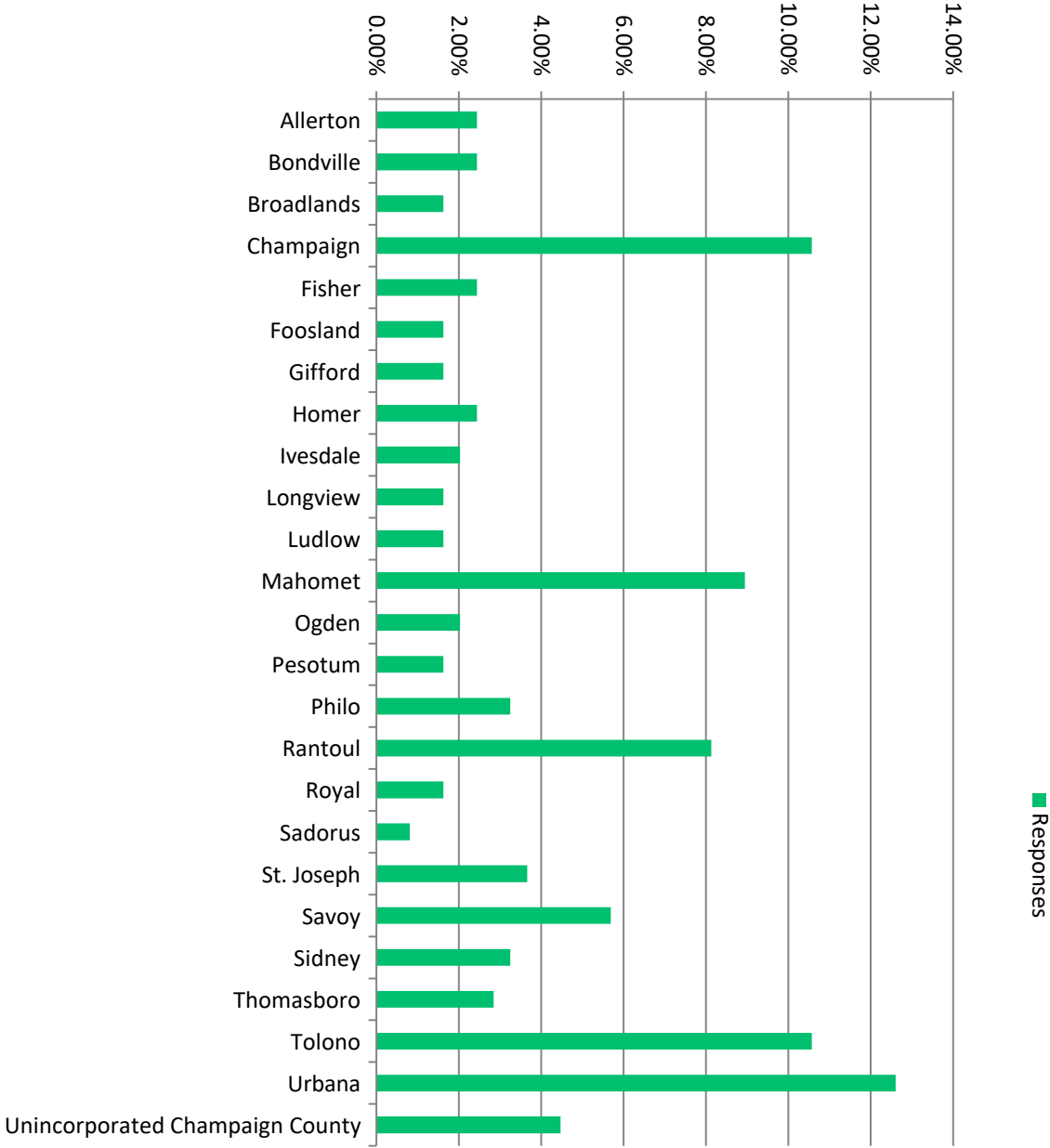
preferred, which types of hazard mitigation actions should be prioritized, and preferences regarding incentives or regulations. Protecting critical facilities was the most important priority when it came to hazard mitigation planning, followed by protecting public utilities, and protecting private property. It should be noted that 45% of survey respondents indicated protecting historical and local landmarks as “Somewhat Important,” and 20% indicated this as a “Neutral” priority, making it the least important priority to survey respondents. When it came to different community-wide strategies, survey respondents were most in favor of the “development of a post-disaster recovery plan that contains guidance and prioritized actions to implement following as disaster event”, while the least favorable approach was “the use of tax dollars to compensate landowners for not developing in areas subject to flood hazards”. Another strategy of note that seemed to be equally agreed and disagreed upon was the “non-regulatory approach to reducing risk”, while a “regulatory approach to reducing risk” was favored by most respondents.

The survey asked respondents to identify what mitigation activities or preparedness activities they may have some experience with, and how to better provide them with information, and basic demographic questions. Most of survey respondents had “signed up to receive an area-wide warning text-messages or email alerts about weather and other hazards” and had “talked with members in household about what to do in case of a natural disaster or technical hazards emergency.” Almost 60% of survey respondents had not “discussed or created a utility shutoff procedure in the event of a natural hazard event.” Another activity of note was “attending meetings or receiving written information on hazard events or emergency preparedness.” A total of 46% of survey respondents had and another 46% had not done so or received anything. Most survey respondents (~68%) felt that receiving an email newsletter would be an effective means of receiving information to make their household and home safer from subject hazards. A total of 51% survey respondents indicated that Facebook would be another effective means to receive useful information, and less than 10% of survey respondents indicated that Newspaper, Television, Instagram, or Twitter would be an effective method. The survey respondents seemed to want all the information on mitigation and preparedness equally, except insurance, which less than 10% of survey respondents wanted information on.

The following pages contain graphics and summary data to display the survey responses to the *Champaign County Multi-Jurisdictional Hazard Mitigation Public Opinion Survey*.

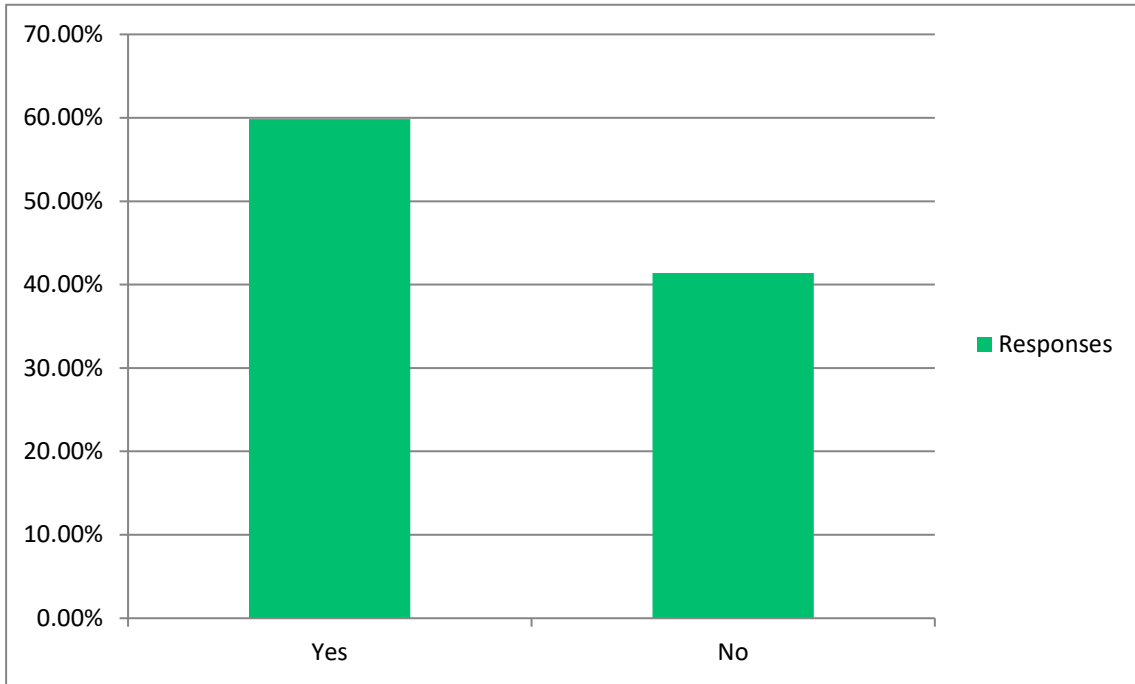
Please check one box that indicates the community where your residence is located:

Answer Choices	Responses	
Allerton	2.44%	6
Bondville	2.44%	6
Broadlands	1.63%	4
Champaign	10.57%	26
Fisher	2.44%	6
Foosland	1.63%	4
Gifford	1.63%	4
Homer	2.44%	6
Ivesdale	2.03%	5
Longview	1.63%	4
Ludlow	1.63%	4
Mahomet	8.94%	22
Ogden	2.03%	5
Pesotum	1.63%	4
Philo	3.25%	8
Rantoul	8.13%	20
Royal	1.63%	4
Sadorus	0.81%	2
St. Joseph	3.66%	9
Savoy	5.69%	14
Sidney	3.25%	8
Thomasboro	2.85%	7
Tolono	10.57%	26
Urbana	12.60%	31
Unincorporated Champaign County	4.47%	11
	Answered	246
	Skipped	2



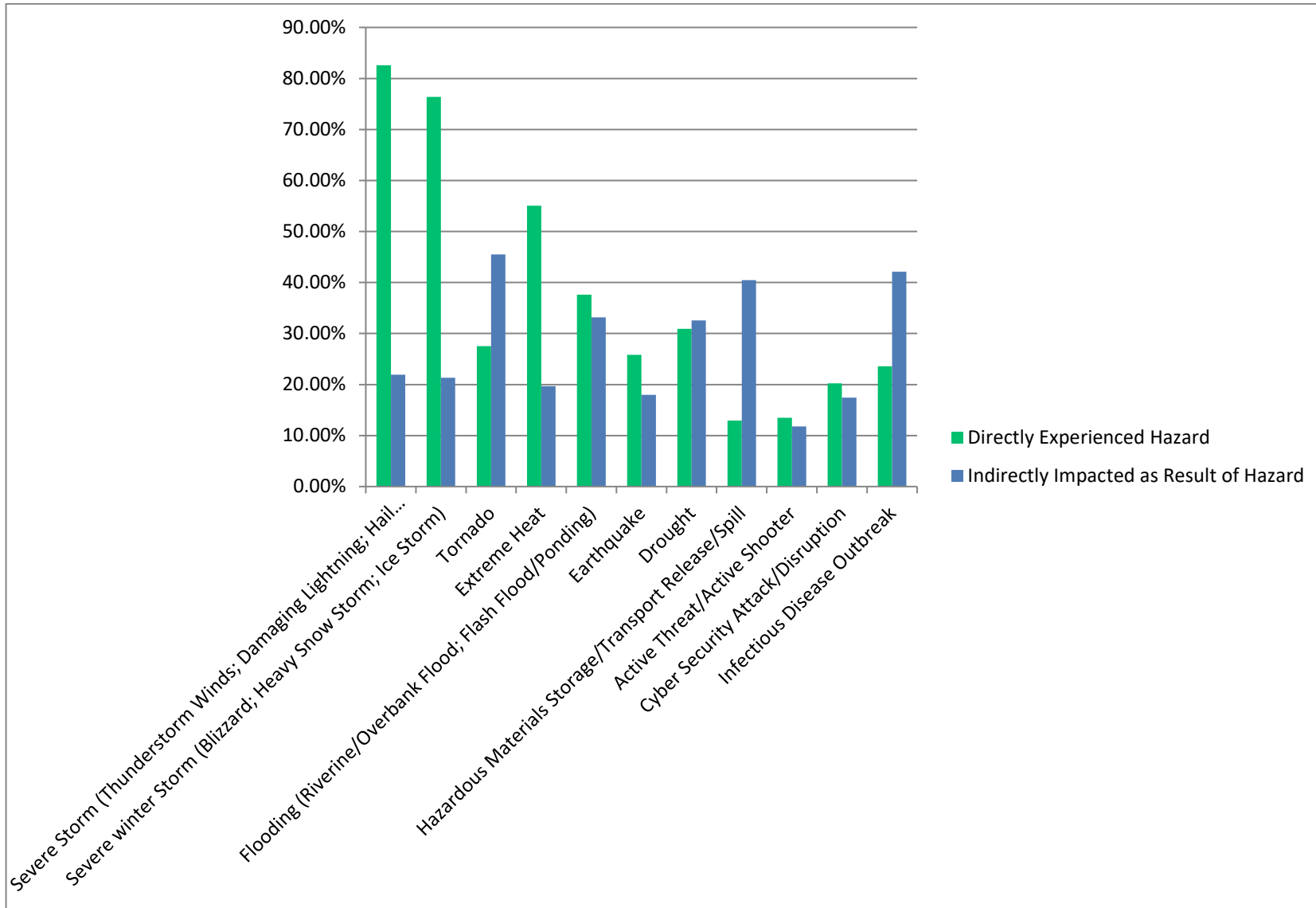
Have you or someone in your household directly experienced or been indirectly impacted by any of the subject hazards?

Answer Choices		Responses	
Yes		59.84%	146
No		41.39%	101
		Answered	244
		Skipped	4



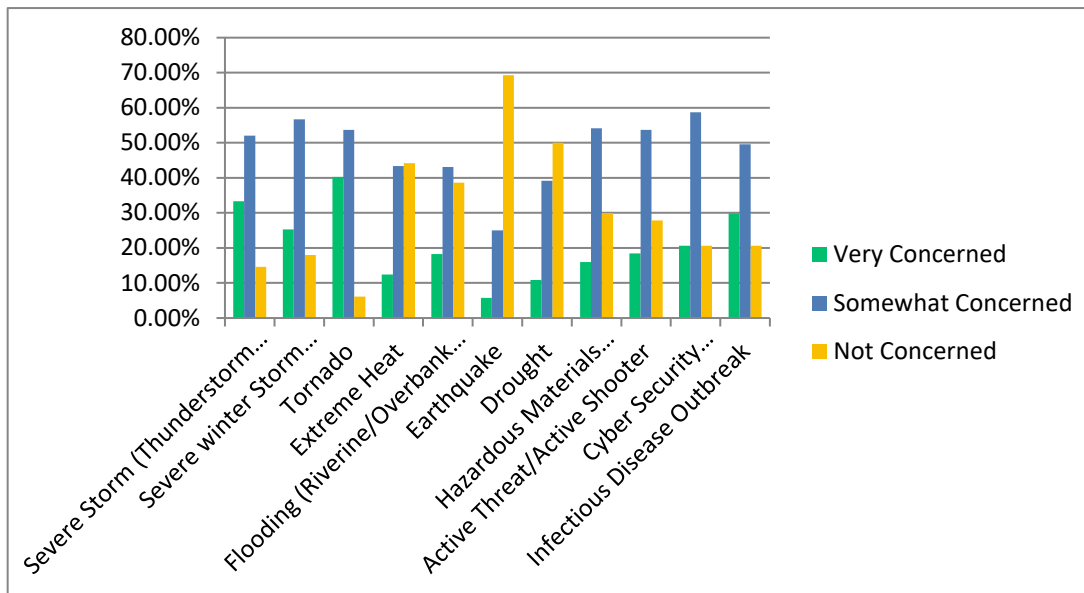
If you answered yes to the previous question, please indicate which hazard(s) and whether you/ household member directly experienced or were indirectly impacted because of the hazard encounter(s).

	Directly Experienced Hazard		Indirectly Impacted as Result of Hazard	
Severe Storm (Thunderstorm Winds; Damaging Lightning; Hailstorm)	82.58%	147	21.91%	39
Severe winter Storm (Blizzard; Heavy Snowstorm; Ice Storm)	76.40%	136	21.35%	38
Tornado	27.53%	49	45.51%	81
Extreme Heat	55.06%	98	19.66%	35
Flooding (Riverine/Overbank Flood; Flash Flood/Ponding)	37.64%	67	33.15%	59
Earthquake	25.84%	46	17.98%	32
Drought	30.90%	55	32.58%	58
Hazardous Materials Storage/Transport Release/Spill	12.92%	23	40.45%	72
Active Threat/Active Shooter	13.48%	24	11.80%	21
Cyber Security Attack/Disruption	20.22%	36	17.42%	31
Infectious Disease Outbreak	23.60%	42	42.13%	75
			Answered	178
			Skipped	70



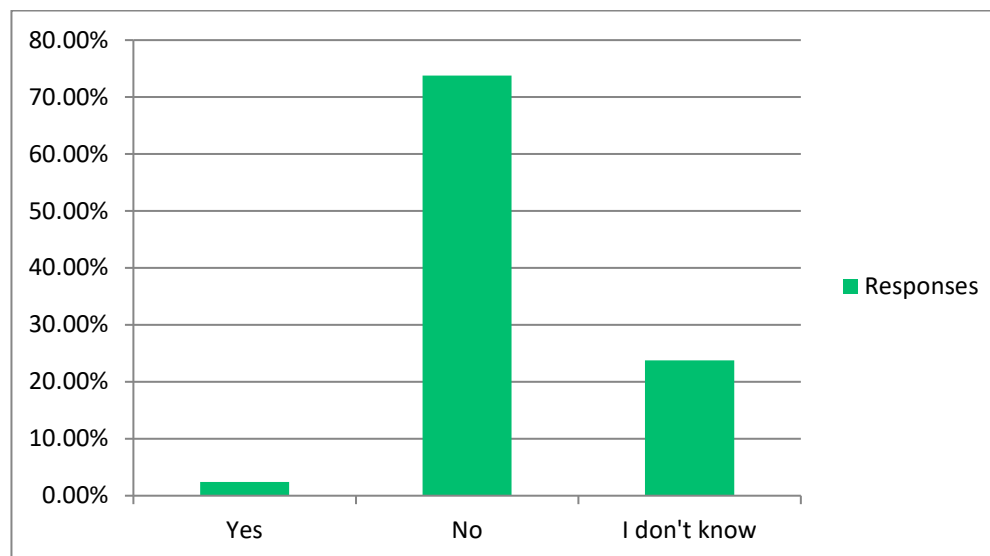
How concerned are you about the impacts of the potential subject hazards in your community?

	Very Concerned	Somewhat Concerned	Not Concerned	Total
Severe Storm (Thunderstorm Winds; Damaging Lightning; Hailstorm)	33.33% 82	52.03% 128	14.63% 36	246
Severe winter Storm (Blizzard; Heavy Snowstorm; Ice Storm)	25.31% 62	56.73% 139	17.96% 44	245
Tornado	40.24% 99	53.66% 132	6.10% 15	246
Extreme Heat	12.40% 30	43.39% 105	44.21% 107	242
Flooding (Riverine/Overbank Flood; Flash Flood/Ponding)	18.29% 45	43.09% 106	38.62% 95	246
Earthquake	5.74% 14	25.00% 61	69.26% 169	244
Drought	10.83% 26	39.17% 94	50.00% 120	240
Hazardous Materials Storage/Transport Release/Spill	15.98% 39	54.10% 132	29.92% 73	244
Active Threat/Active Shooter	18.44% 45	53.69% 131	27.87% 68	244
Cyber Security Attack/Disruption	20.66% 50	58.68% 142	20.66% 50	242
Infectious Disease Outbreak	29.83% 71	49.58% 118	20.59% 49	238
	Answered	246		
	Skipped	2		



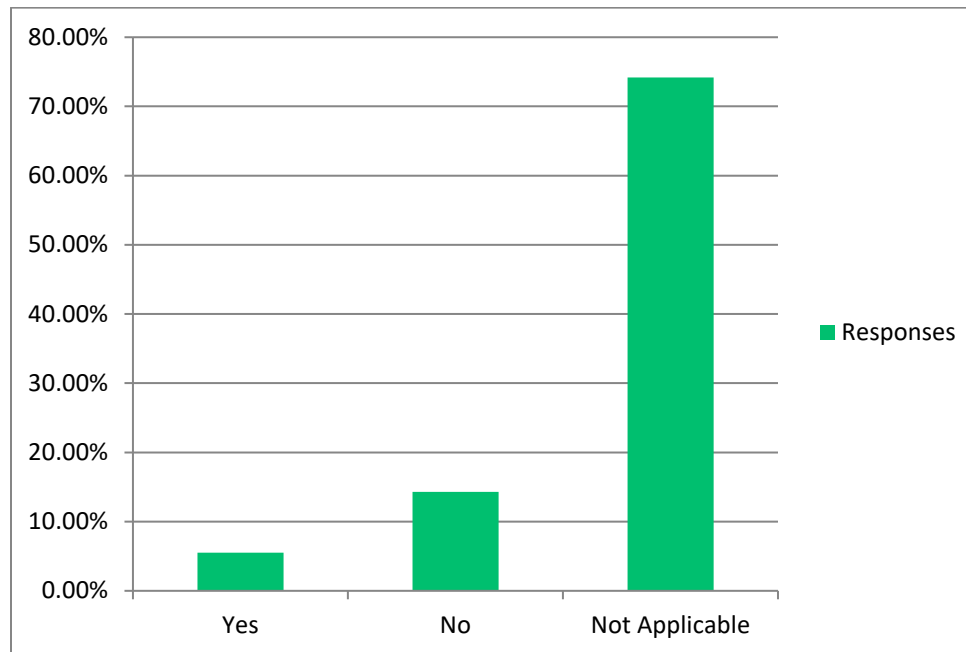
Is your home or business located in a designated floodplain or flood zone?

Answer Choices	Responses	
Yes	2.42%	6
No	73.79%	183
I don't know	23.79%	59
Answered		248
Skipped		0



If you responded "Yes" to the above question, do you currently have flood insurance?

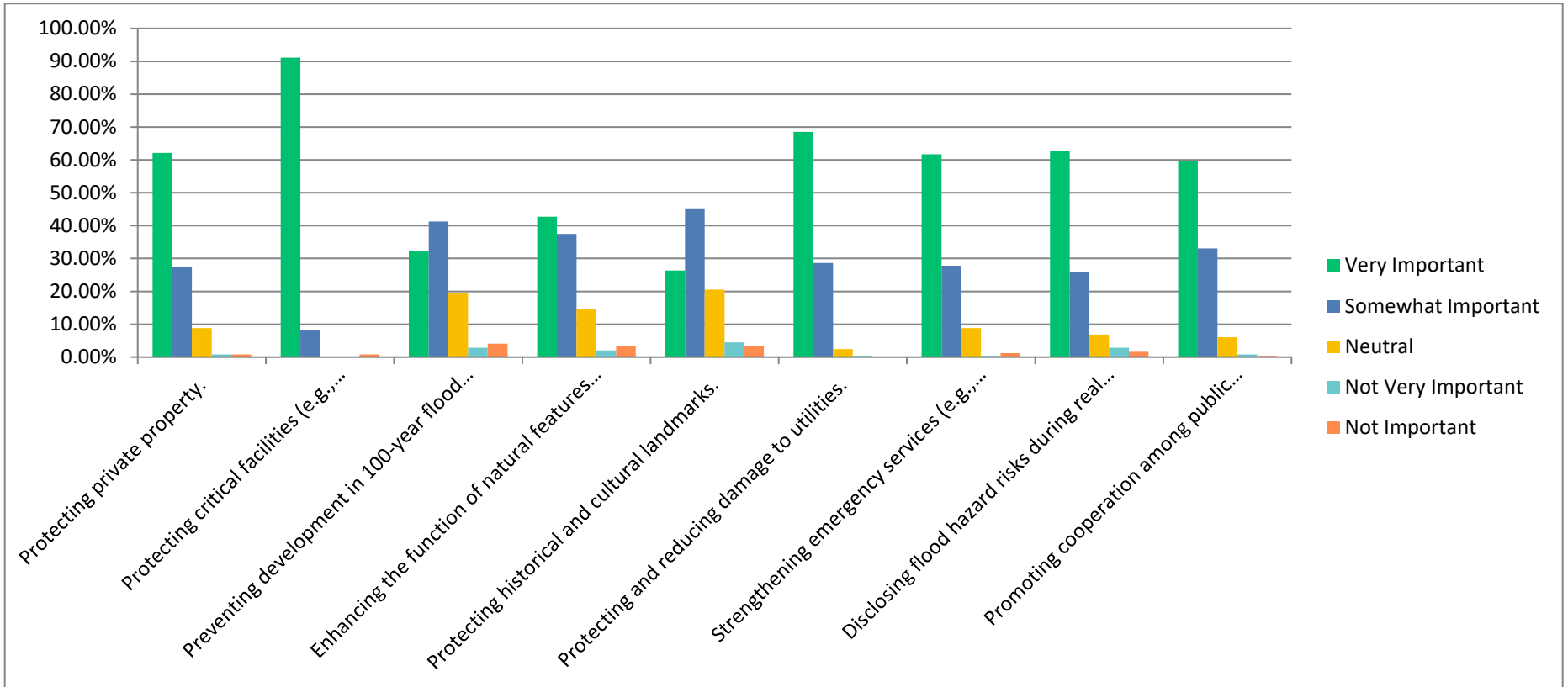
Answer Choices	Responses	
Yes	5.53%	12
No	14.29%	31
Not Applicable	74.19%	161
Answered		217
Skipped		31



The following statements will help determine citizen priorities regarding planning for actions that can be effective in reducing the impacts of the potential subject hazards in your community:

Thinking about potential hazards overall, please tell us how important each activity is to you.

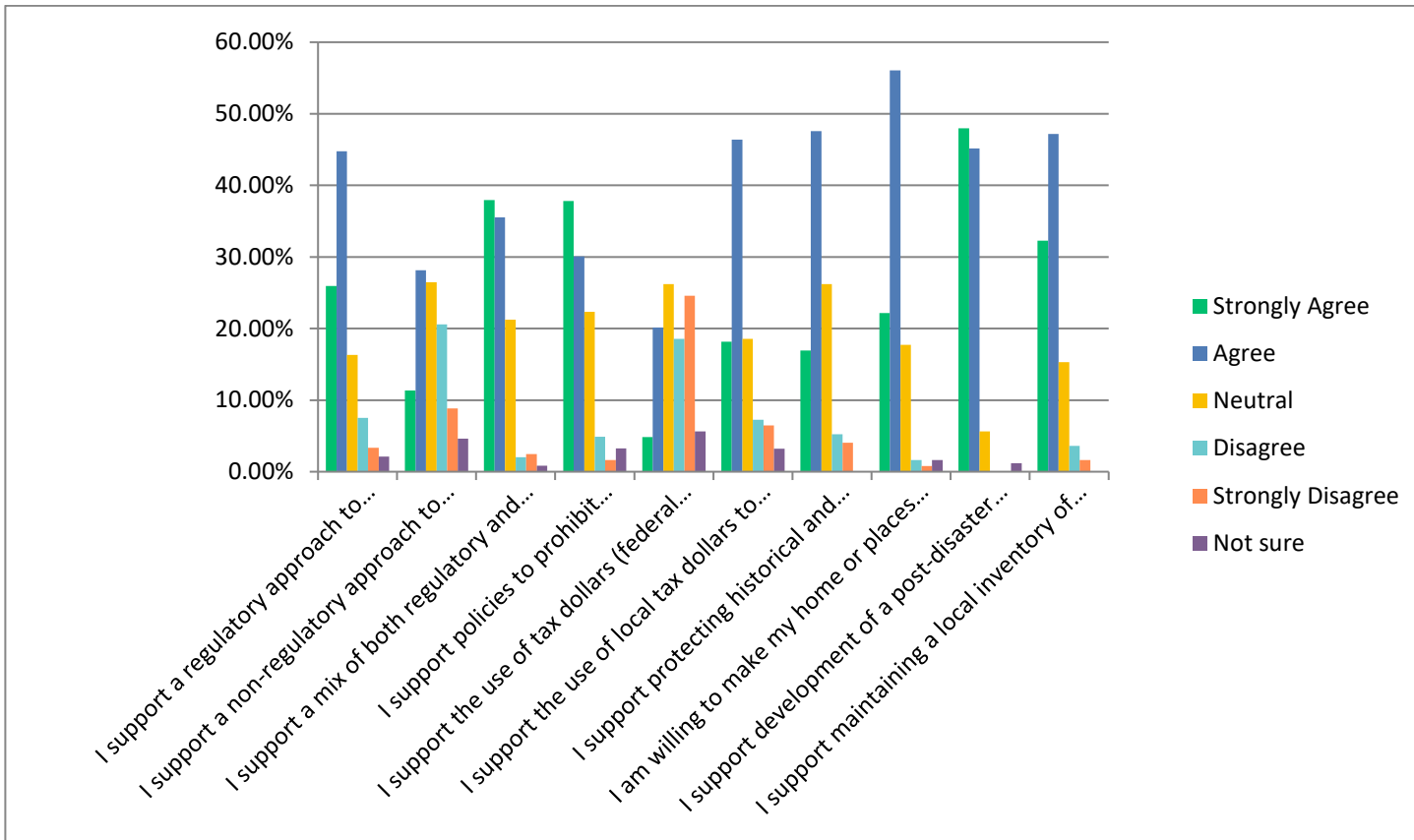
	Very Important		Somewhat Important		Neutral		Not Very Important		Not Important		Total	
Protecting private property.	62.10%	154	27.42%	68	8.87%	22	0.81%	2	0.81%	2	248	
Protecting critical facilities (e.g., transportation networks, hospitals, fire stations).	91.13%	226	8.06%	20	0.00%	0	0.00%	0	0.81%	2	248	
Preventing development in 100-year flood special hazard areas.	32.39%	80	41.30%	102	19.43%	48	2.83%	7	4.05%	10	247	
Enhancing the function of natural features such as wetlands and streams.	42.74%	106	37.50%	93	14.52%	36	2.02%	5	3.23%	8	248	
Protecting historical and cultural landmarks.	26.34%	64	45.27%	110	20.58%	50	4.53%	11	3.29%	8	243	
Protecting and reducing damage to utilities.	68.55%	170	28.63%	71	2.42%	6	0.40%	1	0.00%	0	248	
Strengthening emergency services (e.g., police, fire, ambulance).	61.69%	153	27.82%	69	8.87%	22	0.40%	1	1.21%	3	248	
Disclosing flood hazard risks during real estate transactions.	62.90%	156	25.81%	64	6.85%	17	2.82%	7	1.61%	4	248	
Promoting cooperation among public agencies, citizens, non-profit organizations, and businesses.	59.68%	148	33.06%	82	6.05%	15	0.81%	2	0.40%	1	248	



Please check the box that best represents your opinion regarding the community-wide strategies listed below to reduce the risk and loss associated with the potential subject hazards.

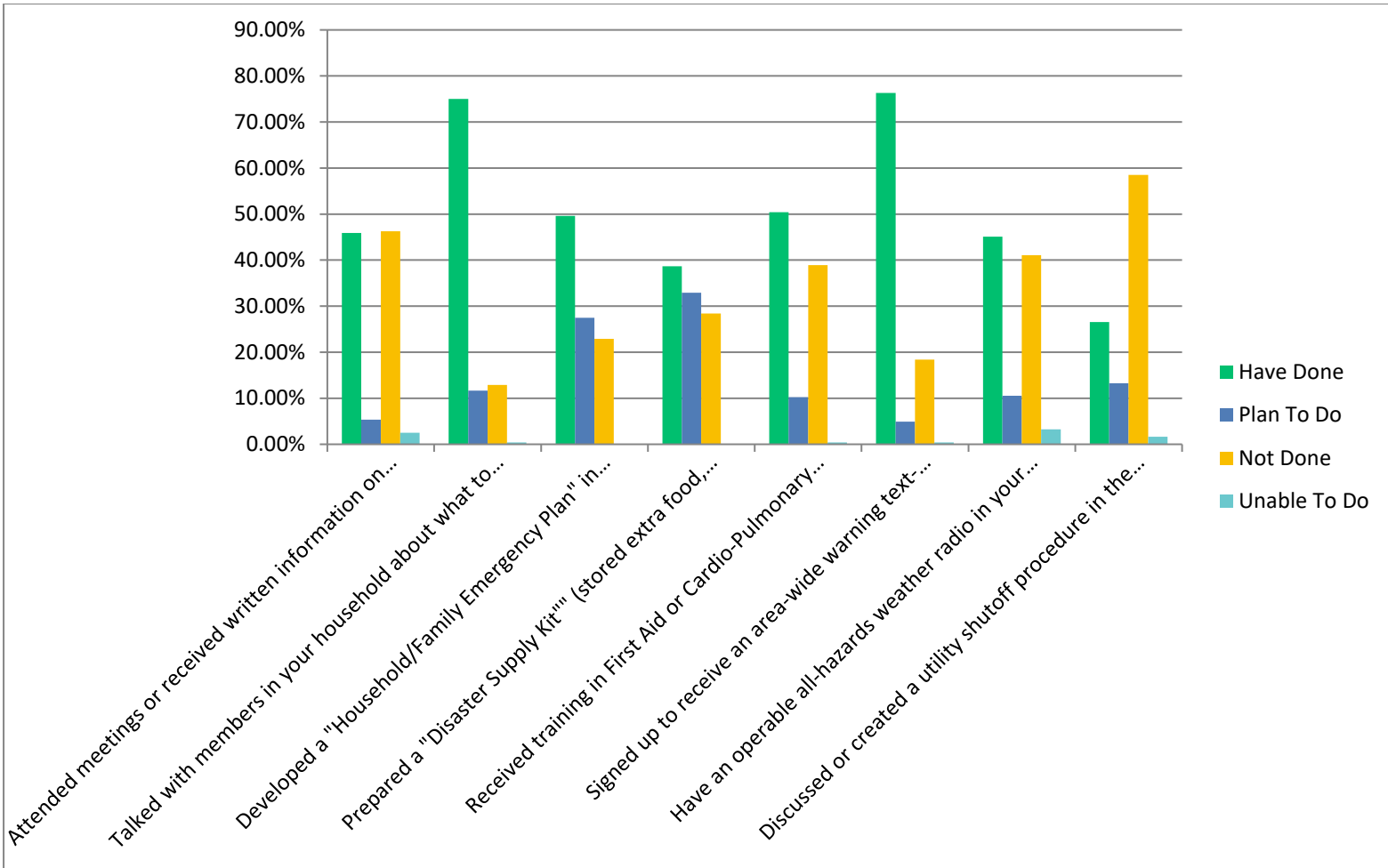
	Strongly Agree		Agree		Neutral		Disagree		Strongly Disagree		Not sure		Total
I support a regulatory approach to reducing risk. (Governments utilize a regulatory approach to adopt ordinances [rules] to restrict or direct certain activities. Aspects of a regulatory process include public review, requiring a developing or building permit, build-out inspections, and regulation enforcement.)	25.94%	62	44.77%	107	16.32%	39	7.53%	18	3.35%	8	2.09%	5	239
I support a non-regulatory approach to reducing risk. (A non-regulatory approach typically would consist of encouraging voluntary efforts to meet a certain performance standard.)	11.34%	27	28.15%	67	26.47%	63	20.59%	49	8.82%	21	4.62%	11	238
I support a mix of both regulatory and non-regulatory approaches to reducing risk. (This approach may feature flexible performance standards or utilize incentives as rewards if a minimum performance standard is met.)	37.96%	93	35.51%	87	21.22%	52	2.04%	5	2.45%	6	0.82%	2	245
I support policies to prohibit development in areas subject to flood hazards.	37.80%	93	30.08%	74	22.36%	55	4.88%	12	1.63%	4	3.25%	8	246
I support the use of tax dollars (federal and/or local) to compensate landowners for not developing in areas subject to flood hazards.	4.84%	12	20.16%	50	26.21%	65	18.55%	46	24.60%	61	5.65%	14	248
I support the use of local tax dollars to reduce risks and losses from the subject	18.15%	45	46.37%	115	18.55%	46	7.26%	18	6.45%	16	3.23%	8	248

hazards. I support protecting historical and cultural structures.	16.94%	42	47.58%	118	26.21%	65	5.24%	13	4.03%	10	0.00%	0	248
I am willing to make my home or places of business more resistant to the profile hazards.	22.18%	55	56.05%	139	17.74%	44	1.61%	4	0.81%	2	1.61%	4	248
I support development of a post-disaster recovery plan that contains guidance and prioritized actions to implement following as disaster event.	47.98%	119	45.16%	112	5.65%	14	0.00%	0	0.00%	0	1.21%	3	248
I support maintaining a local inventory of at-risk building and infrastructure.	32.26%	80	47.18%	117	15.32%	38	3.63%	9	1.61%	4	0.00%	0	248



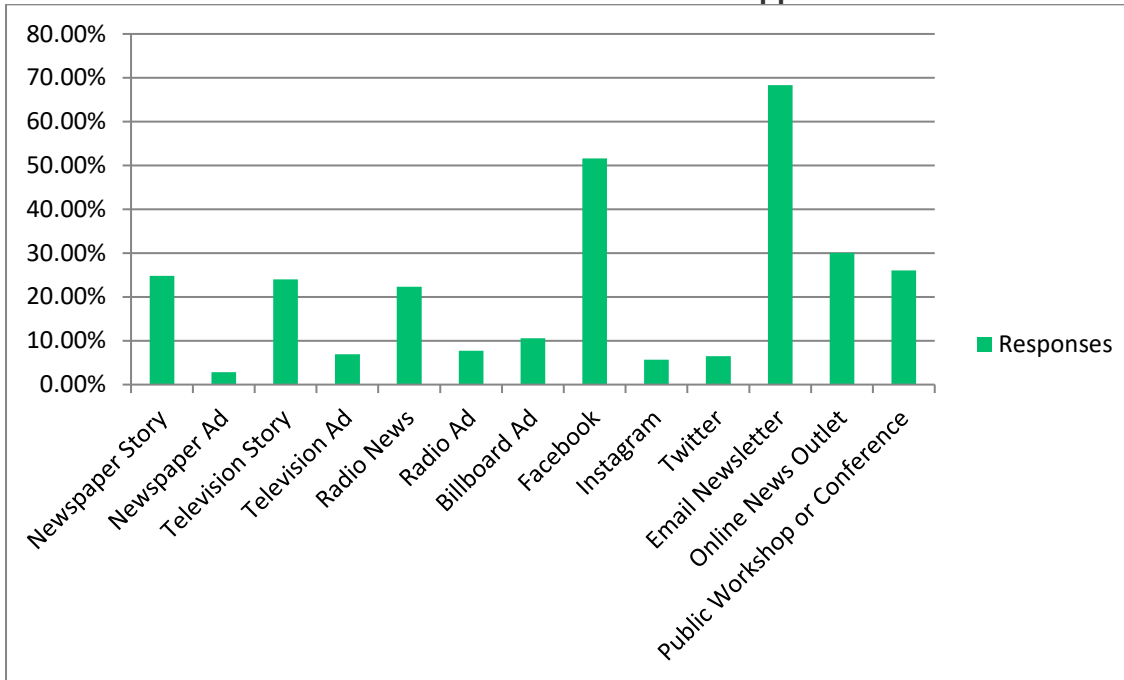
Considering the potential subject hazards in general, in the following list, please check those activities that you have done in your household, plan to do in the near future, have not done, or are unable to do. Please check one answer for each mitigation/preparedness activity.

	Have Done	Plan to Do	Not Done	Unable to Do	Total
Attended meetings or received written information on hazards events or emergency preparedness.	45.87% 111	5.37% 13	46.28% 112	2.48% 6	242
Talked with members in your household about what to do in case of a natural disaster or technical hazards emergency.	75.00% 180	11.67% 28	12.92% 31	0.42% 1	240
Developed a "Household/Family Emergency Plan" to decide what everyone would do in the event of a disaster or hazards emergency.	49.58% 119	27.50% 66	22.92% 55	0.00% 0	240
Prepared a "Disaster Supply Kit" (stored extra food, water, batteries, or other emergency supplies).	38.68% 94	32.92% 80	28.40% 69	0.00% 0	243
Received training in First Aid or Cardio-Pulmonary Resuscitation (CPR) in the last year.	50.43% 118	10.26% 24	38.89% 91	0.43% 1	234
Signed up to receive an area-wide warning text-messages or email alerts about weather and other hazards.	76.33% 187	4.90% 12	18.37% 45	0.41% 1	245
Have an operable all-hazards weather radio in your home.	45.12% 111	10.57% 26	41.06% 101	3.25% 8	246
Discussed or created a utility shutoff procedure in the event of a natural hazard event (e.g., tornado, earthquake, flood).	26.56% 64	13.28% 32	58.51% 141	1.66% 4	241
				Answered	246
				Skipped	2



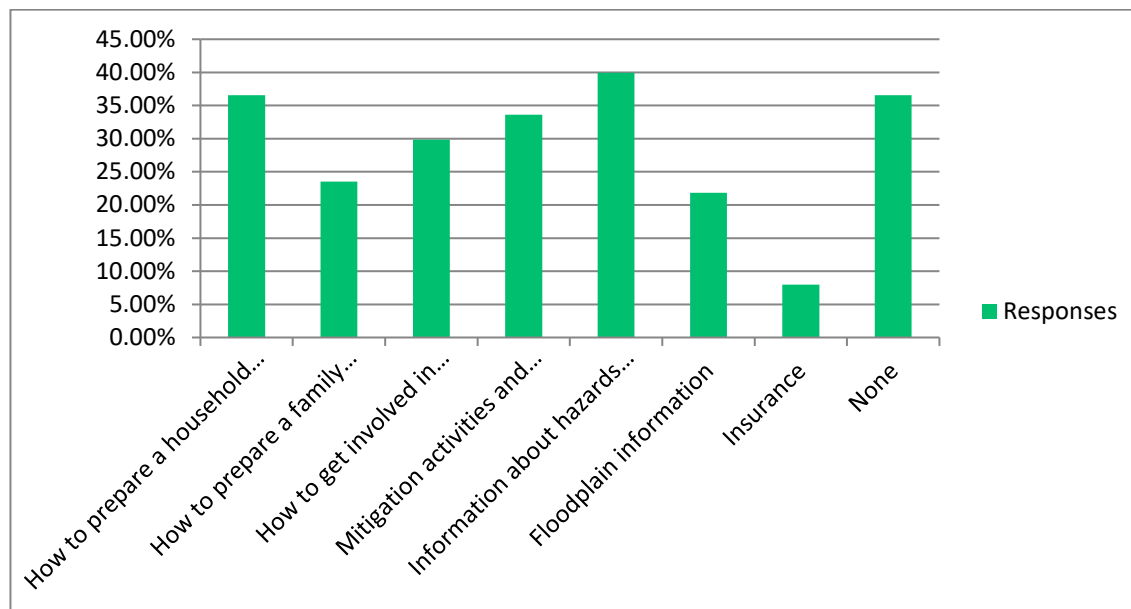
What would be most effective way for you to receive information about how to make your household and home safer from the subject hazards under review? Please check up to three.

Answer Choices	Responses	
Newspaper Story	24.80%	61
Newspaper Ad	2.85%	7
Television Story	23.98%	59
Television Ad	6.91%	17
Radio News	22.36%	55
Radio Ad	7.72%	19
Billboard Ad	10.57%	26
Facebook	51.63%	127
Instagram	5.69%	14
Twitter	6.50%	16
Email Newsletter	68.29%	168
Online News Outlet	30.08%	74
Public Workshop or Conference	26.02%	64
	Answered	246
	Skipped	2



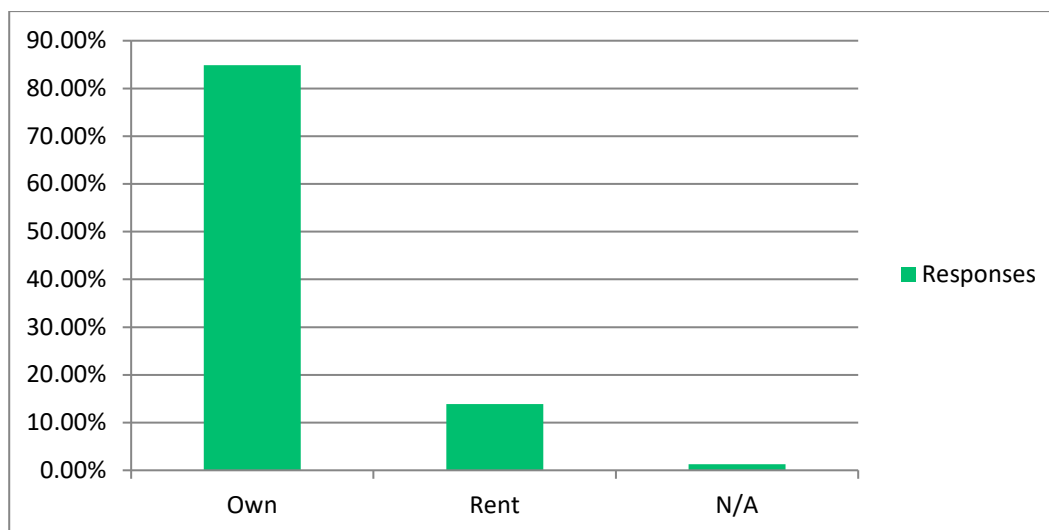
Would you like more information about any of the following:

Answer Choices	Responses	
How to prepare a household disaster kit	36.55%	87
How to prepare a family communication plan	23.53%	56
How to get involved in community preparedness in your community	29.83%	71
Mitigation activities and projects in your community	33.61%	80
Information about hazards that could affect your community	39.92%	95
Floodplain information	21.85%	52
Insurance	7.98%	19
None	36.55%	87
Answered		238
Skipped		10



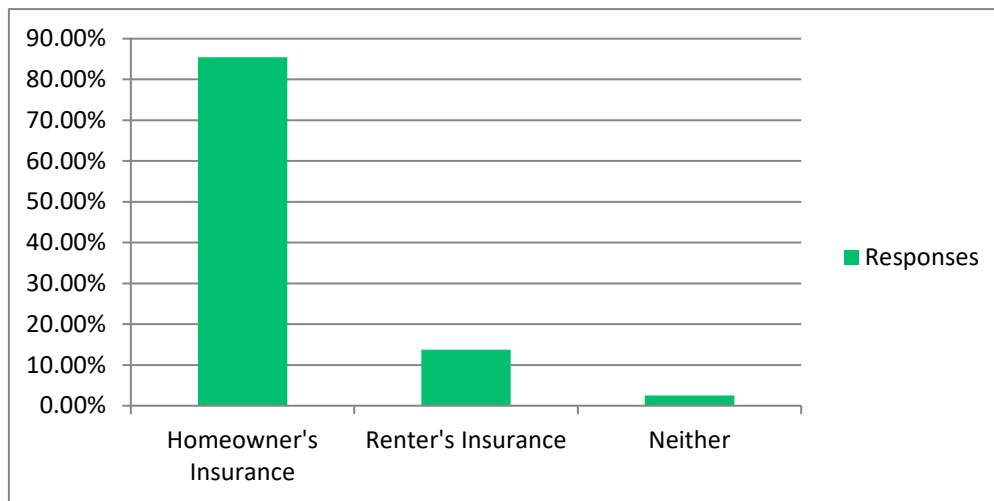
Do you own or rent your place of residence?

Answer Choices	Responses	
Own	84.87%	202
Rent	13.87%	33
N/A	1.26%	3
Answered		238
Skipped		10



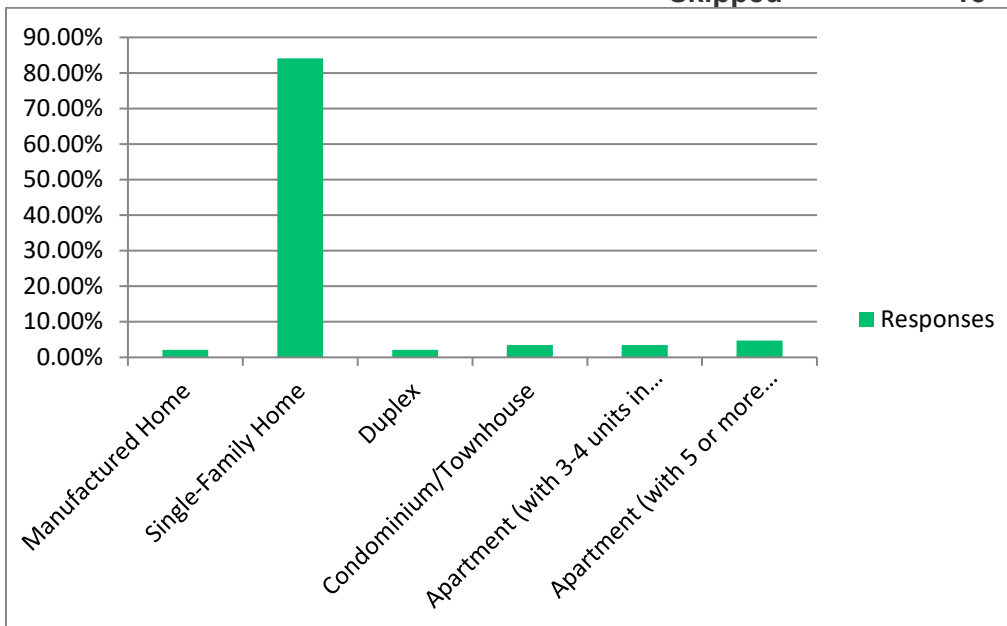
Do you have homeowner's insurance or renter's insurance for your home?

Answer Choices	Responses	
Homeowner's Insurance	85.42%	205
Renter's Insurance	13.75%	33
Neither	2.50%	6
Answered		240
Skipped		8



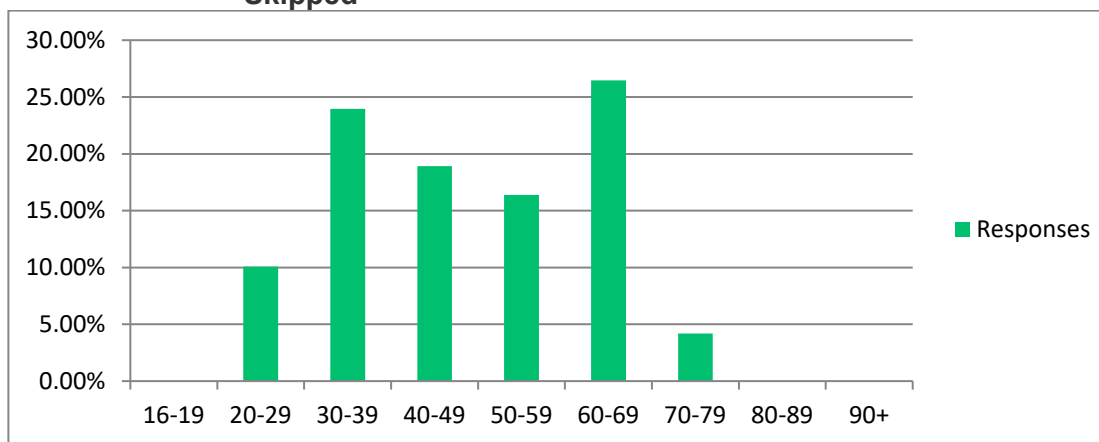
Do you own/rent a:

Answer Choices	Responses	
Manufactured Home	2.15%	5
Single-Family Home	84.12%	196
Duplex	2.15%	5
Condominium/Townhouse	3.43%	8
Apartment (with 3-4 units in structure)	3.43%	8
Apartment (with 5 or more units in structure)	4.72%	11
	Answered	233
	Skipped	15



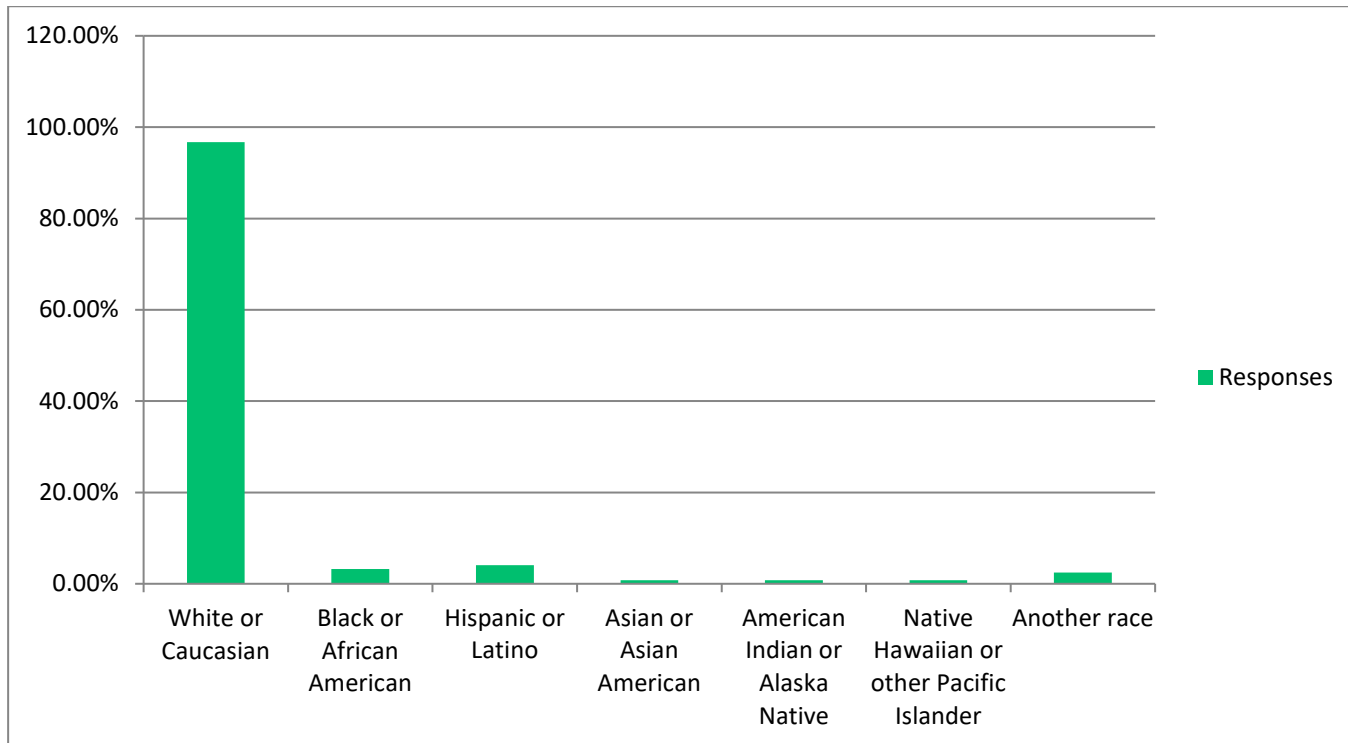
Age

Answer Choices	Responses	
16-19	0.00%	0
20-29	10.08%	24
30-39	23.95%	57
40-49	18.91%	45
50-59	16.39%	39
60-69	26.47%	63
70-79	4.20%	10
80-89	0.00%	0
90+	0.00%	0
Answered		238
Skipped		10



Ethnic/Race groups you most identify with (Check all that apply):

Answer Choices	Responses	
White or Caucasian	96.75%	229
Black or African American	3.25%	7
Hispanic or Latino	4.07%	9
Asian or Asian American	0.81%	2
American Indian or Alaska Native	0.81%	2
Native Hawaiian or other Pacific Islander	0.81%	2
Another race	2.44%	5
Answered	240	
Skipped	8	



Status of Prioritized Hazard Mitigation Actions from the HMP Update 2015 by Jurisdiction

Jurisdiction: Champaign County

Hazards Addressed	Priority	Mitigation Action	2020 HMP Update Status	Notes
All	1	1) Educate public and disseminate information regarding all hazards and preventative and preparedness safety procedures to population via community meetings, presentations to groups, displays, press, and media	ONGOING	Carried forward as Mitigation Action 1.
All	1	2) Promote the use of an area-wide warning text message system such as Alert Sense®, the American Red Cross tornado warning application, or others.	ONGOING	Carried forward as Mitigation Action 2.
T, SS, SWS	1	3) Participate in the National Weather Service StormReady® program.	ONGOING	Carried forward as Mitigation Action 3.
All	2	4) Encourage use of NOAA all-hazard radios in residences and businesses throughout unincorporated area.	ONGOING	Carried forward as Mitigation Action 6.
All	2	5) When appropriate as determined by CCEMA, provide information to local public radio and television stations regarding emergency warning and public service announcements.	ONGOING	Carried forward as Mitigation Action 7.
T, SS	2	6) Coordinate the countywide voluntary Storm Spotter program.	ONGOING	Carried forward as Mitigation Action 8.
F	2	7) Participate in National Flood Insurance Program (NFIP).	ONGOING	Carried forward as Mitigation Action 9.
T, SS, SWS, EH	2	8) Conduct a needs assessment regarding community shelter options for vulnerable populations in unincorporated county.	ONGOING	Removed SS from legend. Provided details about the mitigation action. Carried forward as Mitigation Action 10.
All	2	9) Identify a strategy to transport vulnerable populations in unincorporated county.	ONGOING	Updated to improve the existing transportation program. Carried forward as Mitigation Action 11.

All	3	10) Improve the countywide integrated information base for use in assessing risk from natural and selected technical hazard events . <u>human-caused hazards or threats featured in the HMP Update 2020.</u>	ONGOING	Updated to be consistent with the HMP Update 2020 goals and objectives. Carried forward as Mitigation Action 12.
F	3	11) Review costs and benefits of County participation in FEMA Community Rating System voluntary incentive program.	PENDING	Carried forward as Mitigation Action 13.
T, SS, SWS, E	3	12) Make a recommendation to the Champaign County Environment and Land Use Committee regarding County adoption of building regulations requiring wind-resistant and seismic resistance construction for new critical facilities.	PENDING	Carried forward as Mitigation Action 14.
F	3	13) Identify and prioritize needed improvements to County maintained roads that flood in heavy rainstorms, blocking or impairing road use and through access by vehicular traffic.	PENDING	Carried forward as Mitigation Action 15.
F	3	14) Conduct a feasibility study regarding acquisition of acceptable elevation data to identify boundaries of the floodway and 100-year floodplain throughout unincorporated Champaign County.	REPLACED	Mitigation Action 18 is proposed in place of this action. Mitigation Action 18 is a more specific suggested mitigation action.
All	3	15) Inventory mutual aid agreement terms for Plan Area communities and encourage participation of communities.	PENDING	Carried forward as Mitigation Action 16.

Jurisdiction: Village of Allerton

Hazards Addressed	Priority	Mitigation Action	2020 HMP Update Status	Notes
All	1	1) Encourage Village of Allerton residents and businesses to purchase and use a NOAA all-hazard radio.	ONGOING	Carried forward as Mitigation Action 1.
F	2	2) Participate in the National Flood Insurance Program (NFIP).	ONGOING	Carried forward as Mitigation Action 2.
All	2	3) Improve communication to population regarding preventative protective measures to take prior to occurrence of from natural and selected technical hazard events . <u>human-caused hazards or threats featured in the HMP Update 2020.</u>	PENDING	Updated to be consistent with the HMP Update 2020 goals and objectives. Carried forward as Mitigation Action 3.

Jurisdiction: Village of Bondville

Hazards Addressed	Priority	Mitigation Action	2020 HMP Update Status	Notes
All	1	1) Encourage Village of Bondville residents and businesses to purchase and use a NOAA all-hazard radio.	ONGOING	Carried forward as Mitigation Action 1.
F	2	2) Review cost and benefits of Village of Bondville participation in National Flood Insurance Program.	PENDING	Carried forward as Mitigation Action 2.
All	2	3) Improve communication to population regarding preventative protective measures to take prior to occurrence of natural and selected technical hazard events. <u>human-caused hazards or threats featured in the HMP Update 2020.</u>	NEW	Updated to be consistent with the HMP Update 2020 goals and objectives. Carried forward as Mitigation Action 3.

Jurisdiction: Village of Broadlands

Hazards Addressed	Priority	Mitigation Action	2020 HMP Update Status	Notes
All	1	1) Encourage Village of Broadlands residents and businesses to purchase and use a NOAA all-hazard radio.	ONGOING	Carried forward as Mitigation Action 1.
F	2	2) Participate in the National Flood Insurance Program (NFIP).	ONGOING	Carried forward as Mitigation Action 2.
All	2	3) Improve communication to population regarding preventative protective measures to take prior to occurrence of natural and selected technical hazard events. <u>human-caused hazards or threats featured in the HMP Update 2020.</u>	NEW	Updated to be consistent with the HMP Update 2020 goals and objectives. Carried forward as Mitigation Action 3.
F	3	4) Review hazard mitigation options regarding repetitive flood loss property in Broadlands.	PENDING	Carried forward as Mitigation Action 4.

Jurisdiction: City of Champaign

Hazards Addressed	Priority	Mitigation Action	2020 HMP Update Status	Notes
F	1	1) Continue improvements to remove structures within the Boneyard Creek floodway and mitigate flooding hazards with adequate stormwater detention facilities in the Boneyard Creek watershed.	ONGOING	Carried forward as Mitigation Action 3.
F	1	2) Continue to construct stormwater detention improvements within the Copper Slough Watershed (specific to the West Washington Street Watershed).	REMOVED	Completed and removed from the list.
F	2	3) Acquire properties located within the Boneyard Creek floodplain as funding allows and as the properties become available.	ONGOING	Carried forward as Mitigation Action 4.
F	2	4) Participate in National Flood Insurance Program (NFIP).	ONGOING	Carried forward as Mitigation Action 5.
F	2	5) Continue review of City floodplain development regulations for compliance with FEMA NFIP requirements.	ONGOING	Carried forward as Mitigation Action 6.
F	2	6) Participate in the FEMA Community Rating System Program.	ONGOING	Carried forward as Mitigation Action 7.
T, SS, SWS	2	7) Participate in the National Weather Service StormReady® program.	ONGOING	Carried forward as Mitigation Action 8.
F	2	8) Construct new buildings and new development in accordance with City floodplain development regulations.	ONGOING	Carried forward as Mitigation Action 9.
F	2	9) Conduct volunteer clean-up of Boneyard Creek as part of the MS4 Stormwater Management Program biannual Community Cleanup Day event.	ONGOING	Carried forward as Mitigation Action 10.
F	2	10) Require construction of detention basins in accordance with City stormwater regulations.	ONGOING	Carried forward as Mitigation Action 11.
F	2	11) Require erosion control plans in accordance with City stormwater regulations to mitigate stormwater pollution.	ONGOING	Carried forward as Mitigation Action 12.

All	2	12) Adopt Comprehensive Land Use Plan that guides growth and development to suitable locations and includes goals, objectives and policies consistent with HMP goals and objectives.	ONGOING	Carried forward as Mitigation Action 13.
T, SS	2	13) Maintain City's system of advance warning sirens.	ONGOING	Carried forward as Mitigation Action 14.
All	2	14) Require back-up generators for public assembly buildings and buildings that house dependent populations.	ONGOING	Carried forward as Mitigation Action 15.
T, SS, E, F, SWS	2	15) Require construction projects to conform to wind, snow load, and seismic provisions of the International Building and International Residential Codes.	ONGOING	Carried forward as Mitigation Action 16.
T, SS, SWS, EH	2	16) Conduct a needs assessment regarding community shelter options for vulnerable populations.	NEW	Broadened to indicate interest in creating and supporting year-round emergency shelters. Carried forward as Mitigation Action 17.
All	3	17) Disseminate public education information about preventative protective measures to take prior to occurrence of natural and <u>human-caused hazards or threats featured in the HMP Update 2020 technical hazards</u> via internet, social media, print, and television.	ONGOING	Updated to be consistent with the HMP Update 2020 goals and objectives. Carried forward as Mitigation Action 18.
T, SS, SWS	3	18) Prune or remove trees as needed in public right-of-way areas.	ONGOING	Carried forward as Mitigation Action 19.
T, SS	3	19) Review International Building Codes for adoption by the city as they are published every three years.	ONGOING	Carried forward as Mitigation Action 20.

Jurisdiction: Village of Fisher

Hazards Addressed	Priority	Mitigation Action	2020 HMP Update Status	Notes
All	1	1) Encourage Village of Fisher residents and businesses to purchase and use a NOAA all-hazard radio.	PENDING	Carried forward as Mitigation Action 1.
F	2	2) Participate in the National Flood Insurance Program (NFIP).	ONGOING	Carried forward as Mitigation Action 2.
F	2	3) Improve communication to population regarding preventative protective measures to take prior to occurrence of natural and <u>human-caused hazards or threats featured in the HMP Update 2020 technical hazards.</u>	PENDING	Updated to be consistent with the HMP Update 2020 goals and objectives. Carried forward as Mitigation Action 3.
F	3	4) Review hazard mitigation options regarding repetitive flood loss property in Fisher.	PENDING	Priority shifted from 3 to 2. Carried forward as Mitigation Action 4.

Jurisdiction: Village of Foosland

Hazards Addressed	Priority	Mitigation Action	2020 HMP Update Status	Notes
All	2	1) Encourage Village of Foosland residents and businesses to purchase and use a NOAA all-hazard radio.	ONGOING	Priority shifted from 2 to 1. Carried forward as Mitigation Action 2.
All	1	2) Improve communication to population regarding preventative protective measures to take prior to occurrence of natural and <u>human-caused hazards or threats featured in the HMP Update 2020 technical hazards.</u>	PENDING	Updated to be consistent with the HMP Update 2020 goals and objectives. Carried forward as Mitigation Action 1.

Jurisdiction: Village of Gifford

Hazards Addressed	Priority	Mitigation Action	2020 HMP Update Status	Notes
All	1	1) Encourage Village of Gifford residents and businesses to purchase and use a NOAA all-hazard radio.	ONGOING	Carried forward as Mitigation Action 1.
T, SS	1	2) Arrange to designate a local facility as a storm shelter.	PENDING	Carried forward as Mitigation Action 2.
F	2	3) Review cost and benefits of Village participation in National Flood Insurance Program.	PENDING	Carried forward as Mitigation Action 3.
All	2	4) Improve communication to population regarding preventative protective measures to take prior to occurrence of natural and <u>human-caused hazards or threats featured in the HMP Update 2020 technical hazards.</u>	PENDING	Updated to be consistent with the HMP Update 2020 goals and objectives. Carried forward as Mitigation Action 4.

Jurisdiction: Village of Homer

Hazards Addressed	Priority	Mitigation Action	2020 HMP Update Status	Notes
All	1	1) Encourage Village of Homer residents and businesses to purchase and use a NOAA all-hazard radio.	ONGOING	Carried forward as Mitigation Action 1.
F	2	2) Review cost and benefits of Village participation in National Flood Insurance Program.	PENDING	Carried forward as Mitigation Action 2.
All	2	3) Improve communication to population regarding preventative protective measures to take prior to occurrence of natural and <u>human-caused hazards or threats featured in the HMP Update 2020 technical hazards.</u>	PENDING	Updated to be consistent with the HMP Update 2020 goals and objectives. Carried forward as Mitigation Action 3.

Jurisdiction: Village of Ivesdale

Hazards Addressed	Priority	Mitigation Action	2020 HMP Update Status	Notes
All	1	1) Encourage Village of Ivesdale residents and businesses to purchase and use a NOAA all-hazard radio.	ONGOING	Carried forward as Mitigation Action 1.
F	2	2) Review cost and benefits of Village participation in National Flood Insurance Program.	ONGOING	Carried forward as Mitigation Action 2.
All	2	3) Improve communication to population regarding preventative protective measures to take prior to occurrence of natural and <u>human-caused hazards or threats featured in the HMP Update 2020 technical hazards.</u>	PENDING	Updated to be consistent with the HMP Update 2020 goals and objectives. Carried forward as Mitigation Action 3.

Jurisdiction: Village of Longview

Hazards Addressed	Priority	Mitigation Action	2020 HMP Update Status	Notes
All	1	1) Encourage Village of Longview residents and businesses to purchase and use a NOAA all-hazard radio.	ONGOING	Carried forward as Mitigation Action 1.
F	2	2) Review cost and benefits of Village participation in National Flood Insurance Program.	ONGOING	Carried forward as Mitigation Action 2.
All	2	3) Improve communication to population regarding preventative protective measures to take prior to occurrence of natural and <u>human-caused hazards or threats featured in the HMP Update 2020 technical hazards.</u>	PENDING	Updated to be consistent with the HMP Update 2020 goals and objectives. Carried forward as Mitigation Action 3.

Jurisdiction: Village of Ludlow

Hazards Addressed	Priority	Mitigation Action	2020 HMP Update Status	Notes
All	1	1) Encourage Village of Ludlow residents and businesses to purchase and use a NOAA all-hazard radio.	ONGOING	Carried forward as Mitigation Action 1.
F	2	2) Participate in the National Flood Insurance Program (NFIP).	ONGOING	Carried forward as Mitigation Action 2.
All	2	3) Improve communication to population regarding preventative protective measures to take prior to occurrence of natural and <u>human-caused hazards or threats featured in the HMP Update 2020 technical hazards.</u>	PENDING	Updated to be consistent with the HMP Update 2020 goals and objectives. Carried forward as Mitigation Action 3.

Jurisdiction: Village of Mahomet

Hazards Addressed	Priority		Mitigation Action	2020 HMP Update Status	Notes
F	1	1)	Participate in the National Flood Insurance Program (NFIP).	ONGOING	Carried forward as Mitigation Action 3.
F	1	2)	Administer and periodically update the Mahomet Code of Ordinances provisions relevant to addressing potential flood issues: Development within Floodplain Areas, Subdivisions, and Stormwater Management.	ONGOING	Carried forward as Mitigation Action 4.
All	1	3)	Conduct a needs assessment regarding community shelter options for vulnerable populations in the Village.	PENDING	Carried forward as Mitigation Action 5.
T, SS	1	4)	Maintain advance warning sirens.	ONGOING	Carried forward as Mitigation Action 6.
T, SS, SWS, E, F	2	5)	Review benefits and costs of adopting International Building and International Residential Codes.	PENDING	Carried forward as Mitigation Action 11.
D	2	6)	Review the Mahomet Code of Ordinance provisions 'Conservation of Water During High Use Periods and Restrictions During Water Shortage' for potential updates needed.	PENDING	Carried forward as Mitigation Action 12.
All	2	7)	Educate public with regard to preventative protective measures to take prior to occurrence of natural and <u>human-caused hazards or threats featured in the HMP Update 2020 technical hazards.</u>	ONGOING	Updated to be consistent with the HMP Update 2020 goals and objectives. Carried forward as Mitigation Action 13.
All	3	8)	Update the Mahomet Comprehensive Land Use Plan to include goals, objectives and policies consistent with HMP goals and objectives.	ONGOING	Carried forward as Mitigation Action 14.
F	3	9)	Acquire flood-prone properties for open space use in accordance with the Mahomet Stormwater Master Plan.	ONGOING	Carried forward as Mitigation Action 15.

Jurisdiction: Village of Ogden

Hazards Addressed	Priority	Mitigation Action	2020 HMP Update Status	Notes
All	1	1) Encourage Village of Ogden residents and businesses to purchase and use a NOAA all-hazard radio	ONGOING	Carried forward as Mitigation Action 1.
F	2	2) Participate in the National Flood Insurance Program (NFIP).	ONGOING	Carried forward as Mitigation Action 2.
All	2	3) Improve communication to population regarding preventative protective measures to take prior to occurrence of natural and <u>human-caused hazards or threats featured in the HMP Update 2020 technical hazards.</u>	PENDING	Updated to be consistent with the HMP Update 2020 goals and objectives. Carried forward as Mitigation Action 3.
F	3	4) Review costs and benefits of Village of Ogden participation in FEMA Community Rating System voluntary incentive program.	PENDING	Carried forward as Mitigation Action 4.

Jurisdiction: Village of Pesotum

Hazards Addressed	Priority	Mitigation Action	2020 HMP Update Status	Notes
All	1	1) Encourage all Village of Pesotum residents and businesses to purchase and use a NOAA all-hazard radio	ONGOING	Carried forward as Mitigation Action 1.
F	2	2) Review cost and benefits of Village participation in National Flood Insurance Program.	PENDING	Carried forward as Mitigation Action 2.
All	2	3) Improve communication to population regarding preventative protective measures to take prior to occurrence of natural and <u>human-caused hazards or threats featured in the HMP Update 2020 technical hazards.</u>	PENDING	Updated to be consistent with the HMP Update 2020 goals and objectives. Carried forward as Mitigation Action 3.

Jurisdiction: Village of Philo

Hazards Addressed	Priority	Mitigation Action	2020 HMP Update Status	Notes
All	1	1) Encourage all Village of Philo residents and businesses to purchase and use a NOAA all-hazard radio	ONGOING	Carried forward as Mitigation Action 1.
F	2	2) Review cost and benefits of Village participation in National Flood Insurance Program.	PENDING	Carried forward as Mitigation Action 2.
All	2	23) Improve communication to population regarding preventative protective measures to take prior to occurrence of natural and <u>human-caused hazards or threats featured in the HMP Update 2020 technical hazards.</u>	PENDING	Updated to be consistent with the HMP Update 2020 goals and objectives. Carried forward as Mitigation Action 3.

Jurisdiction: Village of Rantoul

Hazards Addressed	Priority	Mitigation Action	2020 HMP Update Status	Notes
All	1	1) Maintain redundancy in power grid, capability of Village to generate its own power, and backup power generating capabilities for operation of the Village stormwater, wastewater, and municipal buildings.	ONGOING	Carried forward as Mitigation Action 2.
EH, SWS	1	2) Identify cooling and warming shelters for vulnerable populations within the Village.	PENDING	Carried forward as Mitigation Action 3.
T, SS	1	3) Encourage the construction of storm shelters for existing manufactured home developments. Require the construction of storm shelters for new manufactured homes.	PENDING	Carried forward as Mitigation Action 4.
All	1	4) Administer a rental inspection program to inspect all rental properties for structural weaknesses, overcrowding, utilities, and roofing.	ONGOING	Carried forward as Mitigation Action 5.

F	1	5)	Participate in the National Flood Insurance Program (NFIP).	ONGOING	Carried forward as Mitigation Action 6.
T, SS, SWS, E, EH	1	6)	Require construction projects to conform to surge protection, energy efficiency, wind, snow load, and seismic provisions of the International Building and International Residential Codes.	ONGOING	Carried forward as Mitigation Action 7.
T, SS	1	7)	Maintain advance warning sirens.	ONGOING	Carried forward as Mitigation Action 8.
All	1	8)	Encourage Village of Rantoul residents and businesses to purchase and use a NOAA all-hazard radio.	PENDING	Carried forward as Mitigation Action 13.
All	2	9)	Maintain fiber optic connections to Village wastewater, stormwater, electric and municipal facilities to allow their remote operation in the event they become inaccessible.	ONGOING	Carried forward as Mitigation Action 14.
T, SS, SWS	2	10)	Conduct tree trimming and removal program in public right of way areas to prevent damage to overhead electric lines.	ONGOING	Carried forward as Mitigation Action 15.
T, SS, SWS	2	11)	Require new developments to bury electrical utilities underground.	ONGOING	Carried forward as Mitigation Action 16.
T, SS, SWS	2	12)	Ensure that anchoring requirements are in place for mobile homes.	ONGOING	Carried forward as Mitigation Action 17.
T, SS	2	13)	Notify ESDA director, monitor Doppler radar, and send lookouts to monitor tornados when a Tornado Warning is issued.	ONGOING	Carried forward as Mitigation Action 18.
All	2	14)	Improve communication to population regarding preventative protective measures to take prior to occurrence of natural and <u>human-caused hazards or threats featured in the HMP Update 2020</u> technical hazards .	ONGOING	Updated to be consistent with the HMP Update 2020 goals and objectives. Carried forward as Mitigation Action 19.
E	2	15)	Conduct rapid visual screening to identify structural and non-structural hazards.	ONGOING	Carried forward as Mitigation Action 20.
All	2	17)	Review International Building Codes for adoption by the Village as they are published every three years.	ONGOING	Carried forward as Mitigation Action 21.
All	2	18)	Update Comprehensive Land Use Plan to include goals, objectives, and policies consistent with HMP goals and objectives.	PENDING	Carried forward as Mitigation Action 22.

F	2	19) Require construction of detention basins pursuant to Village stormwater detention requirements.	ONGOING	Carried forward as Mitigation Action 23.
F	3	20) Review costs and benefits of Village of Rantoul participation in FEMA Community Rating System voluntary incentive program.	PENDING	Carried forward as Mitigation Action 24.
T, SS, SWS, F	3	21) Conduct quarterly meetings of storm drainage committee to identify, prioritize and oversee drainage improvements.	ONGOING	Carried forward as Mitigation Action 25.
T, SS	3	22) Use public address systems in police and fire vehicles to warn citizens in the event that the advance warning sirens fail.	ONGOING	Carried forward as Mitigation Action 26.

Jurisdiction: Village of Royal

Hazards Addressed	Priority	Mitigation Action	2020 HMP Update Status	Notes
All	1	1) Encourage Village of Royal residents and businesses to purchase and use a NOAA all-hazard radio	ONGOING	Carried forward as Mitigation Action 1.
F	2	2) Participate in the National Flood Insurance Program (NFIP).	ONGOING	Carried forward as Mitigation Action 2.
All	2	3) Improve communication to population regarding preventative protective measures to take prior to occurrence of natural and <u>human-caused hazards or threats featured in the HMP Update 2020 technical hazards.</u>	PENDING	Updated to be consistent with the HMP Update 2020 goals and objectives. Carried forward as Mitigation Action 3.

Jurisdiction: Village of Sadorus

Hazards Addressed	Priority	Mitigation Action	2020 HMP Update Status	Notes
All	1	1) Encourage Village of Sadorus residents and businesses to purchase and use a NOAA all-hazard radio.	ONGOING	Carried forward as Mitigation Action 1.
All	2	2) Improve communication to population regarding preventative protective measures to take prior to occurrence of natural and <u>human-caused hazards or threats featured in the HMP Update 2020 technical hazards.</u>	PENDING	Updated to be consistent with the HMP Update 2020 goals and objectives. Carried forward as Mitigation Action 2.

Jurisdiction: Village of Savoy

Hazards Addressed	Priority	Mitigation Action	2020 HMP Update Status	Notes
All	1	1) Encourage Village of Savoy residents and businesses to purchase and use a NOAA all-hazard radio.	ONGOING	Carried forward as Mitigation Action 3.
F	2	2) Review cost and benefits of Village participation in National Flood Insurance program (NFIP).	PENDING	Carried forward as Mitigation Action 4.
F	2	3) Review costs and benefits of Village of Savoy participation in FEMA Community Rating System voluntary incentive program.	PENDING	Carried forward as Mitigation Action 5.
All	2	4) Administer Building Code for new and replacement development construction.	ONGOING	Carried forward as Mitigation Action 6.
T, SS, SWS	2	5) Participate in the National Weather Service StormReady® program.	ONGOING	Carried forward as Mitigation Action 7.
All	3	6) Update the Village of Savoy Comprehensive Land Use Plan to be consistent with HMP goals and objectives.	COMPLETED	Completed in 2019 and removed as a mitigation action.

Jurisdiction: Village of Sidney

Hazards Addressed	Priority	Mitigation Action	2020 HMP Update Status	Notes
All	1	1) Encourage Village of Sidney residents and businesses to purchase and use a NOAA all-hazard radio.	ONGOING	Carried forward as Mitigation Action 1.
F	2	2) Participate in the National Flood Insurance Program (NFIP).	ONGOING	Carried forward as Mitigation Action 2.
All	2	3) Improve communication to population regarding preventative protective measures to take prior to occurrence of natural and <u>human-caused hazards or threats featured in the HMP Update 2020 technical hazards.</u>	PENDING	Updated to be consistent with the HMP Update 2020 goals and objectives. Carried forward as Mitigation Action 3.
F	3	4) Review costs and benefits of Village of Sidney participation in FEMA Community Rating System voluntary incentive program.	PENDING	Carried forward as Mitigation Action 4.

Jurisdiction: Village of St. Joseph

Hazards Addressed	Priority	Mitigation Action	2020 HMP Update Status	Notes
All	1	1) Encourage Village of St. Joseph residents and businesses to purchase and use a NOAA all-hazard radio	ONGOING	Carried forward as Mitigation Action 1.
F	2	2) Participate in the National Flood Insurance Program (NFIP).	ONGOING	Carried forward as Mitigation Action 2.
All	2	3) Improve communication to population regarding preventative protective measures to take prior to occurrence of natural and <u>human-caused hazards or threats featured in the HMP Update 2020 technical hazards.</u>	PENDING	Updated to be consistent with the HMP Update 2020 goals and objectives. Carried forward as Mitigation Action 3.
F	3	4) Review costs and benefits of Village of St. Joseph participation in FEMA Community Rating System voluntary incentive program.	PENDING	Carried forward as Mitigation Action 4.

Jurisdiction: Village of Thomasboro

Hazards Addressed	Priority	Mitigation Action	2020 HMP Update Status	Notes
All	1	1) Encourage Village of Thomasboro residents and businesses to purchase and use a NOAA all-hazard radio.	ONGOING	Carried forward as Mitigation Action 1.
F	2	2) Review cost and benefits of Village participation in National Flood Insurance Program.	PENDING	Carried forward as Mitigation Action 2.
All	2	3) Improve communication to population regarding preventative protective measures to take prior to occurrence of natural and <u>human-caused hazards or threats featured in the HMP Update 2020 technical hazards.</u>	PENDING	Updated to be consistent with the HMP Update 2020 goals and objectives. Carried forward as Mitigation Action 3.

Jurisdiction: Village of Tolono

Hazards Addressed	Priority	Mitigation Action	2020 HMP Update Status	Notes
All	1	1) Encourage Village of Tolono residents and businesses to purchase and use a NOAA all-hazard radio.	ONGOING	Carried forward as Mitigation Action 1.
F	2	2) Review cost and benefits of Village participation in National Flood Insurance Program.	PENDING	Carried forward as Mitigation Action 2.
All	2	3) Improve communication to population regarding preventative protective measures to take prior to occurrence of natural and <u>human-caused hazards or threats featured in the HMP Update 2020 technical hazards.</u>	PENDING	Updated to be consistent with the HMP Update 2020 goals and objectives. Carried forward as Mitigation Action 3.

Jurisdiction: City of Urbana

Hazards Addressed	Priority	Mitigation Action	2020 HMP Update Status	Notes
All	1	1) Complete installation of emergency back-up power systems for remaining essential City facilities such as Fire Stations 2 and 3 and the Civic Center.	PENDING	Hazards addressed narrowed to SWS, SS, EH, T, and E. Carried forward as Mitigation Action 6.
All	1	2) Contribute to countywide integrated information base for use in assessing risk from natural and <u>human-caused hazards or threats featured in the HMP Update 2020</u> technical hazards .	ONGOING	Updated to be consistent with the HMP Update 2020 goals and objectives. Carried forward as Mitigation Action 7.
All	1	3) Identify existing buildings as shelters	ONGOING	Hazards addressed narrowed to SWS, SS, EH, T, and E. Carried forward as Mitigation Action 8.
All	1	4) Offer and promote the use of area-wide warning text message system (e.g., Alert Sense)	ONGOING	Carried forward as Mitigation Action 9.
T, SS	1	5) Maintain an advance outdoor warning siren system	ONGOING	Hazards addressed broadened to all. Carried forward as Mitigation Action 10.
T, SS, SWS	1	6) Use Risk Watch program in schools.	ONGOING	Hazards addressed broadened to all. Carried forward as Mitigation Action 11.
T, SS, SWS	1	7) Educate the public--especially seniors and the disabled--on methods to ensure critical documents can be easily retrieved in case of emergency.	ONGOING	Hazards addressed broadened to also include E and EH. Carried forward as Mitigation Action 12.
E	1	8) Periodically review and update International Building Code requirements concerning seismic resistance.	ONGOING	Carried forward as Mitigation Action 13.
T, SS, SWS	1	9) Periodically review and update International Building Code requirements concerning high wind resistance.	ONGOING	Hazards addressed narrowed to T and SS. Carried forward as Mitigation Action 14.

F	1	10) Require developers to pre-approve a tax benefit district to include properties served by a detention basin in the event that a property owner association fails to maintain it.	ONGOING	Carried forward as Mitigation Action 15.
F	1	11) Continue to require a minimum of one-foot freeboard above the 100-year floodplain for new construction.	ONGOING	Carried forward as Mitigation Action 16.
All	2	12) Encourage distribution of NOAA all-hazard radios to special needs populations.	REMOVED	Removed as redundant to ongoing hazard mitigation action efforts.
F	2	13) Participate in the National Flood Insurance Program (NFIP) .	ONGOING	Carried forward as Mitigation Action 17.
T, SS, SWS	2	14) Participate in the National Weather Service StormReady® program.	ONGOING	Carried forward as Mitigation Action 18.
F	2	15) Offer zoning transfer of development rights as a tool within the Boneyard Creek District.	ONGOING	Carried forward as Mitigation Action 19.
All E, T, SS	2	16) Monitor and target financial assistance to improve safety of existing buildings in TIF districts through redevelopment incentive programs.	ONGOING	Hazards addressed narrowed to E, T, and SS. Carried forward as Mitigation Action 20.
T, SS	2	17) Educate local builders on wind resistant construction techniques.	REMOVED	Removed due to limited City resources.
T, SS, SWS	2	18) Trim and tree removal program to reduce limb and tree hazards.	ONGOING	Carried forward as Mitigation Action 21.
D , T, SS, SWS	2	19) Improve maintenance and proper species selection in urban forestry.	ONGOING	Hazards addressed broadened to include D. Carried forward as Mitigation Action 22.
F	3	20) When appropriate, Acquire flood-prone properties along the Boneyard Creek to expand greenways.	ONGOING	Carried forward as Mitigation Action 23.
All	3	21) Develop a Facilities Plan to provide technical support and funding or subsidies to upgrade critical facilities.	PENDING	Carried forward as Mitigation Action 24.
T, SS, SWS, E	3	22) Provide technical support and funding or subsidies to upgrade unreinforced masonry buildings in downtown Urbana.	REMOVED	Removed due to limited City resources.
T, SS	3	23) Educate residents of mobile home parks regarding the location of safe shelters and/or offer shelters within parks through distribution of materials and annual presentations.	REMOVED	Removed due to limited City resources.

Jurisdiction: Parkland College

Hazards Addressed	Priority	Mitigation Action	2020 HMP Update Status	Notes
All	1	1) Offer and promote the use of an area-wide warning text message system such as IRIS.	ONGOING	Carried forward as Mitigation Action 2.
All <u>EH</u> <u>SS</u> <u>SWS</u> <u>D, T</u>	1	2) Participate as a StormReady® campus.	ONGOING	Hazards addressed reduced from All to EH, SS, SWS, D, and T. Carried forward as Mitigation Action 3.
All	1	3) Continue to use Use Parkland College public safety website and social media to communicate to campus population regarding preventative protective measures to take prior to occurrence of natural and <u>human-caused hazards or threats featured in the HMP Update 2020 technical hazards.</u>	ONGOING	Updated to be consistent with the HMP Update 2020 goals and objectives. Carried forward as Mitigation Action 4.
All	1	4) Review benefits of Parkland College participation in the 'Ready to Respond' Campus program.	PENDING	Carried forward as Mitigation Action 5.
All	1	5) Continue to Conduct classroom outreach talks to students, staff, and faculty each semester and upon request to address preventive protective measures prior to occurrence of natural and <u>human-caused hazards or threats featured in the HMP Update 2020 technical hazards.</u>	ONGOING	Updated to be consistent with the HMP Update 2020 goals and objectives. Carried forward as Mitigation Action 6.
All	1	6) Distribute 'Emergency Procedure Guide' throughout Parkland College <u>the campus.</u>	PENDING	Carried forward as Mitigation Action 7.
All	1	7) Conduct a needs assessment with regard to back-up generators to serve campus premises.	PENDING	Carried forward as Mitigation Action 8.

Jurisdiction: University of Illinois at Urbana-Champaign

Hazards Addressed	Priority	Mitigation Action	2020 HMP Update Status	Notes
All	1	1) Update and expand the Office of Campus Emergency Planning Website.	ONGOING	Carried forward as Mitigation Action 2.
All	1	2) Utilize nine emergency notification systems to alert the campus community.	ONGOING	Carried forward as Mitigation Action 3.
All	1	3) Continue assignment of Building Emergency Coordinators to assist in creation and maintenance of Building Emergency Action Plans for natural <u>and human-caused hazards or threats featured in the HMP Update 2020 technical hazards.</u>	ONGOING	Updated to be consistent with the HMP Update 2020 goals and objectives. Carried forward as Mitigation Action 4.
All	1	4) Continue to update and implement the Building Emergency Plan template to be used by campus buildings.	ONGOING	Carried forward as Mitigation Action 5.
F	1	5) Continue to update and implement the UC Berkeley <u>Kuali</u> Continuity of Operations Plan template.	ONGOING	Carried forward as Mitigation Action 6.
All	1	6) Establish a training and/or review program to ensure employees are trained on their respective Building Emergency Action Plan(s).	ONGOING	Carried forward as Mitigation Action 7.
All	1	7) Create online emergency response training programs for the UIUC campus.	ONGOING	Carried forward as Mitigation Action 13
All	1	8) Complete Department of Human Services survey of critical infrastructure.	REMOVED	Completed and removed as a Mitigation Action.

Adoption Resolutions
Participating Local Government Agencies/Institutions of Higher Education

Each participating local government agency and institution of higher education adopted the *Champaign County Multi-Jurisdictional Natural Hazard Mitigation Plan* (CC HMP) dated August 1, 2009, CC HMP Update 2015, and CC HMP Update 2020, as noted in the following table.

	<i>Participating Local Government Agency or Participating Institution of Higher Education</i>	<i>CC HMP 2009 Date of Signed Resolution</i>	<i>CC HMP Update 2015 Name and Date of Signed Ordinance or Resolution</i>	<i>CC HMP Update 2020 Name and Date of Signed Ordinance or Resolution</i>
1	Champaign County	August 20, 2009	County Board Resolution No. 9376 September 17, 2015	Champaign County Board Resolution No. 2021-6 January 21, 2021
2	City of Champaign	September 15, 2009	Council Bill No. 2015-193 November 17, 2015	City of Champaign Council Bill No 2021-002 January 19, 2021
3	City of Urbana	August 17, 2009	Ordinance No. 2015-09-100 An Ordinance Amending the 2005 Comprehensive Plan of the City of Urbana, Illinois (Adoption of Champaign County Multi-Jurisdictional Hazard Mitigation Plan Update as an Amendment to the Comprehensive Plan – Plan Case 2264-CP-15) September 21, 2015	Ordinance 2021-05-018 (Amending the 2005 Comprehensive Plan of the City of Urbana, Illinois)(Champaign County Multi-Jurisdictional Hazard Mitigation Plan 2020 Update / Plan Case 2419-CP-21) May 24, 2021
4	Village of Allerton	October 20, 2009	Hazard Mitigation Plan Adoption Resolution October 20, 2015	Hazard Mitigation Plan Adoption Resolution May 18, 2021
5	Village of Bondville	September 14, 2009	Village of Bondville Resolution 2015-11-01 November 9, 2015	Bondville Resolution 2020-12-01 December 14, 2020
6	Village of Broadlands	September 2, 2009	Village of Broadlands Adoption Resolution September 2, 2015	Adoption Resolution June 3, 2021
7	Village of Fisher	August 13, 2009	Village of Fisher Resolution: Adoption of Champaign County Multi-Jurisdictional Hazard Mitigation Plan Update, October 8, 2015	Village of Fisher Resolution No. 2 December 10, 2020
8	Village of Foosland	October 12, 2009	Adoption Resolution September 14, 2015	Adoption Resolution May 10, 2021

Table Continued:

	<i>Participating Local Government Agency or Participating Institution of Higher Education</i>	<i>CC HMP 2009 Date of Signed Resolution</i>	<i>CC HMP Update 2015 Name and Date of Signed Ordinance or Resolution</i>	<i>CC HMP Update 2020 Name and Date of Signed Ordinance or Resolution</i>
9	Village of Gifford	September 3, 2009	Adoption Resolution August 27, 2015	Adoption Resolution May 6, 2021
10	Village of Homer	November 9, 2009	Adoption Resolution 091415R Champaign County Multi-Jurisdictional Hazard Mitigation Plan Update September 14, 2015	Adoption Resolution R051021B Champaign County Multi-Jurisdictional Hazard Mitigation Plan Update May 10, 2021
11	Village of Ivesdale	August 17, 2009	Resolution #2015R-9-1 A Resolution Adopting the Champaign County Multi-Jurisdictional Hazard Mitigation Plan Update, September 21, 2015	Resolution #2020R-12-1 December 14, 2020
12	Village of Longview	October 21, 2009	Resolution No. 9-16-15 Champaign County Multi-Jurisdictional Hazard Mitigation Plan Update, September 16, 2015	Longview Resolution # 12162020B December 16, 2020
13	Village of Ludlow	July 13, 2009	Adoption Resolution August 31, 2015	Adoption Resolution June 8, 2021
14	Village of Mahomet	August 25, 2009	Resolution 15-10-04 A Resolution Adopting the Champaign County Multi-Jurisdictional Hazard Mitigation Plan Update, October 27, 2015	Mahomet Resolution 21-02-04 February 23, 2021
15	Village of Ogden	September 3, 2009	A Resolution Adopting the Champaign County Multi-Jurisdictional Hazard Mitigation Plan Update, August 6, 2015	Resolution Adopting the Champaign County Multi-Jurisdictional Hazard Mitigation Plan Update June 3, 2021
16	Village of Pesotum	November 4, 2009	Resolution of the Village of Pesotum, Illinois Adopting the Champaign County Multi-Jurisdictional Hazard Mitigation Plan Update November 4, 2015	Resolution of the Village of Pesotum Adopting the Champaign County Multi-Jurisdictional Hazard Mitigation Plan Update June 2, 2021
17	Village of Philo	September 2, 2009	Adoption Resolution October 14, 2015	Adoption Resolution December 9, 2020

Table Continued:

	<i>Participating Local Government Agency or Participating Institution of Higher Education</i>	<i>CC HMP 2009 Date of Signed Resolution</i>	<i>CC HMP Update 2015 Name and Date of Signed Ordinance or Resolution</i>	<i>CC HMP Update 2020 Name and Date of Signed Ordinance or Resolution</i>
18	Village of Rantoul	September 8, 2009	Resolution No. 9-15-1193 A Resolution Adopting the Champaign County Multi-Jurisdictional Hazard Mitigation Plan, September 8, 2015	Rantoul Resolution No. 2-21-1326 February 9, 2021
19	Village of Royal	October 5, 2009	Resolution 9-A-15 September 8, 2015	Resolution 6-A-21 June 7, 2021
20	Village of Sadorus	September 2, 2009	Adoption Resolution of Champaign County Multi-Jurisdictional Hazard Mitigation Plan Update September 2, 2015	Resolution 2021-0-1, Adoption Resolution of Champaign County Multi-Jurisdictional Hazard Mitigation Plan Update, June 16, 2021
21	Village of Savoy	September 16, 2009	Resolution No. 2015R-13 Adoption of Champaign County Multi-Jurisdictional Natural Hazard Mitigation Plan October 21, 2015	Savoy Resolution 2021-R-07 March 3, 2021
22	Village of Sidney	November 2, 2009	Resolution No. 2015-R-03 A Resolution Adopting the Champaign County Multi-Jurisdictional Hazard Mitigation Plan Update August 3, 2015	Sidney Resolution No. 2020-03 December 7, 2020
23	Village of St. Joseph	August 25, 2009	Hazard Mitigation Plan Adoption Resolution September 8, 2015	Hazard Mitigation Plan Adoption Resolution January 12, 2021
24	Village of Thomasboro	November 2, 2009	Adoption Resolution September 8, 2015	Adoption Resolution June 7, 2021
25	Village of Tolono	August 18, 2009	Resolution No. 15-3 September 1, 2015	Resolution No. 2020-R-3 December 15, 2020
26	Parkland College	n/a	n/a	A Resolution Adopting the Champaign County Multi-Jurisdictional Hazard Mitigation Plan Update July 21, 2021
27	University of Illinois at Urbana-Champaign	n/a	n/a	University of Illinois Urbana-Champaign approval of Champaign County Multi-Jurisdictional Hazard Mitigation Plan June 17, 2021