

# Winnebago County, Illinois Multi-Hazard Mitigation Plan 2019



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FOR MORE INFORMATION, PLEASE  
CALL 815-319-4182 OR EMAIL [INFO@R1PLANNING.ORG](mailto:INFO@R1PLANNING.ORG)



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## Acknowledgements

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## Multi-Hazard Mitigation Project Team

### ORGANIZATION

WINNEBAGO COUNTY; ENGINEER

WINNEBAGO COUNTY; CIVIL ENGINEER

REGION 1 PLANNING COUNCIL; EXECUTIVE DIRECTOR

REGION 1 PLANNING COUNCIL; DIRECTOR OF REGIONAL PLANNING

REGION 1 PLANNING COUNCIL; LAND USE PLANNER

REGION 1 PLANNING COUNCIL; METROPOLITAN PLANNER

REGION 1 PLANNING COUNCIL; WINGIS

### NAME

JOE VANDERWERFF

SEAN VON BERGEN

MICHAEL DUNN, JR.

JON PAUL DIIPLA

ALLEN MILLS

CHUCK KLUTHO

AARON FREY

## Multi-Hazard Mitigation Partner Organizations

ORGANIZATION	TYPE
NORTHERN IL PREPAREDNESS AND RESPONSE COALITION (NIPARC)	HEALTH COALITION
AMERICAN RED CROSS- CHICAGO AND NORTHERN IL	COMMUNITY ORGANIZATION
WINNEBAGO COUNTY- BUILDING DIVISION, HEALTH DEPARTMENT, HIGHWAY DEPARTMENT, PLANNING & ZONING DIVISION, PURCHASING, REGIONAL PLANNING & ECONOMIC DEVELOPMENT, AND EMERGENCY OPERATIONS (SHERIFF'S DEPARTMENT)	COUNTY
WINNEBAGO COUNTY FIRE OFFICIAL- BLACKHAWK FIRE PROTECTION DISTRICT	WINNEBAGO COUNTY FIRE PROTECTION DISTRICT
WINNEBAGO COUNTY FIRE OFFICIAL-DURAND FIRE PROTECTION DISTRICT	
WINNEBAGO COUNTY FIRE OFFICIAL-PECATONICA	
CITY OF LOVES PARK	
WINNEBAGO COUNTY FIRE OFFICIAL- CHERRY VALLEY FIRE PROTECTION DISTRICT	
WINNEBAGO COUNTY FIRE OFFICIAL- HARLEM-ROSCOE FIRE PROTECTION DISTRICT	
WINNEBAGO COUNTY FIRE OFFICIAL- NEW MILFORD- FIRE PROTECTION DISTRICT	
WINNEBAGO COUNTY FIRE OFFICIAL- NORTH PARK FIRE PROTECTION DISTRICT	
WINNEBAGO COUNTY FIRE OFFICIAL-NORTH WEST FIRE PROTECTION DISTRICT	
WINNEBAGO COUNTY FIRE OFFICIAL- ROCKTON FIRE PROTECTION DISTRICT	
WINNEBAGO COUNTY FIRE OFFICIAL- SHIRLAND FIRE DEPARTMENT	
CITY OF ROCKFORD FIRE DEPARTMENT	
CITY OF SOUTH BELOIT FIRE DEPARTMENT	
WINNEBAGO COUNTY FIRE OFFICIAL-STILLMAN FIRE PROTECTION DISTRICT	
WINNEBAGO COUNTY FIRE OFFICIAL- WIN-BUR-SEW FIRE PROTECTION DISTRICT	
FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA)	
ILLINOIS EMERGENCY MANAGEMENT AGENCY (IEMA)	
SWEDISH AMERICAN HOSPITAL GROUP	HOSPITAL
OSF HEALTHCARE	
MERCYHEALTH SYSTEM	
REGION 1 PLANNING COUNCIL	LOCAL GOVERNMENT
CITY OF LOVES PARK	COUNTY MUNICIPALITY
CITY OF ROCKFORD	
CITY OF SOUTH BELOIT	
VILLAGE OF CHERRY VALLEY	
VILLAGE OF DURAND	
VILLAGE OF MACHESNEY PARK	
VILLAGE OF NEW MILFORD	
VILLAGE OF PECATONICA	
VILLAGE OF ROCKTON	
VILLAGE OF ROSCOE	
VILLAGE OF WINNEBAGO	
BOONE-WINNEBAGO COUNTY SCHOOL DISTRICTS	SCHOOL DISTRICT
CHICAGO-ROCKFORD INTERNATIONAL AIRPORT	SERVICE PROVIDER
COMCAST (TELEVISION/INTERNET PROVIDER)	
COMMONWEALTH EDISON (COMEd) (POWER)	
ILLINOIS AMERICAN WATER	
NICOR (GAS)	

ORGANIZATION	TYPE
BURRITT TOWNSHIP	WINNEBAGO COUNTY TOWNSHIP
CHERRY VALLEY TOWNSHIP	
DURAND TOWNSHIP	
HARLEM TOWNSHIP	
HARRISON TOWNSHIP	
LAONA TOWNSHIP	
OWEN TOWNSHIP	
PECATONICA TOWNSHIP	
ROCKFORD TOWNSHIP	
ROCKTON TOWNSHIP	
ROSCOE TOWNSHIP	
SEWARD TOWNSHIP	
SHIRLAND TOWNSHIP	
WINNEBAGO TOWNSHIP	
NORTH PARK PUBLIC WATER DISTRICT	UTILITY PROVIDER
ROCK RIVER WATER RECLAMATION DISTRICT	
ROCK ENERGY COOPERATIVE (ELECTRIC/GAS)	

## Disclosures

The contents, views, and recommendations provided in this plan not necessarily representative of those of the partner organizations who coordinated in the production of this plan.<sup>1</sup>



404 Elm St.  
Rockford, Illinois 61103  
815-319-4444 | boardoffice@r1planning.org



313 North Main St.  
Rockford, Illinois 61103  
815-319-4180 | info@r1planning.org

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<sup>1</sup> If you have any questions or comments related to this plan or the contents therein, please call or email Allen Mills at 312-447-9183 or amills@r1planning.org.



# Winnebago County, Illinois Community Profile

# 1 Introduction

## Overview

Hazard Mitigation is an integral part of long-range, comprehensive planning. It minimizes the initial and long-term impacts major disasters have on municipalities and residents. Major disasters often have devastating effects over large areas and often the impacts of these storms can last for extended periods of time. The long-term impacts of these storms are often worse in low-income communities<sup>1</sup>. The Federal Emergency Management Agency (henceforth referred to as FEMA) prioritizes mitigation as a tier principle in its organizational operation. Through the Disaster Management Act of 2000 (DMA) FEMA began federally requiring a Multi-Hazard Mitigation Plan (henceforth referred to as MHMP) as a prerequisite for the majority of pre-and-post disaster funding for disasters (US: 44 CFR Part 201).

## What is Hazard Mitigation and the Multi-Hazard Mitigation Plan?

According to FEMA, hazard mitigation is “any effort to reduce the loss of life and property by lessening the impact of disasters, both natural and man-made.”<sup>2</sup> This involves the identification of vulnerable assets, individuals, and areas; followed by the assessment of risks by impact level and by disaster type; and finally the drafting, identification, and implementation of strategies to mitigate loss of life and devastation on impacted areas. Hazard mitigation is further defined as “the key to breaking the cycle of disaster damage, reconstruction, and repeated damage.”<sup>2</sup> MHMPs represent the coalescence of these mitigation tools into a single document in combination with a succinct profile of the community. This community profile is provided in the form of socio-demographic data; climate, topographical, and land-cover data; and finally a community risk analysis which indexes the perceived threat from disasters by organization or municipality through a Risk Priority Analysis.

## FEMA Hazard Mitigation Planning and Hazard Mitigation Grant Program – 44 CFR Parts 201 and 206

In 2002, the Robert T. Stafford Act, enacted under the Disaster Mitigation Act of 2000, was amended to mandate (as a final rule) that a portion of the Hazard Mitigation Grant Program funds (up to 20 percent) could be used to develop a “comprehensive, enhanced mitigation plan.” This amendment also added to the existing requirement, which mandated that states have a mitigation plan adopted as a condition of federal pre-and-post-disaster funding, that local entities also have a mitigation plan adopted as a condition of federal pre-and-post-disaster funding. Below is an excerpt from the federal register of February 2002.

“This section: (1) Continues the requirement for a Standard State Mitigation plan as a condition of disaster assistance; (2) provides for States to receive an increased percentage of HMGP funds (from 15 to 20 percent of the total estimated eligible Federal assistance) if, at the time of the

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<sup>1</sup> Data sourced from [https://www.samhsa.gov/sites/default/files/dtac/srb-low-ses\\_2.pdf](https://www.samhsa.gov/sites/default/files/dtac/srb-low-ses_2.pdf)

<sup>2</sup> Data sourced from <https://www.fema.gov/hazard-mitigation-planning>.

declaration of a major disaster, they have in effect a FEMA-approved Enhanced State Mitigation Plan that meets the factors listed in this rule; (3) establishes a new requirement for local mitigation plans; and (4) authorizes up to 7 percent of the HMGP funds available to a State to be used for development of State, tribal, and local mitigation plans. We will give Indian tribal governments the opportunity to fulfill the requirements of § 322 either as a grantee or a sub-grantee. An Indian tribal government may choose to apply for HMGP funding directly to us and would then serve as a grantee, meeting the State level responsibilities, or it may apply through the State, meeting the local government or sub-grantee responsibilities.

## Why Planning?

Planning represents the unification of multiple partner organizations working together with their respective communities towards a common goal: often this comes in the form of comprehensive planning documents, collaborative policies and procedures, and regionally established goals. Challenges that affect the region—whether it is social inequity, environmental degradation, structurally deficient infrastructure, or natural disasters—require the cooperative expertise from these partner organizations to be integrated with public comment into unified outputs that represents the interests of all. Often this results in policies that represent a broader group of individuals and the municipalities they make up.

Winnebago County completed their first MHMP in 2007. FEMA federal requirements mandate that the MHMP be updated every five years. This document represents the second update to the MHMP. RPC was contracted by Winnebago County to complete their 2019 MHMP. RPC guided the planning process, performed the risk assessment, drafted, edited, and assisted in identifying mitigation recommendations. Certain sections of this plan were carried over from the 2014 update, these sections were identified during an internal review and deemed unnecessary to update; this is noted where appropriate. This document serves as Winnebago County's Multi-Hazard Mitigation Plan (2019).

## 2 Winnebago County Overview

### Winnebago County History

Winnebago County was established in January 1836. The County was named after the Winnebago Tribe, a Siouan-speaking tribe of Native Americans that once occupied large parts of what is now Illinois, Wisconsin, and Iowa. After the Black Hawk War of 1832, the area was settled on the banks of the Rock River in what is now the City of Rockford. Located halfway between Chicago and Galena, this early settlement was known as “Midway Village” but was eventually renamed Rockford, after the ford that existed across the now Rock River. The Rock River played a major role in the development of the Region, serving as the major source of power while the rich soils of the area helped the area grown rapidly. Rapid industrialization during the mid-twentieth century saw the City of Rockford become a regional powerhouse in the industrial world. Winnebago County now represents a dynamic balance between urban amenities and tranquil rurality.

## Winnebago County & Municipalities

Figure 1 displays Winnebago County and its incorporated municipalities. Winnebago County covers 519 square miles and is located in north-central Illinois, ninety miles northwest of Chicago and sixty miles south of Madison, Wisconsin. It is bordered by Wisconsin on the north, Boone County on the east, Ogle County on the south, and Stephenson County on the west. The City of Rockford is the County Seat and largest city; other cities in Winnebago County include Loves Park and South Beloit. There are eight villages in Winnebago County: Cherry Valley, Durand, Machesney Park, New Milford, Pecatonica, Roscoe, Rockton, and Winnebago. There are fourteen townships: Burritt, Cherry Valley, Durand, Harlem, Harrison, Laona, Owen, Pecatonica, Rockford, Rockton, Roscoe, Seward, Shirland, and Winnebago. Representatives from each city, village, and township were involved in the 2019 MHMP.



# Municipalities in Winnebago County, Illinois

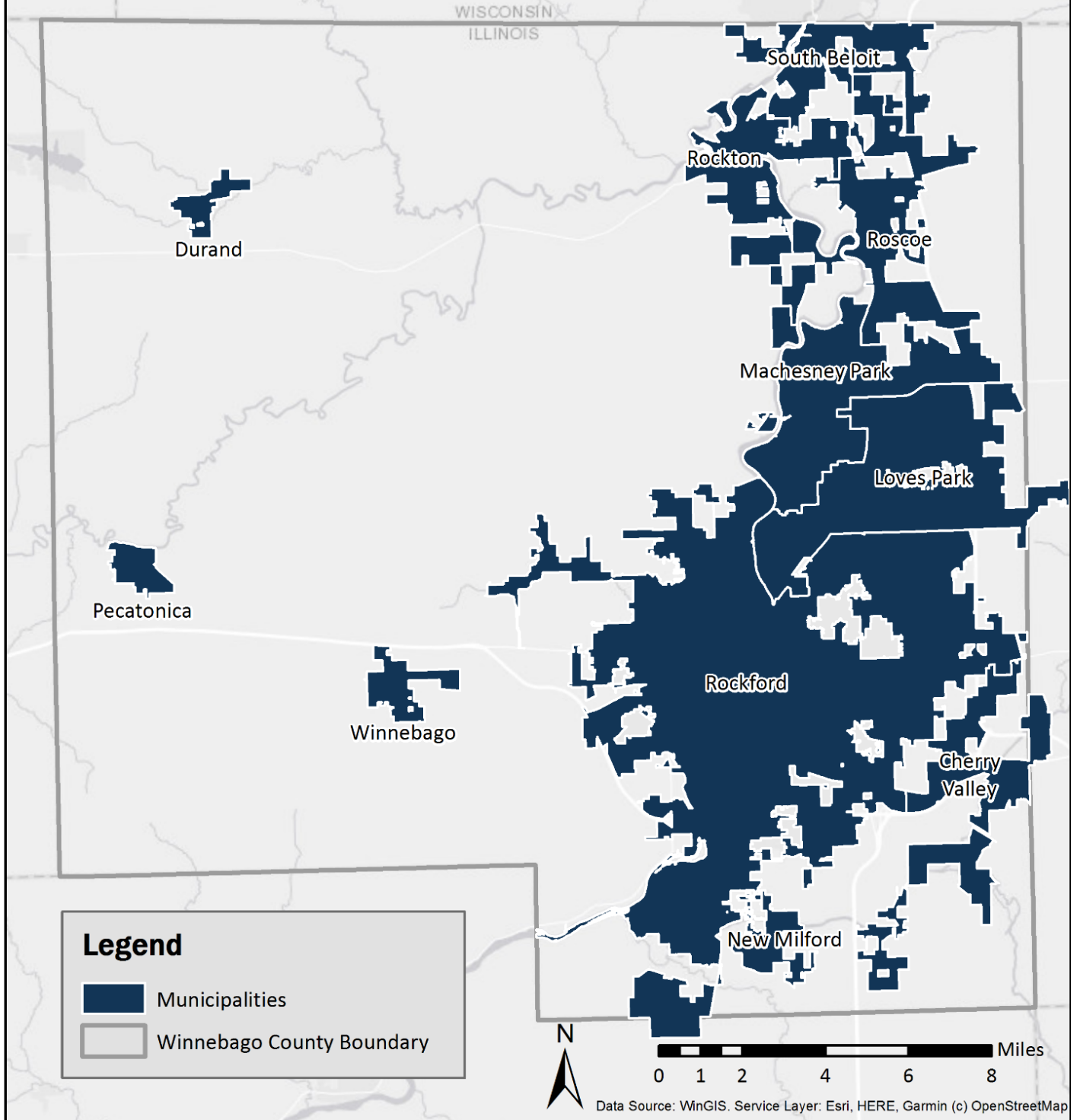


Figure 1: Winnebago County Municipal Boundary Map (RPC Project Team)

## Climate and Weather

Winnebago County's climate is a Humid-Continental climate according to the National Weather Service (NWS), which is based on the "Köppen-Geiger climate classification system." According to the National Oceanic and Atmospheric Administration (NOAA) this climate is defined by humid hot summers—with convective thunderstorms dominating these months—to extremely snowy winter months, where the temperature often drops below freezing and can remain that way for multiple days to weeks. Wide temperature variations between the winter and summer are the standard of this mid-latitude climate zone. Winnebago County's average low temperature for the month of January from 1981-2010 was 12.3° F; during that same period (1981-2010), the average high temperature for the month of July, the hottest month of the year, was 84.5° F. The highest temperature on record for Winnebago County is 112° F and the lowest temperature on record is -27° F. Winnebago gets some measurable precipitation for at least 116 days out of the year. This comes from powerful summer thunderstorms dropping on average 37" of rain per year and fierce winter storms which bring on average 35" of snow per year.<sup>12345</sup>

## Topography & Major Waters

### Topography

Winnebago County is situated within the Central Lowlands Province, Rock River Hill County Subsection of the Till-Plains Section physiographic division of Illinois (shown in Figure 2). The topography is gently rolling ground moraine, with occasional eskers, kames, marginal moraines, and outwash. Elevations in the county range from >980 feet above mean sea level to <680 feet above mean sea level.

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<sup>1</sup> Data sourced from <https://w2.weather.gov/climate/getclimate.php?wfo=lot>

<sup>2</sup> Data sourced from [https://www.weather.gov/jetstream/climate\\_max](https://www.weather.gov/jetstream/climate_max)

<sup>3</sup> Data sourced from [https://cpo.noaa.gov/Who-We-Are/About-CPO/Glossary?udt\\_6287\\_param\\_page=3&udt\\_6287\\_param\\_search](https://cpo.noaa.gov/Who-We-Are/About-CPO/Glossary?udt_6287_param_page=3&udt_6287_param_search)

<sup>4</sup> Data sourced from <https://www.isws.illinois.edu/statecli/General/averages.htm>

<sup>5</sup> Data sourced from <https://www.isws.illinois.edu/statecli/newnormals/normals.USW00094822.txt>

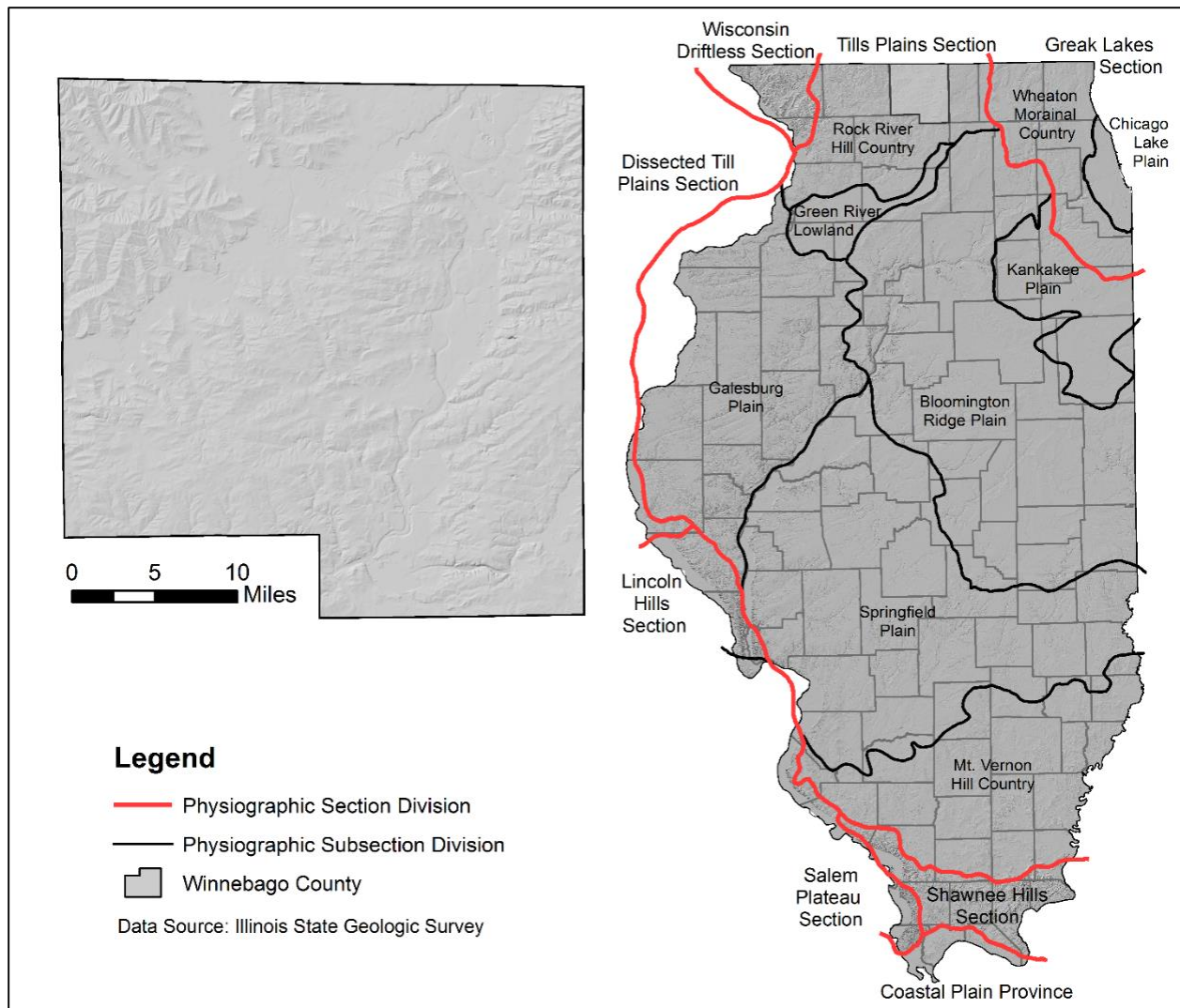


Figure 2: Winnebago County Topographical Map (2014 MHMP Update)

## Major Lakes, Rivers, and Streams

Winnebago County has several water bodies, with Rock River being the most significant. According to the United States Geologic Survey (USGS), Winnebago County consists of five drainage basins: Kishwaukee, Lower Rock, Middle Rock, Pecatonica, and Sugar. Figure 3 depicts the hydrologic units within Winnebago County.

The Rock River flows south through the county for a distance of 33.2 stream miles. Headwaters of the Rock River begin in the lake region of Fond du Lac County, Wisconsin. Within Winnebago County the Rock River flows through the communities of South Beloit, Rockton, Roscoe, Machesney Park, Loves Park, and Rockford. There are numerous tributaries that feed into the Rock River. The southeast tributaries of the Rock River include: Killbuck Creek, Kishwaukee River, South Branch Kishwaukee River, Madigan Creek, Keith Creek, Spring Creek, Buckbee Creek, South Ditch, Main Drainage Ditch, Ditch No. 3 and Manning Creek. The northeast tributaries of the Rock River include: Will Creek, McDonald Creek,

South Kinnikinnick Creek, North Kinnikinnick Creek, Dry Creek, South Branch Dry Creek, and Turtle Creek. The central west tributaries of the Rock River include: North Kent Creek, South Kent Creek, unnamed Tributary to South Kent Creek, Kilburn Creek and Mud Creek.

The Pecatonica River System differs markedly from others in Winnebago County. The main stem has a flat slope and the river valley is very wide, being cut through alluvium. The Pecatonica River System includes: Pecatonica River, Unnamed Tributary to Pecatonica River, Sugar River, Otter Creek, North Branch Otter Creek, Raccoon Creek, Randall Creek, and South Branch Otter Creek.

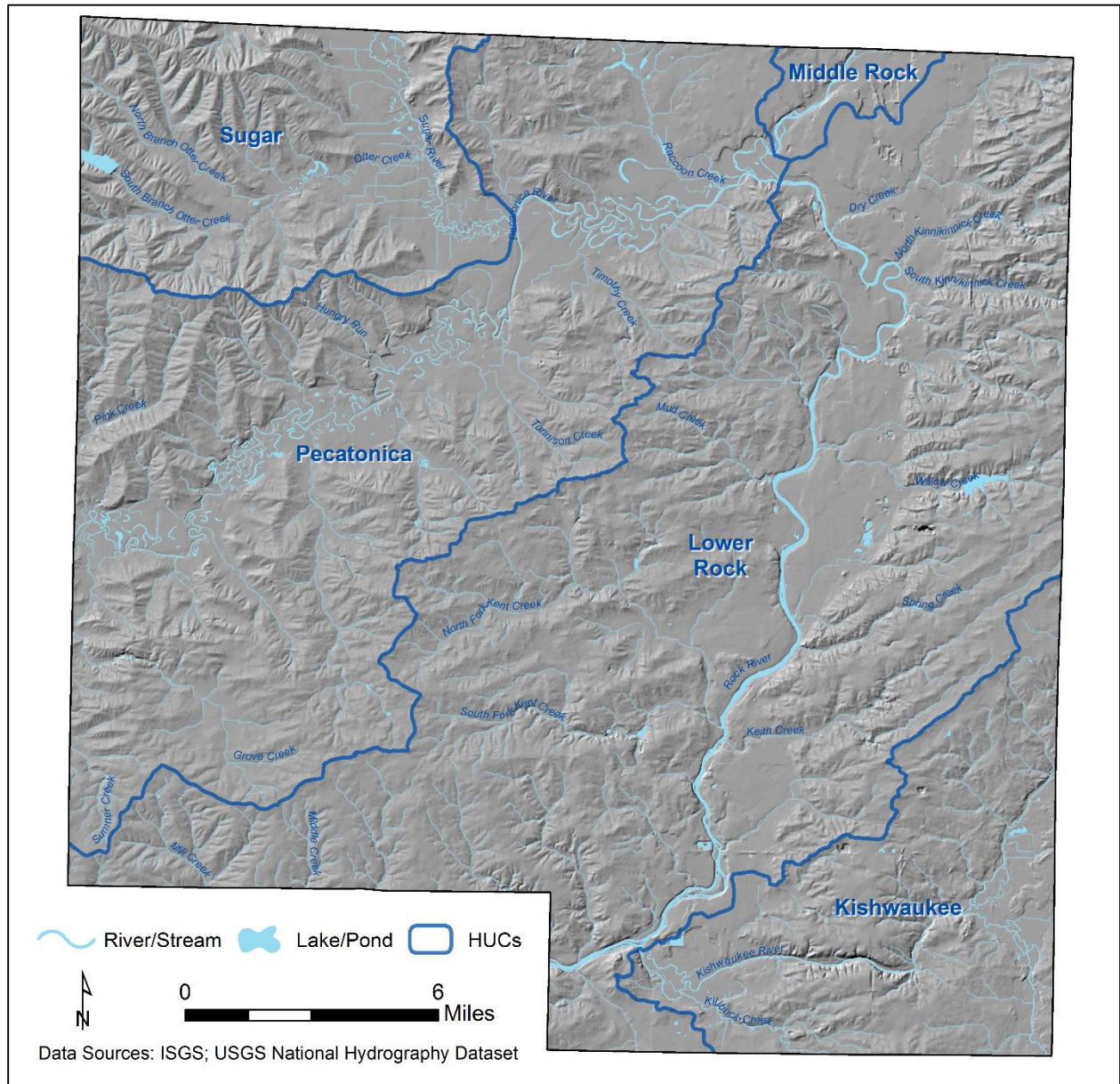


Figure 3: Winnebago County Hydrological Map (2014 MHMP Update)

## Land Cover & Development

### Land Cover by Type

Winnebago County's predominant land covers include cultivated crop, developed space, deciduous forest, and hay/pasture (National Land Cover Data Set (NLCD) 2016) (Figure 4). Agricultural lands are found almost everywhere in Winnebago County. Deciduous forest cover is primarily found along the Rock River, Pecatonica River, Sugar River, and Kishwaukee River. Significant urban development is concentrated along the eastern boundary of the county and includes the municipalities of Rockford, Roscoe, Rockton, South Beloit, Loves Park and Machesney Park, with rural development to the west. Land located within a municipal boundary accounts for about 25.19% of the land in Winnebago County<sup>1</sup>.

### Development Since 2014

Winnebago County has experienced little growth since the 2014 Winnebago County Multi-Hazard Mitigation Plan was adopted. Much of this is attributed to the stagnant national and state economy; in addition to, an abundance of existing housing stock ([see Housing section](#)). According to the USCB, from 2014 to 2017, Winnebago County only constructed 122 new residential housing units<sup>2</sup>. For context, from 2000 to 2009, over 13,700 new housing units were built. In 2017, Winnebago County had a total housing stock of approximately 125,800 units. Of those, approximately 11,309 were vacant in 2017. The majority of any new housing (outside of new construction which occurred largely in neighboring Boone County) arose from adaptive reuse in the Rockford urbanized area (UA); both of these situations are explained in greater detail in the following paragraph. Consequently, Winnebago County's vulnerability to the hazards profiled in this plan has not changed.

Much of the construction of housing in Winnebago County occurred during the 2000-2010 period. Following the 2008 financial crisis, new construction essentially halted. Since 2008, the national economy has seen a decade of growth and prosperity – housing has recovered and even surpassed levels during the preceding decade. However, in Illinois<sup>3</sup>, fiscal instability at the State level and inter-state migration towards the Southern United States have contributed to a period of population loss. As such, in Winnebago County, the demand for new housing has largely been satisfied by existing housing. Infill development in Winnebago County has occurred predominantly in the Rockford UA, specifically along the East/West State Street corridor and along the river in Downtown Rockford. These properties are not located in floodplains and their vulnerability to other hazards remains the same as it was in

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<sup>1</sup> Percentage calculated using Geographic Information Systems (GIS). Actual Winnebago County acreage estimate (332,671.32). Municipal land acreage estimate (83,791.6) does not include land outside of Winnebago County.

<sup>2</sup> The USCB estimates "new residential construction" as under two qualifications: permitted construction and non-permitted construction. Permitted construction is defined as construction where a building permit was issued. Non-permitted construction is defined as construction where a building permit was not issued (this is usually in locations that do not issue building permits formally). The USCB does not delineate between new structures being built and adaptive reuse projects (both situations where, in Winnebago County, a formal building permit is required). Language sourced from the USCB's "Methodology for State and County Total Housing Unit Estimates (Vintage 2016): April 1, 2010 to July 1, 2016." (Found here: <https://www2.census.gov/programs-surveys/popest/technical-documentation/methodology/2010-2016/2016-hu-meth.pdf>)

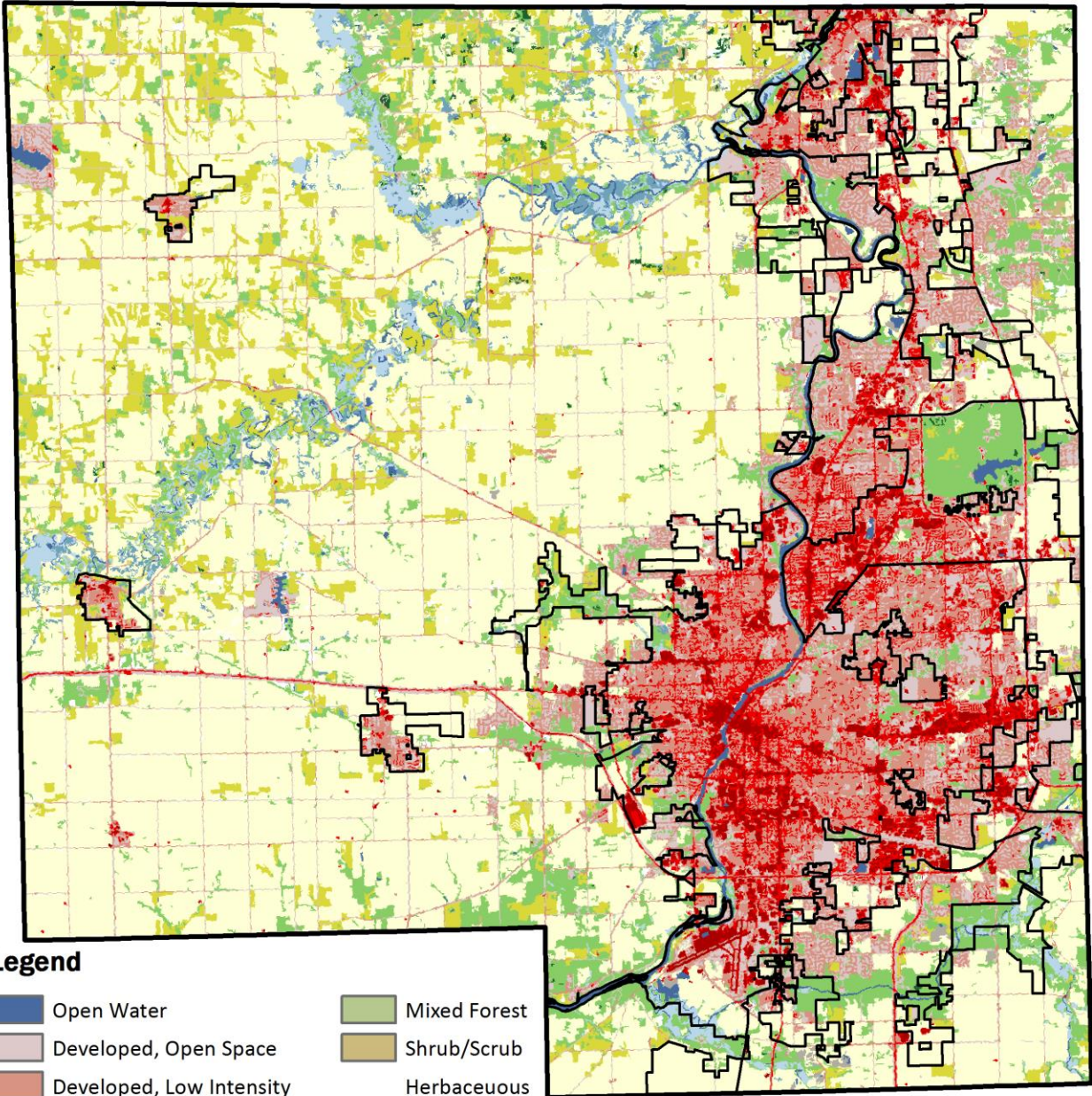
<sup>3</sup> According to a report from CoreLogic titled "Evaluating the Housing Market Since the Great Recession" (2017) (Found here: <https://www.corelogic.com/downloadable-docs/corelogic-peak-totrough-final-030118.pdf>).

2014. A number of private properties, mainly multi-story buildings, were gutted by developers are currently available and vacant; or they were gutted, refinished, and marketed by developers as ground-floor retail, urban market-rate apartments, and market-space office space. There has been no new structure construction in Downtown Rockford since 2014.

## Future Development

As the county's population grows, the residential and urban areas will extend further into the county, placing more pressure on existing transportation and utility infrastructure while increasing the rate of farmland conversion. As part of the Rockford Region's Metropolitan Transportation Plan (MTP) 2050, the RPC is developing scenarios that may differ from the assumptions included in this plan. This section is based on the assumption that growth will continue as normal and some mitigation strategies included in Section 8 to alleviate such issues remain. Winnebago County is vulnerable to a variety of natural hazards, therefore the Winnebago County government—in partnership with state government and local governments—must make a commitment to hazard mitigation. Winnebago County is committed to ensuring that County's elected and appointed officials become informed leaders regarding community hazards so that they are better prepared to set and direct policies for emergency management in mitigation, preparedness, response, and recovery. Winnebago County has adopted a [2030 Land Resource Management Plan](#) to implement its vision for the future of the County (Figure 5). The land use decisions and growth management strategies found in the 2030 Land Resource Management plan aim to preserve Winnebago County's unique quality of life, which results from its ability to balance the rural and urban characteristics that represent the county.

# Winnebago County, Illinois 2016 Land Cover



## Legend

- |                             |                              |
|-----------------------------|------------------------------|
| Open Water                  | Mixed Forest                 |
| Developed, Open Space       | Shrub/Scrub                  |
| Developed, Low Intensity    | Herbaceous                   |
| Developed, Medium Intensity | Hay/Pasture                  |
| Developed, High Intensity   | Cultivated Crops             |
| Barren Land                 | Woody Wetlands               |
| Deciduous Forest            | Emergent Herbaceous Wetlands |
| Evergreen Forest            | Incorporated Municipalities  |



Data Source: 2016 National Land Cover Database: Multi-Resolution Land Characteristics (MRLC) Consortium

Figure 4: Winnebago County Land Cover Map (NLCD Database; RPC Project Team)

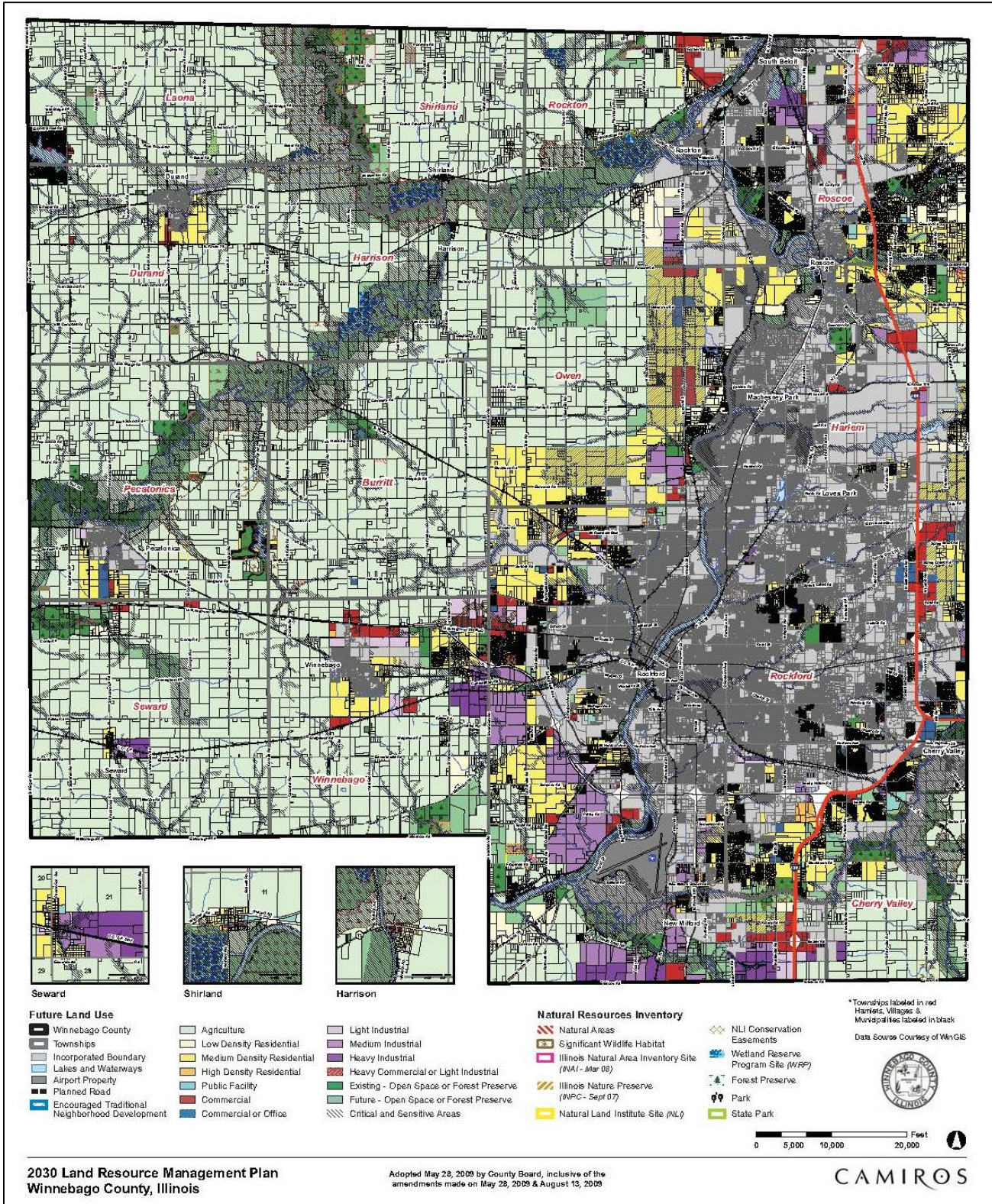


Figure 5: Winnebago County Future Land Use Map (Winnebago County 2030 Land Resource Management Plan)



# 3 Winnebago County Demographics

## Population Distribution

### Population (County, Density, and by Municipality)

Winnebago County has a population of 287,512 (U.S. Census Bureau (USCB), 2017 American Community Survey 5-year estimate). This is down slightly (2.6%) from the 2010 Census when the population was 295,266 (USCB, 2010 Census). Winnebago County has a population density of 555.56 people per square mile. The population is spread throughout the 14 townships: Burritt, Cherry Valley, Durand, Harlem, Harrison, Laona, Owen, Pecatonica, Rockford, Rockton, Roscoe, Seward, Shirland, and Winnebago. Dispersed through those 14 townships are 12 incorporated municipalities: Cherry Valley, Durand, Loves Park, Machesney Park, New Milford, Pecatonica, Rockford, Rockton, South Beloit, and Winnebago (Table 1). The largest incorporated municipality in Winnebago County, which also serves as the county seat, is the City of Rockford, has a population of approximately 148,640 (USCB, 2017 American Community Survey 5-year estimate).

Table 1: Winnebago County Population by Municipality (USCB 2017 American Community Survey 5-year estimate)

MUNICIPALITY	POPULATION (USCB 2017 ACS 5-YEAR EST.)
CHERRY VALLEY	2,796
DURAND	1,427
LOVES PARK	24,320
MACHESNEY PARK	23,002
NEW MILFORD	669
PECATONICA	2,326
ROCKFORD	148,640
ROCKTON	7,474
ROSCOE	10,571
SOUTH BELOIT	7,999
WINNEBAGO	3,252
WINNEBAGO COUNTY <sup>1</sup>	55,036

### Racial Breakdown

Winnebago County is comprised of 70.24% White alone, not Hispanic or Latino, 12.19% Hispanic or Latino, 12.35% Black or African American, and 5.22% all other (Figure 6). Minority populations in Winnebago County represent a substantial portion of the population. Historically, the USCB defined minorities as anything other than White. However, faced with a rapidly growing “minority” population (in some U.S. states “Non-White” minorities now make up a larger percentage of the population than White people), the USCB is changing its definitions to reflect more accurate representations. In many parts of the U.S., the term minority is no longer appropriate.

<sup>1</sup> Includes populations in unincorporated areas of the county

## Racial Breakdown Winnebago County, Illinois

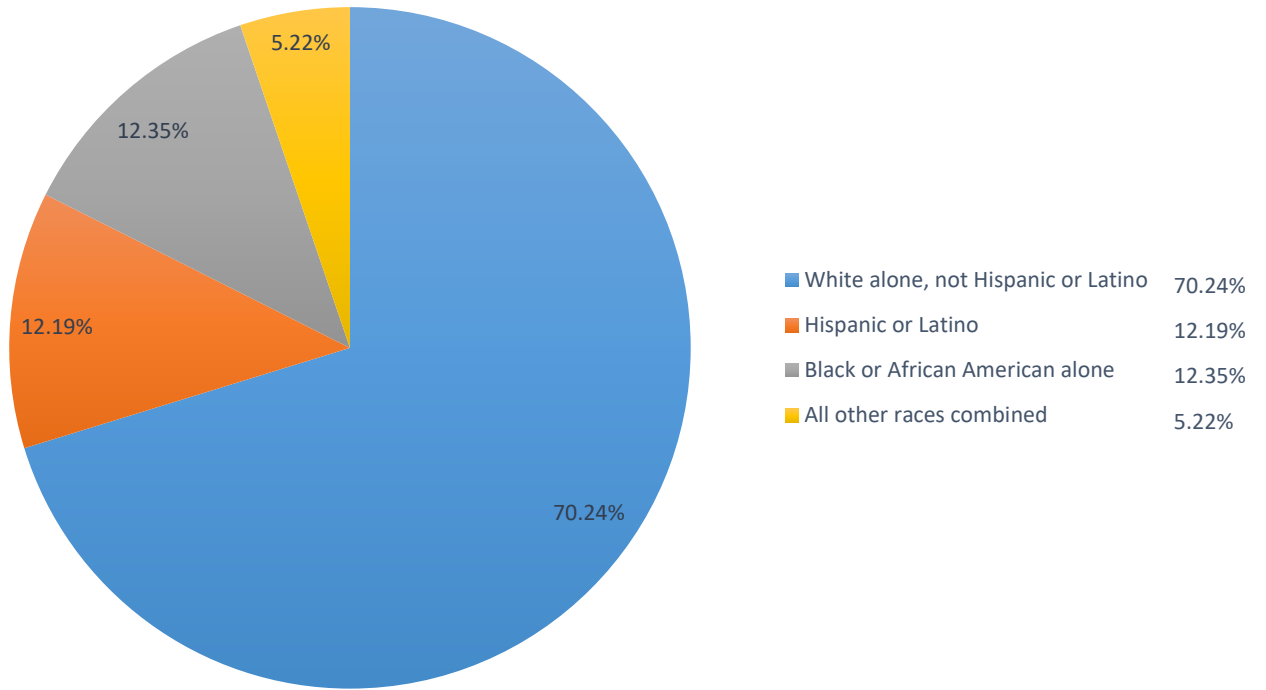


Figure 6: Winnebago County Racial Breakdown (Data from USCB 2017 American Community Survey 5-year estimate)<sup>1</sup>

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<sup>1</sup> All other races combined includes: American Indian and Alaskan Native, Asian, Native Hawaiian and Other Pacific Islander, Some other, and two or more.

## Educational Attainment

Educational attainment in Winnebago County is uneven with the majority of residents in Winnebago County have little to no college education (Figure 7, Figure 8, Figure 9). Only 22% of residents in Winnebago County over 25 have a college degree (Figure 9). Where 56% have at least a high school diploma with some college. According to a report by the Substance Abuse and Mental Health Services Administration (SAMHSA) titled “Disaster Technical Assistance Center- Supplemental Research Bulletin- Greater Impact: How Disasters Affect People of Low Socioeconomic Status;” groups of lower socioeconomic status (SES), those who are generally lower-income and low-educated are less likely to be prepared for a disaster, more vulnerable to certain disasters, and less likely to fully recover post-disaster. Impacts of disasters also often have longer felt impacts on those of lower SES. The section titled “After the Disaster” details the long term impacts disasters have on lower SES. Often they have trouble accessing aid, finding stable housing, and managing post-disaster mental impacts.<sup>12</sup>

### EDUCATIONAL ATTAINMENT BY RACE WINNEBAGO COUNTY, IL

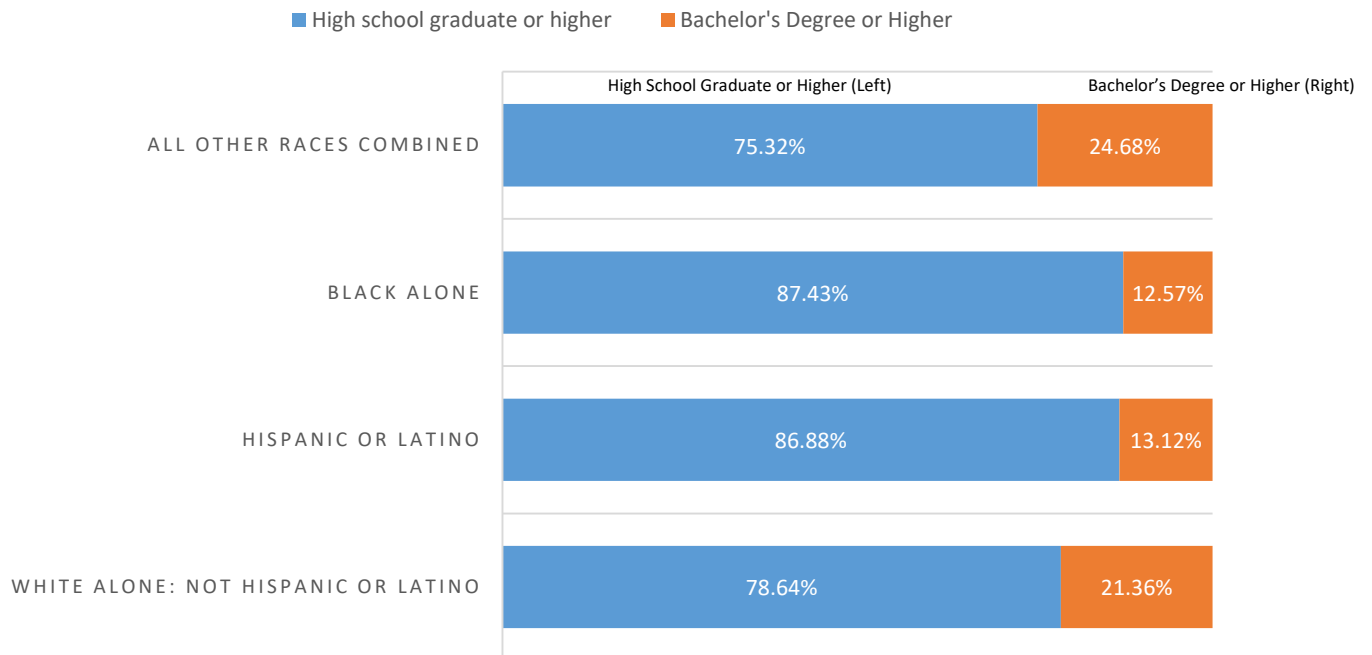
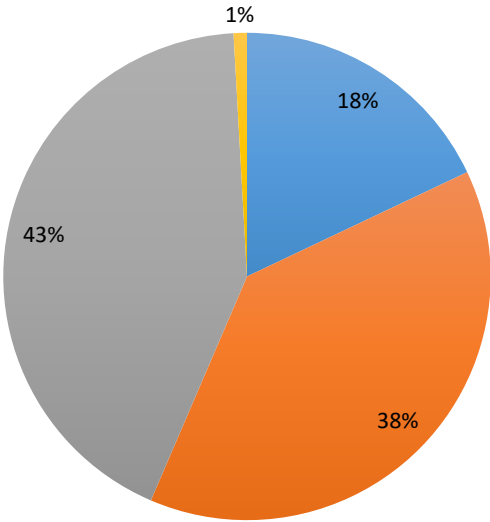


Figure 7: Winnebago County Educational Attainment by Race (Data from USCB 2017 American Community Survey 5-year estimate)

<sup>1</sup> Data sourced from <https://www.esri.com/library/brochures/pdfs/minority-population-growth.pdf>2012

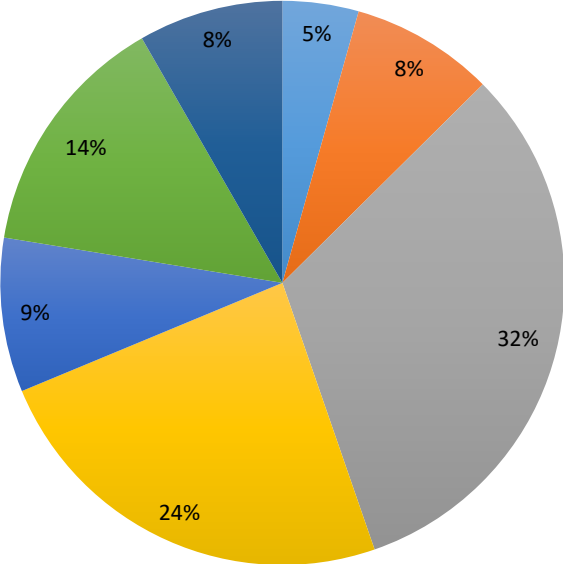
<sup>2</sup> Data sourced from [https://www.samhsa.gov/sites/default/files/dtac/srb-low-ses\\_2.pdf](https://www.samhsa.gov/sites/default/files/dtac/srb-low-ses_2.pdf)

### Education Attainment by Age Group: 18 to 24 year



■ Less than high school graduate	18%
■ High school graduate (including equivalencies)	38%
■ Some college or associate's degree	43%
■ Bachelor's degree or higher	1%

### Education Attainment by Age Group: 25 years and over



■ Less than 9th grade	5%
■ 9th to 12th grade, no diploma	8%
■ High school graduate (including equivalencies)	32%
■ Some college, no degree	24%
■ Associate's degree	9%
■ Bachelor's degree	14%
■ Graduate or professional degree	8%

## Economic Distribution

### Industry Sectors

Winnebago County's largest employment sectors comprised of manufacturing, education and healthcare, and administrative and management sectors. The classifications below were sourced from the North American Industry Classification System (NAICS). The NAICS classifications were then rectified with the USCB 2013-2017 ACS data which uses a slightly different set of classifications (Table 2). Additionally, the Illinois Department of Employment Security (IDES) states that Winnebago County's largest employers include MercyHealth Systems, Swedish American Hospital, OSF St. Anthony Medical Center, and the Rockford Park District (Table 3).

Table 2: Winnebago County's Largest Employment Sectors (Data from USCB 2013-2017 American Community Survey)

INDUSTRY SECTOR	ESTIMATE	PERCENT
MANUFACTURING	30,104	23%
EDUCATIONAL SERVICES, HEALTH CARE, AND SOCIAL SERVICES	28,637	22%
RETAIL TRADE	14,558	11%
PROFESSIONAL, SCIENTIFIC, MANAGEMENT, ADMINISTRATIVE, AND WASTE MANAGEMENT SERVICES	11,476	9%
ARTS, ENTERTAINMENT, RECREATION, ACCOMMODATION, AND FOOD SERVICES	11,243	9%
TRANSPORTATION, WAREHOUSING, AND UTILITIES	6,856	5%
CONSTRUCTION	6,726	5%
OTHER SERVICES, EXCEPT PUBLIC ADMINISTRATION	6,670	5%
FINANCE, INSURANCE, REAL ESTATE, AND LEASING	5,865	4%
PUBLIC ADMINISTRATION	3,758	3%
WHOLESALE TRADE	3,420	3%
INFORMATION	1,946	1%
AGRICULTURE, FORESTRY, FISHING, HUNTING, AND MINING	931	1%
TOTAL:	132,190	100%

### Largest Employers

Table 3: Winnebago County's Largest Employers (Data from Illinois Department of Illinois Security; InfoGroup of Nebraska)

NAME	BUSINESS TYPE
MERCYHEALTH SYSTEMS	HOSPITALS
SWEDISH AMERICAN HOSPITAL	HOSPITALS
UTC AEROSPACE SYSTEMS	AEROSPACE INDUSTRIES (MANUFACTURERS)
OSF ST. ANTHONY MEDICAL CENTER	HOSPITALS
ROCKFORD PARK DISTRICT	STATE GOVERNMENT – GENERAL OFFICES

## Poverty

Winnebago County has a median household income of \$51,110, compared to the U.S. median household income of \$57,652. Just over one in three (33.9%) of households in Winnebago County have an income of less than \$35,000 and 11.5% of families live at or below the federal poverty line. As mentioned above, those of lower SES (socioeconomic status) often have difficulties returning to normalcy post-disaster. Additionally, poverty is not uniform across different demographic sectors. Poverty varies by age group, sex, race, and employment status (Figure 10).

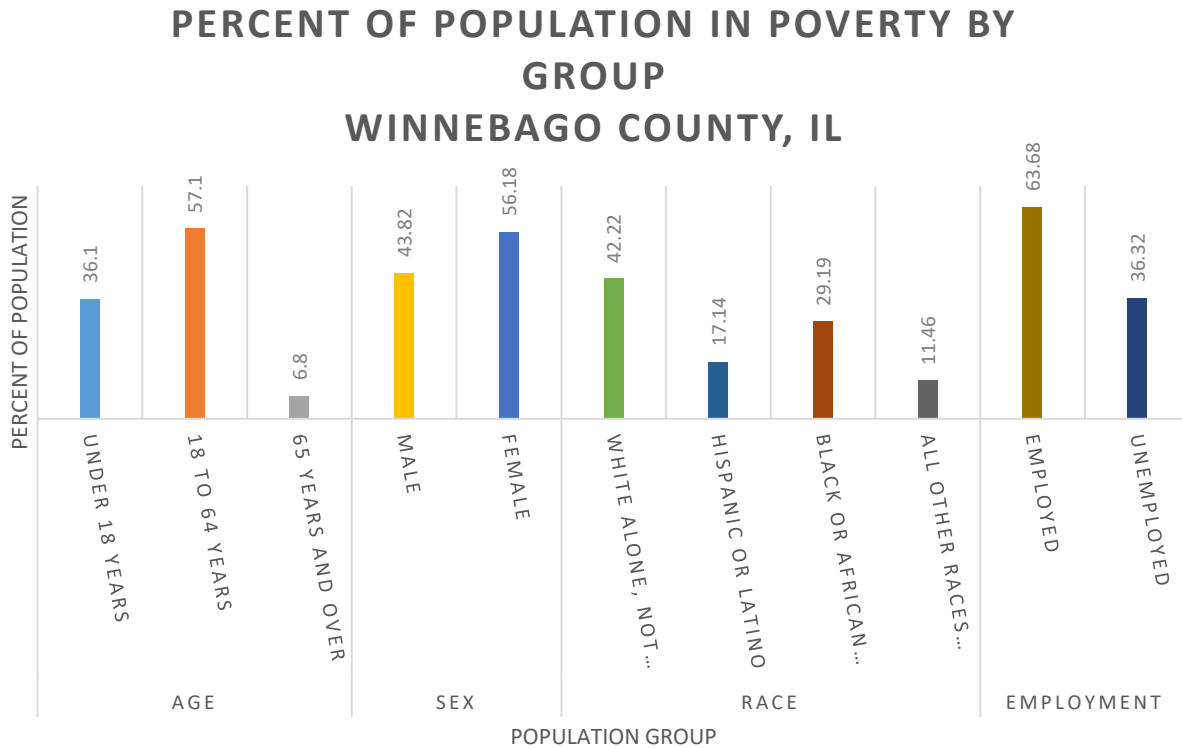


Figure 8: Winnebago County Poverty Distribution by Group (Data from USCB 2017 American Community Survey 5-year estimate)

## Housing

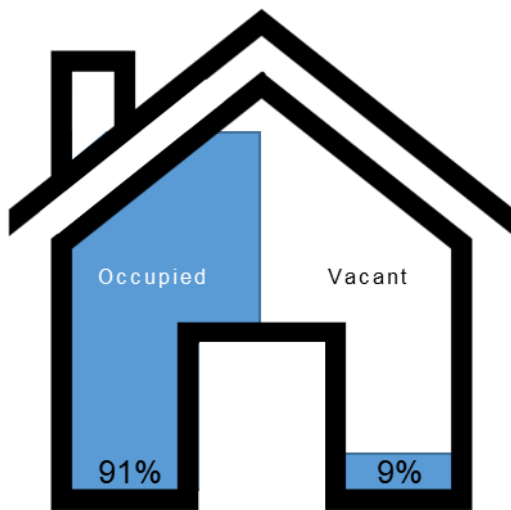
### Housing Units (Occupied vs. Vacant)

Winnebago County has a total of 125,800 housing units. Of those housing units, 91.01% or 114,491 are occupied and 8.99% or 11,309 are vacant (USCB 2017 American Community Survey 5-year estimate) (Figure 11).

### Housing Units (Owners vs. Renters)

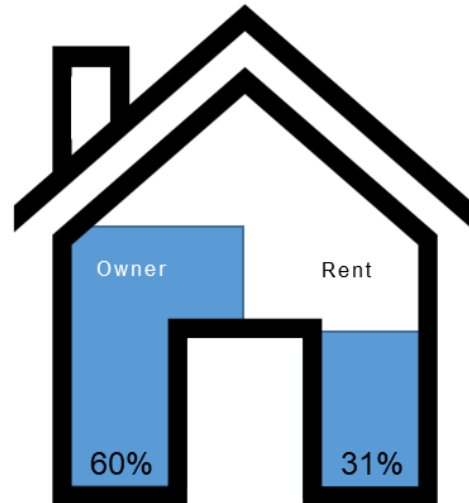
Of the total housing units in Winnebago County, 114,491 or 91% are occupied and 11,309 or 8.99% are vacant. Of the total housing units in Winnebago County, 75,723 or 60.19% of those are owner occupied and 38,768 or 30.82% are renter occupied (Figure 11-1).

Occupied vs. Vacant Housing Units  
Winnebago County, IL



Source: Data from U.S. Census Bureau American Community Survey, 2017 est. Retrieved 06/26/2019.  
Image- Available through creative commons.

Owner vs. Renter Occupied  
Winnebago County, IL



Source: Data- American Community Survey, 2017 est. Retrieved 06/26/2019.  
Image- Available through creative commons.

Figure 9 (Left): Winnebago County Housing Units: Occupied vs. Vacant. Figure 11-1 (Right): Winnebago County Housing Units: Owner vs. Renter.

### Housing Units (Flood Zone Parcels)

Riverine and stream flooding can occur naturally onto adjacent lands. Issues arise when development occurs on both sides of a riverbank and stormwater management is an afterthought. Even with stormwater management as part of the development, riverine flooding is exacerbated by development because the water has less places to naturally dissipate into. Flooding has been a reoccurring problem for Winnebago County for many years, and 2019 was no exception. Winnebago County has a total number of 122,144 parcels. Of the total, 78.78% of those are residentially zone parcels. Of the residential parcels, 7,955 or 6.51% are within a floodplain. The majority of these parcels are municipalities in the eastern part of the county (Rockford, Machesney Park, Rockton, etc.) (Figure 12).

# Residential Parcels in Flood Zones - Winnebago County, IL

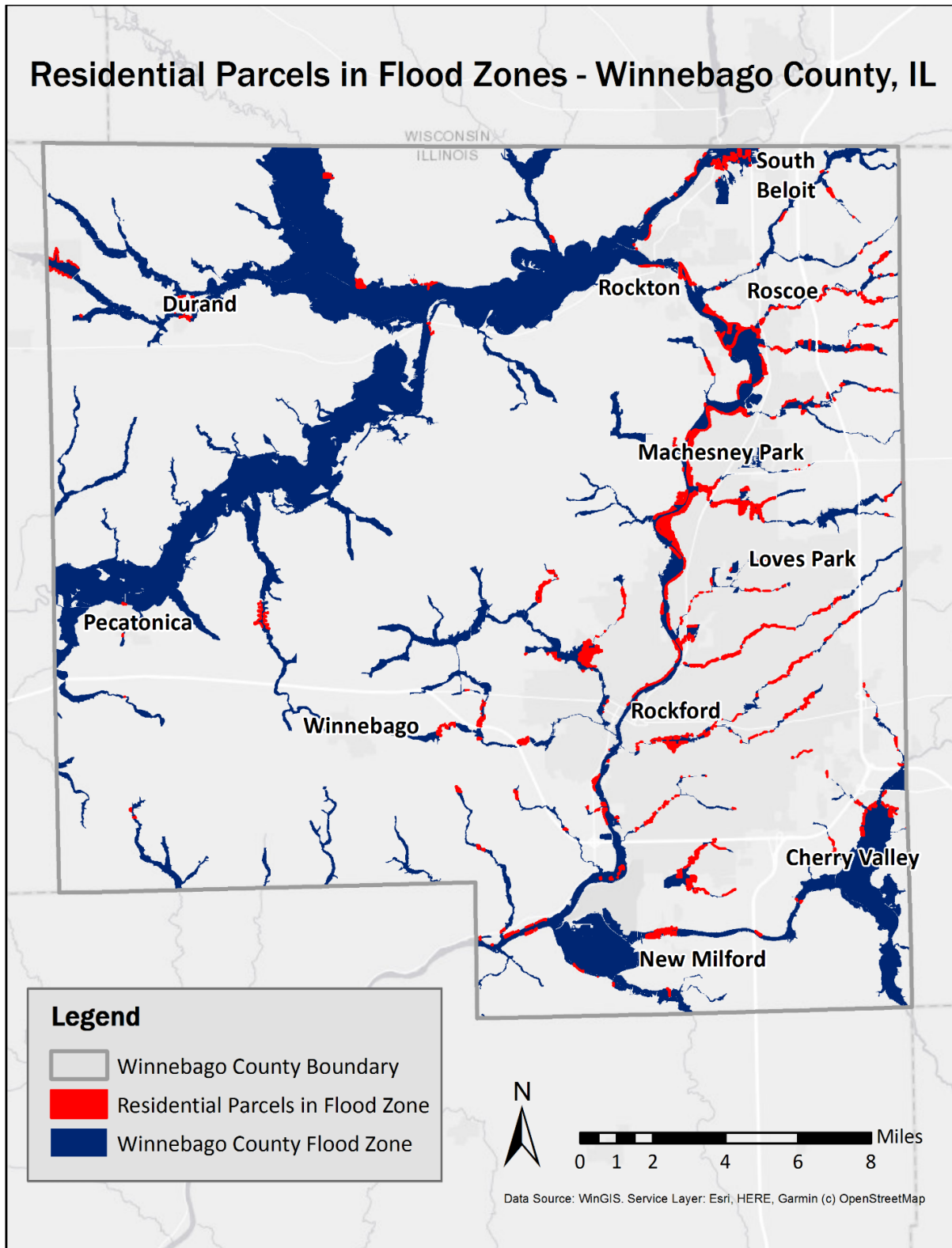


Figure 10: GIS Analysis of Winnebago County Residential Parcels in a Floodplain in 2019 (RPC Project Team)



# Boone, Winnebago, Ogle County Economic Projections (Regional Economic Modeling Inc.)

The REMI model was utilized for population projections and economic forecasts at the regional level for the 2019 Winnebago County MHMP. The REMI model for the RPC Region consists of Boone, Winnebago, and Ogle counties – therefore, the data below represents the region, not just Winnebago County. Projection data for 2015 to 2030 is included below (table 4).

Table 4: REMI Modeling Projects from 2015 to 2030

YEAR	TOTAL EMPLOYMENT	POPULATION	GROSS DOMESTIC PRODUCT (BILLIONS OF FIXED 2009 DOLLARS)
2015 (BASE)	166,343	288,237	13
	167,818	287,962	13
	169,175	287,843	14
	170,294	287,779	14
	170,022	287,710	14
	170,256	287,696	14
	170,976	287,799	15
	171,088	287,992	15
	171,600	288,299	15
	172,110	288,698	15
	173,026	289,231	16
	174,101	289,880	16
	174,848	290,601	16
	175,513	291,355	17
	176,188	292,149	17
<b>2030 (PROJECTED)</b>	<b>176,716</b>	<b>292,971</b>	<b>17</b>

Utilizing REMI modeling projections (table 4) the RPC project team is able to assess long-term projected employment and population growth. Table 4 shows a total population growth in the region to 292,971 in 2030. This assume a trend-level development pattern and does not account for the fluctuations you can see in population patterns and development trends based on the economy and other situational factors. However, the REMI modeling projections provide a safe approximation of the employment and population estimates for the region.

These employment and population projections can help local and state governments to determine the necessary measures to take to provide for the resources, the security, and the space for the populations of people as the region continues to grow.

## 4 Winnebago County Public Facilities (Essential Facilities)

WinGIS (Winnebago County GIS Department) maintains an essential facilities list for those identified in Winnebago County. Essential facilities are defined as those which are vital to the operation of the county. Table 5 identifies the number of public facilities by type, Table 6 identifies the number of utility facilities by type, and Table 7 lists the utility providers for each sector within Winnebago County. Figure 13 displays a map of Winnebago County police, fire, and hospitals—a subset of the critical facilities list.

### Winnebago County Essential Facilities

#### Public Facilities

Table 5: Winnebago County Public Facilities (WinGIS Data)

FACILITY	NUMBER OF FACILITIES
GOVERNMENT BUILDING	110
COMMUNITY COLLEGE/COLLEGE/UNIVERSITY	25
SCHOOL OR EDUCATIONAL	226
HOSPITAL OR MEDICAL	410
POLICE, FIRE, OR MILITARY	80

#### Utility Facilities

Table 6: Winnebago County Utility Facilities (WinGIS Data)

FACILITY	NUMBER OF FACILITIES
GAS OR FUEL	6
COMMUNICATION	23
WATER OR SEWER	27

#### Utility Provider

Table 7: Winnebago County Utility Providers (WinGIS Data)

UTILITY TYPE	COMPANY NAME
ELECTRICITY	COMMONWEALTH EDISON (COMED)
	ROCK-ENERGY COOPERATIVE
GAS	NICOR GAS
	ROCK-ENERGY COOPERATIVE
INTERNET	COMCAST
	AT&T
	FRONTIER
	CHARTER
	RISE BROADBAND
WATER & SEWER	CITY OF ROCKFORD
	ROCK RIVER WATER RECLAMATION DISTRICT
	CITY OF BELVIDERE
	NORTH PARK WATER DISTRICT
	WINNEBAGO COUNTY WATER SYSTEM
	WESTLAKE WATER AND SEWER SYSTEM
	LAKE SUMMERSET

# Winnebago County Police Stations, Fire Stations & Hospitals

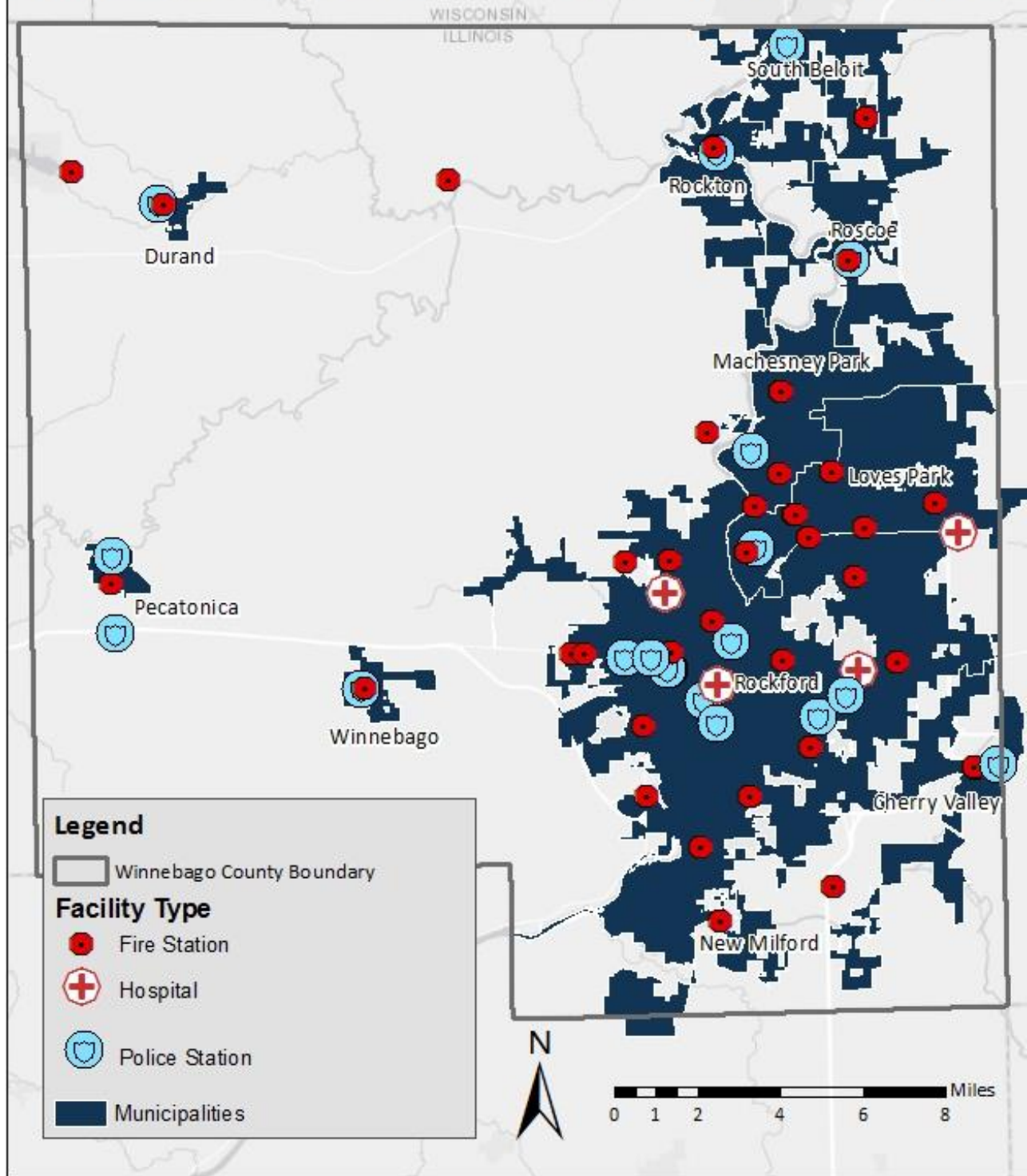


Figure 11: Winnebago County Essential Facilities (Police, Fire, and Hospitals)

## Winnebago County Essential Facilities in a Floodplain<sup>1</sup>

Of the essential facilities located in Winnebago County, a number of them are located within a floodplain. Those located within a floodplain are especially susceptible to damage during storm events. Table 8 highlights the facilities by type that are located in floodplains and Figure 14 maps these within Winnebago County.

### Essential Facilities in Floodplain

Table 8: Winnebago County Essential Facilities in Floodplains (WinGIS)

<b>FACILITY</b>	<b>NUMBER OF FACILITIES</b>
GOVERNMENT BUILDING	7
COMMUNITY COLLEGE/COLLEGE/UNIVERSITY	0
SCHOOL OR EDUCATIONAL	3
HOSPITAL OR MEDICAL	2
POLICE, FIRE, OR MILITARY	5

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<sup>1</sup> excludes payphones which can be found in floodplains.

# Winnebago County, IL Essential Facilities in Flood Plain

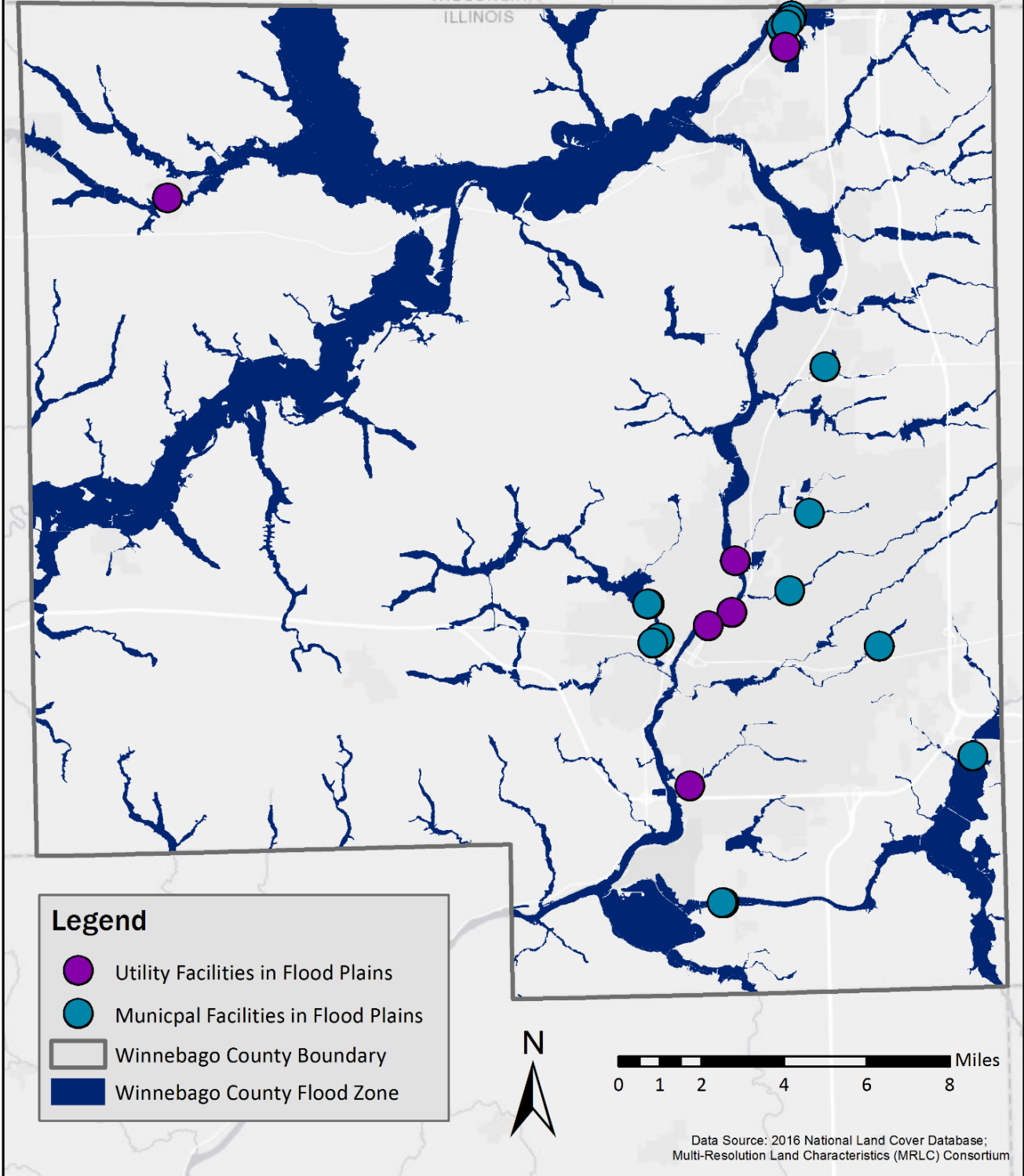


Figure 12: Winnebago County Essential Facilities in a Floodplain

## Winnebago County Schools and School Districts

As of 2018, Winnebago County had approximately 91 public-and-private-schools (table 9). These are included below as well as the school districts (figure 15).

### Schools

Table 9: Winnebago County Schools by District

SCHOOL DISTRICT	SCHOOL NAME	TYPE	GRADE LEVELS	ENROLLMENT
BOONE/WINNEBAGO ROE	REG'L LEARNING ACADEMY STAR WINN	PUBLIC, ALTERNATIVE	6 TO 11	89
	REG'L LEARNING CENTER STAR WINN	PUBLIC	9 TO 12	20
	REGIONAL ALTERNATIVE SCHOOL	PUBLIC	9 TO 12	93
COUNTY OF WINNEBAGO SCHOOL DISTRICT 320	BLACKHAWK ELEMENTARY SCHOOL	PUBLIC	5 TO 6	129
	CLARK ELEMENTARY SCHOOL	PUBLIC	PK, K TO 1	225
	RIVERVIEW ELEMENTARY SCHOOL	PUBLIC	2 TO 4	240
	SOUTH BELOIT JUNIOR HIGH SCHOOL	PUBLIC	7 TO 8	155
	SOUTH BELOIT SENIOR HIGH SCHOOL	PUBLIC	9 TO 12	276
DURAND CUSD 322	DOLAN CENTER MARYVILLE FARM CAMPUS	PUBLIC, ALTERNATIVE	1 TO 12	19
	DURAND ELEMENTARY SCHOOL	PUBLIC	PK, K TO 6	298
	DURAND HIGH SCHOOL	PUBLIC	9 TO 12	152
	DURAND JUNIOR HIGH SCHOOL	PUBLIC	7 TO 8	91
HARLEM UD 122	DONALD C PARKER EARLY EDUC. CENTER	PUBLIC	PK-K	572
	HARLEM HIGH SCHOOL	PUBLIC	9 TO 12	2093
	HARLEM HIGH SCHOOL - 9TH GRADE CAMPUS	PUBLIC, ALTERNATIVE	9	-
	HARLEM MIDDLE SCHOOL	PUBLIC	7 TO 8	1006
	LOVES PARK ELEMENTARY SCHOOL	PUBLIC	1 TO 6	345
	MACHESNEY ELEMENTARY SCHOOL	PUBLIC	4 TO 6	419
	MAPLE ELEMENTARY SCHOOL	PUBLIC	1 TO 6	275
	MARQUETTE ELEMENTARY SCHOOL	PUBLIC	1 TO 3	326
	OLSON PARK ELEMENTARY SCHOOL	PUBLIC	1 TO 6	343
	RALSTON ELEMENTARY SCHOOL	PUBLIC	1 TO 6	312
	ROCK CUT ELEMENTARY SCHOOL	PUBLIC	1 TO 6	415
WINDSOR ELEMENTARY SCHOOL	PUBLIC	1 TO 6	427	
HONONEGAH CHD 207	HONONEGAH HIGH SCHOOL	PUBLIC	9 TO 12	2074
KINNIKINNICK CCSD 131	KINNIKINNICK SCHOOL	PUBLIC	4 TO 5	388
	LEDGEWOOD ELEMENTARY SCHOOL	PUBLIC	PK, KG TO 1	402
	ROSCOE MIDDLE SCHOOL	PUBLIC	6 TO 8	598
	STONE CREEK SCHOOL	PUBLIC	2 TO 3	356
PECATONICA CUSD 321	PECATONICA COMMUNITY MIDDLE SCHOOL	PUBLIC	5 TO 8	295
	PECATONICA ELEMENTARY SCHOOL	PUBLIC	K TO 4	353

SCHOOL DISTRICT	SCHOOL NAME	TYPE	GRADE LEVELS	ENROLLMENT
	PECATONICA HIGH SCHOOL	PUBLIC	9 TO 12	244
PRAIRIE HILL CCSD 133	PRAIRIE HILL ELEMENTARY SCHOOL	PUBLIC	PK, K TO 4	399
	WILLOWBROOK MIDDLE SCHOOL	PUBLIC	5 TO 8	344
ROCKFORD SCHOOL DISTRICT 205	A C THOMPSON ELEMENTARY SCHOOL	PUBLIC	K TO 5	284
	ABRAHAM LINCOLN MIDDLE SCHOOL	PUBLIC	6 TO 8	699
	ARTHUR FROBERG ELEMENTARY SCHOOL	PUBLIC	K TO 5	462
	AUBURN HIGH SCHOOL	PUBLIC	9 TO 12	1871
	BARBOUR TWO-WAY LANG IMMERSION	PUBLIC	K TO 8	739
	BERNARD W FLINN MIDDLE SCHOOL	PUBLIC	6 TO 8	963
	BEYER ELEMENTARY SCHOOL	PUBLIC	1 TO 5	300
	BROOKVIEW ELEMENTARY SCHOOL	PUBLIC	K TO 5	470
	C HENRY BLOOM ELEMENTARY SCHOOL	PUBLIC	K TO 5	334
	CHERRY VALLEY ELEMENTARY SCHOOL	PUBLIC	3 TO 5	162
	CLIFFORD P CARLSON ELEMENTARY SCHOOL	PUBLIC	K TO 5	418
	CONKLIN ELEMENTARY SCHOOL	PUBLIC	K TO 5	334
	DENNIS EARLY CHILDHOOD CENTER	PUBLIC	PK	307
	EISENHOWER MIDDLE SCHOOL	PUBLIC	6 TO 8	810
	ELLIS ELEMENTARY SCHOOL	PUBLIC	K TO 5	479
	FAIRVIEW EARLY CHILDHOOD CENTER	PUBLIC	PK	700
	GALAPAGOS ROCKFORD CHARTER SCHOOL	PUBLIC, CHARTER	K TO 8	321
	GREGORY ELEMENTARY SCHOOL	PUBLIC	K TO 5	317
	GUILFORD HIGH SCHOOL	PUBLIC	9 TO 12	1723
	HASKELL ELEMENTARY SCHOOL	PUBLIC	K TO 5	308
	JACKSON CHARTER SCHOOL	PUBLIC, CHARTER	K TO 8	512
	JEFFERSON HIGH SCHOOL	PUBLIC	9 TO 12	1633
	JOHN NELSON ELEMENTARY SCHOOL	PUBLIC	K TO 5	468
	JULIA LATHROP ELEMENTARY SCHOOL	PUBLIC	K TO 5	435
	KENNEDY MIDDLE SCHOOL	PUBLIC	6 TO 8	520
	KISHWAUKEE ELEMENTARY SCHOOL	PUBLIC	K TO 5	305
	LEGACY ACADEMY OF EXCELLENCE CHARTER	PUBLIC, CHARTER, ALTERNATIVE	K TO 12	315
	LEWIS LEMON ELEMENTARY	PUBLIC	K TO 5	395
	MAUD E JOHNSON ELEMENTARY SCHOOL	PUBLIC	K TO 5	488
	MCINTOSH ELEMENTARY	PUBLIC	K TO 5	361
	MONTESSORI ELEMENTARY SCHOOL	PUBLIC	PK, K TO 8	498
	R K WELSH ELEMENTARY SCHOOL	PUBLIC	K TO 5	470
	RIVERDAHL ELEMENTARY SCHOOL	PUBLIC	K TO 5	523
ROCKFORD EAST HIGH SCHOOL	PUBLIC	9 TO 12	1995	
ROCKFORD ENVIRONMENTAL SCIENCE ACADEMY	PUBLIC	6 TO 8	962	
ROLLING GREEN	PUBLIC	PK, K TO 5	780	

SCHOOL DISTRICT	SCHOOL NAME	TYPE	GRADE LEVELS	ENROLLMENT
	ROOSEVELT CENTER	PUBLIC	9 TO 12	415
	SPRING CREEK ELEMENTARY SCHOOL	PUBLIC	K TO 5	340
	SUMMERDALE EARLY CHILDHOOD CENTER	PUBLIC	PK	417
	SWAN HILLMAN ELEMENTARY SCHOOL	PUBLIC	K TO 5	595
	THURGOOD MARSHALL ELEMENTARY	PUBLIC	1 TO 4	414
	THURGOOD MARSHALL SCHOOL	PUBLIC	5 TO 8	457
	WASHINGTON ELEMENTARY SCHOOL	PUBLIC	K TO 5	314
	WEST MIDDLE SCHOOL	PUBLIC	6 TO 8	887
	WEST VIEW ELEMENTARY SCHOOL	PUBLIC	K TO 5	475
	WHITE SWAN ELEMENTARY SCHOOL	PUBLIC	K TO 2	194
	WHITEHEAD ELEMENTARY SCHOOL	PUBLIC	K TO 5	566
	WILSON ASPIRE	PUBLIC	7	28
	WM NASHOLD EARLY CHILDHOOD CENTER	PUBLIC	PK	-
ROCKTON SCHOOL DISTRICT 140	ROCKTON ELEMENTARY SCHOOL	PUBLIC	PK, K TO 2	532
	STEPHEN MACK MIDDLE SCHOOL	PUBLIC	6 TO 8	529
	WHITMAN POST ELEMENTARY SCHOOL	PUBLIC	3 TO 5	472
SHIRLAND CCSD 134	SHIRLAND C.C. SCHOOL	PUBLIC	K TO 8	117
WINNEBAGO CUSD 323	DOROTHY SIMON ELEMENTARY SCHOOL	PUBLIC	PK, K TO 2	302
	JEAN MCNAIR ELEMENTARY SCHOOL	PUBLIC	3 TO 5	289
	WINNEBAGO HIGH SCHOOL	PUBLIC	9 TO 12	455
	WINNEBAGO MIDDLE SCHOOL	PUBLIC	6 TO 8	338



## School Districts

Winnebago County has seven school districts (a portion of the school districts in Table 9 are sub-districts). For the 2018-2019 school year, Winnebago County's 85 schools served 44,052 students. The minority enrollment rate was 51% (Figure 15).

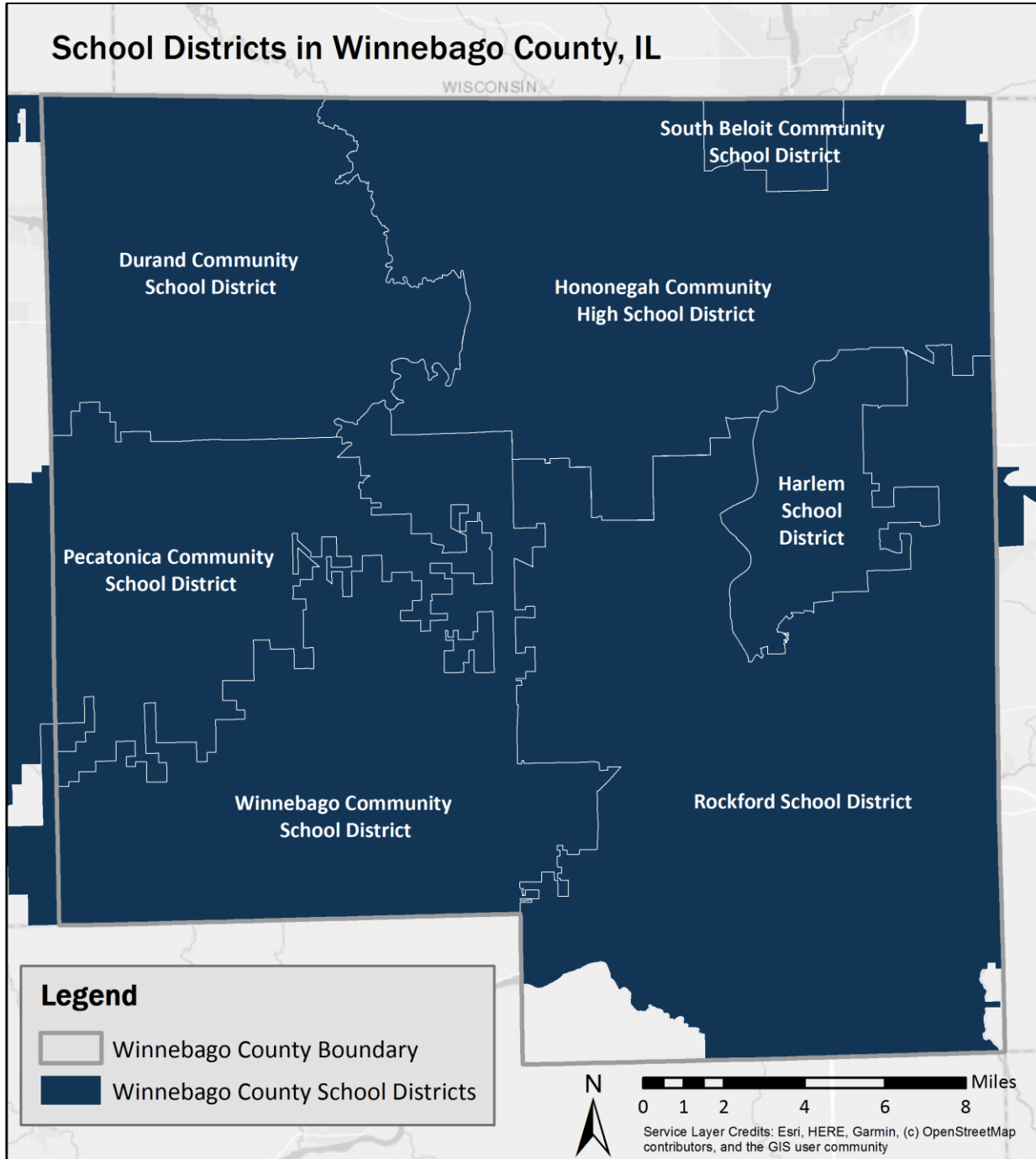


Figure 13: Winnebago County School Districts

## 5 Planning Process

### Planning Process

The MHMP update process was broken into a multi-phase process. The process was managed by RPC in coordination with the Winnebago County Highway Department. The process included identifying an extensive list of stakeholders throughout Winnebago County. One stakeholder meeting was hosted at the RPC Design Center towards the end of the update process. Additionally, each stakeholder was given the opportunity to offer comments for revisions. The final draft of the document was sent to the Illinois Emergency Management Agency (IEMA) and the Federal Emergency Management Agency (FEMA) for final review and comments before municipal adoption.

**Phase 1: Review of the 2014 Multi-Hazard Mitigation Plan.** The 2014 version of the Winnebago County MHMP completed by SIU was extensively reviewed by the RPC staff to identify what data was necessary to update and what could remain in this version. In addition, the stakeholder list was reviewed and expanded. The 2014 version was continually referenced throughout this document and certain sections were drafted into this version with light editing.

**Phase 2: Update of the 2014 Multi-Hazard Mitigation Plan.** A new outline was drafted for the 2019 MHMP which mirrored that of the 2014 version. A new visual standard and templates were developed in connection with this phase as well. The updated outline consolidated certain sections to more closely mirror other metropolitan planning organization's Multi-Hazard Mitigation Plans. A data collection outline (work plan) was drafted to determine what data was necessary to update and where to collect it. The data was updated where available and appropriate. This included socio-demographic data, land-use, and mitigation implementations. The addition of Regional Economic Modeling Initiative (REMI) was also introduced and approved during this phase. During this phase the Risk Priority Index ranking (RPN) was also updated which involved the feedback of numerous stakeholders (Table 10). The RPN represents the individual stakeholder's perceptions of the severity, probability, and detection ability of Winnebago County.

**Phase 3: Drafting of the 2019 Multi-Hazard Mitigation Plan.** The main drafting phase of the updates to the document. This phase included editing, revisions, and opportunity for comment. Following the final draft, a copy was sent to the stakeholder group for final comments and those were included where appropriate.

**Phase 4: Review and Approval of the 2019 Multi-Hazard Mitigation Plan.** The partner organizations and the public reviewed the draft plan, proposed revisions, and accepted the plan after RPC incorporated the necessary changes from stakeholder comments. Following this, RPC forwarded the plan to the mitigation staff at the Illinois Emergency Management Agency (IEMA) and the Federal Emergency Management Agency (FEMA) for review and comments before final approval by FEMA.

The DMA 2000 planning regulations require that planning team members from each municipality actively participate in the MHMP process. For the MHMP, the municipalities were the individual organizations included throughout the county. The partner organizations (Table 10) were actively involved on the following components:

- Attending the MHMP meetings
- Providing available assessment and parcel data and historical hazard information
- Reviewing and providing comments on the draft plans
- Coordinating and participating in the public input process
- Coordinating the formal adoption of the plan by the county

### Partner Organizations Information

The project teams at RPC and Winnebago County would like to give an explicit thank you to the organizations and individuals included below. Without their valuable feedback, none of this process would have been possible.

Table 10: Winnebago County Multi-Hazard Mitigation Plan Partner Organizations

ORGANIZATION	TYPE	TITLE	NAME
NIPARC (NORTHERN IL PREPAREDNESS AND RESPONSE COALITION)	COALITION	DIRECTOR/EMERGENCY MANAGEMENT COORDINATOR	STEPHANIE KUSCHEL
AMERICAN RED CROSS-CHICAGO AND NORTHERN IL	COMMUNITY ORGANIZATION	EXTERNAL RELATIONS MANAGER	YVETTE ALEXANDER-MAXIE
		DIRECTOR	LORI COMPTON
WINNEBAGO COUNTY-BUILDING DIVISION	COUNTY	DIVISION HEAD	STEVE GIRARD
WINNEBAGO COUNTY HEALTH DEPARTMENT	COUNTY	DIRECTOR OF PUBLIC HEALTH PREPAREDNESS	THERESA JAMES
WINNEBAGO COUNTY HIGHWAY DEPARTMENT	COUNTY	COUNTY ENGINEER	JOE VANDERWERFF
WINNEBAGO COUNTY HIGHWAY DEPARTMENT	COUNTY	CIVIL ENGINEER	SEAN VON BERGEN
WINNEBAGO COUNTY-PLANNING & ZONING DIVISION	COUNTY	DIVISION HEAD	TROY KRUP
WINNEBAGO COUNTY-PURCHASING	COUNTY	DIRECTOR	ANN JOHNS
WINNEBAGO COUNTY-REGIONAL PLANNING & ECONOMIC DEVELOPMENT	COUNTY	DIRECTOR OF DEVELOPMENT SERVICES	CHRIS DORNBUSH
WINNEBAGO COUNTY EMERGENCY OPERATIONS CENTER (SHERIFF'S DEPT.)	COUNTY	ACTING DIRECTOR	DON GASPARINI
WINNEBAGO COUNTY FIRE OFFICIAL- BLACKHAWK FIRE PROTECTION DISTRICT	FIRE PROTECTION DISTRICT	CHIEF	JONATHAN TRAIL

<b>ORGANIZATION</b>	<b>TYPE</b>	<b>TITLE</b>	<b>NAME</b>
WINNEBAGO COUNTY FIRE OFFICIAL-DURAND FIRE PROTECTION DISTRICT	FIRE PROTECTION DISTRICT	CHIEF	KIM STEWARD
WINNEBAGO COUNTY FIRE OFFICIAL-PECATONICA	FIRE PROTECTION DISTRICT	CHIEF	STEVE VAN VLECK
WINNEBAGO COUNTY FIRE OFFICIAL- CITY OF LOVES PARK	FIRE PROTECTION DISTRICT	CHIEF	JERRY WILTFANG
WINNEBAGO COUNTY FIRE OFFICIAL- CHERRY VALLEY FIRE PROTECTION DISTRICT	FIRE PROTECTION DISTRICT	CHIEF	JOE CORL
WINNEBAGO COUNTY FIRE OFFICIAL- HARLEM-ROSCOE FIRE PROTECTION DISTRICT	FIRE PROTECTION DISTRICT	DEPUTY FIRE CHIEF	JOHN BERGERON
WINNEBAGO COUNTY FIRE OFFICIAL- NEW MILFORD-FIRE PROTECTION DISTRICT	FIRE PROTECTION DISTRICT	DEPUTY FIRE CHIEF	ALAN CARLSON
WINNEBAGO COUNTY FIRE OFFICIAL- NORTH PARK FIRE PROTECTION DISTRICT	FIRE PROTECTION DISTRICT	CHIEF	JOEL HALLSTROM
WINNEBAGO COUNTY FIRE OFFICIAL-NORTH WEST FIRE PROTECTION DISTRICT	FIRE PROTECTION DISTRICT	CHIEF	LT NICK JUPIN
WINNEBAGO COUNTY FIRE OFFICIAL- ROCKTON FIRE PROTECTION DISTRICT	FIRE PROTECTION DISTRICT	DEPUTY FIRE CHIEF	KIRK WILSON
WINNEBAGO COUNTY FIRE OFFICIAL- SHIRLAND FIRE DEPARTMENT	FIRE PROTECTION DISTRICT	CHIEF	RON WEAVER
WINNEBAGO COUNTY FIRE OFFICIAL- CITY OF ROCKFORD	FIRE PROTECTION DISTRICT	CHIEF OF OPERATIONS/EMA DIRECTOR	MICHELE PANKOW
WINNEBAGO COUNTY FIRE OFFICIAL-CITY OF SOUTH BELOIT	FIRE PROTECTION DISTRICT	CHIEF	MICHAEL DAVENPORT
WINNEBAGO COUNTY FIRE OFFICIAL-STILLMAN FIRE PROTECTION DISTRICT	FIRE PROTECTION DISTRICT	CHIEF	CHAD HOEFLE
WINNEBAGO COUNTY FIRE OFFICIAL- WIN-BUR-SEW FIRE PROTECTION DISTRICT	FIRE PROTECTION DISTRICT	CHIEF	SCOTT NAILOR
FEMA	GOVERNMENT AGENCY	FEMA MITIGATION PLANNING	LORENA REYES
IEMA	GOVERNMENT AGENCY	HAZARD MITIGATION PLANNER	GLENN SMITH
		STATE HAZARD MITIGATION OFFICER	SAM AL-BASHA
ILLINOIS DEPARTMENT OF PUBLIC HEALTH	GOVERNMENT AGENCY	EMERGENCY RESPONSE COORDINATOR	MASOOD ATHAR
SWEDISH AMERICAN HOSPITAL GROUP	HOSPITAL	EMERGENCY MANAGEMENT COORDINATOR	TOM PRATT
OSF HEALTHCARE	HOSPITAL	EMERGENCY MANAGEMENT COORDINATOR	JEFF BROWN

ORGANIZATION	TYPE	TITLE	NAME
MERCYHEALTH SYSTEM	HOSPITAL	EMERGENCY MANAGEMENT COORDINATOR	RON KRAUSE
		PROGRAM DIRECTOR	RON MEADORS
REGION 1 PLANNING COUNCIL	LOCAL GOVERNMENT	EXECUTIVE DIRECTOR	MICHAEL DUNN JR.
		LAND USE PLANNER	ALLEN MILLS
		TRANSPORTATION SYSTEM PLANNER	COLIN BELLE
		METROPOLITAN PLANNER	CHUCK KLUTHO
REGION 1 PLANNING COUNCIL (WINGIS)	LOCAL GOVERNMENT	GIS TECHNICIAN	AARON FREY
CITY OF LOVES PARK	MUNICIPALITY	ECONOMIC DEVELOPMENT AND PLANNING MANAGER	NATHAN BRUCK
CITY OF ROCKFORD	MUNICIPALITY	PUBLIC WORKS	BRAD HOLCOMB
		PUBLIC WORKS	KELLY NOKES
		PUBLIC WORKS	JAMIE ROTT
CITY OF SOUTH БЕЛОIT	MUNICIPALITY	MAYOR	TED REHL
VILLAGE OF CHERRY VALLEY	MUNICIPALITY	PUBLIC WORKS DIRECTOR	CHUCK FREEMAN
VILLAGE OF DURAND	MUNICIPALITY	VILLAGE ZONING ADMINISTRATOR	JOHN SCOTT
VILLAGE OF MACHESNEY PARK	MUNICIPALITY	PLANNING & ZONING SPECIALIST	CARRIE HOUSTON
		VILLAGE ADMINISTRATOR	TIM SAVAGE
VILLAGE OF NEW MILFORD	MUNICIPALITY	VILLAGE PRESIDENT	TIM OWENS
VILLAGE OF PECATONICA	MUNICIPALITY	VILLAGE PRESIDENT	BILL SMULL
VILLAGE OF ROCKTON	MUNICIPALITY	MAYOR	DALE ADAMS
VILLAGE OF ROSCOE	MUNICIPALITY	CHIEF OF POLICE	JAMIE EVANS
VILLAGE OF WINNEBAGO	MUNICIPALITY	PUBLIC WORKS DIRECTOR	CHAN INSKO
		VILLAGE PRESIDENT	FRANK EUBANK
		CHIEF OF POLICE	TODD STOCKBURGER
WINNEBAGO COUNTY SCHOOL DISTRICT SUPERINTENDENT	SCHOOL DISTRICT	SUPERINTENDENT	SCOTT BLOOMQUIST
CHICAGO ROCKFORD INT'L AIRPORT	SERVICE PROVIDER	MANAGER OF OPERATIONS	ZACK OAKLEY
COMCAST	SERVICE PROVIDER	GOVERNMENT AND COMMUNITY AFFAIRS	JOAN SAGE
COMED	SERVICE PROVIDER	EXTERNAL AFFAIRS MANAGER	GEORGE GAULRAPP
ILLINOIS AMERICAN WATER	SERVICE PROVIDER	CHICAGO DISTRICT OPERATIONS	TERRY HARRINGTON
NICOR	SERVICE PROVIDER	COMMUNITY AFFAIRS	DAVID SURINA
WCT- BURRITT	TOWNSHIP	HIGHWAY COMMISSIONER	LANA DALY
WCT- CHERRY VALLEY	TOWNSHIP	HIGHWAY COMMISSIONER	SCOTT FRANTZ
WCT- DURAND	TOWNSHIP	HIGHWAY COMMISSIONER	KIM STEWARD
WCT- HARLEM	TOWNSHIP	HIGHWAY COMMISSIONER	ED TEGLAND
WCT- HARRISON	TOWNSHIP	HIGHWAY COMMISSIONER	BEN DOLAN
WCT- LAONA	TOWNSHIP	HIGHWAY COMMISSIONER	KERRY STEWARD
WCT- OWEN	TOWNSHIP	HIGHWAY COMMISSIONER	CHARLES BARNES

ORGANIZATION	TYPE	TITLE	NAME
WCT- PECATONICA	TOWNSHIP	HIGHWAY COMMISSIONER	BRUCE LIZER
WCT- ROCKFORD	TOWNSHIP	HIGHWAY COMMISSIONER	BRAD TRENT
WCT- ROCKTON	TOWNSHIP	HIGHWAY COMMISSIONER	MATTHEW CULYER
WCT- ROSCOE	TOWNSHIP	ASSESSOR	CYNTHIA SERVANT
WCT- SEWARD	TOWNSHIP	HIGHWAY COMMISSIONER	DAVE HESLOP
WCT- SHIRLAND	TOWNSHIP	HIGHWAY COMMISSIONER	CURT MCNAMES
WCT- WINNEBAGO	TOWNSHIP	HIGHWAY COMMISSIONER	BARRY PALM
NORTH PARK PUBLIC WATER DISTRICT	UTILITY PROVIDER		JOHN DONAHUE
ROCK RIVER WATER RECLAMATION DISTRICT	UTILITY PROVIDER		TIM HANSON
			JIM READER
ROCK ENERGY COOPERATIVE	UTILITY PROVIDER	SYSTEM ENGINEER	BEN KRAMBEER

**Timeline**

**June-July:** Data. Beginning in June 2019, with the confirmation of the project as active, the RPC began reviewing the 2014 draft of the Winnebago County MHMP. Following an exhaustive review of the 2014 draft, work began on updating the data included within this plan. The 2014 version was continually referenced throughout the 2019 update process. In the months leading up to the submission to IEMA/FEMA for final review, the RPC completed a comprehensive update of the data included in the MHMP. This data included population, land use, economic factors, and other socio-demographic data. During these months’ maps included in this document were also evaluated for validity and updated where appropriate by the RPC. Because this update is taking place 5 years after the last update, certain maps were deemed still applicable.

**July-September:** Draft. Beginning in July 2019, a draft outline was composed and approved by the Winnebago County Highway Department project team. This outline served as the basis for the 2019 version of the Winnebago County MHMP. This outline evolved over the following months into the final outline included here. The drafting process took multiple months and included a number of versions and revisions including those comments from stakeholders and the public. Certain sections of the 2014 version were carried over to 2019 as they were deemed unnecessary to update—this is noted where appropriate.

**October:** Public Meeting/Stakeholder Meeting. In October of 2019 the RPC hosted a stakeholder meeting that was open to the public. Public versions of the drafts were made available online for the weeks leading up to this Stakeholder meeting. Additionally, a draft version was sent out to stakeholder in the weeks prior to the meeting to ensure a timely review. Meeting attendees were asked to provide comments in person or via email on the draft for their inclusion.

**November-December:** Submission to IEMA/FEMA for Review. Following the October meeting, the RPC submitted the final edited draft to IEMA and FEMA representatives for review and comments. This followed a self-review and internal review by both the RPC and Winnebago County.

**December-January:** Approval by Winnebago County. Following the receipt of comments and suggestions from IEMA/FEMA the revisions were made based on their comments. The final version was adopted by Winnebago County and the individual municipalities over the following weeks.

## Public Involvement

The Multi-Hazard Mitigation Project Team (henceforth referred to as the project team) solicited stakeholder input during the planning process with varying levels of involvement and commitment. When the draft was finalized it was submitted to both stakeholders and made available to the public through the RPC and Winnebago County websites. A stakeholder meeting in October offered the chance to review the County's risk assessment. The public comment period ran from October 1, 2019 to October 25, 2019. [Appendix A](#) contains meeting materials from each respective meeting. [Appendix B](#) contains comments received by both the public and stakeholders during the applicable periods.

## Organizational Involvement

The 2019 Winnebago County MHMP would not have been possible without the invaluable feedback and review of the partner organizations. An exhaustive stakeholder list was compiled featuring a number of public and private organizations who also participated in the 2014 update to the MHMP. These organizations can be found on pages VIII, 30-33 or in [Appendix C](#). Each organization offered feedback on the plan at some point during the process. Organizations were initially reached out via email and phone. Following a more finalized stakeholder list – stakeholders were reached out to throughout the process.

## Review of Technical Documents and Data

The project team identified representatives from key agencies to assist in the planning process. RPC obtained technical data, reports, and studies from these agencies with the assistance of partner agencies and detailed research. Technical Documents under References summarizes these organizations, documents, and data gathered during this update.

## Review of Existing Plans

The RPC project team reviewed publicly available plans related to resource management, and disaster response. These included plans from Winnebago County, municipalities, FEMA, and IEMA. The project team also received feedback from emergency response coordinators at the county and private sector levels. The 2014 Winnebago County MHMP was a continual source for the 2019 MHMP throughout the process. The existing plans reviewed during this update, in addition to how they were utilized, can be found in [Appendix D](#).

## Data Updated

During the 2019 update the majority of the data updated was restricted to sociodemographic data including population, race, educational attainment, economic indicators, poverty, and housing data. This data was updated to better demonstrate an accurate county profile as of the most current data available (data updates are also required by FEMA).



# Winnebago County, Illinois Natural Hazards Assessment



## 6 Risk Analysis

The goal of mitigation is to reduce future hazard impacts including loss of life, property damage, disruption to local and regional economies, and the expenditure of public and private funds for recovery. Sound mitigation requires rigorous risk assessment. A risk assessment involves quantifying the potential loss resulting from a disaster by assessing the vulnerability of buildings, infrastructure, and people. This assessment identifies the characteristics and potential consequences of a disaster, how much the disaster could affect the community, and the impact on community assets. A risk assessment consists of these components—hazard identification, risk assessment, hazard profiling, county-wide risk analysis, and recommendations.

### Hazard Identification

The hazards profiled in Section 7 were those that were identified by FEMA, IEMA, and those highlighted in the 2014 version. The selection of hazards included the review of existing threats to Winnebago County, review of historic national weather records, and review of FEMA’s disaster declarations by type. The 2019 version includes the addition of a groundwater shortage as a new threat because of recent studies highlighting it as a threat. Table 11 shows these.

Table 11: 2019 Winnebago County Multi-Hazard Mitigation Plan (MHMP) Hazards Profiled

HAZARD
FLOODING
SEVERE STORMS
TORNADOES
HAZARDOUS MATERIALS STORAGE AND TRANSPORTATION
WINTER STORMS
DROUGHT/EXTREME HEAT
DAM AND LEVEE FAILURE
EARTHQUAKES
GROUNDWATER SHORTAGE

### National and State Weather Records

RPC reviewed historic national weather records to create a profile of weather events that have traditionally impacted Winnebago County. This aided in choosing hazards to profile in this plan. The data was collected from the National Centers for Environmental Information (NCEI; previously the National Climatic Data Center (NCDC)), National Weather Service (NWS), National Oceanic and Atmospheric Administration (NOAA), and data from the Illinois State Climatologist Office (ISCO) through the Illinois State Water Survey (ISWS).

The NCEI records provide estimates of damage reported to the NWS from various local, state, and federal sources. These estimates are often preliminary in nature and may not match final estimates. Historic averages for climate and weather were collected through the NWS and ISCO. Finally, data collected from NOAA provided classifications for weather.

The NCEI reported 353 events in Winnebago County from 1950 to 2019 (these are strictly weather events reported by the area, and may not include all events depending on their size and intensity). The following hazard-profile sections each include a summary table of events related to each hazard type. Table 12 summarizes meteorological hazards reported by NCEI for Winnebago County. Figure 16 summarizes the relative frequency of NCEI reported meteorological hazards and the percent of total damage associated with each hazard for Winnebago County. Full details of individual hazard events are on the [NCEI website](#).

Table 12: National Centers for Environmental Information (NCEI) Storm Events 1950 to 2019

EVENT TYPE	NCEI PROPERTY DAMAGE ESTIMATE	NCEI PROPERTY DAMAGE ESTIMATE (IN MILLIONS USD)	PERCENT SHARE OF EVENTS
WINTER STORM/BLIZZARD	29	-	8.22%
DROUGHT/EXCESSIVE HEAT	11	-	3.12%
FLASH FLOOD/FLOOD	62	30,932,000.00	17.56%
THUNDERSTORM	235	5,561,500.00	66.57%
TORNADO	16	5,440,000.00	4.53%
<b>TOTAL:</b>	<b>353</b>	<b>41,933,500.00</b>	<b>100.00%</b>

### NCEI Storm Events: 1950 to 2019

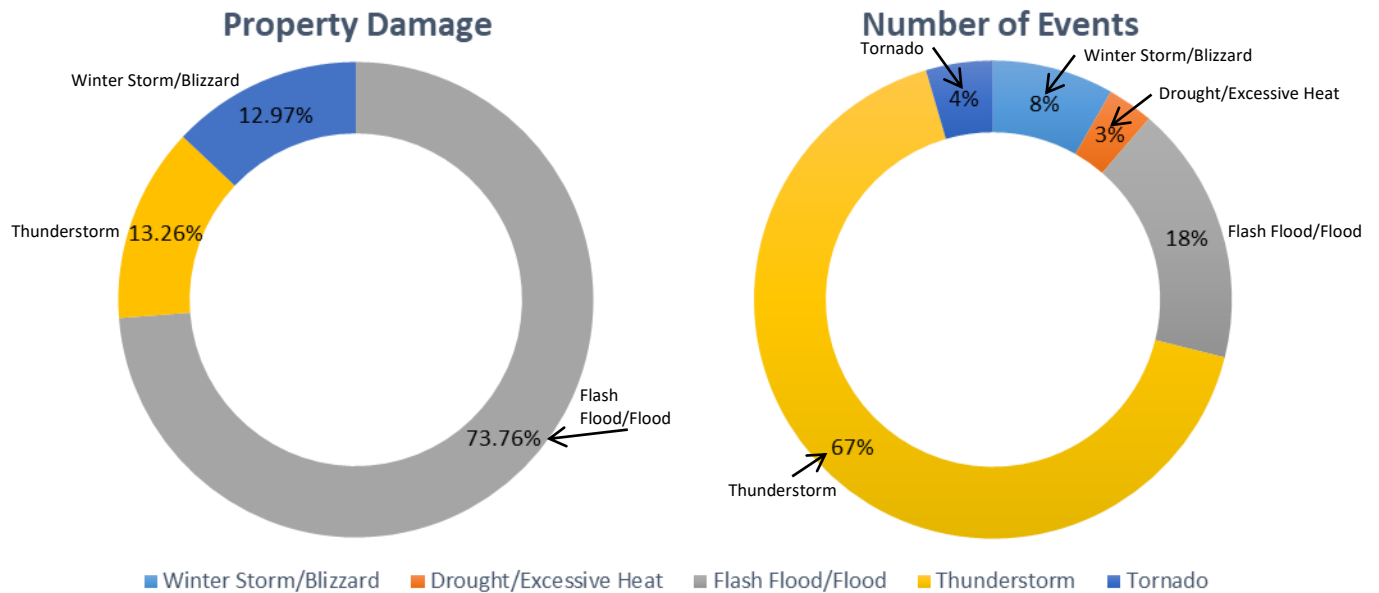


Figure 14: National Centers for Environmental Information Storm Events from 1950 to 2019

## Federal Emergency Management

## Agency Disaster Declarations

Since 1957, FEMA has declared 53 major disasters and 7 emergencies for the state of Illinois. Emergency declarations allow states to access FEMA funds for Public Assistance (PA); disaster declarations allow for even more PA funding, including Individual Assistance (IA) and the Hazard

Mitigation Grant Program (HMGP). Winnebago County has received federal aid for sixteen declared disasters and emergencies since 1965. There have been no new disaster declarations since the 2014 update. Figure 17 depicts the disasters and emergencies that have been declared for the State of Illinois by county since 1965. Table 13 lists specific information for each disaster declaration in Winnebago County.

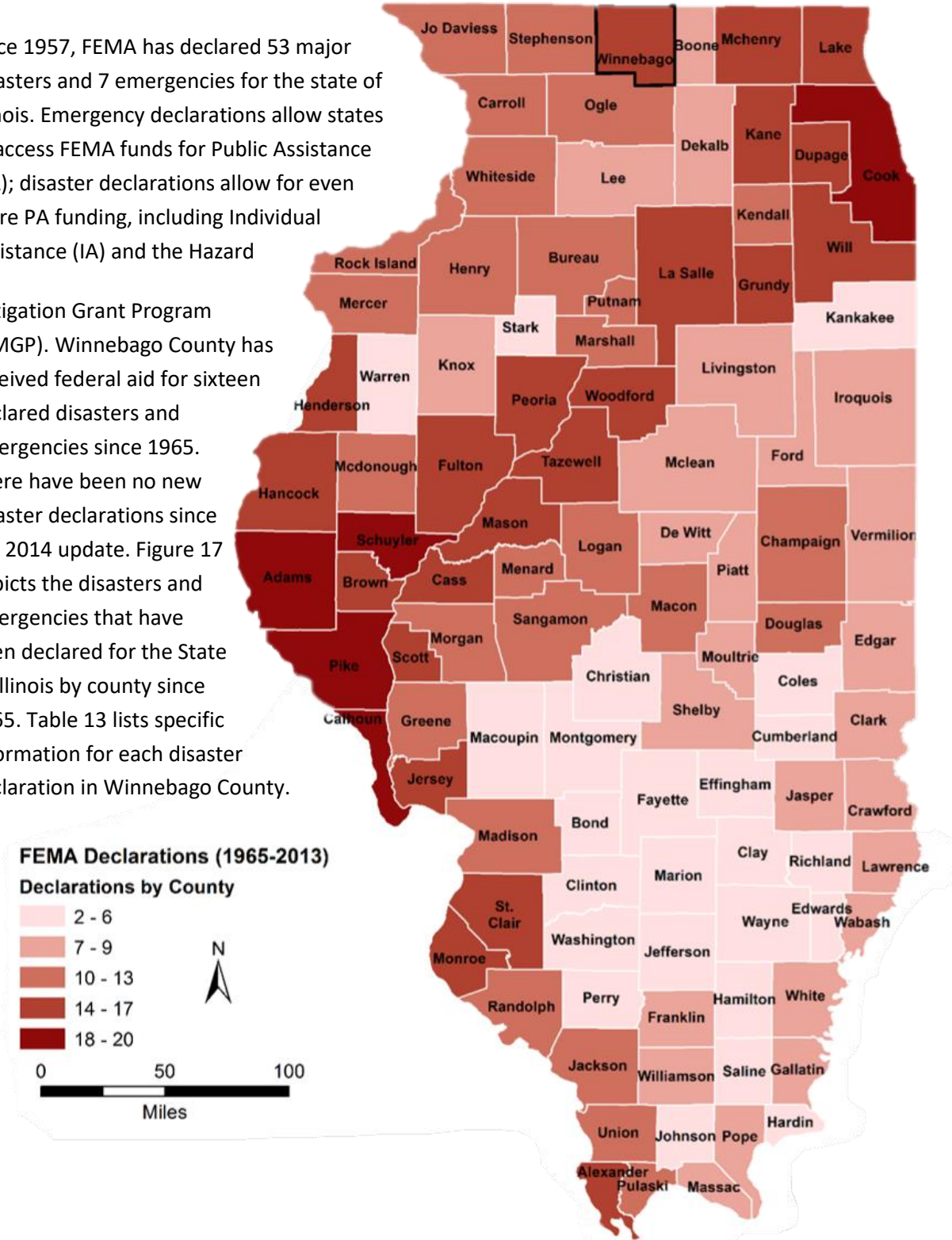


Figure 15: Federal Emergency Management Agency (FEMA) Disaster Declarations by County 1965 to 2013 (2014 MHMP)

Table 13: Federal Emergency Management Agency (FEMA) Disaster Declarations for Winnebago County since 1965

DECLARATION NUMBER	DATE OF DECLARATION	DESCRIPTION
227	4/25/1967	TORNADOES
373	4/26/1973	SEVERE STORMS AND FLOODING
438	6/10/1974	SEVERE STORMS AND FLOODING
3068	1/16/1979	BLIZZARDS AND SNOWSTORMS
997	7/9/1993	SEVERE STORMS AND FLOODING
1129	7/25/1996	SEVERE STORMS AND FLOODING
3134	1/8/1999	WINTER STORM
3161	1/17/2001	WINTER STORMS
3230	9/7/2005	HURRICANE KATRINA EVACUATION
3269	12/29/2006	SNOW
1722	8/30/2007	SEVERE STORMS AND FLOODING
3283	3/13/2008	RECORD SNOW AND NEAR RECORD SNOW
1771	6/24/2008	SEVERE STORMS AND FLOODING
1935	8/19/2010	SEVERE STORMS AND FLOODING
1960	3/17/2011	SEVERE WINTER STORM AND SNOWSTORM
4116	5/10/2013	SEVERE STORMS, STRAIGHT-LINE WINDS, AND FLOODING

### Risk Priority Index Number (RPN)

The Risk Priority Index Number (RPN) quantifies risk as a ranked number representative of the product of hazard *severity (S) X probability (P) X detection (D)*. This tool is used to provide partner organizations with a ranking to prioritize mitigation strategies for high-risk-priority hazards. The RPC project team used historical hazard data to determine probability and knowledge of local conditions to determine the possible severity of a hazard; the hazards that were included in the RPN analysis are profiled in Section 7. For the 2019 version, the analysis metrics included: severity (S), probability (P), and detection (D)—affected area was also included but is not factored into the analysis<sup>1</sup>. The RPN represents a comprehensive risk assessment including organizations from the private, public, and non-profit sectors. The three components are weighted independently initially; however, the final RPN (Table 16) is a weighted normalization ranking to offer the RPN as an evaluative measure. The independent organizations are also weighted evenly (i.e., one organization’s ranking is not heavier or lesser than another). Table 14 displays the basic formulas used to calculate the final RPN—including the varied weights to determine the final RPN. Table 15 displays the metrics the project team used to quantify hazard probability and magnitude and the affect area descriptions.

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<sup>1</sup> Affected area was included to understand jurisdictional perception of geographic impact.

Table 14: Risk Priority Index Number (RPN) Matrices: Weighted Breakdown for Calculation

RISK PRIORITY INDEX NUMBER (RPN) METRICS	WEIGHTED (IF APPLICABLE)
UNADJUSTED RPN	SEVERITY (33.33) X PROBABILITY (33.33) X DETECTION (33.33)
ADJUSTED (S)	SEVERITY (60.00) X PROBABILITY (20.00) X DETECTION (20.00)
ADJUSTED (P)	SEVERITY (20.00) X PROBABILITY (60.00) X DETECTION (20.00)
FINAL RPN	ADJUSTED (S) X ADJUSTED (P) X DETECTION (D)

Table 15: Risk Priority Index Number (RPN) Matrices: Severity (S), Probability (P), Detection (D), and Affected Area

**Severity (S)**

1	MINOR	INJURIES TREATABLE WITH ON-SITE FIRST AID; MINOR IMPACT TO QUALITY OF LIFE LOST; SHUTDOWN OF CRITICAL FACILITIES FOR TWENTY-FOUR HOURS OR LESS; LITTLE TO NO PROPERTY DAMAGE IN DISASTER AREA.
2	MODERATE	INJURIES MAY REQUIRE HOSPITAL VISIT; SHUTDOWN OF CRITICAL FACILITIES FOR MORE THAN FIVE DAYS; MULTIPLE PROPERTIES IN DISASTER AREA DAMAGED.
3	CRITICAL	INJURIES REQUIRE HOSPITAL STAY; SHUTDOWN OF CRITICAL FACILITIES FOR MORE THAN TEN DAYS; PROPERTY DAMAGE TO MORE THAN 50% OF DISASTER AREA.
4	EXTREME	SEVERE INJURIES AND MULTIPLE DEATHS; SEVERE IMPACT TO QUALITY OF LIFE; SHUTDOWN OF CRITICAL FACILITIES FOR MORE THAN FIFTEEN DAYS; PROPERTY DAMAGE TO MORE THAN 75% OF DISASTER AREA.

**Probability (P)**

1	UNLIKELY	EVENT IS NOT LIKELY TO OCCUR WITHIN THE NEXT TEN YEARS; HISTORY OF EVENT SHOWS EVENT HAS NOT OCCURRED IN THE LAST TEN YEARS.
2	SOMEWHAT LIKELY	EVENT COULD OCCUR IN THE NEXT FIVE YEARS; HISTORY OF EVENT SHOWS AT LEAST ONE OCCURRENCE IN THE LAST TEN YEARS.
3	LIKELY	EVENT COULD OCCUR IN THE NEXT THREE YEARS; HISTORY OF EVENT SHOWS AT LEAST ONE OCCURRENCE IN THE LAST FIVE YEARS.
4	HIGHLY LIKELY	EVENT WILL LIKELY OCCUR IN THE NEXT YEAR; HISTORY OF EVENT SHOWS AT LEAST ONE OCCURRENCE IN THE LAST FIVE YEARS.

**Detection (D)**

1	POOR	NO CONTROLS IN PLACE TO DETECT FUTURE OCCURRENCES; MINIMAL ABILITY TO FORECAST FUTURE EVENT OCCURRENCE.
2	MODERATE	CONTROLS IN PLACE WILL LIKELY NOT FORECAST FUTURE OCCURRENCES; SMALL ADVANCED WARNING OF LESS THAN TEN MINUTES OFFERED TO CITIZENS IN AFFECTED AREA RESULTING IN GREATER INJURIES/DEATHS.
3	GOOD	CONTROLS IN PLACE WILL LIKELY FORECAST FUTURE OCCURRENCES; GREATER ADVANCE WARNING OF AT LEAST TWO HOURS OR MORE WARNING OFFERED TO CITIZENS IN AFFECTED AREA IS ENOUGH TO MINIMIZE INJURIES/DEATHS.
4	EXCELLENT	CONTROLS IN PLACE HAVE PROVEN ABILITY TO FORECAST FUTURE OCCURRENCES WITH MULTIPLE DAY WARNING; INJURIES/DEATHS UNLIKELY.

**Affected Area**

SPECIFIC AREA	DURING HIGH-LEVEL HAZARD EVENT THAT MAY IMPACT THE COUNTY, THIS WOULD BE RESTRICTED A MORE DEFINED AREA OR WOULD BE LOCALIZED (I.E. NEIGHBORHOOD, A STREET).
MULTI-COUNTY	DURING A HIGH-LEVEL HAZARD EVENT THAT MAY IMPACT THE COUNTY, THIS WOULD IMPACT A MUCH LARGER AREA, OFTEN STRETCHING ACROSS COUNTY BORDERS.

The product of hazard severity (S), probability (P), and detection (D) is the RPN. The partner organizations ranked hazards based on the RPN matrix (Table 14), with smaller numbers corresponding to greater risk (i.e., Rank 1 being the highest priority hazard). The major municipality jurisdictional ratings are included below because hazard susceptibility may differ by municipality and these organizations manage the largest concentrations of county residents (Table 17). Table 16 identifies the final RPN for each hazard as an aggregate amount, in addition to affected area perceptions; Table 17 identifies the major municipalities in Winnebago county and their corresponding rankings; Table 18 provides the perceived geographic impact by county.

Table 16: Normalized Jurisdictional Risk Priority Index Number (RPN) Ranking

<b>RPN RANKING – HAZARD</b>
(1) WINTER STORMS
(2) THUNDERSTORM
(3) TORNADOES
(4) FLOODING
(5) DROUGHT/HEAT
(6) EARTHQUAKE
(7) HAZARDOUS MATERIALS STORAGE AND TRANSPORTATION
(8) GROUNDWATER SHORTAGE
(9) DAM/LEVEE FAILURE

Table 17: Normalized Jurisdiction Risk Priority Index Number (RPN) Ranking by Major Jurisdictions<sup>1</sup>

<b>JURISDICTION</b>	<b>F</b>	<b>ST</b>	<b>T</b>	<b>HZ</b>	<b>WS</b>	<b>DH</b>	<b>DL</b>	<b>EQ</b>	<b>GS</b>
WINNEBAGO COUNTY HEALTH DEPARTMENT	1	2	7	6	5	3	4	8	9
WINNEBAGO COUNTY EMERGENCY OPERATIONS CENTER (SHERIFF'S DEPT.)	4	3	1	9	2	5	8	6	7
CITY OF LOVES PARK	3	1	2	4	5	6	8	7	9
CITY OF ROCKFORD	2	3	1	5	4	8	6	7	9
CITY OF SOUTH BELOIT	4	3	2	9	1	5	8	6	7
VILLAGE OF MACHESNEY PARK	1	4	2	6	3	5	7	9	8
VILLAGE OF NEW MILFORD	4	3	2	5	1	7	8	6	9
VILLAGE OF ROCKTON	3	4	5	6	1	2	7	8	9
BOONE-WINNEBAGO COUNTY SCHOOL DISTRICTS	7	2	5	8	1	3	9	6	4

<sup>1</sup> Key: F- Flooding, ST- Thunderstorm, T- Tornado, HZ- Hazardous Materials Storage and Transportation, WS- Winter Storm, DH- Drought/Heat, DL- Dam/Levee Failure, EQ- Earthquake, GS- Groundwater Shortage

Table 18: Perceived Geographic Impact by Hazard Type

HAZARD	GEOGRAPHIC IMPACT
FLOODING	SPECIFIC-AREA
THUNDERSTORM	MULTI-COUNTY
TORNADOES	MULTI-COUNTY
HAZARDOUS MATERIALS STORAGE AND TRANSPORTATION	SPECIFIC-AREA
WINTER STORMS	MULTI-COUNTY
DROUGHT / HEAT	MULTI-COUNTY
DAM/LEVEE FAILURE	SPECIFIC-AREA
EARTHQUAKES	MULTI-COUNTY
GROUNDWATER SHORTAGE	MULTI-COUNTY

### GIS, Hazus-MH, and Regional Economic Modeling Initiative (REMI)

During the 2014 update SIU completed an analysis using GIS and Hazus-MH software. This step in the risk assessment is the risk analysis, which quantifies the risk to the population, infrastructure, and economy of the community. SIU quantified the hazards using GIS analyses and Hazus-MH where possible. This process reflects a Level 2 Hazus-MH analysis. A level 2 Hazus-MH analysis involves substituting selected Hazus-MH default data with local data and improving the accuracy of model predictions.

Depending upon the analysis options and the quality of data the user inputs, Hazus-MH generates a combination of site-specific and aggregated loss estimates. Hazus-MH is not intended as a substitute for detailed engineering studies; it is intended to serve as a planning aid for communities interested in assessing their risk to flood-, earthquake-, and hurricane-related hazards. This plan does not fully document the processes and procedures completed in its development, but this documentation is available upon request.

As part of the 2019 version, the RPC opted to include a forecasted data report that was generated using the available baseline data in the Regional Economic Modeling Initiative (REMI). The REMI model is traditionally used to forecast the economic viability large-scale infrastructure projects or long-term population and economic projections using established, baseline data. As part of an ongoing update at the RPC, there will be the ability to forecast the impact of certain natural disasters on the Region. Due to staff restrictions, the update process, and time constraints, the inclusion of this data prior to the necessary adoption date of the plan made this improbable. However, the RPC project team recommends this as an addendum to the 2019 Winnebago County MHMP as soon as feasible. For the 2019 version the REMI model was utilized for population projections and economic forecasts at the regional level. The REMI model for the RPC Region consists of Boone, Winnebago, and Ogle counties. The project team felt that this was an appropriate addition given the historical reliability of the REMI models. Table 19 indicates the analysis type (i.e. GIS, Hazus-MH, or historical records) used for each hazard assessment.



Table 19: Risk Assessment Tool Used by Hazard Type

<b>HAZARD</b>	<b>RISK ASSESSMENT TOOL(S)</b>
FLOODING	HISTORICAL RECORDS, HAZUS-MH, GIS
THUNDERSTORM	HISTORICAL RECORDS
TORNADOES	HISTORICAL RECORDS, GIS
HAZARDOUS MATERIALS STORAGE AND TRANSPORTATION	HISTORICAL RECORDS, ALOHA (NOAA)
WINTER STORMS	HISTORICAL RECORDS
DROUGHT / HEAT	HISTORICAL RECORDS
DAM/LEVEE FAILURE	HISTORICAL RECORDS
EARTHQUAKES	HISTORICAL RECORDS, HAZUS-MH, GIS
GROUNDWATER SHORTAGE	HISTORICAL RECORDS

## 7 Hazard Profiles<sup>1</sup>

### Flooding

Flooding is a significant natural hazard throughout the United States. As of the date of this plan, FEMA has paid over two million USD in Flood Insurance claims in Illinois since 1978 to approximately 270 claimants<sup>2</sup>. The type, magnitude, and severity of flooding are dependent upon the magnitude and distribution of precipitation over a given area, the rate at which precipitation infiltrates the ground, the geometry and hydrology of the catchment, and flow dynamics and conditions in and along the river channel. Below are definitions of the two common types of flooding in Illinois: Upstream and Downstream floods.

Upstream floods, also called flash floods, occur in the upper parts of drainage basins and are generally characterized by periods of intense rainfall over a short duration. These floods arise with very little warning and often result in locally intense damage, and sometimes loss of life, due to the high energy of the flowing water. Flood waters can snap trees, topple buildings, and easily move large boulders or other structures. Six inches of rushing water can upend a person; another 18 inches might carry off a car. Generally, upstream floods cause severe damage over relatively localized areas. Urban flooding is a type of upstream flood. Urban flooding involves the overflow of storm drain systems and can result from inadequate drainage combined with heavy rainfall or rapid snowmelt. Upstream or flash floods can occur at any time of the year in Illinois, but they are most common in the spring and summer months.

Downstream floods, sometimes called riverine floods, refer to floods on large rivers at locations with large upstream catchments. Downstream floods are typically associated with precipitation events that are of relatively long duration and occur over large areas. Flooding on small tributary streams may be limited, but the contribution of increased runoff may result in a large flood downstream. The lag time between precipitation and time of the flood peak is much longer for downstream floods than for upstream floods, generally providing ample warning for people to move to safe locations and, to some extent, secure some property against damage. Riverine flooding on the large rivers of Illinois generally occurs during either the spring or summer.

### Previous Occurrences of Flooding

The NCEI database reported 62 flooding events in Winnebago County since 1950. The most recent event reported was in March of 2019. The most significant flooding event occurred in 2006. On September 4, 2006 thunderstorms developed over southeast Winnebago County. Some areas of eastern Rockford

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<sup>1</sup> Disclaimer: the majority of the following section (“Hazard Profiles”) was completed by SIU during the 2014 update. The data collected and calculated in this section was done during the 2014 update by SIU; however, the weather data was updated where necessary. The modeling done in GIS and Hazus-MH were completed during the 2014 update; none of the modeling was redone by the RPC project team, excluding the addition of the REMI modeling. The RPC project team concluded that the data and modeling included in this section were within the margin of error for changes within Winnebago County; that is to say, no major developmental changes have occurred within the County since 2014 so this section remained relatively unchanged apart from minor editing and reformatting.

<sup>2</sup> Data sourced from <https://www.fema.gov/policy-claim-statistics-flood-insurance>

received heavy rain for two to three hours. As a result, massive and severe flooding occurred. Most of the flooding occurred in and round the Keith Creek Watershed. Some of the damage included a large section of a concrete drainage ditch that was washed out on Harrison Avenue near 20<sup>th</sup> Street. Hundreds of basements were flooded, fifteen of which suffered structural damage and were deemed uninhabitable. Numerous streets and parking lots were flooded. As much as 4 to 6 feet with cars floating or submerged in the flood waters. Flood waters as deep as nine feet were reported on Alpine Park in downtown Rockford. Dozens of people were rescued from the flood waters and hundreds were evacuated from their homes as flood waters rose. Flood waters rose so fast in some areas that motorists were trapped in their cars until help arrived. At least 70 businesses sustained some level of flood damage. The highest rainfall total reported was 7.50 inches near Cherry Valley and 4.30 inches was reported on the east side of Rockford. Table 20 provides NCEI-recorded flooding events that caused damage, death or injury in Winnebago County. Additional details of individual hazard events are on the NCEI website.

Table 20: NCEI Flooding Events

LOCATION OR COUNTY <sup>1</sup>	DATE	DEATHS	INJURIES	PROPERTY DAMAGE (x \$1000)
WINNEBAGO COUNTY	02/1997	1	0	\$0
ROCKFORD	09/2006	0	0	\$20000
ROSCOE	06/2008	0	0	\$6000
WINNEBAGO	08/2007	0	0	\$2000
ROCKFORD	08/2007	0	0	\$1000
SOUTH BELOIT	07/2010	0	0	\$632
<b>TOTAL:</b>		<b>1</b>	<b>0</b>	<b>\$29,632</b>

### Repetitive Loss Properties

FEMA defines a repetitive loss structure as a structure covered by a contract of flood insurance issued under the NFIP that has suffered flood loss damage on two or more occasions during a 10-year period that ends on the date of the second loss, in which the cost to repair the flood damage is  $\geq$  25% of the market value of the structure at the time of each flood loss.

The IEMA State Hazard Mitigation Plan was referenced to determine the location of repetitive loss structures in Winnebago County. Records indicate that there were 405 total losses (severe repetitive loss and unmitigated repetitive loss properties) within the county as of 2018. The total amount paid for related damage and deconstruction of these repetitive loss structures is \$7,803,811.01. Table 21 describes the repetitive loss structures for each municipality as of 2018. In addition to the number of repetitive loss properties in Winnebago County – these properties were identified by type. Table 22 identifies these properties by single-family, multi-family, manufactured home, or vacant lot as of 2018.

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<sup>1</sup> NCEI records are estimates of damage compiled by the National Weather Service from various local, state, and federal sources. However, these estimates are often preliminary in nature and may not match the final assessment of economic and property losses related to a given weather event.

Table 21: Identified Repetitive Loss Properties in Winnebago County by Jurisdiction (2018)

JURISDICTION	SEVERE REPETITIVE LOSS (SRL)	UNMITIGATED REPETITIVE LOSS (URL)	TOTAL LOSSES (SRL+URL)	TOTAL PAID (SRL+URL)
	NUMBER OF PROPERTIES	NUMBER OF PROPERTIES		
MACHESNEY PARK	2	35	104	\$1,827,496.83
ROCKFORD	2	78	176	\$4,199,831.96
ROSCOE	-	8	8	\$30,188.89
SOUTH BELOIT	-	2	1	\$8,521.40
WINNEBAGO COUNTY	2	28	116	\$1,737,771.93
<b>TOTALS:</b>	<b>6</b>	<b>151</b>	<b>405</b>	<b>\$7,803,811.01</b>

\*indicative of properties as of 2018.

Table 22: Identified Repetitive Loss Properties Acquired through Hazard Mitigation Funding in Winnebago County by Jurisdiction (2018)

	ROCKFORD	MACHESNEY PARK	ROSCOE	TOTALS
SINGLE-FAMILY	61	26	-	<b>87</b>
MULTI-FAMILY	16	-	-	<b>16</b>
MANUFACTURED HOME	16	-	-	<b>16</b>
VACANT LOT	4	2	1	<b>7</b>

\*indicative of properties as of 2018.

### Geographic Location of Flooding

Flood damage in Winnebago County results from three types of floods. Floods on the Rock River generally are associated with spring snowmelt combined with ice jams and rain storms. Floods on the Pecatonica River system generally are caused by spring snowmelt combined with rainfall. Floods on the much smaller tributaries of the Rock River in Winnebago County are usually caused by intense thunderstorms which occur in the late summer, or early fall.

The majority of flood problems in Winnebago County occur in the areas near the Cities of Rockford, Loves Park, and Machesney Park. Flood peaks have been increased by recent urbanization of uplands. Urbanization often is accompanied by floodplain filling or encroachment which reduces the channel conveyance capacity and increases the rainfall runoff. Increased flooding on the main channels can produce backwater effects up tributaries thus increasing the flood hazard. Additional flood runoff is unable to flow through restricted culverts and bridges which often are clogged with sediment and debris from new construction.

### Hazard Extent for Flooding

All floodplains are susceptible to flooding in Winnebago County. The floodplain of concern is for the 100-year flood event which is defined as areas that have a 1% change of flooding in any given year. However, flooding is dependent on various local factors including, but not limited to, impervious surfaces, amount of precipitation, river-training structures, etc.

### Risk Identification for Flood Hazard

Based on historical information, future occurrence of some kind of flooding event in Winnebago County is probable. According to the Risk Priority Index Number (RPN) and County input, flooding is ranked as the number four hazard.

<b>HAZARD</b>	<b>RISK PRIORITY INDEX NUMBER (RPN) RANKING</b>
FLOODING	4

### Hazus-MH Flood Analysis Using User-Defined Building Inventory

SIU used Hazus-MH to generate the flood depth grid for a 100-year return period and made calculations by clipping the United States Geologic Survey (USGS) one-third-arc-second DEM (~10 m) to the flood boundary. Next, SIU used Hazus-MH to estimate the damages for Winnebago County by utilizing a detailed building inventory database created from assessor and parcel data. According to this analysis, there are 2,719 buildings located in the Winnebago County 100-year floodplain. The estimated damage to these structures is \$289,944,020. Figure 18 depicts the building inventory within the 100-year floodplain and Table 23 shows the loss estimates by building type.

Table 23: Building Loss Estimates by Type for Buildings in 100-year Floodplain

BUILDING TYPE	NUMBER OF STRUCTURES	ESTIMATED BUILDING RELATED LOSSES
RESIDENTIAL	2281	\$155,978,404
COMMERCIAL	177	\$44,079,240
INDUSTRIAL	118	\$51,936,921
AGRICULTURAL	132	\$36,872,630
RELIGIOUS	7	\$1,068,478
GOVERNMENT	4	\$8,345
EDUCATION	0	\$0
<b>TOTAL:</b>	<b>2719</b>	<b>\$289,944,020</b>

# Residential Parcels in Flood Zones - Winnebago County, IL

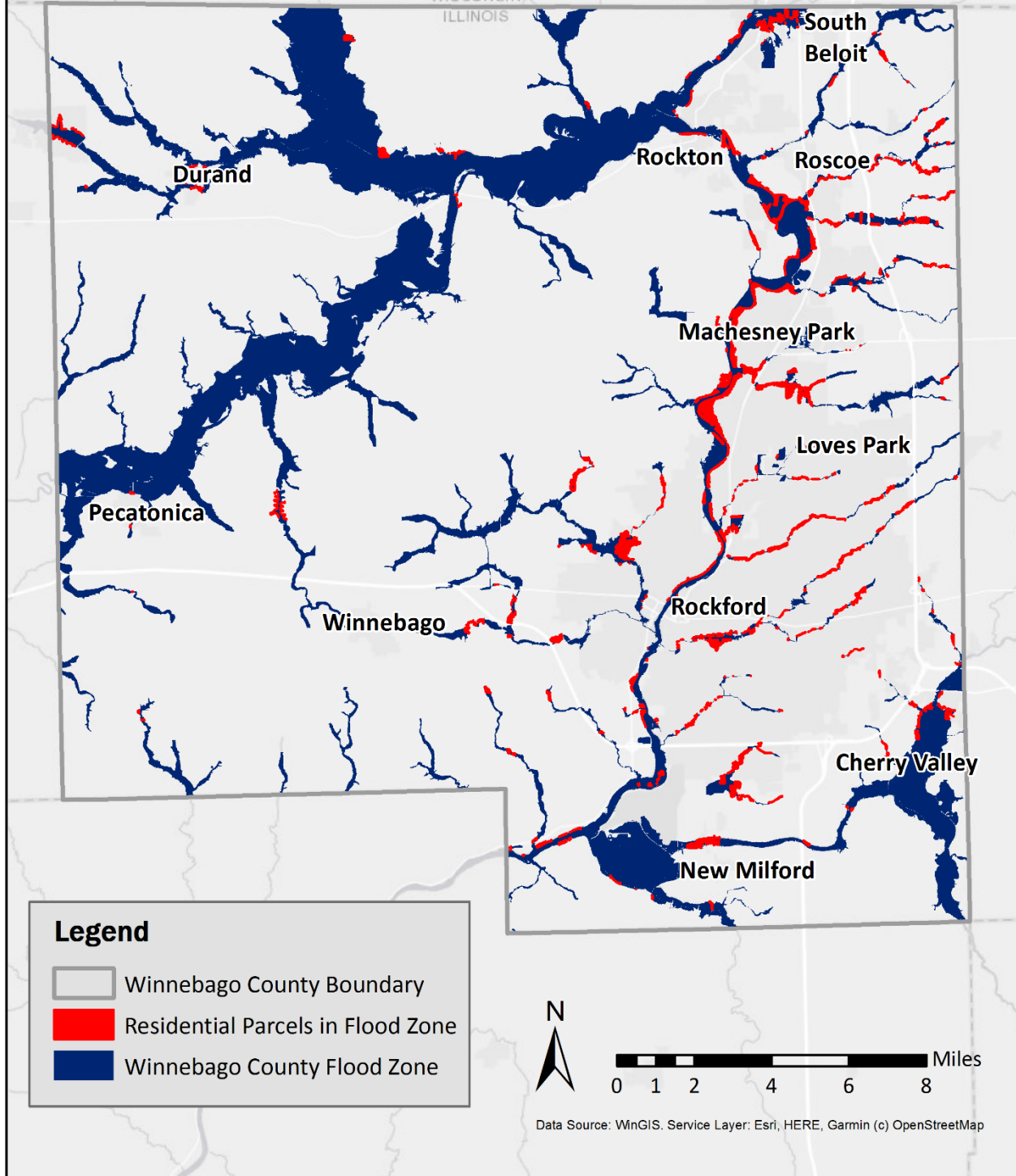


Figure 16: GIS Analysis of Winnebago County Residential Buildings within a Floodplain (2019)

## Critical Facilities

All critical facilities within the floodplain are vulnerable to floods. An essential facility will encounter many of the same impacts as other buildings within the flood boundary. These impacts can include structural failure, extensive water damage to the facility, and loss of facility functionality (e.g., a damaged police station cannot serve the community). Tables 5, 6, and 7 include a list of the essential facilities in Winnebago County and Figure 11 displays a large format map of the locations of all critical facilities within the county.

## Infrastructure

The types of infrastructure potentially impacted by a flood include roadways, utility lines/pipes, railroads, and bridges. Since an extensive inventory of the infrastructure is not available for this plan, it is important to emphasize that a flood could damage any number of these items. The impacts to these items include: broken, failed, or impassable roadways; broken or failed utility lines (e.g., loss of power or gas to community); or railway failure from broken or impassable railways. Bridges could also fail or become impassable, causing risk to motorists.

## Essential Facilities Damage

Of the essential facilities located in Winnebago County, a number of them are located within a floodplain. Those located within a floodplain are especially susceptible to damage during storm events. Table 24 highlights the facilities by type that are located in floodplains and Figure 12 maps these within Winnebago County.

Table 24: Winnebago County Critical Facilities in a Floodplain (Calculated using GIS)

FACILITY	NAME	CITY
CITY/VILLAGE HALL	NEW MILFORD VILLAGE HALL	ROCKFORD
	SOUTH BELOIT CITY HALL	SOUTH BELOIT
DAYCARE	SALVATION ARMY	ROCKFORD
DEPT. OF MOTOR VEHICLES	SECRETARY OF STATE	ROCKFORD
ELEMENTARY SCHOOL	ST PETER CATHOLIC SCHOOL	SOUTH BELOIT
FIRE STATION	SOUTH BELOIT FIRE STATION	SOUTH BELOIT
	OLD FIRE DEPARTMENT / SOUTH BELOIT	SOUTH BELOIT
	NEW MILFORD FIRE PROTECTION DISTRICT	NEW MILLFORD
GOVERNMENTAL, OTHER	PUBLIC AID DEPT	ROCKFORD
	CHERRY VALLEY PUBLIC WORKS GARAGE	CHERRY VALLEY
	WCHD - LIFE CENTER	ROCKFORD
	POST 80	ROCKFORD
MEDICAL OFFICE	ROCK VALLEY ANESTHESIOLOGISTS	ROCKFORD
	MINUTECLINIC	LOVES PARK
MIDDLE/JUNIOR HIGH SCHOOL	EISENHOWER MIDDLE SCHOOL	ROCKFORD
MILITARY	NATIONAL GUARD ARMORY	MACHESNEY PARK
POLICE STATION	SOUTH BELOIT POLICE	SOUTH BELOIT
SANITATION UTILITY	SOUTH BELOIT PARK CONCESSION BUILDING	SOUTH BELOIT
	SOUTH BELOIT PARK GARAGE / STORAGE	SOUTH BELOIT
	SOUTH BELOIT PARK / BABY BUILDING	SOUTH BELOIT
	SOUTH BELOIT PARK / KINDERGARTEN BUILDING	SOUTH BELOIT
	HAZARDOUS WASTE DROP OFF SITE	ROCKFORD
	LIFT STATION 4 SAELENS PARK	DURAND

### Vulnerability Analysis for Flash Flooding

Flash flooding could affect any low-lying location or areas of poor drainage within the county; therefore, a significant portion of the county’s population and buildings are vulnerable to a flash flood. These structures can expect the same impacts as discussed in a riverine flood.

### Suggestions for Community Development Trends

Reducing floodplain development is crucial to reducing flood-related damages. Areas with recent development may be more vulnerable to drainage issues. Storm drains and sewer systems are usually most susceptible to drainage issues. Damage to these can cause back-up of water, sewage, and debris into homes and basements, causing structural and mechanical damage as well as creating public health hazards and unsanitary conditions.



## Thunderstorm

Severe thunderstorms are weather events with one or more of the following characteristics: strong winds, large and damaging hail, and frequent lightning. Severe thunderstorms most frequently occur in Illinois during the spring and summer months, but can occur at any time. A severe thunderstorm's impacts can be localized or can be widespread in nature. A thunderstorm is classified as severe when it meets one or more of the following criteria:

- Hail 0.75 inches or greater in diameter
- Frequent and dangerous lightning
- Wind speeds greater than or equal to 58 miles per hour

## Hail

Hail is a possible product of a strong thunderstorm. Hail usually falls near the center of a storm, but strong winds occurring at high altitudes in the thunderstorm can blow the hailstones away from the storm center, resulting in damage in other areas near the storm. Hailstones range from pea-sized to baseball-sized, and some reports note hailstones larger than softballs.

## Lightning

Lightning is a discharge of electricity from a thunderstorm. Lightning is often perceived as a minor hazard, but lightning damages many structures and kills or severely injures numerous people in the United States each year.

## Severe Winds (Straight-Line Winds)

Straight-line winds from thunderstorms are fairly common in Illinois. Straight-line winds can cause damage to homes, businesses, power lines, and agricultural areas, and may require temporary sheltering of individuals who are without power for extended periods of time.

## Previous Occurrences of Thunderstorm Hazards

The NCEI database reported 235 thunderstorm events in Winnebago County since 1950. Hailstorms occur nearly every year in the late spring and early summer months. The most recent reported occurrence was on May of 2018, when powerful severe thunderstorms moved across northern Illinois on producing large hail and damaging winds; the hail was primarily concentrated in Southeast Rockford. The NCEI database reported no occurrences of significant hail storms (such as those that cause death damage or injury) in Winnebago County.

## Previous Occurrences of Lightning Events

The NCEI database reported eight lightning events in Winnebago County since 1950. The most recent reported event was on May of 2011, when a line of thunderstorms moved across parts of northeast and eastern Illinois during the morning hours of May 25<sup>th</sup> producing a tornado near St. Anne as well as heavy rain and some flooding. Table 25 identifies NCEI-recorded lightning that caused damage, death, or injury in Winnebago County. Additional details of individual hazard events are on the NCEI website.

Table 25: NCEI Lighting Events

LOCATION OR COUNTY	DATE	DEATHS	INJURIES	PROPERTY DAMAGE <sup>1</sup>
EAST ROCKFORD	04/2008	0	0	\$1K
PECATONICA	06/2009	0	0	\$10K
SEWARD	05/2011	0	0	\$10K
LOVES PARK	11/2010	0	0	\$20K
HARLEM	05/2011	0	0	\$400K
ROSCOE	07/2010	0	0	\$50K
WINNEBAGO COUNTY	09/2006	0	0	\$50K
<b>TOTAL:</b>		0	0	\$541K

### Previous Occurrences of High Wind Events

The NCEI database reported 21 high wind events in Winnebago County since 1950. The most recent reported event was in February of 2019, when Very strong and gusty winds developed during the morning hours of February 24th and continued into the evening hours. Wind gusts between 55 mph and 65 mph were common during this time period which resulted in numerous tree limbs and power lines being blown down. Some roof and structural damage was observed. Table 26 identifies selected NCEI-recorded wind storms that caused major damage, death, or injury in Winnebago County. Additional details of individual hazard events are on the NCEI website.

Table 26: NCEI High Wind Events

LOCATION	DATE	DEATHS	INJURIES	PROPERTY DAMAGE
<b>WINNEBAGO COUNTY (ZONE<sup>2</sup>)</b>	05/30/2008	0	0	\$10K
	10/26/2010	0	0	\$100K
	10/27/2010	0	0	\$10K
	03/16/2016	0	0	\$1K
	03/08/2017	0	0	\$25K
<b>TOTALS:</b>		0	0	\$146K

### Geographic Location of Thunderstorm Hazard

The entire county has the same risk for occurrence of thunderstorms. They can occur at any location within the county.

<sup>1</sup> NCEI records are estimates of damage compiled by the National Weather Service from various local, state, and federal sources. However, these estimates are often preliminary in nature and may not match the final assessment of economic and property losses related to a given weather event.

<sup>2</sup> Zone is defined as: "a region or area set off as distinct from surrounding or adjoining parts."

## Hazard Extent for Thunderstorm Hazard

The extent of the historical thunderstorms depends upon the extent of the storm, the wind speed, and the size of hail stones. Thunderstorms can occur at any location within the county. Thunderstorms are often forecasted in advance by the NWS; however, weather can still be unpredictable and weather events can occur without warning. Based on historical information, the occurrence of future high winds, hail, and lightning is probable. There were over 200 events since 1950 and that only counts events that were reported as *severe*. The county should expect high winds, hail, and lightning of widely varying magnitudes in the future.

### Risk Identification for Thunderstorm Hazard

Based on historical information, future occurrence of some kind of thunderstorm event in Winnebago County is likely. According to the Risk Priority Index Number (RPN) and County input, thunderstorms are ranked as the number two hazard.

HAZARD	RISK PRIORITY INDEX NUMBER (RPN) RANKING
THUNDERSTORM	2

## Vulnerability Analysis for Thunderstorm Hazard

The entire county's population and all buildings are vulnerable to a severe thunderstorm and can expect the same impacts within the affected area. This plan will therefore consider all buildings located within the county as vulnerable.

### Critical Facilities

All critical facilities are vulnerable to severe thunderstorms. A critical facility will encounter many of the same impacts as any other building within the municipality. These impacts include structural failure, damaging debris (trees or limbs), roofs blown off or windows broken by hail or high winds, fires caused by lightning, and loss of building functionality (e.g., a damaged police station cannot serve the community). Table 5, 6, and 7 includes a list of the essential facilities in Winnebago County and Figure 11 displays a large format map of the locations of all critical facilities within the county.

### Building Inventory

Table 27 displays the building exposure in terms of types and numbers of buildings for the entire county. The buildings within the county can expect impacts similar to those discussed for critical facilities. These impacts include structural failure, damaging debris (trees or limbs), roofs blown off or windows broken by hail or high winds, fires caused by lightning, and loss of building functionality (e.g., a person cannot inhabit a damaged home, causing residents to seek shelter).

Table 27: Building Exposure by Type for Winnebago County

GENERAL OCCUPANCY	ESTIMATED TOTAL BUILDINGS	TOTAL BUILDING EXPOSURE
RESIDENTIAL	61,248	\$17,362,426,152
AGRICULTURE	2,207	\$3,255,071,022
COMMERCIAL	1,437	\$2,630,557,920
EDUCATION	563	\$259,207,317
GOVERNMENT	62	\$46,241,928
RELIGION	11	\$1,900,647
INDUSTRIAL	6	\$11,417,643
<b>TOTAL:</b>	<b>65,534</b>	<b>\$23,566,822,629</b>

## Infrastructure

A severe thunderstorm could impact roadways, utility lines/pipes, railroads, and bridges. Since the county’s entire infrastructure is vulnerable, it is important to emphasize that a severe thunderstorm could damage any number of these structures. The impacts to these structures include broken, failed, or impassable roadways; broken or failed utility lines (e.g., loss of power or gas to community); or impassable railways. Bridges could become impassable causing risk to motorists.

## Potential Dollar Losses for Thunderstorm Hazard

RPC determined that Winnebago County has incurred \$6,248,000 million USD in damages relating to thunderstorms, including hail, lightning, and high winds since 1950. NCEI records are estimates of damage compiled by the National Weather Service from various local, state, and federal sources. However, these estimates are often preliminary in nature and may not match the final assessment of economic and property losses related to a given weather event. As a result, RPC cannot reliably constrain potential dollar losses for a future event; however, based on average property damage in the past decade, SIU estimated that Winnebago County incurs property damages of approximately \$90,550 per year related to severe thunderstorms.

## Vulnerability to Future Assets/Infrastructure for Thunderstorm Hazard

All future development within the county and all communities will remain vulnerable to these events.

## Suggestions for Community Development Trends

Local officials will enhance severe storm preparedness if they sponsor a wide range of programs and initiatives to address the overall safety of county residents. The county needs to build new structures with more sturdy construction, and harden existing structures to lessen the potential impacts of severe weather. The construction of new in addition to the existing warning sirens will warn the community of approaching storms to ensure the safety of Winnebago County residents.

## Tornado

Tornadoes are violently rotating columns of air extending from thunderstorms to the ground. Funnel clouds are rotating columns of air not in contact with the ground; however, the violently rotating column of air can reach the ground quickly and become a tornado. If the funnel cloud picks up and blows debris, it has reached the ground and is a tornado.

Tornadoes are a significant risk to Illinois and its citizens. Tornadoes can occur at any time on any day. The unpredictability of tornadoes makes them one of Illinois' most dangerous hazards. Tornado winds are violently destructive in developed and populated areas. Current estimates place maximum wind velocity at about 300 miles per hour, but higher values can occur. A wind velocity of 200 miles per hour results in a pressure of 102.4 pounds per square foot—a load that exceeds the tolerance limits of most buildings. Thus, it is easy to understand why tornadoes can devastate the communities they hit.

Tornadoes are classified according to the Enhanced Fujita tornado intensity scale. The Enhanced Fujita scale ranges from intensity EF0, with effective wind speeds of 40 to 70 miles per hour, to EF5 tornadoes, with effective wind speeds of over 260 miles per hour. Table 28 outlines the Enhanced Fujita intensity scale.

Table 28: Enhanced Fujita Scale for Tornadoes

ENHANCED FUJITA NUMBER	ESTIMATED WIND SPEED	PATH WIDTH	PATH LENGTH	DESCRIPTION OF DESTRUCTION
0 GALE	40-72 MPH	6-17 YARDS	0.3-0.9 MILES	LIGHT DAMAGE, SOME DAMAGE TO CHIMNEYS, BRANCHES BROKEN, SIGNBOARDS DAMAGED, SHALLOW-ROOTED TREES BLOWN OVER.
1 MODERATE	73-112 MPH	18-55 YARDS	1.0-3.1 MILES	MODERATE DAMAGE, ROOF SURFACES PEELED OFF, MOBILE HOMES PUSHED OFF FOUNDATIONS, ATTACHED GARAGES DAMAGED.
2 SIGNIFICANT	113-157 MPH	56-175 YARDS	3.2-9.9 MILES	CONSIDERABLE DAMAGE, ENTIRE ROOFS TORN FROM FRAME HOUSES, MOBILE HOMES DEMOLISHED, BOXCARS PUSHED OVER, LARGE TREES SNAPPED OR UPROOTED.
3 SEVERE	158-206 MPH	176-566 YARDS	10-31 MILES	SEVERE DAMAGE, WALLS TORN FROM WELL-CONSTRUCTED HOUSES, TRAINS OVERTURNED, MOST TREES IN FORESTS UPROOTED, HEAVY CARS THROWN ABOUT.
4 DEVASTATING	207-260 MPH	0.3-0.9 MILES	32-99 MILES	COMPLETE DAMAGE, WELL-CONSTRUCTED HOUSES LEVELED, STRUCTURES WITH WEAK FOUNDATIONS BLOWN OFF FOR SOME DISTANCE, LARGE MISSILES GENERATED.
5 INCREDIBLE	261-318 MPH	1.0-3.1 MILES	100-315 MILES	FOUNDATIONS SWEEPED CLEAN, AUTOMOBILES BECOME MISSILES AND THROWN FOR 100 YARDS OR MORE, STEEL-REINFORCED CONCRETE STRUCTURES BADLY DAMAGED.

## Previous Occurrences of Tornadoes

The NCEI database reported 16 tornadoes in Winnebago County since 1950. The most recent recorded event occurred on June of 2017, when an EF-1 tornado with maximum winds of 100 mph touched down west of the intersection of Huber and Genoa Roads and lifted east of the intersection of Huber and Fern Hill Roads. The tornado was on the ground for 1.6 miles. Damage was mainly to trees with a few homes experiencing property damage. Table 29 identifies NCEI-recorded tornadoes that caused damage, death, or injury in Winnebago County. Additional details of individual hazard events are on the NCEI website.

Table 29: NCEI Tornado Events

LOCATION	DATE	FUJITA SCALE	DEATHS	INJURIES	PROPERTY DAMAGE <sup>1</sup>
WINNEBAGO CTY.	08/30/1958	F2	0	0	25.00K
	06/11/1967	-	0	0	25.00K
	08/17/1979	F2	0	0	250.00K
	08/28/1990	F1	0	0	25.00K
HARLEM	11/22/2010	EF2	0	6	5.000M
SEWARD	05/22/2011	EF1	0	0	100.00K
SOUTH BELOIT	05/22/2011	EF1	0	0	15.00K
<b>TOTALS:</b>			0	6	5.440M

## Geographic Location for Tornado Hazard

The entire county has the same risk of tornado occurrence. Tornadoes can occur at any location within the county.

## Hazard Extent for Tornado Hazard

Historical tornadoes generally moved from southwest to northeast across the county. The extent of the hazard varies in terms of the size of the tornado, its path, and its wind speed.

### Risk Identification for Tornado Hazard

Based on historical information, future occurrence of some kind of tornado event in Winnebago County is probable. According to the Risk Priority Index Number (RPN) and County input, tornado is ranked as the number three hazard.

HAZARD	RISK PRIORITY INDEX NUMBER (RPN) RANKING
TORNADO	3

## GIS-based Tornado Analysis

SIU conducted two tornado scenarios for Winnebago County: (1) City of Rockford and Village of Cherry Valley and (2) City of Rockford and City of Loves Park. The following analysis quantifies the anticipated

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<sup>1</sup> NCEI records are estimates of damage compiled by the National Weather Service from various local, state, and federal sources. However, these estimates are often preliminary in nature and may not match the final assessment of economic and property losses related to a given weather event.

impacts of tornadoes in the county in terms of numbers and types of buildings and infrastructure damaged. SIU used GIS-overlay modeling (Buffered Zonal Analysis) to determine the potential impacts of an F4 tornado. The analysis used a hypothetical path based upon the F4 tornado event that runs for 13.1 miles through the City of Rockford and Village of Cherry and 14.7 miles through the City of Rockford and City of Loves Park. Table 30 depicts estimated damage impacts and path widths utilized for the modeled scenario. The damage curve is based on conceptual wind speeds, path winds, and path lengths from the Enhanced-Fujita Scale guidelines.

Table 30: GIS Tornado Analysis of Damage Width and Amount

<b>FUJITA SCALE</b>	<b>PATH WIDTH (FEET)</b>	<b>MAXIMUM EXPECTED DAMAGE</b>
5	2,400	100%
4	1,800	100%
3	1,200	80%
2	600	50%
1	300	10%
0	150	0%

Degrees of damage depend on proximity to the path centerline within a given tornado path. The most intense damage occurs within the center of the damage path, with decreasing amounts of damage away from the center. To model the F4 tornado, SIU used GIS to create the desired tornado path and subsequently add buffers (damage zones) around the tornado path. Figure 19 and Table 31 illustrate the zone analysis. Figure 18 depicts the selected hypothetical tornado paths.

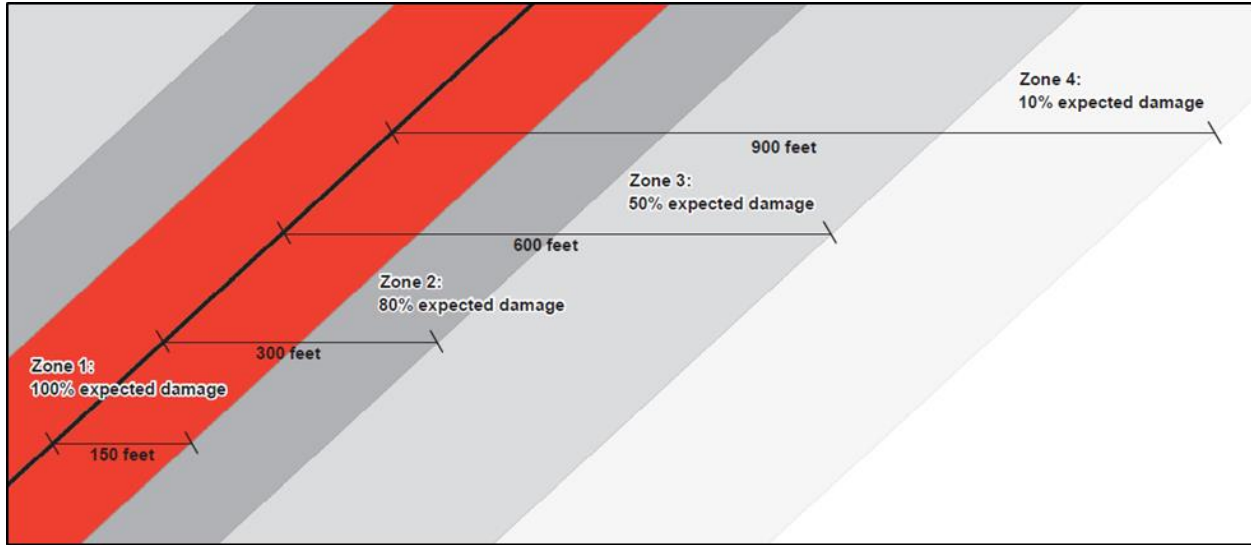


Figure 17: Buffered Analysis done using GIS (Graphic)

Table 31: Buffered Analysis done using GIS (metrics)

ZONE	BUFFER (FEET)	DAMAGE CURVE
1	0-150	100%
2	150-300	80%
3	300-600	50%
4	600-900	10%



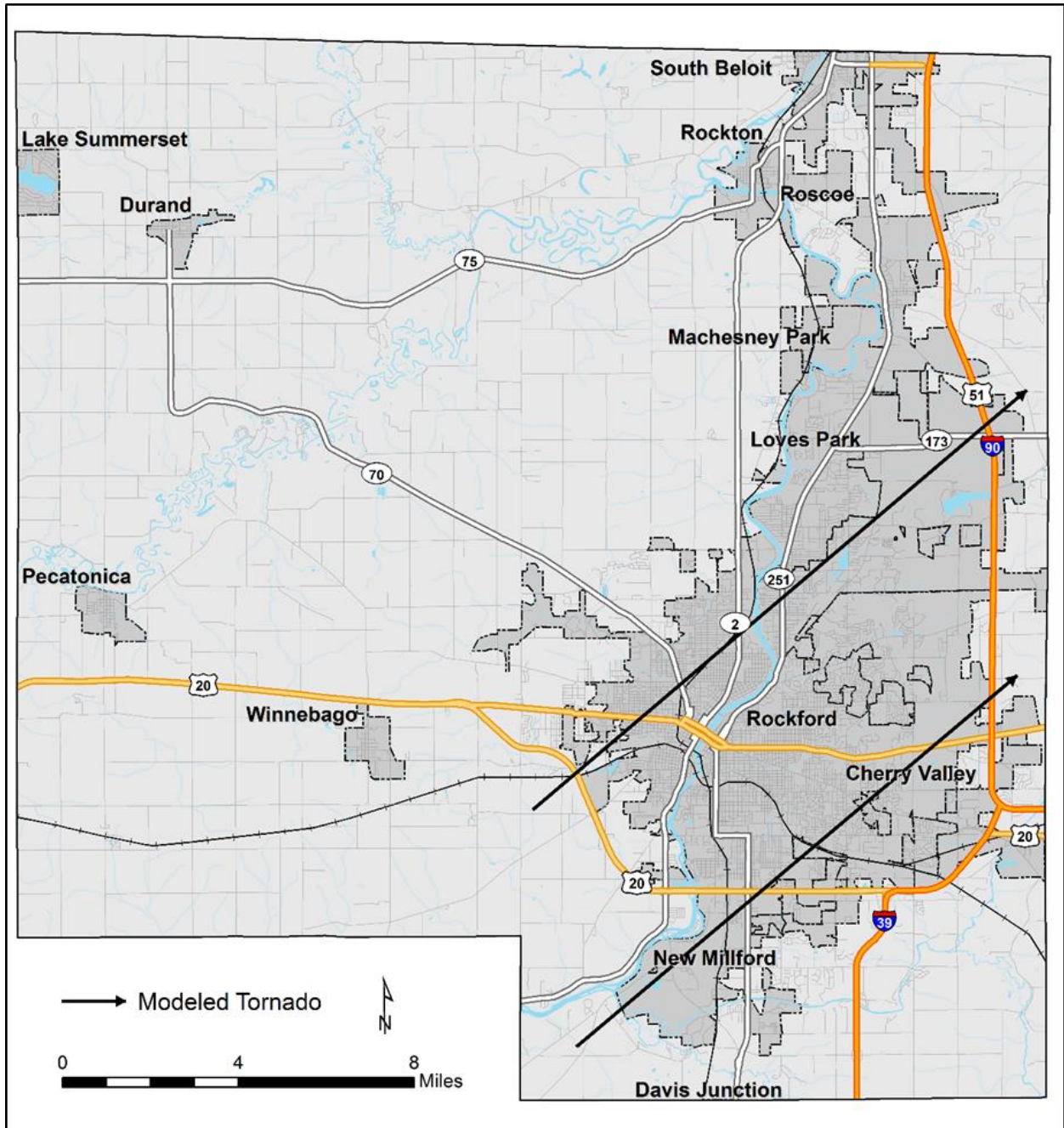


Figure 18: Buffered Analysis done using GIS (Map)

### Modeled Impacts of a F4 Tornado in Rockford and Cherry Valley

Table 32 and Figure 19 show the results of the tornado analysis for the City of Rockford and the village of Cherry Valley. The GIS analysis estimates that the modeled tornado would damage 2,196 buildings. The estimated building losses are over \$523,554,001. The building losses are an estimate of building replacement costs multiplied by the damage percent.

Table 32: Estimated Building Loss by Occupancy Type in Rockford and Cherry Valley

OCCUPANCY	ZONE 1	ZONE 2	ZONE 3	ZONE 4
RESIDENTIAL	\$77,542,482	\$70,959,226	\$86,932,326	\$16,968,646
COMMERCIAL	\$58,508,910	\$95,975,071	\$54,243,788	\$10,621,774
INDUSTRIAL	\$9,306,708	\$6,989,962	\$30,231,306	\$2,690,035
AGRICULTURAL	\$279	\$0	\$924,516	\$55,230
RELIGIOUS	\$0	\$1,603,742	\$0	\$0
GOVERNMENT	\$0	\$0	\$0	\$0
EDUCATION	\$0	\$0	\$0	\$0
<b>TOTAL:</b>	<b>\$145,358,379</b>	<b>\$175,528,001</b>	<b>\$172,331,936</b>	<b>\$30,335,686</b>

### Modeled Impacts of a F4 Tornado in Rockford and Loves Park

Table 33 and Figure 19 show the results of the tornado analysis for the City of Rockford and the City of Loves Park. The GIS analysis estimates that the modeled tornado would damage 3,537 buildings. The estimated building losses are over \$371,490,921. The building losses are an estimate of building replacement costs multiplied by the damage percent.

Table 33: Estimated Building Loss by Occupancy Type in Rockford and Loves Park

OCCUPANCY	ZONE 1	ZONE 2	ZONE 3	ZONE 4
RESIDENTIAL	\$69,373,308	\$62,596,541	\$77,337,876	\$19,212,050
COMMERCIAL	\$13,081,860	\$11,500,474	\$23,988,231	\$4,342,474
INDUSTRIAL	\$44,108,916	\$23,933,318	\$12,035,358	\$4,632,496
AGRICULTURAL	\$639,477	\$4,292,690	\$249,192	\$0
RELIGIOUS	\$0	\$155,959	\$0	\$0
GOVERNMENT	\$0	\$0	\$0	\$0
EDUCATION	\$0	\$0	\$10,701	\$0
<b>TOTAL:</b>	<b>\$127,203,561</b>	<b>\$102,478,982</b>	<b>\$113,621,358</b>	<b>\$28,187,019</b>

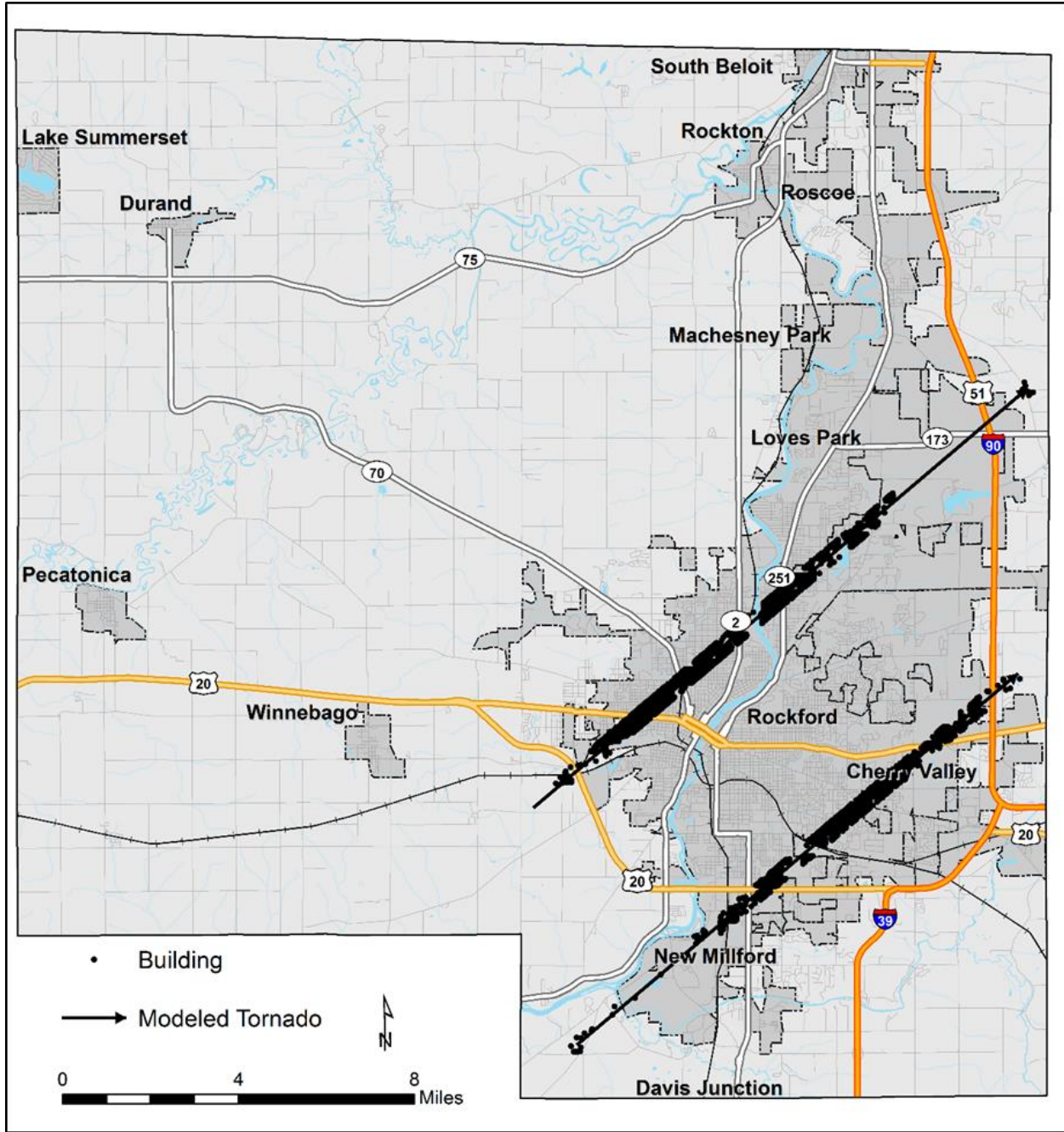


Figure 19: GIS Tornado Analysis Modeling Rockford and Loves Park (Top); Rockford and Cherry Valley (Bottom)

### Vulnerability Analysis for Tornado Hazard

Tornadoes can occur within any area in the county; therefore, the entire county population and all buildings are vulnerable to tornadoes. To accommodate this risk, this plan considers all buildings located within the county as vulnerable.

## Critical Facilities

All critical facilities are vulnerable to tornadoes. A critical facility is susceptible to many of the same impacts as any other building within the municipality. These impacts vary based on the magnitude of the tornado but can include structural failure, damaging debris (trees or limbs), roofs blown off or windows broken by hail or high winds, and loss of facility functionality (e.g., a damaged police station will no longer be able to serve the community). Tables 5, 6, and 7 include a list of the essential facilities in Winnebago County and Figure 11 displays a large format map of the locations of all critical facilities within the county.

## Building Inventory

The buildings within the county can all expect the same impacts, similar to those discussed for critical facilities. These impacts include structural failure, damaging debris (trees or limbs), roofs blown off or windows broken by hail or high winds, and loss of building function (e.g., damaged home will no longer be habitable, causing residents to seek shelter).

## Infrastructure

The types of infrastructure that could be impacted during a tornado include roadways, utility lines/pipes, railroads, and bridges. Since the county's entire infrastructure is vulnerable, it is important to emphasize that any number of these structures could become damaged during a tornado. The impacts to these structures include broken, failed, or impassable roadways, broken or failed utility lines (e.g., loss of power or gas to community), and railway failure from broken or impassable rail lines. Bridges could fail or become impassable, causing risk to motorists.

## Vulnerability to Future Assets/Infrastructure for Tornado Hazard

The entire population and all buildings are at risk because tornadoes can occur anywhere within the state, at any time. Furthermore, any future development in terms of new construction within the county is at risk. All critical facilities in the county are at risk. Tables 5, 6, and 7 include a list of the essential facilities in Winnebago County and Figure 11 displays a large format map of the locations of all critical facilities within the county.

## Suggestions for Community Development Trends

Local officials will enhance severe storm preparedness if they sponsor a wide range of programs and initiatives to address the overall safety of county residents. As advanced warning systems are developed throughout time, the county should prioritize their investment into these. The county needs to build new structures with more sturdy construction, and harden existing structures to lessen the potential impacts of severe weather. The continued investment in newer and more advanced warning systems in combination with existing systems will ensure the community receives ample warning time for approaching storms to ensure the safety of Winnebago County residents.

## Hazardous Material Storage and Transportation

Illinois has numerous active transportation lines that run through many of its counties. Active railways transport harmful and volatile substances across county and state lines every day. Transporting chemicals and substances along interstate routes is commonplace in Illinois. The rural areas of Illinois have considerable agricultural commerce, meaning transportation of fertilizers, herbicides, and pesticides is common on rural roads. These factors increase the chance of hazardous material releases and spills throughout the state of Illinois.

The release or spill of certain substances can cause an explosion. Explosions result from the ignition of volatile products such as petroleum products, natural and other flammable gases, hazardous materials/chemicals, dust, and bombs. An explosion can potentially cause death, injury, and property damage. In addition, a fire routinely follows an explosion, which may cause further damage and inhibit emergency response. Emergency response may require fire, safety/law enforcement, search and rescue, and hazardous materials units.

## Previous Occurrences of Hazardous Materials Storage and Transportation Hazard

Winnebago County has not experienced a significantly large-scale hazardous material incident at a fixed site or during transport resulting in multiple deaths or serious injuries. Minor releases have put local firefighters, hazardous materials teams, emergency management, and local law enforcement into action to try to stabilize these incidents and prevent or lessen harm to Winnebago County residents.

## Geographic Location of Hazardous Materials Storage and Transportation Hazard

Hazardous material hazards are countywide and are primarily associated with the transport of materials via highway, railroad, and/or river barge.

## Winnebago County Landfill

Originally founded as Pagel's Landfill in 1972, the Winnebago County Landfill and Recycling Facility<sup>1</sup> (Winnebago County LRF) now operates as the main waste collection site for the County and its respective municipalities. The landfill was originally founded out of a crisis. In the early 1970's the City of Rockford saw the reality of explosive growth—their municipal landfill was running out of space and they were in need of a new site. The Pagel Landfill was founded and operated until the late 1980's when it also began to fill up. In 1990, the IEPA granted a site expansion to the landfill in accordance with their regulations and the site received the State's first Subtitle D landfill classification expansion.

In 2005, the landfill was renamed the Winnebago County LRF and was billed to serve the county and its municipalities in whole. According to the Illinois Environmental Protection Agency the Winnebago County LRF has two examples of recorded violations. These violations are profiled below.

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<sup>1</sup> Data sourced from <https://www.winnebago-landfill.com/landfill>

## Winnebago County Landfill and Recycling Facility: IEPA Violations<sup>1</sup>

April 16, 2012

- In January of 2012, the IEPA found that the Winnebago County LRF had violated two provisions of the Illinois Environmental Protection Act (IEPA) under Section 31(a)(7)(i). These two violations are profiled in the [Violation Notice \(VN\) L-2012-01007](#) and here. The first of which was 21(d)(1) 415 ILCS 5/21(d)(1) which relates to the “conduct of a waste-storage, waste-treatment, or waste-disposal operation without a permit or in violation of any condition of a permit.” The second of which was 21(d)(2) 415 ILCS 5/21(d)(2) which relates to the “conduct of a waste-storage, waste-treatment, or waste-disposal operation in violation of any Regulation or Standard adopted by the Pollution Control Board (an entity under the IEPA: which has two major responsibilities: determining, defining, and implementing environmental control standards for the State of Illinois, and adjudicating complaints that allege non-criminal violations of the IEPA<sup>2</sup>). The Winnebago County LRF was made to submit new data showing a resolution of the referenced chemicals in the VN and of the area groundwater separate from standard reports.  
February 17, 2012
- In September of 2016, the IEPA found that the Winnebago County LRF had violated six provisions of the IEPA and the PCB regulations. These six violations are profiled in [VN L-2016-01105](#) and here. The first of which was 21(d)(1) 415 ILCS 5/21(d)(1) which relates to the “conduct of a waste-storage, waste-treatment, or waste-disposal operation without a permit or in violation of any condition of a permit.” The second of which was 21(d)(2) 415 ILCS 5/21(d)(2) which relates to the “conduct of a waste-storage, waste-treatment, or waste-disposal operation in violation of any Regulation or Standard adopted by the Pollution Control Board. The VN also found four other violations of Illinois Administrative Code and IEPA permits including *Section 35 811.109(a) and 811.302(c)*; violation of IEPA permit number 2010-133-LF DE/OP, Mod #7, *Permit Condition II, page 16, #24*; and violation of Standard Conditions for Construction/Development Permits issued by IEPA Bureau of Land (BOL), #3. The Winnebago County LRF was made to install additional fencing on the northwestern section of the Western Expansion Unit in order to inhibit access to the site; and install a screening fabric along public roads where landfill operations are occurring.

As of this plan, the Winnebago County LRF is in full compliance with IEPA regulations and standards and the state statutes that govern its existence. Per the Winnebago County LRF’s website, they maintain two landfills, two transfer stations, and a composting facility. They allow general household trash and demolition debris; they do not allow yard waste, tires, liquids (including paints, oils, and hazardous materials) or appliances. Liquids that are collected through the municipal drainage systems are treated by the LRF at their wastewater treatment facility in Rockford, Illinois. The Winnebago County LRF works to maintain full compliance with the State of Illinois’ statutes and regulations. The Winnebago County LRF should work to maintain their compliant status with the IEPA and reduce violations – especially violations that concern the storage, treatment, or disposal of hazardous materials (including both those that are regulated by the IEPA and the PCB and those that are not).

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<sup>1</sup> <https://external.epa.illinois.gov/DocumentExplorer/Documents/Index/170000168869>

<sup>2</sup> Illinois Environmental Protection Agency: Pollution Control Board: <https://pcb.illinois.gov/AboutPCB/GeneralInformation>

## Hazard Extent of Hazardous Materials Storage and Transportation Hazard

The extent of the hazardous material hazard varies both in terms of the quantity of material being transported as well as the specific content of the container. With multiple state and federal routes traveling through the area, an event is possible.

### Risk Identification for Hazardous Materials Storage and Transportation Hazard

Based on historical information, future occurrence of a hazardous materials situation is unlikely in Winnebago County. According to the Risk Priority Index Number (RPN) and County input, hazardous materials storage and transportation is ranked as the number seven hazard.

HAZARD	RISK PRIORITY INDEX NUMBER (RPN) RANKING
HAZARDOUS MATERIALS STORAGE AND TRANSPORTATION	7

## ALOHA Hazardous Chemical Release Analysis

SIU used the U.S. Environmental Protection Agency's ALOHA (Areal Locations of Hazardous Atmospheres) model to assess the impacted area for: (1) ammonia release at the intersection of Route 20 and Illinois 2 and (2) Chlorine release at the Viking Chemical Plant in Rockford. The Winnebago County project team selected the ammonia scenarios because of significant truck traffic along major transportation routes within a relatively densely populated area. The Chlorine scenario was selected because bulk chemicals are present in at the Viking Chemical Plant in Rockford. ALOHA is a computer program designed for response to chemical accidents, as well as emergency planning and training. Ammonia, chlorine, and propane are common chemicals used in industrial operations and are found in either liquid or gas form. Rail and truck tankers haul ammonia, chlorine, and propane to and from facilities.

Ammonia is a clear colorless gas with a strong odor. Ammonia is shipped as a liquid under its own vapor pressure. The density of liquid ammonia is 6 lb/gal. Contact with the unconfined liquid can cause frostbite. Gas is generally regarded as nonflammable but does burn within certain vapor concentration limits and with strong ignition. Fire hazard increases in the presence of oil or other combustible materials. Although gas is lighter than air, vapors from a leak initially hug the ground. Prolonged exposure of containers to fire or heat may cause violent rupturing and rocketing. Long-term inhalation of low concentrations of the vapors or short-term inhalation of high concentrations have adverse health effects. Used as a fertilizer, as a refrigerant, and in the manufacture of other chemicals (NOAA Reactivity, 2007)<sup>1</sup>.

Chlorine is a greenish yellow gas with a pungent to suffocating odor. The gas liquefies above -35°C degrees at ambient pressure and will liquefy from pressure applied at room temperature. Contact with unconfined liquid chlorine can cause frostbite from evaporative cooling. Chlorine does not burn but, like

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<sup>1</sup> Data sourced from <http://cameochemicals.noaa.gov/chemical/4860>

oxygen, supports combustion. The toxic gas can have adverse health effects from either long-term inhalation of low concentrations of vapors or short-term inhalation of high concentrations. Chlorine vapors are much heavier than air and tend to settle in low areas. Chlorine is commonly used to purify water, bleach wood pulp, and make other chemicals (NOAA Reactivity 2007)<sup>1</sup>.

For the ammonia scenario, SIU assumed average atmospheric and climatic conditions for the summer season with a breeze from the southwest. For the chlorine scenario, SIU assumed average atmospheric and climatic conditions for the fall season with a breeze from the south-southwest. SIU considered the seasonal conditions upon the request of the Winnebago County project team and obtained average monthly conditions for Rockford from NOAA's Monthly Weather Summary. Figures 22 depicts the plume origins of the two modeled hazardous chemical releases in Winnebago County.

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<sup>1</sup> Data sourced from <http://cameochemicals.noaa.gov/chemical/2862>



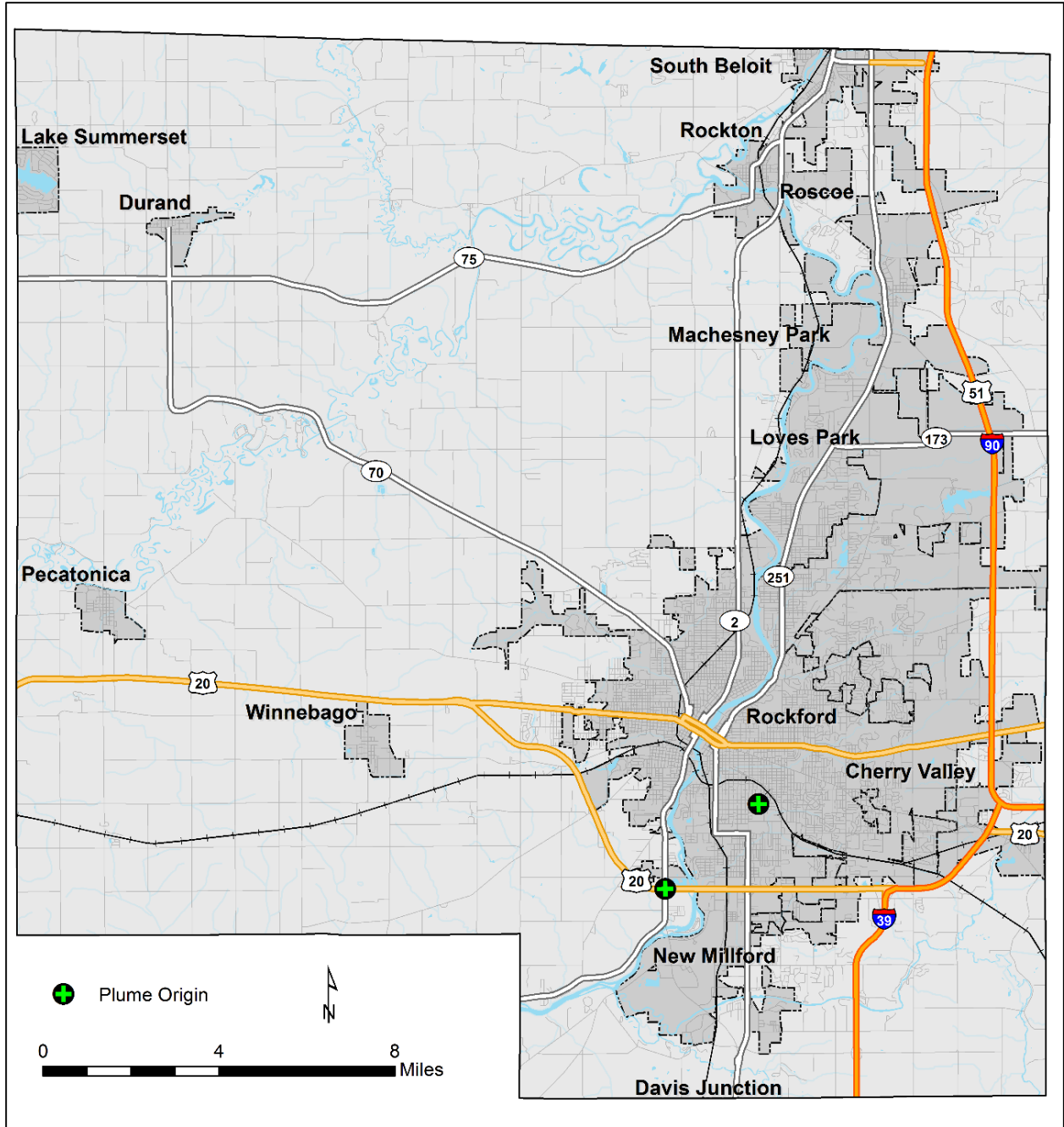


Figure 20: ALOHA Analysis Plume Origins

## Analysis Parameters for Ammonia Release

The ALOHA atmospheric modeling parameters for the ammonia release, depicted in Figure 23, were based upon a southwest wind speed of 9.3 miles per hour. The temperature was 67.8°F with 75% humidity and a cloud cover of five-tenths skies. SIU used average weather conditions for the month of June reported from NOAA for wind direction, wind speed, and temperature to simulate summer conditions.

<b>SITE DATA:</b> Location: winnebago_RT20_IL2_ACCIDENT, ILLINOIS Building Air Exchanges Per Hour: 0.65 (sheltered single storied) Time: June 17, 2014 1511 hours CDT (using computer's clock)	
<b>CHEMICAL DATA:</b> Chemical Name: AMMONIA Molecular weight: 17.03 g/mol AEGL-1 (60 min): 30 ppm AEGL-2 (60 min): 160 ppm AEGL-3 (60 min): 1100 ppm IDLH: 300 ppm LEL: 150000 ppm UEL: 280000 ppm Ambient Boiling Point: -29.1° F Vapor Pressure at Ambient Temperature: greater than 1 atm Ambient Saturation Concentration: 1,000,000 ppm or 100.0%	
<b>ATMOSPHERIC DATA: (MANUAL INPUT OF DATA)</b> wind: 9.3 miles/hour from SW at 10 feet Ground Roughness: open country Cloud Cover: 5 tenths Air Temperature: 67.8° F Stability Class: D No Inversion Height Relative Humidity: 75%	
<b>SOURCE STRENGTH:</b> Leak from hole in horizontal cylindrical tank Flammable chemical escaping from tank (not burning) Tank Diameter: 8 feet Tank Length: 33 feet Tank volume: 12,408 gallons Tank contains liquid Internal Temperature: 67.8° F Chemical Mass in Tank: 23.8 tons Tank is 75% full Circular Opening Diameter: 2.5 inches Opening is 12 inches from tank bottom Release Duration: 9 minutes Max Average Sustained Release Rate: 7,720 pounds/min (averaged over a minute or more) Total Amount Released: 44,109 pounds Note: The chemical escaped as a mixture of gas and aerosol (two phase flow).	

Figure 21: ALOHA Analysis Parameters for Ammonia Release

The source of the chemical spill is a horizontal, cylindrical-shaped tank. The diameter of the tank was set to 8 feet and the length set to 33 feet (12,408 gallons). At the time of its release, it was estimated that the tank was 75% full. The ammonia in this tank is in its liquid state. This release was based on a leak from a 2.5-inch-diameter hole, 12 inches above the bottom of the tank. According to these ALOHA parameters, this scenario would release approximately 7,720 pounds of material per minute. Figure 24 depicts the plume footprint generated by ALOHA.

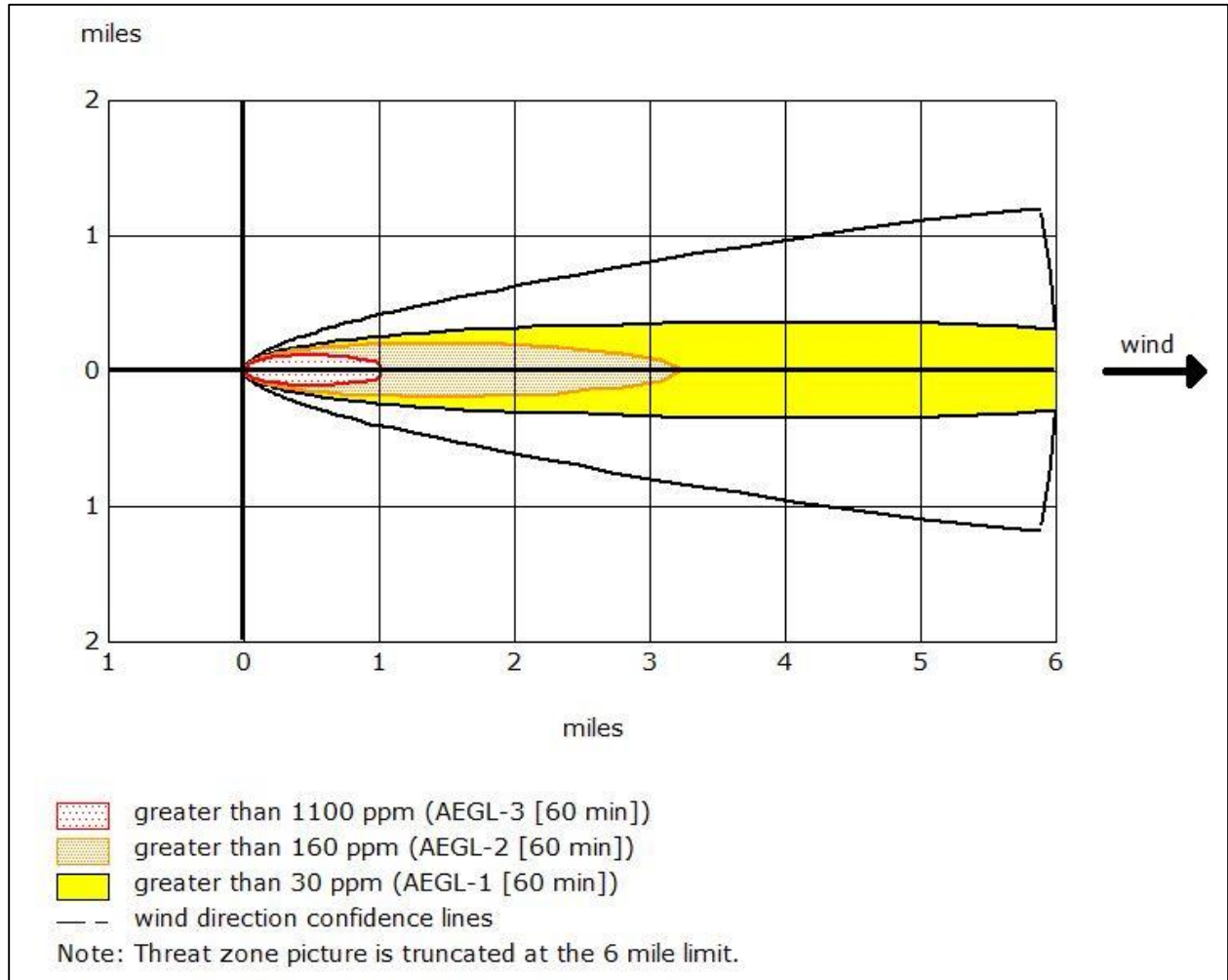


Figure 22: ALOHA Analysis Generated Plume from Ammonia Scenario

## Analysis Parameters for Chlorine Release

The ALOHA atmospheric modeling parameters for the chlorine release, depicted in Figure 25, were based upon a south-southwesterly wind speed of 10 miles per hour. The temperature was 44.3°F with 75% humidity and a cloud cover of five-tenths skies. SIU used average weather conditions for the month of November reported from NOAA for wind direction, wind speed, and temperature to simulate fall conditions, as requested by the Winnebago County project team.

<b>SITE DATA:</b>		
Location: WINNEBAGO_Viking_Chemical_CHLORINE, ILLINOIS		
Building Air Exchanges Per Hour: 0.78 (sheltered single storied)		
Time: June 17, 2014 1643 hours CDT (using computer's clock)		
<b>CHEMICAL DATA:</b>		
Chemical Name: CHLORINE	Molecular weight: 70.91 g/mol	
AEGL-1 (60 min): 0.5 ppm	AEGL-2 (60 min): 2 ppm	AEGL-3 (60 min): 20 ppm
IDLH: 10 ppm		
Ambient Boiling Point: -30.3° F		
Vapor Pressure at Ambient Temperature: greater than 1 atm		
Ambient Saturation Concentration: 1,000,000 ppm or 100.0%		
<b>ATMOSPHERIC DATA: (MANUAL INPUT OF DATA)</b>		
wind: 10 miles/hour from SSW at 10 feet		
Ground Roughness: open country	Cloud Cover: 5 tenths	
Air Temperature: 44.3° F	Stability Class: D	
No Inversion Height	Relative Humidity: 75%	
<b>SOURCE STRENGTH:</b>		
Leak from hole in horizontal cylindrical tank		
Non-flammable chemical is escaping from tank		
Tank Diameter: 8 feet	Tank Length: 33 feet	
Tank Volume: 12,408 gallons		
Tank contains liquid	Internal Temperature: 44.3° F	
Chemical Mass in Tank: 56.4 tons	Tank is 75% full	
Circular Opening Diameter: 2.5 inches		
Opening is 12 inches from tank bottom		
Release Duration: 21 minutes		
Max Average Sustained Release Rate: 8,380 pounds/min		
(averaged over a minute or more)		
Total Amount Released: 104,528 pounds		
Note: The chemical escaped as a mixture of gas and aerosol (two phase flow).		

Figure 23: ALOHA Analysis Parameters for Chlorine Release

The source of the chemical spill is a horizontal, cylindrical-shaped tank. The diameter of the tank was set to 8 feet and the length set to 33 feet (12,408 gallons). At the time of its release, it was estimated that the tank was 75% full. The chlorine in this tank is in its liquid state. This release was based on a leak from a 2.5-inch-diameter hole, 12 inches above the bottom of the tank. According to these ALOHA parameters, this scenario would release approximately 8,380 pounds of material per minute. Figure 26 depicts the plume footprint generated by ALOHA.

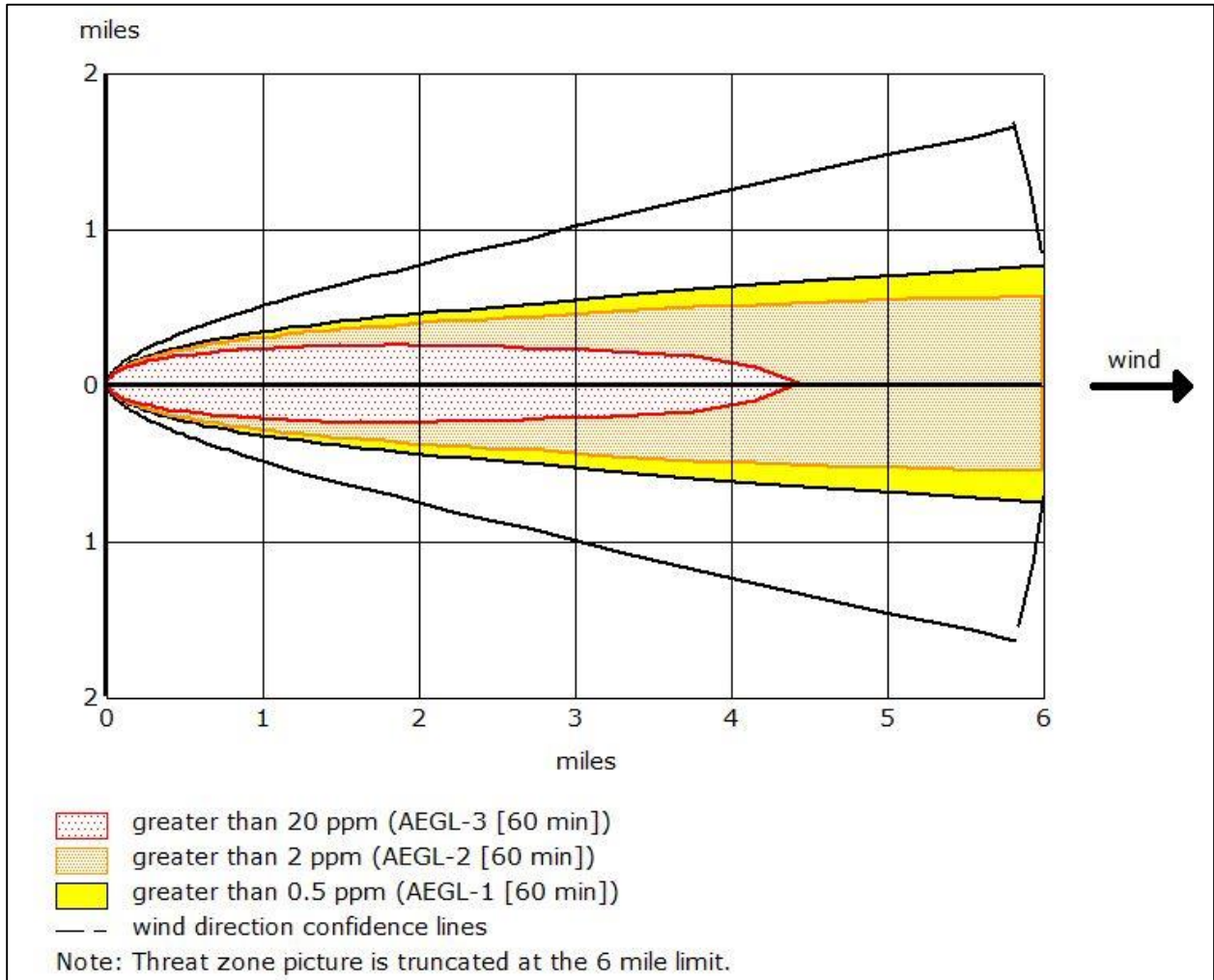


Figure 24: ALOHA Analysis Generated Plume from Chlorine Scenario

## Description of Acute Exposure Guideline Levels for Hazardous Substances

AEGLs are intended to describe the risk to humans resulting from once-in-a-lifetime, or rare exposure to airborne chemical (U.S. EPA AEGL Program<sup>1</sup>). The National Advisory Committee for the Development of Acute Exposure Guideline Levels for Hazardous Substances (AEGL Committee) is involved in developing these guidelines to help both national and local authorities, as well as private companies, deal with emergencies involving spills, or other catastrophic exposures. AEGLs represent threshold exposure limits for the general public and are applicable to emergency exposure periods ranging from 10 minutes to 8 hours. The three AEGLs have been defined as follows:

**AEGL-1:** the airborne concentration, expressed as parts per million or milligrams per cubic meter (ppm or mg/m<sup>3</sup>) of a substance above which it is predicted that the general population, including susceptible individuals, could experience notable discomfort, irritation, or certain asymptomatic non-sensory effects. However, the effects are not disabling and are transient and reversible upon cessation of exposure.

**AEGL-2:** the airborne concentration (expressed as ppm or mg/m<sup>3</sup>) of a substance above which it is predicted that the general population, including susceptible individuals, could experience irreversible or other serious, long-lasting adverse health effects or an impaired ability to escape.

**AEGL-3:** the airborne concentration (expressed as ppm or mg/m<sup>3</sup>) of a substance above which it is predicted that the general population, including susceptible individuals, could experience life-threatening health effects or death.

Airborne concentrations below the AEGL-1 represent exposure levels that can produce mild and progressively increasing but transient and non-disabling odor, taste, and sensory irritation or certain asymptomatic, non-sensory effects. With increasing airborne concentrations above each AEGL, there is a progressive increase in the likelihood of occurrence and the severity of effects described for each corresponding AEGL. Although the AEGL values represent threshold levels for the general public, including susceptible subpopulations, such as infants, children, the elderly, persons with asthma, and those with other illnesses, it is recognized that individuals, subject to unique or idiosyncratic responses, could experience the effects described at concentrations below the corresponding AEGL.

## Results for Ammonia Release

SIU calculated an estimate of property exposed to the ammonia spill by using the building inventory and intersecting these data with each of the AEGL levels (AEGL 3:  $\geq 20.0$  ppm, AEGL 2:  $\geq 2.0$  ppm and AEGL 1:  $\geq 0.5$  ppm). There are 4,625 buildings within the ammonia plume. Table 34 lists building exposure by AEGL zone. Figure 27 depicts the ammonia spill footprint and location of the buildings exposed. This GIS

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<sup>1</sup> Data sourced from <https://www.epa.gov/aegl/about-acute-exposure-guideline-levels-aegls>

overlay analysis estimates that the full replacement cost of the buildings exposed to the ammonia plume are over \$1,108,928,571.

Table 34: Estimated Building Exposure as a Result of the Ammonia Release

OCCUPANCY	BUILDING EXPOSURE			NUMBER OF BUILDINGS		
	AEGL 1	AEGL 2	AEGL 3	AEGL 1	AEGL 2	AEGL3
RESIDENTIAL	\$726,975,126	\$77,599,596	\$961,704	3613	601	9
COMMERCIAL	\$149,258,367	\$9,154,080	\$0	178	34	0
INDUSTRIAL	\$78,848,760	\$63,941,676	\$1,134,912	116	70	1
AGRICULTURAL	\$0	\$0	\$0	0	0	0
RELIGIOUS	\$962,100	\$92,250	\$0	2	1	0
GOVERNMENT	\$0	\$0	\$0	0	0	0
EDUCATION	\$0	\$0	\$0	0	0	0
<b>TOTAL:</b>	<b>\$956,044,353</b>	<b>\$150,787,602</b>	<b>\$2,096,616</b>	<b>3909</b>	<b>706</b>	<b>10</b>

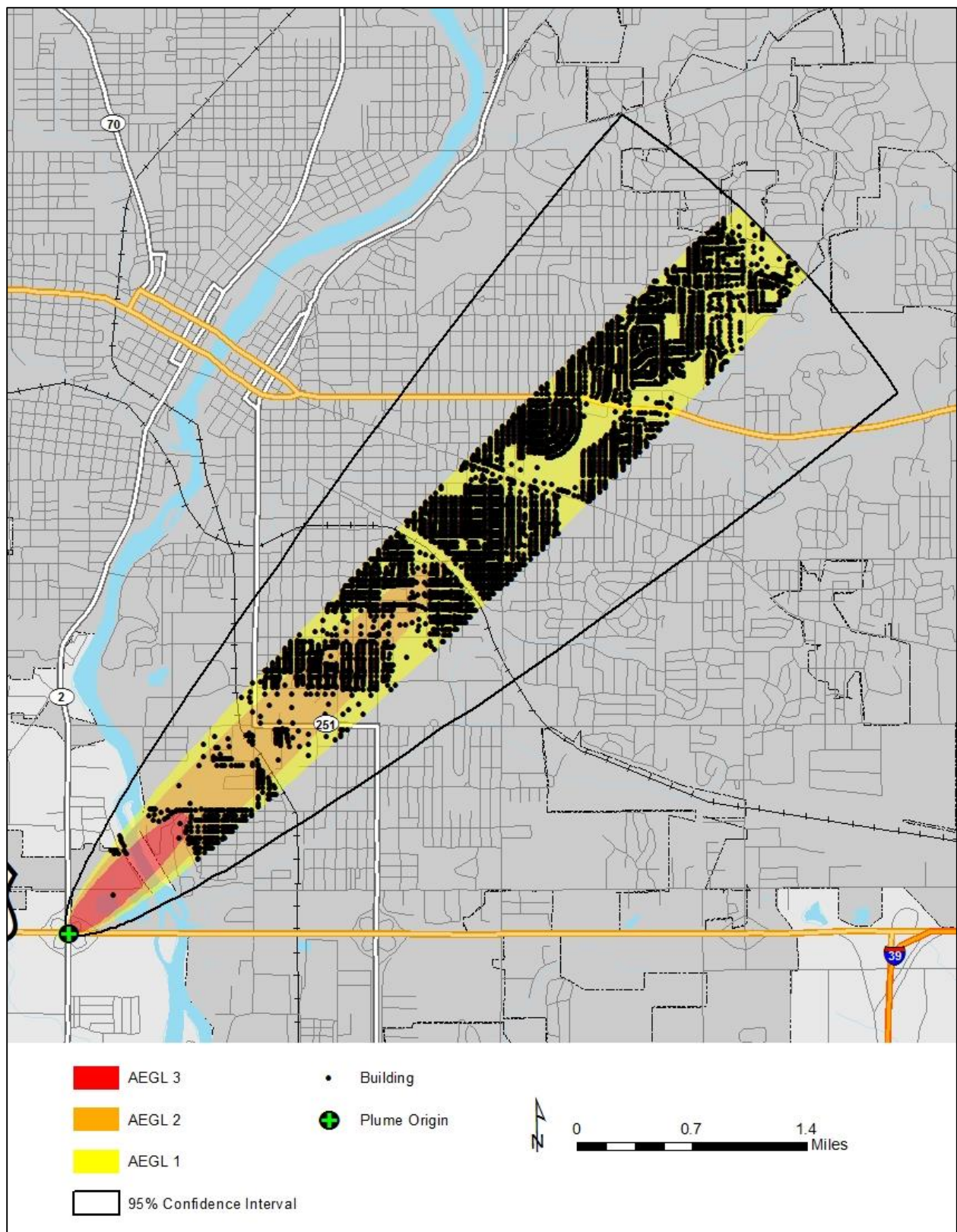


Figure 25: ALOHA Plume Footprint and Buildings Exposed to Ammonia Release



## Results for Chlorine Release

SIU calculated an estimate of property exposed to the chlorine spill by using the building inventory and intersecting these data with each of the AEGL levels (AEGL 3:  $\geq 20.0$  ppm, AEGL 2:  $\geq 2.0$  ppm and AEGL 1:  $\geq 0.5$  ppm). There are 8,144 building within the chlorine plume. Table 35 lists building exposure by AEGL zone. Figure 28 depicts the ammonia spill footprint and location of the buildings exposed. This GIS overlay analysis estimates that the full replacement cost of the buildings exposed to the ammonia plume are over \$2,503,082,664.

Table 35: Estimated Building Exposure as a Result of the Chlorine Release

OCCUPANCY	BUILDING EXPOSURE			NUMBER OF BUILDINGS		
	AEGL 1	AEGL 2	AEGL 3	AEGL 1	AEGL 2	AEGL3
RESIDENTIAL	\$318,444,996	\$1,022,638,056	\$719,587,284	1189	3528	3103
COMMERCIAL	\$26,038,116	\$178,310,061	\$30,583,035	24	94	53
INDUSTRIAL	\$76,834,356	\$100,683,672	\$17,237,160	35	73	35
AGRICULTURAL	\$0	\$0	\$0	0	0	0
RELIGIOUS	\$0	\$7,828,992	\$1,403,892	0	4	4
GOVERNMENT	\$0	\$0	\$0	0	0	0
EDUCATION	\$0	\$3,493,044	\$0	0	2	0
<b>TOTAL:</b>	<b>\$421,317,468</b>	<b>\$1,312,953,825</b>	<b>\$768,811,371</b>	<b>1248</b>	<b>3701</b>	<b>3195</b>

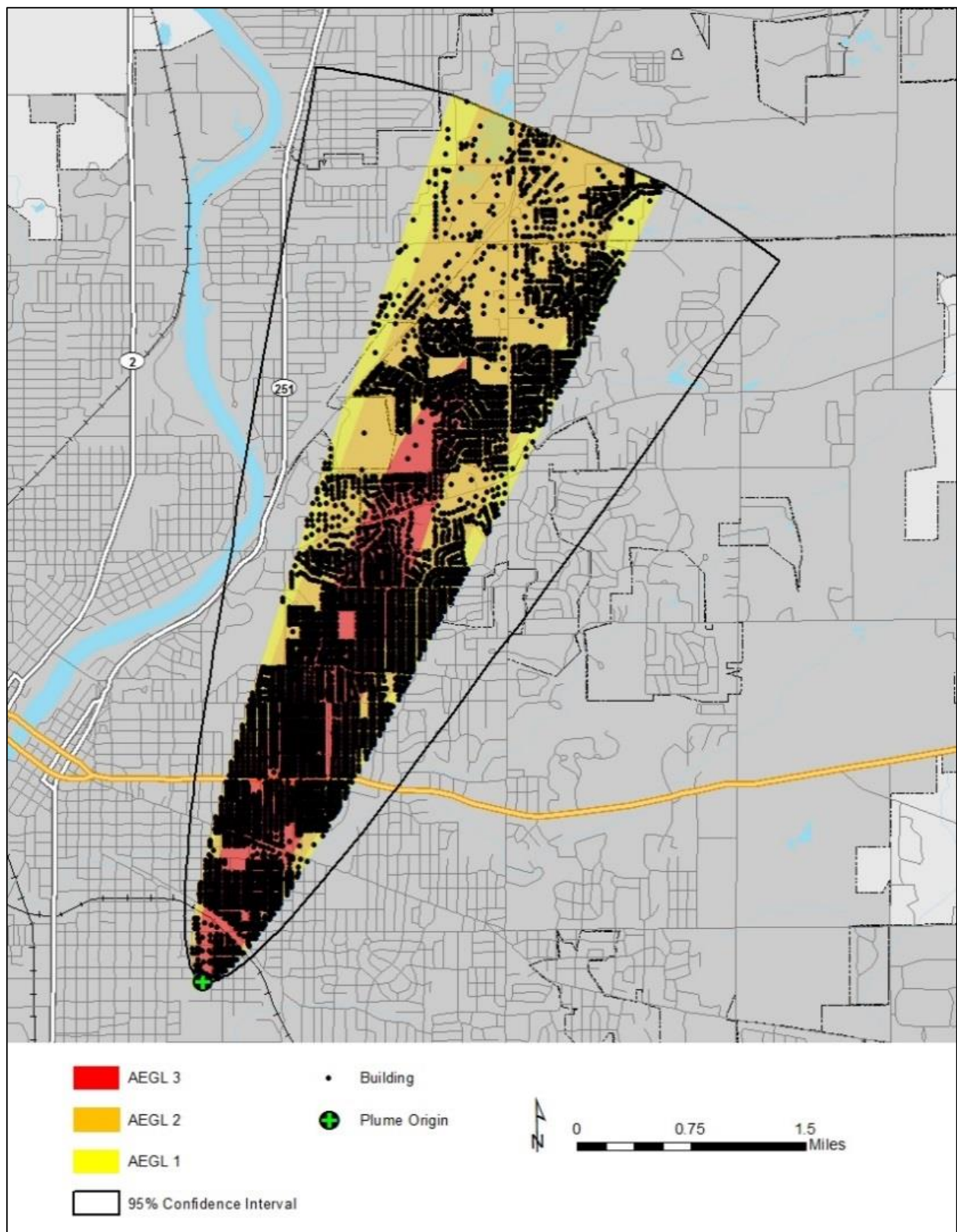


Figure 26: ALOHA Plume Footprint and Buildings Exposed to Chlorine Release

## Vulnerability Analysis for Hazardous Materials Storage and Transportation Hazard

The entire county is vulnerable to a hazardous material release and can expect impacts within the affected area. The main concern during a release or spill is the affected population. This plan will therefore consider all buildings located within the county as vulnerable.

### Critical Facilities

All critical facilities and communities within the county are at risk. A critical facility will encounter many of the same impacts as any other building within the municipality. These impacts include structural failure due to fire or explosion and loss of function of the facility (e.g., a damaged police station can no longer serve the community). Tables 5, 6, and 7 include a list of the essential facilities in Winnebago County and Figure 11 displays a large format map of the locations of all critical facilities within the county.

### Building Inventory

Buildings within the county can expect impacts similar to those discussed for critical facilities. These impacts include structural failure due to fire or explosion or debris, and loss of function of the building (e.g., a person cannot inhabit a damaged home, causing residents to seek shelter).

### Infrastructure

During a hazardous material release, the types of potentially impacted infrastructure include roadways, utility lines/pipes, railroads, and bridges. Since an extensive inventory of the infrastructure is not available to this plan, it is important to emphasize that a hazardous materials release could damage any number of these items. The impacts to these items include: broken, failed, or impassable roadways; broken or failed utility lines (e.g., loss of power or gas to community); and railway failure from broken or impassable railways. Bridges could become impassable causing risk to motorists.

### Building Inventory Damage

Buildings within the county can all expect impacts similar to those discussed for critical facilities. These impacts include structural failure due to fire or explosion or debris and loss of function of the building (e.g., a person cannot inhabit a damaged home, causing residents to seek shelter).

## Vulnerability to Future Assets/Infrastructure for Hazardous Materials Storage and Transportation Hazard

Any new development within the county will be vulnerable to these events, especially development along major roadways.

### Suggestions for Community Development Trends

Because the hazardous material hazard events may occur anywhere within the county, future development is impacted. The major transportation routes and the industries located in Winnebago County pose a threat of dangerous chemicals and hazardous materials release.

## Winter Storm

Severe winter weather consists of various forms of precipitation and weather conditions. This may include one or more of the following: freezing rain, sleet, heavy snow, blizzards, icy roadways, extreme low temperatures, and strong winds. These conditions can cause human health risks such as frostbite, hypothermia, or death and cause property damage and disrupt economic activity.

### Ice (Glazing) and Sleet Storms

Ice or sleet, even in small quantities, can result in hazardous driving conditions and can cause property damage. Sleet involves raindrops that freeze completely before reaching the ground. Sleet does not stick to trees and wires. Ice storms, on the other hand, involve liquid rain that falls through subfreezing air and/or onto sub-freezing surfaces, freezing on contact with those surfaces. The ice coats trees, buildings, overhead wires, and roadways, sometimes causing extensive damage.

Ice storms are some of the most damaging winter storms in Illinois. Ice storms occur when moisture-laden Gulf air converges with the northern jet stream causing freezing rain that coats power and communication lines and trees with heavy ice. Strong winds can cause the overburdened limbs and cables to snap; leaving large sectors of the population without power, heat, or communication.

### Snow Storms

Rapid accumulation of snow, often accompanied by high winds, cold temperatures, and low visibility, characterize significant snowstorms. A blizzard is categorized as a snow storm with winds of 35 miles per hour or greater and/or visibility of less than one-quarter mile for three or more hours. Strong winds during a blizzard blow falling and fallen snow, creating poor visibility and impassable roadways. Blizzards potentially result in property damage.

Blizzards repeatedly affect Illinois. Blizzard conditions cause power outages, loss of communication, and transportation difficulties. Blizzards can reduce visibility to less than one-quarter mile, and the resulting disorientation makes even travel by foot dangerous if not deadly.

### Severe Cold

Severe cold involves ambient air temperatures that drop to 0°F or below. These extreme temperatures can increase the likelihood of frostbite and hypothermia. High winds during severe cold events can enhance the air temperature's effects. Fast winds during cold weather events can lower the wind chill factor (how cold the air feels on your skin). As a result, the time it takes for frostbite and hypothermia to affect a person's body will decrease.

### Previous Occurrences of Winter Storm Hazard

The NCEI database identified 29 blizzard or winter storm events for Winnebago County since 1950. Of the events listed on the NCEI database, no property damage, deaths, or injuries were reported. Additional details of individual hazard events are on the NCEI website. The most recent reported event

occurred in February of 2019, when areas of freezing rain with embedded scattered thunderstorms moved across northern Illinois during the afternoon and evening of February 5th. Air temperatures were near to slightly below freezing with ice accumulation across much of the area. The highest ice accumulation amounts were generally along and north of Interstate 88. The freezing rain intensity of moderate to heavy at times limited how much ice accumulated on surfaces. Some sleet also mixed in with the freezing rain across far northern Illinois.

### Geographic Location of Winter Storm Hazard

Severe winter storms are regional in nature. Most of the NCEI data are calculated regionally or in some cases statewide.

### Hazard Extent of Winter Storm Hazard

The extent of the historical winter storms varies in terms of storm location, temperature, and ice or snowfall. A severe winter storm can occur anywhere in the county. Based on historical information and input from the Winnebago County project team, the occurrence of future winter storms is likely. The county should expect winter storms of varying magnitudes.

#### Risk Identification for Winter Storm Hazard

Based on historical information, future occurrences of varying level intensity winter storm events in Winnebago County is very likely. According to the Risk Priority Index Number (RPN) and County input, winter storms are ranked as the number one hazard.

HAZARD	RISK PRIORITY INDEX NUMBER (RPN) RANKING
WINTER STORM	1

### Vulnerability Analysis of Winter Storm Hazard

Winter storm impacts are equally likely across the entire county; therefore, the entire county is vulnerable to a winter storm and can expect impacts within the affected area.

### Critical Facilities

All critical facilities are vulnerable to a winter storm. A critical facility will encounter many of the same impacts as other buildings within the county. These impacts include loss of gas or electricity from broken or damaged utility lines, damaged or impassable roads and railways, broken water pipes, and roof collapse from heavy snow. Table 5, 6, and 7 include a list of the essential facilities in Winnebago County and Figure 11 displays a large format map of the locations of all critical facilities within the county.

### Building Inventory

The impacts to the general buildings within the county are similar to the damages expected to the critical facilities. These include loss of gas or electricity from broken or damaged utility lines, damaged or impassable roads and railways, broken water pipes, and roof collapse from heavy snow.

## Infrastructure

During a winter storm, the types of potentially impacted infrastructure include roadways, utility lines/pipes, railroads, and bridges. Since the county's entire infrastructure is vulnerable, it is important to emphasize that a winter storm could impact any structure. Potential impacts include broken gas and/or electricity lines or damaged utility lines, damaged or impassable roads and railways, and broken water pipes.

## Potential Dollar Losses for Winter Storm Hazard

It was determined that property damage can occur due to severe blizzards and winter storms (including downed trees, downed power lines, collapsed roofs, etc.). Winnebago County has no documented property damage for blizzards or winter storms since 1950 reported to the NCEI.

## Vulnerability to Future Assets/Infrastructure for Winter Storm Hazard

Any new development within the county will remain vulnerable to these events.

## Suggestions for Community Development Trends

Because winter storm events are regional in nature, future development across the county will also face winter storms.

## Drought & Extreme Heat

Drought is a climatic phenomenon. The meteorological condition that creates a drought is below-normal rainfall. However, excessive heat can lead to increased evaporation, which enhances drought conditions. Droughts can occur in any month. Drought differs from normal arid conditions found in low-rainfall areas. Drought is the consequence of a reduction in the amount of precipitation over an undetermined length of time (usually a growing season or longer). The severity of a drought depends on location, duration, and geographical extent. Additionally, drought severity depends on the water supply, usage demands by human activities, vegetation, and agricultural operations. Drought will affect the quality and quantity of crops, livestock, and other agricultural assets. Drought can adversely impact forested areas leading to an increased potential for extremely destructive forest and woodland fires that could threaten residential, commercial, and recreational structures.

## Hazard Definition for Extreme Heat Hazard

Drought conditions are often accompanied by extreme heat, which is defined as temperatures that exceed the average high for the area by 10°F or more for the last for several weeks.

## Common Terms Associated with Extreme Heat

- Heat Wave: Prolonged period of excessive heat often combined with excessive humidity.
- Heat Index: A number, in degrees Fahrenheit, which estimates how hot it feels when relative humidity is added to air temperature. Exposure to full sunshine can increase the heat index by 15°F.

- **Heat Cramps:** Muscular pains and spasms due to heavy exertion. Although heat cramps are the least severe, they are often the first signal that the body is having trouble with 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, resulting in a form of mild shock. If left untreated, the victim’s condition will worsen. Body temperature will continue to rise, and the victim may suffer heat stroke.
- **Heat and Sun Stroke:** A life-threatening condition. The victim’s temperature control system, which produces sweat to cool the body, stops working. The body’s temperature can rise so high that brain damage and death may result if the body is not cooled quickly.

### Previous Occurrences for Drought and Extreme Heat

The NCDC database reported eleven drought/heat wave events in Winnebago County since 1950. The most recent recorded event occurred on July of 2012, when severe drought conditions developed across much of northern Illinois by mid July 2012 with extreme drought conditions developing during late July. Rainfall totals in the extreme drought areas between June 1<sup>st</sup> and August 1<sup>st</sup> included 3.34 inches in Rockford (38% of normal rainfall). Temperatures reached 90 degrees or higher on 21 days in July at Rockford Airport and 100 degrees or higher on 5 of those 21 days. Table 36 identifies NCEI recorded drought/heat wave events that caused damage, death, or injury in Winnebago County. Additional details of individual hazard events are on the NCEI website.

Table 36: NCEI Recorded Extreme Heat Events That Caused Damage, Death, or Injury

LOCATION	DATE	DEATHS	INJURIES	PROPERTY DAMAGE <sup>1</sup>
WINNEBAGO COUNTY	07/1999	2	0	\$0
WINNEBAGO COUNTY	08/2006	1	0	\$0
<b>TOTAL:</b>		<b>3</b>	<b>0</b>	<b>\$0</b>

### Geographic Location for Drought and Extreme Heat

Droughts are regional in nature. Most areas of the United States are vulnerable to the risk of drought and extreme heat.

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<sup>1</sup> NCEI records are estimates of damage compiled by the National Weather Service from various local, state, and federal sources. However, these estimates are often preliminary in nature and may not match the final assessment of economic and property losses related to a given weather event.

## Hazard Extent for Drought and Extreme Heat

The extent of droughts or extreme heat varies both depending on the magnitude and duration of the heat and the range of precipitation.

### Risk Identification for Drought and Extreme Hazard

Based on historical information, future occurrences of some kind of drought and/or extreme heat event in Winnebago County likely. According to the Risk Priority Index Number (RPN) and County input, drought and extreme heat are ranked as the number five hazard.

HAZARD	RISK PRIORITY INDEX NUMBER (RPN) RANKING
DROUGHT AND EXTREME HEAT	5

## Vulnerability Analysis for Drought and Extreme Heat

Drought and extreme heat are a potential threat across the entire county; therefore, the county is vulnerable to this hazard and can expect impacts within the affected area. According to FEMA, approximately 175 Americans die each year from extreme heat. Young children, elderly, and hospitalized populations have the greatest risk. The entire population and all buildings are at risk.

### Critical Facilities

All critical facilities are vulnerable to drought. A critical facility will encounter many of the same impacts as any other building within the municipality, which should involve little or no damage. Potential impacts include water shortages, fires as a result of drought conditions, and residents in need of medical care from the heat and dry weather. Tables 5, 6, and 7 include a list of the essential facilities in Winnebago County and Figure 11 displays a large format map of the locations of all critical facilities within the county.

### Building Inventory

The buildings within the county can all expect impacts similar to those discussed for critical facilities. These impacts include water shortages, fires as a result of drought conditions, and residents in need of medical care from the heat and dry weather.

### Infrastructure

During a drought, the types of potentially impacted infrastructure include roadways, utility lines/pipes, railroads, and bridges. The risk to these structures is primarily associated with fire, which could result from hot, dry conditions. Since the county's entire infrastructure is vulnerable, damage to any infrastructure is possible. The impacts to these items include: impassable roadways; broken or failed utility lines (e.g., loss of power or gas to community); or impassable railways. Bridges could become impassable, causing risk to motorists.



## Vulnerability to Future Assets/Infrastructure from Drought/Extreme Heat Hazard

Future development will remain vulnerable to droughts. Typically, some urban and rural areas are more susceptible than others. For example, urban areas are subject to water shortages during periods of drought. Excessive demands of densely populated areas put a limit on water resources. In rural areas, crops and livestock may suffer from extended periods of heat and drought. Dry conditions can lead to the ignition of wildfires that could threaten residential, commercial, and recreational areas.

## Suggestions for Community Development Trends

Because droughts and extreme heat are regional in nature, future development is susceptible to drought. Although urban and rural areas are equally vulnerable to this hazard, those living in urban areas may have a greater risk from the effects of a prolonged heat wave. The atmospheric conditions that create extreme heat tend to trap pollutants in urban areas, adding contaminated air to the excessively hot temperatures and creating increased health problems. Furthermore, asphalt and concrete store heat longer, gradually releasing it at night and producing high nighttime temperatures. This phenomenon is known as the “urban heat island effect.”

Local officials should address drought and extreme heat hazards by educating the public on steps to take before and during the event—for example, temporary window reflectors to direct heat back outside, staying indoors as much as possible, and avoiding strenuous work during the warmest part of the day.

## Dam & Levee Failure

Dams are structures that retain or detain water behind a large barrier. When full or partially full, the difference in elevation between the water above the dam and the drop in elevation below has the potential to create large amounts of energy, but also creating the potential for structural failure. The same potential exists for levees when they serve their purpose, which is to confine flood waters within the channel area of a river and exclude that water from land or communities land-ward of the levee. Dams and levees can fail due to either: 1) water heights or flows above the capacity for which the structure was designed; or 2) deficiencies in the structure such that it cannot hold back the potential energy of the water. If a dam or levee fails, issues of primary concern include loss of human life/injury, downstream property damage, lifeline disruption (of concern would be transportation routes and utility lines required to maintain or protect life), and environmental damage.

Many communities view both dams and levees as permanent and infinitely safe structures. This sense of security may well be false, leading to significantly increased risks. Both downstream of dams and on floodplains protected by levees, security leads to new construction, added infrastructure, and increased population over time. Levees in particular are built to hold back flood waters only up to some maximum level, often the 100-year (1% annual probability) flood event. When that maximum is exceeded by more than the design safety margin, then the levee will be overtopped or otherwise fail, inundating communities in the land previously protected by that levee. It has been suggested that climate change,

land-use shifts, and some forms of river engineering may be increasing the magnitude of large floods and the frequency of levee-failure situations.

In addition to failure that results from extreme floods above the design capacity, levees and dams can fail due to structural deficiencies. Both dams and levees require constant monitoring and regular maintenance to assure their integrity. Many structures across the U.S. have been under-funded or otherwise neglected, leading to an eventual day of reckoning in the form either of realization that the structure is unsafe or, sometimes, an actual failure. The threat of dam or levee failure may require substantial commitment of time, personnel, and resources. Since dams and levees deteriorate with age, minor issues become larger compounding problems, and the risk of failure increases.

### Previous Occurrences of Dam and Levee Failure

According to the Winnebago County mitigation Winnebago County project team, there are no records or local knowledge of any dam or levee failure in the county.

### Geographic Location of Dams and Levees in Winnebago County

Table 37 provides a list of the dams located in Winnebago County and their respective classification level. According to Winnebago County records, six dams in Winnebago County are classified as high hazard and three dams have Emergency Action Plans (EAP). An EAP is not required by the State of Illinois but is strongly recommended by the Illinois Department of Natural Resources.

Table 37: Dams Located in Winnebago County

DAM NAME	STREAM/RIVER	PRIMARY PURPOSE	HAZARD POTENTIAL	EAP
ALPINE DAM	KEITH CREEK	FLOOD CONTROL	HIGH	YES
CHERRY VALLEY LOWER DAM	MADIGAN CREEK	FLOOD CONTROL	LOW	-
CHERRY VALLEY UPPER DAM	MADIGAN CREEK	FLOOD CONTROL	LOW	-
COOLIDGE CREEK DAM	COOLIDGE CREEK	RECREATION	LOW	-
FORDHAM STATION DAM	ROCK RIVER	RECREATION	LOW	-
FUTURE ROADWAY DAM	TRIBUTARY OF ROCK RIVER	-	-	-
KIOWA CROSSING DAM	TRIBUTARY OF NORTH BRANCH OF KINNIKINNICK CREEK	RECREATION	SIGNIFICANT	-
LAKE SUMMERSSET DAM	SOUTH BRANCH OTTER CREEK	RECREATION	HIGH	-
LEVINGS LAKE DAM	SOUTH BRANCH KENT CREEK	FLOOD CONTROL	HIGH	YES
OLSON LAKE DAM	WILLOW CREEK	RECREATION	LOW	-
PAGE PARK DAM	KENT CREEK	FLOOD CONTROL	HIGH	YES
PEBBLE CREEK DAM	PEBBLE PARK	FLOOD CONTROL	HIGH	-
PIERCE LAKE DAM	WILLOW CREEK	RECREATION	HIGH	-
ROCKTON DAM	ROCK RIVER	HYDROELECTRIC	LOW	-
SPRING LAKE DAM	TRIBUTARY OF SPRING CREEK	RECREATION	SIGNIFICANT	-

A review of the US Army Corps of Engineers National Levee Database and Winnebago County records indicated one state or federal levee within Winnebago County. Table 38 summarizes the National Levee Database.

Table 38: Levees Located in Winnebago County

LEVEE SYSTEM NAME	LEVEE AREA ACREAGE	INSPECTION RATING	LAST INSPECTION DATE
KENT CREEK SOUTH BRANCH DIVERSION CHANNEL	636.60	UNACCEPTABLE	05/10/2013

### Hazard Extent for Dam and Levee Failure

Dams are assigned a low hazard potential classification means that failure or incorrect operation of the dam will result in no human life losses and no economic or environmental losses. Losses are principally limited to the owner’s property. A significant hazard classification means that failure or incorrect operation results in no probable loss of human life; however, dam or levee failure can cause economic loss, environmental damage, and disruption of lifeline facilities. Significant hazard potential dams are often located in predominantly rural or agricultural areas, but could be located in populated areas with a significant amount of infrastructure. A high hazard potential classification means that failure or incorrect operation has the highest risk to cause loss of human life and to significantly damage buildings and infrastructure. According Winnebago County, six dams are classified as high hazard dams; three of which have an Emergency Action Plan (EAP). An EAP is not required by the State of Illinois but is recommended in the 2003 Illinois Dam Safety & Inspection Manual. Accurate mapping of the risks of flooding behind levees depends on knowing the condition and level of protection the levees actually provide. FEMA and the U.S. Army Corps of Engineers are working together to make sure that flood hazard maps better reflect the flood protection capabilities of levees and that the maps accurately represent the flood risks posed to areas situated behind them. Levee owners—usually states, communities, or private individuals or organizations such as local levee districts—are responsible for ensuring that the levees they own are maintained to their original design level and condition. In order to be considered creditable flood protection structures on FEMA’s flood maps, levee owners must provide documentation to prove that the levee meets design, operation, and maintenance standards for protection against the 1% annual probability (100-year) flood.

#### Risk Identification for Dam and Levee Failure Hazard

Based on operation and maintenance requirements and local knowledge of the dams and levees in Winnebago County, the probability of failure is low. However, if a high-hazard dam failed, the magnitude and severity of the damage could be great. The warning time and duration of the dam failure event would be very short. Based on historical information, future occurrences of some kind of dam or levee failure event in Winnebago County unlikely; however, measures should still be taken to ensure the continued use of existing and future dams/levees. According to the Risk Priority Index Number (RPN) and County input, dam or levee failure event is ranked as the number nine hazard.

HAZARD	RISK PRIORITY INDEX NUMBER (RPN) RANKING
DAM AND LEVEE FAILURE	9

## Critical Facilities

All critical facilities within the floodplain are vulnerable to dam and levee failure. An essential facility will encounter many of the same impacts as other buildings within the flood boundary. These impacts can include structural failure, extensive water damage to the facility, and loss of facility functionality (e.g., a damaged police station cannot serve the community). Tables 5, 6, and 7 include a list of the essential facilities in Winnebago County and Figure 11 displays a large format map of the locations of all critical facilities within the county.

## Infrastructure

The types of infrastructure potentially impacted by a flood include roadways, utility lines/pipes, railroads, and bridges. Since an extensive inventory of the infrastructure is not available for this plan, it is important to emphasize that a flood could damage any number of these items. The impacts to these items include: broken, failed, or impassable roadways; broken or failed utility lines (e.g., loss of power or gas to community); or railway failure from broken or impassable railways. Bridges could also fail or become impassable, causing risk to motorists.

## Vulnerability Analysis for Dam and Levee Failure

An Emergency Action Plan (EAP) is required to assess the effect of dam failure on these communities. In order to be considered creditable flood protection structures on FEMA's flood maps, levee owners must provide documentation to prove the levee meets design, operation, and maintenance standards for protection against the 1% annual probability flood.

## Vulnerability to Future Assets/Infrastructure for Dam and Levee Failure

The Winnebago County Zoning Board of Appeals reviews new development for compliance with local zoning ordinances.

## Suggestions for Community Development Trends

Areas with recent development within the county may be more vulnerable to drainage issues. Storm drains and sewer systems are usually most susceptible, which can cause the back-up of water, sewage, and debris into homes and basements, causing structural and mechanical damage as well as creating public health hazards and unsanitary conditions. Controlling floodplain development is the key to reducing flood-related damages.

## Earthquake

An earthquake is a shaking of the earth caused by the energy released when large blocks of rock slip past each other in the earth's crust. Imagine pressing two sandpaper blocks firmly together and trying to slide them past one another; at first they don't move at all, but as you continue to work harder they slip past each other very quickly. Similarly, blocks of the earth's crust (tectonic plates) are very slowly trying to slide past each other. When they build up enough energy, they quickly slip past each other, generating an earthquake.

Most earthquakes occur at tectonic plate boundaries; however, some earthquakes occur in the middle of plates, for example the New Madrid Seismic Zone or the Wabash Valley Fault System. Both of these seismic areas have a geologic history of strong quakes, and an earthquake from either seismic area could possibly affect Illinois counties. There may be other, currently unidentified faults in the Midwest also capable of producing strong earthquakes.

Strong earthquakes can collapse buildings and infrastructure, disrupt utilities, and trigger landslides, avalanches, flash floods, fires, and tsunamis. When an earthquake occurs in a populated area, it may cause death, injury, and extensive property damage. An earthquake might damage essential facilities, such as fire departments, police departments, and hospitals, disrupting emergency response services in the affected area. Strong earthquakes may also require mass relocation; however, relocation may be impossible in the short-term aftermath of a significant event due to damaged transportation infrastructure and public communication systems.

Earthquakes are usually measured by two criteria: intensity and magnitude (M). Earthquake intensity qualitatively measures the strength of shaking produced by an earthquake at a certain location and is determined from effects on people, structures, and the natural environment. Earthquake magnitude quantitatively measures the energy released at the earthquake’s subsurface source in the crust, or epicenter. SIU uses magnitude in the earthquake hazard analysis. Table 39 provides a comparison of magnitude and intensity, and Table 40 provides qualitative descriptions of intensity, for a sense of what a given magnitude might feel like.

Table 39: Comparison of Earthquake Magnitude and Intensity

<b>MAGNITUDE (M)</b>	<b>TYPICAL MAXIMUM MODIFIED MERCALLI INTENSITY</b>
1.0 – 3.0	I
3.0 – 3.9	II – III
4.0 – 4.9	IV – V
5.0 – 5.9	VI – VII
6.0 – 6.9	VII – IX
7.0 AND HIGHER	VIII OR HIGHER

Table 40: Abbreviated Modified Mercalli Intensity Scale

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.
III	FELT QUITE NOTICEABLY BY PERSONS INDOORS, ESPECIALLY ON UPPER FLOORS OF BUILDINGS. MANY PEOPLE DO NOT RECOGNIZE IT AS AN EARTHQUAKE. STANDING MOTORCARS MAY ROCK SLIGHTLY. VIBRATIONS 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 MOTORCARS 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, AND 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. RAILS BENT.
XI	FEW, IF ANY (MASONRY) STRUCTURES REMAIN STANDING. BRIDGES DESTROYED. RAILS BENT GREATLY.
XII	DAMAGE TOTAL. LINES OF SIGHT AND LEVEL ARE DISTORTED. OBJECTS THROWN INTO THE AIR.

### Previous Occurrences for Earthquakes

Historically, the most significant seismic activity in Illinois is associated with New Madrid Seismic Zone. The New Madrid Seismic Zone produced three large earthquakes in the central U.S. with magnitudes estimated between 7.0 and 7.7 on December 16, 1811, January 23, 1812, and February 7, 1812. These earthquakes caused violent ground cracking and volcano-like eruptions of sediment (sand blows) over an area >10,500 km<sup>2</sup>, and uplifted a 50 km by 23 km zone (the Lake County uplift). The shaking was felt over a total area of over 10 million km<sup>2</sup> (the largest felt area of any historic earthquake). The United States Geological Survey (USGS) and the Center for Earthquake Research and Information (CERI) at the University of Memphis estimate the probability of a repeat of the 1811-1812 type earthquakes (M7.5-8.0) is 7%-10% over the next 50 years (USGS Fact Sheet 2006-3125).

Earthquakes measured in Illinois typically vary in magnitude from very low micro-seismic events of M=1-3 to larger events up to M=5.4. The most recent earthquake in Illinois—as of the date of this report—was a M2.0 event in June of 2019 approximately 5 miles WSW of Metropolis, Illinois. In Northern Illinois, the most recent earthquake was a M2.9 event in March of 2015 approximately 2 miles WNW of Lake in the Hills, Illinois. The last earthquake in Illinois to cause minor damage occurred on April 18, 2008 near Mt. Carmel, IL and measured 5.2 in magnitude. Earthquakes resulting in more serious damage have occurred about every 70 to 90 years and are historically concentrated in southern Illinois.

## Geographic Location for Earthquake Hazard

The two most significant zones of seismic activity in Illinois are the New Madrid Seismic Zone and the Wabash Valley Fault System (Figure 29- Continental U.S. Earthquake Geographic Hazard Zones). There are no earthquake epicenters recorded in Winnebago County. While large earthquakes ( $>M7.0$ ) experienced during the New Madrid Events of 1811 and 1812 are unlikely in Winnebago County, moderate earthquakes ( $\leq 6.0M$ ) in or in the vicinity of Winnebago County are probable. The USGS estimates the probability of a moderate  $M5.5$  earthquake occurring in Winnebago County within the next 500-years at approximately 3% (USGS 2009).

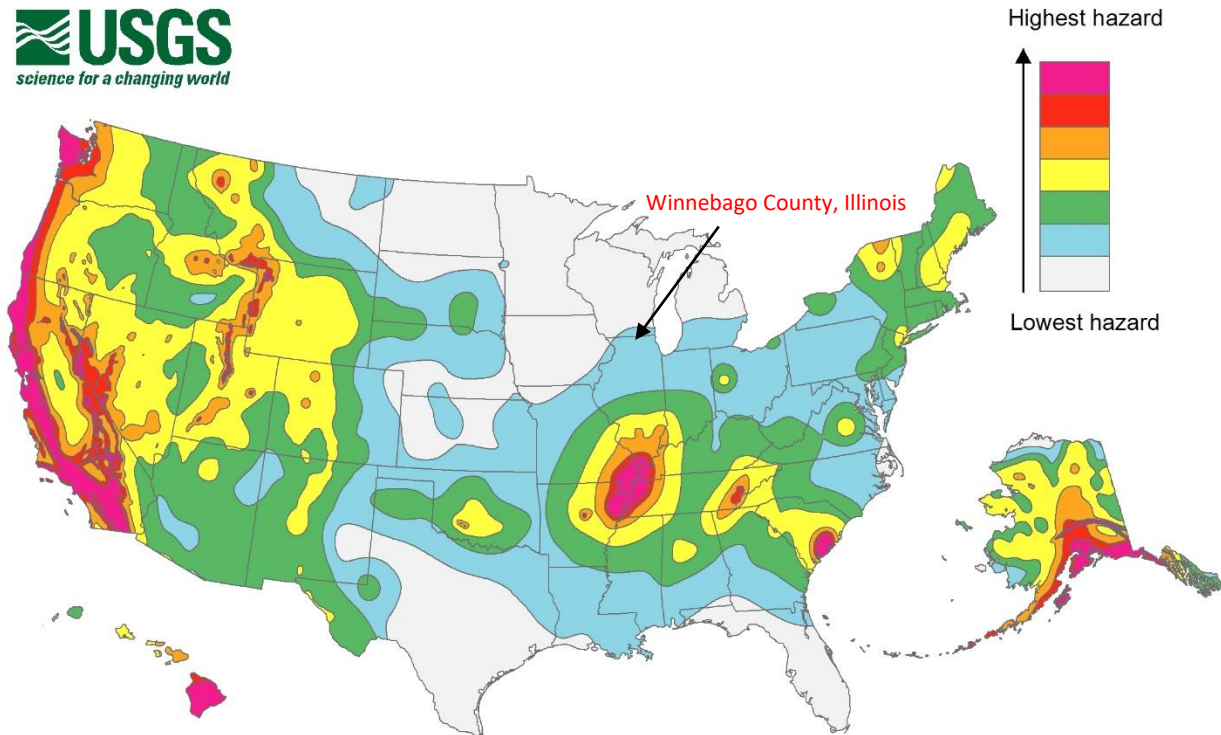


Figure 27: Earthquake Geographic Hazard Zones. Map sourced from the United States Geologic Survey (USGS 2014)<sup>1</sup>

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<sup>1</sup> Location of Winnebago County on map is approximate.



### Frequency of Damaging Earthquake Shaking Around the U.S.

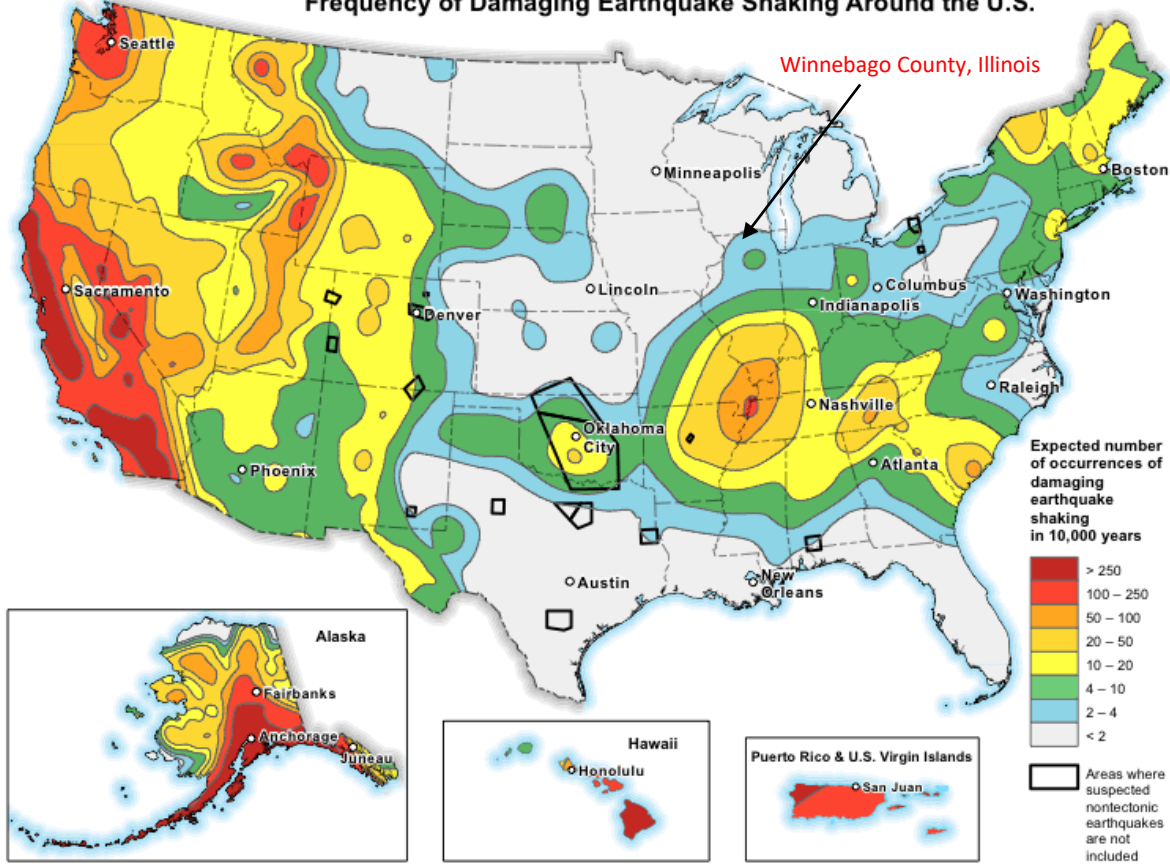


Figure 28: Earthquake Probabilities by Zone. Map sourced from the United States Geologic Survey (USGS 2014)<sup>1</sup>

<sup>1</sup> Location of Winnebago County on map is approximate.



## Hazard Extent for Earthquake Hazard

Earthquake effects are possible anywhere in Winnebago County. One of the most critical sources of information that is required for accurate assessment of earthquake risk is soils data. The project team used GIS data from the Central United States Earthquake Consortium (CUSEC) to identify soils that were most susceptible to liquefaction. According to the USGS Liquefaction takes place when loosely packed, water-logged sediments at or near the ground surface lose their strength in response to strong ground shaking. Liquefaction occurring beneath buildings and other structures can cause major damage during earthquakes. Figure 31 identifies the soils in Illinois most susceptible to failure. Based on historical information and current USGS and SIU research and studies, future earthquakes in Winnebago County are possible, but large (>M7.0) earthquakes that can cause catastrophic damage are unlikely. Figure 29 and Figure 30 illustrates the probability of an earthquake event occurring within the Winnebago County area.

### Risk Identification for Earthquake Hazard

Based on historical information, future occurrences of varying level intensity earthquake events in Winnebago County is unlikely. According to the Risk Priority Index Number (RPN) and County input, earthquake is ranked as the number six hazard.

HAZARD	RISK PRIORITY INDEX NUMBER (RPN) RANKING
EARTHQUAKE	6

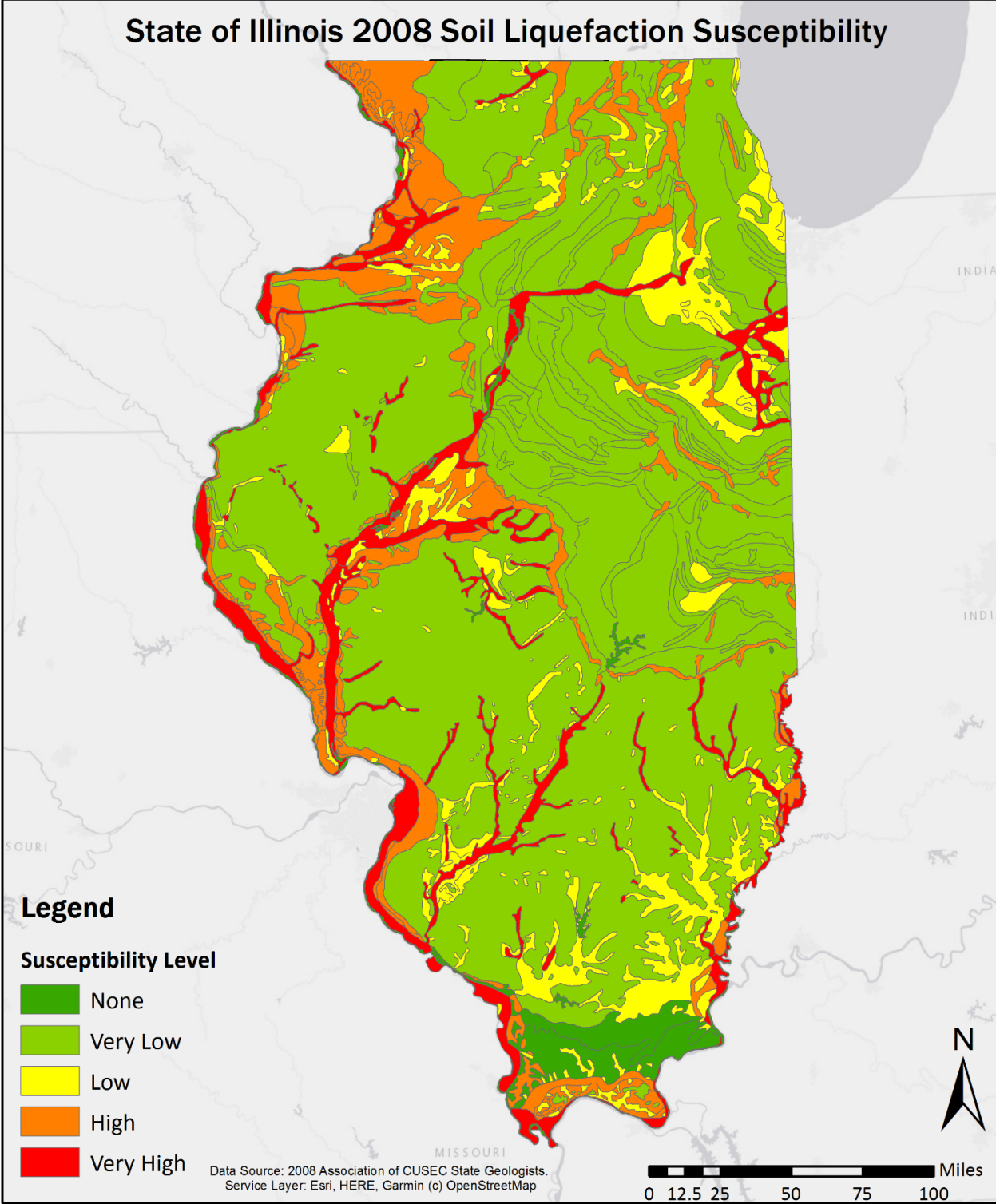


Figure 29: CUSEC Soil Liquefaction Susceptibility (2008). Data provided to CUSEC by USGS.

## Hazus-MH Analyses for Four Earthquake Scenarios

SIU reviewed existing geological information and recommendations from the Winnebago County project team for earthquake scenarios. SIU ran a deterministic and a probabilistic earthquake scenario to provide a reasonable basis for earthquake planning in Winnebago County. The deterministic scenario was a Moment Magnitude of 5.5 with the epicenter located on the Sandwich Fault Zone. The Sandwich Fault Zone is a fault zone that runs northwest from Oswego to Ogle County, transecting Lee County in Northern Illinois. The fault is historically not active, although there was a minor earthquake in 2002, and another, slightly larger one in 2010. This represents a realistic scenario for planning purposes.

Additionally, the earthquake-loss analysis included a probabilistic scenario based on ground-shaking parameters derived from U.S. Geological Survey probabilistic seismic hazard curves for the earthquake with the 500-year return period. This scenario evaluates the average impacts of a multitude of possible earthquake epicenters with a magnitude typical of that expected for a 500-year return period.

The earthquake hazard modeling scenarios performed are:

- Magnitude 5.5 500-year probability event in Winnebago County
- Magnitude 5.5 deterministic event along the Sandwich Fault Zone

Modeling a deterministic scenario requires user input for a variety of parameters. One of the most critical sources of information required for accurate assessment of earthquake risk is soils data. SIU used a National Earthquake Hazard Reduction Program (NEHRP) soil data for Illinois in the analysis. NEHRP soil classifications portray the degree of shear-wave amplification that can occur during ground shaking. FEMA provided the soils map and liquefaction-potential map that is the default in Hazus-MH.

Earthquake hypocenter depths in Illinois range from less than 1.0 to ~25.0 km. The deterministic scenarios used the average hypocenter depth of ~10.0 km. For this scenario type, Hazus-MH requires the user to define an attenuation function. SIU used the Toro et al. (1997) attenuation function for the deterministic earthquake scenario to maintain consistency with the USGS (2006) strong ground motion modeling in the central United States.

This report presents two types of building losses: 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 earthquake. Business interruption losses also include the temporary living expenses for those people displaced from their homes because of the earthquake.

## Results for 500-Year Probabilistic Scenario – General Building Stock

Tables 41 and 42 show the results of the 500-year probabilistic analysis. The total economic loss estimated for the M5.5 probabilistic earthquake scenario is \$15.29 million, which includes building and lifeline related losses based on the Region's available inventory. Hazus-MH estimates that the event

would at least moderately damage approximately 281 buildings. This is 0% of the total number of buildings in the Region. Hazus-MH estimates that the event would damage one building beyond repair. Building-related losses totaled \$14.77 million; 29% of the estimated losses were related to the business interruption of the Region. The residential occupancy class sustained the largest loss, experiencing 53% of the total loss.

Table 41: 500-Year Probabilistic Earthquake Damage Estimates by Building Type

BUILDING TYPE	NONE		SLIGHT		MODERATE		EXTENSIVE		COMPLETE	
	COUNT	(%)	COUNT	(%)	COUNT	(%)	COUNT	(%)	COUNT	(%)
AGRICULTURE	424	0.39	6	0.52	2	0.73	0	0.88	0	0.40
COMMERCIAL	5,527	5.08	80	6.98	23	8.98	2	10.43	0	6.93
EDUCATIONAL	162	0.15	2	0.20	1	0.26	0	0.30	0	0.32
GOVERNMENT	115	0.11	1	0.12	0	0.15	0	0.17	0	0.20
INDUSTRIAL	1,983	1.82	30	2.63	9	3.61	1	4.17	0	1.79
OTHER RESIDENTIAL	18,339	16.85	231	20.15	56	21.90	4	17.81	0	18.49
RELIGION	460	0.42	7	0.62	2	0.82	0	0.98	0	0.95
SINGLE FAMILY	81,825	75.18	787	68.78	163	63.61	16	65.27	1	70.92
<b>TOTAL:</b>	<b>108,834</b>		<b>1,144</b>		<b>256</b>		<b>24</b>		<b>1</b>	

Table 42: 500-Year Probabilistic Earthquake Estimates of Building Economic Losses (in Millions of Dollars)

CATEGORY	AREA	SINGLE FAMILY	OTHER RESIDENTIAL	COMMERCIAL	INDUSTRIAL	OTHER	TOTAL
INCOME LOSSES	WAGE	0.00	0.03	0.73	0.10	0.05	0.91
	CAPITAL-RELATED	0.00	0.01	0.57	0.06	0.01	0.65
	RENTAL	0.21	0.25	0.42	0.04	0.02	0.94
	RELOCATION	0.74	0.18	0.29	0.15	0.15	1.81
	SUBTOTAL:	0.95	0.47	2.31	0.35	0.23	4.31
CAPITAL STOCK LOSSES	STRUCTURAL	1.44	0.38	0.75	0.44	0.16	3.18
	NON-STRUCTURAL	2.93	1.10	1.13	0.58	0.28	6.02
	CONTENT	0.35	0.13	0.32	0.31	0.07	1.17
	INVENTORY	0.00	0.00	0.01	0.07	0.00	0.08
	SUBTOTAL:	4.72	1.62	2.21	1.40	0.51	10.45
	TOTAL:	5.67	2.09	4.52	1.75	0.74	14.77

### Results for M5.5 Deterministic Scenario – General Building Stock

Tables 43 and 44 show the results for Winnebago County of the M5.5 Deterministic Scenario epicenter along the Sandwich Fault Zone. The total economic loss estimated for the M5.5 deterministic earthquake scenario is \$171.81 million, which includes building and lifeline related losses based on the Region’s available inventory. Hazus-MH estimates that the event would at least moderately damage approximately 2,042 buildings. This is more than 2% of the total number of buildings in the Region. Hazus-MH estimates that the event would damage 20 buildings beyond repair. Building-related losses totaled \$153.30 million; 21% of the estimated losses were related to the business interruption of the Region. The residential class sustained the largest loss, experiencing 51% of the total loss.

Table 43: M5.5 Deterministic Earthquake Damage Estimates by Building Type

BUILDING TYPE	NONE		SLIGHT		MODERATE		EXTENSIVE		COMPLETE	
	COUNT	(%)	COUNT	(%)	COUNT	(%)	COUNT	(%)	COUNT	(%)
AGRICULTURE	391	0.38	27	0.42	12	0.68	2	0.84	0	0.51
COMMERCIAL	5,101	5.00	361	5.75	145	8.13	23	9.92	2	7.29
EDUCATIONAL	150	0.15	10	0.16	4	0.23	1	0.27	0	0.23
GOVERNMENT	106	0.10	7	0.12	3	0.16	0	0.17	0	0.21
INDUSTRIAL	1,820	1.78	132	2.10	61	3.41	10	4.25	0	2.30
OTHER RESIDENTIAL	16,931	16.61	1,246	19.84	402	22.52	48	20.12	4	18.43
RELIGION	420	0.41	33	0.53	14	0.76	2	0.96	0	0.91
SINGLE FAMILY	77,1017	75.75	4,465	71.09	1,144	64.10	150	63.47	15	70.03
<b>TOTAL:</b>	<b>101,936</b>		<b>6,281</b>		<b>1,785</b>		<b>237</b>		<b>21</b>	

Table 44: M5.5 Deterministic Earthquake Estimates of Building Economic Losses (in Millions of Dollars)

CATEGORY	AREA	SINGLE FAMILY	OTHER RESIDENTIAL	COMMERCIAL	INDUSTRIAL	OTHER	TOTAL
INCOME LOSSES	WAGE	0.00	0.30	5.10	0.76	0.35	6.51
	CAPITAL-RELATED	0.00	0.13	3.92	0.48	0.09	4.61
	RENTAL	1.54	1.92	2.82	0.31	0.13	6.72
	RELOCATION	5.65	1.44	4.34	1.17	1.10	13.70
	SUBTOTAL:	7.19	3.79	16.19	2.71	1.67	31.55
CAPITAL STOCK LOSSES	STRUCTURAL	10.11	2.79	5.23	3.17	1.14	22.44
	NON-STRUCTURAL	29.63	13.31	13.73	10.20	3.10	69.96
	CONTENT	7.85	3.18	7.56	7.22	1.59	27.39
	INVENTORY	0.00	0.00	0.23	1.71	0.02	1.95
	SUBTOTAL:	47.58	19.28	26.74	22.30	5.85	121.75
TOTAL:	54.77	23.07	42.93	25.02	7.52	153.30	

### Vulnerability Analysis for Earthquake Hazard

Earthquakes could impact the entire county equally; therefore, the entire county’s population and all buildings are vulnerable to an earthquake. To accommodate this risk, this plan considers all buildings located within the county as vulnerable.

### Critical Facilities

All critical facilities are vulnerable to earthquakes. A critical facility would encounter many of the same impacts as any other building within the county. These impacts include structural failure and loss of facility functionality (e.g., a damaged police station cannot serve the community). Tables 5, 6, and 7 include a list of the essential facilities in Winnebago County and Figure 11 displays a large format map of the locations of all critical facilities within the county.

### Building Inventory

The buildings within the county can expect similar impacts to those discussed for critical facilities. These impacts include structural failure and loss of building function which could result in indirect impacts (e.g., damaged homes will no longer be habitable causing residents to seek shelter).

## Infrastructure

During an earthquake, the types of infrastructure that shaking could impact include roadways, utility lines/pipes, railroads, and bridges. Since an extensive inventory of the infrastructure is not available to the public, it is important to emphasize that any number of these items could become damaged in the event of an earthquake. The impacts to these items include broken, failed, or impassable roadways, broken or failed utility lines (e.g., loss of power or gas to community), and railway failure from broken or impassable railways. Bridges could also fail or become impassable, causing risk to motorists.

## Vulnerability to Future Assets/Infrastructure for Earthquake Hazard

New construction, especially critical facilities, should accommodate earthquake mitigation design standards.

## Suggestions for Community Development Trends

Community development should occur outside of the low-lying areas in floodplains with a water table within five feet of grade that is susceptible to liquefaction.

## Groundwater Shortage

According to the USGS, groundwater “decline and depletion” is occurring over large areas in the United States. As the United States’ population continues to grow, surface sources of freshwater for drinking, energy, and production dwindle. Per the USGS, groundwater provides drinking water to nearly half of the total population of the United States and nearly all of the rural population. Additionally, it provides over 50 billion gallons per day for agricultural needs—feeding millions of American consumers.

Groundwater depletion or “over-pumping” can have dire effects on the environment. The depletion rates fall far below the depletion rates leading to shortages in multiple regions throughout the United States. Figure 32 shows the depletion rates in critical areas throughout the United States. Shortages of groundwater can affect the water table, the water found in streams and lakes, the land, the water quality, and the costs on the user. These affects are explained briefly below.

### **Effects of Groundwater Depletion on the Environment, Supply, and User<sup>1</sup>**

#### *Lowering of the Water Table*

- The most severe consequence of the over-pumping of the groundwater is the lowering of the water table. The water table is the level that the water rests at directly underground. For users to reach the groundwater they dig wells. If the water table drops, the wells may have to be dug deeper or re-dug altogether. Additionally, as the water table drops, the yield from a well may decrease significantly.

#### *Reduction of Water in Streams and Lakes*

- Due to ongoing hydrological forces, groundwater and surface water are constantly interacting. A portion, sometimes large, of the water located in streams and lakes comes from groundwater seepage. Groundwater pumping can alter the rates at which this occurs or remove it altogether depending on the severity.

#### *Land Subsidence*

- This geologic phenomenon occurs when the support below the ground disappears or slowly erodes. This change can either happen slowly or rapidly depending on the geology of the area; however, in both instances it causes the land (which supports the structures above) to collapse into the empty space.

#### *Increased Costs for the User*

- As the depth required to access groundwater increases, production and transportation costs increase which are inevitably directly routed to the users of the service.

#### *Deterioration of the Water Quality*

- A major water quality threat to groundwater is contamination from saltwater intrusion. All of the groundwater in the earth is not freshwater; some of the deepest wells of groundwater are saline. Natural conditions maintain the barrier between salt and freshwater; however, drilling and welling can cause major disturbances which can upend and cause saltwater to surge into groundwater supply.

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<sup>1</sup> Data sourced from [https://www.usgs.gov/special-topic/water-science-school/science/groundwater-decline-and-depletion?qt-science\\_center\\_objects=0#qt-science\\_center\\_objects](https://www.usgs.gov/special-topic/water-science-school/science/groundwater-decline-and-depletion?qt-science_center_objects=0#qt-science_center_objects)

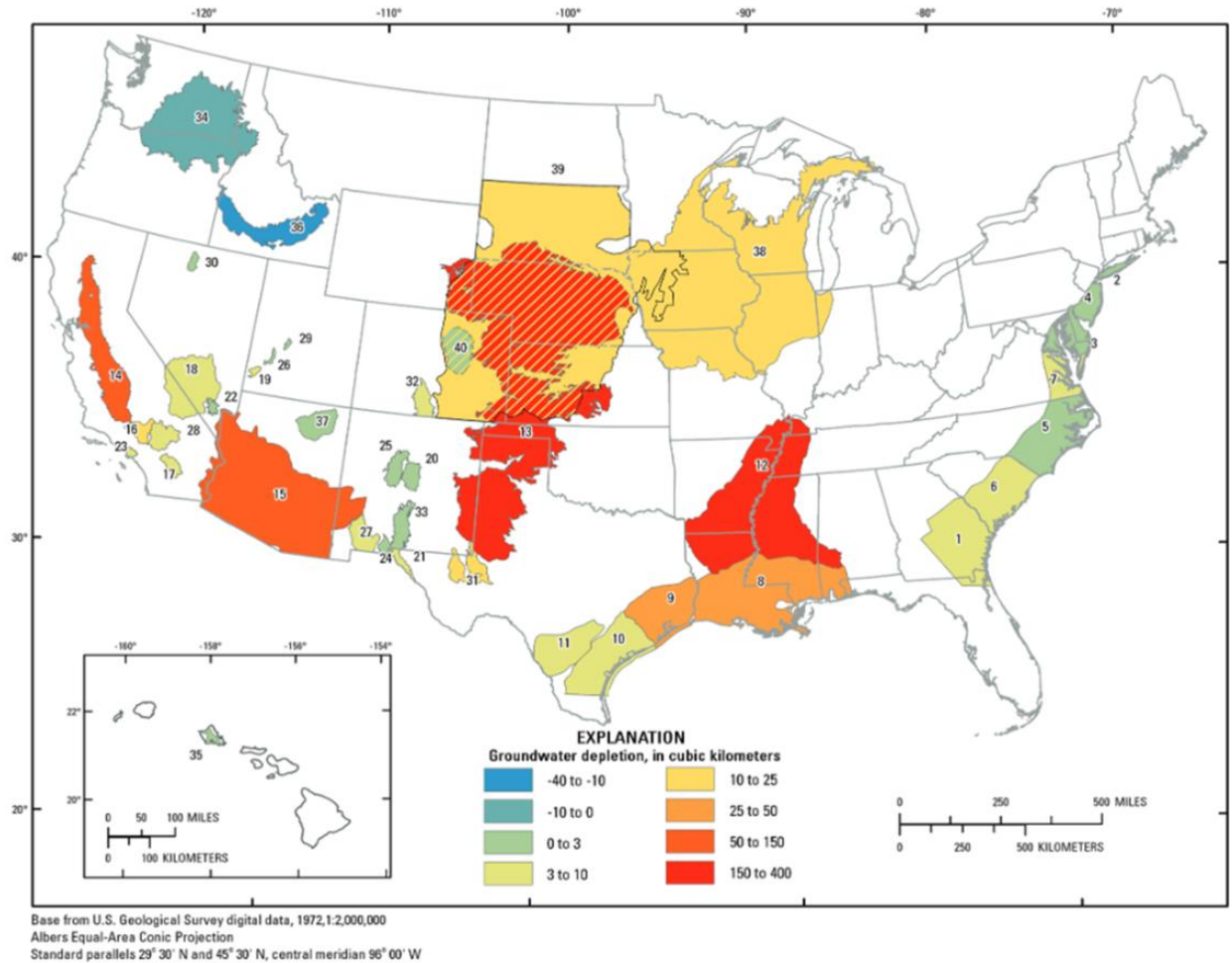


Figure 30: Critical Depletion Rates in the Contiguous Lower 48 States

### Previous Occurrences for Groundwater Shortage

Groundwater shortages are a problem throughout multiple regions in the United States. For example, in California in 2014 the state experienced the confluence of one of the worst multi-year droughts to grip the state. Shortages in water availability reached nearly 80% in some aquifers as the reality set in that the state may not be able to provide clean drinking water. This forced the State of California to pursue multi-billion-dollar infrastructure projects and restrictive water usage controls. California was able to stave off the worst of the drought, however, the drought remains a very serious problem and it highlighted how quickly over-usage push a state to a precipice if austerity measures are not enacted<sup>1</sup>.

For the Midwest, specifically, the problem stretches from Northern Michigan to Southern Louisiana. In Illinois aquifers have provided sources of water for the Chicagoland area since the mid-1800s, contributing to its explosive population growth. However, in 2017 it was shown that Chicago's

<sup>1</sup> Data sourced from <https://www.wri.org/blog/2014/03/drought-only-one-explanation-california-s-water-crisis>



Southwestern Suburbs are on a collision course with a water shortage. Low repletion rates (due to geologic features) and high depletion rates (due to population growth and increases in demand) have exacerbated the water shortage problem locally as Chicago’s more affluent Eastern and Northern Suburbs tap Lake Michigan’s infinite supply. One of Chicago’s largest collar cities, Joliet, is predicted to run out water in 13 years (2032). The City of Joliet is currently forming a plan for how to deal with the impending water shortage.<sup>1</sup> Figure 33 shows the groundwater shortage risk area for the St. Peter Sandstone Aquifer for Northern Illinois. Figure 34 shows the groundwater shortage risk area for the St. Peter Sandstone Aquifer for Winnebago County.

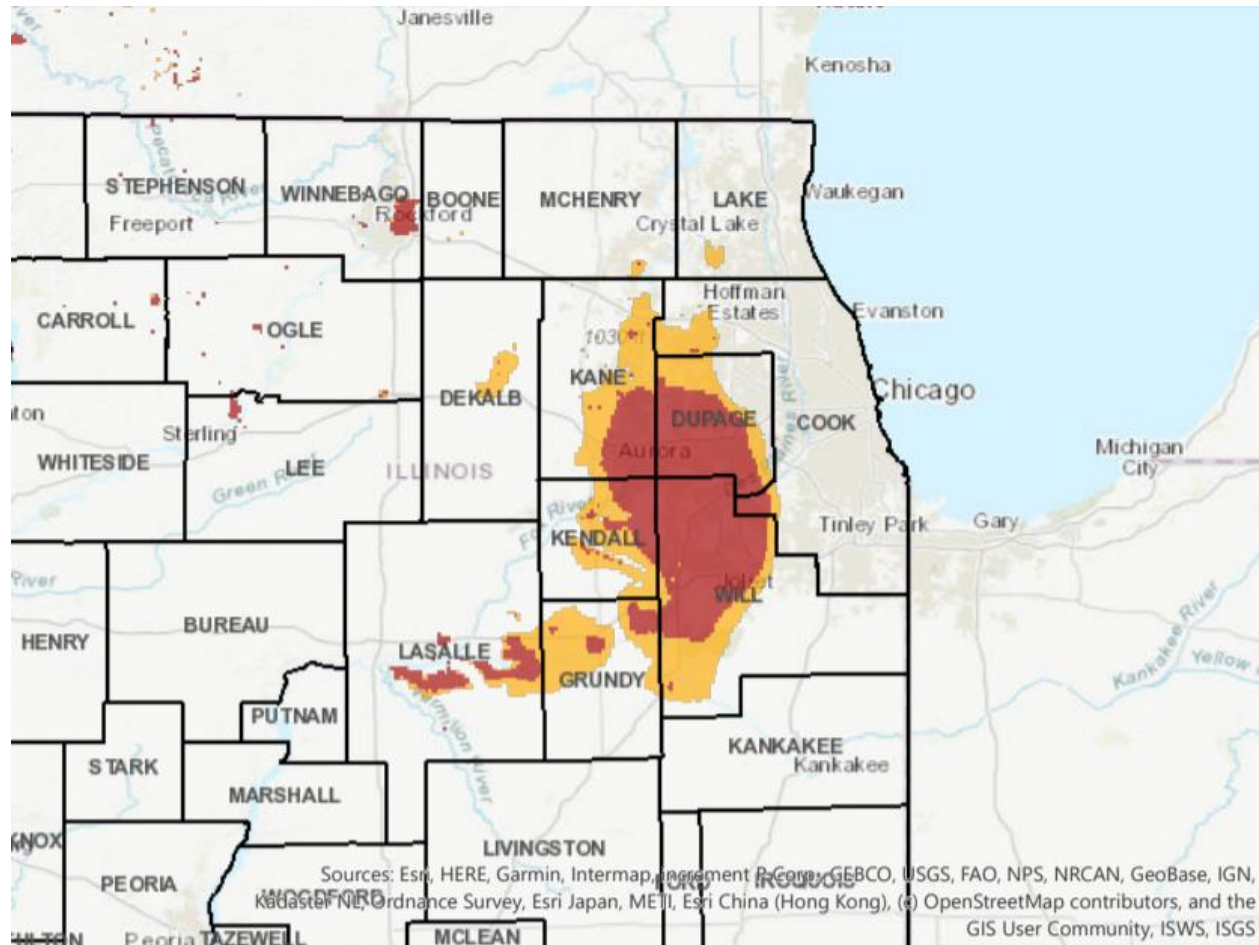


Figure 31: St. Peter Sandstone Aquifer Risk Area for Northern Illinois from the Illinois State Water Survey

<sup>1</sup> Data sourced from “Groundwater Depletion in Chicago’s Southwestern Suburbs. ISWS. Devin H. Mannix, Daniel B. Abrams, et. Al. Aug 29, 2017. <https://www.isws.illinois.edu/pubdoc/MP/ISWSMP-208.pdf>

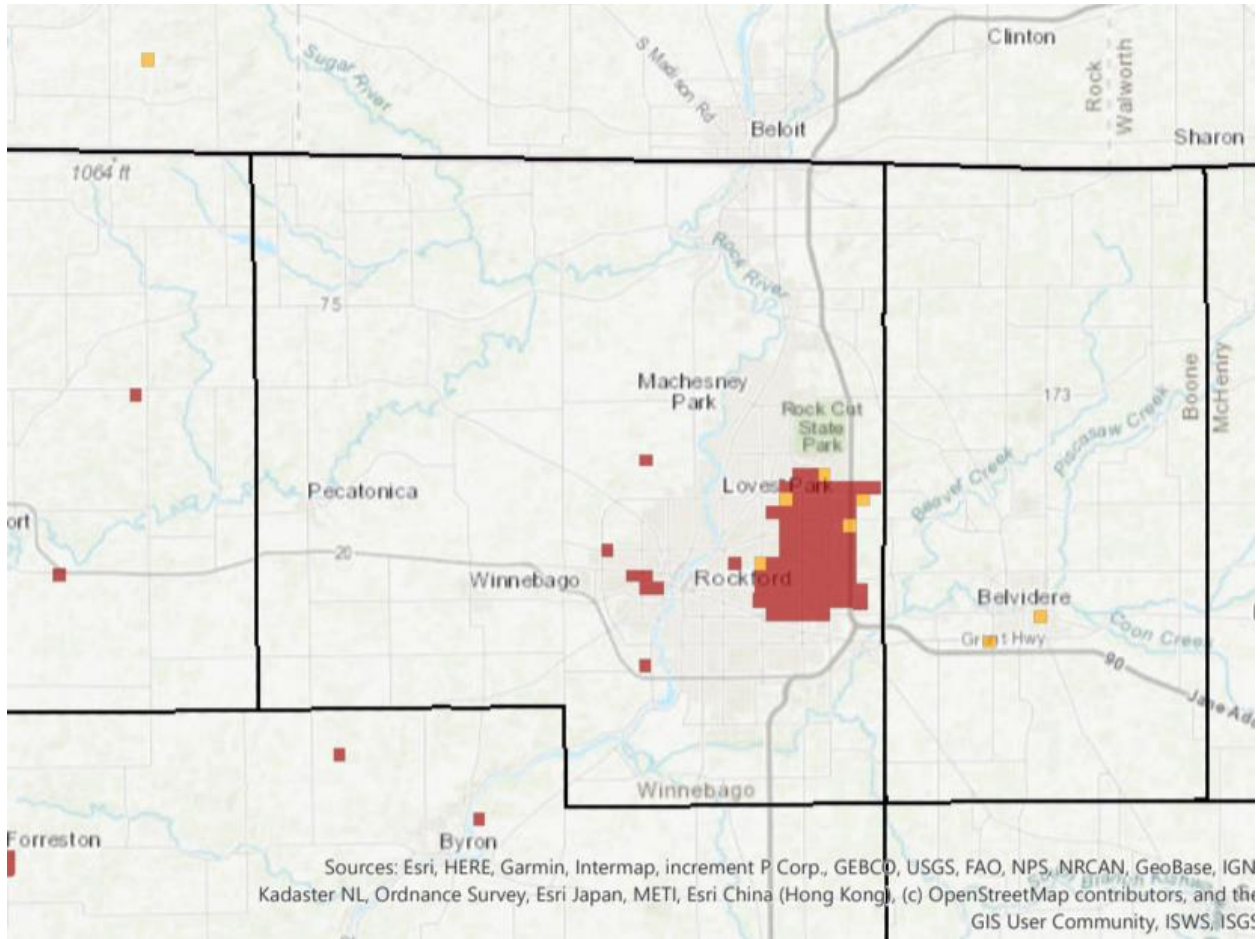


Figure 32: St. Peter Sandstone Aquifer Risk Area for Winnebago County from the Illinois State Water Survey

### Geographic Location of Groundwater Shortage

Groundwater shortage impacts would be felt at the regional level. Figures 32, 33, and 34 highlight the high risk areas at the national, state, and local level, respectively, that are vulnerable to the risk of groundwater shortage.

## Hazard Extent for Groundwater Shortage

Similar to drought, the extent of groundwater shortage hazard varies both depending on the severity and duration of the shortage and the range of depletion and repletion rates. While studies on the groundwater shortage impacts on Northern Illinois are ongoing, the Rock River Watershed is a serious problem that should be addressed now, rather than later when it becomes a serious problem.

### Risk Identification for Groundwater Shortage Hazard

Based on historical information and ongoing water studies in the Region, future occurrences of groundwater shortage events in Winnebago County are likely. According to the Risk Priority Index Number (RPN) and County input, groundwater shortages are ranked as the number eight hazard.

HAZARD	RISK PRIORITY INDEX NUMBER (RPN) RANKING
GROUNDWATER SHORTAGE	8

## Critical Facilities

All critical facilities are impacted by groundwater shortages. A critical facility would encounter many of the same impacts as any other building within the county. These impacts include inability to serve the community or a lack of access to clean drinking water. Tables 5, 6, and 7 include a list of the essential facilities in Winnebago County and Figure 11 displays a large format map of the locations of all critical facilities within the county.

## Infrastructure

Infrastructure such as power plants and most factories would not be able to operate without the availability of ample water. Fire protection services would not be active due to a lack of water. A groundwater shortage would be felt by residents on many levels.

## Vulnerability Analysis for Groundwater Shortage

Groundwater shortages could impact the entire county equally; therefore, the entire county's population and all buildings are vulnerable to an earthquake. To accommodate this risk, this plan considers all buildings located within the county as vulnerable.

## Vulnerability to Future Assets Groundwater Shortage/ Suggestions for Community Development

New development in the county would be equally impacted by groundwater shortages as existing infrastructure. A lack of access to clean, safe drinking water would be of detriment to the entire community. New developments should be built and plan with groundwater use reduction design standards.

## Suggestions for Community Development Trends

Much like droughts and extreme heat, groundwater shortages will be a regional problem. While the initial shortage may affect only one or two municipalities in the beginning, the external affects from that will affect the Region. As such, future development is susceptible to groundwater shortage. Because urban and rural areas are equally vulnerable to this hazard, both should take measures to ensure the continuity of our water supply.

An urban water shortage would spell catastrophe for civil, urban life. On the other hand, rural Winnebago County, much of which is agricultural, would see extreme hardships if a water supply issue were to present itself. Local officials should address groundwater shortage hazards by educating the public on steps to take before and during the event. Further, proactive measures towards the problem will do much more to help the County than reactive measures.



# Winnebago County, Illinois MHMP & the Future

## 8 Mitigation Strategies

The goal of mitigation is to reduce the future impacts of a hazard, including property damage, disruption to local and regional economies, and the amount of public and private funds spent to assist with recovery. Overall, mitigation strategies attempt to build disaster-resistant communities. Mitigation actions and projects are necessarily based on a well-constructed risk assessment (Section 6). Mitigation is an ongoing process that adapts over time to accommodate a community's needs.

### Winnebago County Successful Mitigation Projects and Related Projects

To be successful, mitigation must be a recurrent process that is continually striving to lessen the impact of natural hazards within the county. The following are projects that have been successfully completed following the adoption of Winnebago County's 2007 Multi-Hazard Mitigation Plan.

#### **Federal Emergency Management Agency (FEMA)/Illinois State Water Survey (ISWS)**

##### *Kishwaukee Watershed Discovery*

- Through FEMA's Flood Risk Mapping (FRM) program, FEMA worked with ISWS to develop more comprehensive maps of the Kishwaukee Watershed's flood risk areas. While much of this was located in Boone County, some of the flood risk mapping impacted areas in Winnebago County.

#### **State of Illinois: Department of Natural Resources (IDNR)**

##### *Water Demand in the Rock River Water Supply Planning Region, 2010-2060*

- Through the IDNR in partnership with the ISWS, a comprehensive water demand study was completed for the Rock River Region (IDNR's northwestern water study geographic region). The study focused on five areas of major water demand: public supply, self-supplied domestic, self-supplied thermoelectric power generation, self-supplied industrial and commercial, and self-supplied irrigation. The study also factored in climate change scenarios and their impact on water availability.

#### **Winnebago County**

##### *Acquisition of 12 Flood Prone Structures*

- FEMA has released \$1,667,191 in Hazard Mitigation Grant Program (HMGP) funds to Winnebago County, Ill., for the acquisition and removal of 12 homes in Edgemere Terrace that have been repeatedly damaged by flooding.

##### *Acquisition of 29 Flood Prone Structures and 61 Adjacent Vacant Lots*

- The U.S. Department of Homeland Security's Federal Emergency Management Agency (FEMA) has released \$1,446,034 in Hazard Mitigation Grant Program (HMGP) funds to Winnebago County, Ill., for the acquisition and removal of 29 structures & 61 adjacent vacant lots on Blackhawk Island that have been repeatedly damaged by flooding.

##### *Update Flood Maps*

- FEMA has provided funding to the Illinois State Water Survey and the USACE Rock Island District to update flood studies and flood hazard mapping in Winnebago County. A new engineering study of the hydrology and hydraulics of the Rock River took place. In addition, funding has been provided to update flood studies and mapping for a limited number of tributaries to the Rock

River in Winnebago County. The Illinois State Water Survey, on behalf of the Federal Emergency Management Agency, held a Winnebago County Flood Risk Review Meeting on May 1, 2013 in Rockford, Illinois.

- From 2015 to 2017 the Village of Roscoe has acquired 6 flood prone structures. Funding sources have been HMGP funds totaling over \$1,000,000.

#### **City of Rockford**

##### *Acquisition of 38 Flood Prone Structures*

- The City of Rockford has acquired and demolished 112 flood prone structures in the Keith Creek floodplain. Funding sources have been HMGP funds totaling \$5,240,765, DCEO CDAP funds totaling \$2,918,186 and DCEO IKE Buyout Program funds totaling \$4,832,727.
- From 2015 to 2017 the City of Rockford has acquired 92 flood prone structures. Funding sources have been HMGP funds totaling over \$6,685,000.

#### **Machesney Park**

##### *Acquisition of 116 Flood Prone Structures*

- The Village of Machesney Park has acquired 143 parcels and demolished 116 flood prone structures in the Shore Drive and floodplain areas within the Village. Funding sources have been HMGP funds totaling \$6,465,476, DCEO funds total \$6,022,382, FMA funds totally \$260,752, and IDNR funds totally \$277,612.

## **National Flood Insurance Program (NFIP)**

As of the date of this plan, FEMA has paid over two million dollars in flood insurance claims in Illinois since 1978 to approximately 270 claimants<sup>1</sup>. Table 45 includes a summary of additional information for Winnebago County including information on the NFIP participation and date, Flood Insurance Rate Map (FIRM) participation and data, and floodplain ordinances. FEMA manages a program known as the Community Rating System (CRS); however, none of the municipalities in Winnebago County participate in this program. Cherry Valley, Durand, Loves Park, Machesney Park, New Milford, Pecatonica, Rockford, Roscoe, South Beloit, and the unincorporated areas of Winnebago County participate in the NFIP. As of 10/15/1981, the Village of Rockton has been suspended from the NFIP. Winnebago County will continue to provide information to these municipalities regarding the benefits of the program.

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<sup>1</sup> Data sourced from <https://www.fema.gov/policy-claim-statistics-flood-insurance>

Table 45: Community NFIP Participation, FIRM Data, and Floodplain Ordinance Date

COMMUNITY	PARTICIPATION DATE	FIRM DATE	FLOODPLAIN ORDINANCE
WINNEBAGO COUNTY	11/19/1980	02/17/2016	08/2006
CHERRY VALLEY	03/16/1981	02/17/2016	03/2004
DURAND	09/02/1981	09/06/2006	08/2006
LOVES PARK	10/17/1978	02/17/2016	02/2011
MACHESNEY PARK	09/30/1981	02/17/2016	01/2016
NEW MILFORD	09/06/2006	02/17/2016	06/2006
PECATONICA	12/01/1981	02/17/2016	09/2006
ROCKFORD	12/04/1979	02/17/2016	9/2011
ROCKTON	10/15/1981	02/17/2016	-
ROSCOE	03/01/1982	02/17/2016	03/1993
SOUTH BELOIT	01/02/1980	02/17/2016	08/1976

## Zoning & Building Codes

Ordinances that directly pertain, or can pertain, to disaster mitigation are listed in Table 46. These are discussed in more detail, if information was provided, in this section. Data in this table was collected from Municode and the individual municipalities.

Table 46: Related Municipal Zoning Ordinances

MUNICIPALITY NAME	ZONING	BUILDING CODES	LAND USE PLAN	STORMWATER MANAGEMENT PLAN	STORMWATER MANAGEMENT ORDINANCE	FLOODING CONTROLS	SUBDIVISION ORDINANCE	BURNING ORDINANCE	SEISMIC STANDARDS	EROSION MANAGEMENT
CHERRY VALLEY	YES	YES	YES	NO	YES	YES	YES	YES	NO	YES
DURAND	YES	YES	NO	NO	YES	YES	YES	YES	NO	NO
LOVES PARK	YES	YES	YES	NO	YES	YES	YES	YES	NO	YES
MACHESNEY PARK	YES	YES	YES	NO	YES	YES	YES	YES	NO	YES
NEW MILFORD	YES	YES	NO	NO	YES	YES	YES	YES	NO	YES
PECATONICA	YES	YES	NO	NO	YES	-	-	YES	-	YES
ROCKFORD	YES	YES	YES	YES	YES	YES	YES	YES	NO	YES
ROCKTON	YES	YES	NO	NO	YES	YES	YES	YES	NO	YES
ROSCOE	YES	YES	YES	YES	YES	YES	YES	YES	NO	YES
SOUTH BELOIT	YES	YES	YES	YES	YES	YES	YES	YES	NO	YES
WINNEBAGO	YES	YES	YES	YES	YES	YES	YES	YES	NO	YES
WINNEBAGO COUNTY	YES	YES	YES	NO	YES	YES	YES	YES	NO	YES



## Fire Insurance Ratings<sup>1</sup>

Fire Insurance Ratings (FIR) are provided to your community’s fire department by a company called Insurance Service Offices (ISO). The ratings are generally not made available to the public. These ratings directly impact your home insurance rates. ISO rates how effective your fire department is at protecting your community from hazards. The ISO rating is also known as a Public Protection Classification (PPC) and is a score from one to ten and often is used as an indicator for how well-equipped your fire department(s) are to protect the community. One is the best possible rating with ten meaning the fire department does not meet the ISO minimum standards. The Greater Rockford Airport fire is not evaluated by the ISO rating system as they only handle airport-related fires. Table 47 provides the municipal fire insurance ratings.

Table 47: Fire Insurance Ratings by Community Fire Protection District

FACILITY NAME	FIRE INSURANCE RATING	NUMBER OF EMPLOYEES
BLACKHAWK FIRE	7/9	16
CHERRY VALLEY FIRE PROTECTION DISTRICT	4/6	53
DURAND FIRE PROTECTION DISTRICT*	5/8	49
GREATER ROCKFORD AIRPORT FIRE	N/A	6
HARLEM ROSCOE FIRE PROTECTION DISTRICT*	3	86
LOVES PARK FIRE PROTECTION DISTRICT*	5/8	38
NEW MILFORD FIRE PROTECTION DISTRICT*	4	20
NORTH PARK FIRE PROTECTION DISTRICT*	4	56
NORTHWEST FIRE PROTECTION DISTRICT	5/8	30
PECATONICA FIRE PROTECTION DISTRICT*	4/8	41
ROCKFORD FIRE PROTECTION DISTRICT*	2	280
ROCKTON FIRE PROTECTION DISTRICT*	3	50
SHIRLAND FIRE PROTECTION DISTRICT	5/8	20
SOUTH BELOIT FIRE PROTECTION DISTRICT	3	32
STILLMAN FIRE PROTECTION DISTRICT*	8/4	41
WEST SUBURBAN FIRE PROTECTION DISTRICT	7/9	21
WIN-BUR-SEW FIRE PROTECTION DISTRICT	4/7	47

\*Confirmed as of 2019

<sup>1</sup> Data sourced from <https://www.valuepenguin.com/iso-fire-rating-home-insurance>

## Mitigation Goals

In Section 6 of this plan, the risk assessment identified Winnebago County as prone to several hazards. The Multi-Hazard Mitigation project team members understand that although they cannot eliminate hazards altogether, Winnebago County can work towards building disaster-resistant communities. Below is a generalized list of goals, objectives, and actions. The goals represent long-term, broad visions of the overall vision the county would like to achieve for mitigation. The objectives are strategies and steps that will assist the communities in attaining the listed goals. While these goals are carried from the 2014 version, they were reviewed and deemed applicable by the County and RPC project teams.

### **Goal 1: Lessen the impacts of hazards to new and existing infrastructure**

- *Objective:* Retrofit critical facilities and structures with structural design practices and equipment that will withstand natural disasters and offer weather-proofing.
- *Objective:* Equip public facilities and communities to guard against damage caused by secondary effects of hazards.
- *Objective:* Minimize the amount of infrastructure exposed to hazards.
- *Objective:* Evaluate and strengthen the communication and transportation abilities of emergency services throughout the county.
- *Objective:* Improve emergency sheltering in Winnebago County.

### **Goal 2: Create new, revise, and support existing plans/maps for Winnebago County**

*Objective:* Support compliance with the NFIP for each municipality in Winnebago County.

*Objective:* Review and update existing, or create new, community plans and ordinances to support hazard mitigation.

*Objective:* Conduct new studies/research to profile hazards and follow up with mitigation strategies.

*Objective:* Identify developing hazards as the world around us changes and prepare for them.

### **Goal 3: Develop long-term strategies to educate Winnebago County residents on the hazards affecting their county**

*Objective:* Raise public awareness on hazard mitigation.

*Objective:* Improve education and training of emergency personnel and public officials.

## Mitigation Actions Plans & Strategies

Upon completion of the risk assessment and development of the goals and objectives, the mitigation planning committee reviewed a list of the six mitigation measure categories from the FEMA State and Local Mitigation Planning How-to Guides. The measures are listed as follows:

- **Prevention:** Government, administrative, or regulatory actions or processes that influence the way land and buildings are developed and built. These actions also include public activities to reduce hazard losses. Examples include planning and zoning, building codes, capital improvement programs, open space preservation, and stormwater management regulations.
- **Property Protection:** Actions that involve the modification of existing buildings or structures to protect them from a hazard or removal from the hazard area. Examples include acquisition, elevation, structural retrofits, storm shutters, and shatter-resistant glass.

- **Public Education and Awareness:** Actions to inform and educate citizens, elected officials, and property owners about the hazards and potential ways to mitigate them. Such actions include outreach projects, real estate disclosure, hazard information centers, and school-age and adult education programs.
- **Natural Resource Protection:** Actions that, in addition to minimizing hazard losses, preserve or restore the functions of natural systems. These actions include sediment and erosion control, stream-corridor restoration, watershed management, forest and vegetation management, and wetland restoration and preservation.
- **Emergency Services:** Actions that protect people and property during and immediately after a disaster or hazard event. Services include warning systems, emergency response services, and protection of critical facilities.
- **Structural Projects:** Actions that involve the construction of structures to reduce the impacts of a hazard. Such structures include dams, levees, floodwalls, seawalls, retaining walls, and safe rooms.

As part of the evaluative measures set forth by FEMA, the project team was tasked with listing potential mitigation activities using the FEMA evaluation criteria. FEMA uses their evaluation criteria STAPLE+E (stands for social, technical, administrative, political, legal, economic and environmental) to assess the developed mitigation strategies.

**Social:**

- Will the proposed action adversely affect one segment of the population?
- Will the action disrupt established neighborhoods, break up voting districts, or cause the relocation of lower income people?

**Technical:**

- How effective is the action in avoiding or reducing future losses?
- Will it create more problems than it solves?
- Does it solve the problem or only a symptom?
- Does the mitigation strategy address continued compliance with the NFIP?

**Administrative:**

- Does the municipality have the capability (staff, technical experts, and/or funding) to implement the action, or can it be readily obtained?
- Can the community provide the necessary maintenance?
- Can it be accomplished in a timely manner?

**Political:**

- Is there political support to implement and maintain this action?
- Is there a local champion willing to help see the action to completion?
- Is there enough public support to ensure the success of the action?
- How can the mitigation objectives be accomplished at the lowest cost to the public?

**Legal:**

- Does the community have the authority to implement the proposed action?
- Are the proper laws, ordinances, and resolutions in place to implement the action?
- Are there any potential legal consequences?
- Is there any potential community liability?
- Is the action likely to be challenged by those who may be negatively affected?
- Does the mitigation strategy address continued compliance with the NFIP?

**Economic:**

- Are there currently sources of funds that can be used to implement the action?
- What benefits will the action provide?
- Does the cost seem reasonable for the size of the problem and likely benefits?
- What burden will be placed on the tax base or local economy to implement this action?
- Does the action contribute to other community economic goals such as capital improvements or economic development?
- What proposed actions should be considered but be “tabled” for implementation until outside sources of funding are available?

**Environmental:**

- How will this action affect the environment (land, water, endangered species)?
- Will this action comply with local, state, and federal environmental laws and regulations?
- Is the action consistent with community environmental goals?

## Implementation and Analysis of Mitigation Projects

Implementation of the mitigation plan is critical to the overall success of the mitigation planning process. The first step is to decide, based upon many factors, which action will be undertaken first. In order to pursue the top priority first, an analysis and prioritization of the actions is important. Some actions may occur before the top priority due to financial, engineering, environmental, permitting, and site control issues. Public awareness and input of these mitigation actions can increase knowledge to capitalize on funding opportunities and monitoring the progress of an action.

As part of the 2019 version, Winnebago County, individual municipalities, and the organizations that operate in the County were asked to review the 2014 strategies they developed during the 2014 plan and offer and comments or additions where appropriate. The matrices included under [Mitigation Strategies 2019](#) includes completed and Ongoing mitigation strategies. Once the review was complete, the prioritization was updated where appropriate. Table 48 summarizes the STAPLE+E criteria used by FEMA to prioritize strategies. For each incorporated municipality, a rating of high, medium, or low was assessed for each mitigation item.

Table 48: STAPLE+E Criteria from FEMA

<b>S – SOCIAL</b>	MITIGATION ACTIONS ARE ACCEPTABLE TO THE COMMUNITY IF THEY DO NOT ADVERSELY AFFECT A PARTICULAR SEGMENT OF THE POPULATION, DO NOT CAUSE RELOCATION OF LOWER INCOME PEOPLE, AND IF THEY ARE COMPATIBLE WITH THE COMMUNITY’S SOCIAL AND CULTURAL VALUES.
<b>T – TECHNICAL</b>	MITIGATION ACTIONS ARE TECHNICALLY MOST EFFECTIVE IF THEY PROVIDE A LONG-TERM REDUCTION OF LOSSES AND HAVE MINIMAL SECONDARY ADVERSE IMPACTS.
<b>A – ADMINISTRATIVE</b>	MITIGATION ACTIONS ARE EASIER TO IMPLEMENT IF THE MUNICIPALITY HAS THE NECESSARY STAFFING AND FUNDING.
<b>P – POLITICAL</b>	MITIGATION ACTIONS CAN TRULY BE SUCCESSFUL IF ALL STAKEHOLDERS HAVE BEEN OFFERED AN OPPORTUNITY TO PARTICIPATE IN THE PLANNING PROCESS AND IF THERE IS PUBLIC SUPPORT FOR THE ACTION.
<b>L – LEGAL</b>	IT IS CRITICAL THAT THE MUNICIPALITY OR IMPLEMENTING AGENCY HAVE THE LEGAL AUTHORITY TO IMPLEMENT AND ENFORCE A MITIGATION ACTION.
<b>E – ECONOMIC</b>	BUDGET CONSTRAINTS CAN SIGNIFICANTLY DETER THE IMPLEMENTATION OF MITIGATION ACTIONS. HENCE, IT IS IMPORTANT TO EVALUATE WHETHER AN ACTION IS COST-EFFECTIVE, AS DETERMINED BY A COST BENEFIT REVIEW, AND POSSIBLE TO FUND.
<b>E – ENVIRONMENTAL</b>	SUSTAINABLE MITIGATION ACTIONS THAT DO NOT HAVE AN ADVERSE EFFECT ON THE ENVIRONMENT, COMPLY WITH FEDERAL, STATE, AND LOCAL ENVIRONMENTAL REGULATIONS, AND ARE CONSISTENT WITH THE COMMUNITY’S ENVIRONMENTAL GOALS, HAVE MITIGATION BENEFITS WHILE BEING ENVIRONMENTALLY SOUND.

For each mitigation action related to infrastructure, new and existing infrastructure was considered. Additionally, the mitigation strategies address continued compliance with the NFIP. While an official cost-benefit review was not conducted for any of the mitigation actions – potential funding sources are included in the following paragraph. The overall benefits were considered when prioritizing mitigation items from high to low. An official cost-benefit review would be conducted prior to the implementation of any mitigation actions; however, as part of the scope of this project – an official review was not completed for each mitigation item. [Appendix E](#) presents mitigation projects for each incorporated municipality and organization developed and updated for 2019. This plan identifies potential funding sources for each mitigation item as well as responsible positions, departments, or municipalities for the mitigation strategies included below. The objective of this updated plan is to generate proactive mitigation strategies with clear goals and objectives. The Winnebago County Highway Department continues to lead local planning efforts – with the intention of transferring this responsibility to the Winnebago County Emergency Management offices – who would become the local champion for the mitigation actions. The Winnebago County Board, the cities, and the villages continue to be an integral part of the implementation process. Federal and state assistance will be necessary for a number of the identified actions included below and this is noted under the potential funding sources.

### Potential Mitigation Item Funding Sources

The largest issue in implementing many mitigation items is a lack of funding across local, state, and federal governments. The costs of these projects run into the hundreds of thousands of dollars – sometimes even the millions. It can be difficult for governments, especially at the local and state levels, to amass the necessary capital to implement them. However, the cost of doing nothing – especially in an era of weather extremes – is far greater. Included below are descriptions for identified FEMA funding

sources. Additionally, under the [Review of Mitigation Strategies](#) section, each mitigation strategy has a potential funding source<sup>1</sup> if applicable (i.e. if a mitigation item is complete – it will have no funding source).

Per the NCEI<sup>2</sup>, from 1980 to 2018 the annual average cost year-to-year for overall damage on the U.S. government was \$42.8b (including billion-dollar weather disasters only). From 2014 to 2018 the annual average cost year-to-year for overall damage on the U.S. government was \$99.1b – nearly \$100b year-to-year (including billion-dollar weather disasters only). The trend in billion dollar disasters for the U.S. is upward in both intensity and probability, therefore, resiliency during an era of weather extremes is more important than ever. Flash floods and floods represent the second most common NCEI storm events that impact the Winnebago County area. Since 2000, the Winnebago County area has suffered from nearly \$31m in damage from flash floods and floods (42 storm events reported from 2000-2019<sup>3</sup>). Included below are potential funding sources with brief descriptions for each for the mitigation items profiled above (all of the FEMA grant included below are available to local government through the [Hazard Mitigation Assistance](#) grant program here<sup>4</sup>); these funding source options were identified through FEMA materials.

#### **Federal Emergency Management Association (FEMA)**

- *Hazard Mitigation Grant Program (HMGP)*

The HMGP is designed to provide local and state governments access to a larger pool of funding following a Presidential Major Disaster Declaration<sup>5</sup>. The funds (HMGP will fund up to 75% of a projects total cost, 25% must come from local sources or other (i.e. private, non-profit or other funding sources)) are eligible to be used for projects that reduce long-term effects of future disaster events. The prioritization of projects is administered through state and local governments. Private individuals may not apply for this funding; however, they may be sponsored by a local government as an applicant. Benefits of the HMGP funded projects are risk-reduction activities, improved resiliency, and the provision of a solution to a long-term problem.

- *Pre-Disaster Mitigation Program (PDM)*

The PDM grant is offered to local and state governments to reduce the reliance on the Federal government for future disaster funding<sup>6</sup>. The program is designed to fund projects that mitigate future damage to infrastructure and areas before a natural hazard impacts them. The funds will only be approved for projects that are consistent with a FEMA approved local or state hazard mitigation plan. Mitigation planning is a key process used to break the cycle of disaster damage, reconstruction, and repeated damage. Private individuals may not apply for this funding; however, they may be sponsored by a local government as an applicant. Benefits of the PDM funded projects are risk-reduction activities, improved resiliency, and a reduction in reliance on the federal government for future disaster assistance.

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<sup>1</sup> These funding sources are potential funding sources only. They are intended to express no formal commitment and are solely included to demonstrate potential funding sources.

<sup>2</sup> <https://www.climate.gov/news-features/blogs/beyond-data/2018s-billion-dollar-disasters-context>

<sup>3</sup> <https://www.ncdc.noaa.gov/stormevents/choosedates.jsp?statefips=17,ILLINOIS>

<sup>4</sup> <https://www.fema.gov/hazard-mitigation-assistance>

<sup>5</sup> <https://www.fema.gov/media-library/assets/documents/28318>

<sup>6</sup> <https://www.fema.gov/pre-disaster-mitigation-grant-program>

- *Flood Mitigation Assistance Grant Program (FMA)*  
The FMA grant is offered to state and local governments under the National Flood Insurance Act of 1968 (NFIA). It is intended to reduce or eliminate claims made under the NFIP. The FMA provides funding for the reduction or elimination of structures that are at risk of flooding and are insured by the NFIP. The funding is also available for management costs. Private individuals may not apply for this funding; however, they may be sponsored by a local government as an applicant. Benefits of the FMA funded projects are improved resiliency and a reduction in reliance on the federal government for future disaster assistance.

**Provided by the local or state government**

- *Taxes; Fees; Financial Reserves (i.e. General Funds) (provided by the local or state government)*  
Taxes are an often underutilized source of funding for hazard mitigation activities. Whether it is because of their unpopularity or mistrust in government use of tax money – taxes represent an excellent source of funding at the local and state level to fund mitigation projects and activities. Further, it is not necessarily the levying of a tax – local and state governments can offer tax incentives (often referred to as breaks) to developers and builders that build with future disaster resiliency in mind. If a tax was levied against a local or state community, it should be placed into a fund to grow cumulatively – and offered as a grant for future mitigation projects or activities.
- *Impact Fees (provided by the local or state government)*  
Impact fees are traditionally used to offset the costs of new infrastructure and public capital facilities when new developments are constructed (more information from the [American Planning Association is here](#)<sup>1</sup>; and information from the [Institute for Legal Government: League of California Cities](#)<sup>2</sup> is here). However, funding from impact fees can be utilized to offset the mitigation of future damages from natural hazards. For example, one option of funding would be to deposit impact fees on developments in one municipality into a general fund for multiple municipalities that can fund mitigation strategies at a higher level – the logic behind this being, multiple funding sources can make project funding easier. While mitigation projects and actions are often specific in nature, funding projects done collaboratively as a region can ease cost burdens. Impact can be formatted as taxes (which may provide a longer-term solution to funding local and state mitigation projects); however, this is a relatively new concept. Impact fees are more common and easily defined. In either case – a solution should be funneled into a kind of financial reserve for the municipality to fund mitigation projects and actions only. To ensure the funding stays relatively stable the funding should come from multiple sources (municipalities).

**Provided by local, state, and national financial institutions**

- *Lending from Private Financial Institutions (provided by local, state, and national financial institutions)*  
Another funding source for local and state government is local, state, and national financial institutions. These funds are readily available through the financial system. However, these funds are often in the form of loans which often carry interest rates. Some larger foundations and corporations may provide funding through the form of grants to non-profits or local government. However, these grants can carry strict requirements for how the funding is spent – additionally, the funding is also often limited in the way that it is spent (for example: a restriction on capital expenditures).

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<sup>1</sup> <https://www.planning.org/policy/guides/adopted/impactfees.htm>

<sup>2</sup> [http://www.ca-ilg.org/sites/main/files/file-attachments/resources\\_\\_overviewimpactfees.pdf](http://www.ca-ilg.org/sites/main/files/file-attachments/resources__overviewimpactfees.pdf)

## Organizational Mitigation Strategies Matrix

As a part of the multi-hazard mitigation planning requirements, at least two identifiable mitigation action items have been addressed for each hazard listed in the risk assessment and for each municipality covered under this plan. As part of the 2019 version of the MHMP, each municipality and organization was asked to complete a review of their 2014 mitigation strategies and provide an update on its status as of 2019. These are provided below in addition to potential funding sources, timelines, and a responsible positions, departments, or municipalities for the mitigation strategies included below<sup>1</sup>. Also included below are individual action items by municipality if one was provided – these action items are included following the mitigation strategy table.

During the drafting of the 2019 version all of incorporated municipalities within and including Winnebago County were asked to participate in a review in which goals, objectives, and strategies were discussed and prioritized. In addition, organizations that operate in Winnebago County, such as service providers and utility providers were encouraged to participate. Each participant was offered the 2014 strategies as well as the Mitigation Ideas: A Resource for Reducing Risk to Natural Hazards (2013) authored by FEMA. This guidebook includes possible mitigation goals and strategies provided by FEMA. All potential strategies and goals that arose through this process are included in this plan. The Winnebago County project team used FEMA’s evaluation criteria to gauge the priority of all items.

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<sup>1</sup> The responsible positions, departments, or municipalities identified below are subject to change due to internal changes, departmental reorganizations, and other external factors. These are meant to be illustrative of current conditions and are non-binding.



## Mitigation Strategies 2019

Winnebago County, individual municipalities, and the organizations that operate in the County continue to work with IEMA and FEMA on mitigation projects like those outlined below. Winnebago County and its municipalities will continue to develop new strategies, plans, maps, and procedures for mitigating the impacts of natural hazards. Included below are reviews by the individual municipalities on their mitigation strategies since the 2014 version with comments for status updates as of 2019 as well as timelines for projects and responsible parties. All comments were reviewed and may be edited slightly for content and clarity (unedited versions are available upon request). The 2019 Mitigation Strategies Matrices can also be found in [Appendix E](#).

### The Village of Cherry Valley (2019)

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Status/Priority	Comments (2014)	Comments (2019)
Devote Section of Website to Hazard Mitigation Awareness	Goal: Develop long-term strategies to educate residents on the hazards affecting their community--- Objective: Raise public awareness of hazard mitigation	All Hazards	Ongoing/ High	Cherry Valley identified that the village website is the most used medium for awareness and access to information. A section of the village website will be devoted to hazard mitigation awareness.	The Village of Cherry Valley continues to work to post all available information to the Village's website.
<b>Timeline:</b> Ongoing (1 year; website is reviewed annually for updates to information). <b>Funding:</b> Village of Cherry Valley general funds.					
First Responder Training	Goal: Develop long-term strategies to education residents on the hazards affecting their community--- Objective: Improve education and training of emergency personnel and public officials	All Hazards	Ongoing/ High	Ongoing within Cherry Valley. The Village wishes to provide additional training and education for Management team, as well as Public Works Crews through NIMS training.	The Village of Cherry Valley continues to provide updated first responder training to new and existing employees as new options present themselves.
<b>Timeline:</b> Training is provided within 1-year of funding (yearly). <b>Funding:</b> Village of Cherry Valley general funds.					
Back-up Generators for Critical Facilities	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Equip public facilities and communities to guard against damage caused by secondary effects on hazards	All Hazards	Completed	Cherry Valley will be adding back-up generators to another well house as well as to new public work facilities (Spring 2015).	The Village of Cherry Valley added two backup generators to critical facilities since 2014 and continues to seek funding for additional as needed.
<b>Timeline:</b> Completed. <b>Funding:</b> None.					

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Status/Priority	Comments (2014)	Comments (2019)
Active Tree Management	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Active tree management near critical facilities and essential facilities to minimize risk of damage	All Hazards	Ongoing/ High	Cherry Valley will be implementing additional action plans to minimize tree damage to power lines as well as other infrastructure.	The Village of Cherry Valley has begun removing EAB affected trees within the Village borders. We will continue to remove hazardous trees as they present themselves.
<b>Timeline:</b> 5 years (for total hazardous tree removal). <b>Funding:</b> Village of Cherry Valley general funds.					
Special Needs Population List	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Evaluate and strengthen the communication and transportation abilities of the emergency services	All Hazards	Ongoing/ Low	The special needs population in Cherry Valley continues to grow and will be one of the larger demographic groups.	Still evaluating means of communication and transportation abilities of the emergency services.
<b>Timeline:</b> Programming/resources to serve this demographic to be established within 3 years after funding is available. <b>Funding:</b> Village of Cherry Valley general funds.					
Public Education / Awareness	Goal: Develop long-term strategies to educate residents on the hazards affecting their community--- Objective: Raise public awareness of hazard mitigation	All Hazards	Ongoing/ Medium	Cherry Valley plans to distribute materials to residents at strategic times to raise awareness of potential hazard. In addition, the Village will look into enhancing communication between other agencies.	Continued communication efforts by sending out Village newsletter quarterly, additionally a portable message board has been purchased to identify local and specific issues.
<b>Timeline:</b> Ongoing (Occurs yearly) (roughly every 3 months). <b>Funding:</b> Village of Cherry Valley general funds.					
Develop Safety Procedures for Earthquakes	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Review and update existing, or create new community plans and ordinances	Earthquakes	High	Cherry Valley plans to develop an emergency plan in the event an earthquake.	Still need to develop an emergency plan specific to earthquakes.
<b>Timeline:</b> Plan anticipated to be completed within the next 5 years. <b>Funding:</b> Village of Cherry Valley general funds.					

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Status/Priority	Comments (2014)	Comments (2019)
Burn Ordinances	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Review and update existing, or create new community plans and ordinances	Extreme Heat	Completed	Cherry Valley plans to develop an ordinance that restricts outdoor burning during periods of drought and extreme heat.	Ordinance was passed allowing burning the last (2) weekends in October and first (2) weekends in November.
<b>Timeline:</b> Completed. <b>Funding:</b> None.					
Floodplain Ordinances	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Review and update existing, or create new community plans and ordinances	Flooding / Dam and Levee Failure	Ongoing/ High	Cherry Valley will continue to improve the village's floodplain ordinances to restrict development with the floodplain.	Cherry Valley will continue to improve the village's floodplain ordinances to restrict development with the floodplain.
<b>Timeline:</b> Reviewed every 2 years; annual. <b>Funding:</b> Village of Cherry Valley general funds.					
Stormwater Management Ordinances	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Review and update existing, or create new community plans and ordinances	Flooding / Dam and Levee Failure	Medium	Cherry Valley wishes to plan for new flow and direct it to access of outflow.	Cherry Valley wishes to plan for new flow and direct it to access of outflow.
<b>Timeline:</b> A stormwater plan will be developed within 5 years after funding is awarded. <b>Funding:</b> Village of Cherry Valley general funds; Pre-Disaster Mitigation Funding; private lending; or grant funding ( <a href="#">State of Illinois</a> , Federal ( <a href="#">EPA</a> ; <a href="#">USDA</a> ), etc.).					
Emergency Plan / Protocol for HAZMAT Releases	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Review and update existing, or create new community plans and ordinances	HAZMAT	High	Cherry Valley plans to develop an emergency plan in the event of a HAZMAT release. The village has identified the importance of reinforced situational awareness, identification of potential hazards, and the need to communicate with other disciplines.	The Village of Cherry Valley plans to develop an emergency plan in the event of a HAZMAT release. The Village recognizes the vital importance of an organized response.
<b>Timeline:</b> 5 years. <b>Funding:</b> Villages of Cherry Valley general funds.					

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Status/Priority	Comments (2014)	Comments (2019)
HAZMAT Spill, Removal, and Disposal Procedure	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Review and update existing, or create new community plans and ordinances	HAZMAT	Medium	Cherry Valley has identified the need to develop a HAZMAT Spill, Removal, and Disposal Procedure.	The Village of Cherry Valley plans to work with local Fire and Police on this.
<p><b>Timeline:</b> Procedure anticipated to be completed within the next 5 years.  <b>Funding:</b> Village of Cherry Valley general funds.</p>					
Bury Power Lines	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Minimize the amount of infrastructure exposed to hazards	Severe Storms / Tornadoes	High	Cherry Valley wishes to seek funding to convert existing power lines. This will minimize loss of energy at critical times of need.	The Village is seeking funding to complete this project in the coming years.
<p><b>Timeline:</b> Village to complete program within 10 years after funding is awarded to the Village.  <b>Funding:</b> Village of Cherry Valley general funds; Pre-Disaster Mitigation Funding; private lending; or grant funding (<a href="#">State of Illinois</a>, Federal (<a href="#">EPA</a>; <a href="#">USDA</a>), etc.).</p>					
Ordinance for Higher Construction Standards	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Review and update existing, or create new community plans and ordinances	Severe Storms / Tornadoes	Ongoing/ Medium	Cherry Valley will continue to improve the village's construction ordinances to develop construction standards specific to weather/climate stressors.	The Village of Cherry Valley continues to improve the village's construction ordinances.
<p><b>Timeline:</b> Zoning ordinances will be reviewed every 2 years.  <b>Funding:</b> Village of Cherry Valley general funds.</p>					
Install Snow Fences (Removed)	The Village of Cherry Valley has no plans to install snow fencing at this time because of maintenance issues associated. Upon review there are little to no issues within the Village.				
Heating and Cooling Shelters	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Improve emergency sheltering	Winter Storms / Extreme Heat	Ongoing/ Medium	Cherry Valley wishes to seek funding to increase the number of heating and cooling shelters in the village.	Looking at additional locations to utilize.
<p><b>Timeline:</b> Additional shelters will be constructed within 5 years after funding is awarded to the Village.  <b>Funding:</b> Village of Cherry Valley general funds; Pre-Disaster Mitigation Funding; private lending; or grant funding (<a href="#">State of Illinois</a>, Federal (<a href="#">EPA</a>; <a href="#">USDA</a>), etc.).</p>					
<b>Responsible:</b> Village of Cherry Valley Public Works					

### The Village of Durand (2019)

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Status/Priority	Comments (2014)	Comments (2019)
Special Needs Population List	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Evaluate and strengthen the communication and transportation abilities of the emergency services	All Hazards	High	The special needs population in Durand continues to grow and will be one of the larger demographic groups. The Village will indicate all nursing homes, Sr. Living Complexes and other Special Needs residents and contact information to this list	The Village of Durand would still like to develop more senior living and special needs contact information and lists.
<b>Timeline:</b> 2 years. <b>Funding:</b> Village of Durand general funds.					
Mutual Aid Agreements	Goal: Lessen the impacts of hazards to new and existing infrastructure---	All Hazards	Completed	Currently, the Durand Fire Department has mutual aid agreements with other local departments. Durand Police Department is also involved with mutual aid agreements.	The Village of Durand maintains mutual aid agreements with appropriate neighboring departments.
<b>Timeline:</b> Completed. <b>Funding:</b> None.					
Back-up Generators for Critical Facilities	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Equip public facilities and communities to guard against damage caused by secondary effects on hazards	All Hazards	Completed	The Village currently has one large generator to assure their ability to operate pumps in the event of a prolonged power outage. The village also has several smaller portable generators to insure power for radio communication.	Durand Fire Department has a back-up generator as well as Medina Manor Nursing Center.
<b>Timeline:</b> Completed. <b>Funding:</b> None.					
First Responder Training	Goal: Develop long-term strategies to education residents on the hazards affecting their community--- Objective: Improve education and training of emergency personnel and public officials	All Hazards	Ongoing/ High	Durand wishes to improve first responder training in the city. This will be handled by the Durand Fire and EMS.	No comment.
<b>Timeline:</b> Ongoing (every 1 years). <b>Funding:</b> Village of Durand general funds.					

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Status/Priority	Comments (2014)	Comments (2019)
Devote Section of Website to Hazard Mitigation Awareness	Goal: Develop long-term strategies to educate residents on the hazards affecting their community--- Objective: Raise public awareness of hazard mitigation	All Hazards	Ongoing/ Low	The Village of Durand is currently redesigning their website. A section of the village website can be devoted to hazard mitigation awareness.	The Village of Durand's new website is online and the village is continuing to add more information.
<b>Timeline:</b> Ongoing (updated annually). <b>Funding:</b> Village of Durand general funds.					
Enhance / Create Alternate Emergency Operations Center	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Improve EOC emergency sheltering	All Hazards	Completed.	Durand's primary EOC is the Durand Fire Department. The secondary EOC is the Village Hall and/or Durand School.	The Village of Durand maintains three EOC's (Durand Fire Department, the Village Hall, and Durand School).
<b>Timeline:</b> Completed. <b>Funding:</b> None.					
Back-up Water Supply	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Equip public facilities and communities to guard against damage caused by secondary effects on hazards	All Hazards	Completed.	The Village's portable generator is capable of providing power to the well in order to keep the elevated water tower filled.	This mitigation item is complete.
<b>Timeline:</b> Completed. <b>Funding:</b> None.					
Burn / Water Ban Ordinances	Goal: Create new or revise existing plans/maps--- Objective: Review and update existing, or create new community plans and ordinances	Extreme Heat and Drought	Completed	The Village currently has existing burning ordinances as well as a water ban ordinance that can be implemented when needed.	No comment.
<b>Timeline:</b> Completed. <b>Funding:</b> None.					
Floodplain Ordinances	Goal: Create new or revise existing plans/maps--- Objective: Review and update existing, or create new community plans and ordinances	Flooding / Dam and Levee Failure	Ongoing	Durand will continue to maintain update floodplain ordinances.	No comment.
<b>Timeline:</b> 5 years after funding is made available. <b>Funding:</b> Village of Durand general funds.					

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Status/Priority	Comments (2014)	Comments (2019)
Stormwater Management Ordinances	Goal: Create new or revise existing plans/maps--- Objective: Review and update existing, or create new community plans and ordinances	Flooding / Dam and Levee Failure	High	Durand has discussed developing and adopting a stormwater management ordinance but no action has been taken nor will be acted on in the near future.	While funding continues to be an issue, this remains a top village priority.
<b>Timeline:</b> 5 years after funding is made available.					
<b>Funding:</b> Village of Durand general funds.					
Culvert Replacement	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Minimize the amount of infrastructure exposed to hazards	Flooding / Dam and Levee Failure	Ongoing/ Medium	Durand currently monitors high flow areas. The Village will seek funding to replace culverts on an as needed basis.	No comment.
<b>Timeline:</b> 5 years after funding is made available.					
<b>Funding:</b> Village of Durand general funds; Pre-Disaster Mitigation Funding; private lending; or grant funding ( <a href="#">State of Illinois</a> , Federal ( <a href="#">EPA</a> ; <a href="#">USDA</a> ), etc.).					
Emergency Plan/Protocol for HAZMAT Releases; HAZMAT Spill, Removal, and Disposal Procedure	Goal: Create new or revise existing plans/maps--- Objective: Review and update existing, or create new community plans and ordinances	HAZMAT	Ongoing/ Medium	Durand Fire Department will continue to work with the Winnebago County LEPC to improve the County's HAZMAT response plans.	No comment.
<b>Timeline:</b> 2 years.					
<b>Funding:</b> Village of Durand general funds.					
Anchoring of Manufactured Homes and Exterior Attachments	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Minimize the amount of infrastructure exposed to hazards	Severe Storms / Tornadoes	Completed	Current building codes address this issue including anchoring of utility sheds.	No comment.
<b>Timeline:</b> Completed.					
<b>Funding:</b> None.					
Heating and Cooling Shelters	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Improve emergency sheltering	Winter Storms / Extreme Heat	Completed	(New for 2019)	The Village of Durand Fire Department can be utilized as a heating/cooler shelter for residents.
<b>Timeline:</b> Completed.					
<b>Funding:</b> None.					
<b>Responsible position:</b> Zoning Administrator, Village Administrator					

### The City of Loves Park (2019)

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Status/Priority	Comments (2014)	Comments (2019)
Public Education / Awareness	Goal: Develop long-term strategies to educate County residents on the hazards affecting their community--Objective: Raise public awareness of hazard mitigation	All Hazards	Ongoing/ High	Loves Park will work with Winnebago County to improve Public Education and Awareness.	The City of Loves Park will continue to work with Winnebago County to improve Public Education and Awareness.
<b>Timeline:</b> Ongoing.					
<b>Funding:</b> City of Loves Park general funds.					
Mutual Aid Agreements	Goal: Lessen the impacts of hazards to new and existing infrastructure---	All Hazards	Ongoing/ High	Loves Park will work with the Winnebago County Local Emergency Planning Committee (LEPC) to develop and improve various mutual aid agreements within the county.	The City of Loves Park will continue to support these efforts with the Winnebago County.
<b>Timeline:</b> Ongoing.					
<b>Funding:</b> City of Loves Park general funds.					
Back-up Generators for Critical Facilities	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Equip public facilities and communities to guard against damage caused by secondary effects on hazards	All Hazards	Ongoing/ High	Loves Park wishes to seek funding to obtain back-up generators for critical facilities within the City.	The City of Loves Park will continue to seek funding for back-up generators for critical facilities within the City.
<b>Timeline:</b> 1 to 3 years once funds become available.					
<b>Funding:</b> City of Loves Park general funds; Pre-Disaster Mitigation Funding; private lending; or grant funding/donations ( <a href="#">ComEd- Powering Safe Communities</a> , <a href="#">NiCor</a> , <a href="#">State of Illinois</a> , Federal ( <a href="#">EPA</a> ; <a href="#">USDA</a> ), etc.).					
First Responder Training	Goal: Develop long-term strategies to education residents on the hazards affecting their community--Objective: Improve education and training of emergency personnel and public officials	All Hazards	Ongoing/ High	Loves Park wishes to improve first responder training in the City and will work with Winnebago County on this mitigation item.	The City of Loves Park continues to provide updated first responder training to new and existing employees as new options present themselves
<b>Timeline:</b> Ongoing; annually (1 year).					
<b>Funding:</b> City of Loves Park general funds.					
Develop Safety Procedures for Earthquakes	Goal: Improve emergency sheltering and procedures in the event of an earthquake--Objective: Review and update existing, or create new community earthquake plans	Earthquakes	Low	The City of Loves Park will work with Winnebago County will work to develop mutual aid agreements in event of an earthquake.	The City of Loves Park will work with Winnebago County will work to develop mutual aid agreements in event of an earthquake.



Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Status/Priority	Comments (2014)	Comments (2019)
<b>Timeline:</b> 7 to 10 years. <b>Funding:</b> City of Loves Park general funds.					
Burn Ordinances	Goal: Create new or revise existing plans/maps---Objective: Review and update existing, or create new community plans and ordinances	Extreme Heat and Drought	Completed	The City of Loves Park will continue to maintain update burn ordinances.	The City of Loves Park will continue enforcing burn ordinance and maintain updates as necessary.
<b>Timeline:</b> Completed. <b>Funding:</b> None.					
Develop educational materials, both web-based and in paper form, on the benefits of the NFIP	Goal: Develop long-term strategies to educate County residents on the hazards affecting their community---Objective: Raise public awareness of flooding and flood insurance	Flooding / Dam and Levee Failure	Ongoing/ High	Loves Park participates in the NFIP and will continue to education its residents on the benefits of the NFIP.	The City of Loves Park will continue efforts educating residents on the benefits of the NFIP.
<b>Timeline:</b> Ongoing. <b>Funding:</b> City of Loves Park general funds.					
Culvert Replacement	Goal: Lessen the impacts of hazards to new and existing infrastructure---Objective: Minimize the amount of infrastructure exposed to hazards	Flooding / Dam and Levee Failure	High	Loves Park wishes to seek funding to replace culverts in the city.	The City of Loves Park wishes to seek funding to replace culverts in the city.
<b>Timeline:</b> 1 to 3 years once funding is available. <b>Funding:</b> City of Loves Park general funds; Pre-Disaster Mitigation Funding; private lending; or grant funding ( <a href="#">State of Illinois</a> , Federal ( <a href="#">EPA</a> ; <a href="#">USDA</a> ), etc.).					
Install Sump Pumps	Goal: Lessen the impacts of hazards to new and existing infrastructure---Objective: Minimize potential damage to foundations and household/critical facility utilities	Flooding / Dam and Levee Failure	Ongoing/ High	This mitigation item is ongoing.	This mitigation item is ongoing.
<b>Timeline:</b> Ongoing; 5-7 years; completed as necessary. <b>Funding:</b> City of Loves Park general funds.					
Emergency Plan / Protocol for HAZMAT Releases	Goal: Create new or revise existing plans/maps---Objective: Review and update existing, or create new community plans and ordinances	HAZMAT	High	The City of Loves Park will work with the Winnebago County LEPC to improve the County's HAZMAT response plans.	The City of Loves Park will work with the Winnebago County LEPC to improve the County's HAZMAT response plans.
<b>Timeline:</b> 1 to 3 years. <b>Funding:</b> City of Loves Park general funds.					

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Status/Priority	Comments (2014)	Comments (2019)
HAZMAT Spill, Removal and Disposal Procedure	Goal: Create new or revise existing plans/maps---Objective: Review and update existing, or create new community plans and ordinances	HAZMAT	High	The City of Loves Park will work with the Winnebago County LEPC to improve the County's HAZMAT response plans.	The City of Loves Park will work with the Winnebago County LEPC to improve the County's HAZMAT response plans.
<b>Timeline:</b> 1 to 3 years. <b>Funding:</b> City of Loves Park general funds.					
Develop Alternate Traffic Routes	Goal: Create new or revise existing plans/maps---Objective: Review and update existing, or create new community plans and ordinances	HAZMAT	Medium	The City of Loves Park will work with the Winnebago County LEPC to improve the County's HAZMAT response plans.	The City of Loves Park will work with the Winnebago County LEPC to improve the County's HAZMAT response plans.
<b>Timeline:</b> 4 to 6 years. <b>Funding:</b> City of Loves Park general funds.					
Bury Power Lines	Goal: Lessen the impacts of hazards to new and existing infrastructure---Objective: Minimize the amount of infrastructure exposed to hazards	Severe Storms / Tornadoes	Ongoing/ High	The City of Loves Park would like to convert above ground power lines to minimize the amount of infrastructure exposed to severe storms and tornadoes.	The City of Loves Park will continue these efforts. However, the exorbitant cost of burying existing power lines makes this a very difficult reality.
<b>Timeline:</b> 4 to 6 years once funding is available. <b>Funding:</b> City of Loves Park general funds; Pre-Disaster Mitigation Funding; private lending; or grant funding ( <a href="#">State of Illinois</a> , Federal ( <a href="#">EPA</a> ; <a href="#">USDA</a> ), etc.).					
Harden Infrastructure	Goal: Lessen the impacts of hazards to new and existing infrastructure---Objective: Minimize the amount of infrastructure exposed to hazards	Severe Storms / Tornadoes	Medium	The City of Loves Park wishes to seek funding to harden existing infrastructure in the event of severe storms and tornadoes.	The City of Loves Park wishes to seek funding to harden existing infrastructure in the event of severe storms and tornadoes.
<b>Timeline:</b> 4 to 6 years once funding is available. <b>Funding:</b> City of Loves Park general funds; Pre-Disaster Mitigation Funding; private lending; or grant funding ( <a href="#">State of Illinois</a> , Federal ( <a href="#">EPA</a> ; <a href="#">USDA</a> ), etc.).					
Install Snow Fences	Goal: Lessen the impacts of hazards to new and existing infrastructure---Objective: Minimize the amount of infrastructure exposed to hazards	Winter Storms	Ongoing/ Medium	This mitigation item is ongoing in the County the Highway Department. The City of Loves Park will work with the County to improve this mitigation item.	This mitigation item is ongoing in Winnebago County and the Winnebago County Highway Department. The City of Loves Park will work with the County to improve this mitigation item.
<b>Timeline:</b> 4 to 6 years once funding is available. <b>Funding:</b> City of Loves Park general funds; Pre-Disaster Mitigation Funding; private lending; or grant funding ( <a href="#">State of Illinois</a> , Federal ( <a href="#">EPA</a> ; <a href="#">USDA</a> ), etc.).					

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Status/Priority	Comments (2014)	Comments (2019)
Heating and Cooling Shelters	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Improve emergency sheltering	Winter Storms / Extreme Heat	Medium	The City of Loves Park wishes to seek funding to increase the number of heating and cooling shelters for its residents.	The City of Loves Park wishes to seek funding to increase the number of heating and cooling shelters for its residents.
<b>Timeline:</b> 4 to 6 years once funding is available.					
<b>Funding:</b> City of Loves Park general funds; Pre-Disaster Mitigation Funding; private lending; or grant funding ( <a href="#">State of Illinois</a> , Federal ( <a href="#">EPA</a> ; <a href="#">USDA</a> ), etc.).					
<b>Responsible:</b> City of Loves Park; Public works					

### The Village of Machesney Park (2019)

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Status/Priority	Comments (2014)	Comments (2019)
Public Education / Awareness	Goal: Develop long-term strategies to educate residents on the hazards affecting their community--- Objective: Raise public awareness of hazard mitigation	All Hazards	High	Machesney Park plans to work with Winnebago County to distribute materials to residents at strategic times to raise awareness of potential hazard.	Machesney Park works to distribute materials to residents at strategic times to raise awareness of potential hazard.
<b>Timeline:</b> Quarterly and annual updates to the village through newsletters and mailings. (Ongoing; as needed)					
<b>Funding:</b> Village of Machesney Park general funds.					
Mutual Aid Agreements	Goal: Create new or revise existing plans/maps---Goal: Lessen the impacts of hazards to new and existing infrastructure	All Hazards	High	Machesney Park will work with the Winnebago County Local Emergency Planning Committee (LEPC) and other Agencies in the County to develop and improve mutual aid agreements within the county.	Machesney Park will work with the Winnebago County Local Emergency Planning Committee (LEPC) and other Agencies in the County to develop and improve mutual aid agreements within the county.
<b>Timeline:</b> 5 to 10 years; pending Winnebago County Sheriff's Department approval.					
<b>Funding:</b> Village of Machesney Park general funds.					

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Status/Priority	Comments (2014)	Comments (2019)
Back-up Generators for Critical Facilities	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Equip public facilities and communities to guard against damage caused by secondary effects on hazards	All Hazards	High	Machesney Park wishes to seek funding to obtain back-up generators for critical facilities.	Machesney Park wishes to seek funding to obtain back-up generators for critical facilities.
<b>Timeline:</b> 2 years after funding identified. <b>Funding:</b> Village of Machesney Park general funds; Pre-Disaster Mitigation Funding; private lending; or grant funding ( <a href="#">State of Illinois</a> , Federal ( <a href="#">EPA</a> ; <a href="#">USDA</a> ), etc.).					
Data Acquisition for Future Hazard Mitigation Planning	Goal: Create new or revise existing plans/maps--- Objective: Review and update existing GIS datasets	All Hazards	Ongoing/ High	Machesney park will continue to assist WinGIS in maintaining its list of critical and essential facilities in the county	Machesney park will continue to assist WinGIS in maintaining its list of critical and essential facilities in the county
<b>Timeline:</b> Ongoing; annually (reviewed every 1- year). <b>Funding:</b> Village of Machesney Park general funds.					
Establish Local Emergency Planning Committee	Goal: Create new or revise existing plans/maps---Goal: Lessen the impacts of hazards to residents	All Hazards	Low	Machesney Park will work with the Winnebago County Local Emergency Planning Committee (LEPC).	Machesney Park will work with the Winnebago County Local Emergency Planning Committee (LEPC).
<b>Timeline:</b> 5 years. <b>Funding:</b> Village of Machesney Park general funds.					
Family Disaster Plans & Kits	Goal: Lessen the impacts of hazards to residents--- Objective: Strengthen communication between residents and emergency services	All Hazards	Medium	Machesney Park will work with Winnebago County to distribute Family Disaster Plans and Kits to residents.	Machesney Park will work with Winnebago County to distribute Family Disaster Plans and Kits to residents.
<b>Timeline:</b> Triggered when disaster occurs. (As needed) <b>Funding:</b> Village of Machesney Park general funds.					
Special Needs Population List	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Evaluate and strengthen the communication and transportation abilities of emergency services	All Hazards	Medium	Machesney Park will work to develop and maintain a special needs population list to strengthen the emergency services.	Machesney Park will work to develop and maintain a special needs population list to strengthen the emergency services.
<b>Timeline:</b> 5 to 10 years. <b>Funding:</b> Village of Machesney Park general funds.					

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Status/Priority	Comments (2014)	Comments (2019)
Provided and Publicize Location of Safe Rooms and / or Shelters	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Improve emergency sheltering in the county	All Hazards	Medium	Machesney Park will work to develop, maintain, and distribute a list of the safe rooms and shelters to its residents.	Machesney Park will work to develop, maintain, and distribute a list of the safe rooms and shelters to its residents.
<b>Timeline:</b> 5 years. <b>Funding:</b> Village of Machesney Park general funds.					
Enhance Communication Systems	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Equip public facilities and communities to guard against damage caused by secondary effects on hazards	All Hazards	Medium	Machesney Park plans to improve the emergency communication system currently in place.	Machesney Park plans to improve the emergency communication system currently in place.
<b>Timeline:</b> 5 to 10 years. <b>Funding:</b> Village of Machesney Park general funds.					
Active Tree Management	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Active tree management near critical facilities and essential facilities to minimize risk of damage	All Hazards	Ongoing/ Medium	Machesney Park will be implementing additional action plans to minimize tree damage to power lines as well as other infrastructure.	Machesney Park will be implementing additional action plans to minimize tree damage to power lines as well as other infrastructure.
<b>Timeline:</b> 1 year. <b>Funding:</b> Village of Machesney Park general funds.					
Develop Safety Procedures for Earthquakes	Goal: Improve emergency sheltering and procedures in the event of an earthquake--- Objective: Review and update existing, or create new community earthquake plans	Earthquakes	Low	Machesney Park will work with Winnebago County will work to develop mutual aid agreements in event of an earthquake.	Machesney Park will work with Winnebago County will work to develop mutual aid agreements in event of an earthquake.
<b>Timeline:</b> 10 years. <b>Funding:</b> Village of Machesney Park general funds.					
Burn Ordinances	Goal: Create new or revise existing plans/maps--- Objective: Review and update existing, or create new community plans and ordinances	Extreme Heat and Drought	Ongoing/ Medium	Machesney Park will continue to maintain update burn ordinances.	Machesney Park will continue to maintain updated burn ordinances.

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Status/Priority	Comments (2014)	Comments (2019)
<b>Timeline:</b> 5-year review schedule. <b>Funding:</b> Village of Machesney Park general funds.					
Participate in the Community Rating System	Goal: Create new or revise existing plans/maps--- Objective: Support compliance with the NFIP	Flooding / Dam and Levee Failure	High	Machesney Park will work with Winnebago County will investigate the feasibility of joining the CRS.	Machesney Park will investigate the feasibility of joining the CRS.
<b>Timeline:</b> 1 to 2 years. <b>Funding:</b> Village of Machesney Park general funds.					
Develop educational materials, both web-based and in paper form, on the benefits of the NFIP	Goal: Develop long-term strategies to educate County residents on the hazards affecting their community--- Objective: Raise public awareness of flooding and flood insurance	Flooding / Dam and Levee Failure	Ongoing/ High	Machesney Park participates in the NFIP and will continue to education its residents on the benefits of the NFIP.	Machesney Park participates in the NFIP and will continue to educate its residents on the benefits of the NFIP.
<b>Timeline:</b> 2 years. <b>Funding:</b> Village of Machesney Park general funds.					
Property Acquisition (Buyouts) & Property Relocation	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Minimize the amount of infrastructure exposed to hazards	Flooding / Dam and Levee Failure	Ongoing/ High	Machesney Park currently works and will continue to identify areas where buyouts and property relocations make the most sense. Several projects have already been completed with Federal assistance. Machesney Park will continue to seek federal funding for future property acquisitions.	Machesney Park currently works and will continue to identify areas where buyouts and property relocations make the most sense. Several projects have already been completed with Federal assistance. Machesney Park will continue to seek federal funding for future property acquisitions.
<b>Timeline:</b> 1 year and immediately following funding identification and award. <b>Funding:</b> Village of Machesney Park general funds; Pre-Disaster Mitigation Funding; private lending; or grant funding ( <a href="#">State of Illinois</a> , Federal ( <a href="#">EPA</a> ; <a href="#">USDA</a> ), etc.).					
Floodplain and Stormwater Management Ordinances	Goal: Create new or revise existing plans/maps--- Objective: Review and update existing, or create new community plans and ordinances	Flooding / Dam and Levee Failure	Ongoing/ High	Machesney Park has building code restrictions and flood protection requirements in place. The village will continue to maintain and update these ordinances.	Machesney Park has building code restrictions and flood protection requirements in place. The Village will continue to maintain and update these ordinances.
<b>Timeline:</b> 2-year review. <b>Funding:</b> Village of Machesney Park general funds.					

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Status/Priority	Comments (2014)	Comments (2019)
Open Space Preservation	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Keep the floodplain and other hazardous areas open and free from development	Flooding / Dam and Levee Failure	Ongoing/ High	Machesney Park wishes to seek funding to improve open space preservation and decrease the amount of infrastructure exposed to flooding.	Machesney Park wishes to seek funding to improve open space preservation and decrease the amount of infrastructure exposed to flooding.
<b>Timeline:</b> 2 years after funding identified and awarded. <b>Funding:</b> Village of Machesney Park general funds; Pre-Disaster Mitigation Funding; private lending; or grant funding ( <a href="#">State of Illinois</a> , Federal ( <a href="#">EPA</a> ; <a href="#">USDA</a> ), etc.).					
Identification of Floodplain Structures	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Examine flood loss areas and generate a comprehensive list of structures located in floodplains	Flooding / Dam and Levee Failure	Completed	Machesney Park created a conservation overlay district which identified all structures in the floodway.	Machesney Park created a conservation overlay district which identified all structures in the floodway.
<b>Timeline:</b> Completed. <b>Funding:</b> None.					
Emergency Plan / Protocol for HAZMAT Releases	Goal: Create new or revise existing plans/maps--- Objective: Review and update existing, or create new community plans and ordinances	HAZMAT	High	Machesney Park will work with the Winnebago County LEPC to improve the County's HAZMAT response plans.	Machesney Park will work with the Winnebago County LEPC to improve the County's HAZMAT response plans.
<b>Timeline:</b> 5 to 10 years. <b>Funding:</b> Village of Machesney Park general funds.					
Develop Alternate Traffic Routes	Goal: Create new or revise existing plans/maps--- Objective: Review and update existing, or create new community plans and ordinances	HAZMAT	Medium	Machesney Park will work with the Winnebago County LEPC to improve the County's HAZMAT response plans.	Machesney Park will work with the Winnebago County LEPC to improve the County's HAZMAT response plans.
<b>Timeline:</b> 5 to 10 years. <b>Funding:</b> Village of Machesney Park general funds.					
Bury Power Lines	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Minimize the amount of infrastructure exposed to hazards	Severe Storms / Tornadoes	Medium	Machesney Park wishes to seek funding to convert existing power lines. This will minimize loss of energy at critical times of need.	Machesney Park wishes to seek funding to convert existing power lines. This will minimize loss of energy at critical times of need.

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Status/Priority	Comments (2014)	Comments (2019)
<p><b>Timeline:</b> 10 years after funding identified and received.  <b>Funding:</b> Village of Machesney Park general funds; Pre-Disaster Mitigation Funding; private lending; or grant funding (<a href="#">State of Illinois</a>, Federal (<a href="#">EPA</a>; <a href="#">USDA</a>), etc.).</p>					
Install Snow Fences	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Minimize the amount of infrastructure exposed to hazards	Winter Storms	Ongoing/ Medium	This mitigation item is ongoing. Machesney Park will work with the County to improve this mitigation item.	This mitigation item is ongoing.
<p><b>Timeline:</b> Ongoing (5 years).  <b>Funding:</b> Village of Machesney Park general funds; Pre-Disaster Mitigation Funding; private lending; or grant funding (<a href="#">State of Illinois</a>, Federal (<a href="#">EPA</a>; <a href="#">USDA</a>), etc.).  <b>Responsible:</b> Village of Machesney Park</p>					

### The Village of New Milford (2019)

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Status/Priority	Comments (2014)	Comments (2019)
Public Education /Awareness	Goal: Develop long-term strategies to educate residents on the hazards affecting their community--- Objective: Raise public awareness of hazard mitigation	All Hazards	Ongoing/ High	The Village of New Milford has a website that residents can get information about Emergency Procedures. Data is updated every three months.	The Village of New Milford is looking into new communication methods. There are website updates ongoing. The Village of New Milford is looking into text notification of residents for emergencies.
<p><b>Timeline:</b> Every 3 months (annually).  <b>Funding:</b> Village of New Milford general funds.</p>					
Provided and Publicize Location of Safe Rooms and/or Shelters	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Improve emergency sheltering in the county	All Hazards	Ongoing/ High	The Village of New Milford is currently trying to establish shelter space for residents of the mobile home park. There was an agreement with New Milford School prior to closing.	The Village of New Milford is pursuing grant options to provide shelter since the New Milford School Structure has been demolished.
<p><b>Timeline:</b> Shelter to be constructed within five years once funding is awarded to the Village.  <b>Funding:</b> Village of New Milford general funds; Pre-Disaster Mitigation Funding; private lending; or grant funding (<a href="#">State of Illinois</a>, Federal (<a href="#">EPA</a>; <a href="#">USDA</a>), etc.).</p>					



Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Status/Priority	Comments (2014)	Comments (2019)
Back-up Generators for Critical Facilities	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Equip public facilities and communities to guard against damage caused by secondary effects on hazards	All Hazards	Ongoing/ High	New Milford wishes to seek funding to obtain back-up generators for the Village Hall. This would also allow for the Village Hall to be used as a heating/cooling center.	The Village of New Milford is evaluating funding sources for these facilities.
<p><b>Timeline:</b> Generator to be purchased and installed within five years once funding is awarded to the Village.</p> <p><b>Funding:</b> Village of New Milford general funds; Pre-Disaster Mitigation Funding; private lending; or grant funding (<a href="#">State of Illinois</a>, Federal (<a href="#">EPA</a>; <a href="#">USDA</a>), etc.).</p>					
Floodplain and Stormwater Management Ordinances	Goal: Create new or revise existing plans/maps--- Objective: Review and update existing, or create new community plans and ordinances	Flooding / Dam and Levee Failure	Ongoing/ Medium	New Milford has ordinances and procedures in place to coincide with Winnebago County's ordinances. The village will continue to maintain and update these ordinances.	The Village of New Milford is continuing to review and update applicable ordinances.
<p><b>Timeline:</b> Applicable ordinances and procedures are reviewed (every 1) yearly.</p> <p><b>Funding:</b> Village of New Milford general funds.</p>					
Emergency Plan/Protocol for HAZMAT Releases	Goal: Create new or revise existing plans/maps--- Objective: Review and update existing, or create new community plans and ordinances	HAZMAT	Ongoing/ Medium	New Milford will continue to work with the Winnebago County LEPC to improve the County's HAZMAT response plans.	The Village of New Milford is continuing to collaborate with the appropriate agencies and departments at the Winnebago County.
<p><b>Timeline:</b> Plan to be completed within 5 years once funding is awarded to the Village.</p> <p><b>Funding:</b> Village of New Milford general funds.</p>					
Install Tornado Safe Room	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Improve emergency sheltering	Severe Storms / Tornadoes	Ongoing/ High	The Village is working to secure funding to provide a safe room for residents of the mobile home parks.	The Village of New Milford is evaluating and pursuing grant options to provide shelter since New Milford School Structure has been demolished.
<p><b>Timeline:</b> Shelter to be constructed within 5 years once funding is awarded to the Village.</p> <p><b>Funding:</b> Village of New Milford general funds; Pre-Disaster Mitigation Funding; private lending; or grant funding (<a href="#">State of Illinois</a>, Federal (<a href="#">EPA</a>; <a href="#">USDA</a>), etc.).</p>					
Anchoring of Manufactured Homes and Exterior Attachments	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Minimize the amount of infrastructure exposed to hazards	Severe Storms / Tornadoes	Completed	Through stricter ordinances and building codes, the Village is currently working with Mobile Home owners to ensure each unit is anchored properly.	The Village of New Milford has updated applicable ordinances and is working with homeowners to comply.
<p><b>Timeline:</b> Completed; Applicable ordinances and procedures are reviewed (every 1) yearly.</p> <p><b>Funding:</b> None.</p>					

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Status/Priority	Comments (2014)	Comments (2019)
Heating and Cooling Shelters	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Improve emergency sheltering in the county	Winter Storms / Drought and Extreme Heat	Ongoing/ High	The Village would like to use the Village Hall as a heating / cooling shelter. A backup generator will need to be obtained along with local coordination from Board members and residents.	The Village of New Milford is evaluating funding sources for these facilities.
<b>Timeline:</b> Generator to be purchased and installed within 5 years once funding is awarded to the Village.					
<b>Funding:</b> Village of New Milford general funds; Pre-Disaster Mitigation Funding; private lending; or grant funding ( <a href="#">State of Illinois</a> , Federal ( <a href="#">EPA</a> ; <a href="#">USDA</a> ), etc.).					
<b>Responsible:</b> Village of New Milford					

### North Park Water District (2019)

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Status/Priority	Comments (2014)	Comments (2019)
Public Education / Awareness	Goal: Develop long-term strategies to educate residents on the hazards affecting their community---Objective: Raise public awareness of hazard mitigation	All Hazards	Completed	NPPWD plans to raise awareness of the danger to water utilities during extreme cold (i.e., frozen services)	Implemented robo-calls, which allows us to target susceptible customers for advanced notification. Increased social media awareness as an additional communication method.
<b>Timeline:</b> Completed.					
<b>Funding:</b> None.					
Family Disaster Plans & Kits	Goal: Develop long-term strategies to educate residents on the hazards affecting their community---Objective: Raise public awareness of hazard mitigation	All Hazards	Medium	NPPWD would like obtain funding for family disaster plans & kits to stress the importance of safe drinking water.	NPPWD would like obtain funding for family disaster plans & kits to stress the importance of safe drinking water.
<b>Timeline:</b> Within 2 years after the funding is awarded.					
<b>Funding:</b> North Park Water District general funds.					
Back-up Generators for Critical Facilities	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Equip public facilities and communities to guard against damage caused by secondary effects on hazards	All Hazards	Completed	NPPWD wishes to seek funding to obtain back-up generators for critical water facilities within the Machesney park, Roscoe and Loves Park area.	Generators at critical sites are included in the 5 year capital plan.
<b>Timeline:</b> Within 3 years after the funding is awarded.					
<b>Funding:</b> North Park Water District General funds.					

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Status/Priority	Comments (2014)	Comments (2019)
Structure Elevation	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Minimize the amount of infrastructure exposed to hazards	Flooding / Dam and Levee Failure	Completed	NPPWD has identified several structures that would benefit from structure elevation renovations. NPPWD will seek federal funding for future projects.	Susceptible facilities have been raised above flood plain.
<b>Timeline:</b> Completed. <b>Funding:</b> None.					
Install Sump Pumps	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Minimize potential damage to foundations and household/critical facility utilities	Flooding / Dam and Levee Failure	Completed	NPPWD would like to seek funding to install backflow assemblies to protect cross contamination of public water.	Backflow devices are required in all commercial buildings and residential buildings with hazards as defined by IEPA.
<b>Timeline:</b> Completed. <b>Funding:</b> None.					
Harden Infrastructure	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Minimize the amount of infrastructure exposed to hazards	Severe Storms / Tornadoes	Medium	NPPWD wishes to seek funding to harden existing water infrastructure in the event of severe storms and tornadoes.	No comment.
<b>Timeline:</b> Within 5 years after the funding is awarded. <b>Funding:</b> North Park Water District general funds; Pre-Disaster Mitigation Funding; private lending; or grant funding ( <a href="#">State of Illinois</a> , Federal ( <a href="#">EPA</a> ; <a href="#">USDA</a> ), etc.).					
Bury Power Lines	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Minimize the amount of infrastructure exposed to hazards	Severe Storms / Tornadoes	Ongoing/ Low	NPPWD would like to convert above ground power lines to minimize the amount of infrastructure exposed to severe storms and tornadoes.	Have begun converting critical sites to underground power.
<b>Timeline:</b> Within 5 years after the funding is awarded. <b>Funding:</b> North Park Water District general funds.					
Emergency Plan / Protocol for HAZMAT Releases (Removed)	No longer applicable as hazardous chemicals have been eliminated from respective spaces relating to North Park Water District.				
HAZMAT Spill, Removal and Disposal Procedure	Goal: Create new or revise existing plans/maps---Objective: Review and update existing, or create new community plans and ordinances	HAZMAT	Completed	NPPWD will work with the Winnebago County LEPC to improve the County's HAZMAT response plans.	Groundwater protection setback zones have been established and communicated with local emergency response agencies.

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Status/Priority	Comments (2014)	Comments (2019)
<b>Timeline:</b> Completed. <b>Funding:</b> None.					
Heating and Cooling Shelters	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Improve emergency sheltering	Winter Storms / Extreme Heat	Ongoing/ Medium	NPPWD will continue to work with the municipalities it serves to increase the number of heating and cooling shelters for its residents.	Will continue to cooperate with local municipalities in all aspects of severe weather emergencies.
<b>Timeline:</b> Annually (1 year). <b>Funding:</b> North Park Water District general funds.					
Develop Safety Procedures for Earthquakes	Goal: Improve emergency sheltering and procedures in the event of an earthquake-- --Objective: Review and update existing, or create new community earthquake plans	Earthquakes	Ongoing/ Low	NPPWD will work with Winnebago County will work to develop mutual aid agreements in event of an earthquake.	Will continue to cooperate with local municipalities in all aspects of emergencies.
<b>Timeline:</b> Annually (1 year). <b>Funding:</b> North Park Water District general funds. <b>Responsible:</b> North Park Water District					

### The Village of Pecatonica (2019)

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Status/Priority	Comments (2014)	Comments (2019)
Public Education / Awareness	Goal: Develop long-term strategies to educate residents on the hazards affecting their community--- Objective: Raise public awareness of hazard mitigation	All Hazards	Ongoing/ High	This will be overseen by the Village Board, thru press releases and Village website notices pertaining to mitigation issues.	This will continue to be overseen by the Village Board. In addition to press releases, and the website, we are now able to contact every household with our callout system.
<b>Timeline:</b> Ongoing. <b>Funding:</b> Village of Pecatonica general funds.					
Develop a Disaster Plan	Goal: Develop Disaster plan--- Objective: To inform Citizens of who to call and where to go in case of a disaster.	All Hazards	High	This will be overseen by the Public Works/ Public Safety Committee.	This plan will be developed by the Village Board with input from Police and Fire Departments and Social Service agencies.
<b>Timeline:</b> 2 years. <b>Funding:</b> Village of Pecatonica general funds.					

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Status/Priority	Comments (2014)	Comments (2019)
Emergency Planning Committee	Goal: Develop an Emergency Planning Committee--- Objective: To review and update existing, or create new community plans.	All Hazards	High	Village President to set up ADHOC committee.	This still needs to be setup. Delayed due to internal changes in the administration since 2014.
<b>Timeline:</b> 1 year. <b>Funding:</b> Village of Pecatonica general funds.					
Back-up Generators for Critical Facilities	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Equip public facilities and communities to guard against damage caused by secondary effects on hazards	All Hazards	Completed/Ongoing/ Low	The Village will attempt to secure funding to purchase generators for all Village buildings. This will be addressed by full Village Board.	The Village currently has one and options are being reviewed to increase.
<b>Timeline:</b> Completed; 3 years once funding becomes available. <b>Funding:</b> Village of Pecatonica general funds; Pre-Disaster Mitigation Funding; private lending; or grant funding/donations ( <a href="#">ComEd- Powering Safe Communities</a> , <a href="#">NiCor</a> , <a href="#">State of Illinois</a> , Federal ( <a href="#">EPA</a> ; <a href="#">USDA</a> ), etc.).					
Develop Procedures Specific to Earthquakes and Educate Public	Goal: Develop Procedures specific to Earthquakes --- Objective: Establish guidelines and procedures in case of an earthquake	Earthquakes	Low	This mitigation item will be assigned to emergency planning committee.	This will be assigned to the emergency committee once established.
<b>Timeline:</b> 2 years. <b>Funding:</b> Village of Pecatonica general funds.					
Burn / Water Ban Ordinances	Goal: Create new or revise existing plans/maps--- Objective: Review and update existing, or create new community plans and ordinances	Extreme Heat / Drought	Completed	Public works / Public safety committee will review ordinances on a yearly basis.	Currently the Village does not allow burning. A water ban ordinance can be implemented if needed.
<b>Timeline:</b> Completed. <b>Funding:</b> None.					
Culvert / Storm Drain Repair	Goal: Culvert / Storm drain Repair-- -Objective: Ensure all culverts and storm drains are working properly and evaluate if others are needed.	Flooding / Dam and Levee Failure	Ongoing/ Low	This mitigation item will be addressed by the Public Works Director. Plan already in place but will be updated and reviewed yearly.	Public Works inspects these areas on a regular basis and if there are heavy rains a close eye is kept on these areas.
<b>Timeline:</b> Ongoing. <b>Funding:</b> Village of Pecatonica general funds.					

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Status/Priority	Comments (2014)	Comments (2019)
Floodplain Ordinances	Goal: Create new or revise existing plans/maps--- Objective: Review and update existing, or create new community plans and ordinances	Flooding / Dam and Levee Failure	Medium	The Public Works / Public Safety Committee will address the subject.	This still needs to be setup.
<b>Timeline:</b> 5 years.					
<b>Funding:</b> Village of Pecatonica general funds.					
Identification of Structures in Floodplains	Goal: Identification of Structures In floodplains--- Objective: To create a list of all Structures located in Floodplains.	Flooding / Dam and Levee Failure	Ongoing/ Medium	This will be addressed by the emergency planning committee.	We currently have a map that identifies the floodplain area however, it still needs more work done by the committee once established.
<b>Timeline:</b> Ongoing; 3 years' final completion.					
<b>Funding:</b> Village of Pecatonica general funds; Pre-Disaster Mitigation Funding; private lending; or grant funding.					
Emergency Plan / Protocol for HAZMAT Releases	Goal: Create new or revise existing plans/maps--- Objective: Review and update existing, or create new community plans and ordinances	HAZMAT	Completed	The Pecatonica Fire – Police and Public works departments all have currant plans in place.	These plans are still in effect.
<b>Timeline:</b> Completed.					
<b>Funding:</b> None.					
HAZMAT Spill, Removal, and Disposal Procedure	Goal: Create new or revise existing plans/maps--- Objective: Review and update existing, or create new community plans and ordinances	HAZMAT	Completed	Public Works Department has plan in place in conjunction with the Police Department.	This plan is still in place with the Public Works and Police Department
<b>Timeline:</b> Completed.					
<b>Funding:</b> None.					
Floodplain and Stormwater Ordinances	Goal: Create new or revise existing plans/maps--- Objective: Review and update existing, or create new community plans and ordinances	Flooding / Dam and Levee Failure	Completed	The Village will continue to maintain and update their ordinances to comply with the County and State requirements.	The Village created a stormwater ordinance in 2015 that established regulations that limit the discharge of stormwater and manage erosion.
<b>Timeline:</b> Completed.					
<b>Funding:</b> None					

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Status/Priority	Comments (2014)	Comments (2019)
Active Tree Management	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Active tree management near critical facilities and essential facilities to minimize risk of damage	Severe Storms / Tornadoes	Ongoing/ Medium	This mitigation item is ongoing and is handled by the Public works department.	This will continue to be handled by the Public Works Department.
<b>Timeline:</b> Ongoing. <b>Funding:</b> Village of Pecatonica general funds.					
Provide and Publicize Shelters / Safe Rooms	Goal: Provide and Publicize Shelters / Safe Rooms--- Objective: To Inform the Public of where they can go in case of a severe storm.	Severe Storms / Tornadoes	Medium	This mitigation item is ongoing and the Village has set buildings for this purpose. This will be handled by the Emergency planning Committee.	This will be assigned to the emergency committee once established.
<b>Timeline:</b> 2 years. <b>Funding:</b> Village of Pecatonica general funds.					
Winter Storms - Dissemination of Information	Goal: Provide contacts for residents if snowed in.---Objective: To inform Residents of whom to call if they are stranded at home or in town.	Winter Storms	High	Will be addressed by emergency planning committee.	This will be assigned to the emergency committee once established.
<b>Timeline:</b> 2 years. <b>Funding:</b> Village of Pecatonica general funds.					
Heating and Cooling Shelters	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Improve emergency sheltering	Winter Storms / Extreme Heat	Completed/Ongoing/ Low	The Village has two Buildings assigned for this but will try to establish two more shelters in different areas of the Village.	The Village of Pecatonica currently has one building assigned for this more work needs to be done to add other sites.
<b>Timeline:</b> Ongoing. <b>Funding:</b> Village of Pecatonica general funds City of Loves Park general funds; Pre-Disaster Mitigation Funding; private lending; or grant funding ( <a href="#">State of Illinois</a> , Federal ( <a href="#">EPA</a> ; <a href="#">USDA</a> ), etc.). <b>Responsible:</b> Village of Pecatonica; public works					

**Rock River Water Reclamation District (2019)**

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Status/Priority	Comments (2014)	Comments (2019)
Mutual Aid Agreements	Goal: Create new or revise existing plans/maps---Goal: Lessen the impacts of hazards to new and existing infrastructure	All Hazards	Ongoing/ Medium	RRWRD will formalize existing agreements. RRWRD does not anticipate accumulating any cost for this strategy, no funding will be sought after.	Formalized one Mutual Aid Agreement; looking to implement additional with appropriate agencies.
<b>Timeline:</b> Ongoing; as appropriate. <b>Funding:</b> Rock River Water Reclamation District general funds (as needed).					
Back-up Generators for Critical Facilities	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Equip public facilities and communities to guard against damage caused by secondary effects on hazards	All Hazards	Completed	All critical lift stations and WWTPs have back-up generators.	All critical lift stations and WWTPs have back-up generators.
<b>Timeline:</b> Completed. <b>Funding:</b> None.					
Harden Infrastructure	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Minimize the amount of infrastructure exposed to hazards	Severe Storms / Tornadoes	Completed	RRWRD has completed the planning stage to harden existing infrastructure. Construction is slated to being in 2015. RRWRD is applying for an IEPA loan to help fund this project.	Project completed and infrastructure has been hardened.
<b>Timeline:</b> Completed. <b>Funding:</b> None.					
<b>Responsible:</b> Rock River Water District staff.					

**The City of Rockford (2019)**

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Status/Priority	Comments (2014)	Comments (2019)
Create Evacuation Notification Strategies	Goal: Improve Emergency Response procedures--- Objective: Create Evacuation Notification Strategies	All Hazards	Completed	Currently in progress with expected completion end of 2014 - mid 2015. Funding source from City of Rockford general funds. PW Emergency Manager, ESDA Coordinator, and Police oversee this mitigation item.	Completed in 2015 and updated in 2016 and 2018 by ESDA Coordinator.



Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Status/Priority	Comments (2014)	Comments (2019)
<b>Timeline:</b> Completed. <b>Funding:</b> None.					
Create a Public Works Recovery Plan	Goal: Improve Emergency Response procedures--- Objective: Create a Public Works Recovery Plan	All Hazards	Completed	To be completed by end of 2014 Funding source from City of Rockford general funds. PW Emergency Manager oversee this mitigation item.	Completed in 2015 updated in 2018. Public works Emergency Manager oversee this mitigation item.
<b>Timeline:</b> Completed. <b>Funding:</b> None.					
Create and Update Mutual Aid Agreements with Outside Agencies and Contractors	Goal: Improve Emergency Response procedures--- Objective: Create and Update Mutual Aid Agreements with Outside Agencies and Contractors	All Hazards	Completed	Expected completion end of 2014 – mid 2015. Funding source from City of Rockford general funds. PW Emergency Manager, ESDA Coordinator, and Police oversee this mitigation item.	Completed in 2015 updated in 2018 for Public Works.
<b>Timeline:</b> Completed. <b>Funding:</b> None.					
Follow In Place Plans/Procedures/Strategies for Hazard Situations	Goal: Improve Emergency Response procedures--- Objective: Follow In Place Plans/Procedures/Strategies for Hazard Situations	All Hazards	Ongoing/ High	Currently in progress. Funding source from City of Rockford general funds. All City of Rockford Departments oversee this mitigation item.	This mitigation item is ongoing. Funding source from City of Rockford general funds. All City of Rockford Departments oversee this mitigation item.
<b>Timeline:</b> Ongoing. <b>Funding:</b> City of Rockford General Funds.					
Run Public Service Announcements and Educational Material for Each Hazard	Goal: Improve safety for our citizens during disasters---Objective: Run Public Service Announcements and Educational Material for Each Hazard	All Hazards	Ongoing/ High	Currently in progress. Funding source from City of Rockford general funds. PIO, PW Emergency Manager, ESDA Coordinator, and Police oversee this mitigation item.	This mitigation item is ongoing. Funding source from City of Rockford general funds. Strategic Communications Manager, Public Works Emergency Manager, ESDA Coordinator, Fire and Police Departments oversee this mitigation item.

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Status/Priority	Comments (2014)	Comments (2019)
<b>Timeline:</b> Ongoing. <b>Funding:</b> City of Rockford General Funds.					
Follow Load Restrictions on Building Design, Fire Suppression and Electrical/Plumbing Requirements	Goal: Improve safety for our citizens during disasters---Objective: Follow Load Restrictions on Building Design, Fire Suppression and Electrical/Plumbing Requirements	All Hazards	Ongoing/ High	Currently in progress. Funding source from City of Rockford general funds. The Building Code Official oversees this mitigation item.	This mitigation item is ongoing. Funding source from City of Rockford general funds. The Building Code Official oversees this mitigation item.
<b>Timeline:</b> Ongoing. <b>Funding:</b> City of Rockford General Funds.					
Train Additional Staff in Emergency Management	Goal: Improve Emergency Response procedures---Objective: Train Additional Staff in Emergency Management	All Hazards	Ongoing/ Medium	Currently in progress with expected completion by end of 2015. Funding source from City of Rockford general funds. PW Emergency Manager, ESDA Coordinator, and Police oversee this mitigation item.	This mitigation item is ongoing. Funding source from City of Rockford general funds. Public works Emergency Manager, ESDA Coordinator, Fire and Police Departments oversee this mitigation item.
<b>Timeline:</b> Ongoing. <b>Funding:</b> City of Rockford General Funds.					
Map City Wells and Cone of Influence	Goal: Monitor Water Supply---Objective: Map city wells and cone of influence	Extreme Heat and Drought	Completed	Maps have been completed. Funding source was from the City of Rockford water funds. The Water Superintendent oversees this mitigation item.	Completed by the City of Rockford and should be updated as needed.
<b>Timeline:</b> Completed. <b>Funding:</b> None.					

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Status/Priority	Comments (2014)	Comments (2019)
Map Groundwater Ordinances and Plume of Contamination	Goal: Monitor Water Supply---Objective: Map groundwater ordinances & plume of contamination	Extreme Heat and Drought	Low	Ordinances have been mapped from 2006 to present, additional research is required for earlier ordinances. Funding source from the City of Rockford general funds. The Stormwater Administrator-GIS oversees this mitigation item.	No Change. Updated as needed will continue to research ordinances prior to 2006.
<b>Timeline:</b> 2 years. <b>Funding:</b> City of Rockford General Funds.					
Regularly Check for Leaks to Minimize Water Supply Losses	Goal: Monitor Water Supply---Objective: Regularly Check for Leaks to Minimize Water Supply Losses	Extreme Heat and Drought	Ongoing/ Low	This mitigation item is ongoing with no completion date expected. Funding source from City of Rockford water funds. The Water Superintendent oversee this mitigation item.	This item is ongoing mitigation item with no expected completion date (as of 2019); the City of Rockford is divided into quadrants and an annual inspection is completed on one quadrant per year. Funding source from City of Rockford Water Funds. Water Superintendent oversees this mitigation item.
<b>Timeline:</b> Ongoing. <b>Funding:</b> City of Rockford General Funds.					
Begin Integrated Planning for Water Quality Improvements (Removed)	The City of Rockford withdrew from this agreement and this item is being completed independently of the City of Rockford; the Water Department has remained involved.				

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Status/Priority	Comments (2014)	Comments (2019)
Install Rain Gauges Throughout City to Better Understand Rainfall Trends	Goal: Monitor Water Supply---Objective: Install rain gauges throughout city to better understand rainfall trends	Extreme Heat and Drought	Ongoing/ Medium	Design is underway with an expected completion date of mid-2015; Funding sources from the City of Rockford Water and CIP funds.	Weather Station was designed for a portion of the Alpine Dam Improvements; this program will be re-evaluated for year 2020; Funding sources from the City of Rockford Water Department and Capital Improvement Program Funds.
<p><b>Timeline:</b> 1 year to 5 years.  <b>Funding:</b> City of Rockford General Funds.</p>					
Restrict Water Usage During Drought Events	Goal: Require water conservation during drought conditions---Objective: Restrict Water Usage During Drought Events	Extreme Heat and Drought	Ongoing/ Medium	This mitigation item is ongoing when required. Funding source from the City of Rockford Water funds. The Water Superintendent oversees this mitigation item.	This mitigation item is ongoing when required. Supervisory control and data acquisition (SCADA) system has been implemented and assists in this. Funding source from City of Rockford Water Department. The Water Superintendent oversees this mitigation item.
<p><b>Timeline:</b> Ongoing.  <b>Funding:</b> City of Rockford General Funds.</p>					
Rewrite City's Stormwater Ordinance and Stormwater Technical Manual	Goal: Adopt and enforce building codes and development standards---Objective: Rewrite City's Stormwater Ordinance and Stormwater Technical Manual	Flooding / Dam and Levee Failure	Completed	Draft Ordinance is complete and draft technical manual underway; expected completion end of 2014. Funding source from City of Rockford general funds. The Stormwater Administrator oversees this mitigation item.	Both items completed in 2015 with regular updates as needed. The Stormwater Manager oversees this mitigation item.
<p><b>Timeline:</b> Completed.  <b>Funding:</b> None.</p>					

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Status/Priority	Comments (2014)	Comments (2019)
Enforce Flood Mitigation, Flood Control, Stormwater Management	Goal: Adopt and enforce building codes and development standards--- Objective: Enforce Flood Mitigation, Flood Control, Stormwater Management	Flooding / Dam and Levee Failure	Completed	SOPs have been created providing guidance on inspection, maintenance and enforcement measures. Ordinance revisions are underway for enforcement and code hearing process for all ordinance violations. Funding source from City of Rockford general funds. The Stormwater Administrator oversees this mitigation item.	Standard operating procedures have been created providing guidance on inspection, maintenance and enforcement measures. Ordinance revisions are underway for enforcement and code hearing process for all ordinance violations. Funding is provided from the City of Rockford general funds. The Stormwater Administrator oversees this mitigation item.
<b>Timeline:</b> Completed. <b>Funding:</b> None.					
Enforce Post Construction Management Requirements	Goal: Adopt and enforce building codes and development standards--- Objective: Enforce Post Construction Management Requirements	Flooding / Dam and Levee Failure	Completed	This mitigation item is part of the new stormwater ordinance. Agreement and maintenance templates have been completed and used on projects. Ordinance revisions are underway for enforcement and code hearing process for all ordinance violations. Funding source from City of Rockford general funds. The Stormwater Administrator oversees this mitigation item.	This item was completed in 2015 with on-going inspections and updates as needed including code hearing processes. The Stormwater Manager oversees this mitigation item.

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Status/Priority	Comments (2014)	Comments (2019)
<b>Timeline:</b> Completed. <b>Funding:</b> None.					
Continue To Map Priority Acquisition And Unsuitable For Development Areas	Goal: Limit or restrict development in floodplain areas---Objective: Continue To Map Priority Acquisition And Unsuitable For Development Areas	Flooding / Dam and Levee Failure	Ongoing/ High	This mitigation item is ongoing. Expected completion end of 2016. Funding source from City of Rockford general funds. The Stormwater Administrator-GIS oversees this mitigation item.	This mitigation item is ongoing. The City of Rockford follows state and federally recognized floodplain regulations. The Stormwater Manager and GIS department oversee this mitigation item.
<b>Timeline:</b> 5 years. <b>Funding:</b> City of Rockford General Funds.					
Enforce Landscaping And Buffer Requirements, Open Space Requirements, Impervious Ratio Requirements	Goal: Limit or restrict development in floodplain areas---Objective: Enforce landscaping and buffer requirements, open space requirements, impervious ratio requirements	Flooding / Dam and Levee Failure	Ongoing/ High	This mitigation item is ongoing and is enforced through Zoning/Building permits. Zoning Officer and Building Code Official oversee this mitigation item.	No comment.
<b>Timeline:</b> Ongoing. <b>Funding:</b> City of Rockford General Funds.					
Map Structures Located Within Floodplains and Map Repetitive Loss and Substantially Damaged Properties	Goal: Improve Flood Risk Assessment---Objective: Map structures located within floodplains and map repetitive loss and substantially damaged properties	Flooding / Dam and Levee Failure	Completed	This mitigation item is ongoing. Expected completion end of 2015, basic map completed but new floodplain maps are expected in 2015. Funding source from City of Rockford general funds. The Stormwater Administrator-GIS oversee this mitigation item.	This item was completed in 2017. The Stormwater Manager oversees this mitigation item.
<b>Timeline:</b> Completed. <b>Funding:</b> None.					

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Status/Priority	Comments (2014)	Comments (2019)
Develop Flood Risk Map Educational Materials for New FEMA Maps	Goal: Improve Flood Risk Assessment---Objective: Develop flood risk map educational materials for new FEMA Maps	Flooding / Dam and Levee Failure	Completed	The City of Rockford has received technical assistance from FEMA to help create these materials. Expected completion in early 2015. The City wishes to seek additional funding with limited funding source from general funds. The Stormwater Administrator oversees this mitigation item.	This item was completed and went into effect in February 2016 with the issuance of new FEMA maps. The Stormwater Manager oversees this mitigation item.
<b>Timeline:</b> Completed. <b>Funding:</b> None.					
Replace Water Level Gauges at Page Park And Levings Lake Dam; Install Water Level Gauge at Alpine Dam	Goal: Improve Flood Risk Assessment---Objective: Replace water level gauges at Page Park and Levings Lake Dam; Install water level gauge at Alpine Dam	Flooding / Dam and Levee Failure	Completed/ Ongoing/ Medium	Design underway and expected completion mid- 2015. Funding sources are from Water and CIP funds. The Stormwater Administrator and Water Superintendent oversees this mitigation item.	This mitigation item was completed in 2017 for Page Park and Levings Lake Dam; Alpine Dam Improvements to be completed in 2020 which will include this item. The funding source is Capital Improvement Program general funds. The Stormwater manager oversees this mitigation item.
<b>Timeline:</b> Completed/Ongoing. <b>Funding:</b> City of Rockford General Funds.					
Participate in the Community Rating System	Goal: Manage the floodplain beyond minimum requirements---Objective: Participate in the Community Rating System	Flooding / Dam and Levee Failure	Ongoing/ High	Expected application completion end of 2015. Funding source from City of Rockford general funds. The Stormwater Administrator oversees this mitigation item.	This mitigation item is ongoing; The City of Rockford continues to participate in the Community Rating System (CRS). The Stormwater Manager oversees this mitigation item.

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Status/Priority	Comments (2014)	Comments (2019)
<p><b>Timeline:</b> Ongoing.  <b>Funding:</b> City of Rockford General Funds.</p>					
Improve Compliance with the NFIP	<p>Goal: Manage the floodplain beyond minimum requirements---  Objective: Improve compliance with the NFIP</p>	<p>Flooding / Dam and Levee Failure</p>	<p>Ongoing/ High</p>	<p>This mitigation item is ongoing. Limited funding source from City of Rockford general funds. The Stormwater Administrator oversees this mitigation item.</p>	<p>This item is ongoing. The flood plain ordinance went into effect in 2015 and the City of Rockford standard is above minimum compliance standards with the NFIP. The Stormwater Manager oversees this item.</p>
<p><b>Timeline:</b> Ongoing.  <b>Funding:</b> City of Rockford General Funds.</p>					
Flood-Proof, Relocate, Elevate and Demolish At-Risk Properties	<p>Goal: Manage the floodplain beyond minimum requirements---  Objectives: Flood-proof, relocate, elevate and demolish at risk properties</p>	<p>Flooding / Dam and Levee Failure</p>	<p>Ongoing/ High</p>	<p>This mitigation item is ongoing with no expected completion date due to lack of funds for City to accomplish. The City of Rockford will seek additional funding. This mitigation items is enforced through building permits and is overseen by the Stormwater Administrator and Building Code Official.</p>	<p>This mitigation item is ongoing. Due to limited funds, it is reviewed on a case by case basis and updated as needed. The Beverly Park neighborhood was identified as an area of concern for focus. The Stormwater Manager oversees this item along with the Building Code Official.</p>
<p><b>Timeline:</b> 3-4 years.  <b>Funding:</b> City of Rockford General Funds.</p>					



Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Status/Priority	Comments (2014)	Comments (2019)
Complete Alpine Dam Rehabilitation	Goal: Conduct regular maintenance for drainage systems and flood control structures---Objectives: Complete Alpine Dam rehabilitation	Flooding / Dam and Levee Failure	Ongoing/ High	This mitigation item is ongoing. Plans are complete and easements have been obtained however there is a lack of funding to accomplish this item. The City of Rockford will seek additional funding sources. The Stormwater Administrator and City Engineer oversee this mitigation item.	The City of Rockford secured funding for this mitigation items. Design Phase is near completion with implementation set for 2020. The Stormwater Manager and City Engineer are overseeing this mitigation item.
<b>Timeline:</b> 3 years. <b>Funding:</b> City of Rockford General Funds, state and federal funds.					
Continue Watershed Assessment and Planning	Goal: Form Partnerships to support floodplain management---Objective: Continue Watershed Assessment and Planning	Flooding / Dam and Levee Failure	Ongoing/ Low	Several watersheds have been completed with one underway. The City of Rockford wishes to seek additional funding. Funding is an issue for continued studies, current funding source is CIP. The Stormwater Administrator oversees this mitigation item.	Several watersheds have been completed. Airport East watershed study is in currently in review; Funding is an issue for continued studies, current funding source is Capital Improvement Program. The Stormwater Manager oversees this mitigation item.
<b>Timeline:</b> 5 years. <b>Funding:</b> City of Rockford General Funds.					
Review and Update Emergency Plan and Protocol for HAZMAT Releases	Goal: Review and update emergency procedures for hazard materials--- Objective: Review and update emergency plan and protocol for HAZMAT releases	HAZMAT	Ongoing/ Medium	This mitigation item is ongoing. Funding source from the City of Rockford general funds. The Fire Department oversees this mitigation item.	This mitigation item is ongoing. Funding source from the City of Rockford general funds. The Fire Department oversees this mitigation item.
<b>Timeline:</b> Ongoing. <b>Funding:</b> City of Rockford General Funds.					

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Status/Priority	Comments (2014)	Comments (2019)
Review and Update HAZMAT Spill, Removal and Disposal Procedures	Goal: Review and update emergency procedures for hazard materials--- Objective: Review and Update HAZMAT Spill, Removal and Disposal Procedures	HAZMAT	Ongoing/ Medium	This mitigation item is ongoing. Funding source from the City of Rockford general funds. The Fire Department oversees this mitigation item	This mitigation item is ongoing. Funding source from the City of Rockford general funds. The Fire Department oversees this mitigation item
<b>Timeline:</b> Ongoing. <b>Funding:</b> City of Rockford General Funds.					
Enforce Tree and Brush Trimming / Pruning Requirements / Planting and Removal Requirements	Goal: Reduce Impacts to Infrastructure---Objective: Enforce Tree and Brush Trimming / Pruning Requirements / Planting and Removal Requirements	Severe Storms / Tornadoes	Ongoing/ High	This mitigation item is ongoing. Ordinance revisions are underway for enforcement and code hearing process for all ordinance violations. Funding source from the City of Rockford general funds. The Street Superintendent and Neighborhood Standards oversee this mitigation item.	This mitigation item is ongoing. Ordinance revisions were complete in 2018 for enforcement and code hearing process for all ordinance violations. The Street Superintendent and Neighborhood Standards oversee this mitigation item.
<b>Timeline:</b> Ongoing. <b>Funding:</b> City of Rockford General Funds.					
Provide and Publicize Heating and Cooling Shelters	Goal: Educate citizens and property owners on severe weather conditions--- Objective: Provide and publicize heating and cooling shelters	Severe Storms / Tornadoes	Ongoing/ Medium	This mitigation item is ongoing. Funding source from the City of Rockford general funds. The PIO and ESDA Coordinator oversee this mitigation item.	This mitigation item is ongoing. Funding source from the City of Rockford general funds. The Strategic Communications Manager, ESDA Coordinator, and Health & Human Services Department oversee this mitigation item.
<b>Timeline:</b> Ongoing. <b>Funding:</b> City of Rockford General Funds.					

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Status/Priority	Comments (2014)	Comments (2019)
Follow Parking Restrictions for Emergency Events, Follow Salting and Plowing Policies	Goal: Reduce Impacts to Roadways---Objective: Follow parking restrictions for emergency events, follow salting and plowing policies	Severe Storms / Winter Storms	Ongoing/ Medium	This mitigation item is ongoing when required. Funding source from the City of Rockford parking and general funds. The Parking Contractor, Street Superintendent, and police oversee this mitigation item.	This item is ongoing when required. Funding source from the City of Rockford parking and the City of Rockford general funds. The Parking contractor, Street Superintendent, and police oversee this mitigation item.
<b>Timeline:</b> Ongoing. <b>Funding:</b> City of Rockford General Funds.					
Educate Property Owners About Freezing Pipes	Goal: Educate citizens and property owners on severe weather conditions---Objective: Educate property owners about freezing pipes	Winter Storms	Ongoing/ Medium	This mitigation item is ongoing. Funding source from the City of Rockford Water funds. The Water Superintendent oversees this mitigation item.	This mitigation item is ongoing and comes up as weather demands. The funding source is City of Rockford Water Department. The Water Superintendent oversees this item.
<b>Timeline:</b> Ongoing. <b>Funding:</b> City of Rockford General Funds.					
Back-up Generators for Critical Facilities	Goal: Lessen the impacts of hazards to new and existing infrastructure--Objective: Equip public facilities and communities to guard against damage caused by secondary effects on hazards	All Hazards	Ongoing/ High	The City currently has five large generators at water facilities to assure their ability to operate pumps in the event of a prolonged power outage as well as communicate with each generator site. The Street Department has one generator to ensure the ability to provide continued support in all hazards.	This mitigation item is ongoing. Funding source from the City of Rockford General Fund. As critical buildings are updated, the need for a generator is evaluated. The Water Superintendent, Street Superintendent and City Engineer oversee this mitigation item.
<b>Timeline:</b> 5 years. <b>Funding:</b> City of Rockford General Funds.					

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Status/Priority	Comments (2014)	Comments (2019)
<b>Responsible:</b> Noted throughout this matrix within the 2019 comments column for each respective mitigation strategy where appropriate.					

## City of Rockford: Action Items

### **Beverly Park Neighborhood**

#### *Acquisition of Flood Prone Structures*

- During the update process, the RPC project team reviewed the newly assessed Flood Insurance Rate Maps (FIRM) maps created by FEMA and the NFIP program for the City of Rockford in 2016. In addition, the RPC project team was made aware (through public comment; see [Appendix B](#)) of the Beverly Park neighborhood as an area of concern. As of the 2016 FIRM, the Beverly Park neighborhood was identified as almost wholly in the area of the floodplain. The Beverly Park neighborhood represents about thirty city blocks between the arterial roads of Auburn St. (to the south), Kilburn Ave. (to the East), Gilbert Ave. (to the North), and North Central Ave. (and West). To the South of the Beverly Park neighborhood is the North Fork Kent Creek which has a tendency to flood (see [Vision to Action: Creating and Using a Flood Risk Assessment for Identifying Mitigation Options](#)<sup>1</sup>). Additionally, running through the middle of the Beverly Park neighborhood is a channelized drainage basin. Both of these contribute to flooding issues in the area.

The recommendation for the City of Rockford is to seek funding through FEMA (primarily through Pre-Disaster Mitigation Grants(PDM)) to obtain the properties that are prone to flood – at market value – and through this process demolish and allow the land to be reclaimed by the creek for flooding and retention of water. The land can also serve to be public space, for example, a greenspace or park. This is recognized by FEMA (see [Mitigation Ideas: A Resource for Reducing Risk to Natural Hazards](#); Mitigation Item F-12, Pg. 27<sup>2</sup>).

<sup>1</sup> [http://www.floods.org/Files/Conf2016\\_ppts/E4\\_Graff.pdf](http://www.floods.org/Files/Conf2016_ppts/E4_Graff.pdf)

<sup>2</sup> [https://www.fema.gov/media-library-data/20130726-1904-25045-0186/fema\\_mitigation\\_ideas\\_final508.pdf](https://www.fema.gov/media-library-data/20130726-1904-25045-0186/fema_mitigation_ideas_final508.pdf)

### The Village of Rockton (2019)

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Status/Priority	Comments (2014)	Comments (2019)
Public Education / Awareness	Goal: Develop long-term strategies to educate residents on the hazards affecting their community--- Objective: Raise public awareness of hazard mitigation	All Hazards	Ongoing/ High	Rockton plans to update its website to include emergency information for residents.	Rockton is periodically updating website and posting information on Facebook with emergency information.
<b>Timeline:</b> The Village evaluates the website information at least quarterly each year (1 year). <b>Funding:</b> Village of Rockton general funds.					
Back-up Generators for Critical Facilities	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Equip public facilities and communities to guard against damage caused by secondary effects on hazards	All Hazards	Ongoing/ High	Rockton wishes to seek funding to obtain additional back-up generators for critical facilities. The village currently provides back-up generators at the critical municipal facilities.	Rockton continues to pursue additional funding for Generators.
<b>Timeline:</b> Within 3 years after funding is made available for the project. <b>Funding:</b> Village of Rockton general funds; Pre-Disaster Mitigation Funding; private lending; or grant funding/donations ( <a href="#">ComEd- Powering Safe Communities</a> , <a href="#">NiCor</a> , <a href="#">State of Illinois</a> , Federal ( <a href="#">EPA</a> ; <a href="#">USDA</a> ), etc.).					
Enhance Communication Systems	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Equip public facilities and communities to guard against damage caused by secondary effects on hazards	All Hazards	Medium	Rockton plans to improve the emergency communication system currently in place.	No comment.
<b>Timeline:</b> Within 5 years upon receipt of the funding for this project. <b>Funding:</b> Village of Rockton general funds.					
Active Tree Management	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Active tree management near critical facilities and essential facilities to minimize risk of damage	All Hazards	Ongoing/ Medium	Rockton will be implementing additional action plans to minimize tree damage to power lines as well as other infrastructure.	Rockton has developed a yearly tree trimming program and is working with Rock Energy to remove tree hazards by power lines.
<b>Timeline:</b> Trees will be removed annually with available funds allocated for such work (1 year). <b>Funding:</b> Village of Rockton general funds.					

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Status/Priority	Comments (2014)	Comments (2019)
Establish Local Emergency Planning Committee	Goal: Create new or revise existing plans/maps---Goal: Lessen the impacts of hazards to new and existing infrastructure	All Hazards	Completed	Rockton will develop a Local Emergency Planning Committee and work with the Winnebago County Local Emergency Planning Committee (LEPC).	The Village of Rockton in conjunction with the Fire District and the State Of Illinois has formed a committee.
<b>Timeline:</b> Completed. <b>Funding:</b> None.					
Identification of Floodplain Structures	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Examine flood loss areas and generate a comprehensive list of structures located in floodplains	Flooding / Dam and Levee Failure	Ongoing/ High	Rockton plans to create a comprehensive list of structures located in the floodplain.	Rockton continues to work on and maintain a list of structures.
<b>Timeline:</b> Structures will be identified annually with available funds that are allocated for this project (1 year). <b>Funding:</b> Village of Rockton general funds.					
Structure Elevation	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Minimize the amount of infrastructure exposed to hazards	Flooding / Dam and Levee Failure	Ongoing/ High	The Village has been proactive in requiring any new or modified structure to be constructed a minimum of 1 foot above the 100 year flood elevation.	Rockton is working with the Winnebago County Building department to elevate all structures.
<b>Timeline:</b> Within 3 years after the Village is awarded funding. <b>Funding:</b> Village of Rockton general funds; Pre-Disaster Mitigation Funding; private lending; or grant funding.					
Floodplain and Stormwater Ordinances	Goal: Create new or revise existing plans/maps--- Objective: Review and update existing, or create new community plans and ordinances	Flooding / Dam and Levee Failure	High	The Village will continue to maintain and update their ordinances to comply with the County and State requirements.	No comment.
<b>Timeline:</b> Every 2 years. <b>Funding:</b> Village of Rockton general funds.					
Develop Alternate Traffic Routes	Goal: Create new or revise existing plans/maps--- Objective: Review and update existing, or create new community plans and ordinances	HAZMAT	Low	Rockton will work with the Winnebago County LEPC to improve the County's HAZMAT response plans.	No comment.
<b>Timeline:</b> Within 3 years after the Village is awarded funding. <b>Funding:</b> Village of Rockton general funds.					

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Status/Priority	Comments (2014)	Comments (2019)
HAZMAT Spill, Removal and Disposal Procedure	Goal: Create new or revise existing plans/maps--- Objective: Review and update existing, or create new community plans and ordinances	HAZMAT	Medium	Rockton will work with the Winnebago County LEPC to improve the County's HAZMAT response plans.	No comment.
<b>Timeline:</b> Within 3 years after the Village is awarded funding. <b>Funding:</b> Village of Rockton general funds.					
Bury Power Lines	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Active tree management near critical facilities and essential facilities to minimize risk of damage	Severe Storms / Tornadoes	High	The Village has been working with Rock Energy to bury all new and relocated facilities.	No comment.
<b>Timeline:</b> Within 10 years after the Village is awarded funding. <b>Funding:</b> Village of Rockton general funds; Pre-Disaster Mitigation Funding; private lending; or grant funding ( <a href="#">State of Illinois</a> , Federal ( <a href="#">EPA</a> ; <a href="#">USDA</a> ), etc.).					
Install Snow Fences	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Minimize the amount of infrastructure exposed to hazards	Winter Storms	Completed	This mitigation item is ongoing in the County the Highway Department. Rockton will work with the County to improve this mitigation item.	Rockton Continues to work with the County and has purchased and installs snow fencing.
<b>Timeline:</b> Completed. <b>Funding:</b> Village of Rockton general funds; Pre-Disaster Mitigation Funding; private lending; or grant funding ( <a href="#">State of Illinois</a> , Federal ( <a href="#">EPA</a> ; <a href="#">USDA</a> ), etc.).					
Heating and Cooling Shelters	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Improve emergency sheltering	Winter Storms / Extreme Heat	Medium	Rockton wishes to seek funding to increase the number of heating and cooling shelters for its residents.	No comment.
<b>Timeline:</b> Within 5 years after the Village is awarded funding. <b>Funding:</b> City of Loves Park general funds; Pre-Disaster Mitigation Funding; private lending; or grant funding ( <a href="#">State of Illinois</a> , Federal ( <a href="#">EPA</a> ; <a href="#">USDA</a> ), etc.). <b>Responsible:</b> Village Public Works Director; & The Village of Rockton					

### The Village of Roscoe (2019)

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Status/Priority	Comments (2014)	Comments (2019)
Back-up Generators for Critical Facilities	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Equip public facilities and communities to guard against damage caused by secondary effects on hazards	All Hazards	Completed	Roscoe wishes to seek funding to obtain additional back-up generators for critical facilities.	The Village of Roscoe has constructed a new Police Department building which is 100% backed up by a generator, with Uninterrupted Power Supply (UPS) systems to ensure zero down time. Critical systems, including IT and access control in Village Hall are linked to the generator as well. Additionally, Com Ed has installed a 'Smart Grid' network throughout the Village that involves distribution automation to immediately re-route power to effected areas.
<b>Timeline:</b> Completed. <b>Funding:</b> None.					
Enhance Communication Systems	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Equip public facilities and communities to guard against damage caused by secondary effects on hazards	All Hazards	Completed	Roscoe plans to improve the emergency communication system currently in place.	Since 2014, the Village of Roscoe has implemented a new communication system and they now communicate with other agencies utilizing the "StarCom" radio system.
<b>Timeline:</b> Completed. <b>Funding:</b> None.					
Active Tree Management	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Active tree management near critical facilities and essential facilities to minimize risk of damage	All Hazards	Completed/ Ongoing	Roscoe will implement additional action plans to minimize tree damage to power lines as well as other infrastructure.	The Village of Roscoe now contracts with private tree trimming vendors on an annual basis to minimize risk to power lines and other infrastructure.
<b>Timeline:</b> Completed/Ongoing. <b>Funding:</b> Village of Roscoe general funds.					



Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Status/Priority	Comments (2014)	Comments (2019)
Mutual Aid Agreements	Goal: Lessen the impacts of hazards to new and existing infrastructure---	All Hazards	Ongoing/ Medium	Roscoe will work with the Winnebago County Local Emergency Planning Committee (LEPC) and other Agencies in the County to develop and improve mutual aid agreements within the county.	The Village of Roscoe has increased communication and inter-governmental cooperation with surrounding communities, including in the areas of mutual aid.
<b>Timeline:</b> Ongoing.					
<b>Funding:</b> Village of Roscoe general funds.					
Establish Local Emergency Planning Committee	Goal: Create new or revise existing plans/maps---Goal: Improve emergency sheltering and procedures in the event of an earthquake	All Hazards	Low	Roscoe will develop a Local Emergency Planning Committee and work with the Winnebago County Local Emergency Planning Committee (LEPC).	No comment.
<b>Timeline:</b> 2 years.					
<b>Funding:</b> Village of Roscoe general funds.					
Develop Safety Procedures for Earthquakes	Goal: Improve emergency sheltering and procedures in the event of an earthquake--- Objective: Review and update existing, or create new community plans and ordinances	Earthquake	Low	Roscoe will work to develop an earthquake safety procedure for the village.	No comment.
<b>Timeline:</b> 5 years.					
<b>Funding:</b> Village of Roscoe general funds.					
Burn Ordinances	Goal: Create new or revise existing plans/maps--- Objective: Review and update existing, or create new community plans and ordinances	Extreme Heat and Drought	Completed	Roscoe will continue to maintain update burn ordinances.	The Village of Roscoe has updated the ordinance to require that all property owners maintain a physical presence at all recreational or yard waste fires until fully extinguished.
<b>Timeline:</b> Completed.					
<b>Funding:</b> None.					
Participate in the Community Rating System	Goal: Create new or revise existing plans/maps--- Objective: Support compliance with the NFIP	Flooding / Dam and Levee Failure	Medium	Roscoe will investigate the feasibility of joining the CRS.	No comment.

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Status/Priority	Comments (2014)	Comments (2019)
<b>Timeline:</b> 5 years. <b>Funding:</b> Village of Roscoe general funds.					
Identification of Floodplain Structures	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Examine flood loss areas and generate a comprehensive list of structures located in floodplains	Flooding / Dam and Levee Failure	Ongoing/ Medium	Roscoe will work to identify all flood prone structures in the village.	The Village has begun the process of compiling a list of all structures existing in identified floodplains. Preliminary indications are that only 4 inhabitable structures exist within a floodplain.
<b>Timeline:</b> 2 years. <b>Funding:</b> Village of Roscoe general funds.					
Develop Alternate Traffic Routes	Goal: Create new or revise existing plans/maps---	HAZMAT	Completed	Roscoe will work to develop alternate traffic routes in the event of a HAZMAT release.	Alternate route mapping is complete.
<b>Timeline:</b> Completed. <b>Funding:</b> None.					
HAZMAT Spill, Removal, and Disposal Procedure	Goal: Create new or revise existing plans/maps--- Objective: Review and update existing, or create new community plans and ordinances	HAZMAT	Medium	Roscoe will continue to work with the Winnebago County LEPC to improve the County's HAZMAT response plans.	No comment.
<b>Timeline:</b> 5 years. <b>Funding:</b> Village of Roscoe general funds.					
Install Snow Fences	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Minimize the amount of infrastructure exposed to hazards	Winter Storms	Ongoing/ Medium	Roscoe will work with the County to improve this mitigation item.	The Village of Roscoe continues to maintain our roadway network to the highest standard during winter storm events, ensuring that streets are free of ice and snow at all times.
<b>Timeline:</b> 1 to 2 years once funding is made available. <b>Funding:</b> Village of Roscoe general funds; Pre-Disaster Mitigation Funding; private lending; or grant funding ( <a href="#">State of Illinois</a> , Federal ( <a href="#">EPA</a> ; <a href="#">USDA</a> ), etc.).					
Heating and Cooling Shelters	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Improve emergency sheltering	Winter Storms/ Extreme Heat	Ongoing/ Medium	Roscoe wishes to seek funding to increase the number of heating and cooling shelters for its residents.	The Village of Roscoe works with the Harlem-Roscoe Fire Protection District to inform residents of heating/cooling centers. We use social media as a tool.
<b>Timeline:</b> 1 to 2 years once funding is made available. <b>Funding:</b> Village of Roscoe general funds; Pre-Disaster Mitigation Funding; private lending; or grant funding ( <a href="#">State of Illinois</a> , Federal ( <a href="#">EPA</a> ; <a href="#">USDA</a> ), etc.).					

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Status/Priority	Comments (2014)	Comments (2019)
<b>Responsible:</b> Village Administrator; & The Village of Roscoe					

**Boone-Winnebago County Regional Offices of Education (Boone-Winnebago County School Districts)  
(2019)**

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Status/Priority	Comments (2014)	Comments (2019)
Emergency and Crisis Response Plan with Enhanced Security Measures	Goal: Create new or revise existing plans/maps--- Objective: Review and update existing, or create new community plans and ordinances	All Hazards	Ongoing/ High	Develop an Emergency and Crisis Response Plan. This plan will be implemented on the first day of school and remain in effect until a revised plan is disseminated to all staff and Response Agencies. Each classroom is equipped with a copy of this plan stored at the exit of the classroom.	All school districts are required to meet with local first responders and their representative crisis teams annually, before October 1, to review all emergency plans. Minutes from these meetings are submitted to the Regional Office of Education each school year and are available at our office.
<b>Timeline:</b> Ongoing event. By October 1, 2020. (Yearly) <b>Funding:</b> Respective school districts general funds.					
Back-up Generators for Critical Facilities	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Equip public facilities and communities to guard against damage caused by secondary effects on hazards	All Hazards	Ongoing/ High	The School Districts would like to seek funding to obtain a back-up generators.	Currently, school districts lack funding for items such as these; however, certain schools' facilities have them from different funding sources. The Boone-Winnebago ROE does not manage this as it is up to the individual school districts.
<b>Timeline:</b> When funding is identified; 2 to 4-year implementation (pending individual school board approval). <b>Funding:</b> Respective school districts general funds; Pre-Disaster Mitigation Funding; private lending; or grant funding/donations ( <a href="#">ComEd- Powering Safe Communities</a> , <a href="#">NiCor</a> , <a href="#">State of Illinois</a> , Federal ( <a href="#">EPA</a> ; <a href="#">USDA</a> ), etc.).					
Develop Emergency Management Team	Goal: Create new or revise existing plans/maps--- Objective: Review and update existing, or create new community plans and ordinances	All Hazards	Completed	Some school districts have a School Emergency Management Team and are integrated into the Unified Command Structure.	All school districts have a School Emergency Management Team (EMT) that are integrated into the Unified Command Structure.

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Status/Priority	Comments (2014)	Comments (2019)
<b>Timeline:</b> Completed (EMT teams meet yearly with local officials and individual schools prior to October 1).					
<b>Funding:</b> None.					
<b>Responsible:</b> Boone-Winnebago Regional Offices of Education administrative offices; Respective school district offices of administration.					

### The City of South Beloit (2019)

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Status/Priority	Comments (2014)	Comments (2019)
Public Education / Awareness	Goal: Develop long-term strategies to educate residents on the hazards affecting their community--- Objective: Raise public awareness of hazard mitigation	All Hazards	Ongoing/ High	South Beloit will increase its public education at the library, sewer billing and city websites. Press releases will also be distributed.	South Beloit will increase its public education at the library, sewer billing and city websites. Press releases will also be distributed.
<b>Timeline:</b> Ongoing.					
<b>Funding:</b> City of South Beloit general funds.					
Develop Education Materials on the benefits of the NFIP	Goal: Develop long-term strategies to educate residents on the hazards affecting their community--- Objective: Raise public awareness of flooding and flood insurance	Flooding / Dam and Levee Failure	Completed	Material will be available at the city hall.	Material is available at the city hall.
<b>Timeline:</b> Completed.					
<b>Funding:</b> None.					
Special Needs Population List	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Evaluate and strengthen the communication and transportation abilities of emergency services	All Hazards	Completed	Nursing homes currently have mutual aid agreements in place. This agreement includes developing and maintaining a special needs population list for each nursing home.	Nursing homes currently have mutual aid agreements in place. This agreement includes developing and maintaining a special needs population list for each nursing home.
<b>Timeline:</b> Completed.					
<b>Funding:</b> None.					
Provided and Publicize Location of Safe Rooms and / or Shelters	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Improve emergency sheltering in the county	All Hazards	Completed	South Beloit currently has designated heating/cooling shelters and plans to distribute the locations of the shelters to residents in the county.	South Beloit currently has designated heating/cooling shelters and plans to distribute the locations of the shelters to residents in the county.
<b>Timeline:</b> Completed.					
<b>Funding:</b> None.					

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Status/Priority	Comments (2014)	Comments (2019)
Mutual Aid Agreements	Goal: Lessen the impacts of hazards to new and existing infrastructure---	All Hazards	Completed	South Beloit currently has mutual aid agreements in place for the Fire Departments and Public Works.	South Beloit currently has mutual aid agreements in place for the Fire Departments and Public Works.
<b>Timeline:</b> Completed. <b>Funding:</b> None.					
Back-up Generators for Critical Facilities	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Equip public facilities and communities to guard against damage caused by secondary effects on hazards	All Hazards	Completed	City Hall, Police and Fire Department, and the Sewer Plant have portable generators.	Appropriate critical facilities have portable generators.
<b>Timeline:</b> Completed. <b>Funding:</b> None.					
Data Acquisition for Future Hazard Mitigation Planning	Goal: Create new or revise existing plans/maps---Objective: Review and update existing GIS datasets	All Hazards	Completed	WinGIS maintains a list of critical and essential facilities in the county.	Through its work with RPC, the City of South Beloit can access WinGIS – they maintains a list of critical and essential facilities in the county.
<b>Timeline:</b> Completed. <b>Funding:</b> None.					
First Responder Training	Goal: Develop long-term strategies to education residents on the hazards affecting their community--- Objective: Improve education and training of emergency personnel and public officials	All Hazards	Ongoing/ Medium	Ongoing with Fire and Police.	The City of South Beloit continues to provide updated first responder training to new and existing employees as new options present themselves.
<b>Timeline:</b> Completed. <b>Funding:</b> None.					
Participate in the NFIP	Goal: Create new or revise existing plans/maps---Objective: Support compliance with the NFIP	Flooding / Dam and Levee Failure	Ongoing/ High	Ongoing. The South Beloit will contribute to map revisions.	Ongoing. The South Beloit will contribute to map revisions.
<b>Timeline:</b> Ongoing. <b>Funding:</b> City of South Beloit general funds.					

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Status/Priority	Comments (2014)	Comments (2019)
Property Acquisition (Buyouts)	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Minimize the amount of infrastructure exposed to hazards	Flooding / Dam and Levee Failure	Ongoing/ High	South Beloit will continue to seek funding for future property acquisitions.	South Beloit will continue to seek funding for future property acquisitions.
<p><b>Timeline:</b> 2 years once funding is made available.  <b>Funding:</b> City of South Beloit general funds; Pre-Disaster Mitigation Funding; private lending; or grant funding (<a href="#">State of Illinois</a>, Federal (<a href="#">EPA</a>; <a href="#">USDA</a>), etc.).</p>					
Structure Elevation	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Minimize the amount of infrastructure exposed to hazards	Flooding / Dam and Levee Failure	Completed	Ordinances in the village requires all new structures to be raised above the flood level.	These ordinances exist within the city code and require that all new structures to be raised above the flood level.
<p><b>Timeline:</b> Completed.  <b>Funding:</b> None.</p>					
Floodplain and Stormwater Management Ordinances	Goal: Create new or revise existing plans/maps---Objective: Review and update existing, or create new community plans and ordinances	Flooding / Dam and Levee Failure	Completed/ Ongoing	South Beloit has building code restrictions and flood protection requirements in place. South Beloit will continue to maintain and update these ordinances.	South Beloit has building code restrictions and flood protection requirements in place. South Beloit will continue to maintain and update these ordinances.
<p><b>Timeline:</b> Completed/ongoing.  <b>Funding:</b> City of South Beloit general fund.</p>					
Open Space Preservation	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Keep the floodplain and other hazardous areas open and free from development	Flooding / Dam and Levee Failure	Ongoing/ Medium	South Beloit will continue working to preserve green space along Turtle Creek and Rock River.	South Beloit will continue working to preserve green space along Turtle Creek and Rock River.
<p><b>Timeline:</b> 5 years once funding is made available.  <b>Funding:</b> City of South Beloit general funds; Pre-Disaster Mitigation Funding; private lending; or grant funding (<a href="#">State of Illinois</a>, Federal (<a href="#">EPA</a>; <a href="#">USDA</a>), etc.).</p>					
Install Backflow Values and Sump Pumps	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Minimize potential damage to foundations and household/critical facility utilities	Flooding / Dam and Levee Failure	Ongoing/ High	This mitigation item is ongoing through city ordinances.	This mitigation item is ongoing through city ordinances.
<p><b>Timeline:</b> Ongoing.  <b>Funding:</b> City of South Beloit general funds.</p>					

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Status/Priority	Comments (2014)	Comments (2019)
Anchoring of Manufactured Homes and Exterior Attachments	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Minimize the amount of infrastructure exposed to hazards	Severe Storms / Tornadoes	Completed	Current building codes address this issue including anchoring.	Current building codes address this issue including anchoring.
<b>Timeline:</b> Completed. <b>Funding:</b> None.					
Ordinance for Higher Construction Standards / Techniques Regarding Severe Storms	Goal: Create new or revise existing plans/maps---Objective: Review and update existing, or create new community plans and ordinances	Severe Storms / Tornadoes	Completed/Ongoing	South Beloit will continue to maintain and update this ordinance.	South Beloit will continue to maintain and update this ordinance.
<b>Timeline:</b> Completed/Ongoing. <b>Funding:</b> City of South Beloit general fund.					
Active Tree Management	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Active tree management near critical facilities and essential facilities to minimize risk of damage	All Hazards	Low	South Beloit will be implementing additional action plans to minimize tree damage to power lines as well as other infrastructure.	South Beloit will be implementing additional action plans to minimize tree damage to power lines as well as other infrastructure.
<b>Timeline:</b> 10 years. <b>Funding:</b> City of South Beloit general funds.					
Emergency Plan / Protocol for HAZMAT Releases	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Review and update existing, or create new community plans and ordinances	HAZMAT	Low	South Beloit plans to develop an emergency plan in the event of a HAZMAT release and will work with the Winnebago County LEPC.	South Beloit plans to develop an emergency plan in the event of a HAZMAT release and will work with the Winnebago County LEPC.
<b>Timeline:</b> 5 years. <b>Funding:</b> City of South Beloit general funds.					
HAZMAT Spill, Removal and Disposal Procedure	Goal: Create new or revise existing plans / maps---Objective: Review and update existing, or create new community plans and ordinances	HAZMAT	Low	South Beloit plans to develop an emergency plan in the event of a HAZMAT release and will work with the Winnebago County LEPC.	South Beloit plans to develop an emergency plan in the event of a HAZMAT release and will work with the Winnebago County LEPC.
<b>Timeline:</b> 5 years. <b>Funding:</b> City of South Beloit general funds.					

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Status/Priority	Comments (2014)	Comments (2019)
Heating and Cooling Shelters	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Improve emergency sheltering	Winter Storms / Extreme Heat	Medium	South Beloit wishes to seek funding to increase the number of heating and cooling shelters in the village.	South Beloit wishes to seek funding to increase the number of heating and cooling shelters in the City.
<b>Timeline:</b> 5 years once funding is made available.					
<b>Funding:</b> City of South Beloit general funds; Pre-Disaster Mitigation Funding; private lending; or grant funding ( <a href="#">State of Illinois</a> , Federal ( <a href="#">EPA</a> ; <a href="#">USDA</a> ), etc.).					
<b>Responsible:</b> City of South Beloit; City of South Beloit Public Works					

### Winnebago County (2019)

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Status/Priority	Comments (2014)	Comments (2019)
Public Education / Awareness	Goal: Develop long-term strategies to educate County residents on the hazards affecting their community-- -Objective: Raise public awareness of hazard mitigation	All Hazards	Ongoing/ High	Ongoing within Winnebago County.	Ongoing within Winnebago County.
<b>Timeline:</b> Ongoing.					
<b>Funding:</b> Winnebago County general fund.					
Devote Section of County Website to Hazard Mitigation Awareness	Goal: Develop long-term strategies to educate residents on the hazards affecting their community-- Objective: Raise public awareness of hazard mitigation	All Hazards	Ongoing/ High	Ongoing mitigation item. Winnebago County website is utilized.	Ongoing mitigation item. Winnebago County website is utilized. Information should be updated frequently.
<b>Timeline:</b> Updated on a year (1 year annually).					
<b>Funding:</b> Winnebago County general fund.					
Family Disaster Plans & IEMA Kits	Goal: Lessen the impacts of hazards to County residents--- Objective: Strengthen communication between County residents and emergency services	All Hazards	Ongoing/ High	Ongoing mitigation item. The Health Department will distribute information packets prior to and immediately following hazardous events.	Winnebago County continues to work with Winnebago County Health Department on this as well as working with local municipalities and public works on this.
<b>Timeline:</b> Ongoing.					
<b>Funding:</b> Winnebago County general fund; Winnebago County Health Department general fund.					



Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Status/Priority	Comments (2014)	Comments (2019)
Special Needs Population List	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Evaluate and strengthen the communication and transportation abilities of emergency services	All Hazards	Completed	Nursing homes within Winnebago county currently have mutual aid agreements in place. This agreement includes developing and maintaining a special needs population list for each nursing home.	Nursing homes within Winnebago county currently have mutual aid agreements in place. This agreement includes developing and maintaining a special needs population list for each nursing home.
<b>Timeline:</b> Completed. <b>Funding:</b> None.					
Provided and Publicize Location of Safe Rooms and / or Shelters	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Improve emergency sheltering in the county	All Hazards	Completed	Winnebago County currently has designated heating/cooling shelters and plans to distribute the locations of the shelters to residents in the county.	Winnebago County currently has designated heating/cooling shelters and distributes the locations of the shelters to residents in the county prior/during each extreme weather event.
<b>Timeline:</b> Completed. <b>Funding:</b> None.					
Establish Local Emergency Planning Committee	Goal: Create new or revise existing plans/maps--- Objective: Review and update existing, or create new community plans and ordinances	All Hazards	Completed	Shortly after the enactment of SARA Title III the Winnebago County Local Emergency Planning Committee was formed. The Winnebago County LEPC holds an annual Public Luncheon and Emergency Plan Discussion.	The Winnebago County LEPC continues to hold monthly planning meetings as well as annual public meetings and conferences.
<b>Timeline:</b> Completed. <b>Funding:</b> None.					

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Status/Priority	Comments (2014)	Comments (2019)
Mutual Aid Agreements	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Evaluate and strengthen the communication and transportation abilities of emergency services	All Hazards	Completed	Winnebago County Local Emergency Planning Committee (LEPC) oversees the various mutual aid agreements within the county.	Winnebago County Local Emergency Planning Committee (LEPC) oversees the various mutual aid agreements within the county.
<b>Timeline:</b> Completed. <b>Funding:</b> None.					
Back-up Generators for Critical Facilities	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Equip public facilities and communities to guard against damage caused by secondary effects on hazards	All Hazards	Completed/ Ongoing	Certain critical facilities within Winnebago County have alternative power sources in the event of a hazardous event.	Certain critical facilities within Winnebago County have alternative power sources in the event of a hazardous event. Winnebago County will work to identify those that do not have alternate power and work with ComEd if they lose power.
<b>Timeline:</b> 2 years once funding is available. <b>Funding:</b> Winnebago County general funds; Pre-Disaster Mitigation Funding; private lending; or grant funding/donations ( <a href="#">ComEd- Powering Safe Communities</a> , <a href="#">NiCor</a> , <a href="#">State of Illinois</a> , Federal ( <a href="#">EPA</a> ; <a href="#">USDA</a> ), etc.).					
Enhance Communication Systems	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Equip public facilities and communities to guard against damage caused by secondary effects on hazards	All Hazards	Ongoing/ Medium	The County plans to improve emergency alarms in rural areas	Winnebago County is in the process of implementing a new Emergency Notification System, which is I-PAWS compliant.
<b>Timeline:</b> 2 years. <b>Funding:</b> Winnebago County general fund.					

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Status/Priority	Comments (2014)	Comments (2019)
Data Acquisition for Future Hazard Mitigation Planning	Goal: Create new or revise existing plans/maps--- Objective: Review and update existing GIS datasets	All Hazards	Ongoing/ High	Winnebago County continues to assist the Illinois State Water Survey with FEMA-directed flood risk-map reviews and comments. WinGIS maintains a list of critical and essential facilities in the county.	Winnebago County continues to assist the Illinois State Water Survey with FEMA-directed flood risk-map reviews and comments. WinGIS maintains a list of critical and essential facilities in the county.
<b>Timeline:</b> Ongoing. <b>Funding:</b> Winnebago County general fund.					
First Responder Training	Goal: Develop long-term strategies to education residents on the hazards affecting their community-- -Objective: Improve education and training of emergency personnel and public officials	All Hazards	Ongoing/ High	Ongoing within Winnebago County.	Winnebago County continues to provide updated first responder training to new and existing employees as new options present themselves.
<b>Timeline:</b> Ongoing. <b>Funding:</b> Winnebago County general fund.					
Develop Safety Procedures for Earthquakes	Goal: Improve emergency sheltering and procedures in the event of an earthquake--- Objective: Review and update existing, or create new community earthquake plans	Earthquakes	Low	Winnebago County will work to develop mutual aid agreements in event of an earthquake.	Winnebago County will work to develop mutual aid agreements in event of an earthquake.
<b>Timeline:</b> 5 years. <b>Funding:</b> Winnebago County general fund.					
Burn Ordinances	Goal: Create new or revise existing plans/maps--- Objective: Review and update existing, or create new community plans and ordinances	Extreme Heat and Drought	Ongoing/ Low	This mitigation item is ongoing and is addressed by current ordinances. The County will continue to maintain update these ordinances.	This mitigation item is ongoing and is addressed by current ordinances. The County will continue to maintain update these ordinances.
<b>Timeline:</b> Ongoing. <b>Funding:</b> Winnebago County general fund.					

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Status/Priority	Comments (2014)	Comments (2019)
Participate in the NFIP	Goal: Create new or revise existing plans/maps--- Objective: Support compliance with the NFIP	Flooding / Dam and Levee Failure	Ongoing/ Low	Ongoing within Winnebago County. The county will continue to educate and encourage communities/jurisdictions to join the NFIP.	Ongoing within Winnebago County. The county will continue to educate and encourage communities/jurisdictions to join the NFIP.
<b>Timeline:</b> Ongoing. <b>Funding:</b> Winnebago County general fund.					
Participate in the Community Rating System	Goal: Create new or revise existing plans/maps--- Objective: Support compliance with the NFIP	Flooding / Dam and Levee Failure	Ongoing/ High	Winnebago County will investigate the feasibility of joining the CRS.	Winnebago County will investigate the feasibility of joining the CRS.
<b>Timeline:</b> 5 years. <b>Funding:</b> Winnebago County general fund.					
Property Acquisition (Buyouts) & Property Relocation	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Minimize the amount of infrastructure exposed to hazards	Flooding / Dam and Levee Failure	Ongoing/ High	Winnebago County currently works and will continue to identify areas where buyouts and property relocations make the most sense. Several projects have already been completed with Federal assistance. The County will continue to seek federal funding for future property acquisitions.	Winnebago County currently assesses and will continue to identify areas where buyouts and property relocations make the most sense. Several projects have already been completed with Federal Mitigation assistance. The County will continue to seek federal funding for future property acquisitions.
<b>Timeline:</b> 5 years once funding is made available. <b>Funding:</b> Winnebago County general fund; Pre-Disaster Mitigation Funding; private lending; or grant funding ( <a href="#">State of Illinois</a> , Federal ( <a href="#">EPA</a> ; <a href="#">USDA</a> ), etc.).					

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Status/Priority	Comments (2014)	Comments (2019)
Structure Elevation	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Minimize the amount of infrastructure exposed to hazards	Flooding / Dam and Levee Failure	Ongoing/ High	Currently, the flood protection elevation is set at Base Flood Elevation + 1 foot; flood protection overlay districts are included in the proposed Unified Development Ordinance.	Currently, the flood protection elevation is set at Base Flood Elevation + 1 foot; flood protection overlay districts are included in the proposed Unified Development Ordinance.
<b>Timeline:</b> 5 years once funding is made available.					
<b>Funding:</b> Winnebago County general fund; Pre-Disaster Mitigation Funding; private lending; or grant funding.					
Floodplain and Stormwater Management Ordinances	Goal: Create new or revise existing plans/maps--- Objective: Review and update existing, or create new community plans and ordinances	Flooding / Dam and Levee Failure	Ongoing/ High	Winnebago County has building code restrictions and flood protection requirements in place. The County will continue to maintain and update these ordinances.	Winnebago County has building code restrictions and flood protection requirements in place. The County will continue to maintain and update these ordinances.
<b>Timeline:</b> 5 years.					
<b>Funding:</b> Winnebago County general fund.					
Dam Failure Emergency Response Plan	Goal: Create new or revise existing plans/maps--- Objective: Review and update existing, or create new community plans and ordinances	Flooding / Dam and Levee Failure	Ongoing/ High	Winnebago County Emergency Services participate in response planning for such events.	Winnebago County Emergency Services participate in response planning for such events.
<b>Timeline:</b> Ongoing.					
<b>Funding:</b> Winnebago County general fund.					
Open Space Preservation	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Keep the floodplain and other hazardous areas open and free from development	Flooding / Dam and Levee Failure	Completed	Flood protection overlay districts and conservation design are included in the proposed Unified Development Ordinance.	Flood protection overlay districts and conservation design are included in the proposed Unified Development Ordinance.
<b>Timeline:</b> Completed.					
<b>Funding:</b> None.					

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Status/Priority	Comments (2014)	Comments (2019)
Install Sump Pumps	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Minimize potential damage to foundations and household/critical facility utilities	Flooding / Dam and Levee Failure	Ongoing/ High	This mitigation item is ongoing within Winnebago County and is part of the building code requirement for specified sites.	This mitigation item is ongoing within Winnebago County and is part of the building code requirement for specified sites.
<b>Timeline:</b> Ongoing. <b>Funding:</b> Winnebago County general fund.					
Emergency Plan / Protocol for HAZMAT Releases	Goal: Create new or revise existing plans/maps--- Objective: Review and update existing, or create new community plans and ordinances	HAZMAT	Completed	Winnebago County requires HAZMAT response plans for specified building sites and facilities.	Winnebago County requires HAZMAT response plans for specified building sites and facilities. Through Mutual Aid, the Rockford Fire Department is the designated response team for Hazardous Materials incidents.
<b>Timeline:</b> Completed. <b>Funding:</b> None.					
Develop Alternate Traffic Routes	Goal: Create new or revise existing plans/maps--- Objective: Review and update existing, or create new community plans and ordinances	HAZMAT	Ongoing/ Medium	This mitigation item is ongoing. Example: The Health Department has specified certain water protection routes for directing commercial traffic that might represent a threat to water resources.	This mitigation item is ongoing.
<b>Timeline:</b> 5 years. <b>Funding:</b> Winnebago County general fund.					
HAZMAT Spill, Removal and Disposal Procedure	Goal: Create new or revise existing plans/maps--- Objective: Review and update existing, or create new community plans and ordinances	HAZMAT	Ongoing/ High	This mitigation item is ongoing and is overseen by the Winnebago County LEPC.	This mitigation item is ongoing and is overseen by the Winnebago County LEPC.

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Status/Priority	Comments (2014)	Comments (2019)
<b>Timeline:</b> 5 years. <b>Funding:</b> Winnebago County general fund.					
Anchoring of Manufactured Homes and Exterior Attachments	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Minimize the amount of infrastructure exposed to hazards	Severe Storms / Tornadoes	Completed/ Ongoing/ Low	This mitigation item is ongoing within Winnebago County and is part of the building code requirement for specified structures.	This mitigation item is ongoing within Winnebago County and is part of the building code requirement for specified structures.
<b>Timeline:</b> Completed/Ongoing. <b>Funding:</b> None.					
Ordinance for Higher Construction Standards / Techniques in Regards to Severe Storms	Goal: Create new or revise existing plans/maps--- Objective: Review and update existing, or create new community plans and ordinances	Severe Storms / Tornadoes	Completed/ Ongoing/ High	This mitigation item is ongoing within Winnebago County and is part of the building code requirement. Example: Per current building code, 90 mph, 2-3 second gusts must be withstood by certain building categories.	This mitigation item is ongoing within Winnebago County and is part of the building code requirement. Example: Per current building code, 90 mph, 2-3 second gusts must be withstood by certain building categories.
<b>Timeline:</b> Completed/Ongoing. <b>Funding:</b> None.					
Install Snow Fences	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Minimize the amount of infrastructure exposed to hazards	Winter Storms	Ongoing/ High	This mitigation item is ongoing and is regular practice of the Highway Department.	This mitigation item is ongoing and is regular practice of the Highway Department.
<b>Timeline:</b> 1 year (as additional funding becomes available – more fencing may be installed). <b>Funding:</b> Winnebago County general fund; Pre-Disaster Mitigation Funding; private lending; or grant funding ( <a href="#">State of Illinois</a> , Federal ( <a href="#">EPA</a> ; <a href="#">USDA</a> ), etc.).					
<b>Responsible:</b> Winnebago County Highway Department; Winnebago County; Winnebago County Emergency Management Agency (Winnebago County Sheriff's Department)					

**The Village of Winnebago (2019)**

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Status/Priority	Comments (2014)	Comments (2019)
Public Education / Awareness	Goal: Develop long-term strategies to educate residents on the hazards affecting their community--- Objective: Raise public awareness of hazard mitigation	All Hazards	Ongoing/ High	The Village Board plans to improve public education and awareness of hazard mitigation. Potential funding sources have not been identified at this point.	Plans to improve public education and awareness remain a vital goal of the Village.
<p><b>Timeline:</b> 2 years (once funding becomes available).  <b>Funding:</b> Village of Winnebago general fund; private lending; or grant funding/donations (<a href="#">ComEd- Powering Safe Communities</a>, <a href="#">NiCor</a>, <a href="#">State of Illinois</a>, Federal (<a href="#">EPA</a>; <a href="#">USDA</a>), etc.).</p>					
Mutual Aid Agreements	Goal: Create new or revise existing plans/maps--- Goal: Lessen the impacts of hazards to new and existing infrastructure	All Hazards	Ongoing/ High	The Village of Winnebago will work with the Winnebago County Local Emergency Planning Committee (LEPC) and other Agencies in the County to develop and improve mutual aid agreements within the county.	The Village of Winnebago is committed to working with Winnebago County Local Emergency Planning Committee and other agencies/entities to develop, refine, and improve agreements throughout the county.
<p><b>Timeline:</b> Ongoing.  <b>Funding:</b> Village of Winnebago general fund.</p>					
Back-up Generators for Critical Facilities	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Equip public facilities and communities to guard against damage caused by secondary effects on hazards	All Hazards	Ongoing/ High	The Village Board will oversee this project. Potential funding sources and start/end date have not been identified at this point.	The Village Board and department heads within the Village recognize the importance of this category.
<p><b>Timeline:</b> 1 year (once funding becomes available).  <b>Funding:</b> Village of Winnebago general fund; Pre-Disaster Mitigation funding; private lending; or grant funding/donations (<a href="#">ComEd- Powering Safe Communities</a>, <a href="#">NiCor</a>, <a href="#">State of Illinois</a>, Federal (<a href="#">EPA</a>; <a href="#">USDA</a>), etc.).</p>					



Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Status/Priority	Comments (2014)	Comments (2019)
Participate in the NFIP	Goal: Create new or revise existing plans/maps--- Objective: Support compliance with the NFIP	Flooding / Dam and Levee Failure	Ongoing/ High	The Village of Winnebago participates in the NFIP and will continue to maintain compliance with the NFIP by evaluating and improving existing ordinances.	The Village of Winnebago will continue assessments to evaluate and improve existing ordinances.
<b>Timeline:</b> Ongoing. <b>Funding:</b> Village of Winnebago general fund.					
Floodplain and Stormwater Management Ordinances	Goal: Create new or revise existing plans/maps--- Objective: Review and update existing, or create new community plans and ordinances	Flooding / Dam and Levee Failure	Ongoing/ High	The Village of Winnebago has building code restrictions and flood protection requirements in place. The Village Board will continue to maintain and update these ordinances.	The Village of Winnebago oversees building code restrictions and flood requirements. The Board will maintained update ordinances as necessary.
<b>Timeline:</b> Ongoing. <b>Funding:</b> Village of Winnebago general fund.					
Harden Infrastructure	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Minimize the amount of infrastructure exposed to hazards	Severe Storms / Tornadoes	Ongoing/ High	The Village of Winnebago wishes to seek funding to harden existing infrastructure in the event of severe storms and tornadoes. The Village Board will oversee this project. No start /end date has been selected at this time.	The Village of Winnebago realizes the importance of critical infrastructure and securing funding to manage it.
<b>Timeline:</b> 5 to 7 years once funding is available. <b>Funding:</b> Village of Winnebago general funds; Pre-Disaster Mitigation Funding; private lending; or grant funding ( <a href="#">State of Illinois</a> , Federal ( <a href="#">EPA</a> ; <a href="#">USDA</a> ), etc.).					
Develop Alternate Traffic Routes	Goal: Create new or revise existing plans/maps--- Objective: Review and update existing, or create new community plans and ordinances	HAZMAT	Medium	The Village of Winnebago will work with the Winnebago County LEPC to improve the County's HAZMAT response plans. The project will be overseen by the Village Board.	The Village of Winnebago will work with Winnebago Co. LEPC and other entities/agencies as necessary to improve and implement HAZMAT response plans.

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Status/Priority	Comments (2014)	Comments (2019)
<b>Timeline:</b> 1 year. <b>Funding:</b> Village of Winnebago general fund.					
Install Snow Fences	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Minimize the amount of infrastructure exposed to hazards	Winter Storms	Ongoing/ High	The Village Board will oversee this project. Potential funding sources and start/end date have not been identified at this point.	The Village Board will oversee this project while working with appropriate department head(s) and try to secure funding.
<b>Timeline:</b> 1 year once funding becomes available. <b>Funding:</b> Village of Winnebago general fund; Pre-Disaster Mitigation Funding; private lending; or grant funding ( <a href="#">State of Illinois</a> , Federal ( <a href="#">EPA</a> ; <a href="#">USDA</a> ), etc.).					
Heating and Cooling Shelters	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Improve emergency sheltering	Winter Storms / Extreme Heat	Ongoing/ Medium	The Village Board will oversee this project and informally initiated through the village, school district, and fire department.	The Village Board oversees this project while working with appropriate department head(s), as well as outside entities and agencies.
<b>Timeline:</b> 1 year once funding becomes available. <b>Funding:</b> Village of Winnebago general funds; Pre-Disaster Mitigation Funding; private lending; or grant funding ( <a href="#">State of Illinois</a> , Federal ( <a href="#">EPA</a> ; <a href="#">USDA</a> ), etc.).					
Burn Ordinances	Goal: Create new or revise existing plans/maps--- Objective: Review and update existing, or create new community plans and ordinances	Extreme Heat and Drought	Ongoing/ High	The Village Board will oversee this project. The goal is to implement a new burn ordinance.	The Village Board, and the appropriate sub-committee(s) will oversee and monitor the existing ordinance. A revised ordinance has not been implemented at this time.
<b>Timeline:</b> 2-4 years. <b>Funding:</b> Village of Winnebago general fund.					
Ordinance for Higher Construction Standards (Building and Zoning Codes)	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Review and update existing, or create new community plans and ordinances	Severe Storms / Tornadoes/ Flooding	Completed	Village of Winnebago will continue to improve the village's construction ordinances to develop construction standards specific to weather/climate stressors.	The Village of Winnebago continues to improve the village's construction ordinances. These were updated in 2019.

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Status/Priority	Comments (2014)	Comments (2019)
<b>Timeline:</b> Completed (updated annually).					
<b>Funding:</b> Village of Winnebago general fund.					
<b>Responsible:</b> Village of Winnebago, Public Works					

## 9 Plan Maintenance

### Adoption by Local Government

RPC delivered the draft plan to the Winnebago County project team, IEMA, and FEMA for review on October 31, 2019. Following comments and feedback throughout November and December from IEMA, FEMA, and partner organizations, the RPC project team subsequently incorporated these into the plan. Following FEMA and IEMA review and approval, the RPC project team presented and recommended the plan to the Winnebago County Board for adoption, who adopted the MHMP on January 9, 2020. Other municipalities that adopt the plan will be included in [Appendix G](#). The RPC project team will work with the County and the municipalities to ensure all interested parties adopt the plan. [Appendix G](#) includes resolution adoptions of this plan from the individual municipalities.

### Monitoring, Evaluation, and Updating the MHMP

Throughout the five-year planning cycle, Winnebago County and other adoptees (including all municipalities that opt to adopt the plan informally or formally) will reference the plan when appropriate and offer updates to the project team where necessary. If updates are made to this plan after adoption occurs municipal governments, notices should be sent containing the details of the related update. Additionally, a meeting will be held in 2023 to address the update of this plan. Members of the project teams are readily available to engage in email correspondence if needed. If the need for a special meeting, due to new developments or the occurrence of a declared disaster in the county, the team will meet to update mitigation strategies. Depending on grant opportunities and fiscal resources, mitigation projects may be implemented independently by individual communities or through local partnerships.

Before the next update the committee will review the county goals and objectives to determine their relevance to changing situations in the county. In addition, state and federal policies will be reviewed to ensure they are addressing current and expected conditions. Finally, the committee will also review the risk assessment portion of the plan to determine if this information should be updated or modified. The parties responsible for the various implementation actions will report on the status of their projects, and will include which implementation processes worked well, any difficulties encountered, how coordination efforts are proceeding, and which strategies should be revised. Evaluation of the plans implementation will be the responsibility of the individual municipalities and the county should work to ensure that the plans mitigation items are enacted in a timely manner.

The GIS data used to prepare the plan was obtained from existing county GIS data as well as data collected as part of the planning process. As newer data becomes available with the next update process in 2024, the updated data will be integrated into future risk assessments and vulnerability analyses.

*Implementation, monitoring, and evaluation of the plan will be the primary responsibility of: Winnebago County Highway Department, 424 N Springfield Avenue, Rockford, IL 61101.*

## Implementation through Existing Programs

The results of this plan will be incorporated into ongoing planning efforts since many of the mitigation projects identified as part of this planning process are ongoing. Winnebago County and its incorporated municipalities will update the zoning plans and ordinances listed in tables 45 and 46 as necessary and as part of regularly scheduled updates. Each community will be responsible for updating its own plans and ordinances.

## Continued Public Involvement

Continued public involvement is critical to the successful implementation of the MHMP. Comments from the public on the MHMP will be received by the Winnebago County Highway Department and forwarded to the Winnebago County and RPC project teams for discussion. Education efforts for hazard mitigation will be an ongoing effort of Winnebago County. The public will be notified of periodic planning meetings through notices in the local newspaper. Once adopted, a copy of the MHMP will be available in the Winnebago County Highway Department office; online at the Winnebago County website; online at the RPC website; online at the individual municipalities websites (if available); and a printed copy will be available upon request from the RPC for a fee.

## References

### Images

- Document Cover: Image by not provided (Available on *Pixabay*; creative commons licensed)
- Section 1 Title Cover: Image by Region 1 Planning Council (image not available for use)
- Section 2 Title Cover: Image by WKIDesign (Available on *Pixabay*; creative commons licensed)
- Section 3 Title Cover: Image by Skeeze (Available on *Pixabay*; creative commons licensed)

### Technical Documents and Data<sup>1</sup>

(Reference Document) 2014 Winnebago County Multi-Hazard Mitigation Plan (Winnebago County Highway Department, Southern Illinois University) (2014)

(Reference Document; Data) 2018 Illinois Natural Hazard Mitigation Plan (Illinois Emergency Management Agency) (2018)

(Map; Data) 2030 Land Resource Management Plan (Winnebago County)

Climate Data, Historic Storm Data (Illinois State Water Survey, National Oceanic and Atmospheric Administration: National Centers for Environmental Information, National Weather Service)

Community Status Book Report (Federal Emergency Management Agency) (2018)

Critical Facility Data (Winnebago County Geographic Information Systems)

Disaster Technical Assistance Center: Supplemental Research Bulletin- Greater Impact: How Disasters Affect People of Low Socioeconomic Status (Substance Abuse and Mental Health Services Administration) (2017)

Groundwater Depletion in Chicago's Southwestern Suburbs (Illinois State Water Survey: Prairie Research Institute) (2014)

Land Cover Data (2016) (United States Geological Survey: National Land Cover Database, Federal Emergency Management Association)

Population, Racial, Economic, and Housing Data (USCB, Datausa, Headwaters Economics System, Illinois Department of Employment Security)

Property Acquisitions (2015-2019), Local Mitigation Plan Review Guide (2011), Local Mitigation Planning Handbook (2013), Mitigation Ideas: A Resource for Reducing Risk to Natural Hazards (2013) (Federal Emergency Management Agency)

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<sup>1</sup> This list is not meant to be exhaustive. Certain sources are cited throughout the document where appropriate.

## Definitions

<b>100-year Floodplain</b>	Areas subject to inundation by the 1-percent-annual-chance flood event.
<b>Critical Facility</b>	A structure, because of its function, size, service area, or uniqueness, that has the potential to cause serious bodily harm, extensive property damage, or disruption of vital socioeconomic activities if it is destroyed or damaged or if its functionality is impaired. This includes, but are not limited to, water and wastewater treatment facilities, municipal buildings, education facilities, and non-emergency healthcare facilities.
<b>Community Rating System (CRS)</b>	A voluntary program for National Flood Insurance Program (NFIP) participating communities. The goals of the CRS are to reduce flood damages to insurable property, strengthen and support the insurance aspects of the NFIP, and encourage a comprehensive approach to floodplain management.
<b>Comprehensive Plan</b>	A document, also known as a "general plan," covering the entire geographic area of a community and expressing community goals and objectives. The plan lays out the vision, policies, and strategies for the future of the community, including all the physical elements that will determine the community's future developments.
<b>Disaster Mitigation Act of 2000 (DMA 2000)</b>	The largest legislation to improve the planning process. It was signed into law on October 30, 2000. This new legislation reinforces the importance of mitigation planning and emphasizes planning for disasters before they occur.
<b>Essential Facility</b>	A subset of critical facilities that represent a substantial hazard to human life in the event of failure. This includes (but not limited to) hospital and fire, rescue, ambulance, emergency operations centers, and police stations.
<b>Federal Emergency Management Agency (FEMA)</b>	An independent agency created in 1979 to provide a single point of accountability for all federal activities related to disaster mitigation and emergency preparedness, response, and recovery.
<b>Hazard</b>	A source of potential danger or adverse condition.
<b>Hazard Mitigation</b>	Any sustained action to reduce or eliminate long-term risk to human life and property from hazards.
<b>Hazard Mitigation Grant Program (HMGP)</b>	Authorized under Section 404 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act, HMGP is administered by FEMA and provides grants to states, tribes, and local

governments to implement hazard mitigation actions after a major disaster declaration.

**Illinois Emergency Management Agency (IEMA)**

The primary responsibility of the Illinois Emergency Management Agency (IEMA) is to better prepare the State of Illinois for natural, manmade or technological disasters, hazards, or acts of terrorism. Our goal is a "better prepared state." IEMA assists local governments with multi-hazard emergency operations plans and maintains the Illinois Emergency Operations Plan.

**Hazus-MH**

A geographic information system (GIS)-based disaster risk assessment tool.

**Multi-Hazard Mitigation Planning**

Identify policies and actions that can be implemented over the long term to reduce risk and future losses from various hazardous events.

**National Flood Insurance Program (NFIP)**

Administered by the Federal Emergency Management Agency, which works closely with nearly 90 private insurance companies to offer flood insurance to property owners and renters. In order to qualify for flood insurance, a community must join the NFIP and agree to enforce sound floodplain management standards.

**Planning Team (Interchangeably referred to as project team)**

A group composed of government, private sector, and individuals with a variety of skills and areas of expertise, usually appointed by a city or town manager, or chief elected official. The group finds solutions to community mitigation needs and seeks community acceptance of those solutions.

**Risk Priority Index (RPI)**

Quantifies risk as the product of hazard probability and magnitude so planning team members can prioritize mitigation strategies for high-risk-priority hazards.

**Risk Assessment**

Quantifies the potential loss resulting from a disaster by assessing the vulnerability of buildings, infrastructure, and people.

**Strategy**

A collection of actions to achieve goals and objectives.

**Vulnerability**

Describes how exposed or susceptible to damage an asset is. Vulnerability depends on an asset's construction, contents, and the economic value of its functions.



# Acronyms

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## A

AEGL – ACUTE EXPOSURE GUIDELINE LEVELS

ALOHA – AREAL LOCATIONS OF HAZARDOUS ATMOSPHERES

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## B

BOL – IEPA: BUREAU OF LAND

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## C

CERI – CENTER FOR EARTHQUAKE RESEARCH AND INFORMATION

CFR – (UNITED STATES) CODE OF FEDERAL REGULATIONS

CRS – COMMUNITY RATING SYSTEM

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## D

DCEO IKE – ILLINOIS DEPARTMENT OF COMMERCE AND ECONOMIC OPPORTUNITY: ILLINOIS DISASTER RECOVERY PROGRAM

DEM – DIGITAL ELEVATION MODEL

DFIRM – DIGITAL FLOOD INSURANCE RATE MAP

DMA – DISASTER MITIGATION ACT OF 2000

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## E

EMA – EMERGENCY MANAGEMENT AGENCY

EPA – ENVIRONMENTAL PROTECTION AGENCY

ESDA – EMERGENCY SERVICES AND DISASTER AGENCY (LOCAL AGENCY)

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## F

FEMA – FEDERAL EMERGENCY MANAGEMENT AGENCY

FIRM – FLOOD INSURANCE RATE MAP

FMA – FLOOD MITIGATION ASSISTANCE GRANT

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## G

GIS – GEOGRAPHIC INFORMATION SYSTEMS

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## H

HAZUS-MH – HAZARDS USA MULTI-HAZARD

HMGP – HAZARD MITIGATION GRANT PROGRAM

HUC – HYDROLOGIC UNIT CODE

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## I

IA – INDIVIDUAL ASSISTANCE

IDES – ILLINOIS DEPARTMENT OF EMPLOYMENT SECURITY

IDNR – ILLINOIS DEPARTMENT OF NATURAL RESOURCES

IDOT – ILLINOIS DEPARTMENT OF TRANSPORTATION

IEMA – ILLINOIS EMERGENCY MANAGEMENT AGENCY

IEPACT – ILLINOIS ENVIRONMENTAL PROTECTION ACT

IEPA – ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

ISCO – ILLINOIS STATE CLIMATOLOGIST OFFICE

ISWS – ILLINOIS STATE WATER SURVEY

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## M

MHMP – MULTI-HAZARD MITIGATION PLAN

MPA – METROPOLITAN PLANNING AREA

MPO – METROPOLITAN PLANNING ORGANIZATION

MTP – METROPOLITAN TRANSPORTATION PLAN

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## N

NAICS – NORTH AMERICAN INDUSTRY CLASSIFICATION SYSTEM

NCDC – NATIONAL CLIMATIC DATA CENTER

NCEI – NATIONAL CENTERS FOR ENVIRONMENTAL INFORMATION (FORMERLY THE NCDC)

NEHRP – NATIONAL EARTHQUAKE HAZARDS REDUCTION PROGRAM

NEPA – NATIONAL ENVIRONMENTAL POLICY ACT

NFIA – NATIONAL FLOOD INSURANCE ACT OF 1968

NFIP – NATIONAL FLOOD INSURANCE PROGRAM

NLCD – NATIONAL LAND COVER DATA

NLD – NATIONAL LEVEE DATABASE

NWS – NATIONAL WEATHER SERVICE

NOAA – NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

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**P**

PA – PUBLIC ASSISTANCE

PDM – PRE DISASTER MITIGATION

PDMG – PRE DISASTER MITIGATION GRANT

PPM – PARTS PER MILLION

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**R**

REMI – REGIONAL ECONOMIC MODELING INITIATIVE

RPN/I – RISK PRIORITY NUMBER/INDEX

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**S**

SAMHSA – SUBSTANCE ABUSE AND MENTAL HEALTH SERVICES ADMINISTRATION

SES – SOCIOECONOMIC STATUS

SIU – SOUTHERN ILLINOIS UNIVERSITY (CARBONDALE)

SPC – STORM PREDICTION CENTER

SRL – SEVERE REPETITIVE LOSS PROPERTY

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**U**

UA – URBANIZED AREA

UPS – UNINTERRUPTED POWER SUPPLY

USCB – UNITED STATES CENSUS BUREAU

USDA – UNITED STATES DEPARTMENT OF AGRICULTURE

USGS – UNITED STATES GEOLOGICAL SURVEY

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**V**

VN – Violation Notice

# Appendices

## Appendix A – Meeting Materials by Date/Meeting

### Appx. A – Meeting 1: Kickoff Meeting



- AGENDA**
1. **ATTENDEES**
    - a) Winnebago County Highway Department: Sean Von Bergen, Joe Vanderwerff, Frank ~~Hodson~~
    - b) Region 1 Planning Council: Allen Mills, Michael Dunn, Jr., Steve Gregg
  2. **2019 WINNEBAGO COUNTY MULTI-HAZARD MITIGATION PLAN**
    - a) Introduction – Winnebago County Multi-Hazard Mitigation Plan
    - b) Why – FEMA requirements
    - c) Hazards – Selection criteria, evaluation
    - d) Update – Data updates, REMI modeling addition, Risk Priority Analysis, Mitigation Strategy Review (2019 comments)
    - e) Review – Questions or comments from stakeholders, submission of paper draft comments

\* Not a public meeting  
 313 N Main St, Rockford, IL 61101 | 815-319-4180 | info@r1planning.org  
[www.r1planning.org](http://www.r1planning.org)

*2019 MHMP update WORK PLAN  
 Winnebago County*

*- update assessment  
 August deadline  
 24, 2019*

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**Executive Summary** *INVOLVE*

- Local Officials
- Stakeholders
- Public

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**Objective**

The objective of this project is to update Winnebago County's 2014 Multi-Hazard Mitigation Plan (MHMP) to meet the requirements of the Illinois Emergency Management Agency (IEMA) and the Federal Emergency Management Agency (FEMA). To ensure that this plan remains relevant and active, the update will address changes in the probability and impact of specific hazards to the county, as well as changes in land-use, population, and demographics. The plan will incorporate detailed GIS and Hazus-MH level 2 analyses to improve the risk assessment, and will revise and update mitigation strategies accordingly. The Planning Process section of this scope of work provides details on specific tasks and deliverables.

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**Goals**

- Address and/or correct any deficiencies in previous plan using FEMA crosswalk and current FEMA guidance *FEMA crosswalk*
- Ensure participation in planning process from all incorporated jurisdictions in the county *Winnebago*
- Analyze changes to county's risk through historical and scientific analysis
- Complete a new risk assessment which includes GIS and detailed Hazus-MH modeling *Winnebago?*
- Review previous mitigation strategies and document the status of each, addressing which were successful and which were not implemented and why *Access current FEMA guidance MHMP*
- Develop new mitigation strategies based on current community profile and updated risk assessment
- Adopt and implement the plan update

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**Project Management**

Such planning often requires considerable expertise in order to evaluate the full scope of potential loss and determine how the county can increase its resiliency. Winnebago County Highway Department intends to partner with local planning and Southern Illinois University-Carbondale resources to complete its plan.

This plan update is a partnership between Winnebago County and the Geology Department at Southern Illinois University at Carbondale (SIU-C). The county will supervise scheduling of meetings, log meeting attendance and other official activities, track on-going documentation of local matching contributions, and report those match contributions as required. SIU-C will offer expertise, project management, and resources including the necessary modeling and writing.

The county/university partners will carry out comparisons of the county's risk from 2014-2019 to address previous deficiencies in the plan, update the risk assessment with improved data and modeling, and revise mitigation goals, objectives, and strategies based on new community information. Prior to submitting the plan for review at IEMA and FEMA, the mitigation planning

team will review it against FEMA's Local Mitigation Plan Review Tool, ensure it addresses all requirements.

### Planning Process

#### Task 1. Organize Resources

##### Identify and Address Areas of Improvement

The county and its partners will develop a local planning team. Public meetings and planning sessions will be conducted at sites selected by Winnebago County. The partnership will participate in presentations to county groups, officials, and the community on natural hazards such as flooding, geologic hazards, and geologic subsidence hazards for the respective county. *KPC design center*

##### Task 1 subtasks:

- Create planning team
- Obtain official recognition for the planning team
- Organize the team; identify hazards

Detailed descriptions of the Task 1 subtasks are included as follows:

##### Subtask 1. Create planning team

The planning team will be built on existing organizations, planning boards, agencies, and departments. The partnership staff will attend an organizational meeting with the county. The partnership will present an overview of the natural hazards within each region. The county will determine potential interested stakeholders to include the following:

- Affiliated groups and organizations
- State, regional, and local government representatives
- Federal agency representatives
- Senior officials
- Persons from associated jurisdictions

##### Subtask 2. Obtain official recognition for the planning team

Mitigation plan leaders will meet with county leaders to designate a team with the official authority to develop a mitigation plan. To ensure that the best available data is used and available for hazard mitigation planning, the county may develop a Memorandum of Understanding (MOU) with SIU-C for the sharing of GIS and other data necessary for high-quality modeling and risk assessment for this plan.

#### Task 2. Profile Hazards and Determine Modeling Scenarios

##### Profile Hazard Events

In 2014, Winnebago County identified the following hazards to include in its plan

- Flooding
- Severe Thunderstorms
- Tornadoes
- Hazardous Material Storage and Transportation
- Winter Storms
- Drought and Extreme Heat
- Dam and Levee Failure
- Earthquakes

In the 2019 update, Winnebago County will profile these same hazards.

SIU-C will create new hazard event profiles using the best available GIS resources and historical information. The profiles will help to determine possible magnitudes and severities of each hazard event. This step includes the following tasks:

- Obtain and create a base map. SIU-C will identify and collect the most up-to-date base map information to show the areas that are subject to various hazards. The GIS basemap data from the community will be used in conjunction with regional and statewide data.
- Obtain hazard event profile information. Using the information obtained in the previous tasks, the planning team will assess the return frequency for each hazard. The hazard frequency will be based on the most commonly available information for a particular hazard. A more comprehensive hazard profile that considers all possible events, such as floods with different probabilities, may still be needed later in the planning process, but this simplified version will be adequate to help identify each community's risks and narrow the focus for planning efforts.
- Record hazard event profile information. SIU-C will record the research information for each hazard profile. The task will include documenting the source of the various maps such as the Flood Insurance Rate Maps (FIRMs) or other hazard event data.

##### Rank Hazards by Risk

In this step, the university will present the hazard rankings that the county developed in its original plan and lead the planning team through an exercise to determine if the rankings changed in five years. The exercise will consider significant hazard events that occurred since 2014, changes in land use and demographics that may impact the county's vulnerability, and additional relevant information from state and local experts. *Hazard ranking*

#### Subtask 3. Organize the team, identify hazards

##### Preparation for the first formal meeting

Before the first formal meeting convenes, the partnership will develop issues and points of discussion from the information it has collected. After reviewing the information, the entity of the university partnership attending the meeting will prepare an agenda to be sent to the members before the first meeting.

##### Mitigation Planning Meetings

There will be a series of four mitigation meetings throughout the planning process:

**Meeting 1** will consist of an overview of the planning process and discussion of schedule and milestones. This meeting will also include a discussion of roles, responsibilities, decision-making processes, administrative procedures, and communication strategies. The university will confirm locations of essential and critical facilities.

This meeting will also consist of profiling perennials and historical hazards to Winnebago County. SIU-C will present a county-scale map with NOAA's historical severe storm data. The planning team will identify the particular hazards that threaten the county and prioritize these hazards based on probability and risk for potential damage. The planning team will also determine the disaster scenarios/risk assessments that are to be modeled by SIU-C for the county plan.

**Meeting 2** will consist of one or more public meetings. Open and inclusive public involvement is a requirement for plan approval by FEMA. SIU-C will provide templates for advertising, and the county will make the community aware of the meeting (a copy of the advertising is to be included in the mitigation plan). At the public meeting(s), the university will present the results of the risk assessment and describe the GIS and Hazus models. The meeting(s) will conclude with open Q&A and an introduction to mitigation strategies.

**Meeting 3** will consist of one or more mitigation brainstorming sessions. The group will review the risk assessment from meeting 2 and the strategies developed in the previous version of the MHRMP and will discuss the following: 1) completed, successful strategies, 2) strategies that were not implemented and reasons for incompletion, and 3) new strategies needed. At the end of the meeting(s), the group will develop goals and objectives, as well as determine a "pre-plan" on how to implement the strategies. Following this meeting, the county will compile a draft version of the mitigation plan.

**Meeting 4** is an opportunity for the planning team to review and revise the draft plan. They will make any necessary changes and fill in any gaps, and then submit the revisions to the university. The university partnership does not typically attend this meeting, but is available upon request.

**Meeting 5** is not technically a formal meeting. Meeting 5 consists of adopting the final plan upon FEMA's approval of the document. The approval process may take several months, but once the plan is approved by FEMA, the county will have until the end of their grant period to adopt the plan. The date the county adopts the plan is the date that is set for the five-year update.

*community approval/recommendation is? Adoption*

*Planning process responsibilities schedules historical relevant hazards prioritization*

*Public involvement progress thru*

*Mitigation strategy session following: draft 1 of update*

*Draft revisions technical comments submitted FEMA approval*

#### Determine GIS Modeling Scenarios

SIU-C will provide a map of historical hazards in the area of Winnebago County, i.e. tornado paths and tornado touchdown, severe wind and hail events, and 100-year flood areas. The planning team will use this map and the hazard rankings to: 1) determine a tornado path to model, 2) determine where the hazmat plume analysis should occur, and 3) identify areas of flash flooding to map. Additionally, SIU-C will model a 100-year flood event and probabilistic and deterministic earthquake scenarios. A table of potentially identified hazards and the type of risk assessment that will be performed is below.

Hazard	Type
Tornado, e.g. hypothetical F-4	GIS-based
Flood, e.g. 100-year	Hazus-MH
Earthquake, e.g. probabilistic and deterministic scenarios	Hazus-MH
Severe thunderstorm, e.g. wind, heavy rain, hail	Historical Records
Drought/extreme heat	Historical Records
Severe winter storm, e.g. snow, ice	Historical Records
Hazardous materials release, e.g. anhydrous ammonia, chlorine	GIS-based
Fire, e.g. wildland, fire, structural	Historical Records

#### Task 3. Complete Risk Assessment

The risk assessment will utilize GIS and Hazus modeling for floods, tornadoes, earthquakes, and hazmat releases. The remaining hazards will be analyzed using historical context and occurrences. The university partnership will complete this task.

##### Inventory Assets - INVENTORY

The inventory subtask effort identifies the assets in the community that a hazard event could affect. The task includes conducting an inventory of the vulnerable assets. The 2014 risk assessment included level 2 Hazus analysis. The risk assessment begins with default Hazus-MH inventory, but SIU-C will refine it using available local data. The effort includes incorporating critical facilities identified by the planning team, existing local GIS data, and available community property assessment information including property ownership and building replacement costs. The effort includes developing and mapping a general inventory of assets in the community. Using the basemap developed in the previous task, the university team will identify the assets inside hazard areas, for example using available floodplain maps to identify assets within the 100-year floodplain boundary. This subtask includes the following activities:

extrapolation hazard zones (use pre-existing zones?)  
 located in affected areas  
 residential, commercial, industrial

- Using local resources including the community assessor's data, aerial photography, local planning documents, census data, and Hazus-MH data, the team will determine the total number and value of buildings. The information will be grouped by occupancy class such as residential, commercial, or industrial. Hazus-MH, current census data, or local population figures are used to estimate the current population.
- The team will use GIS techniques to estimate the total number of buildings, total value of buildings, and number of people in each hazard zone. Throughout this process, the team will engage community officials to identify areas of recent and future growth and note whether these areas lie within hazard boundaries.

**Estimate Losses**

The next step in the loss estimation process determines how a hazard event affects a community's assets. Hazus-MH software and GIS tools are used to estimate these losses. Some buildings, infrastructure, or functions will be damaged more than others in the same hazard event because they are more vulnerable due to their location or construction. The team will use Hazus-MH structure loss estimation tables to determine the estimated percent of damage from the various hazard events. The analysis reports will include estimated structure losses (use and function), content losses, and human losses.

**Task 4. Review Risk Assessment and Hold Public Meeting**

After completing the risk assessment, SIU-C will prepare a draft risk assessment and present the report to the planning team, elected officials, and general public at an open meeting (meeting #2). Prior to the meeting, the County Engineer will publish the date, location, and time of the meeting in a local newspaper or via a radio/television announcement. In the presentation, the university will highlight significant changes in analysis results from the 2014 plan. The team and public will have an opportunity to ask questions and/or suggest revisions. This meeting will significantly inform the development of the mitigation strategies section of the plan.

**Task 5. Revise and Create New Mitigation Strategies**

The university will help the planning team to update the mitigation section of the MHMP, developing strategies to address the priorities including costs and timeframes. The goal of this task is to review the goals and objectives and mitigation strategies listed in the 2014 MHMP, assess which strategies were successful and how, discuss why certain strategies were not completed, and reprioritize/develop new strategies based on the results of the hazard profiles and loss estimation.

The university team will meet with the jurisdictions to discuss mitigation strategies. The group will review the strategies developed in the previous version of the MHMP, and will discuss the following: 1) completed, successful strategies, 2) strategies that were not implemented and reasons for incompletion, and 3) new strategies needed. At the end of the meeting, the group will prioritize its new strategies and develop goals and objectives to implement them.

**AMOUNTS REDACTED**

BUDGET	Item Name	Grant Budget Class	Subgrant Budget Class	Unit Quantity	Unit of Measure	Unit Cost (\$)	Cost Estimate (\$)	Notes/Responsibilities
Organize Resources	Organize Resources	Personnel	Personnel	80	hour			Meeting 1: Overview of the planning process and discussion of schedule and milestones. This meeting will also include a discussion of roles, responsibilities, creation of meeting processes, administrative procedures, and communication strategies. The university will collect and organize GIS resources to use for the improved risk assessment and will confirm locations of essential and critical facilities. The team will also profile and rank its hazards and determine modeling scenarios.
Organize Resources	Supplies	Supplies	Supplies	0	supplies			
Assess Risks/ GIS Analysis	Personnel	Personnel	Personnel	90	hour			Identify hazards, run Hazus-MH for risk assessment, print copies for the planning team to review.
Assess Risks/ GIS Analysis	Supplies	Supplies	Supplies	40	supplies			
Assess Risks/ GIS Analysis	Other	Other	Other	1	computer equipment			
Public Involvement	Personnel	Personnel	Personnel	15	hour			Meeting 2: As the public meeting, the university will present the results of the risk assessment and describe the GIS and Hazus models. The public also will be included in the mitigation implementation process.
Public Involvement	Supplies	Supplies	Supplies	4	supplies			
Public Involvement	Travel	Travel	Travel	2	person trips			
Develop Goals and Objectives	Personnel	Personnel	Personnel	40	hour			Meeting 2: Review STAPLE-H with the planning team to ensure their understanding of the evaluation process and prioritization. The group will review the strategies developed in the previous version of the MHMP and will discuss the following: 1) completed, successful strategies, 2) strategies that were not implemented and reasons for incompletion, and 3) new strategies needed. At the end of the meeting, the group will prioritize its new strategies and develop goals and objectives to implement them.
Develop Goals and Objectives	Supplies	Supplies	Supplies	4	supplies			
Develop Goals and Objectives	Travel	Travel	Travel	2	person trips			
Provide Mitigation Actions	Personnel	Personnel	Personnel	40	hour			Review the resulting mitigation actions with the stakeholder session and draft into the plan.
Write Plan & Distribute for Council	Personnel	Personnel	Personnel	80	hour			Compile a draft of the entire plan including appendices; print copies of the draft for review.
Write Plan & Distribute for Council	Supplies	Supplies	Supplies	16	supplies			
Finalize Plan/Print	Personnel	Personnel	Personnel	30	hour			Incorporate revisions from the planning team's review of the plan draft; print a final copy to submit to BMS.
Finalize Plan/Print	Supplies	Supplies	Supplies	16	supplies			

Fairfax wings?

time constraints? available data?

experience in geology, hydrography, natural hazards  
 - disaster modeling using GIS

identify process  
 - update existing  
 - assess new

KPC: establish final comm input

<sup>1</sup> Travel expenses include rental car or mileage, and per diem (printing (maps, reports, etc.), paper, printer ink, postage, shipping, copying)  
<sup>2</sup> cost would go toward computer workstation/sharing and a large format plotter  
<sup>3</sup> printing reports, ODCU of final plan, paper, printer ink, postage, shipping, copying

PER SEVE:  
 POSSIBLE IT DATA IS AVAILABLE SOMEWHERE (NODC) (SPC)  
 GIS MODELING COULD BE DONE IN HOUSE.  
 (KPC) (HAZMUS) (GIS MODELING)

# Appx. A – Meeting 2: Winnebago County Health Department Meeting



COLLABORATIVE PLANNING FOR NORTHERN ILLINOIS

## 2019 Winnebago County Multi-Hazard Mitigation Plan: WCHD Meeting\*

Monday, August 12, 2019 – 8:30am – 9:30am  
Winnebago County Health Department Conference Room 203 – 555 N Court St.

### AGENDA

1. ATTENDEES
  - a) Winnebago County Health Department: Dr. Sandra Martell, Theresa James, Katherine O'Toole
  - b) Region 1 Planning Council: Allen Mills
2. 2019 WINNEBAGO COUNTY MULTI-HAZARD MITIGATION PLAN
  - a) Introduction – Winnebago County Multi-Hazard Mitigation Plan
  - b) Why – FEMA requirements
  - c) Hazards – Selection criteria, evaluation
  - d) Update – Data updates, REMI modeling addition
3. NOTES (A. Mills)
  - a) Winnebago county all hazards plan- WC Sheriff's dept. (EMA plan)
  - b) HVA- hazard vulnerability assessment
  - c) Specialty plans/annexes
  - d) THRIA- Threat hazard risk incident assessment
  - e) City/county- EMA management plans (Michele Pankow)
  - f) WCHD- Theresa representative
  - g) Winnebago County PIO plan
  - h) Stephanie Kuschei- Mercyhealth
  - i) Masood Arthur- IDPH- health
  - j) Lynn Baker- State hospital
  - k) NIPARC- Northern IL Preparedness and Response Coalition
  - l) The MHMP acts as an assessment where the county plans feed off
  - m) Continuity of operations

- 1- Send what data is going into MHMP to Theresa
- 2- Send updated stakeholder list to Theresa
- 3- Contact information for Stephanie/Masood

\* Not a public meeting

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# Appx A. – Meeting 3: Boone-Winnebago County Regional Offices of Education



COLLABORATIVE PLANNING FOR NORTHERN ILLINOIS

## Executive Summary

Date: August 16, 2019  
 Item: 2019 Update Winnebago County Multi-Hazard Mitigation Plan  
 Prepared by: Allen Mills, Land Use Planner

Prevailing Statute(s): Federal, [Public Law 106-360, Disaster Mitigation Act of 2000 \(DMA 2000\)](#). The DMA 2000 mandates mitigation planning as a prerequisite to most Federal Emergency Management Agency (FEMA) pre-and-post disaster funding. The DMA 2000 amends the Robert T. Stafford Disaster Relief and Emergency Assistance Act by emphasizing the need for State, Local, and Indian Tribal entities to closely coordinate mitigation planning and implementation efforts. The DMA 2000 also authorizes up to seven percent of FEMA Hazard Mitigation Grant program funding to be used for the development of these plans [this is managed in coordination with the Illinois Emergency Management Agency]<sup>1</sup>.  
 Federal, [2 CFR Part 200, Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards](#). The Code of Federal Regulations is the general and permanent rules published by the United States Government by the departments and agencies of the federal government. The CFR Part 200 is a subcategory of Title 2 of the CFR. Title 2 manages the grants and funding made available by the United States Government<sup>2</sup>.  
 State, [20 ILCS 3305, Illinois Emergency Management Act \(IEMAA\)](#). The IEMAA (1) created the Illinois Emergency Management Agency (IEMA), (2) provides for the powers of IEMA, (3) provides for the programming of funds into the villages and cities, (4) and maintains that all programs, plans, and policies in the state of Illinois align with IEMAA to ensure the most efficient and effective use of local, state, and federal resources relating to any disaster that may occur<sup>3</sup>.

Background: The Multi-Hazard Mitigation Plan (MHMP), in addition to being federally required for the majority of pre-and-post federal disaster funding provided by FEMA, represents the coalescence of a community profile, hazard profile, mitigation strategies, and a Risk Priority Analysis profile into one plan. The MHMP is a stakeholder-driven document that a state, tribal, or local government uses to describe risks and vulnerabilities as well as long-term strategies and implementation approaches for reducing loss of life and property from natural disasters<sup>4</sup>. Stakeholders include the county municipalities, utility and service providers, and community organizations.

Additional information is included in the attached:  
 • Draft outline  
 • Draft stakeholder list [list all attachments]

CFR: Code of Federal Regulations  
 ILCS: Illinois Compiled Statutes

<sup>1</sup> <https://www.fema.gov/media-library/assets/documents/4596>  
<sup>2</sup> [https://www.ecfr.gov/cgi-bin/ncnrs?\\_n=1&url=/ecfrbrowse/ttitle02/2cfr200\\_main\\_02.tpl](https://www.ecfr.gov/cgi-bin/ncnrs?_n=1&url=/ecfrbrowse/ttitle02/2cfr200_main_02.tpl)  
<sup>3</sup> <https://www.ilga.gov/legislation/ilcs/ilcs3.asp?ActID=3658&ChapterID=5>  
<sup>4</sup> <https://www.fema.gov/hazard-mitigation-planning-frequently-asked-questions>  
 313 N Main St, Rockford, IL 61101 | 815-319-4180 | info@r1planning.org

[www.r1planning.org](http://www.r1planning.org)



**REGIONAL OFFICE OF EDUCATION**  
 BOONE-WINNEBAGO COUNTIES  
 MR. SCOTT BLOOMQUIST, Regional Superintendent of Schools  
 MRS. ALLISON PIERSON, Assistant Regional Superintendent  
 300 West Blvd., Lewis Park IL 61119-7216 | (815) 626-3000 FAX (815) 626-3000  
[www.roeel.org](http://www.roeel.org)

Boone-Winnebago Superintendent's Meeting  
 August 16, 2019

- Welcome – Scott Bloomquist
- Introduction of Staff – Scott Bloomquist
- R1 Planning Council – Alan Mills
- Compliance – Don Keigher & Scott Bloomquist
- Professional Learning – Allison Pierson
- Homeless & Truancy – Harold Sweeney
- Licensure – Jamie Watts
- Funding – Scott Bloomquist
- Roundtable
- Next Meeting – November 8, 2019

**PLEASE NOTE: Time Change**  
 The Regional Superintendent's Meetings will now begin at 7:45am

## SUPERINTENDENTS' IN-SERVICE SIGN-IN August 16, 2019

PLEASE SIGN IN	SUPERINTENDENT'S NAME	SCHOOL DISTRICT
<i>[Signature]</i>	DAN WOESTMAN	BELVIDERE DISTRICT 100
<i>[Signature]</i>	MIKE GREENLEE	NORTH BOONE DISTRICT 200
<i>[Signature]</i>	JULIE MORRIS	HARLEM DISTRICT 122
<i>[Signature]</i>	KELI FREEDLUND	KINNIKINNICK DISTRICT 131
<i>[Signature]</i>	CLINT CZIZEK	PRAIRIE HILL DISTRICT 133
<i>[Signature]</i>	JOHN ULFERTS	SHIRLAND DISTRICT 134
<i>[Signature]</i>	GLENN TERRY	ROCKTON DISTRICT 140
<i>[Signature]</i>	EHREN JARRETT	ROCKFORD DISTRICT 205
<i>[Signature]</i>	MICHAEL DUGAN	HONONEGAH DISTRICT 207
<i>[Signature]</i>	SCOTT FISHER	SOUTH BELOIT DISTRICT 320
<i>[Signature]</i>	WILLIAM FALLER	PECATONICA DISTRICT 321
<i>[Signature]</i>	KURT ALBERSTETT	DURAND DISTRICT 322
<i>[Signature]</i>	JOHN SCHWUCHOW	WINNEBAGO DISTRICT 323
<i>[Signature]</i>	SCOTT BLOOMQUIST	REGIONAL SUPERINTENDENT
<i>[Signature]</i>	ALLISON PIERSON	ASST REGIONAL SUPERINTENDENT
<i>[Signature]</i>	DON KIEGHER	BOONE WINNEBAGO ROE
<i>[Signature]</i>	HAROLD SWEENEY	BOONE WINNEBAGO RAS
<i>[Signature]</i>	MEGHAN HAWKINSON	BOONE WINNEBAGO RAS
<i>[Signature]</i>	DAVE SANDERS	BOONE WINNEBAGO RAS
<i>[Signature]</i>	KIM MAVILLE	KIDS

*M. Hartfel*      *Margie Hartfel*      *CERNI*

# Appx A. – Meeting 4: Winnebago County Multi-Hazard Mitigation Plan Stakeholder Meeting



COLLABORATIVE PLANNING FOR NORTHERN ILLINOIS

**2019 Winnebago County Multi-Hazard Mitigation Plan Update**  
 Monday, October 21 2019 – 10:00am – 11:00am  
 Regional Design Center – 315 N. Main St.

**AGENDA**

1. INTRODUCTION
  - a) Call to Order
  - b) Opportunity for public comment
2. 2019 WINNEBAGO COUNTY MULTI-HAZARD MITIGATION PLAN
  - a) Introduction – Winnebago County Multi-Hazard Mitigation Plan
  - b) Why – FEMA requirements
    - i. Required for most pre-and-post federal mitigation assistance money (PDM, HGMP, PA, FMA, etc.)
    - ii. Comprehensive guideline for countywide mitigation activities
  - c) Hazards – Selection criteria, evaluation
 

RPN Ranking – Hazards (2014)
(1) Flooding
Severe Storms (Thunderstorms)
Tornadoes
Hazmat
Winter Storms
Drought/Extreme Heat
Dam/Levee Failure
(8) Earthquakes

RPN Ranking – Hazards (2019)
(1) Winter Storms
Thunderstorms
Tornadoes
Flooding
Drought/Heat
Earthquake
Hazardous Materials Storage and Transportation
Groundwater Shortage
(9) Dam/Levee Failure
  - d) Update – Data updates, REMI modeling, RPN Analysis, Mitigation Strategy Review (2019)
  - e) Review – Questions or comments from stakeholders,
  - f) Submission of stakeholder comments
3. ADJOURNMENT

*Opportunities for public comment will be afforded on all agenda items. Persons who require special accommodations under the Americans with Disabilities Act or persons who require translation services (free of charge) should contact R1PC at 815-319-4180 at least two working days before the need for such services or accommodations.*

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Village Of Durand - Comments 10/21/2019

Notes for MHMP Stakeholder Meeting—10/21/19  
 Durand Fire Department

Page 27—Chief is Kim Steward. (Sandy Ditzler is the District Secretary.)

Page 101—ISO Rating—current one is pending as we were just re-evaluated on 10/09/19.

Page 108—Back-up Generators for Critical Facilities - Durand Fire Department has a back-up generator. Medina Manor Nursing Center also has a back-up generator.

Page 108—1<sup>st</sup> Responder Training... provided by Durand Fire Department? Not sure where this came from or who submitted this as no one talked to us prior to this being presented.

Page 110—Emergency Plan / Protocol for HAZMAT Releases and HAZMAT Spill, Removal, and Disposal Procedure... commits the Durand Fire Department to continue to work with the Winnebago County LEPC to improve the County's HAZMAT Response Plan. While we are willing to work with an appropriate Agency to accomplish this item, there has been no discussion with the Durand Fire Department relative to these 2 items. Again, we are not sure where this came from or who submitted this as no one talked to us prior to this being presented.

Page 110—Add-Heating and Cooling Shelters-Winter Storms / Extreme Heat—Durand Fire Department can be utilized a warming/cooling shelter.

Winnebago County Multi-Hazard Mitigation Plan Stakeholder Meeting  
 October 21<sup>st</sup>, 2019  
 10:00 AM – 11:00 AM

**SIGNUP SHEET**



Winnebago County Multi-Hazard Mitigation Plan Stakeholder Meeting  
 October 21<sup>st</sup>, 2019  
 10:00 AM – 11:00 AM

**SIGNUP SHEET**



Name	Organization
DAN BRASEN	Village of Rockton
Theresa James	Winn Co. Health dept
Ben Krumbier	Rock Energy Cooperative
KURT DITZLER	DURAND FIRE
TODD STOCKWATER	Village of WINNEBAGO
Carrie Houston	Machensney Park
Jeff Brna	OSF
SEAVON BERVEN	W.C.H.D
Joe Vanderwerff	W.C.H.D
Lana Daly	Burrill TWP Road Commissioner
Stephanie Koschel	NIPARC
Dog Gasparini	Winnebago County ESDA
Chia P. Belle	R1 Planning
Margie Palm	City of Rock Fire
Tea Kroll	South Beloit

Name	Organization
Tom Pratt	SwedisAmerican
Seery W. Dunbar	L.P.F.D
Jean Sage	Comcast
MATT BAILLARGEON	CITY OF ROCKFORD
JAMIE ROTT	CITY OF ROCKFORD
Ron Krause	MercyHealth Saven Bea Hosp.
Joe Lott	Cherry Valley
ZACK O'BAJ	Rockford Airport



## Appendix B- Public and stakeholder comments

- *Ginger H.*

“To Winnebago County Mitigation Authority,  
I have read the Multi –Hazard Mitigation Plan Draft Version and would like to add as public comment my concerns regarding the mixed use waste stored in the Winnebago County Landfill. It collects multiple forms of refuse to include hazardous and contaminated waste that should remain separated for safety. The facility backs to several homes releasing noxious pollutants creating even graver concerns regarding flooded run off water and other conditions acclimate weather may cause. The facility has multiple ILEPA violations. The record rains of the last two years remind us our ground water should be a concern outside the landfill in runoff areas. This combination seems potentially volatile to our society if not planned for accordingly. After reading your plan may I respectfully ask for public comment that this hazard be addressed and possibly mentioned within the Community Profile, possibly as land uses, and ideally addressed later in the plan under Essential Facilities, Hazardous Material Storage, Flooding and or even Tornado hazard for nearby residents.  
Thank you for your consideration”
- *Mona K.*

To Winnebago County Mitigation Authority,  
I have read the Multi –Hazard Mitigation Plan Draft Version and would like to add as public comment my concerns regarding the mixed use waste stored in our county landfill. It collects multiple forms of refuse to include hazardous and contaminated waste. The facility backs to several homes releasing noxious pollutants creating even graver concerns regarding flooded run off water. The facility has multiple ILEPA violations. The record rains of the last two years remind us our ground water should be a concern outside the landfill in runoff areas. I would initially believe these should be addressed in the Community Profile, possibly as land uses, and ideally addressed later in the plan under Essential Facilities, Hazardous Material Storage, Flooding and or even Tornado hazard for nearby residents.  
Thank you”
- *David D.*

“as a concerned citizen living just 1 1/2 miles straight north of the Winnebago landfill I have many concerns about its constant non-compliance to IEPA regulations and mandates governing the correct and proper operation of a landfill so as not to be a hazard or just a plain nuisance to us citizens. The constant spewing of odors and trash all over our community is abhorrent to me as well as the entire community. Their blatant disregard for us citizens is apparent on a daily basis. Their only concern as a company is their bottom line. They seem oblivious to the fact that you can have both, happy neighbors and a robust bottom line.  
I like most of the citizens who live nearby have wells as our only source of potable water. The potential for ruining our source of water seems real and possible to me.  
Would they be responsible and provide us with fresh water should they ruin our aquifer? That and the constant barrage of noxious odors spewed from this landfill raises nothing but questions and concerns to me and my wife about this landfill's ability or willingness to become compliant and that good neighbor that they should be.”

## Appendix C- Multi-Hazard Mitigation Partner Organizations and Representatives

ORGANIZATION	TYPE	TITLE	NAME
NIPARC (NORTHERN IL PREPAREDNESS AND RESPONSE COALITION)	COALITION	DIRECTOR/EMERGENCY MANAGEMENT COORDINATOR	STEPHANIE KUSCHEL
AMERICAN RED CROSS-CHICAGO AND NORTHERN IL	COMMUNITY ORGANIZATION	EXTERNAL RELATIONS MANAGER	YVETTE ALEXANDER-MAXIE
		DIRECTOR	LORI COMPTON
WINNEBAGO COUNTY-BUILDING DIVISION	COUNTY	DIVISION HEAD	STEVE GIRARD
WINNEBAGO COUNTY HEALTH DEPARTMENT	COUNTY	DIRECTOR OF PUBLIC HEALTH PREPAREDNESS	THERESA JAMES
WINNEBAGO COUNTY HIGHWAY DEPARTMENT	COUNTY	COUNTY ENGINEER	JOE VANDERWERFF
WINNEBAGO COUNTY HIGHWAY DEPARTMENT	COUNTY	CIVIL ENGINEER	SEAN VON BERGEN
WINNEBAGO COUNTY-PLANNING & ZONING DIVISION	COUNTY	DIVISION HEAD	TROY KRUP
WINNEBAGO COUNTY-PURCHASING	COUNTY	DIRECTOR	ANN JOHNS
WINNEBAGO COUNTY-REGIONAL PLANNING & ECONOMIC DEVELOPMENT	COUNTY	DIRECTOR OF DEVELOPMENT SERVICES	CHRIS DORNBUSH
WINNEBAGO COUNTY EMERGENCY OPERATIONS CENTER (SHERIFF'S DEPT.)	COUNTY	ACTING DIRECTOR	DON GASPARINI
WINNEBAGO COUNTY FIRE OFFICIAL- BLACKHAWK FIRE PROTECTION DISTRICT	FIRE PROTECTION DISTRICT	CHIEF	JONATHAN TRAIL
WINNEBAGO COUNTY FIRE OFFICIAL-DURAND FIRE PROTECTION DISTRICT	FIRE PROTECTION DISTRICT	CHIEF	SANDY DITZLER
WINNEBAGO COUNTY FIRE OFFICIAL-PECATONICA	FIRE PROTECTION DISTRICT	CHIEF	STEVE VAN VLECK
WINNEBAGO COUNTY FIRE OFFICIAL- CITY OF LOVES PARK	FIRE PROTECTION DISTRICT	CHIEF	JERRY WILTFANG
WINNEBAGO COUNTY FIRE OFFICIAL- CHERRY VALLEY FIRE PROTECTION DISTRICT	FIRE PROTECTION DISTRICT	CHIEF	JOE CORL
WINNEBAGO COUNTY FIRE OFFICIAL- HARLEM-ROSCOE FIRE PROTECTION DISTRICT	FIRE PROTECTION DISTRICT	DEPUTY FIRE CHIEF	JOHN BERGERON
WINNEBAGO COUNTY FIRE OFFICIAL- NEW MILFORD-FIRE PROTECTION DISTRICT	FIRE PROTECTION DISTRICT	DEPUTY FIRE CHIEF	ALAN CARLSON
WINNEBAGO COUNTY FIRE OFFICIAL- NORTH PARK FIRE PROTECTION DISTRICT	FIRE PROTECTION DISTRICT	CHIEF	JOEL HALLSTROM

WINNEBAGO COUNTY FIRE OFFICIAL-NORTH WEST FIRE PROTECTION DISTRICT	FIRE PROTECTION DISTRICT	CHIEF	LT NICK JUPIN
WINNEBAGO COUNTY FIRE OFFICIAL- ROCKTON FIRE PROTECTION DISTRICT	FIRE PROTECTION DISTRICT	DEPUTY FIRE CHIEF	KIRK WILSON
WINNEBAGO COUNTY FIRE OFFICIAL- SHIRLAND FIRE DEPARTMENT	FIRE PROTECTION DISTRICT	CHIEF	RON WEAVER
WINNEBAGO COUNTY FIRE OFFICIAL- CITY OF ROCKFORD	FIRE PROTECTION DISTRICT	CHIEF OF OPERATIONS/EMA DIRECTOR	MICHELE PANKOW
WINNEBAGO COUNTY FIRE OFFICIAL-CITY OF SOUTH BELOIT	FIRE PROTECTION DISTRICT	CHIEF	MICHAEL DAVENPORT
WINNEBAGO COUNTY FIRE OFFICIAL-STILLMAN FIRE PROTECTION DISTRICT	FIRE PROTECTION DISTRICT	CHIEF	CHAD HOEFLE
WINNEBAGO COUNTY FIRE OFFICIAL- WIN-BUR-SEW FIRE PROTECTION DISTRICT	FIRE PROTECTION DISTRICT	CHIEF	SCOTT NAILOR
FEMA	GOVERNMENT AGENCY	FEMA MITIGATION PLANNING	LORENA REYES
IEMA	GOVERNMENT AGENCY	HAZARD MITIGATION PLANNER	GLENN SMITH
		STATE HAZARD MITIGATION OFFICER	SAM AL-BASHA
ILLINOIS DEPARTMENT OF PUBLIC HEALTH	GOVERNMENT AGENCY	EMERGENCY RESPONSE COORDINATOR	MASOOD ATHAR
SWEDISH AMERICAN HOSPITAL GROUP	HOSPITAL	EMERGENCY MANAGEMENT COORDINATOR	TOM PRATT
OSF HEALTHCARE	HOSPITAL	EMERGENCY MANAGEMENT COORDINATOR	JEFF BROWN
MERCYHEALTH SYSTEM	HOSPITAL	EMERGENCY MANAGEMENT COORDINATOR	RON KRAUSE
		PROGRAM DIRECTOR	RON MEADORS
REGION 1 PLANNING COUNCIL	LOCAL GOVERNMENT	EXECUTIVE DIRECTOR	MICHAEL DUNN JR.
		LAND USE PLANNER	ALLEN MILLS
		TRANSPORTATION SYSTEM PLANNER	COLIN BELLE
		METROPOLITAN PLANNER	CHUCK KLUTHO
REGION 1 PLANNING COUNCIL (WINGIS)	LOCAL GOVERNMENT	GIS TECHNICIAN	AARON FREY
CITY OF LOVES PARK	MUNICIPALITY	ECONOMIC DEVELOPMENT AND PLANNING MANAGER	NATHAN BRUCK
CITY OF ROCKFORD	MUNICIPALITY	PUBLIC WORKS	BRAD HOLCOMB
		PUBLIC WORKS	KELLY NOKES
		PUBLIC WORKS	JAMIE ROTT
CITY OF SOUTH BELOIT	MUNICIPALITY	MAYOR	TED REHL
VILLAGE OF CHERRY VALLEY	MUNICIPALITY	PUBLIC WORKS DIRECTOR	CHUCK FREEMAN
VILLAGE OF DURAND	MUNICIPALITY	VILLAGE ZONING ADMINISTRATOR	JOHN SCOTT

VILLAGE OF MACHESNEY PARK	MUNICIPALITY	PLANNING & ZONING SPECIALIST	CARRIE HOUSTON
		VILLAGE ADMINISTRATOR	TIM SAVAGE
VILLAGE OF NEW MILFORD	MUNICIPALITY	VILLAGE PRESIDENT	TIM OWENS
VILLAGE OF PECATONICA	MUNICIPALITY	VILLAGE PRESIDENT	BILL SMULL
VILLAGE OF ROCKTON	MUNICIPALITY	MAYOR	DALE ADAMS
VILLAGE OF ROSCOE	MUNICIPALITY	CHIEF OF POLICE	JAMIE EVANS
VILLAGE OF WINNEBAGO	MUNICIPALITY	PUBLIC WORKS DIRECTOR	CHAN INSKO
		VILLAGE PRESIDENT	FRANK EUBANK
		CHIEF OF POLICE	TODD STOCKBURGER
WINNEBAGO COUNTY SCHOOL DISTRICT SUPERINTENDENT	SCHOOL DISTRICT	SUPERINTENDENT	SCOTT BLOOMQUIST
CHICAGO ROCKFORD INT'L AIRPORT	SERVICE PROVIDER	MANAGER OF OPERATIONS	ZACK OAKLEY
COMCAST	SERVICE PROVIDER	GOVERNMENT AND COMMUNITY AFFAIRS	JOAN SAGE
COMMONWEALTH EDISON (COMED)	SERVICE PROVIDER	EXTERNAL AFFAIRS MANAGER	GEORGE GAULRAPP
ILLINOIS AMERICAN WATER	SERVICE PROVIDER	CHICAGO DISTRICT OPERATIONS	TERRY HARRINGTON
NICOR	SERVICE PROVIDER	COMMUNITY AFFAIRS	DAVID SURINA
WCT- BURRITT	TOWNSHIP	HIGHWAY COMMISSIONER	LANA DALY
WCT- CHERRY VALLEY	TOWNSHIP	HIGHWAY COMMISSIONER	SCOTT FRANTZ
WCT- DURAND	TOWNSHIP	HIGHWAY COMMISSIONER	KIM STEWARD
WCT- HARLEM	TOWNSHIP	HIGHWAY COMMISSIONER	ED TEGLAND
WCT- HARRISON	TOWNSHIP	HIGHWAY COMMISSIONER	BEN DOLAN
WCT- LAONA	TOWNSHIP	HIGHWAY COMMISSIONER	KERRY STEWARD
WCT- OWEN	TOWNSHIP	HIGHWAY COMMISSIONER	CHARLES BARNES
WCT- PECATONICA	TOWNSHIP	HIGHWAY COMMISSIONER	BRUCE LIZER
WCT- ROCKFORD	TOWNSHIP	HIGHWAY COMMISSIONER	BRAD TRENT
WCT- ROCKTON	TOWNSHIP	HIGHWAY COMMISSIONER	MATTHEW CULYER
WCT- ROSCOE	TOWNSHIP	ASSESSOR	CYNTHIA SERVANT
WCT- SEWARD	TOWNSHIP	HIGHWAY COMMISSIONER	DAVE HESLOP
WCT- SHIRLAND	TOWNSHIP	HIGHWAY COMMISSIONER	CURT McNAMES
WCT- WINNEBAGO	TOWNSHIP	HIGHWAY COMMISSIONER	BARRY PALM
NORTH PARK PUBLIC WATER DISTRICT	UTILITY PROVIDER		JOHN DONAHUE
ROCK RIVER WATER RECLAMATION DISTRICT	UTILITY PROVIDER		TIM HANSON
			JIM READER
ROCK ENERGY COOPERATIVE	UTILITY PROVIDER	SYSTEM ENGINEER	BEN KRAMBEER

## Appendix D- Existing Plans

YEAR	ORGANIZATION	TITLE	DESCRIPTION
2019	FEDERAL EMERGENCY MANAGEMENT AGENCY	FLOOD INSURANCE RATE MAPS	A COMPILATION AND PRESENTATION OF FLOOD RISK DATA FOR SPECIFIC WATERCOURSES, LAKES, AND FLOOD HAZARD AREAS WITHIN WINNEBAGO COUNTY. A REVIEW OF THE CURRENT FLOOD INSURANCE RATE MAPS (FIRM) WAS COMPLETED.
THE FIRMS WERE USED IN CONJUNCTION WITH NATIONAL LAND COVER DATASET AND FACILITY DATA AVAILABLE AT THE RPC TO DETERMINE THE FACILITIES LOCATED IN CURRENT FLOODPLAINS. IN ADDITION, THE DATA WAS USED TO MAKE A DIRECT RECOMMENDATIONS FOR THE CITY OF ROCKFORD.			
2018	ILLINOIS EMERGENCY MANAGEMENT AGENCY	ILLINOIS NATURAL HAZARD MITIGATION PLAN	THE STATE OF ILLINOIS NHMP PROVIDES AN OVERVIEW OF THE PROCESS FOR IDENTIFYING AND MITIGATING NATURAL HAZARDS IN ILLINOIS AS REQUIRED BY THE DISASTER MITIGATION ACT OF 2000.
USE: THE STATE OF ILLINOIS NHMP WAS UTILIZED AS A BASE FOR HAZARD SELECTION, PROCESS, AND FOR HISTORICAL CONTEXT. IT WAS ALSO REVIEWED FOR CONSISTENCY BETWEEN THE TWO PLANS.			
2014	WINNEBAGO COUNTY	MULTI-HAZARD MITIGATION PLAN	MULTI-HAZARD, MULTI-JURISDICTIONAL PLAN FOR THE COMMUNITIES WITHIN WINNEBAGO COUNTY.
THE 2014 WINNEBAGO COUNTY MHMP WAS USED AS A BASELINE FOR THE 2019 VERSION OF THE MHMP. AS NOTED THROUGHOUT THIS DOCUMENT, PORTIONS OF THE 2014 VERSION WERE CARRIED OVER FROM THE EXISTING DOCUMENT. DATA AND MAPS WERE UPDATED WHERE APPROPRIATE.			
2013	SWEDISH AMERICAN HOSPITAL SYSTEM	EMERGENCY OPERATIONS PLAN	THE EMERGENCY OPERATIONS PLAN PROVIDES AN ALL HAZARDS ASSESSMENT DEVELOPED WITH THE INPUT OF THE MULTI-DISCIPLINARY EMERGENCY MANAGEMENT COMMITTEE INCLUDING SENIOR LEADERSHIP AND PHYSICIANS. AS OF 2019, THIS PLAN IS BEING UPDATED.
THE SWEDISH AMERICAN HOSPITAL SYSTEM EOP WAS REVIEWED TO ENSURE CONSISTENCY ACROSS PLANS AND AS REGIONAL CONTEXT.			
2018	WINNEBAGO COUNTY	EMERGENCY OPERATIONS PLAN	EMERGENCY RESPONSE PLAN THAT IDENTIFIES FACILITIES THAT USE OR STORE HAZARDOUS MATERIAL AND EXTREMELY HAZARDOUS SUBSTANCES WITHIN WINNEBAGO COUNTY. IT ALSO IDENTIFIES ROUTES THAT ARE LIKELY TO BE USED IN THE TRANSPORT OF EHS.
THE WINNEBAGO COUNTY EOP WAS REVIEWED TO ENSURE CONSISTENCY ACROSS PLANS AND AS REGIONAL CONTEXT.			
2030	WINNEBAGO COUNTY	LAND RESOURCE MANAGEMENT PLAN	A COMPREHENSIVE LAND USE PLAN THAT OFFERS A VISION OF HOW THE UNINCORPORATED AREAS OF WINNEBAGO COUNTY WILL GROW AND DEVELOP OVER THE NEXT 20 YEARS.
THE WINNEBAGO COUNTY LRMP WAS REVIEWED TO ENSURE THAT RECOMMENDATIONS FOR DEVELOPMENT AND GROWTH ALIGNED WITH THE RECOMMENDATIONS INCLUDED IN THAT PLAN.			
2012	CITY OF ROCKFORD	EMERGENCY OPERATIONS PLAN	THE ROCKFORD EOP ASSIGNS RESPONSIBILITY TO ORGANIZATIONS OR INDIVIDUALS FOR CARRYING OUT SPECIFIC ACTIONS DURING AN EMERGENCY THAT EXCEEDS THE CAPABILITY OR ROUTINE RESPONSIBILITY OF ANY ONE AGENCY.
THE CITY OF ROCKFORD EOP WAS REVIEWED TO ENSURE CONSISTENCY ACROSS PLANS AND AS REGIONAL CONTEXT.			
2019-2023	CITY OF ROCKFORD	CITY OF ROCKFORD CAPITAL IMPROVEMENT PLAN	CITY OF ROCKFORD FOUR YEAR CAPITAL IMPROVEMENT PLAN THAT IDENTIFIED CAPITAL PROJECTS. THE PLAN INCLUDES PROJECT DESCRIPTIONS, FUNDING SOURCES, AND ESTIMATED TOTAL PROJECT BUDGETS.
THE CITY OF ROCKFORD CIP WAS REVIEWED TO ENSURE CONSISTENCY ACROSS PLANS AND AS REGIONAL CONTEXT.			
2018-2019	WINNEBAGO COUNTY HEALTH DEPARTMENT	HEALTH VULNERABILITY ASSESSMENT	THE HVA WEIGHS DIFFERENT TYPES OF HAZARDS TO WINNEBAGO COUNTY BY CRITERIA INCLUDING HUMAN IMPACT, COMMUNITY PREPAREDNESS, AND RISK LEVEL.
THE WINNEBAGO COUNTY HEALTH DEPARTMENT HVA WAS REVIEWED TO ENSURE CONSISTENCY ACROSS PLANS AND AS REGIONAL CONTEXT.			
2015	CITY OF ROCKFORD	STORMWATER MASTER PLAN	THE CITY OF ROCKFORD STORMWATER MASTER PLAN IDENTIFIES ACTIONS TO MANAGE STORMWATER QUALITY AND QUANTITY.
THE CITY OF ROCKFORD STORMWATER MASTER PLAN WAS REVIEWED TO ENSURE CONSISTENCY ACROSS PLANS AND AS REGIONAL CONTEXT.			

## Appendix E- List of Mitigation Strategies by Jurisdiction (2019)

### The Village of Cherry Valley (2019)

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Status/Priority	Comments (2014)	Comments (2019)
Devote Section of Website to Hazard Mitigation Awareness	Goal: Develop long-term strategies to educate residents on the hazards affecting their community--- Objective: Raise public awareness of hazard mitigation	All Hazards	Ongoing/ High	Cherry Valley identified that the village website is the most used medium for awareness and access to information. A section of the village website will be devoted to hazard mitigation awareness.	The Village of Cherry Valley continues to work to post all available information to the Village's website.
<b>Timeline:</b> Ongoing (1 year; website is reviewed annually for updates to information). <b>Funding:</b> Village of Cherry Valley general funds.					
First Responder Training	Goal: Develop long-term strategies to education residents on the hazards affecting their community--- Objective: Improve education and training of emergency personnel and public officials	All Hazards	Ongoing/ High	Ongoing within Cherry Valley. The Village wishes to provide additional training and education for Management team, as well as Public Works Crews through NIMS training.	The Village of Cherry Valley continues to provide updated first responder training to new and existing employees as new options present themselves.
<b>Timeline:</b> Training is provided within 1-year of funding (yearly). <b>Funding:</b> Village of Cherry Valley general funds.					
Back-up Generators for Critical Facilities	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Equip public facilities and communities to guard against damage caused by secondary effects on hazards	All Hazards	Completed	Cherry Valley will be adding back-up generators to another well house as well as to new public work facilities (Spring 2015).	The Village of Cherry Valley added two backup generators to critical facilities since 2014 and continues to seek funding for additional as needed.
<b>Timeline:</b> Completed. <b>Funding:</b> None.					
Active Tree Management	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Active tree management near critical facilities and essential facilities to minimize risk of damage	All Hazards	Ongoing/ High	Cherry Valley will be implementing additional action plans to minimize tree damage to power lines as well as other infrastructure.	The Village of Cherry Valley has begun removing EAB affected trees within the Village borders. We will continue to remove hazardous trees as they present themselves.
<b>Timeline:</b> 5 years (for total hazardous tree removal). <b>Funding:</b> Village of Cherry Valley general funds.					

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Status/Priority	Comments (2014)	Comments (2019)
Special Needs Population List	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Evaluate and strengthen the communication and transportation abilities of the emergency services	All Hazards	Ongoing/ Low	The special needs population in Cherry Valley continues to grow and will be one of the larger demographic groups.	Still evaluating means of communication and transportation abilities of the emergency services.
<b>Timeline:</b> Programming/resources to serve this demographic to be established within 3 years after funding is available. <b>Funding:</b> Village of Cherry Valley general funds.					
Public Education / Awareness	Goal: Develop long-term strategies to educate residents on the hazards affecting their community--- Objective: Raise public awareness of hazard mitigation	All Hazards	Ongoing/ Medium	Cherry Valley plans to distribute materials to residents at strategic times to raise awareness of potential hazard. In addition, the Village will look into enhancing communication between other agencies.	Continued communication efforts by sending out Village newsletter quarterly, additionally a portable message board has been purchased to identify local and specific issues.
<b>Timeline:</b> Ongoing (Occurs yearly) (roughly every 3 months). <b>Funding:</b> Village of Cherry Valley general funds.					
Develop Safety Procedures for Earthquakes	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Review and update existing, or create new community plans and ordinances	Earthquakes	High	Cherry Valley plans to develop an emergency plan in the event an earthquake.	Still need to develop an emergency plan specific to earthquakes.
<b>Timeline:</b> Plan anticipated to be completed within the next 5 years. <b>Funding:</b> Village of Cherry Valley general funds.					
Burn Ordinances	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Review and update existing, or create new community plans and ordinances	Extreme Heat	Completed	Cherry Valley plans to develop an ordinance that restricts outdoor burning during periods of drought and extreme heat.	Ordinance was passed allowing burning the last (2) weekends in October and first (2) weekends in November.
<b>Timeline:</b> Completed. <b>Funding:</b> None.					

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Status/Priority	Comments (2014)	Comments (2019)
Floodplain Ordinances	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Review and update existing, or create new community plans and ordinances	Flooding / Dam and Levee Failure	Ongoing/ High	Cherry Valley will continue to improve the village's floodplain ordinances to restrict development with the floodplain.	Cherry Valley will continue to improve the village's floodplain ordinances to restrict development with the floodplain.
<b>Timeline:</b> Reviewed every 2 years; annual. <b>Funding:</b> Village of Cherry Valley general funds.					
Stormwater Management Ordinances	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Review and update existing, or create new community plans and ordinances	Flooding / Dam and Levee Failure	Medium	Cherry Valley wishes to plan for new flow and direct it to access of outflow.	Cherry Valley wishes to plan for new flow and direct it to access of outflow.
<b>Timeline:</b> A stormwater plan will be developed within 5 years after funding is awarded. <b>Funding:</b> Village of Cherry Valley general funds; Pre-Disaster Mitigation Funding; private lending; or grant funding ( <a href="#">State of Illinois</a> , Federal ( <a href="#">EPA</a> ; <a href="#">USDA</a> ), etc.).					
Emergency Plan / Protocol for HAZMAT Releases	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Review and update existing, or create new community plans and ordinances	HAZMAT	High	Cherry Valley plans to develop an emergency plan in the event of a HAZMAT release. The village has identified the importance of reinforced situational awareness, identification of potential hazards, and the need to communicate with other disciplines.	The Village of Cherry Valley plans to develop an emergency plan in the event of a HAZMAT release. The Village recognizes the vital importance of an organized response.
<b>Timeline:</b> 5 years. <b>Funding:</b> Villages of Cherry Valley general funds.					
HAZMAT Spill, Removal, and Disposal Procedure	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Review and update existing, or create new community plans and ordinances	HAZMAT	Medium	Cherry Valley has identified the need to develop a HAZMAT Spill, Removal, and Disposal Procedure.	The Village of Cherry Valley plans to work with local Fire and Police on this.
<b>Timeline:</b> Procedure anticipated to be completed within the next 5 years. <b>Funding:</b> Village of Cherry Valley general funds.					



Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Status/Priority	Comments (2014)	Comments (2019)
Bury Power Lines	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Minimize the amount of infrastructure exposed to hazards	Severe Storms / Tornadoes	High	Cherry Valley wishes to seek funding to convert existing power lines. This will minimize loss of energy at critical times of need.	The Village is seeking funding to complete this project in the coming years.
<p><b>Timeline:</b> Village to complete program within 10 years after funding is awarded to the Village.  <b>Funding:</b> Village of Cherry Valley general funds; Pre-Disaster Mitigation Funding; private lending; or grant funding (<a href="#">State of Illinois</a>, Federal (<a href="#">EPA</a>; <a href="#">USDA</a>), etc.).</p>					
Ordinance for Higher Construction Standards	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Review and update existing, or create new community plans and ordinances	Severe Storms / Tornadoes	Ongoing/ Medium	Cherry Valley will continue to improve the village's construction ordinances to develop construction standards specific to weather/climate stressors.	The Village of Cherry Valley continues to improve the village's construction ordinances.
<p><b>Timeline:</b> Zoning ordinances will be reviewed every 2 years.  <b>Funding:</b> Village of Cherry Valley general funds.</p>					
Install Snow Fences (Removed)	The Village of Cherry Valley has no plans to install snow fencing at this time because of maintenance issues associated. Upon review there are little to no issues within the Village.				
Heating and Cooling Shelters	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Improve emergency sheltering	Winter Storms / Extreme Heat	Ongoing/ Medium	Cherry Valley wishes to seek funding to increase the number of heating and cooling shelters in the village.	Looking at additional locations to utilize.
<p><b>Timeline:</b> Additional shelters will be constructed within 5 years after funding is awarded to the Village.  <b>Funding:</b> Village of Cherry Valley general funds; Pre-Disaster Mitigation Funding; private lending; or grant funding (<a href="#">State of Illinois</a>, Federal (<a href="#">EPA</a>; <a href="#">USDA</a>), etc.).</p>					
<b>Responsible:</b> Village of Cherry Valley Public Works					

### The Village of Durand (2019)

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Status/Priority	Comments (2014)	Comments (2019)
Special Needs Population List	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Evaluate and strengthen the communication and transportation abilities of the emergency services	All Hazards	High	The special needs population in Durand continues to grow and will be one of the larger demographic groups. The Village will indicate all nursing homes, Sr. Living Complexes and other Special Needs residents and contact information to this list	The Village of Durand would still like to develop more senior living and special needs contact information and lists.
<p><b>Timeline:</b> 2 years.  <b>Funding:</b> Village of Durand general funds.</p>					

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Status/Priority	Comments (2014)	Comments (2019)
Mutual Aid Agreements	Goal: Lessen the impacts of hazards to new and existing infrastructure---	All Hazards	Completed	Currently, the Durand Fire Department has mutual aid agreements with other local departments. Durand Police Department is also involved with mutual aid agreements.	The Village of Durand maintains mutual aid agreements with appropriate neighboring departments.
<b>Timeline:</b> Completed. <b>Funding:</b> None.					
Back-up Generators for Critical Facilities	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Equip public facilities and communities to guard against damage caused by secondary effects on hazards	All Hazards	Completed	The Village currently has one large generator to assure their ability to operate pumps in the event of a prolonged power outage. The village also has several smaller portable generators to insure power for radio communication.	Durand Fire Department has a back-up generator as well as Medina Manor Nursing Center.
<b>Timeline:</b> Completed. <b>Funding:</b> None.					
First Responder Training	Goal: Develop long-term strategies to education residents on the hazards affecting their community--- Objective: Improve education and training of emergency personnel and public officials	All Hazards	Ongoing/ High	Durand wishes to improve first responder training in the city. This will be handled by the Durand Fire and EMS.	No comment.
<b>Timeline:</b> Ongoing (every 1 years). <b>Funding:</b> Village of Durand general funds.					
Devote Section of Website to Hazard Mitigation Awareness	Goal: Develop long-term strategies to educate residents on the hazards affecting their community--- Objective: Raise public awareness of hazard mitigation	All Hazards	Ongoing/ Low	The Village of Durand is currently redesigning their website. A section of the village website can be devoted to hazard mitigation awareness.	The Village of Durand's new website is online and the village is continuing to add more information.
<b>Timeline:</b> Ongoing (updated annually). <b>Funding:</b> Village of Durand general funds.					
Enhance / Create Alternate Emergency Operations Center	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Improve EOC emergency sheltering	All Hazards	Completed.	Durand's primary EOC is the Durand Fire Department. The secondary EOC is the Village Hall and/or Durand School.	The Village of Durand maintains three EOC's (Durand Fire Department, the Village Hall, and Durand School).
<b>Timeline:</b> Completed. <b>Funding:</b> None.					

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Status/Priority	Comments (2014)	Comments (2019)
Back-up Water Supply	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Equip public facilities and communities to guard against damage caused by secondary effects on hazards	All Hazards	Completed.	The Village's portable generator is capable of providing power to the well in order to keep the elevated water tower filled.	This mitigation item is complete.
<b>Timeline:</b> Completed. <b>Funding:</b> None.					
Burn / Water Ban Ordinances	Goal: Create new or revise existing plans/maps--- Objective: Review and update existing, or create new community plans and ordinances	Extreme Heat and Drought	Completed	The Village currently has existing burning ordinances as well as a water ban ordinance that can be implemented when needed.	No comment.
<b>Timeline:</b> Completed. <b>Funding:</b> None.					
Floodplain Ordinances	Goal: Create new or revise existing plans/maps--- Objective: Review and update existing, or create new community plans and ordinances	Flooding / Dam and Levee Failure	Ongoing	Durand will continue to maintain update floodplain ordinances.	No comment.
<b>Timeline:</b> 5 years after funding is made available. <b>Funding:</b> Village of Durand general funds.					
Stormwater Management Ordinances	Goal: Create new or revise existing plans/maps--- Objective: Review and update existing, or create new community plans and ordinances	Flooding / Dam and Levee Failure	High	Durand has discussed developing and adopting a stormwater management ordinance but no action has been taken nor will be acted on in the near future.	While funding continues to be an issue, this remains a top village priority.
<b>Timeline:</b> 5 years after funding is made available. <b>Funding:</b> Village of Durand general funds.					
Culvert Replacement	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Minimize the amount of infrastructure exposed to hazards	Flooding / Dam and Levee Failure	Ongoing/ Medium	Durand currently monitors high flow areas. The Village will seek funding to replace culverts on an as needed basis.	No comment.
<b>Timeline:</b> 5 years after funding is made available. <b>Funding:</b> Village of Durand general funds; Pre-Disaster Mitigation Funding; private lending; or grant funding ( <a href="#">State of Illinois</a> , Federal ( <a href="#">EPA</a> ; <a href="#">USDA</a> ), etc.).					

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Status/Priority	Comments (2014)	Comments (2019)
Emergency Plan/Protocol for HAZMAT Releases; HAZMAT Spill, Removal, and Disposal Procedure	Goal: Create new or revise existing plans/maps--- Objective: Review and update existing, or create new community plans and ordinances	HAZMAT	Ongoing/ Medium	Durand Fire Department will continue to work with the Winnebago County LEPC to improve the County's HAZMAT response plans.	No comment.
<b>Timeline:</b> 2 years. <b>Funding:</b> Village of Durand general funds.					
Anchoring of Manufactured Homes and Exterior Attachments	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Minimize the amount of infrastructure exposed to hazards	Severe Storms / Tornadoes	Completed	Current building codes address this issue including anchoring of utility sheds.	No comment.
<b>Timeline:</b> Completed. <b>Funding:</b> None.					
Heating and Cooling Shelters	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Improve emergency sheltering	Winter Storms / Extreme Heat	Completed	(New for 2019)	The Village of Durand Fire Department can be utilized as a heating/cooler shelter for residents.
<b>Timeline:</b> Completed. <b>Funding:</b> None. <b>Responsible position:</b> Zoning Administrator, Village Administrator					

### The City of Loves Park (2019)

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Status/Priority	Comments (2014)	Comments (2019)
Public Education / Awareness	Goal: Develop long-term strategies to educate County residents on the hazards affecting their community---Objective: Raise public awareness of hazard mitigation	All Hazards	Ongoing/ High	Loves Park will work with Winnebago County to improve Public Education and Awareness.	The City of Loves Park will continue to work with Winnebago County to improve Public Education and Awareness.
<b>Timeline:</b> Ongoing. <b>Funding:</b> City of Loves Park general funds.					
Mutual Aid Agreements	Goal: Lessen the impacts of hazards to new and existing infrastructure---	All Hazards	Ongoing/ High	Loves Park will work with the Winnebago County Local Emergency Planning Committee (LEPC) to develop and improve various mutual aid agreements within the county.	The City of Loves Park will continue to support these efforts with the Winnebago County.

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Status/Priority	Comments (2014)	Comments (2019)
<b>Timeline:</b> Ongoing. <b>Funding:</b> City of Loves Park general funds.					
Back-up Generators for Critical Facilities	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Equip public facilities and communities to guard against damage caused by secondary effects on hazards	All Hazards	Ongoing/ High	Loves Park wishes to seek funding to obtain back-up generators for critical facilities within the City.	The City of Loves Park will continue to seek funding for back-up generators for critical facilities within the City.
<b>Timeline:</b> 1 to 3 years once funds become available. <b>Funding:</b> City of Loves Park general funds; Pre-Disaster Mitigation Funding; private lending; or grant funding/donations ( <a href="#">ComEd- Powering Safe Communities</a> , <a href="#">NiCor</a> , <a href="#">State of Illinois</a> , Federal ( <a href="#">EPA</a> ; <a href="#">USDA</a> ), etc.).					
First Responder Training	Goal: Develop long-term strategies to education residents on the hazards affecting their community---Objective: Improve education and training of emergency personnel and public officials	All Hazards	Ongoing/ High	Loves Park wishes to improve first responder training in the City and will work with Winnebago County on this mitigation item.	The City of Loves Park continues to provide updated first responder training to new and existing employees as new options present themselves
<b>Timeline:</b> Ongoing; annually (1 year). <b>Funding:</b> City of Loves Park general funds.					
Develop Safety Procedures for Earthquakes	Goal: Improve emergency sheltering and procedures in the event of an earthquake-- Objective: Review and update existing, or create new community earthquake plans	Earthquakes	Low	The City of Loves Park will work with Winnebago County will work to develop mutual aid agreements in event of an earthquake.	The City of Loves Park will work with Winnebago County will work to develop mutual aid agreements in event of an earthquake.
<b>Timeline:</b> 7 to 10 years. <b>Funding:</b> City of Loves Park general funds.					
Burn Ordinances	Goal: Create new or revise existing plans/maps---Objective: Review and update existing, or create new community plans and ordinances	Extreme Heat and Drought	Completed	The City of Loves Park will continue to maintain update burn ordinances.	The City of Loves Park will continue enforcing burn ordinance and maintain updates as necessary.
<b>Timeline:</b> Completed. <b>Funding:</b> None.					
Develop educational materials, both web-based and in paper form, on the benefits of the NFIP	Goal: Develop long-term strategies to educate County residents on the hazards affecting their community---Objective: Raise public awareness of flooding and flood insurance	Flooding / Dam and Levee Failure	Ongoing/ High	Loves Park participates in the NFIP and will continue to education its residents on the benefits of the NFIP.	The City of Loves Park will continue efforts educating residents on the benefits of the NFIP.
<b>Timeline:</b> Ongoing. <b>Funding:</b> City of Loves Park general funds.					

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Status/Priority	Comments (2014)	Comments (2019)
Culvert Replacement	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Minimize the amount of infrastructure exposed to hazards	Flooding / Dam and Levee Failure	High	Loves Park wishes to seek funding to replace culverts in the city.	The City of Loves Park wishes to seek funding to replace culverts in the city.
<b>Timeline:</b> 1 to 3 years once funding is available. <b>Funding:</b> City of Loves Park general funds; Pre-Disaster Mitigation Funding; private lending; or grant funding ( <a href="#">State of Illinois</a> , Federal ( <a href="#">EPA</a> ; <a href="#">USDA</a> ), etc.).					
Install Sump Pumps	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Minimize potential damage to foundations and household/critical facility utilities	Flooding / Dam and Levee Failure	Ongoing/ High	This mitigation item is ongoing.	This mitigation item is ongoing.
<b>Timeline:</b> Ongoing; 5-7 years; completed as necessary. <b>Funding:</b> City of Loves Park general funds.					
Emergency Plan / Protocol for HAZMAT Releases	Goal: Create new or revise existing plans/maps---Objective: Review and update existing, or create new community plans and ordinances	HAZMAT	High	The City of Loves Park will work with the Winnebago County LEPC to improve the County's HAZMAT response plans.	The City of Loves Park will work with the Winnebago County LEPC to improve the County's HAZMAT response plans.
<b>Timeline:</b> 1 to 3 years. <b>Funding:</b> City of Loves Park general funds.					
HAZMAT Spill, Removal and Disposal Procedure	Goal: Create new or revise existing plans/maps---Objective: Review and update existing, or create new community plans and ordinances	HAZMAT	High	The City of Loves Park will work with the Winnebago County LEPC to improve the County's HAZMAT response plans.	The City of Loves Park will work with the Winnebago County LEPC to improve the County's HAZMAT response plans.
<b>Timeline:</b> 1 to 3 years. <b>Funding:</b> City of Loves Park general funds.					
Develop Alternate Traffic Routes	Goal: Create new or revise existing plans/maps---Objective: Review and update existing, or create new community plans and ordinances	HAZMAT	Medium	The City of Loves Park will work with the Winnebago County LEPC to improve the County's HAZMAT response plans.	The City of Loves Park will work with the Winnebago County LEPC to improve the County's HAZMAT response plans.
<b>Timeline:</b> 4 to 6 years. <b>Funding:</b> City of Loves Park general funds.					

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Status/Priority	Comments (2014)	Comments (2019)
Bury Power Lines	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Minimize the amount of infrastructure exposed to hazards	Severe Storms / Tornadoes	Ongoing/ High	The City of Loves Park would like to convert above ground power lines to minimize the amount of infrastructure exposed to severe storms and tornadoes.	The City of Loves Park will continue these efforts. However, the exorbitant cost of burying existing power lines makes this a very difficult reality.
<p><b>Timeline:</b> 4 to 6 years once funding is available.  <b>Funding:</b> City of Loves Park general funds; Pre-Disaster Mitigation Funding; private lending; or grant funding (<a href="#">State of Illinois</a>, Federal (<a href="#">EPA</a>; <a href="#">USDA</a>), etc.).</p>					
Harden Infrastructure	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Minimize the amount of infrastructure exposed to hazards	Severe Storms / Tornadoes	Medium	The City of Loves Park wishes to seek funding to harden existing infrastructure in the event of severe storms and tornadoes.	The City of Loves Park wishes to seek funding to harden existing infrastructure in the event of severe storms and tornadoes.
<p><b>Timeline:</b> 4 to 6 years once funding is available.  <b>Funding:</b> City of Loves Park general funds; Pre-Disaster Mitigation Funding; private lending; or grant funding (<a href="#">State of Illinois</a>, Federal (<a href="#">EPA</a>; <a href="#">USDA</a>), etc.).</p>					
Install Snow Fences	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Minimize the amount of infrastructure exposed to hazards	Winter Storms	Ongoing/ Medium	This mitigation item is ongoing in the County the Highway Department. The City of Loves Park will work with the County to improve this mitigation item.	This mitigation item is ongoing in Winnebago County and the Winnebago County Highway Department. The City of Loves Park will work with the County to improve this mitigation item.
<p><b>Timeline:</b> 4 to 6 years once funding is available.  <b>Funding:</b> City of Loves Park general funds; Pre-Disaster Mitigation Funding; private lending; or grant funding (<a href="#">State of Illinois</a>, Federal (<a href="#">EPA</a>; <a href="#">USDA</a>), etc.).</p>					
Heating and Cooling Shelters	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Improve emergency sheltering	Winter Storms / Extreme Heat	Medium	The City of Loves Park wishes to seek funding to increase the number of heating and cooling shelters for its residents.	The City of Loves Park wishes to seek funding to increase the number of heating and cooling shelters for its residents.
<p><b>Timeline:</b> 4 to 6 years once funding is available.  <b>Funding:</b> City of Loves Park general funds; Pre-Disaster Mitigation Funding; private lending; or grant funding (<a href="#">State of Illinois</a>, Federal (<a href="#">EPA</a>; <a href="#">USDA</a>), etc.).</p>					
<p><b>Responsible:</b> City of Loves Park; Public works</p>					

### The Village of Machesney Park (2019)

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Status/Priority	Comments (2014)	Comments (2019)
Public Education / Awareness	Goal: Develop long-term strategies to educate residents on the hazards affecting their community--- Objective: Raise public awareness of hazard mitigation	All Hazards	High	Machesney Park plans to work with Winnebago County to distribute materials to residents at strategic times to raise awareness of potential hazard.	Machesney Park works to distribute materials to residents at strategic times to raise awareness of potential hazard.
<b>Timeline:</b> Quarterly and annual updates to the village through newsletters and mailings. (Ongoing; as needed) <b>Funding:</b> Village of Machesney Park general funds.					
Mutual Aid Agreements	Goal: Create new or revise existing plans/maps---Goal: Lessen the impacts of hazards to new and existing infrastructure	All Hazards	High	Machesney Park will work with the Winnebago County Local Emergency Planning Committee (LEPC) and other Agencies in the County to develop and improve mutual aid agreements within the county.	Machesney Park will work with the Winnebago County Local Emergency Planning Committee (LEPC) and other Agencies in the County to develop and improve mutual aid agreements within the county.
<b>Timeline:</b> 5 to 10 years; pending Winnebago County Sheriff's Department approval. <b>Funding:</b> Village of Machesney Park general funds.					
Back-up Generators for Critical Facilities	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Equip public facilities and communities to guard against damage caused by secondary effects on hazards	All Hazards	High	Machesney Park wishes to seek funding to obtain back-up generators for critical facilities.	Machesney Park wishes to seek funding to obtain back-up generators for critical facilities.
<b>Timeline:</b> 2 years after funding identified. <b>Funding:</b> Village of Machesney Park general funds; Pre-Disaster Mitigation Funding; private lending; or grant funding ( <a href="#">State of Illinois</a> , Federal ( <a href="#">EPA</a> ; <a href="#">USDA</a> ), etc.).					
Data Acquisition for Future Hazard Mitigation Planning	Goal: Create new or revise existing plans/maps--- Objective: Review and update existing GIS datasets	All Hazards	Ongoing/ High	Machesney park will continue to assist WinGIS in maintaining its list of critical and essential facilities in the county	Machesney park will continue to assist WinGIS in maintaining its list of critical and essential facilities in the county
<b>Timeline:</b> Ongoing; annually (reviewed every 1- year). <b>Funding:</b> Village of Machesney Park general funds.					



Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Status/Priority	Comments (2014)	Comments (2019)
Establish Local Emergency Planning Committee	Goal: Create new or revise existing plans/maps---Goal: Lessen the impacts of hazards to residents	All Hazards	Low	Machesney Park will work with the Winnebago County Local Emergency Planning Committee (LEPC).	Machesney Park will work with the Winnebago County Local Emergency Planning Committee (LEPC).
<b>Timeline:</b> 5 years. <b>Funding:</b> Village of Machesney Park general funds.					
Family Disaster Plans & Kits	Goal: Lessen the impacts of hazards to residents--- Objective: Strengthen communication between residents and emergency services	All Hazards	Medium	Machesney Park will work with Winnebago County to distribute Family Disaster Plans and Kits to residents.	Machesney Park will work with Winnebago County to distribute Family Disaster Plans and Kits to residents.
<b>Timeline:</b> Triggered when disaster occurs. (As needed) <b>Funding:</b> Village of Machesney Park general funds.					
Special Needs Population List	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Evaluate and strengthen the communication and transportation abilities of emergency services	All Hazards	Medium	Machesney Park will work to develop and maintain a special needs population list to strengthen the emergency services.	Machesney Park will work to develop and maintain a special needs population list to strengthen the emergency services.
<b>Timeline:</b> 5 to 10 years. <b>Funding:</b> Village of Machesney Park general funds.					
Provided and Publicize Location of Safe Rooms and / or Shelters	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Improve emergency sheltering in the county	All Hazards	Medium	Machesney Park will work to develop, maintain, and distribute a list of the safe rooms and shelters to its residents.	Machesney Park will work to develop, maintain, and distribute a list of the safe rooms and shelters to its residents.
<b>Timeline:</b> 5 years. <b>Funding:</b> Village of Machesney Park general funds.					
Enhance Communication Systems	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Equip public facilities and communities to guard against damage caused by secondary effects on hazards	All Hazards	Medium	Machesney Park plans to improve the emergency communication system currently in place.	Machesney Park plans to improve the emergency communication system currently in place.
<b>Timeline:</b> 5 to 10 years. <b>Funding:</b> Village of Machesney Park general funds.					

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Status/Priority	Comments (2014)	Comments (2019)
Active Tree Management	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Active tree management near critical facilities and essential facilities to minimize risk of damage	All Hazards	Ongoing/ Medium	Machesney Park will be implementing additional action plans to minimize tree damage to power lines as well as other infrastructure.	Machesney Park will be implementing additional action plans to minimize tree damage to power lines as well as other infrastructure.
<b>Timeline:</b> 1 year. <b>Funding:</b> Village of Machesney Park general funds.					
Develop Safety Procedures for Earthquakes	Goal: Improve emergency sheltering and procedures in the event of an earthquake--- Objective: Review and update existing, or create new community earthquake plans	Earthquakes	Low	Machesney Park will work with Winnebago County will work to develop mutual aid agreements in event of an earthquake.	Machesney Park will work with Winnebago County will work to develop mutual aid agreements in event of an earthquake.
<b>Timeline:</b> 10 years. <b>Funding:</b> Village of Machesney Park general funds.					
Burn Ordinances	Goal: Create new or revise existing plans/maps--- Objective: Review and update existing, or create new community plans and ordinances	Extreme Heat and Drought	Ongoing/ Medium	Machesney Park will continue to maintain update burn ordinances.	Machesney Park will continue to maintain updated burn ordinances.
<b>Timeline:</b> 5-year review schedule. <b>Funding:</b> Village of Machesney Park general funds.					
Participate in the Community Rating System	Goal: Create new or revise existing plans/maps--- Objective: Support compliance with the NFIP	Flooding / Dam and Levee Failure	High	Machesney Park will work with Winnebago County will investigate the feasibility of joining the CRS.	Machesney Park will investigate the feasibility of joining the CRS.
<b>Timeline:</b> 1 to 2 years. <b>Funding:</b> Village of Machesney Park general funds.					
Develop educational materials, both web-based and in paper form, on the benefits of the NFIP	Goal: Develop long-term strategies to educate County residents on the hazards affecting their community--- Objective: Raise public awareness of flooding and flood insurance	Flooding / Dam and Levee Failure	Ongoing/ High	Machesney Park participates in the NFIP and will continue to education its residents on the benefits of the NFIP.	Machesney Park participates in the NFIP and will continue to educate its residents on the benefits of the NFIP.
<b>Timeline:</b> 2 years. <b>Funding:</b> Village of Machesney Park general funds.					

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Status/Priority	Comments (2014)	Comments (2019)
Property Acquisition (Buyouts) & Property Relocation	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Minimize the amount of infrastructure exposed to hazards	Flooding / Dam and Levee Failure	Ongoing/ High	Machesney Park currently works and will continue to identify areas where buyouts and property relocations make the most sense. Several projects have already been completed with Federal assistance. Machesney Park will continue to seek federal funding for future property acquisitions.	Machesney Park currently works and will continue to identify areas where buyouts and property relocations make the most sense. Several projects have already been completed with Federal assistance. Machesney Park will continue to seek federal funding for future property acquisitions.
<p><b>Timeline:</b> 1 year and immediately following funding identification and award.  <b>Funding:</b> Village of Machesney Park general funds; Pre-Disaster Mitigation Funding; private lending; or grant funding (<a href="#">State of Illinois</a>, Federal (<a href="#">EPA</a>; <a href="#">USDA</a>), etc.).</p>					
Floodplain and Stormwater Management Ordinances	Goal: Create new or revise existing plans/maps--- Objective: Review and update existing, or create new community plans and ordinances	Flooding / Dam and Levee Failure	Ongoing/ High	Machesney Park has building code restrictions and flood protection requirements in place. The village will continue to maintain and update these ordinances.	Machesney Park has building code restrictions and flood protection requirements in place. The Village will continue to maintain and update these ordinances.
<p><b>Timeline:</b> 2-year review.  <b>Funding:</b> Village of Machesney Park general funds.</p>					
Open Space Preservation	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Keep the floodplain and other hazardous areas open and free from development	Flooding / Dam and Levee Failure	Ongoing/ High	Machesney Park wishes to seek funding to improve open space preservation and decrease the amount of infrastructure exposed to flooding.	Machesney Park wishes to seek funding to improve open space preservation and decrease the amount of infrastructure exposed to flooding.
<p><b>Timeline:</b> 2 years after funding identified and awarded.  <b>Funding:</b> Village of Machesney Park general funds; Pre-Disaster Mitigation Funding; private lending; or grant funding (<a href="#">State of Illinois</a>, Federal (<a href="#">EPA</a>; <a href="#">USDA</a>), etc.).</p>					

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Status/Priority	Comments (2014)	Comments (2019)
Identification of Floodplain Structures	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Examine flood loss areas and generate a comprehensive list of structures located in floodplains	Flooding / Dam and Levee Failure	Completed	Machesney Park created a conservation overlay district which identified all structures in the floodway.	Machesney Park created a conservation overlay district which identified all structures in the floodway.
<b>Timeline:</b> Completed. <b>Funding:</b> None.					
Emergency Plan / Protocol for HAZMAT Releases	Goal: Create new or revise existing plans/maps--- Objective: Review and update existing, or create new community plans and ordinances	HAZMAT	High	Machesney Park will work with the Winnebago County LEPC to improve the County's HAZMAT response plans.	Machesney Park will work with the Winnebago County LEPC to improve the County's HAZMAT response plans.
<b>Timeline:</b> 5 to 10 years. <b>Funding:</b> Village of Machesney Park general funds.					
Develop Alternate Traffic Routes	Goal: Create new or revise existing plans/maps--- Objective: Review and update existing, or create new community plans and ordinances	HAZMAT	Medium	Machesney Park will work with the Winnebago County LEPC to improve the County's HAZMAT response plans.	Machesney Park will work with the Winnebago County LEPC to improve the County's HAZMAT response plans.
<b>Timeline:</b> 5 to 10 years. <b>Funding:</b> Village of Machesney Park general funds.					
Bury Power Lines	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Minimize the amount of infrastructure exposed to hazards	Severe Storms / Tornadoes	Medium	Machesney Park wishes to seek funding to convert existing power lines. This will minimize loss of energy at critical times of need.	Machesney Park wishes to seek funding to convert existing power lines. This will minimize loss of energy at critical times of need.
<b>Timeline:</b> 10 years after funding identified and received. <b>Funding:</b> Village of Machesney Park general funds; Pre-Disaster Mitigation Funding; private lending; or grant funding ( <a href="#">State of Illinois</a> , Federal ( <a href="#">EPA</a> ; <a href="#">USDA</a> ), etc.).					
Install Snow Fences	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Minimize the amount of infrastructure exposed to hazards	Winter Storms	Ongoing/ Medium	This mitigation item is ongoing. Machesney Park will work with the County to improve this mitigation item.	This mitigation item is ongoing.
<b>Timeline:</b> Ongoing (5 years). <b>Funding:</b> Village of Machesney Park general funds; Pre-Disaster Mitigation Funding; private lending; or grant funding ( <a href="#">State of Illinois</a> , Federal ( <a href="#">EPA</a> ; <a href="#">USDA</a> ), etc.). <b>Responsible:</b> Village of Machesney Park					

### The Village of New Milford (2019)

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Status/Priority	Comments (2014)	Comments (2019)
Public Education /Awareness	Goal: Develop long-term strategies to educate residents on the hazards affecting their community--- Objective: Raise public awareness of hazard mitigation	All Hazards	Ongoing/ High	The Village of New Milford has a website that residents can get information about Emergency Procedures. Data is updated every three months.	The Village of New Milford is looking into new communication methods. There are website updates ongoing. The Village of New Milford is looking into text notification of residents for emergencies.
<b>Timeline:</b> Every 3 months (annually). <b>Funding:</b> Village of New Milford general funds.					
Provided and Publicize Location of Safe Rooms and/or Shelters	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Improve emergency sheltering in the county	All Hazards	Ongoing/ High	The Village of New Milford is currently trying to establish shelter space for residents of the mobile home park. There was an agreement with New Milford School prior to closing.	The Village of New Milford is pursuing grant options to provide shelter since the New Milford School Structure has been demolished.
<b>Timeline:</b> Shelter to be constructed within five years once funding is awarded to the Village. <b>Funding:</b> Village of New Milford general funds; Pre-Disaster Mitigation Funding; private lending; or grant funding ( <a href="#">State of Illinois</a> , Federal ( <a href="#">EPA</a> ; <a href="#">USDA</a> ), etc.).					
Back-up Generators for Critical Facilities	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Equip public facilities and communities to guard against damage caused by secondary effects on hazards	All Hazards	Ongoing/ High	New Milford wishes to seek funding to obtain back-up generators for the Village Hall. This would also allow for the Village Hall to be used as a heating/cooling center.	The Village of New Milford is evaluating funding sources for these facilities.
<b>Timeline:</b> Generator to be purchased and installed within five years once funding is awarded to the Village. <b>Funding:</b> Village of New Milford general funds; Pre-Disaster Mitigation Funding; private lending; or grant funding ( <a href="#">State of Illinois</a> , Federal ( <a href="#">EPA</a> ; <a href="#">USDA</a> ), etc.).					
Floodplain and Stormwater Management Ordinances	Goal: Create new or revise existing plans/maps--- Objective: Review and update existing, or create new community plans and ordinances	Flooding / Dam and Levee Failure	Ongoing/ Medium	New Milford has ordinances and procedures in place to coincide with Winnebago County's ordinances. The village will continue to maintain and update these ordinances.	The Village of New Milford is continuing to review and update applicable ordinances.
<b>Timeline:</b> Applicable ordinances and procedures are reviewed (every 1) yearly. <b>Funding:</b> Village of New Milford general funds.					

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Status/Priority	Comments (2014)	Comments (2019)
Emergency Plan/Protocol for HAZMAT Releases	Goal: Create new or revise existing plans/maps--- Objective: Review and update existing, or create new community plans and ordinances	HAZMAT	Ongoing/ Medium	New Milford will continue to work with the Winnebago County LEPC to improve the County's HAZMAT response plans.	The Village of New Milford is continuing to collaborate with the appropriate agencies and departments at the Winnebago County.
<b>Timeline:</b> Plan to be completed within 5 years once funding is awarded to the Village.					
<b>Funding:</b> Village of New Milford general funds.					
Install Tornado Safe Room	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Improve emergency sheltering	Severe Storms / Tornadoes	Ongoing/ High	The Village is working to secure funding to provide a safe room for residents of the mobile home parks.	The Village of New Milford is evaluating and pursuing grant options to provide shelter since New Milford School Structure has been demolished.
<b>Timeline:</b> Shelter to be constructed within 5 years once funding is awarded to the Village.					
<b>Funding:</b> Village of New Milford general funds; Pre-Disaster Mitigation Funding; private lending; or grant funding ( <a href="#">State of Illinois</a> , Federal ( <a href="#">EPA</a> ; <a href="#">USDA</a> ), etc.).					
Anchoring of Manufactured Homes and Exterior Attachments	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Minimize the amount of infrastructure exposed to hazards	Severe Storms / Tornadoes	Completed	Through stricter ordinances and building codes, the Village is currently working with Mobile Home owners to ensure each unit is anchored properly.	The Village of New Milford has updated applicable ordinances and is working with homeowners to comply.
<b>Timeline:</b> Completed; Applicable ordinances and procedures are reviewed (every 1) yearly.					
<b>Funding:</b> None.					
Heating and Cooling Shelters	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Improve emergency sheltering in the county	Winter Storms / Drought and Extreme Heat	Ongoing/ High	The Village would like to use the Village Hall as a heating / cooling shelter. A backup generator will need to be obtained along with local coordination from Board members and residents.	The Village of New Milford is evaluating funding sources for these facilities.
<b>Timeline:</b> Generator to be purchased and installed within 5 years once funding is awarded to the Village.					
<b>Funding:</b> Village of New Milford general funds; Pre-Disaster Mitigation Funding; private lending; or grant funding ( <a href="#">State of Illinois</a> , Federal ( <a href="#">EPA</a> ; <a href="#">USDA</a> ), etc.).					
<b>Responsible:</b> Village of New Milford					

### North Park Water District (2019)

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Status/Priority	Comments (2014)	Comments (2019)
Public Education / Awareness	Goal: Develop long-term strategies to educate residents on the hazards affecting their community---Objective: Raise public awareness of hazard mitigation	All Hazards	Completed	NPPWD plans to raise awareness of the danger to water utilities during extreme cold (i.e., frozen services)	Implemented robo-calls, which allows us to target susceptible customers for advanced notification. Increased social media awareness as an additional communication method.
<b>Timeline:</b> Completed. <b>Funding:</b> None.					
Family Disaster Plans & Kits	Goal: Develop long-term strategies to educate residents on the hazards affecting their community---Objective: Raise public awareness of hazard mitigation	All Hazards	Medium	NPPWD would like obtain funding for family disaster plans & kits to stress the importance of safe drinking water.	NPPWD would like obtain funding for family disaster plans & kits to stress the importance of safe drinking water.
<b>Timeline:</b> Within 2 years after the funding is awarded. <b>Funding:</b> North Park Water District general funds.					
Back-up Generators for Critical Facilities	Goal: Lessen the impacts of hazards to new and existing infrastructure---Objective: Equip public facilities and communities to guard against damage caused by secondary effects on hazards	All Hazards	Completed	NPPWD wishes to seek funding to obtain back-up generators for critical water facilities within the Machesney park, Roscoe and Loves Park area.	Generators at critical sites are included in the 5 year capital plan.
<b>Timeline:</b> Within 3 years after the funding is awarded. <b>Funding:</b> North Park Water District General funds.					
Structure Elevation	Goal: Lessen the impacts of hazards to new and existing infrastructure---Objective: Minimize the amount of infrastructure exposed to hazards	Flooding / Dam and Levee Failure	Completed	NPPWD has identified several structures that would benefit from structure elevation renovations. NPPWD will seek federal funding for future projects.	Susceptible facilities have been raised above flood plain.
<b>Timeline:</b> Completed. <b>Funding:</b> None.					
Install Sump Pumps	Goal: Lessen the impacts of hazards to new and existing infrastructure---Objective: Minimize potential damage to foundations and household/critical facility utilities	Flooding / Dam and Levee Failure	Completed	NPPWD would like to seek funding to install backflow assemblies to protect cross contamination of public water.	Backflow devices are required in all commercial buildings and residential buildings with hazards as defined by IEPA.

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Status/Priority	Comments (2014)	Comments (2019)
<b>Timeline:</b> Completed. <b>Funding:</b> None.					
Harden Infrastructure	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Minimize the amount of infrastructure exposed to hazards	Severe Storms / Tornadoes	Medium	NPPWD wishes to seek funding to harden existing water infrastructure in the event of severe storms and tornadoes.	No comment.
<b>Timeline:</b> Within 5 years after the funding is awarded. <b>Funding:</b> North Park Water District general funds; Pre-Disaster Mitigation Funding; private lending; or grant funding ( <a href="#">State of Illinois</a> , Federal ( <a href="#">EPA</a> ; <a href="#">USDA</a> ), etc.).					
Bury Power Lines	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Minimize the amount of infrastructure exposed to hazards	Severe Storms / Tornadoes	Ongoing/ Low	NPPWD would like to convert above ground power lines to minimize the amount of infrastructure exposed to severe storms and tornadoes.	Have begun converting critical sites to underground power.
<b>Timeline:</b> Within 5 years after the funding is awarded. <b>Funding:</b> North Park Water District general funds.					
Emergency Plan / Protocol for HAZMAT Releases (Removed)	No longer applicable as hazardous chemicals have been eliminated from respective spaces relating to North Park Water District.				
HAZMAT Spill, Removal and Disposal Procedure	Goal: Create new or revise existing plans/maps---Objective: Review and update existing, or create new community plans and ordinances	HAZMAT	Completed	NPPWD will work with the Winnebago County LEPC to improve the County's HAZMAT response plans.	Groundwater protection setback zones have been established and communicated with local emergency response agencies.
<b>Timeline:</b> Completed. <b>Funding:</b> None.					
Heating and Cooling Shelters	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Improve emergency sheltering	Winter Storms / Extreme Heat	Ongoing/ Medium	NPPWD will continue to work with the municipalities it serves to increase the number of heating and cooling shelters for its residents.	Will continue to cooperate with local municipalities in all aspects of severe weather emergencies.
<b>Timeline:</b> Annually (1 year). <b>Funding:</b> North Park Water District general funds.					



Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Status/Priority	Comments (2014)	Comments (2019)
Develop Safety Procedures for Earthquakes	Goal: Improve emergency sheltering and procedures in the event of an earthquake--Objective: Review and update existing, or create new community earthquake plans	Earthquakes	Ongoing/ Low	NPPWD will work with Winnebago County will work to develop mutual aid agreements in event of an earthquake.	Will continue to cooperate with local municipalities in all aspects of emergencies.
<b>Timeline:</b> Annually (1 year).					
<b>Funding:</b> North Park Water District general funds.					
<b>Responsible:</b> North Park Water District					

### The Village of Pecatonica (2019)

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Status/Priority	Comments (2014)	Comments (2019)
Public Education / Awareness	Goal: Develop long-term strategies to educate residents on the hazards affecting their community--- Objective: Raise public awareness of hazard mitigation	All Hazards	Ongoing/ High	This will be overseen by the Village Board, thru press releases and Village website notices pertaining to mitigation issues.	This will continue to be overseen by the Village Board. In addition to press releases, and the website, we are now able to contact every household with our callout system.
<b>Timeline:</b> Ongoing.					
<b>Funding:</b> Village of Pecatonica general funds.					
Develop a Disaster Plan	Goal: Develop Disaster plan--- Objective: To inform Citizens of who to call and where to go in case of a disaster.	All Hazards	High	This will be overseen by the Public Works/ Public Safety Committee.	This plan will be developed by the Village Board with input from Police and Fire Departments and Social Service agencies.
<b>Timeline:</b> 2 years.					
<b>Funding:</b> Village of Pecatonica general funds.					
Emergency Planning Committee	Goal: Develop an Emergency Planning Committee--- Objective: To review and update existing, or create new community plans.	All Hazards	High	Village President to set up ADHOC committee.	This still needs to be setup. Delayed due to internal changes in the administration since 2014.
<b>Timeline:</b> 1 year.					
<b>Funding:</b> Village of Pecatonica general funds.					

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Status/Priority	Comments (2014)	Comments (2019)
Back-up Generators for Critical Facilities	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Equip public facilities and communities to guard against damage caused by secondary effects on hazards	All Hazards	Completed/Ongoing/ Low	The Village will attempt to secure funding to purchase generators for all Village buildings. This will be addressed by full Village Board.	The Village currently has one and options are being reviewed to increase.
<p><b>Timeline:</b> Completed; 3 years once funding becomes available.  <b>Funding:</b> Village of Pecatonica general funds; Pre-Disaster Mitigation Funding; private lending; or grant funding/donations (<a href="#">ComEd- Powering Safe Communities</a>, <a href="#">NiCor</a>, <a href="#">State of Illinois</a>, Federal (<a href="#">EPA</a>; <a href="#">USDA</a>), etc.).</p>					
Develop Procedures Specific to Earthquakes and Educate Public	Goal: Develop Procedures specific to Earthquakes --- Objective: Establish guidelines and procedures in case of an earthquake	Earthquakes	Low	This mitigation item will be assigned to emergency planning committee.	This will be assigned to the emergency committee once established.
<p><b>Timeline:</b> 2 years.  <b>Funding:</b> Village of Pecatonica general funds.</p>					
Burn / Water Ban Ordinances	Goal: Create new or revise existing plans/maps--- Objective: Review and update existing, or create new community plans and ordinances	Extreme Heat / Drought	Completed	Public works / Public safety committee will review ordinances on a yearly basis.	Currently the Village does not allow burning. A water ban ordinance can be implemented if needed.
<p><b>Timeline:</b> Completed.  <b>Funding:</b> None.</p>					
Culvert / Storm Drain Repair	Goal: Culvert / Storm drain Repair-- -Objective: Ensure all culverts and storm drains are working properly and evaluate if others are needed.	Flooding / Dam and Levee Failure	Ongoing/ Low	This mitigation item will be addressed by the Public Works Director. Plan already in place but will be updated and reviewed yearly.	Public Works inspects these areas on a regular basis and if there are heavy rains a close eye is kept on these areas.
<p><b>Timeline:</b> Ongoing.  <b>Funding:</b> Village of Pecatonica general funds.</p>					
Floodplain Ordinances	Goal: Create new or revise existing plans/maps--- Objective: Review and update existing, or create new community plans and ordinances	Flooding / Dam and Levee Failure	Medium	The Public Works / Public Safety Committee will address the subject.	This still needs to be setup.
<p><b>Timeline:</b> 5 years.  <b>Funding:</b> Village of Pecatonica general funds.</p>					

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Status/Priority	Comments (2014)	Comments (2019)
Identification of Structures in Floodplains	Goal: Identification of Structures In floodplains--- Objective: To create a list of all Structures located in Floodplains.	Flooding / Dam and Levee Failure	Ongoing/ Medium	This will be addressed by the emergency planning committee.	We currently have a map that identifies the floodplain area however, it still needs more work done by the committee once established.
<b>Timeline:</b> Ongoing; 3 years' final completion. <b>Funding:</b> Village of Pecatonica general funds; Pre-Disaster Mitigation Funding; private lending; or grant funding.					
Emergency Plan / Protocol for HAZMAT Releases	Goal: Create new or revise existing plans/maps--- Objective: Review and update existing, or create new community plans and ordinances	HAZMAT	Completed	The Pecatonica Fire – Police and Public works departments all have currant plans in place.	These plans are still in effect.
<b>Timeline:</b> Completed. <b>Funding:</b> None.					
HAZMAT Spill, Removal, and Disposal Procedure	Goal: Create new or revise existing plans/maps--- Objective: Review and update existing, or create new community plans and ordinances	HAZMAT	Completed	Public Works Department has plan in place in conjunction with the Police Department.	This plan is still in place with the Public Works and Police Department
<b>Timeline:</b> Completed. <b>Funding:</b> None.					
Floodplain and Stormwater Ordinances	Goal: Create new or revise existing plans/maps--- Objective: Review and update existing, or create new community plans and ordinances	Flooding / Dam and Levee Failure	Completed	The Village will continue to maintain and update their ordinances to comply with the County and State requirements.	The Village created a stormwater ordinance in 2015 that established regulations that limit the discharge of stormwater and manage erosion.
<b>Timeline:</b> Completed. <b>Funding:</b> None					
Active Tree Management	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Active tree management near critical facilities and essential facilities to minimize risk of damage	Severe Storms / Tornadoes	Ongoing/ Medium	This mitigation item is ongoing and is handled by the Public works department.	This will continue to be handled by the Public Works Department.
<b>Timeline:</b> Ongoing. <b>Funding:</b> Village of Pecatonica general funds.					

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Status/Priority	Comments (2014)	Comments (2019)
Provide and Publicize Shelters / Safe Rooms	Goal: Provide and Publicize Shelters / Safe Rooms--- Objective: To Inform the Public of where they can go in case of a severe storm.	Severe Storms / Tornadoes	Medium	This mitigation item is ongoing and the Village has set buildings for this purpose. This will be handled by the Emergency planning Committee.	This will be assigned to the emergency committee once established.
<b>Timeline:</b> 2 years.					
<b>Funding:</b> Village of Pecatonica general funds.					
Winter Storms - Dissemination of Information	Goal: Provide contacts for residents if snowed in.---Objective: To inform Residents of whom to call if they are stranded at home or in town.	Winter Storms	High	Will be addressed by emergency planning committee.	This will be assigned to the emergency committee once established.
<b>Timeline:</b> 2 years.					
<b>Funding:</b> Village of Pecatonica general funds.					
Heating and Cooling Shelters	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Improve emergency sheltering	Winter Storms / Extreme Heat	Completed/Ongoing/ Low	The Village has two Buildings assigned for this but will try to establish two more shelters in different areas of the Village.	The Village of Pecatonica currently has one building assigned for this more work needs to be done to add other sites.
<b>Timeline:</b> Ongoing.					
<b>Funding:</b> Village of Pecatonica general funds City of Loves Park general funds; Pre-Disaster Mitigation Funding; private lending; or grant funding ( <a href="#">State of Illinois</a> , Federal ( <a href="#">EPA</a> ; <a href="#">USDA</a> ), etc.).					
<b>Responsible:</b> Village of Pecatonica; public works					

### Rock River Water Reclamation District (2019)

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Status/Priority	Comments (2014)	Comments (2019)
Mutual Aid Agreements	Goal: Create new or revise existing plans/maps---Goal: Lessen the impacts of hazards to new and existing infrastructure	All Hazards	Ongoing/ Medium	RRWRD will formalize existing agreements. RRWRD does not anticipate accumulating any cost for this strategy, no funding will be sought after.	Formalized one Mutual Aid Agreement; looking to implement additional with appropriate agencies.
<b>Timeline:</b> Ongoing; as appropriate.					
<b>Funding:</b> Rock River Water Reclamation District general funds (as needed).					

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Status/Priority	Comments (2014)	Comments (2019)
Back-up Generators for Critical Facilities	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Equip public facilities and communities to guard against damage caused by secondary effects on hazards	All Hazards	Completed	All critical lift stations and WWTPs have back-up generators.	All critical lift stations and WWTPs have back-up generators.
<b>Timeline:</b> Completed. <b>Funding:</b> None.					
Harden Infrastructure	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Minimize the amount of infrastructure exposed to hazards	Severe Storms / Tornadoes	Completed	RRWRD has completed the planning stage to harden existing infrastructure. Construction is slated to being in 2015. RRWRD is applying for an IEPA loan to help fund this project.	Project completed and infrastructure has been hardened.
<b>Timeline:</b> Completed. <b>Funding:</b> None.					
<b>Responsible:</b> Rock River Water District staff.					

### The City of Rockford (2019)

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Status/Priority	Comments (2014)	Comments (2019)
Create Evacuation Notification Strategies	Goal: Improve Emergency Response procedures--- Objective: Create Evacuation Notification Strategies	All Hazards	Completed	Currently in progress with expected completion end of 2014 - mid 2015. Funding source from City of Rockford general funds. PW Emergency Manager, ESDA Coordinator, and Police oversee this mitigation item.	Completed in 2015 and updated in 2016 and 2018 by ESDA Coordinator.
<b>Timeline:</b> Completed. <b>Funding:</b> None.					
Create a Public Works Recovery Plan	Goal: Improve Emergency Response procedures--- Objective: Create a Public Works Recovery Plan	All Hazards	Completed	To be completed by end of 2014 Funding source from City of Rockford general funds. PW Emergency Manager oversee this mitigation item.	Completed in 2015 updated in 2018. Public works Emergency Manager oversee this mitigation item.

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Status/Priority	Comments (2014)	Comments (2019)
<b>Timeline:</b> Completed. <b>Funding:</b> None.					
Create and Update Mutual Aid Agreements with Outside Agencies and Contractors	Goal: Improve Emergency Response procedures--- Objective: Create and Update Mutual Aid Agreements with Outside Agencies and Contractors	All Hazards	Completed	Expected completion end of 2014 – mid 2015. Funding source from City of Rockford general funds. PW Emergency Manager, ESDA Coordinator, and Police oversee this mitigation item.	Completed in 2015 updated in 2018 for Public Works.
<b>Timeline:</b> Completed. <b>Funding:</b> None.					
Follow In Place Plans/Procedures/Strategies for Hazard Situations	Goal: Improve Emergency Response procedures--- Objective: Follow In Place Plans/Procedures/Strategies for Hazard Situations	All Hazards	Ongoing/High	Currently in progress. Funding source from City of Rockford general funds. All City of Rockford Departments oversee this mitigation item.	This mitigation item is ongoing. Funding source from City of Rockford general funds. All City of Rockford Departments oversee this mitigation item.
<b>Timeline:</b> Ongoing. <b>Funding:</b> City of Rockford General Funds.					
Run Public Service Announcements and Educational Material for Each Hazard	Goal: Improve safety for our citizens during disasters---Objective: Run Public Service Announcements and Educational Material for Each Hazard	All Hazards	Ongoing/High	Currently in progress. Funding source from City of Rockford general funds. PIO, PW Emergency Manager, ESDA Coordinator, and Police oversee this mitigation item.	This mitigation item is ongoing. Funding source from City of Rockford general funds. Strategic Communications Manager, Public Works Emergency Manager, ESDA Coordinator, Fire and Police Departments oversee this mitigation item.
<b>Timeline:</b> Ongoing. <b>Funding:</b> City of Rockford General Funds.					
Follow Load Restrictions on Building Design, Fire Suppression and Electrical/Plumbing Requirements	Goal: Improve safety for our citizens during disasters---Objective: Follow Load Restrictions on Building Design, Fire Suppression and Electrical/Plumbing Requirements	All Hazards	Ongoing/High	Currently in progress. Funding source from City of Rockford general funds. The Building Code Official oversees this mitigation item.	This mitigation item is ongoing. Funding source from City of Rockford general funds. The Building Code Official oversees this mitigation item.

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Status/Priority	Comments (2014)	Comments (2019)
<b>Timeline:</b> Ongoing. <b>Funding:</b> City of Rockford General Funds.					
Train Additional Staff in Emergency Management	Goal: Improve Emergency Response procedures--- Objective: Train Additional Staff in Emergency Management	All Hazards	Ongoing/ Medium	Currently in progress with expected completion by end of 2015. Funding source from City of Rockford general funds. PW Emergency Manager, ESDA Coordinator, and Police oversee this mitigation item.	This mitigation item is ongoing. Funding source from City of Rockford general funds. Public works Emergency Manager, ESDA Coordinator, Fire and Police Departments oversee this mitigation item.
<b>Timeline:</b> Ongoing. <b>Funding:</b> City of Rockford General Funds.					
Map City Wells and Cone of Influence	Goal: Monitor Water Supply---Objective: Map city wells and cone of influence	Extreme Heat and Drought	Completed	Maps have been completed. Funding source was from the City of Rockford water funds. The Water Superintendent oversees this mitigation item.	Completed by the City of Rockford and should be updated as needed.
<b>Timeline:</b> Completed. <b>Funding:</b> None.					
Map Groundwater Ordinances and Plume of Contamination	Goal: Monitor Water Supply---Objective: Map groundwater ordinances & plume of contamination	Extreme Heat and Drought	Low	Ordinances have been mapped from 2006 to present, additional research is required for earlier ordinances. Funding source from the City of Rockford general funds. The Stormwater Administrator-GIS oversees this mitigation item.	No Change. Updated as needed will continue to research ordinances prior to 2006.
<b>Timeline:</b> 2 years. <b>Funding:</b> City of Rockford General Funds.					

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Status/Priority	Comments (2014)	Comments (2019)
Regularly Check for Leaks to Minimize Water Supply Losses	Goal: Monitor Water Supply---Objective: Regularly Check for Leaks to Minimize Water Supply Losses	Extreme Heat and Drought	Ongoing/ Low	This mitigation item is ongoing with no completion date expected. Funding source from City of Rockford water funds. The Water Superintendent oversee this mitigation item.	This item is ongoing mitigation item with no expected completion date (as of 2019); the City of Rockford is divided into quadrants and an annual inspection is completed on one quadrant per year. Funding source from City of Rockford Water Funds. Water Superintendent oversees this mitigation item.
<b>Timeline:</b> Ongoing. <b>Funding:</b> City of Rockford General Funds.					
Begin Integrated Planning for Water Quality Improvements (Removed)	The City of Rockford withdrew from this agreement and this item is being completed independently of the City of Rockford; the Water Department has remained involved.				
Install Rain Gauges Throughout City to Better Understand Rainfall Trends	Goal: Monitor Water Supply---Objective: Install rain gauges throughout city to better understand rainfall trends	Extreme Heat and Drought	Ongoing/ Medium	Design is underway with an expected completion date of mid-2015; Funding sources from the City of Rockford Water and CIP funds.	Weather Station was designed for a portion of the Alpine Dam Improvements; this program will be re-evaluated for year 2020; Funding sources from the City of Rockford Water Department and Capital Improvement Program Funds.
<b>Timeline:</b> 1 year to 5 years. <b>Funding:</b> City of Rockford General Funds.					



Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Status/Priority	Comments (2014)	Comments (2019)
Restrict Water Usage During Drought Events	Goal: Require water conservation during drought conditions--- Objective: Restrict Water Usage During Drought Events	Extreme Heat and Drought	Ongoing/ Medium	This mitigation item is ongoing when required. Funding source from the City of Rockford Water funds. The Water Superintendent oversees this mitigation item.	This mitigation item is ongoing when required. Supervisory control and data acquisition (SCADA) system has been implemented and assists in this. Funding source from City of Rockford Water Department. The Water Superintendent oversees this mitigation item.
<b>Timeline:</b> Ongoing. <b>Funding:</b> City of Rockford General Funds.					
Rewrite City's Stormwater Ordinance and Stormwater Technical Manual	Goal: Adopt and enforce building codes and development standards--- Objective: Rewrite City's Stormwater Ordinance and Stormwater Technical Manual	Flooding / Dam and Levee Failure	Completed	Draft Ordinance is complete and draft technical manual underway; expected completion end of 2014. Funding source from City of Rockford general funds. The Stormwater Administrator oversees this mitigation item.	Both items completed in 2015 with regular updates as needed. The Stormwater Manager oversees this mitigation item.
<b>Timeline:</b> Completed. <b>Funding:</b> None.					

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Status/Priority	Comments (2014)	Comments (2019)
Enforce Flood Mitigation, Flood Control, Stormwater Management	Goal: Adopt and enforce building codes and development standards--- Objective: Enforce Flood Mitigation, Flood Control, Stormwater Management	Flooding / Dam and Levee Failure	Completed	SOPs have been created providing guidance on inspection, maintenance and enforcement measures. Ordinance revisions are underway for enforcement and code hearing process for all ordinance violations. Funding source from City of Rockford general funds. The Stormwater Administrator oversees this mitigation item.	Standard operating procedures have been created providing guidance on inspection, maintenance and enforcement measures. Ordinance revisions are underway for enforcement and code hearing process for all ordinance violations. Funding is provided from the City of Rockford general funds. The Stormwater Administrator oversees this mitigation item.
<b>Timeline:</b> Completed. <b>Funding:</b> None.					
Enforce Post Construction Management Requirements	Goal: Adopt and enforce building codes and development standards--- Objective: Enforce Post Construction Management Requirements	Flooding / Dam and Levee Failure	Completed	This mitigation item is part of the new stormwater ordinance. Agreement and maintenance templates have been completed and used on projects. Ordinance revisions are underway for enforcement and code hearing process for all ordinance violations. Funding source from City of Rockford general funds. The Stormwater Administrator oversees this mitigation item.	This item was completed in 2015 with on-going inspections and updates as needed including code hearing processes. The Stormwater Manager oversees this mitigation item.

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Status/Priority	Comments (2014)	Comments (2019)
<b>Timeline:</b> Completed. <b>Funding:</b> None.					
Continue To Map Priority Acquisition And Unsuitable For Development Areas	Goal: Limit or restrict development in floodplain areas---Objective: Continue To Map Priority Acquisition And Unsuitable For Development Areas	Flooding / Dam and Levee Failure	Ongoing/ High	This mitigation item is ongoing. Expected completion end of 2016. Funding source from City of Rockford general funds. The Stormwater Administrator-GIS oversees this mitigation item.	This mitigation item is ongoing. The City of Rockford follows state and federally recognized floodplain regulations. The Stormwater Manager and GIS department oversee this mitigation item.
<b>Timeline:</b> 5 years. <b>Funding:</b> City of Rockford General Funds.					
Enforce Landscaping And Buffer Requirements, Open Space Requirements, Impervious Ratio Requirements	Goal: Limit or restrict development in floodplain areas---Objective: Enforce landscaping and buffer requirements, open space requirements, impervious ratio requirements	Flooding / Dam and Levee Failure	Ongoing/ High	This mitigation item is ongoing and is enforced through Zoning/Building permits. Zoning Officer and Building Code Official oversee this mitigation item.	No comment.
<b>Timeline:</b> Ongoing. <b>Funding:</b> City of Rockford General Funds.					
Map Structures Located Within Floodplains and Map Repetitive Loss and Substantially Damaged Properties	Goal: Improve Flood Risk Assessment---Objective: Map structures located within floodplains and map repetitive loss and substantially damaged properties	Flooding / Dam and Levee Failure	Completed	This mitigation item is ongoing. Expected completion end of 2015, basic map completed but new floodplain maps are expected in 2015. Funding source from City of Rockford general funds. The Stormwater Administrator-GIS oversee this mitigation item.	This item was completed in 2017. The Stormwater Manager oversees this mitigation item.
<b>Timeline:</b> Completed. <b>Funding:</b> None.					

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Status/Priority	Comments (2014)	Comments (2019)
Develop Flood Risk Map Educational Materials for New FEMA Maps	Goal: Improve Flood Risk Assessment---Objective: Develop flood risk map educational materials for new FEMA Maps	Flooding / Dam and Levee Failure	Completed	The City of Rockford has received technical assistance from FEMA to help create these materials. Expected completion in early 2015. The City wishes to seek additional funding with limited funding source from general funds. The Stormwater Administrator oversees this mitigation item.	This item was completed and went into effect in February 2016 with the issuance of new FEMA maps. The Stormwater Manager oversees this mitigation item.
<b>Timeline:</b> Completed. <b>Funding:</b> None.					
Replace Water Level Gauges at Page Park And Levings Lake Dam; Install Water Level Gauge at Alpine Dam	Goal: Improve Flood Risk Assessment---Objective: Replace water level gauges at Page Park and Levings Lake Dam; Install water level gauge at Alpine Dam	Flooding / Dam and Levee Failure	Completed/ Ongoing/ Medium	Design underway and expected completion mid- 2015. Funding sources are from Water and CIP funds. The Stormwater Administrator and Water Superintendent oversees this mitigation item.	This mitigation item was completed in 2017 for Page Park and Levings Lake Dam; Alpine Dam Improvements to be completed in 2020 which will include this item. The funding source is Capital Improvement Program general funds. The Stormwater manager oversees this mitigation item.
<b>Timeline:</b> Completed/Ongoing. <b>Funding:</b> City of Rockford General Funds.					
Participate in the Community Rating System	Goal: Manage the floodplain beyond minimum requirements---Objective: Participate in the Community Rating System	Flooding / Dam and Levee Failure	Ongoing/ High	Expected application completion end of 2015. Funding source from City of Rockford general funds. The Stormwater Administrator oversees this mitigation item.	This mitigation item is ongoing; The City of Rockford continues to participate in the Community Rating System (CRS). The Stormwater Manager oversees this mitigation item.

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Status/Priority	Comments (2014)	Comments (2019)
<p><b>Timeline:</b> Ongoing.  <b>Funding:</b> City of Rockford General Funds.</p>					
Improve Compliance with the NFIP	<p>Goal: Manage the floodplain beyond minimum requirements---  Objective: Improve compliance with the NFIP</p>	<p>Flooding / Dam and Levee Failure</p>	<p>Ongoing/ High</p>	<p>This mitigation item is ongoing. Limited funding source from City of Rockford general funds. The Stormwater Administrator oversees this mitigation item.</p>	<p>This item is ongoing. The flood plain ordinance went into effect in 2015 and the City of Rockford standard is above minimum compliance standards with the NFIP. The Stormwater Manager oversees this item.</p>
<p><b>Timeline:</b> Ongoing.  <b>Funding:</b> City of Rockford General Funds.</p>					
Flood-Proof, Relocate, Elevate and Demolish At-Risk Properties	<p>Goal: Manage the floodplain beyond minimum requirements---  Objectives: Flood-proof, relocate, elevate and demolish at risk properties</p>	<p>Flooding / Dam and Levee Failure</p>	<p>Ongoing/ High</p>	<p>This mitigation item is ongoing with no expected completion date due to lack of funds for City to accomplish. The City of Rockford will seek additional funding. This mitigation items is enforced through building permits and is overseen by the Stormwater Administrator and Building Code Official.</p>	<p>This mitigation item is ongoing. Due to limited funds, it is reviewed on a case by case basis and updated as needed. The Beverly Park neighborhood was identified as an area of concern for focus. The Stormwater Manager oversees this item along with the Building Code Official.</p>
<p><b>Timeline:</b> 3-4 years.  <b>Funding:</b> City of Rockford General Funds.</p>					

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Status/Priority	Comments (2014)	Comments (2019)
Complete Alpine Dam Rehabilitation	Goal: Conduct regular maintenance for drainage systems and flood control structures---Objectives: Complete Alpine Dam rehabilitation	Flooding / Dam and Levee Failure	Ongoing/ High	This mitigation item is ongoing. Plans are complete and easements have been obtained however there is a lack of funding to accomplish this item. The City of Rockford will seek additional funding sources. The Stormwater Administrator and City Engineer oversee this mitigation item.	The City of Rockford secured funding for this mitigation items. Design Phase is near completion with implementation set for 2020. The Stormwater Manager and City Engineer are overseeing this mitigation item.
<b>Timeline:</b> 3 years. <b>Funding:</b> City of Rockford General Funds, state and federal funds.					
Continue Watershed Assessment and Planning	Goal: Form Partnerships to support floodplain management---Objective: Continue Watershed Assessment and Planning	Flooding / Dam and Levee Failure	Ongoing/ Low	Several watersheds have been completed with one underway. The City of Rockford wishes to seek additional funding. Funding is an issue for continued studies, current funding source is CIP. The Stormwater Administrator oversees this mitigation item.	Several watersheds have been completed. Airport East watershed study is in currently in review; Funding is an issue for continued studies, current funding source is Capital Improvement Program. The Stormwater Manager oversees this mitigation item.
<b>Timeline:</b> 5 years. <b>Funding:</b> City of Rockford General Funds.					
Review and Update Emergency Plan and Protocol for HAZMAT Releases	Goal: Review and update emergency procedures for hazard materials--- Objective: Review and update emergency plan and protocol for HAZMAT releases	HAZMAT	Ongoing/ Medium	This mitigation item is ongoing. Funding source from the City of Rockford general funds. The Fire Department oversees this mitigation item.	This mitigation item is ongoing. Funding source from the City of Rockford general funds. The Fire Department oversees this mitigation item.
<b>Timeline:</b> Ongoing. <b>Funding:</b> City of Rockford General Funds.					

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Status/Priority	Comments (2014)	Comments (2019)
Review and Update HAZMAT Spill, Removal and Disposal Procedures	Goal: Review and update emergency procedures for hazard materials--- Objective: Review and Update HAZMAT Spill, Removal and Disposal Procedures	HAZMAT	Ongoing/ Medium	This mitigation item is ongoing. Funding source from the City of Rockford general funds. The Fire Department oversees this mitigation item	This mitigation item is ongoing. Funding source from the City of Rockford general funds. The Fire Department oversees this mitigation item
<b>Timeline:</b> Ongoing. <b>Funding:</b> City of Rockford General Funds.					
Enforce Tree and Brush Trimming / Pruning Requirements / Planting and Removal Requirements	Goal: Reduce Impacts to Infrastructure---Objective: Enforce Tree and Brush Trimming / Pruning Requirements / Planting and Removal Requirements	Severe Storms / Tornadoes	Ongoing/ High	This mitigation item is ongoing. Ordinance revisions are underway for enforcement and code hearing process for all ordinance violations. Funding source from the City of Rockford general funds. The Street Superintendent and Neighborhood Standards oversee this mitigation item.	This mitigation item is ongoing. Ordinance revisions were complete in 2018 for enforcement and code hearing process for all ordinance violations. The Street Superintendent and Neighborhood Standards oversee this mitigation item.
<b>Timeline:</b> Ongoing. <b>Funding:</b> City of Rockford General Funds.					
Provide and Publicize Heating and Cooling Shelters	Goal: Educate citizens and property owners on severe weather conditions--- Objective: Provide and publicize heating and cooling shelters	Severe Storms / Tornadoes	Ongoing/ Medium	This mitigation item is ongoing. Funding source from the City of Rockford general funds. The PIO and ESDA Coordinator oversee this mitigation item.	This mitigation item is ongoing. Funding source from the City of Rockford general funds. The Strategic Communications Manager, ESDA Coordinator, and Health & Human Services Department oversee this mitigation item.
<b>Timeline:</b> Ongoing. <b>Funding:</b> City of Rockford General Funds.					

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Status/Priority	Comments (2014)	Comments (2019)
Follow Parking Restrictions for Emergency Events, Follow Salting and Plowing Policies	Goal: Reduce Impacts to Roadways---Objective: Follow parking restrictions for emergency events, follow salting and plowing policies	Severe Storms / Winter Storms	Ongoing/ Medium	This mitigation item is ongoing when required. Funding source from the City of Rockford parking and general funds. The Parking Contractor, Street Superintendent, and police oversee this mitigation item.	This item is ongoing when required. Funding source from the City of Rockford parking and the City of Rockford general funds. The Parking contractor, Street Superintendent, and police oversee this mitigation item.
<b>Timeline:</b> Ongoing. <b>Funding:</b> City of Rockford General Funds.					
Educate Property Owners About Freezing Pipes	Goal: Educate citizens and property owners on severe weather conditions---Objective: Educate property owners about freezing pipes	Winter Storms	Ongoing/ Medium	This mitigation item is ongoing. Funding source from the City of Rockford Water funds. The Water Superintendent oversees this mitigation item.	This mitigation item is ongoing and comes up as weather demands. The funding source is City of Rockford Water Department. The Water Superintendent oversees this item.
<b>Timeline:</b> Ongoing. <b>Funding:</b> City of Rockford General Funds.					
Back-up Generators for Critical Facilities	Goal: Lessen the impacts of hazards to new and existing infrastructure--Objective: Equip public facilities and communities to guard against damage caused by secondary effects on hazards	All Hazards	Ongoing/ High	The City currently has five large generators at water facilities to assure their ability to operate pumps in the event of a prolonged power outage as well as communicate with each generator site. The Street Department has one generator to ensure the ability to provide continued support in all hazards.	This mitigation item is ongoing. Funding source from the City of Rockford General Fund. As critical buildings are updated, the need for a generator is evaluated. The Water Superintendent, Street Superintendent and City Engineer oversee this mitigation item.
<b>Timeline:</b> 5 years. <b>Funding:</b> City of Rockford General Funds.					



Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Status/Priority	Comments (2014)	Comments (2019)
<b>Responsible:</b> Noted throughout this matrix within the 2019 comments column for each respective mitigation strategy where appropriate.					

### The Village of Rockton (2019)

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Status/Priority	Comments (2014)	Comments (2019)
Public Education / Awareness	Goal: Develop long-term strategies to educate residents on the hazards affecting their community--- Objective: Raise public awareness of hazard mitigation	All Hazards	Ongoing/ High	Rockton plans to update its website to include emergency information for residents.	Rockton is periodically updating website and posting information on Facebook with emergency information.
<b>Timeline:</b> The Village evaluates the website information at least quarterly each year (1 year). <b>Funding:</b> Village of Rockton general funds.					
Back-up Generators for Critical Facilities	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Equip public facilities and communities to guard against damage caused by secondary effects on hazards	All Hazards	Ongoing/ High	Rockton wishes to seek funding to obtain additional back-up generators for critical facilities. The village currently provides back-up generators at the critical municipal facilities.	Rockton continues to pursue additional funding for Generators.
<b>Timeline:</b> Within 3 years after funding is made available for the project. <b>Funding:</b> Village of Rockton general funds; Pre-Disaster Mitigation Funding; private lending; or grant funding/donations ( <a href="#">ComEd- Powering Safe Communities</a> , <a href="#">NiCor</a> , <a href="#">State of Illinois</a> , Federal ( <a href="#">EPA</a> ; <a href="#">USDA</a> ), etc.).					
Enhance Communication Systems	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Equip public facilities and communities to guard against damage caused by secondary effects on hazards	All Hazards	Medium	Rockton plans to improve the emergency communication system currently in place.	No comment.
<b>Timeline:</b> Within 5 years upon receipt of the funding for this project. <b>Funding:</b> Village of Rockton general funds.					
Active Tree Management	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Active tree management near critical facilities and essential facilities to minimize risk of damage	All Hazards	Ongoing/ Medium	Rockton will be implementing additional action plans to minimize tree damage to power lines as well as other infrastructure.	Rockton has developed a yearly tree trimming program and is working with Rock Energy to remove tree hazards by power lines.
<b>Timeline:</b> Trees will be removed annually with available funds allocated for such work (1 year). <b>Funding:</b> Village of Rockton general funds.					

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Status/Priority	Comments (2014)	Comments (2019)
Establish Local Emergency Planning Committee	Goal: Create new or revise existing plans/maps---Goal: Lessen the impacts of hazards to new and existing infrastructure	All Hazards	Completed	Rockton will develop a Local Emergency Planning Committee and work with the Winnebago County Local Emergency Planning Committee (LEPC).	The Village of Rockton in conjunction with the Fire District and the State Of Illinois has formed a committee.
<b>Timeline:</b> Completed. <b>Funding:</b> None.					
Identification of Floodplain Structures	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Examine flood loss areas and generate a comprehensive list of structures located in floodplains	Flooding / Dam and Levee Failure	Ongoing/ High	Rockton plans to create a comprehensive list of structures located in the floodplain.	Rockton continues to work on and maintain a list of structures.
<b>Timeline:</b> Structures will be identified annually with available funds that are allocated for this project (1 year). <b>Funding:</b> Village of Rockton general funds.					
Structure Elevation	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Minimize the amount of infrastructure exposed to hazards	Flooding / Dam and Levee Failure	Ongoing/ High	The Village has been proactive in requiring any new or modified structure to be constructed a minimum of 1 foot above the 100 year flood elevation.	Rockton is working with the Winnebago County Building department to elevate all structures.
<b>Timeline:</b> Within 3 years after the Village is awarded funding. <b>Funding:</b> Village of Rockton general funds; Pre-Disaster Mitigation Funding; private lending; or grant funding.					
Floodplain and Stormwater Ordinances	Goal: Create new or revise existing plans/maps--- Objective: Review and update existing, or create new community plans and ordinances	Flooding / Dam and Levee Failure	High	The Village will continue to maintain and update their ordinances to comply with the County and State requirements.	No comment.
<b>Timeline:</b> Every 2 years. <b>Funding:</b> Village of Rockton general funds.					
Develop Alternate Traffic Routes	Goal: Create new or revise existing plans/maps--- Objective: Review and update existing, or create new community plans and ordinances	HAZMAT	Low	Rockton will work with the Winnebago County LEPC to improve the County's HAZMAT response plans.	No comment.
<b>Timeline:</b> Within 3 years after the Village is awarded funding. <b>Funding:</b> Village of Rockton general funds.					

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Status/Priority	Comments (2014)	Comments (2019)
HAZMAT Spill, Removal and Disposal Procedure	Goal: Create new or revise existing plans/maps--- Objective: Review and update existing, or create new community plans and ordinances	HAZMAT	Medium	Rockton will work with the Winnebago County LEPC to improve the County's HAZMAT response plans.	No comment.
<b>Timeline:</b> Within 3 years after the Village is awarded funding. <b>Funding:</b> Village of Rockton general funds.					
Bury Power Lines	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Active tree management near critical facilities and essential facilities to minimize risk of damage	Severe Storms / Tornadoes	High	The Village has been working with Rock Energy to bury all new and relocated facilities.	No comment.
<b>Timeline:</b> Within 10 years after the Village is awarded funding. <b>Funding:</b> Village of Rockton general funds; Pre-Disaster Mitigation Funding; private lending; or grant funding ( <a href="#">State of Illinois</a> , Federal ( <a href="#">EPA</a> ; <a href="#">USDA</a> ), etc.).					
Install Snow Fences	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Minimize the amount of infrastructure exposed to hazards	Winter Storms	Completed	This mitigation item is ongoing in the County the Highway Department. Rockton will work with the County to improve this mitigation item.	Rockton Continues to work with the County and has purchased and installs snow fencing.
<b>Timeline:</b> Completed. <b>Funding:</b> Village of Rockton general funds; Pre-Disaster Mitigation Funding; private lending; or grant funding ( <a href="#">State of Illinois</a> , Federal ( <a href="#">EPA</a> ; <a href="#">USDA</a> ), etc.).					
Heating and Cooling Shelters	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Improve emergency sheltering	Winter Storms / Extreme Heat	Medium	Rockton wishes to seek funding to increase the number of heating and cooling shelters for its residents.	No comment.
<b>Timeline:</b> Within 5 years after the Village is awarded funding. <b>Funding:</b> City of Loves Park general funds; Pre-Disaster Mitigation Funding; private lending; or grant funding ( <a href="#">State of Illinois</a> , Federal ( <a href="#">EPA</a> ; <a href="#">USDA</a> ), etc.). <b>Responsible:</b> Village Public Works Director; & The Village of Rockton					

### The Village of Roscoe (2019)

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Status/Priority	Comments (2014)	Comments (2019)
Back-up Generators for Critical Facilities	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Equip public facilities and communities to guard against damage caused by secondary effects on hazards	All Hazards	Completed	Roscoe wishes to seek funding to obtain additional back-up generators for critical facilities.	The Village of Roscoe has constructed a new Police Department building which is 100% backed up by a generator, with Uninterrupted Power Supply (UPS) systems to ensure zero down time. Critical systems, including IT and access control in Village Hall are linked to the generator as well. Additionally, Com Ed has installed a 'Smart Grid' network throughout the Village that involves distribution automation to immediately re-route power to effected areas.
<b>Timeline:</b> Completed. <b>Funding:</b> None.					
Enhance Communication Systems	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Equip public facilities and communities to guard against damage caused by secondary effects on hazards	All Hazards	Completed	Roscoe plans to improve the emergency communication system currently in place.	Since 2014, the Village of Roscoe has implemented a new communication system and they now communicate with other agencies utilizing the "StarCom" radio system.
<b>Timeline:</b> Completed. <b>Funding:</b> None.					
Active Tree Management	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Active tree management near critical facilities and essential facilities to minimize risk of damage	All Hazards	Completed/ Ongoing	Roscoe will implement additional action plans to minimize tree damage to power lines as well as other infrastructure.	The Village of Roscoe now contracts with private tree trimming vendors on an annual basis to minimize risk to power lines and other infrastructure.
<b>Timeline:</b> Completed/Ongoing. <b>Funding:</b> Village of Roscoe general funds.					

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Status/Priority	Comments (2014)	Comments (2019)
Mutual Aid Agreements	Goal: Lessen the impacts of hazards to new and existing infrastructure---	All Hazards	Ongoing/ Medium	Roscoe will work with the Winnebago County Local Emergency Planning Committee (LEPC) and other Agencies in the County to develop and improve mutual aid agreements within the county.	The Village of Roscoe has increased communication and inter-governmental cooperation with surrounding communities, including in the areas of mutual aid.
<b>Timeline:</b> Ongoing.					
<b>Funding:</b> Village of Roscoe general funds.					
Establish Local Emergency Planning Committee	Goal: Create new or revise existing plans/maps---Goal: Improve emergency sheltering and procedures in the event of an earthquake	All Hazards	Low	Roscoe will develop a Local Emergency Planning Committee and work with the Winnebago County Local Emergency Planning Committee (LEPC).	No comment.
<b>Timeline:</b> 2 years.					
<b>Funding:</b> Village of Roscoe general funds.					
Develop Safety Procedures for Earthquakes	Goal: Improve emergency sheltering and procedures in the event of an earthquake--- Objective: Review and update existing, or create new community plans and ordinances	Earthquake	Low	Roscoe will work to develop an earthquake safety procedure for the village.	No comment.
<b>Timeline:</b> 5 years.					
<b>Funding:</b> Village of Roscoe general funds.					
Burn Ordinances	Goal: Create new or revise existing plans/maps--- Objective: Review and update existing, or create new community plans and ordinances	Extreme Heat and Drought	Completed	Roscoe will continue to maintain update burn ordinances.	The Village of Roscoe has updated the ordinance to require that all property owners maintain a physical presence at all recreational or yard waste fires until fully extinguished.
<b>Timeline:</b> Completed.					
<b>Funding:</b> None.					
Participate in the Community Rating System	Goal: Create new or revise existing plans/maps--- Objective: Support compliance with the NFIP	Flooding / Dam and Levee Failure	Medium	Roscoe will investigate the feasibility of joining the CRS.	No comment.

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Status/Priority	Comments (2014)	Comments (2019)
<b>Timeline:</b> 5 years. <b>Funding:</b> Village of Roscoe general funds.					
Identification of Floodplain Structures	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Examine flood loss areas and generate a comprehensive list of structures located in floodplains	Flooding / Dam and Levee Failure	Ongoing/ Medium	Roscoe will work to identify all flood prone structures in the village.	The Village has begun the process of compiling a list of all structures existing in identified floodplains. Preliminary indications are that only 4 inhabitable structures exist within a floodplain.
<b>Timeline:</b> 2 years. <b>Funding:</b> Village of Roscoe general funds.					
Develop Alternate Traffic Routes	Goal: Create new or revise existing plans/maps---	HAZMAT	Completed	Roscoe will work to develop alternate traffic routes in the event of a HAZMAT release.	Alternate route mapping is complete.
<b>Timeline:</b> Completed. <b>Funding:</b> None.					
HAZMAT Spill, Removal, and Disposal Procedure	Goal: Create new or revise existing plans/maps--- Objective: Review and update existing, or create new community plans and ordinances	HAZMAT	Medium	Roscoe will continue to work with the Winnebago County LEPC to improve the County's HAZMAT response plans.	No comment.
<b>Timeline:</b> 5 years. <b>Funding:</b> Village of Roscoe general funds.					
Install Snow Fences	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Minimize the amount of infrastructure exposed to hazards	Winter Storms	Ongoing/ Medium	Roscoe will work with the County to improve this mitigation item.	The Village of Roscoe continues to maintain our roadway network to the highest standard during winter storm events, ensuring that streets are free of ice and snow at all times.
<b>Timeline:</b> 1 to 2 years once funding is made available. <b>Funding:</b> Village of Roscoe general funds; Pre-Disaster Mitigation Funding; private lending; or grant funding ( <a href="#">State of Illinois</a> , Federal ( <a href="#">EPA</a> ; <a href="#">USDA</a> ), etc.).					
Heating and Cooling Shelters	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Improve emergency sheltering	Winter Storms/ Extreme Heat	Ongoing/ Medium	Roscoe wishes to seek funding to increase the number of heating and cooling shelters for its residents.	The Village of Roscoe works with the Harlem-Roscoe Fire Protection District to inform residents of heating/cooling centers. We use social media as a tool.
<b>Timeline:</b> 1 to 2 years once funding is made available. <b>Funding:</b> Village of Roscoe general funds; Pre-Disaster Mitigation Funding; private lending; or grant funding ( <a href="#">State of Illinois</a> , Federal ( <a href="#">EPA</a> ; <a href="#">USDA</a> ), etc.).					

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Status/Priority	Comments (2014)	Comments (2019)
<b>Responsible:</b> Village Administrator; & The Village of Roscoe					

**Boone-Winnebago County Regional Offices of Education (Boone-Winnebago County School Districts)  
(2019)**

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Status/Priority	Comments (2014)	Comments (2019)
Emergency and Crisis Response Plan with Enhanced Security Measures	Goal: Create new or revise existing plans/maps--- Objective: Review and update existing, or create new community plans and ordinances	All Hazards	Ongoing/ High	Develop an Emergency and Crisis Response Plan. This plan will be implemented on the first day of school and remain in effect until a revised plan is disseminated to all staff and Response Agencies. Each classroom is equipped with a copy of this plan stored at the exit of the classroom.	All school districts are required to meet with local first responders and their representative crisis teams annually, before October 1, to review all emergency plans. Minutes from these meetings are submitted to the Regional Office of Education each school year and are available at our office.
<b>Timeline:</b> Ongoing event. By October 1, 2020. (Yearly) <b>Funding:</b> Respective school districts general funds.					
Back-up Generators for Critical Facilities	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Equip public facilities and communities to guard against damage caused by secondary effects on hazards	All Hazards	Ongoing/ High	The School Districts would like to seek funding to obtain a back-up generators.	Currently, school districts lack funding for items such as these; however, certain schools' facilities have them from different funding sources. The Boone-Winnebago ROE does not manage this as it is up to the individual school districts.
<b>Timeline:</b> When funding is identified; 2 to 4-year implementation (pending individual school board approval). <b>Funding:</b> Respective school districts general funds; Pre-Disaster Mitigation Funding; private lending; or grant funding/donations ( <a href="#">ComEd- Powering Safe Communities</a> , <a href="#">NiCor</a> , <a href="#">State of Illinois</a> , Federal ( <a href="#">EPA</a> ; <a href="#">USDA</a> ), etc.).					
Develop Emergency Management Team	Goal: Create new or revise existing plans/maps--- Objective: Review and update existing, or create new community plans and ordinances	All Hazards	Completed	Some school districts have a School Emergency Management Team and are integrated into the Unified Command Structure.	All school districts have a School Emergency Management Team (EMT) that are integrated into the Unified Command Structure.

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Status/Priority	Comments (2014)	Comments (2019)
<b>Timeline:</b> Completed (EMT teams meet yearly with local officials and individual schools prior to October 1).					
<b>Funding:</b> None.					
<b>Responsible:</b> Boone-Winnebago Regional Offices of Education administrative offices; Respective school district offices of administration.					

### The City of South Beloit (2019)

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Status/Priority	Comments (2014)	Comments (2019)
Public Education / Awareness	Goal: Develop long-term strategies to educate residents on the hazards affecting their community--- Objective: Raise public awareness of hazard mitigation	All Hazards	Ongoing/ High	South Beloit will increase its public education at the library, sewer billing and city websites. Press releases will also be distributed.	South Beloit will increase its public education at the library, sewer billing and city websites. Press releases will also be distributed.
<b>Timeline:</b> Ongoing.					
<b>Funding:</b> City of South Beloit general funds.					
Develop Education Materials on the benefits of the NFIP	Goal: Develop long-term strategies to educate residents on the hazards affecting their community--- Objective: Raise public awareness of flooding and flood insurance	Flooding / Dam and Levee Failure	Completed	Material will be available at the city hall.	Material is available at the city hall.
<b>Timeline:</b> Completed.					
<b>Funding:</b> None.					
Special Needs Population List	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Evaluate and strengthen the communication and transportation abilities of emergency services	All Hazards	Completed	Nursing homes currently have mutual aid agreements in place. This agreement includes developing and maintaining a special needs population list for each nursing home.	Nursing homes currently have mutual aid agreements in place. This agreement includes developing and maintaining a special needs population list for each nursing home.
<b>Timeline:</b> Completed.					
<b>Funding:</b> None.					
Provided and Publicize Location of Safe Rooms and / or Shelters	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Improve emergency sheltering in the county	All Hazards	Completed	South Beloit currently has designated heating/cooling shelters and plans to distribute the locations of the shelters to residents in the county.	South Beloit currently has designated heating/cooling shelters and plans to distribute the locations of the shelters to residents in the county.
<b>Timeline:</b> Completed.					
<b>Funding:</b> None.					



Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Status/Priority	Comments (2014)	Comments (2019)
Mutual Aid Agreements	Goal: Lessen the impacts of hazards to new and existing infrastructure---	All Hazards	Completed	South Beloit currently has mutual aid agreements in place for the Fire Departments and Public Works.	South Beloit currently has mutual aid agreements in place for the Fire Departments and Public Works.
<b>Timeline:</b> Completed. <b>Funding:</b> None.					
Back-up Generators for Critical Facilities	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Equip public facilities and communities to guard against damage caused by secondary effects on hazards	All Hazards	Completed	City Hall, Police and Fire Department, and the Sewer Plant have portable generators.	Appropriate critical facilities have portable generators.
<b>Timeline:</b> Completed. <b>Funding:</b> None.					
Data Acquisition for Future Hazard Mitigation Planning	Goal: Create new or revise existing plans/maps---Objective: Review and update existing GIS datasets	All Hazards	Completed	WinGIS maintains a list of critical and essential facilities in the county.	Through its work with RPC, the City of South Beloit can access WinGIS – they maintains a list of critical and essential facilities in the county.
<b>Timeline:</b> Completed. <b>Funding:</b> None.					
First Responder Training	Goal: Develop long-term strategies to education residents on the hazards affecting their community--- Objective: Improve education and training of emergency personnel and public officials	All Hazards	Ongoing/ Medium	Ongoing with Fire and Police.	The City of South Beloit continues to provide updated first responder training to new and existing employees as new options present themselves.
<b>Timeline:</b> Completed. <b>Funding:</b> None.					
Participate in the NFIP	Goal: Create new or revise existing plans/maps---Objective: Support compliance with the NFIP	Flooding / Dam and Levee Failure	Ongoing/ High	Ongoing. The South Beloit will contribute to map revisions.	Ongoing. The South Beloit will contribute to map revisions.
<b>Timeline:</b> Ongoing. <b>Funding:</b> City of South Beloit general funds.					

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Status/Priority	Comments (2014)	Comments (2019)
Property Acquisition (Buyouts)	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Minimize the amount of infrastructure exposed to hazards	Flooding / Dam and Levee Failure	Ongoing/ High	South Beloit will continue to seek funding for future property acquisitions.	South Beloit will continue to seek funding for future property acquisitions.
<p><b>Timeline:</b> 2 years once funding is made available.  <b>Funding:</b> City of South Beloit general funds; Pre-Disaster Mitigation Funding; private lending; or grant funding (<a href="#">State of Illinois</a>, Federal (<a href="#">EPA</a>; <a href="#">USDA</a>), etc.).</p>					
Structure Elevation	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Minimize the amount of infrastructure exposed to hazards	Flooding / Dam and Levee Failure	Completed	Ordinances in the village requires all new structures to be raised above the flood level.	These ordinances exist within the city code and require that all new structures to be raised above the flood level.
<p><b>Timeline:</b> Completed.  <b>Funding:</b> None.</p>					
Floodplain and Stormwater Management Ordinances	Goal: Create new or revise existing plans/maps---Objective: Review and update existing, or create new community plans and ordinances	Flooding / Dam and Levee Failure	Completed/ Ongoing	South Beloit has building code restrictions and flood protection requirements in place. South Beloit will continue to maintain and update these ordinances.	South Beloit has building code restrictions and flood protection requirements in place. South Beloit will continue to maintain and update these ordinances.
<p><b>Timeline:</b> Completed/ongoing.  <b>Funding:</b> City of South Beloit general fund.</p>					
Open Space Preservation	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Keep the floodplain and other hazardous areas open and free from development	Flooding / Dam and Levee Failure	Ongoing/ Medium	South Beloit will continue working to preserve green space along Turtle Creek and Rock River.	South Beloit will continue working to preserve green space along Turtle Creek and Rock River.
<p><b>Timeline:</b> 5 years once funding is made available.  <b>Funding:</b> City of South Beloit general funds; Pre-Disaster Mitigation Funding; private lending; or grant funding (<a href="#">State of Illinois</a>, Federal (<a href="#">EPA</a>; <a href="#">USDA</a>), etc.).</p>					
Install Backflow Values and Sump Pumps	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Minimize potential damage to foundations and household/critical facility utilities	Flooding / Dam and Levee Failure	Ongoing/ High	This mitigation item is ongoing through city ordinances.	This mitigation item is ongoing through city ordinances.
<p><b>Timeline:</b> Ongoing.  <b>Funding:</b> City of South Beloit general funds.</p>					

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Status/Priority	Comments (2014)	Comments (2019)
Anchoring of Manufactured Homes and Exterior Attachments	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Minimize the amount of infrastructure exposed to hazards	Severe Storms / Tornadoes	Completed	Current building codes address this issue including anchoring.	Current building codes address this issue including anchoring.
<b>Timeline:</b> Completed. <b>Funding:</b> None.					
Ordinance for Higher Construction Standards / Techniques Regarding Severe Storms	Goal: Create new or revise existing plans/maps---Objective: Review and update existing, or create new community plans and ordinances	Severe Storms / Tornadoes	Completed/ Ongoing	South Beloit will continue to maintain and update this ordinance.	South Beloit will continue to maintain and update this ordinance.
<b>Timeline:</b> Completed/Ongoing. <b>Funding:</b> City of South Beloit general fund.					
Active Tree Management	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Active tree management near critical facilities and essential facilities to minimize risk of damage	All Hazards	Low	South Beloit will be implementing additional action plans to minimize tree damage to power lines as well as other infrastructure.	South Beloit will be implementing additional action plans to minimize tree damage to power lines as well as other infrastructure.
<b>Timeline:</b> 10 years. <b>Funding:</b> City of South Beloit general funds.					
Emergency Plan / Protocol for HAZMAT Releases	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Review and update existing, or create new community plans and ordinances	HAZMAT	Low	South Beloit plans to develop an emergency plan in the event of a HAZMAT release and will work with the Winnebago County LEPC.	South Beloit plans to develop an emergency plan in the event of a HAZMAT release and will work with the Winnebago County LEPC.
<b>Timeline:</b> 5 years. <b>Funding:</b> City of South Beloit general funds.					
HAZMAT Spill, Removal and Disposal Procedure	Goal: Create new or revise existing plans / maps---Objective: Review and update existing, or create new community plans and ordinances	HAZMAT	Low	South Beloit plans to develop an emergency plan in the event of a HAZMAT release and will work with the Winnebago County LEPC.	South Beloit plans to develop an emergency plan in the event of a HAZMAT release and will work with the Winnebago County LEPC.
<b>Timeline:</b> 5 years. <b>Funding:</b> City of South Beloit general funds.					

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Status/Priority	Comments (2014)	Comments (2019)
Heating and Cooling Shelters	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Improve emergency sheltering	Winter Storms / Extreme Heat	Medium	South Beloit wishes to seek funding to increase the number of heating and cooling shelters in the village.	South Beloit wishes to seek funding to increase the number of heating and cooling shelters in the City.
<b>Timeline:</b> 5 years once funding is made available.					
<b>Funding:</b> City of South Beloit general funds; Pre-Disaster Mitigation Funding; private lending; or grant funding ( <a href="#">State of Illinois</a> , Federal ( <a href="#">EPA</a> ; <a href="#">USDA</a> ), etc.).					
<b>Responsible:</b> City of South Beloit; City of South Beloit Public Works					

### Winnebago County (2019)

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Status/Priority	Comments (2014)	Comments (2019)
Public Education / Awareness	Goal: Develop long-term strategies to educate County residents on the hazards affecting their community-- -Objective: Raise public awareness of hazard mitigation	All Hazards	Ongoing/ High	Ongoing within Winnebago County.	Ongoing within Winnebago County.
<b>Timeline:</b> Ongoing.					
<b>Funding:</b> Winnebago County general fund.					
Devote Section of County Website to Hazard Mitigation Awareness	Goal: Develop long-term strategies to educate residents on the hazards affecting their community-- Objective: Raise public awareness of hazard mitigation	All Hazards	Ongoing/ High	Ongoing mitigation item. Winnebago County website is utilized.	Ongoing mitigation item. Winnebago County website is utilized. Information should be updated frequently.
<b>Timeline:</b> Updated on a year (1 year annually).					
<b>Funding:</b> Winnebago County general fund.					
Family Disaster Plans & IEMA Kits	Goal: Lessen the impacts of hazards to County residents--- Objective: Strengthen communication between County residents and emergency services	All Hazards	Ongoing/ High	Ongoing mitigation item. The Health Department will distribute information packets prior to and immediately following hazardous events.	Winnebago County continues to work with Winnebago County Health Department on this as well as working with local municipalities and public works on this.
<b>Timeline:</b> Ongoing.					
<b>Funding:</b> Winnebago County general fund; Winnebago County Health Department general fund.					

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Status/Priority	Comments (2014)	Comments (2019)
Special Needs Population List	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Evaluate and strengthen the communication and transportation abilities of emergency services	All Hazards	Completed	Nursing homes within Winnebago county currently have mutual aid agreements in place. This agreement includes developing and maintaining a special needs population list for each nursing home.	Nursing homes within Winnebago county currently have mutual aid agreements in place. This agreement includes developing and maintaining a special needs population list for each nursing home.
<b>Timeline:</b> Completed. <b>Funding:</b> None.					
Provided and Publicize Location of Safe Rooms and / or Shelters	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Improve emergency sheltering in the county	All Hazards	Completed	Winnebago County currently has designated heating/cooling shelters and plans to distribute the locations of the shelters to residents in the county.	Winnebago County currently has designated heating/cooling shelters and distributes the locations of the shelters to residents in the county prior/during each extreme weather event.
<b>Timeline:</b> Completed. <b>Funding:</b> None.					
Establish Local Emergency Planning Committee	Goal: Create new or revise existing plans/maps--- Objective: Review and update existing, or create new community plans and ordinances	All Hazards	Completed	Shortly after the enactment of SARA Title III the Winnebago County Local Emergency Planning Committee was formed. The Winnebago County LEPC holds an annual Public Luncheon and Emergency Plan Discussion.	The Winnebago County LEPC continues to hold monthly planning meetings as well as annual public meetings and conferences.
<b>Timeline:</b> Completed. <b>Funding:</b> None.					

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Status/Priority	Comments (2014)	Comments (2019)
Mutual Aid Agreements	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Evaluate and strengthen the communication and transportation abilities of emergency services	All Hazards	Completed	Winnebago County Local Emergency Planning Committee (LEPC) oversees the various mutual aid agreements within the county.	Winnebago County Local Emergency Planning Committee (LEPC) oversees the various mutual aid agreements within the county.
<b>Timeline:</b> Completed. <b>Funding:</b> None.					
Back-up Generators for Critical Facilities	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Equip public facilities and communities to guard against damage caused by secondary effects on hazards	All Hazards	Completed/ Ongoing	Certain critical facilities within Winnebago County have alternative power sources in the event of a hazardous event.	Certain critical facilities within Winnebago County have alternative power sources in the event of a hazardous event. Winnebago County will work to identify those that do not have alternate power and work with ComEd if they lose power.
<b>Timeline:</b> 2 years once funding is available. <b>Funding:</b> Winnebago County general funds; Pre-Disaster Mitigation Funding; private lending; or grant funding/donations ( <a href="#">ComEd- Powering Safe Communities</a> , <a href="#">NiCor</a> , <a href="#">State of Illinois</a> , Federal ( <a href="#">EPA</a> ; <a href="#">USDA</a> ), etc.).					
Enhance Communication Systems	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Equip public facilities and communities to guard against damage caused by secondary effects on hazards	All Hazards	Ongoing/ Medium	The County plans to improve emergency alarms in rural areas	Winnebago County is in the process of implementing a new Emergency Notification System, which is I-PAWS compliant.
<b>Timeline:</b> 2 years. <b>Funding:</b> Winnebago County general fund.					

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Status/Priority	Comments (2014)	Comments (2019)
Data Acquisition for Future Hazard Mitigation Planning	Goal: Create new or revise existing plans/maps--- Objective: Review and update existing GIS datasets	All Hazards	Ongoing/ High	Winnebago County continues to assist the Illinois State Water Survey with FEMA-directed flood risk-map reviews and comments. WinGIS maintains a list of critical and essential facilities in the county.	Winnebago County continues to assist the Illinois State Water Survey with FEMA-directed flood risk-map reviews and comments. WinGIS maintains a list of critical and essential facilities in the county.
<b>Timeline:</b> Ongoing. <b>Funding:</b> Winnebago County general fund.					
First Responder Training	Goal: Develop long-term strategies to education residents on the hazards affecting their community-- -Objective: Improve education and training of emergency personnel and public officials	All Hazards	Ongoing/ High	Ongoing within Winnebago County.	Winnebago County continues to provide updated first responder training to new and existing employees as new options present themselves.
<b>Timeline:</b> Ongoing. <b>Funding:</b> Winnebago County general fund.					
Develop Safety Procedures for Earthquakes	Goal: Improve emergency sheltering and procedures in the event of an earthquake--- Objective: Review and update existing, or create new community earthquake plans	Earthquakes	Low	Winnebago County will work to develop mutual aid agreements in event of an earthquake.	Winnebago County will work to develop mutual aid agreements in event of an earthquake.
<b>Timeline:</b> 5 years. <b>Funding:</b> Winnebago County general fund.					
Burn Ordinances	Goal: Create new or revise existing plans/maps--- Objective: Review and update existing, or create new community plans and ordinances	Extreme Heat and Drought	Ongoing/ Low	This mitigation item is ongoing and is addressed by current ordinances. The County will continue to maintain update these ordinances.	This mitigation item is ongoing and is addressed by current ordinances. The County will continue to maintain update these ordinances.
<b>Timeline:</b> Ongoing. <b>Funding:</b> Winnebago County general fund.					

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Status/Priority	Comments (2014)	Comments (2019)
Participate in the NFIP	Goal: Create new or revise existing plans/maps--- Objective: Support compliance with the NFIP	Flooding / Dam and Levee Failure	Ongoing/ Low	Ongoing within Winnebago County. The county will continue to educate and encourage communities/jurisdictions to join the NFIP.	Ongoing within Winnebago County. The county will continue to educate and encourage communities/jurisdictions to join the NFIP.
<b>Timeline:</b> Ongoing. <b>Funding:</b> Winnebago County general fund.					
Participate in the Community Rating System	Goal: Create new or revise existing plans/maps--- Objective: Support compliance with the NFIP	Flooding / Dam and Levee Failure	Ongoing/ High	Winnebago County will investigate the feasibility of joining the CRS.	Winnebago County will investigate the feasibility of joining the CRS.
<b>Timeline:</b> 5 years. <b>Funding:</b> Winnebago County general fund.					
Property Acquisition (Buyouts) & Property Relocation	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Minimize the amount of infrastructure exposed to hazards	Flooding / Dam and Levee Failure	Ongoing/ High	Winnebago County currently works and will continue to identify areas where buyouts and property relocations make the most sense. Several projects have already been completed with Federal assistance. The County will continue to seek federal funding for future property acquisitions.	Winnebago County currently assesses and will continue to identify areas where buyouts and property relocations make the most sense. Several projects have already been completed with Federal Mitigation assistance. The County will continue to seek federal funding for future property acquisitions.
<b>Timeline:</b> 5 years once funding is made available. <b>Funding:</b> Winnebago County general fund; Pre-Disaster Mitigation Funding; private lending; or grant funding ( <a href="#">State of Illinois</a> , Federal ( <a href="#">EPA</a> ; <a href="#">USDA</a> ), etc.).					



Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Status/Priority	Comments (2014)	Comments (2019)
Structure Elevation	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Minimize the amount of infrastructure exposed to hazards	Flooding / Dam and Levee Failure	Ongoing/ High	Currently, the flood protection elevation is set at Base Flood Elevation + 1 foot; flood protection overlay districts are included in the proposed Unified Development Ordinance.	Currently, the flood protection elevation is set at Base Flood Elevation + 1 foot; flood protection overlay districts are included in the proposed Unified Development Ordinance.
<b>Timeline:</b> 5 years once funding is made available.					
<b>Funding:</b> Winnebago County general fund; Pre-Disaster Mitigation Funding; private lending; or grant funding.					
Floodplain and Stormwater Management Ordinances	Goal: Create new or revise existing plans/maps--- Objective: Review and update existing, or create new community plans and ordinances	Flooding / Dam and Levee Failure	Ongoing/ High	Winnebago County has building code restrictions and flood protection requirements in place. The County will continue to maintain and update these ordinances.	Winnebago County has building code restrictions and flood protection requirements in place. The County will continue to maintain and update these ordinances.
<b>Timeline:</b> 5 years.					
<b>Funding:</b> Winnebago County general fund.					
Dam Failure Emergency Response Plan	Goal: Create new or revise existing plans/maps--- Objective: Review and update existing, or create new community plans and ordinances	Flooding / Dam and Levee Failure	Ongoing/ High	Winnebago County Emergency Services participate in response planning for such events.	Winnebago County Emergency Services participate in response planning for such events.
<b>Timeline:</b> Ongoing.					
<b>Funding:</b> Winnebago County general fund.					
Open Space Preservation	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Keep the floodplain and other hazardous areas open and free from development	Flooding / Dam and Levee Failure	Completed	Flood protection overlay districts and conservation design are included in the proposed Unified Development Ordinance.	Flood protection overlay districts and conservation design are included in the proposed Unified Development Ordinance.
<b>Timeline:</b> Completed.					
<b>Funding:</b> None.					

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Status/Priority	Comments (2014)	Comments (2019)
Install Sump Pumps	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Minimize potential damage to foundations and household/critical facility utilities	Flooding / Dam and Levee Failure	Ongoing/ High	This mitigation item is ongoing within Winnebago County and is part of the building code requirement for specified sites.	This mitigation item is ongoing within Winnebago County and is part of the building code requirement for specified sites.
<b>Timeline:</b> Ongoing. <b>Funding:</b> Winnebago County general fund.					
Emergency Plan / Protocol for HAZMAT Releases	Goal: Create new or revise existing plans/maps--- Objective: Review and update existing, or create new community plans and ordinances	HAZMAT	Completed	Winnebago County requires HAZMAT response plans for specified building sites and facilities.	Winnebago County requires HAZMAT response plans for specified building sites and facilities. Through Mutual Aid, the Rockford Fire Department is the designated response team for Hazardous Materials incidents.
<b>Timeline:</b> Completed. <b>Funding:</b> None.					
Develop Alternate Traffic Routes	Goal: Create new or revise existing plans/maps--- Objective: Review and update existing, or create new community plans and ordinances	HAZMAT	Ongoing/ Medium	This mitigation item is ongoing. Example: The Health Department has specified certain water protection routes for directing commercial traffic that might represent a threat to water resources.	This mitigation item is ongoing.
<b>Timeline:</b> 5 years. <b>Funding:</b> Winnebago County general fund.					
HAZMAT Spill, Removal and Disposal Procedure	Goal: Create new or revise existing plans/maps--- Objective: Review and update existing, or create new community plans and ordinances	HAZMAT	Ongoing/ High	This mitigation item is ongoing and is overseen by the Winnebago County LEPC.	This mitigation item is ongoing and is overseen by the Winnebago County LEPC.

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Status/Priority	Comments (2014)	Comments (2019)
<b>Timeline:</b> 5 years. <b>Funding:</b> Winnebago County general fund.					
Anchoring of Manufactured Homes and Exterior Attachments	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Minimize the amount of infrastructure exposed to hazards	Severe Storms / Tornadoes	Completed/ Ongoing/ Low	This mitigation item is ongoing within Winnebago County and is part of the building code requirement for specified structures.	This mitigation item is ongoing within Winnebago County and is part of the building code requirement for specified structures.
<b>Timeline:</b> Completed/Ongoing. <b>Funding:</b> None.					
Ordinance for Higher Construction Standards / Techniques in Regards to Severe Storms	Goal: Create new or revise existing plans/maps--- Objective: Review and update existing, or create new community plans and ordinances	Severe Storms / Tornadoes	Completed/ Ongoing/ High	This mitigation item is ongoing within Winnebago County and is part of the building code requirement. Example: Per current building code, 90 mph, 2-3 second gusts must be withstood by certain building categories.	This mitigation item is ongoing within Winnebago County and is part of the building code requirement. Example: Per current building code, 90 mph, 2-3 second gusts must be withstood by certain building categories.
<b>Timeline:</b> Completed/Ongoing. <b>Funding:</b> None.					
Install Snow Fences	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Minimize the amount of infrastructure exposed to hazards	Winter Storms	Ongoing/ High	This mitigation item is ongoing and is regular practice of the Highway Department.	This mitigation item is ongoing and is regular practice of the Highway Department.
<b>Timeline:</b> 1 year (as additional funding becomes available – more fencing may be installed). <b>Funding:</b> Winnebago County general fund; Pre-Disaster Mitigation Funding; private lending; or grant funding ( <a href="#">State of Illinois</a> , Federal ( <a href="#">EPA</a> ; <a href="#">USDA</a> ), etc.).					
<b>Responsible:</b> Winnebago County Highway Department; Winnebago County; Winnebago County Emergency Management Agency (Winnebago County Sheriff's Department)					

**The Village of Winnebago (2019)**

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Status/Priority	Comments (2014)	Comments (2019)
Public Education / Awareness	Goal: Develop long-term strategies to educate residents on the hazards affecting their community--- Objective: Raise public awareness of hazard mitigation	All Hazards	Ongoing/ High	The Village Board plans to improve public education and awareness of hazard mitigation. Potential funding sources have not been identified at this point.	Plans to improve public education and awareness remain a vital goal of the Village.
<p><b>Timeline:</b> 2 years (once funding becomes available).  <b>Funding:</b> Village of Winnebago general fund; private lending; or grant funding/donations (<a href="#">ComEd- Powering Safe Communities</a>, <a href="#">NiCor</a>, <a href="#">State of Illinois</a>, Federal (<a href="#">EPA</a>; <a href="#">USDA</a>), etc.).</p>					
Mutual Aid Agreements	Goal: Create new or revise existing plans/maps--- Goal: Lessen the impacts of hazards to new and existing infrastructure	All Hazards	Ongoing/ High	The Village of Winnebago will work with the Winnebago County Local Emergency Planning Committee (LEPC) and other Agencies in the County to develop and improve mutual aid agreements within the county.	The Village of Winnebago is committed to working with Winnebago County Local Emergency Planning Committee and other agencies/entities to develop, refine, and improve agreements throughout the county.
<p><b>Timeline:</b> Ongoing.  <b>Funding:</b> Village of Winnebago general fund.</p>					
Back-up Generators for Critical Facilities	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Equip public facilities and communities to guard against damage caused by secondary effects on hazards	All Hazards	Ongoing/ High	The Village Board will oversee this project. Potential funding sources and start/end date have not been identified at this point.	The Village Board and department heads within the Village recognize the importance of this category.
<p><b>Timeline:</b> 1 year (once funding becomes available).  <b>Funding:</b> Village of Winnebago general fund; Pre-Disaster Mitigation funding; private lending; or grant funding/donations (<a href="#">ComEd- Powering Safe Communities</a>, <a href="#">NiCor</a>, <a href="#">State of Illinois</a>, Federal (<a href="#">EPA</a>; <a href="#">USDA</a>), etc.).</p>					

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Status/Priority	Comments (2014)	Comments (2019)
Participate in the NFIP	Goal: Create new or revise existing plans/maps--- Objective: Support compliance with the NFIP	Flooding / Dam and Levee Failure	Ongoing/ High	The Village of Winnebago participates in the NFIP and will continue to maintain compliance with the NFIP by evaluating and improving existing ordinances.	The Village of Winnebago will continue assessments to evaluate and improve existing ordinances.
<b>Timeline:</b> Ongoing. <b>Funding:</b> Village of Winnebago general fund.					
Floodplain and Stormwater Management Ordinances	Goal: Create new or revise existing plans/maps--- Objective: Review and update existing, or create new community plans and ordinances	Flooding / Dam and Levee Failure	Ongoing/ High	The Village of Winnebago has building code restrictions and flood protection requirements in place. The Village Board will continue to maintain and update these ordinances.	The Village of Winnebago oversees building code restrictions and flood requirements. The Board will maintained update ordinances as necessary.
<b>Timeline:</b> Ongoing. <b>Funding:</b> Village of Winnebago general fund.					
Harden Infrastructure	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Minimize the amount of infrastructure exposed to hazards	Severe Storms / Tornadoes	Ongoing/ High	The Village of Winnebago wishes to seek funding to harden existing infrastructure in the event of severe storms and tornadoes. The Village Board will oversee this project. No start /end date has been selected at this time.	The Village of Winnebago realizes the importance of critical infrastructure and securing funding to manage it.
<b>Timeline:</b> 5 to 7 years once funding is available. <b>Funding:</b> Village of Winnebago general funds; Pre-Disaster Mitigation Funding; private lending; or grant funding ( <a href="#">State of Illinois</a> , Federal ( <a href="#">EPA</a> ; <a href="#">USDA</a> ), etc.).					
Develop Alternate Traffic Routes	Goal: Create new or revise existing plans/maps--- Objective: Review and update existing, or create new community plans and ordinances	HAZMAT	Medium	The Village of Winnebago will work with the Winnebago County LEPC to improve the County's HAZMAT response plans. The project will be overseen by the Village Board.	The Village of Winnebago will work with Winnebago Co. LEPC and other entities/agencies as necessary to improve and implement HAZMAT response plans.

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Status/Priority	Comments (2014)	Comments (2019)
<b>Timeline:</b> 1 year. <b>Funding:</b> Village of Winnebago general fund.					
Install Snow Fences	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Minimize the amount of infrastructure exposed to hazards	Winter Storms	Ongoing/ High	The Village Board will oversee this project. Potential funding sources and start/end date have not been identified at this point.	The Village Board will oversee this project while working with appropriate department head(s) and try to secure funding.
<b>Timeline:</b> 1 year once funding becomes available. <b>Funding:</b> Village of Winnebago general fund; Pre-Disaster Mitigation Funding; private lending; or grant funding ( <a href="#">State of Illinois</a> , Federal ( <a href="#">EPA</a> ; <a href="#">USDA</a> ), etc.).					
Heating and Cooling Shelters	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Improve emergency sheltering	Winter Storms / Extreme Heat	Ongoing/ Medium	The Village Board will oversee this project and informally initiated through the village, school district, and fire department.	The Village Board oversees this project while working with appropriate department head(s), as well as outside entities and agencies.
<b>Timeline:</b> 1 year once funding becomes available. <b>Funding:</b> Village of Winnebago general funds; Pre-Disaster Mitigation Funding; private lending; or grant funding ( <a href="#">State of Illinois</a> , Federal ( <a href="#">EPA</a> ; <a href="#">USDA</a> ), etc.).					
Burn Ordinances	Goal: Create new or revise existing plans/maps--- Objective: Review and update existing, or create new community plans and ordinances	Extreme Heat and Drought	Ongoing/ High	The Village Board will oversee this project. The goal is to implement a new burn ordinance.	The Village Board, and the appropriate sub-committee(s) will oversee and monitor the existing ordinance. A revised ordinance has not been implemented at this time.
<b>Timeline:</b> 2-4 years. <b>Funding:</b> Village of Winnebago general fund.					
Ordinance for Higher Construction Standards (Building and Zoning Codes)	Goal: Lessen the impacts of hazards to new and existing infrastructure--- Objective: Review and update existing, or create new community plans and ordinances	Severe Storms / Tornadoes/ Flooding	Completed	Village of Winnebago will continue to improve the village's construction ordinances to develop construction standards specific to weather/climate stressors.	The Village of Winnebago continues to improve the village's construction ordinances. These were updated in 2019.

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Status/Priority	Comments (2014)	Comments (2019)
<b>Timeline:</b> Completed (updated annually).					
<b>Funding:</b> Village of Winnebago general fund.					
<b>Responsible:</b> Village of Winnebago, Public Works					

## Appendix F- Federal Emergency Management Agency (FEMA): Local Mitigation Plan Review Tool

### Appx F. – SECTION 1: INTRODUCTION

#### PURPOSE OF LOCAL MITIGATION PLAN REVIEW GUIDE

The purpose of this *Local Mitigation Plan Review Guide* is to help Federal and State officials assess Local Mitigation Plans in a fair and consistent manner, and to ensure approved Local Mitigation Plans meet the requirements of the Stafford Act and Title 44 Code of Federal Regulations (CFR) §201.6<sup>1</sup>.

The target audience for this Guide is Federal and State officials that complete Local Mitigation Plan reviews. Plan *developers* are directed to the *Local Mitigation Planning Handbook*<sup>2</sup>. The *Local Mitigation Plan Review Guide* (or *Plan Review Guide*) and the *Local Mitigation Planning Handbook* (or *Planning Handbook*) may be used in tandem by plan reviewers and developers so that communities understand the technical requirements, as well as understand the various ways that plans can be developed to meet these requirements. FEMA supports, coordinates and reviews local plans as a means to:

- Foster federal, state, and local partnerships for hazard mitigation;
- Promote more resilient and sustainable communities; and
- Reduce the costs associated with disaster response and recovery by promoting hazard mitigation activities.

This *Local Mitigation Plan Review Guide*, as interpretation and explanation for the Mitigation Planning regulation in 44 CFR Part 201, is the Federal Emergency Management Agency’s (FEMA) official source for defining the requirements of original and updated Local Mitigation Plans. The *Guide* represents FEMA’s interpretation of a statutory or regulatory requirement. By itself, the *Guide* does not impose legally enforceable rights and obligations, but sets forth a standard operating procedure or agency practice that FEMA employees follow to be consistent, fair, and equitable in the implementation of the agency’s authorities. The Guide includes references to specific language in 44 CFR §201.6 and descriptions of the relevant requirement to meet the Mitigation Planning regulation<sup>2</sup>.

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<sup>1</sup> Section 322 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (Stafford Act), as amended, 42 U.S.C. 5165, and the National Flood Insurance Act of 1968, as amended, 42 U.S.C. 4001 et seq., 44 Code of Federal Regulations (CFR) Part 201.

<sup>2</sup> The Local Mitigation Planning Handbook is under development; once issued, the Plan Review Guide and Planning Handbook will supersede the Local Multi-Hazard Mitigation Planning Guidance (also known as the “Blue Book”).

## ORGANIZATION OF GUIDE

This *Plan Review Guide* has six sections:

- Section 1: Introduction
- Section 2: Plan Review Guiding Principles
- Section 3: Completing the Plan Review Tool
- Section 4: Regulation Checklist
- Section 5: Plan Review Procedure Appendix A: Plan Review Tool

Section 1 describes the purpose and organization of the *Plan Review Guide*. Section 2 describes the overall guiding principles for Local Mitigation Plan reviews. Section 3 provides instructions on how FEMA will complete the *Local Mitigation Plan Review Tool*, including the Regulatory Checklist and Plan Assessment. Section 4 provides the detailed guidance on how FEMA interprets the regulation through the Regulatory Checklist for all Local Mitigation Plan reviews. Section 5 describes the Plan Review Procedure from submittal through approval, including methods of communication between FEMA, States and local governments that develop Local Mitigation Plans. Finally, Appendix A includes the *Plan Review Tool* to document the evaluation of any Local Mitigation Plan.

## ROLES & RESPONSIBILITIES

The primary audience for this *Plan Review Guide* is Federal and State officials or staff that complete reviews of Local Mitigation Plans developed to meet FEMA's Mitigation Planning requirement under 44 CFR Part 201. The requirement for plan reviews (44 CFR 201.6(d)(1)), reads:

*Plans must be submitted to the State Hazard Mitigation Officer (SHMO) for initial review and coordination. The State will then send the plan to the appropriate FEMA Regional Office for formal review and approval. Where the State point of contact for the FMA program is different from the SHMO, the SHMO will be responsible for coordinating the local plan reviews between the FMA point of contact and FEMA.*

The State is responsible for the initial review and coordination of the plan between the local government and FEMA. Additional information on the roles of the State official completing the plan review is described in Section 5, *Plan Review Procedure*.

FEMA is responsible for the final review and approval of all Local Mitigation Plans. Once a Local Mitigation Plan is submitted by the State, FEMA is responsible for the overall coordination of plan review, revisions, tracking and approval.



## MITIGATION PLAN UPDATES

Local Mitigation Plans must be updated at least once every five years in order to continue to be eligible for FEMA hazard mitigation project grant funding. Specifically, the regulation at 44 CFR §201.6(d)(3) reads:

*A local jurisdiction must review and revise its plan to reflect changes in development, progress in local mitigation efforts, and changes in priorities, and resubmit it for approval within five (5) years in order to continue to be eligible for mitigation project grant funding.*

The *Local Mitigation Plan Review Guide* addresses plan updates within each required Element, and more specifically in Element D, Plan Updates. First, each required Element for Local Mitigation Plans must be met with *current* information. For example, the planning process and public participation that were completed in the previous planning cycle will not meet the requirements for the planning process in the five-year update. Likewise, if the plan update does not include major disaster declarations that occurred since the previous plan was written, FEMA will not approve the plan update. Although several sub-elements (A1, B2 and C6) have explicit guidance for plan updates, all sub-elements must be met with current information for FEMA approval of a plan update. Second, Element D identifies the plan update requirements to “*reflect changes in development, progress in local mitigation efforts, and changes in priorities*” (44 CFR §201.6(d)(3)). Specific guidance on how to meet each of these requirements is included in Element D, Plan Updates.

## FLOOD AND MULTI-HAZARDS MITIGATION PLANS

Some communities choose to develop Local Mitigation Plans that only address flood hazards. In order to receive FEMA approval, flood mitigation plans must meet all Elements identified in the regulation at 44 CFR §201.6 and in the Regulation Checklist for flood hazards. FEMA and State officials that review and approve a flood-only mitigation plan will clearly inform the community that the community’s eligibility is limited to the flood mitigation programs authorized by the National Flood Insurance Act of 1968, as amended, and that the community will not be eligible for other FEMA assistance programs, such as Pre-Disaster Mitigation (PDM) and Hazard Mitigation Grant Program (HMGP), that require a multi-hazard mitigation plan.

## Appx F. – SECTION 2: PLAN REVIEW GUIDING PRINCIPLES

The purpose of hazard mitigation is to reduce potential losses from future disasters. The intent of mitigation planning, therefore, is to maintain a process that leads to hazard mitigation actions. Mitigation plans identify the natural hazards that impact communities, identify actions to reduce losses from those hazards, and establish a coordinated process to implement the plan. (44 CFR §201.1(b))

**Hazard mitigation** is any sustained action taken to reduce or eliminate the long-term risk to human life and property from hazards (44 CFR 201.2). Hazard mitigation activities may be implemented prior to, during, or after an event. However, it has been demonstrated that hazard mitigation is most effective when based on an inclusive, comprehensive, long-term plan that is developed before a disaster occurs.

In 2004, FEMA published mitigation planning guidance with a ‘performance’ based approach, rather than a ‘prescriptive’ approach. This means that the requirements identify, generally, *what* should be done in the process and documented in the plan, rather than specify exactly *how* it should be done. This performance approach continues along with a set of Guiding Principles to assist with the review of all Local Mitigation Plans. This *Local Mitigation Plan Review Guide* also includes a description of the intent specific to each requirement.

The following Guiding Principles will be applied to all plan reviews:

1. **Focus on Mitigation Strategy.** *Plan reviews will emphasize actions and implementation of the hazard mitigation strategy. All other sections of the plan contribute to and result in the hazard mitigation strategy and specific hazard mitigation actions. For example, a sound hazard identification and risk assessment is an important part of the plan, but is the basis, in part, for the strategy which is the focus of the Local Mitigation Plan. Submission of a Local Mitigation Plan for FEMA review and approval is not the end state, but is the beginning of implementing hazard mitigation action.*
2. **Review for Intent, as well as Compliance.** *Plan reviews will focus on whether the mitigation plan meets the intent of the law and regulation. FEMA considers the overall plan and each Element (for example, planning process, risk assessment, mitigation strategy), as well as the individual requirements. A comprehensive review of the plan assists FEMA to validate that the plan meets the overall intent of mitigation planning, whereas only a strict interpretation of individual requirements may cause unnecessary revisions.*
3. **Process is as important as the Plan itself.** *FEMA will accept the planning process as defined by the community. In hazard mitigation planning, as with most other planning efforts, the actual process of planning is as important as the plan itself. Said another way, the plan is only as good as the planning process that people chose to develop it. Bringing together local officials, stakeholders and the public in a community-driven planning process to develop the plan also helps build the community’s overall hazard mitigation program. Therefore, FEMA considers the plan as the written record, or documentation, of the planning process. This is why some of the plan requirements ask for a “discussion” or “description” of generally, **what** must be documented in the plan, rather than specify exactly **how** it must be done.*
4. **This is the Community’s Plan.** *Plan reviews will recognize the effort and interest of each community that develops a mitigation plan. To emphasize the importance of the community’s ownership of the plan, FEMA will recognize the inherent differences that exist among local*

governments with respect to size, resources, capability, and vulnerability. FEMA will not penalize communities that have less capability or demonstrate little progress in hazard mitigation efforts over time. In addition, FEMA will not require specific formats (*for example*, stand-alone plan, chapter in emergency operations plan, or integrated into comprehensive plan), and FEMA will not require information above or beyond the requirements to be removed (*for example*, non-natural, climate change). In fact, FEMA acknowledges that some plans will simply “pass” the minimum plan requirements to receive FEMA approval. However, communities of any size, resources or capability that demonstrate a genuine interest in and commitment to hazard mitigation through their planning process will be better positioned to receive FEMA technical and financial assistance to implement their actions or projects.

5. **Foster Relationships.** *FEMA’s relationship with the State and community is as important as the words in the plan.* Although the plan review is a necessary step for FEMA approval, FEMA’s role is to provide technical assistance, not to be gatekeepers of plan approval. FEMA will work with States to ensure the plan review is communicated clearly and in a timely manner. FEMA will communicate the requirement through constructive and positive feedback, particularly if clarification or additional documentation is needed. FEMA understands that there is a whole planning process that has already happened, and FEMA’s review of the plan is intended to benefit the community’s hazard mitigation program.

## Appx F. – SECTION 3: COMPLETING THE PLAN REVIEW TOOL

The *Local Mitigation Plan Review Tool* (See Appendix A) demonstrates how the Local Mitigation Plan meets the regulation in 44 CFR §201.6 and offers States and FEMA Mitigation Planners an opportunity to provide feedback to the community.

The Regulation Checklist provides a summary of FEMA’s evaluation of whether the Plan has addressed all requirements.

The Plan Assessment identifies the plan’s strengths as well as documents areas for future improvement.

The Multi-Jurisdiction Summary Sheet is an optional worksheet that can be used to document how each jurisdiction met the requirements of each Element of the Plan (Planning Process; Hazard Identification and Risk Assessment; Mitigation Strategy; Plan Review, Evaluation, and Implementation; and Plan Adoption).

The FEMA Mitigation Planner must reference this *Local Mitigation Plan Review Guide* when completing the *Local Mitigation Plan Review Tool*.

## REGULATION CHECKLIST (Completion by FEMA required)

The purpose of the Checklist is to identify the location of relevant or applicable content in the Plan by Element/sub-element and to determine if each requirement has been 'Met' or 'Not Met.' The 'Required Revisions' summary at the bottom of each Element must be completed by FEMA to provide a clear explanation of the revisions that are required for plan approval. Required revisions must be explained for each plan sub-element that is 'Not Met.' Sub-elements should be referenced in each summary by using the appropriate numbers (A1, B3, etc.), where applicable. Requirements for each Element and sub-element are described in detail in this *Plan Review Guide* in Section 4, Regulation Checklist.

## PLAN ASSESSMENT (Completion by FEMA Required)

The purpose of the Plan Assessment is to offer the local community more comprehensive feedback on the quality and utility of the plan in a narrative format. The audience for the Plan Assessment is not only the plan developer/local community planner, but also elected officials, local departments and agencies, and others involved in implementing the Local Mitigation Plan. The Plan Assessment must be completed by FEMA and is not required from the State. The Plan Assessment is an opportunity for FEMA to provide feedback and information to the community on: 1) suggested improvements to the Plan; 2) specific sections in the Plan where the community has gone above and beyond minimum requirements; 3) recommendations for plan implementation; and 4) ongoing partnership(s) and information on other FEMA programs, specifically RiskMAP and Hazard Mitigation Assistance programs.

### **The Plan Assessment is divided into two sections:**

- A. Plan Strengths and Opportunities for Improvement
- B. Resources for Implementing Your Approved Plan

***Plan Strengths and Opportunities for Improvement*** is organized according to the plan Elements listed in the Regulation Checklist. Each Element includes a series of italicized bulleted items that are suggested topics for consideration while evaluating plans, but it is not intended to be a comprehensive list. FEMA Mitigation Planners are not required to answer each bullet item, and should use them as a guide to paraphrase their own written assessment (2-3 sentences) of each Element.

The Plan Assessment must not reiterate the required revisions from the Regulation Checklist or be regulatory in nature, and should be open-ended to provide the community with suggestions for improvements or recommended revisions. The recommended revisions are suggestions for improvement and are not required to be made for the Plan to meet Federal regulatory requirements. The italicized text should be deleted once FEMA has added comments regarding strengths of the plan and potential improvements for future plan revisions. It is recommended that the Plan Assessment be a short synopsis of the overall strengths and weaknesses of the Plan (no longer than two pages), rather than a complete recap section by section.

**Resources for Implementing Your Approved Plan** provides a place for FEMA to offer information, data sources and general suggestions on the overall plan implementation and maintenance process. Information on other possible sources of assistance including, but not limited to, existing publications, grant funding or training opportunities, can be provided. States may add state and local resources, if available.

## Sample Completed Plan Assessment

### I. Plan Strengths and Opportunities for Improvement

#### *Element A: Planning Process*

##### **Plan strengths**

- Public involvement process, as described in the planning process section, comprised of meetings with homeowners' associations and public representation on various county boards and councils. A letter included in the Plan also indicates that the Plan was placed in public libraries along with preparedness and other hazard notices; and that comments were received and incorporated.

##### **Opportunities for improvement:**

- Consider providing more detail on the planning process. For example, list every meeting conducted and agencies represented at these meetings.
- Provide a list of comments received from all stakeholders, including the public. This information will provide specific direction for the next plan update.
- Consider providing additional information on outreach methods, etc., for additional Community Rating System (CRS) credit. Contact the State CRS coordinator at 234-234-2345 for more information.
- For the next plan update, consider gaining participation from the local media to help increase public awareness and participation. Posting documents on the web will also allow for more citizens to participate.

#### *Element B: Hazard Identification and Risk Assessment*

##### **Plan strengths:**

- Table 4.1 is an excellent presentation of the actions for each participating jurisdiction and identifies the responsible party, timeframe, hazard, possible funding source, priority, implementation schedule, and impediments to implementation.
- The Plan adequately identifies geographic information system (GIS) data gaps to improve the impact analysis and contains an associated action to acquire additional data for seismic landslide maps.
- The Plan does a good job of describing general development trends. Countywide trends are well described, and some attempt is made to describe trends within each incorporated jurisdiction. The reliance on 1990 and 2000 Census data to highlight these changes is effective in communicating long term trends, but more current data from the 2010 Census, local information, or other sources may bring further clarity to the Plan. Additionally, it may be useful to expand the discussion of development trends to include other agencies that may be represented in the Plan (for example, school districts and special districts) since changes in development may greatly impact the vulnerability for these jurisdictions.

##### **Opportunities for improvement:**

- Potential dollar losses are not addressed in this version and would be a good addition to the next update. The methodology on how loss estimates are prepared should also be included.

- The maps presented within the Plan provide an excellent perspective on vulnerability for various jurisdictions, but more detail concerning these efforts to analyze hazards through advanced GIS methods would be useful. For instance, it is evident that spatial analysis was conducted to determine if there were dams located in close proximity to structures owned by jurisdictions, but no information concerning the buffer distance (or definition of “close”) is included for this analysis.

*Element C: Mitigation Strategy*

**Plan strengths:**

The Plan contains excellent information on funding sources and resources for implementing mitigation actions. It may also be useful to include contact information for the State Hazard Mitigation Officer and the State Mitigation Management website location among these resources since the State is responsible for coordinating the implementation of many of these programs within the State.

**Opportunities for improvement:**

- Some linkages between the mitigation strategy and Hazard Identification and Risk Assessment are evident, but could be better explained in future Plan Updates. As more refined information is created for certain hazards (such as dam failure) it may be possible to target mitigation actions more specifically at certain hazard areas likely to be vulnerable to these hazards.
- The Plan does a good job of identifying other resources such as U.S. Department of Agriculture (USDA) and Community Development Block Grant (CDBG) programs that may be useful for mitigation. Linking these programs to mitigation actions could increase the effectiveness of the Plan and make it a more valuable resource for community officials and citizens.

*Element D: Plan Update, Evaluation, and Implementation (applicable to plan updates only)*

**Plan strengths:**

- The XXX County Hazard Mitigation Planning Committee was formed to update and revise the plan as a multi-jurisdictional plan. Items covered in this update addressed the annual review process. Section 1.2 states that the Plan will be reviewed and updated annually to monitor the progress of its mitigation strategies and to integrate new technologies.

**Opportunities for improvement:**

- The Plan documents changes that have occurred in the planning area as well as updates to the HIRA section. A clearer linkage between these updates and changes that have occurred should be included. It may also be useful to provide description of any items that prevented progress on mitigation actions (for example, funding, regulations, political issues, authorities, etc.) so that these items may be addressed more fully during the next update.
- 2. Resources for Implementing Your Approved Plan
- The 2010 State of AAA Hazard Mitigation Plan identifies a number of potential funding resources for various mitigation actions. The grants identified in Chapter 7 of the State Plan are from both Federal and State sources. More information about applying for grants can be obtained from Joe Johns, AAA’s State Hazard Mitigation Officer.
- FEMA is currently conducting a Risk MAP project in City of YYY. This project is in its infancy stage (LiDAR will be conducted in Fall 2011). In an effort to capitalize on current data and flood risk information, it is important that, during the Discovery Process, the municipality include representatives from departments that deal with flood risk (for example, hazard mitigation planning, emergency planning, and land use and zoning).
- The AAA State Division of Emergency Management mitigation team is available to help identify possible forms of assistance (technical and financial) to improve GIS capabilities, conduct studies and implement projects identified in the Plan.

- The AAA State DNR is currently working to create inundation maps for each high hazard dam in the State. This information will be made available and will assist in creating a more accurate hazard profile for dam failure events within the planning area.
- Benefit cost analysis (BCA) courses are offered through the State Hazard Mitigation Officer at 123-234-3456. As a key component of Hazard Mitigation Assistance (HMA) sub-application development, this course assists communities seeking funding for implementing effective mitigation projects. This course will also provide supplemental material on changes to the Tornado Safe Room program and will be led by State Division of Emergency Management.
- The FEMA Region has expressed interest in direct technical assistance on integrating non-regulatory flood risk products into hazard mitigation plans. The availability of this assistance is limited, but additional information can be found at: <http://www.fema.gov/library/viewRecord.do?id=4763>.

### MULTI-JURISDICTION SUMMARY SPREADSHEET (*Optional*)

For multi-jurisdictional plans, a Multi-Jurisdiction Summary Spreadsheet may be completed by listing each participating jurisdiction, which required Elements for each jurisdiction were ‘Met’ or ‘Not Met,’ and when the adoption resolutions were received. This Summary Sheet does not imply that a mini-plan be developed for each jurisdiction; it should be used as an optional worksheet to ensure that each jurisdiction participating in the Plan has been documented and has met the requirements for those Elements (A through E).

### Appx F. – SECTION 4: REGULATION CHECKLIST

This section provides detailed guidance on how FEMA interprets the various requirements of the regulation for all Local Mitigation Plan reviews through a Regulatory Checklist. The guidance is limited only to the minimum requirements of *what* must be in a Local Mitigation Plan, and does not provide guidance on *how* the community should develop a plan. The Regulation Checklist includes the following Elements:

- ELEMENT A: Planning Process
- ELEMENT B: Hazard Identification and Risk Assessment
- ELEMENT C: Mitigation Strategy
- ELEMENT D: Plan Review, Evaluation, and Implementation
- ELEMENT E: Plan Adoption
- ELEMENT F: Additional State Requirements

Many requirements in the Checklist call for the plan to “document” or “describe” information. FEMA does not require specific formats for the plan or its content. Required information to “document” can be provided in the plan through a variety of formats, such as narrative, tables, lists, maps, etc. Examples provided in this *Guide* are samples of one or more approaches to meeting that particular requirement. Examples are not inclusive of all possible solutions to meet a requirement, and they are not necessarily considered “best practices” or exemplary. FEMA will recognize that there are many formats and types of documentation that may meet a particular requirement.

Terms from the regulation are defined in this *Guide*, where necessary. For example, many of the plan requirements ask for a “discussion” or “description.” FEMA considers the plan as the written record, or documentation, of the planning process. Therefore, many of these terms have the same meaning to document *what* was done. In addition, this *Guide* uses the terms “jurisdiction” and “community” interchangeably. For purposes of this *Guide*, these terms are equal to any local government developing a Local Mitigation Plan. This is defined at 44 CFR §201.2 as:

*“any county, municipality, city, town, township, public authority, school district, special district, intrastate district, council of governments (regardless of whether the council of governments is incorporated as a nonprofit corporation under State law), regional or interstate government entity, or agency or instrumentality of a local government; any Indian tribe or authorized tribal organization, or Alaska Native village or organization; and any rural community, unincorporated town or village, or other public entity.”*

Finally, an important distinction must be made between the words “shall” and “should” in the Mitigation Planning regulation at 44 CFR Part 201. The Regulation Checklist only includes the requirements where the regulation uses the words “shall” and “must,” and does not include the “should.” When the word “should” is used, the item is strongly recommended to be included in the plan, but its absence will not cause FEMA to disapprove the plan.

## ELEMENT A: PLANNING PROCESS

### **Requirement; reasoning**

- §201.6(b) An open public involvement process is essential to the development of an effective plan. In order to develop a more comprehensive approach to reducing the effects of natural disasters, the planning process shall include:
  - §201.6(b)(1) An opportunity for the public to comment on the plan during the drafting stage and prior to plan approval;
  - §201.6(b)(2) An opportunity for neighboring communities, local and regional agencies involved in hazard mitigation activities, and agencies that have the authority to regulate development, as well as businesses, academia and other private and non-profit interests to be involved in the planning process; and
  - §201.6(b)(3) Review and incorporation, if appropriate, of existing plans, studies, reports, and technical information.
- §201.6(c)(1) [The plan shall document] the planning process used to develop the plan, including how it was prepared, who was involved in the process, and how the public was involved.
- §201.6(c)(4)(i) [The plan maintenance process shall include a] section describing the method and schedule of monitoring, evaluating, and updating the mitigation plan within a five-year cycle.
- §201.6(c)(4)(iii) [The plan maintenance process shall include a] discussion on how the community will continue public participation in the plan maintenance process.



**Overall Intent.** The planning process is as important as the plan itself. Any successful planning activity, such as developing a comprehensive plan or local land use plan, involves a cross-section of stakeholders and the public to reach consensus on desired outcomes or to resolve a community problem. The result is a common set of community values and widespread support for directing financial, technical, and human resources to an agreed upon course of action, usually identified in a plan. The same is true for mitigation planning. An effective and open planning process helps ensure that citizens understand risks and vulnerability, and they can work with the jurisdiction to support policies, actions, and tools that over the long-term will lead to a reduction in future losses.

Leadership, staffing, and in-house knowledge in local government may fluctuate over time. Therefore, the description of the planning process serves as a permanent record that explains how decisions were reached and who involved. FEMA will accept the planning process as defined by the community, as long as the mitigation plan includes a narrative description of the process used to develop the mitigation plan—a systematic account about how the mitigation plan evolved from the formation of a planning team, to how the public participated, to how each section of the plan was developed, to what plans or studies were incorporated into the plan, to how it will be implemented. Documentation of a current planning process is required for both new and updated plans.

<u>ELEMENT</u>	<u>REQUIREMENTS</u>
<p><b>A1. Does the Plan document the planning process, including how it was prepared and who was involved in the process for each jurisdiction? 44 CFR 201.6(c)(1)</b></p> <p><i>Intent: To inform the public and other readers about the overall approach to the plan’s development and serve as a permanent record of how decisions were made and who was involved. This record also is useful for the next plan update.</i></p>	<p>a. Documentation of how the plan was prepared must include the schedule or timeframe and activities that made up the plan’s development as well as who was involved. Documentation typically is met with a narrative description, but may also include, for example, other documentation such as copies of meeting minutes, sign-in sheets, or newspaper articles.</p> <p><i><b>Document</b> means provide the factual evidence for how the jurisdictions developed the plan.</i></p> <p>b. The plan must list the jurisdiction(s) participating in the plan that seek approval.</p> <p>c. The plan must identify who represented each jurisdiction. The Plan must provide, at a minimum, the jurisdiction represented and the person’s position or title and agency within the jurisdiction.</p> <p>d. For each jurisdiction seeking plan approval, the plan must document how they were involved in the planning process. For example, the plan may document meetings attended, data provided, or stakeholder and public involvement activities offered. Jurisdictions that adopt the plan without documenting how they participated in the planning process will not be approved.</p> <p><i><b>Involved in the process</b> means engaged as participants and given the chance to provide input to affect the plan’s content. This is more than simply being invited (See “opportunity to be involved in the planning process” in A2 below) or only adopting the plan.</i></p> <p>e. Plan updates must include documentation of the current planning process undertaken to update the plan.</p>
<p><b>A2. Does the Plan document an opportunity for neighboring communities, local and regional agencies involved in hazard mitigation activities, agencies that have the authority to regulate development as well as other interests to be involved in the planning process? 44 CFR 201.6(b)(2)</b></p>	<p>a. The plan must identify all stakeholders involved or given an opportunity to be involved in the planning process. At a minimum, stakeholders must include:</p> <ol style="list-style-type: none"> <li>1) Local and regional agencies involved in hazard mitigation activities;</li> <li>2) Agencies that have the authority to regulate development; and</li> <li>3) Neighboring communities.</li> </ol> <p><i>An <b>opportunity to be involved in the planning process</b> means that the stakeholders are engaged or invited as participants and given the chance to provide input to affect the plan’s content.</i></p>

<b><u>ELEMENT</u></b>	<b><u>REQUIREMENTS</u></b>
<p><b><i>Intent:</i></b> <i>To demonstrate a deliberative planning process that involves stakeholders with the data and expertise needed to develop the plan, with responsibility or authority to implement hazard mitigation activities, and who will be most affected by the plan’s outcomes.</i></p>	<p>b. The Plan <b>must</b> provide the agency or organization represented and the person’s position or title within the agency.</p> <p>c. The plan <b>must</b> identify how the stakeholders were invited to participate in the process.</p> <p><i>Examples of stakeholders include, but are not limited to:</i></p> <ul style="list-style-type: none"> <li>▪ Local and regional agencies involved in hazard mitigation include public works, zoning, emergency management, local floodplain administrators, special districts, and GIS departments.</li> <li>▪ Agencies that have the authority to regulate development include planning and community development departments, building officials, planning commissions, or other elected officials.</li> <li>▪ Neighboring communities include adjacent counties and municipalities, such as those that are affected by similar hazard events or may be partners in hazard mitigation and response activities.</li> <li>▪ Other interests may be defined by each jurisdiction and will vary with each one. These include, but are not limited to, business, academia, and other private and non-profit interests depending on the unique characteristics of the community.</li> </ul>
<p><b>A3. Does the Plan document how the public was involved in the planning process during the drafting stage?</b> <b>44 CFR 201.6(b)(1) and 201.6(c)(1)</b></p> <p><b><i>Intent:</i></b> <i>To ensure citizens understand what the community is doing on their behalf, and to provide a chance for input on community vulnerabilities and mitigation activities that will inform the plan’s content. Public involvement is also an opportunity to educate the public about hazards and risks in the community, types of activities to mitigate those risks, and how these impact them.</i></p>	<p>a. The plan <b>must</b> document how the public was given the opportunity to be involved in the planning process and how their feedback was incorporated into the plan. Examples include, but are not limited to, sign-in sheets from open meetings, interactive websites with drafts for public review and comment, questionnaires or surveys, or booths at popular community events.</p> <p>b. The opportunity for participation <b>must</b> occur during the plan development, which is prior to the comment period on the final plan and prior to the plan approval / adoption.</p>

<u>ELEMENT</u>	<u>REQUIREMENTS</u>
<p><b>A4. Does the Plan document the review and incorporation of existing plans, studies, reports, and technical information? 44 CFR 201.6(b)(3)</b></p> <p><i><b>Intent:</b> To identify existing data and information, shared objectives, and past and ongoing activities that can help inform the mitigation plan. It also helps identify the existing capabilities and planning mechanisms to implement the mitigation strategy.</i></p>	<p>a. The plan <b>must</b> document <i>what</i> existing plans, studies, reports, and technical information were reviewed. Examples of the types of existing sources reviewed include, but are not limited to, the state hazard mitigation plan, local comprehensive plans, hazard specific reports, and flood insurance studies.</p> <p>b. The plan <b>must</b> document <i>how</i> relevant information was incorporated into the mitigation plan.</p> <p><i><b>Incorporate</b> means to reference or include information from other existing sources to form the content of the mitigation plan.</i></p>
<p><b>A5. Is there discussion on how the community(ies) will continue public participation in the plan maintenance process? 44 CFR 201.6(c)(4)(iii)</b></p> <p><i><b>Intent:</b> To identify how the public will continue to have an opportunity to participate in the plan’s maintenance and implementation over time.</i></p>	<p>a. The plan <b>must</b> describe how the jurisdiction(s) will continue to seek public participation after the plan has been approved and during the plan’s implementation, monitoring and evaluation.</p> <p><i><b>Participation</b> means engaged and given the chance to provide feedback.</i> Examples include, but are not limited to, periodic presentations on the plan’s progress to elected officials, schools or other community groups, annual questionnaires or surveys, public meetings, postings on social media and interactive websites.</p>
<p><b>A6. Is there a description of the method and schedule for keeping the plan current (monitoring, evaluating and updating the mitigation plan within a 5-year cycle)? 44 CFR 201.6(c)(4)(i)</b></p> <p><i><b>Intent:</b> To establish a process for jurisdictions to track the progress of the plan’s implementation. This also serves as the basis of the next plan update.</i></p>	<p>a. The plan <b>must</b> identify how, when, and by whom the plan will be monitored. <i><b>Monitoring</b> means tracking the implementation of the plan over time. For example, monitoring may include a system for tracking the status of the identified hazard mitigation actions.</i></p> <p>b. The plan <b>must</b> identify how, when, and by whom the plan will be evaluated. <i><b>Evaluating</b> means assessing the effectiveness of the plan at achieving its stated purpose and goals.</i></p> <p>c. The plan <b>must</b> identify how, when, and by whom the plan will be updated. <i><b>Updating</b> means reviewing and revising the plan at least once every five years.</i></p> <p>d. The plan <b>must</b> include the title of the individual or name of the department/ agency responsible for leading each of these efforts.</p>

## ELEMENT B. HAZARD IDENTIFICATION AND RISK ASSESSMENT

### **Requirement; reasoning**

- *§201.6(c)(2)(i)* [The risk assessment shall include a] description of the type, location and extent of all natural hazards that can affect the jurisdiction. The plan shall include information on previous occurrences of hazard events and on the probability of future hazard events.
- *§201.6(c)(2)(ii)* [The risk assessment shall include a] description of the jurisdiction's vulnerability to the hazards described in paragraph (c)(2)(i) of this section. This description shall include an overall summary of each hazard and its impact on the community. All plans approved after October 1, 2008 must also address NFIP insured structures that have been repetitively damaged by floods. The plan should describe vulnerability in terms of:
  - *§201.6(c)(2)(ii)(A)* The types and numbers of existing and future buildings, infrastructure, and critical facilities located in the identified hazard areas;
  - *§201.6(c)(2)(ii)(B)* An estimate of the potential dollar losses to vulnerable structures identified in ... this section and a description of the methodology used to prepare the estimate.
  - *§201.6(c)(2)(ii)(C)* Providing a general description of land uses and development trends within the community so that mitigation options can be considered in future land use decisions.
- *§201.6(c)(2)(iii)* For multi-jurisdictional plans, the risk assessment section must assess each jurisdiction's risks where they vary from the risks facing the entire planning area.

**Overall Intent.** The risk assessment provides the factual basis for activities proposed in the strategy that will reduce losses from identified hazards. A quality risk assessment makes a clear connection between the community's vulnerability and the hazard mitigation actions. In other words, it provides sufficient information to enable the jurisdiction(s) to identify and prioritize appropriate hazard mitigation actions. Local risk assessments do not need to be based on the most sophisticated technology, but do need to be accurate, current, and relevant. During a plan update, local jurisdictions assess current and expected future vulnerability to all hazards and integrate new hazard data such as recent hazard events and new flood studies. In the mitigation plan review, FEMA looks at the quality of the information in the risk assessment, not the quantity of information in the risk assessment.

The Mitigation Planning regulation includes several “optional” requirements for the vulnerability assessment. These are easily recognizable with the use of the term “should” in the requirement (See §201.6(c)(2)(ii)(A-C)). Although not required, these are strongly recommended to be included in the plan. However, their absence will not cause FEMA to disapprove the plan. These “optional” requirements were originally intended to meet the overall vulnerability assessment, and this analysis can assist with identifying mitigation actions.

<u>ELEMENT</u>	<u>REQUIREMENTS</u>
<p><b>B1. Does the Plan include a description of the type, location, and extent of all natural hazards that can affect each jurisdiction? 44 CFR 201.6(c)(2)(i) and 44 CFR 201.6(c)(2)(iii)</b></p> <p><i><b>Intent:</b> To understand the potential and chronic hazards affecting the planning area in order to identify which hazard risks are most significant and which jurisdictions or locations are most adversely affected.</i></p>	<p>a. The plan <b>must</b> include a description of the natural hazards that can affect the jurisdiction(s) in the planning area.</p> <p><i>A <b>natural hazard</b> is a source of harm or difficulty created by a meteorological, environmental, or geological event. The plan <b>must</b> address natural hazards. Manmade or human-caused hazards may be included in the document, but these are not required and will not be reviewed to meet the requirements for natural hazards. In addition, FEMA will not require the removal of this extra information prior to plan approval.</i></p> <p>b. The plan <b>must</b> provide the rationale for the omission of any natural hazards that are commonly recognized to affect the jurisdiction(s) in the planning area.</p> <p>c. The description, or profile, <b>must</b> include information on location, extent, previous occurrences, and future probability for each hazard. Previous occurrences and future probability are addressed in sub-element B2.</p> <p>The information does not necessarily need to be described or presented separately for location, extent, previous occurrences, and future probability. For example, for some hazards, one map with explanatory text could provide information on location, extent, and future probability.</p> <p><i><b>Location</b> means the geographic areas in the planning area that are affected by the hazard. For many hazards, maps are the best way to illustrate location. However, location may be described in other formats. For example, if a geographically-specific location cannot be identified for a hazard, such as tornados, the plan may state that the entire planning area is equally at risk to that hazard.</i></p> <p><i><b>Extent</b> means the strength or magnitude of the hazard. For example, extent could be described in terms of the specific measurement of an occurrence on a scientific scale (for example, Enhanced Fujita Scale, Saffir-Simpson Hurricane Scale, Richter Scale, flood depth grids) and/or other hazard factors, such as duration and speed of onset. Extent is not the same as impacts, which are described in sub-element B3.</i></p>

<u>ELEMENT</u>	<u>REQUIREMENTS</u>
	<p>d. For participating jurisdictions in a multi-jurisdictional plan, the plan <b>must</b> describe any hazards that are unique and/or varied from those affecting the overall planning area.</p>
<p><b>B2. Does the Plan include information on previous occurrences of hazard events and on the probability of future hazard events for each jurisdiction? 44 CFR 201.6(c)(2)(i)</b></p> <p><i><b>Intent:</b> To understand potential impacts to the community based on information on the hazard events that have occurred in the past and the likelihood they will occur in the future.</i></p>	<p>a. The plan <b>must</b> include the history of previous hazard events for each of the identified hazards.</p> <p>b. The plan <b>must</b> include the probability of future events for each identified hazard.</p> <p><i><b>Probability</b> means the likelihood of the hazard occurring and may be defined in terms of general descriptors (for example, unlikely, likely, highly likely), historical frequencies, statistical probabilities (for example: 1% chance of occurrence in any given year), and/or hazard probability maps. If general descriptors are used, then they <b>must</b> be defined in the plan. For example, “highly likely” could be defined as equals near 100% chance of occurrence next year or happens every year.</i></p> <p>c. Plan updates <b>must</b> include hazard events that have occurred since the last plan was developed.</p>
<p><b>B3. Is there a description of each identified hazard’s impact on the community as well as an overall summary of the community’s vulnerability for each jurisdiction? 44 CFR 201.6(c)(2)(ii)</b></p> <p><i><b>Intent:</b> For each jurisdiction to consider their community as a whole and analyze the potential impacts of future hazard events and the vulnerabilities that could be reduced through hazard mitigation actions.</i></p>	<p>a. For each participating jurisdiction, the plan <b>must</b> describe the potential impacts of each of the identified hazards on the community.</p> <p><i><b>Impact</b> means the consequence or effect of the hazard on the community and its assets. Assets are determined by the community and include, for example, people, structures, facilities, systems, capabilities, and/or activities that have value to the community. For example, impacts could be described by referencing historical disaster impacts and/or an estimate of potential future losses (such as percent damage of total exposure).</i></p> <p>b. The plan <b>must</b> provide an overall summary of each jurisdiction’s vulnerability to the identified hazards. The overall summary of vulnerability identifies structures, systems, populations or other community assets as defined by the community that are susceptible to damage and loss from hazard events. A plan will meet this sub-element by addressing the requirements described in §201.6(c)(2)(ii)(A-C).</p> <p>Vulnerable assets and potential losses is more than a list of the total exposure of population, structures, and critical facilities in the planning area. An example of an overall summary is a list of key issues or problem statements that clearly describes the community’s greatest vulnerabilities and that will be addressed in the mitigation strategy.</p>

<b><u>ELEMENT</u></b>	<b><u>REQUIREMENTS</u></b>
<p><b>B4. Does the Plan address NFIP insured structures within each jurisdiction that have been repetitively damaged by floods? 44 CFR 201.6(c)(2)(ii)</b></p> <p><i><b>Intent:</b> To inform hazard mitigation actions for properties that have suffered repetitive damage due to flooding, particularly problem areas that may not be apparent on floodplain maps. Information on repetitive loss properties helps inform FEMA hazard mitigation assistance programs under the National Flood Insurance Act.</i></p>	<p>a. The plan <b>must</b> describe the types (residential, commercial, institutional, etc.) and estimate the numbers of repetitive loss properties located in identified flood hazard areas.</p> <p><i><b>Repetitive loss properties</b> are those for which two or more losses of at least \$1,000 each have been paid under the National Flood Insurance Program (NFIP) within any 10-year period since 1978.</i></p> <p><i><b>Severe repetitive loss properties</b> are residential properties that have at least four NFIP payments over \$5,000 each and the cumulative amount of such claims exceeds \$20,000, or at least two separate claims payments with the cumulative amount exceeding the market value of the building.</i></p> <p>Use of flood insurance claim and disaster assistance information is subject to The Privacy Act of 1974, as amended, which prohibits public release of the names of policy holders or recipients of financial assistance and the amount of the claim payment or assistance. However, maps showing general areas where claims have been paid can be made public. If a plan includes the names of policy holders or recipients of financial assistance and the amount of the claim payment or assistance, the plan cannot be approved until this Privacy Act covered information is removed from the plan.</p>

**ELEMENT C. MITIGATION STRATEGY**

**Requirement; reasoning**

- §201.6(c)(3) [The plan shall include the following:] A mitigation strategy that provides the jurisdiction’s blueprint for reducing the potential losses identified in the risk assessment, based on existing authorities, policies, programs, and resources, and its ability to expand on and improve these existing tools.
- §201.6(c)(3)(i) [The hazard mitigation strategy shall include a] description of mitigation goals to reduce or avoid long-term vulnerabilities to the identified hazards.
- §201.6(c)(3)(ii) [The hazard mitigation strategy shall include a] section that identifies and analyzes a comprehensive range of specific mitigation actions and projects being considered to reduce the effects of each hazard, with particular emphasis on new and existing buildings and infrastructure. All plans approved by FEMA after October 1, 2008, must also address the jurisdiction’s participation in the NFIP, and continued compliance with NFIP requirements, as appropriate.
- §201.6(c)(3)(iii) [The hazard mitigation strategy shall include an] action plan, describing how the action identified in paragraph (c)(3)(ii) of this section will be prioritized, implemented, and administered by the local jurisdiction. Prioritization shall include a special emphasis on the extent to which benefits are maximized according to a cost benefit review of the proposed projects and their associated costs.
- §201.6(c)(3)(iv) For multi-jurisdictional plans, there must be identifiable action items specific to the jurisdiction requesting FEMA approval or credit of the plan.



- §201.6(c)(4)(ii) [The plan shall include a] process by which local governments incorporate the requirements of the mitigation plan into other planning mechanisms such as comprehensive or capital improvements, when appropriate.

**Overall Intent.** The mitigation strategy serves as the long-term blueprint for reducing the potential losses identified in the risk assessment. The Stafford Act directs Local Mitigation Plans to describe hazard mitigation actions and establish a strategy to implement those actions.<sup>4</sup> Therefore, all other requirements for a Local Mitigation Plan lead to and support the mitigation strategy.

The mitigation strategy includes the development of goals and prioritized hazard mitigation actions. Goals are long-term policy statements and global visions that support the mitigation strategy. A critical step in the development of specific hazard mitigation actions and projects is assessing the community's existing authorities, policies, programs, and resources and its capability to use or modify local tools to reduce losses and vulnerability from profiled hazards.

In the plan update, goals and actions are either reaffirmed or updated based on current conditions, including the completion of hazard mitigation initiatives, an updated or new risk assessment, or changes in State or local priorities.

<u>ELEMENT</u>	<u>REQUIREMENTS</u>
<p><b>C1. Does the plan document each jurisdiction's existing authorities, policies, programs and resources, and its ability to expand on and improve these existing policies and programs?</b> <b>44 CFR 201.6(c)(3)</b></p> <p><i><b>Intent:</b> To ensure that each jurisdiction evaluates its capabilities to accomplish hazard mitigation actions, through existing mechanisms. This is especially useful for multi-jurisdictional plans where local capability varies widely.</i></p>	<p>a. The plan <b>must</b> describe each jurisdiction's existing authorities, policies, programs and resources available to accomplish hazard mitigation.</p> <p>Examples include, but are not limited to: staff involved in local planning activities, public works, and emergency management; funding through taxing authority, and annual budgets; or regulatory authorities for comprehensive planning, building codes, and ordinances.</p>
<p><b>C2. Does the Plan address each jurisdiction's participation in the NFIP and continued compliance with NFIP requirements, as appropriate?</b> <b>44 CFR 201.6(c)(3)(ii)</b></p> <p><i><b>Intent:</b> To demonstrate flood hazard mitigation efforts by the community through NFIP activities. Where FEMA is the official administering Federal agency of the NFIP, participation in the program is a basic community capability and resource for flood hazard mitigation activities.</i></p>	<p>a. The plan <b>must</b> describe each jurisdiction's participation in the NFIP and describe their floodplain management program for continued compliance. Simply stating "The community will continue to comply with NFIP," will <u>not</u> meet this requirement. The description could include, but is not limited to:</p> <ul style="list-style-type: none"> <li>• Adoption and enforcement of floodplain management requirements, including regulating new construction in Special Flood Hazard Areas (SFHAs);</li> <li>• Floodplain identification and mapping, including any local requests for map updates; or</li> <li>• Description of community assistance and monitoring activities.</li> </ul> <p>Jurisdictions that are currently not participating in the NFIP and where an FHBM or FIRM has been issued may meet this requirement by describing the reasons why the community does not participate.</p>

<u>ELEMENT</u>	<u>REQUIREMENTS</u>
<p><b>C3. Does the Plan include goals to reduce/avoid long-term vulnerabilities to the identified hazards? 44 CFR 201.6(c)(3)(i)</b></p> <p><i><b>Intent:</b> To guide the development and implementation of hazard mitigation actions for the community(ies). Goals are statements of the community’s visions for the future.</i></p>	<p>a. The plan <b>must</b> include general hazard mitigation goals that represent what the jurisdiction(s) seeks to accomplish through mitigation plan implementation.</p> <p><i><b>Goals</b> are broad policy statements that explain what is to be achieved.</i></p> <p>b. The goals <b>must</b> be consistent with the hazards identified in the plan.</p>
<p><b>C4. Does the Plan identify and analyze a comprehensive range of specific mitigation actions and projects for each jurisdiction being considered to reduce the effects of hazards, with emphasis on new and existing buildings and infrastructure? 44 CFR 201.6(c)(3)(ii) and 44 CFR 201.6(c)(3)(iv)</b></p> <p><i><b>Intent:</b> To ensure the hazard mitigation actions are based on the identified hazard vulnerabilities, are within the capability of each jurisdiction, and reduce or avoid future losses. This is the heart of the mitigation plan, and is essential to leading communities to reduce their risk. Communities, not FEMA, “own” the hazard mitigation actions in the strategy.</i></p>	<p>a. The plan <b>must</b> include a mitigation strategy that 1) analyzes actions and/or projects that the jurisdiction considered to reduce the impacts of hazards identified in the risk assessment, and 2) identifies the actions and/or projects that the jurisdiction intends to implement.</p> <p><i><b>Mitigation actions and projects</b> means a hazard mitigation action, activity or process (for example, adopting a building code) or it can be a physical project (for example, elevating structures or retrofitting critical infrastructure) designed to reduce or eliminate the long term risks from hazards. This sub-element can be met with either actions or projects, or a combination of actions and projects.</i></p> <p>The mitigation plan may include non-mitigation actions, such as actions that are emergency response or operational preparedness in nature. These will not be accepted as hazard mitigation actions, but neither will FEMA require these to be removed from the plan prior to approval.</p> <p><i>A <b>comprehensive range</b> consists of different hazard mitigation alternatives that address the vulnerabilities to the hazards that the jurisdiction(s) determine are most important.</i></p> <p>b. Each jurisdiction participating in the plan <b>must</b> have mitigation actions specific to that jurisdiction that are based on the community’s risk and vulnerabilities, as well as community priorities.</p> <p>c. The action plan <b>must</b> reduce risk to existing buildings and infrastructure as well as limit any risk to new development and redevelopment. <i><b>With emphasis on new and existing building and infrastructure</b> means that the action plan includes a consideration of actions that address the built environment.</i></p>

<b><u>ELEMENT</u></b>	<b><u>REQUIREMENTS</u></b>
<p><b>C5. Does the Plan contain an action plan that describes how the actions identified will be prioritized (including cost benefit review), implemented, and administered by each jurisdiction? 44 CFR 201.6(c)(3)(iii) and 44 CFR (c)(3)(iv)</b></p> <p><i><b>Intent:</b> To identify how the plan will directly lead to implementation of the hazard mitigation actions. As opportunities arise for actions or projects to be implemented, the responsible entity will be able to take action towards completion of the activities.</i></p>	<ul style="list-style-type: none"> <li>a. The plan <b>must</b> describe the criteria used for prioritizing implementation of the actions.</li> <li>b. The plan <b>must</b> demonstrate when prioritizing hazard mitigation actions that the local jurisdictions considered the benefits that would result from the hazard mitigation actions versus the cost of those actions. The requirement is met as long as the economic considerations are summarized in the plan as part of the community’s analysis. A complete benefit-cost analysis is not required. Qualitative benefits (<i>for example</i>, quality of life, natural and beneficial values, or other “benefits”) can also be included in how actions will be prioritized.</li> <li>c. The plan <b>must</b> identify the position, office, department, or agency responsible for implementing and administering the action (for each jurisdiction), and identify potential funding sources and expected timeframes for completion.</li> </ul>
<p><b>C6. Does the Plan describe a process by which local governments will integrate the requirements of the mitigation plan into other planning mechanisms, such as comprehensive or capital improvement plans, when appropriate? 44 CFR 201.6(c)(4)(ii)</b></p> <p><i><b>Intent:</b> To assist communities in capitalizing on all available mechanisms that they have at their disposal to accomplish hazard mitigation and reduce risk.</i></p>	<ul style="list-style-type: none"> <li>a. The plan <b>must</b> describe the community’s process to integrate the data, information, and hazard mitigation goals and actions into other planning mechanisms.</li> <li>b. The plan <b>must</b> identify the local planning mechanisms where hazard mitigation information and/or actions may be incorporated.</li> </ul> <p><i><b>Planning mechanisms</b> means governance structures that are used to manage local land use development and community decision- making, such as comprehensive plans, capital improvement plans, or other long-range plans.</i></p> <ul style="list-style-type: none"> <li>c. A multi-jurisdictional plan <b>must</b> describe each participating jurisdiction’s individual process for integrating hazard mitigation actions applicable to their community into other planning mechanisms.</li> <li>d. The updated plan <b>must</b> explain how the jurisdiction(s) incorporated the mitigation plan, when appropriate, into other planning mechanisms as a demonstration of progress in local hazard mitigation efforts.</li> <li>e. The updated plan <b>must</b> continue to describe how the mitigation strategy, including the goals and hazard mitigation actions will be incorporated into other planning mechanisms.</li> </ul>

**ELEMENT D. PLAN REVIEW, EVALUATION, AND IMPLEMENTATION (*Plan Updates Only*)**

**Requirement; reasoning**

- §201.6(d)(3) A local jurisdiction must review and revise its plan to reflect changes in development, progress in local mitigation efforts, and changes in priorities, and resubmit if for approval within 5 years in order to continue to be eligible for mitigation project grant funding.

**Overall Intent.** In order to continue to be an effective representation of the jurisdiction’s overall strategy for reducing its risks from natural hazards, the mitigation plan must reflect current conditions. This will require an assessment of the current development patterns and development pressures as well as an evaluation of any new hazard or risk information. The plan update is an opportunity for the jurisdiction to assess its previous goals and action plan, evaluate progress in implementing hazard mitigation actions, and adjust its actions to address the current realities.

Where conditions of growth and revisions in priorities may have changed very little in a community, much of the text in the updated plan may be unchanged. This is acceptable as long as it still fits the priorities of their community, and it reflects current conditions. The key for plan readers to recognize a good plan update is documentation of the community’s progress or changes in their hazard mitigation program, along with the community’s continued engagement in the mitigation planning process.

<u>ELEMENT</u>	<u>REQUIREMENTS</u>
<p><b>D1. Was the plan revised to reflect changes in development? 44 CFR 201.6(d)(3)</b></p> <p><i><b>Intent:</b> To ensure that the mitigation strategy continues to address the risk and vulnerabilities to existing and potential development, and takes into consideration possible future conditions that can impact the vulnerability of the community.</i></p>	<p>a. The plan <b>must</b> describe changes in development that have occurred in hazard prone areas and increased or decreased the vulnerability of each jurisdiction since the last plan was approved. If no changes in development impacted the jurisdiction’s overall vulnerability, plan updates may validate the information in the previously approved plan.</p> <p><b>Changes in development</b> means recent development (<i>for example</i>, construction completed since the last plan was approved), potential development (<i>for example</i>, development planned or under consideration by the jurisdiction), or conditions that may affect the risks and vulnerabilities of the jurisdictions (<i>for example</i>, climate variability, declining populations or projected increases in population, or foreclosures). Not all development will affect a jurisdiction’s vulnerability.</p>

<u>ELEMENT</u>	<u>REQUIREMENTS</u>
<p><b>D2. Was the plan revised to reflect progress in local mitigation efforts? 44 CFR 201.6(d)(3)</b></p> <p><i><b>Intent:</b> To evaluate and demonstrate progress made in the past five years in achieving goals and implementing actions outlined in their mitigation strategy.</i></p>	<p>a. The plan <b>must</b> describe the status of hazard mitigation actions in the previous plan by identifying those that have been completed or not completed. For actions that have not been completed, the plan <b>must</b> either describe whether the action is no longer relevant or be included as part of the updated action plan.</p>
<p><b>D3. Was the plan revised to reflect changes in priorities? 44 CFR 201.6(d)(3)</b></p> <p><i><b>Intent:</b> To ensure the plan reflects current conditions, including financial, legal, and political realities as well as post-disaster conditions.</i></p>	<p>a. The plan <b>must</b> describe if and how any priorities changed since the plan was previously approved.</p> <p>If no changes in priorities are necessary, plan updates may validate the information in the previously approved plan.</p>

**ELEMENT E. PLAN ADOPTION**

**Requirement; reasoning**

- §201.6(c)(5) [The plan shall include...] Documentation that the plan has been formally adopted by the governing body of the jurisdiction requesting approval of the plan (e.g., City Council, County commissioner, Tribal Council). For multi-jurisdictional plans, each jurisdiction requesting approval of the plan must document that it has been formally adopted.

**Overall Intent.** Adoption by the local governing body demonstrates the jurisdiction’s commitment to fulfilling the hazard mitigation goals and actions outlined in the plan. Adoption legitimizes the plan and authorizes responsible agencies to execute their responsibilities. Updated plans also are adopted anew to demonstrate community recognition of the current planning process, changes that have occurred within the previous five years, and validate community priorities for hazard mitigation actions.

<u>ELEMENT</u>	<u>REQUIREMENTS</u>
<p><b>E1. Does the Plan include documentation that the plan has been formally adopted by the governing body of the jurisdiction requesting approval? 44 CFR 201.6(c)(5)</b></p> <p><i><b>Intent:</b> To demonstrate the jurisdiction’s commitment to fulfilling the hazard mitigation goals outlined in the plan, and to authorize responsible agencies to execute their responsibilities.</i></p>	<p>a. The plan <b>must</b> include documentation of plan adoption, usually a resolution by the governing body or other authority.</p> <p>If the local jurisdiction has not passed a formal resolution, or used some other documentation of adoption, the clerk or city attorney <b>must</b> provide written confirmation that the action meets their community’s legal requirements for official adoption and/or the highest elected official or their designee <b>must</b> submit written proof of the adoption. The signature of one of these officials is required with the explanation or other proof of adoption.</p> <p>Minutes of a council or other meeting during which the plan is adopted will be sufficient if local law allows meeting records to be submitted as documentation of adoption. The clerk of the governing body, or city attorney, <b>must</b> provide a copy of the law and a brief, written explanation such as, “in accordance with section _____ of the city code/ordinance, this constitutes formal adoption of the measure,” with an official signature.</p> <p>If adopted after FEMA review, adoption <b>must</b> take place within one calendar year of receipt of FEMA’s “Approval Pending Adoption.” See Section 5, <i>Plan Review Procedure</i> for more information on “Approvable Pending Adoption.”</p>
<u>ELEMENT</u>	<u>REQUIREMENTS</u>
<p><b>E2. For multi-jurisdictional plans, has each jurisdiction requesting approval of the plan documented formal plan adoption? 44 CFR 201.6(c)(5)</b></p> <p><i><b>Intent:</b> To demonstrate the jurisdiction’s commitment to fulfilling the hazard mitigation goals outlined in the plan, and to authorize responsible agencies to execute their responsibilities.</i></p>	<p>a. Each jurisdiction that is included in the plan <b>must</b> have its governing body adopt the plan prior to FEMA approval, even when a regional agency has the authority to prepare such plans.</p> <p>As with single jurisdictional plans, in order for FEMA to give approval to a multi-jurisdictional plan, at least one participating jurisdiction <b>must</b> formally adopt the plan within one calendar year of FEMA’s designation of the plan as “Approvable Pending Adoption.” See Section 5, <i>Plan Review Procedure</i> for more information on “Approvable Pending Adoption.”</p>

## Appx F. – SECTION 5: PLAN REVIEW PROCEDURE

### COMMUNICATING THE REVIEW

FEMA will work with State counterparts to establish mutually agreeable methods of communication for Local Mitigation Plan reviews. State officials completing reviews may have their own procedures or preferences for communication with the local government or with FEMA. However, a clear understanding of how information on Local Mitigation Plan reviews will be relayed, and where necessary issues resolved, will foster more positive relationships between all parties and provide for greater understanding of unique local situations.

**FEMA:** At a minimum, the following communication techniques will be employed by FEMA in coordination with State offices responsible for the review of Local Mitigation Plans:

- FEMA will provide a completed *Plan Review Tool* with the review determination, including a description of the required revisions in the Regulation Checklist, and recommendations in the Plan Assessment.
- FEMA will send copies of all signed correspondence electronically, not just by mail, to reduce the overall review time.

**FEMA, States and Local Governments:** The following communication techniques may also be employed by FEMA in coordination with State offices responsible for the review of Local Mitigation Plans:

- **Joint Reviews:** FEMA and the State may conduct a joint review by phone or in person to discuss the plan section-by-section, highlighting strengths of the community's mitigation plan, as well as areas where improvements make the plan more effective at reducing risks to known hazards.
- **Involve the Locals:** States may choose to include the local officials in joint reviews, or allow direct contact between FEMA and the local official to reduce review time.
- **Positive First Contact:** When revisions are required, FEMA may contact the State directly by phone to discuss revisions and offer an opportunity for changes prior to issuing a "Required Revisions" letter.
- **Phone First:** When revisions are required, State and/or local officials are encouraged to call FEMA for any clarifications or questions rather than conduct communication in writing.
- **Share Drafts:** Local officials may share drafts of their entire plan, or at least the results of the risk assessment, with the State and/or FEMA well in advance of finalizing the plan. Early feedback from the State and/or FEMA will let the jurisdiction know that it is on the right track, that additional material needs to be added, or that major revisions need to be made in time to develop and submit an approvable plan by established deadlines.
- **Stay on Schedule:** States and local officials should coordinate with each other on procedures and schedules for State support of local mitigation planning efforts, initial State review of Local Mitigation Plans, and FEMA review and approval in time to meet deadlines.
- **Request Technical Assistance:** States and local officials may request technical assistance from FEMA during the development of the Local Mitigation Plan, not simply contact



FEMA at the point of review to ensure the planning process is understood and executed successfully.

## MITIGATION PLAN SUBMITTAL

**State:** The State is responsible for the initial review and coordination of all Local Mitigation Plans within that State. Once initial review by the State is complete, the State submits the plan to the respective FEMA Regional office requesting a FEMA review (See FEMA Regional office contact information at: <http://www.fema.gov/about/contact/regions.shtm>). This submittal consists of the following:

- a) Transmittal letter or email from the State Hazard Mitigation Officer, Governor’s Authorized Representative, or other delegated State officer;
- b) Local Mitigation Plan document to be reviewed;
- c) *Plan Review Tool* completed by the State; and
- d) If the Plan is already adopted by one or more of the participating local jurisdictions, copies of any adopting resolution(s) or letter(s).

Plans may be submitted electronically or in paper copy, or both. Hard copies may be required for review purposes, and electronic copies may be requested for recordkeeping. If sending a paper copy, the State should include an “ATTENTION:” line on the mailing label with the name of the FEMA Mitigation Planner in the respective FEMA Regional office.

**FEMA:** Upon receipt, FEMA will provide confirmation to the State either by phone, email or mail.

## MITIGATION PLAN REVIEW

### **Review Timeframes**

**FEMA:** All Local Mitigation Plans submitted to FEMA will be reviewed by FEMA using this *Local Mitigation Plan Review Guide* and the corresponding *Local Mitigation Plan Review Tool*.

FEMA will work with State officials to ensure plans are reviewed in a timely manner and to prioritize the order of the review of all plans submitted. All Local Mitigation Plans will be reviewed within 45 calendar dates, whenever possible. If FEMA is unable to complete a Local Mitigation Plan review within 45 days of receipt from the State, the FEMA Regional Administrator, or his/her designee will either:

- a) Send a signed letter to be received by the State within 10 calendar days after the end of the 45-day review period. The letter will include an explanation of the cause of any delays in the review of the Local Mitigation Plan and a reasonable projection of the date by which the plan review will be completed. If a completed review is sent to the State within 10 calendar days after the end of the 45-day review period, a signed cover letter will indicate the reason for the delay.

or

- b) Send a monthly status update to each State listing the status of all plans submitted to FEMA for review. This will include, at a minimum, the status of all plans received and currently under

review, a reasonable projection of the date by which the plan review will be completed, and the cause for delays for any plans projected to be reviewed more than 45 days after receipt. This monthly update may also include plans approved, plans nearing expiration, or other status categories as deemed appropriate by FEMA.

Upon completion of a Plan review, FEMA will prepare and forward a notification in the form of a "Requires Revisions", "Approvable Pending Adoption (APA)" or "Approval" letter to the State. The notification to the State will include a copy of the *Local Mitigation Plan Review Tool*.

### **Plan Revisions**

**FEMA:** Local Mitigation Plans that do not meet all of the requirements in 44 CFR 201.6 are returned with a "Requires Revisions." The required revisions are indicated on the Regulation Checklist (in the *Local Mitigation Plan Review Tool*) and sent to the State.

When a plan is not approved upon the first review, and requires revisions to meet 44 CFR Part 201, FEMA will complete subsequent plan reviews within 45 days of receipt from the State, whenever possible. **Items a and b above, Review Timeframes, apply to these subsequent plan reviews as well.**

The review of a revised Local Mitigation Plan and FEMA's responses included in the Mitigation Plan Review Tool will take into consideration:

- a. only those Elements of the Tool where revisions were required in the previous review(s) to meet 44 CFR Part 201;
- b. information in the plan was deleted or changed from its previous version to make the plan no longer meet that Element of the Local Mitigation Plan Review Tool; or
- c. the entire plan if received by the Region more than one year after the Region's previous plan review was sent to the State.

**State:** Unless otherwise agreed upon between the State and FEMA, the State is responsible for forwarding the *Local Mitigation Plan Review Tool* to the local community. The local community may work with the State, jointly with the State and FEMA, or directly with FEMA to make the revisions. The local community resubmits the plan to the State, who is responsible again for initial review before forwarding the plan to FEMA.

## **MITIGATION PLAN APPROVAL AND ADOPTION**

### **Approvable Pending Adoption.**

Approval Pending Adoption (APA) is a recommended and potentially time-saving process by which jurisdictions submit the final draft Local Mitigation Plan for a review prior to formal jurisdictional adoption by the appropriate officials, agencies, or organizations. If FEMA determines the plan is not approvable, the responsible local agency or office will be able to address deficiencies before taking the plan through adoption, therefore avoiding unnecessary delays in plan approval.

**FEMA:** If all Elements are met except adoption, FEMA determines that the Local Mitigation Plan is APA. The FEMA Region sends an APA letter to the State who, in turn, forwards the determination to the local community. The jurisdiction can then proceed with the adoption process, knowing the adopted plan will be approved. When the APA plan is adopted by the jurisdiction, and FEMA has received the documentation of adoption, then it will be formally approved through a signed FEMA approval letter.

**State:** Unless otherwise agreed upon between the State and FEMA, all APA letters from FEMA are sent to the State; the State is responsible for communicating the status of the Plan with the local community.

**Local Government:** If adopted after FEMA review, adoption must take place within one calendar year of receipt of FEMA's APA letter. If the plan is not adopted within one calendar year of FEMA's APA letter, the jurisdiction must update the entire plan and resubmit it for FEMA review. The plan approval date begins the five-year approval period and sets the expiration date for the plan. The official approval date is indicated on the signed FEMA approval letter. In addition to providing the approval date, it also indicates the expiration date of the plan.

As with single jurisdictional plans, in order for FEMA to approve a multi-jurisdictional plan, at least one participating jurisdiction must formally adopt the plan within one calendar year of FEMA's designation of the plan as APA. Participants of a multi-jurisdictional plan will assume the expiration date five years from the first jurisdiction's approval date regardless of the other participant's subsequent adoption date(s). The five-year approval period does not get "re-set" each time another participating jurisdiction adopts the plan.

For example, if jurisdiction #1 is the first jurisdiction to formally adopt the Blue County Multi-Jurisdictional Hazard Mitigation Plan and receives FEMA's "approval" of the plan on January 15, 2008, the plan will expire on January 15, 2013, exactly five years later. If jurisdiction #2 does not formally adopt the same plan until July 15, 2009, its eligibility would expire on January 15, 2013, the same exact date that Blue County's plan received "approval" when the plan was first approved. Thus, jurisdiction #2 does not benefit from the full five-year approval timeframe, but only 3½ years. FEMA recommends that all participating jurisdictions coordinate the adoption process as soon as the plan has received APA status to ensure that all participants are covered by a plan for the full five years.

### **Approved**

**FEMA:** Once all Elements are 'Met' and the adoption resolution is received by the FEMA Regional office, FEMA will send an "Approved" letter signed by the Regional Administrator or his/her designee to the State. This designee may be the Regional Mitigation Division Director, Risk Analysis Branch Chief, or other designated official. Correspondence for "Approved" plans will identify, at a minimum, the name of the approved plan, jurisdiction(s) that have adopted the plan, date(s) of plan adoption, date of plan approval, and the expiration date of FEMA's approval of the plan. For multi-jurisdictional plans, this information may be included in the *Local Mitigation Plan Review Tool* or other attachment.

Approval letter(s) for multi-jurisdictional plans will clearly read that the expiration date of FEMA’s approval of the plan applies for all participating jurisdictions, regardless of different adoption dates. If the plan is multi-jurisdictional and all participating jurisdiction’s adoptions are not received by FEMA at the same time, more than one approval letter will be sent to the State as additional adoptions are received by FEMA. A completed *Local Mitigation Plan Review Tool* will accompany correspondence for all approved Local Mitigation Plans.

**State:** Unless otherwise agreed upon between the State and FEMA, all approval letters from FEMA are sent to the State; the State is responsible for communicating the approval with the local community.

## APPENDIX F – 1: LOCAL MITIGATION PLAN REVIEW TOOL: WINNEBAGO COUNTY

The *Local Mitigation Plan Review Tool* demonstrates how the Local Mitigation Plan meets the regulation in 44 CFR §201.6 and offers States and FEMA Mitigation Planners an opportunity to provide feedback to the community.

- The Regulation Checklist provides a summary of FEMA’s evaluation of whether the Plan has addressed all requirements.
- The Plan Assessment identifies the plan’s strengths as well as documents areas for future improvement.
- The Multi-jurisdiction Summary Sheet is an optional worksheet that can be used to document how each jurisdiction met the requirements of the each Element of the Plan (Planning Process; Hazard Identification and Risk Assessment; Mitigation Strategy; Plan Review, Evaluation, and Implementation; and Plan Adoption).

The FEMA Mitigation Planner must reference this *Local Mitigation Plan Review Guide* when completing the *Local Mitigation Plan Review Tool*.

<b>Jurisdiction:</b> Winnebago County	<b>Title of Plan:</b> Winnebago County Multi-Hazard Mitigation Plan (2019)	<b>Date of Plan:</b> DRAFT: 12/23/2019
<b>Local Point of Contact:</b> Sean Von Bergen		<b>Address:</b> 424 N. Springfield Ave Rockford, IL 61101
<b>Title:</b> Civil Engineer		
<b>Agency:</b> Winnebago County Highway Department		
<b>Phone Number:</b> 815-319-4034		<b>E-Mail:</b> svonbergen@wincoil.us

<b>State Reviewer:</b>	<b>Title:</b>	<b>Date:</b>
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<b>FEMA Reviewer:</b>	<b>Title:</b>	<b>Date:</b>
<b>Date Received in FEMA Region (insert #)</b>		
<b>Plan Not Approved</b>		
<b>Plan Approvable Pending Adoption</b>		
<b>Plan Approved</b>		

## SECTION 1: REGULATION CHECKLIST

**INSTRUCTIONS:** The Regulation Checklist must be completed by FEMA. The purpose of the Checklist is to identify the location of relevant or applicable content in the Plan by Element/sub-element and to determine if each requirement has been ‘Met’ or ‘Not Met.’ The ‘Required Revisions’ summary at the bottom of each Element must be completed by FEMA to provide a clear explanation of the revisions that are required for plan approval.

Required revisions must be explained for each plan sub-element that is ‘Not Met.’ Sub- elements should be referenced in each summary by using the appropriate numbers (A1, B3, etc.), where applicable.

Requirements for each Element and sub-element are described in detail in this *Plan Review Guide* in Section 4, Regulation Checklist.

<b>1. REGULATION CHECKLIST</b>		<b>Location in Plan (section and/or page number)</b>	<b>Met</b>	<b>Not Met</b>
<b>Regulation (44 CFR 201.6 Local Mitigation Plans)</b>				
<b>ELEMENT A. PLANNING PROCESS</b>				
A1. Does the Plan document the planning process, including how it was prepared and who was involved in the process for each jurisdiction? (Requirement §201.6(c)(1))	Section 5, pg. 28			
A2. Does the Plan document an opportunity for neighboring communities, local and regional agencies involved in hazard mitigation activities, agencies that have the authority to regulate development as well as other interests to be involved in the planning process? (Requirement §201.6(b)(2))	Section 5, pg(s). 29-32			
A3. Does the Plan document how the public was involved in the planning process during the drafting stage? (Requirement §201.6(b)(1))	Section 5, pg. 33			
A4. Does the Plan describe the review and incorporation of existing plans, studies, reports, and technical information? (Requirement §201.6(b)(3))	Section 5, pg(s). 33, 170; Appendix E			
A5. Is there discussion of how the community(ies) will continue public participation in the plan maintenance process? (Requirement §201.6(c)(4)(iii))	Section 9, pg. 153			
A6. Is there a description of the method and schedule for keeping the plan current (monitoring, evaluating and updating the mitigation plan within a 5-year cycle)? (Requirement §201.6(c)(4)(i))	Section 9, pg. 152			
<b><u>ELEMENT A: REQUIRED REVISIONS</u></b>				

<b>1. REGULATION CHECKLIST</b>		<b>Location in Plan (section and/or page number)</b>	<b>Met</b>	<b>Not Met</b>
<b>Regulation (44 CFR 201.6 Local Mitigation Plans)</b>				
<b>ELEMENT B. HAZARD IDENTIFICATION AND RISK ASSESSMENT</b>				
B1. Does the Plan include a description of the type, location, and extent of all natural hazards that can affect each jurisdiction(s)? (Requirement §201.6(c)(2)(i))	Section 7, pg(s). 41-99			
B2. Does the Plan include information on previous occurrences of hazard events and on the probability of future hazard events for each jurisdiction? (Requirement §201.6(c)(2)(i))	Section 7, pg(s). 41-99			
B3. Is there a description of each identified hazard’s impact on the community as well as an overall summary of the community’s vulnerability for each jurisdiction? (Requirement §201.6(c)(2)(ii))	Section 7, pg(s). 41-99			
B4. Does the Plan address NFIP insured structures within the jurisdiction that have been repetitively damaged by floods? (Requirement §201.6(c)(2)(ii))	Section 7, pg(s). 42-43, 45, 98-100			
<b><u>ELEMENT B: REQUIRED REVISIONS</u></b>				
<b>ELEMENT C. MITIGATION STRATEGY</b>				
C1. Does the plan document each jurisdiction’s existing authorities, policies, programs and resources and its ability to expand on and improve these existing policies and programs? (Requirement §201.6(c)(3))	Section 8, pg(s). 98-101			
C2. Does the Plan address each jurisdiction’s participation in the NFIP and continued compliance with NFIP requirements, as appropriate? (Requirement §201.6(c)(3)(ii))	Section 8, pg(s). 98-100			
C3. Does the Plan include goals to reduce/avoid long-term vulnerabilities to the identified hazards? (Requirement §201.6(c)(3)(i))	Section 8, pg. 102			
C4. Does the Plan identify and analyze a comprehensive range of specific mitigation actions and projects for each jurisdiction being considered to reduce the effects of hazards, with emphasis on new and existing buildings and infrastructure? (Requirement §201.6(c)(3)(ii))	Section 8, pg(s). 109-167, Appendix E.			
C5. Does the Plan contain an action plan that describes how the actions identified will be prioritized (including cost benefit review), implemented, and administered by each jurisdiction? (Requirement §201.6(c)(3)(iv)); (Requirement §201.6(c)(3)(iii))	Section 8, pg(s). Action Plan: 102-105; Mitigation Strategies: 109-167, Appendix E. Potential Funding: 105-107			
C6. Does the Plan describe a process by which local governments will integrate the requirements of the mitigation plan into other planning mechanisms, such as comprehensive or capital improvement plans, when appropriate? (Requirement §201.6(c)(4)(ii))	Section 8, pg(s). 104-105			
<b><u>ELEMENT C: REQUIRED REVISIONS</u></b>				

<b>1. REGULATION CHECKLIST</b>		<b>Location in Plan (section and/or page number)</b>	<b>Met</b>	<b>Not Met</b>
<b>Regulation (44 CFR 201.6 Local Mitigation Plans)</b>				
<b>ELEMENT D. PLAN REVIEW, EVALUATION, AND IMPLEMENTATION</b> (applicable to plan updates only)				
D1. Was the plan revised to reflect changes in development? (Requirement §201.6(d)(3))	Section 2 pg(s). 8-9			
D2. Was the plan revised to reflect progress in local mitigation efforts? (Requirement §201.6(d)(3))	Section 8, pg(s). 109-167, Appendix E.			
D3. Was the plan revised to reflect changes in priorities? (Requirement §201.6(d)(3))	Section 6, pg(s). 33, 37-39, Appendix E.			
<b><u>ELEMENT D: REQUIRED REVISIONS</u></b>				
<b>ELEMENT E. PLAN ADOPTION</b>				
E1. Does the Plan include documentation that the plan has been formally adopted by the governing body of the jurisdiction requesting approval? (Requirement §201.6(c)(5))	Section 9, pg. 168			
E2. For multi-jurisdictional plans, has each jurisdiction requesting approval of the plan documented formal plan adoption? (Requirement §201.6(c)(5))	Section 9, pg. 168			
<b><u>ELEMENT E: REQUIRED REVISIONS</u></b>				
<b>ELEMENT F. ADDITIONAL STATE REQUIREMENTS (OPTIONAL FOR STATE REVIEWERS ONLY; NOT TO BE COMPLETED BY FEMA)</b>				
F1.				
F2.				
<b><u>ELEMENT F: REQUIRED REVISIONS</u></b>				

## SECTION 2: PLAN ASSESSMENT

**INSTRUCTIONS:** The purpose of the Plan Assessment is to offer the local community more comprehensive feedback to the community on the quality and utility of the plan in a narrative format. The audience for the Plan Assessment is not only the plan developer/local community planner, but also elected officials, local departments and agencies, and others involved in implementing the Local Mitigation Plan. The Plan Assessment must be completed by FEMA. The Assessment is an opportunity for FEMA to provide feedback and information to the community on: 1) suggested improvements to the Plan; 2) specific sections in the Plan where the community has gone above and beyond minimum requirements; 3) recommendations for plan implementation; and 4) ongoing partnership(s) and



information on other FEMA programs, specifically RiskMAP and Hazard Mitigation Assistance programs. The Plan Assessment is divided into two sections:

1. Plan Strengths and Opportunities for Improvement
  2. Resources for Implementing Your Approved Plan
- ***Plan Strengths and Opportunities for Improvement*** is organized according to the plan Elements listed in the Regulation Checklist. Each Element includes a series of italicized bulleted items that are suggested topics for consideration while evaluating plans, but it is not intended to be a comprehensive list. FEMA Mitigation Planners are not required to answer each bullet item, and should use them as a guide to paraphrase their own written assessment (2-3 sentences) of each Element.  
The Plan Assessment must not reiterate the required revisions from the Regulation Checklist or be regulatory in nature, and should be open-ended and to provide the community with suggestions for improvements or recommended revisions. The recommended revisions are suggestions for improvement and are not required to be made for the Plan to meet Federal regulatory requirements. The italicized text should be deleted once FEMA has added comments regarding strengths of the plan and potential improvements for future plan revisions. It is recommended that the Plan Assessment be a short synopsis of the overall strengths and weaknesses of the Plan (no longer than two pages), rather than a complete recap section by section.
  - ***Resources for Implementing Your Approved Plan*** provides a place for FEMA to offer information, data sources and general suggestions on the overall plan implementation and maintenance process. Information on other possible sources of assistance including, but not limited to, existing publications, grant funding or training opportunities, can be provided. States may add state and local resources, if available.

## **A. Plan Strengths and Opportunities for Improvement**

This section provides a discussion of the strengths of the plan document and identifies areas where these could be improved beyond minimum requirements.

### **Element A: Planning Process**

*How does the Plan go above and beyond minimum requirements to document the planning process with respect to:*

- *Involvement of stakeholders (elected officials/decision makers, plan implementers, business owners, academic institutions, utility companies, water/sanitation districts, etc.);*
- *Involvement of Planning, Emergency Management, Public Works Departments or other planning agencies (i.e., regional planning councils);*
- *Diverse methods of participation (meetings, surveys, online, etc.); and*
- *Reflective of an open and inclusive public involvement process.*

### **Element B: Hazard Identification and Risk Assessment**

*In addition to the requirements listed in the Regulation Checklist, 44 CFR 201.6 Local Mitigation Plans identifies additional elements that should be included as part of a plan's risk assessment. The plan should describe vulnerability in terms of:*

- 1) *A general description of land uses and future development trends within the community so that mitigation options can be considered in future land use decisions;*
- 2) *The types and numbers of existing and future buildings, infrastructure, and critical facilities located in the identified hazard areas; and*
- 3) *A description of potential dollar losses to vulnerable structures, and a description of the methodology used to prepare the estimate.*

*How does the Plan go above and beyond minimum requirements to document the Hazard Identification and Risk Assessment with respect to:*

- *Use of best available data (flood maps, HAZUS, flood studies) to describe significant hazards;*
- *Communication of risk on people, property, and infrastructure to the public (through tables, charts, maps, photos, etc.);*
- *Incorporation of techniques and methodologies to estimate dollar losses to vulnerable structures;*
- *Incorporation of Risk MAP products (i.e., depth grids, Flood Risk Report, Changes Since Last FIRM, Areas of Mitigation Interest, etc.); and*
- *Identification of any data gaps that can be filled as new data became available.*

### **Element C: Mitigation Strategy**

*How does the Plan go above and beyond minimum requirements to document the Mitigation Strategy with respect to:*

- *Key problems identified in, and linkages to, the vulnerability assessment;*
- *Serving as a blueprint for reducing potential losses identified in the Hazard Identification and Risk Assessment;*
- *Plan content flow from the risk assessment (problem identification) to goal setting to mitigation action development;*
- *An understanding of mitigation principles (diversity of actions that include structural projects, preventative measures, outreach activities, property protection measures, post-disaster actions, etc);*

- Specific mitigation actions for each participating jurisdictions that reflects their unique risks and capabilities;
- Integration of mitigation actions with existing local authorities, policies, programs, and resources; and
- Discussion of existing programs (including the NFIP), plans, and policies that could be used to implement mitigation, as well as document past projects.

**Element D: Plan Update, Evaluation, and Implementation (*Plan Updates Only*)**

*How does the Plan go above and beyond minimum requirements to document the 5-year Evaluation and Implementation measures with respect to:*

- Status of previously recommended mitigation actions;
- Identification of barriers or obstacles to successful implementation or completion of mitigation actions, along with possible solutions for overcoming risk;
- Documentation of annual reviews and committee involvement;
- Identification of a lead person to take ownership of, and champion the Plan;
- Reducing risks from natural hazards and serving as a guide for decisions makers as they commit resources to reducing the effects of natural hazards;
- An approach to evaluating future conditions (i.e. socio-economic, environmental, demographic, change in built environment etc.);
- Discussion of how changing conditions and opportunities could impact community resilience in the long term; and
- Discussion of how the mitigation goals and actions support the long-term community vision for increased resilience.

**Element D-B: Resources for Implementing Your Approved Plan**

*Ideas may be offered on moving the mitigation plan forward and continuing the relationship with key mitigation stakeholders such as the following:*

- What FEMA assistance (funding) programs are available (for example, Hazard Mitigation Assistance (HMA)) to the jurisdiction(s) to assist with implementing the mitigation actions?
- What other Federal programs (National Flood Insurance Program (NFIP), Community Rating System (CRS), Risk MAP, etc.) may provide assistance for mitigation activities?
- What publications, technical guidance or other resources are available to the jurisdiction(s) relevant to the identified mitigation actions?
- Are there upcoming trainings/workshops (Benefit-Cost Analysis (BCA), HMA, etc.) to assist the jurisdictions(s)?
- What mitigation actions can be funded by other Federal agencies (for example, U.S. Forest Service, National Oceanic and Atmospheric Administration (NOAA), Environmental Protection Agency (EPA) Smart Growth, Housing and Urban Development (HUD) Sustainable Communities, etc.) and/or state and local agencies?

**SECTION 3: MULTI-JURISDICTION SUMMARY SHEET (OPTIONAL)**

**INSTRUCTIONS:** For multi-jurisdictional plans, a Multi-Jurisdiction Summary Spreadsheet may be completed by listing each participating jurisdiction, which required Elements for each jurisdiction were ‘Met’ or ‘Not Met,’ and when the adoption resolutions were received. This Summary Sheet does not imply that a mini-plan be developed for each jurisdiction; it should be used as an optional worksheet to ensure that each jurisdiction participating in the Plan has been documented and has met the requirements for those Elements (A through E).

Multi-Jurisdiction Summary Sheet*												
#	Jurisdiction Name	Jurisdiction Type (city/ borough/ township/ village/etc.)	Plan POC	Mailing Address	Email	Phone	Requirements Met (Y/N)					
							A. Planning Process	B. Hazard Identification & Risk Assessment	C**. Mitigation Strategy	D. Plan Review	E. Plan Adoption	F. State Requirements
1	Winnebago County	County	Sean Von Bergen	424 N. Springfield Ave. Rockford, IL 61101	svonbergen@wincoil.us	815-319-4034	Y	Y	Y	Y	-	-
2	City of Loves Park	City	Nathan Bruck	100 Heart Boulevard, Loves Park, IL 61111	nathanbruck@loves-park.il.us	815-654-5030	Y	Y	Y	Y	-	-
3	City of Rockford	City	Michele Pankow	204 S. 1 <sup>st</sup> St. Rockford, IL 61101	michele.pankow@rockfordil.gov	779-348-7171	Y	Y	Y	Y	-	-
4	City of South Beloit	City	Ted Rehl	519 Blackhawk Blvd. Ste 2., South Beloit, IL 61080	t.rehl@southbeloit.org	815-389-3023	Y	Y	Y	Y	-	-
5	Village of Cherry Valley	Village	Chuck Freeman	806 E. State St., Cherry Valley, IL 61016	cfreeman@cherryvalley.org	815-332-3441	Y	Y	Y	Y	-	-
6	Village of Durand	Village	Kurt Ditzler	308 W. Main St., Durand, IL 61024	wcfdp1@mchsi.com	815-248-2606	Y	Y	Y	Y	-	-
7	Village of Machesney Park	Village	Carrie Houston	300 Roosevelt Rd., Machesney Park, IL 61115	carrieh@machesneypark.org	815-877-5432	Y	Y	Y	Y	-	-

8	Village of New Milford	Village	Tim Owens	6771 11 St., New Milford, IL 61109	timothyo@villageofnewmilford.com	815-874-7271	Y	Y	Y	Y	-	-
9	Village of Pecatonica	Village	Bill Smull	405 Main St., Pecatonica, IL 61063	bsmull@villageofpecatonica.com	815-239-2310	Y	Y	Y	Y	-	-
10	Village of Rockton	Village	Dale Adams	110 E. Main St., Rockton, IL 61072	adams@rocktonvillage.com	815-624-7600	Y	Y	Y	Y	-	-
11	Village of Roscoe	Village	Jamie Evans	10631 Main St., Roscoe, IL 61073	jevans7892@roscoepolice.com	815-623-2829	Y	Y	Y	Y	-	-
12	Village of Winnebago	Village	Frank Eubank	108 W. Main St., Winnebago, IL 61088	feubank@villageofwinnebago.com	815-335-2020	Y	Y	Y	Y	-	-

Notes: \*The jurisdictions included below are limited to those who have the capability to adopt the 2019 Winnebago County Multi-Hazard Mitigation Plan.

\*\*Organizations that updated their mitigation strategies for 2019.

## **Appendix G- Winnebago County Jurisdiction Adoption Resolutions**

Municipal adoption resolutions/relevant paperwork will be included as it is provided.

Last updated: 12/30/19