Winnebago County, Illinois Multi-Hazard Mitigation Plan

A 2014 Update of the 2007 Winnebago Countywide MHMP

WINNEBAGO COUNTY ILLINOIS

IEMA
ILLINOIS EMERGENCY MANAGEMENT AGENCY

FEMA

SIU
Southern Illinois University
CARBONDALE

Multi-Hazard Mitigation Plan

Winnebago County, Illinois

Adoption Date: -- _____ --

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Acknowledgements

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Section 1. Introduction

Hazard mitigation is any sustained action to reduce or eliminate long-term risk to human life and property from hazards. The Federal Emergency Management Agency (FEMA) makes reducing hazards one of its primary goals; hazard-mitigation planning and the subsequent implementation of mitigation projects, measures, and policies is a primary mechanism in achieving FEMA's goal.

The Multi-Hazard Mitigation Plan (MHMP) is a requirement of the Federal Disaster Mitigation Act of 2000 (DMA 2000). The development of a local government plan is required in order to maintain eligibility for certain federal disaster assistance and hazard mitigation funding programs. In order for the National Flood Insurance Program (NFIP) communities to be eligible for future mitigation funds, they must adopt an MHMP.

In recognition of the importance of planning in mitigation activities, FEMA created Hazus Multi-Hazard (Hazus-MH), a powerful geographic information system (GIS)-based disaster risk assessment tool. This tool enables communities of all sizes to estimate losses from floods, hurricanes, earthquakes, and other natural hazards and to measure the impact of various mitigation practices that might help reduce those losses.

Winnebago County completed their first Multi-Hazard Mitigation Plan in 2007. Throughout the five-year planning cycle, the Winnebago County mitigation planning team reconvened to monitor, evaluate, and update the plan on an annual basis. The Natural Hazards Research and Mitigation Group at Southern Illinois University Carbondale (SIU) assisted Winnebago County in developing their MHMP update. SIU guided the planning process, performed the hazard risk assessment, and assisted in identifying sound mitigation activities. This document hereby serves as Winnebago County's Multi-Hazard Mitigation Plan update.

Section 2. Planning Process

2.1 Timeline

The MHMP process is broken into a series of five meetings. These meetings were organized by SIU and hosted by the Winnebago County Highway Department. At these five meetings, various tasks were completed by SIU and the Winnebago County mitigation planning team:

Meeting 1: The purpose of Meeting 1 was to introduce the MHMP process and organize resources. SIU gathered local resources that contributed to the detailed county risk assessment.

Meeting 2: SIU presented the county's historical hazards. Based on this information, the planning team identified natural hazards to include in the plan, and ranked hazards by potential damages and occurrences. The planning team also provided SIU with disaster scenarios for the county risk assessment.

Meeting 3: SIU presented the draft risk assessment, derived from the Hazus-MH and GIS modeling of the identified disasters, to the planning team. The general public was invited to this meeting through a series of newspaper articles and/or radio spots. At the end of the meeting, SIU encouraged the general public to ask questions and provide input to the planning process, fulfilling one of FEMA's requirements for public input.

Meeting 4: This meeting consisted of a "brainstorming session." The planning team lent local knowledge to identify and prioritize mitigation strategies and projects that can address the threats identified in the risk assessment. FEMA requires the plan to contain mitigation strategies specific to each hazard and for each incorporated area within the county.

Meeting 5: The planning team reviewed the draft plan, proposed revisions, and accepted the plan after SIU incorporated the necessary changes. Subsequently, SIU forwarded the county MHMP to the mitigation staff at the Illinois Emergency Management Agency (IEMA) for review prior to submitting it to FEMA.

2.2 Planning Team Information

Joseph Vanderwerff, County Engineer, heads the planning team. The planning team includes representatives from various county departments, municipalities, and public and private utilities. Table 2-1 identifies the planning team individuals and the organizations they represent.

Table 2-1: Mitigation Planning Team Members

Jurisdiction	Name	Title
Village of Cherry Valley	Jim Claeyssen	Village President
	Jim Wise	Village Administrator
	Chuck Freeman	Director of Public Works
Village of Durand	Gary Haughton	Village President
City of Loves Park	Darryl Lindberg	Mayor
	Dan Jacobson	Director of Public Works
	Andrew Quintanilla	Zoning Officer

Jurisdiction	Name	Title
Village of Machesney Park	Jerry Bolin	Village President
	Chad Hunter	Superintendent of Public Works
	Carrie Houston	Planning & Zoning Specialist
Village of New Milford	Dennis McMullen*	Village Engineer
Village of Pecatonica	Dan Barber	Village President
	Robert Smith	Chief of Police
	Bill Faller	Superintendent, CUSD 321
City of Rockford	Marcy Leach	Engineering Operations Manager
	Dean Kurth	Environmental Storm Water Project Manager
	Thaddeus Mack	Planner/Building Plans Examiner
	Joseph Corl	Division Chief, Fire Department
Village of Rockton	Dale Adams	Mayor
	Gordy Nygren	Public Works Manager
Village of Roscoe	Dave Krienke	Village President
	Jamie Evans	Chief of Police
	Emily Roen	Village Engineer
City of South Beloit	Ken Morse	Fire Chief
	Jeff Reininger	Public Works Director
Village of Winnebago	Franklin Eubank	Village President
	Chad Insko	Director of Utilities
	Todd Stockburger	Chief of Police
County of Winnebago	Joe Vanderwerff	County Engineer
	Wayne Vlk	Assistant County Engineer
	Frank Hodina	Civil Engineer Senior
	Don Krizan	Civil Engineer Senior
	Chris Dornbush	Director, Development Services
	Steve Girard	Building Official
	Troy Krup	Planning & Zoning Officer
	Burnie Turner	Director, WinGIS
	Dave Peters	Database Administrator, WinGIS
	Sally Claassen	Director, Purchasing & Facilities
	Todd Marshall	Director, Environmental Health
	Jerry Wiltfang	Director, Emergency Operations
Agencies	Fred Diehl	Chairman, Winnebago County LEPC; RPS205 Director of Security Services
	David Lindberg	Assistant Operations Manager, Rockford Airport
	Steve Ernst	Executive Director, RMAP
	Colleen Hoesly	Metropolitan Planner, RMAP
	Colin Belle	Metropolitan Planner, RMAP
Utilities	Mike Owens	Comcast
	Paul Callighan	ComEd
	Paulo Javier	Frontier Communications
	Gary Owens	Illinois American Water - South Beloit
	David Pietryla	Nicor
	Eric Stromberg	North Park Public Water District
	Alice Ohrtmann	Rock River Water Reclamation District (RRWRD)
	Terry Stoll	Rock River Water Reclamation District (RRWRD)

*Also representing the Villages of Cherry Valley and Rockton

The DMA 2000 planning regulations require that planning team members from each jurisdiction actively participate in the MHMP process. The planning team was 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

Two MHMP kickoff meetings were held in Rockford on 01/07/2014 and 01/22/2014. Representatives from SIU explained the rationale behind the MHMP program and answered questions from the participants. SIU representatives provided an overview of Hazus-MH and described the timeline and the process of the mitigation planning project.

The planning team met on 01/07/2014, 01/22/2014, 03/25/2014, 06/25/2014, 06/26/2014 and 07/23/2014. Each meeting was approximately two hours in length. Appendix A includes the minutes for each meeting. During these meetings, the planning team successfully identified critical facilities, reviewed hazard data and maps, identified and assessed the effectiveness of existing mitigation measures, established mitigation projects, and assisted with preparation of the public participation information.

2.3 Public Involvement

The Winnebago County Planning Team solicited public input during the planning process, and a public meeting (Meeting 3) was held on 06/25/2014 to review the county's risk assessment. Appendix A contains the minutes from the public meeting. Appendix B contains press releases and/or articles sent to local newspapers throughout the public input process.

2.4 Neighboring Community Involvement

The planning team invited participation from various representatives of county government, local city and town governments, community groups, local businesses, and universities. The planning team also invited participation from adjacent counties to obtain their involvement in the planning process. Table 2-2 summarizes details of neighboring stakeholders' involvement.

Table 2-2: Neighboring Community Participation

Person Participating	Neighboring Jurisdiction	Title/Organization	Participation Description
Bard Bartell	Boone County	Boone County EMA	Reviewed plan; offered comments
Terrance Groves	Stephenson County	Stephenson County EMA	Reviewed plan; offered comments
Candace Humphrey	Ogle County	Ogle County EMA	Reviewed plan; offered comments

2.5 Review of Technical Documents

The planning team identified representatives from key agencies to assist in the planning process. SIU obtained technical data, reports, and studies from these agencies. Table 2-3 summarizes these organizations and their contributions.

Table 2-3: Key Agency Resources Provided

Agency Name	Resources Provided
Department of Commerce and Economic Opportunity	Community Profiles
Illinois Department of Employment Security	Industrial Employment by Sector
Illinois Emergency Management Agency	2013 Illinois Hazard Mitigation Plan
Illinois Environmental Protection Agency	Illinois 2008 Section 303(d) Listed Waters and watershed maps
Illinois Water Survey (State Climatologist Office)	Climate Data
Federal Emergency Management Agency	Developing the Mitigation Plan (April 2003)
	Mitigation Ideas (January 2003)
	Local Mitigation Planning Handbook
	Food Insurance Study (2006)
Headwaters Economics & The Bureau of Land Management	A Socioeconomic Profile
NOAA National Climatic Data Center	Climate Data
U.S. Census Bureau	County Profile Information
	2010 Census Data
	American Community Survey (2008-2012)

2.6 Review of Existing Plans

Winnebago County and its local communities utilized a variety of planning documents to direct community development. These documents include land use plans, comprehensive plans, emergency response plans, municipal ordinances, and building codes. The planning process incorporated the existing natural hazard mitigation elements from previous planning efforts. Table 2-4 lists the plans, studies, reports, and ordinances used to develop the plan.

Table 2-4: Documents Utilized in the MHMP Planning Process

Author(s)	Title	Description	Utilized in Section
FEMA	2006 Winnebago County Flood Insurance Study	A compilation and presentation of flood risk data for specific watercourses, lakes, and flood hazard areas within Winnebago County.	2, 4 and 5
State of Illinois Emergency Management Agency	2013 Illinois 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.	3 and 5
Winnebago County	2012 GIS Database	Parcel, Assessor, and Critical Facility Data for Winnebago County.	4
Winnebago County	2007 Multi-Hazard Mitigation Plan	Multi-hazard, multi-jurisdictional plan for the communities within Winnebago County.	2, 3, 4, and 5
Winnebago County	2014 Emergency Response 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.	2, 3 and 4
Winnebago County	2030 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.	2

Author(s)	Title	Description	Utilized in Section
Winnebago County	2010 Emergency Operations Plan	The Winnebago County EOP is intended to assist key county officials and emergency personnel in carrying out their responsibilities for the protection of life and property under a wide range of emergency conditions.	2, 3 and 4
Rockford	2012 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.	2, 3 and 4
Rockford	2014-2018 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.	5
Rockford	NPDES Permit	City of Rockford's National Pollutant Discharge Elimination System Permit. This permit applies to storm water discharge.	5
Shirland School District #134	Emergency and Crisis Response Plan 2014-2015	Shirland School District's comprehensive, multi-hazard management plans that focus on the four phases of emergency management—prevention-mitigation, preparedness, response and recovery.	5

2.7 Jurisdiction Participation Information

SIU intends this plan to meet the requirements of the DMA 2000 and for each incorporated jurisdiction to adopt it. Table 2-5 lists the incorporated communities included in this multi-jurisdictional plan.

Table 2-5: Participating Jurisdictions

Jurisdiction Name
Winnebago County
Village of Cherry Valley
Village of Durand
City of Loves Park
Village of Machesney Park
Village of New Milford
Village of Pecatonica
City of Rockford
Village of Rockton
Village of Roscoe
City of South Beloit
Shirland School District #134
Village of Winnebago
North Park Public Water District (NPPWD)
Rock River Water Reclamation District (RRWRD)

2.8 Adoption by Local Government

SIU delivered the draft plan to the Winnebago County multi-hazard mitigation planning team for review on 07/23/2014. SIU subsequently incorporated any comments from the planning team into the plan.

Upon FEMA approval, the planning team will present and recommend the plan to the County Commissioners for adoption, who adopted it on <adoption date>. The planning team will work with the county and its jurisdictions to ensure all parties adopt the plan. Appendix C includes resolution adoptions of this plan.

2.9 Jurisdiction Participation

DMA 2000 regulations require that each jurisdiction participate in the planning process. Table 2-6 lists each jurisdiction and describes its participation in the construction of this plan. All members of the planning team actively participated in the MHMP meetings, provided available GIS data and historical hazard information, reviewed and provided comments on the draft plans, coordinated and participated in the public input process, and coordinated the county's formal adoption of the plan.

Table 2-6: Description of Participation for Each Jurisdiction

Jurisdiction Name	Participating Member	Participation Description
Winnebago County	Joe Vanderwerff	Reviewed plan; offered comments
Cherry Valley	Jim Claeyssen	Reviewed plan; offered comments
Durand	Gary Haughton	Reviewed plan; offered comments
Loves Park	Darryl Lindberg	Reviewed plan; offered comments
Machesney Park	Jerry Bolin	Reviewed plan; offered comments
New Milford	Dennis McMullen	Reviewed plan; offered comments
Pecatonica	Dan Barber	Reviewed plan; offered comments
Rockford	Marcy Leach	Reviewed plan; offered comments
Rockton	Dale Adams	Reviewed plan; offered comments
Roscoe	Dave Krienke	Reviewed plan; offered comments
South Beloit	Ken Morse	Reviewed plan; offered comments
Shirland School District #134	John Ulferts	Reviewed plan; offered comments
Village of Winnebago	Franklin Eubank	Reviewed plan; offered comments
North Park Public Water District (NPPWD)	Eric Stromberg	Reviewed plan; offered comments
Rock River Water Reclamation District (RRWRD)	Alice Ohrtmann	Reviewed plan; offered comments

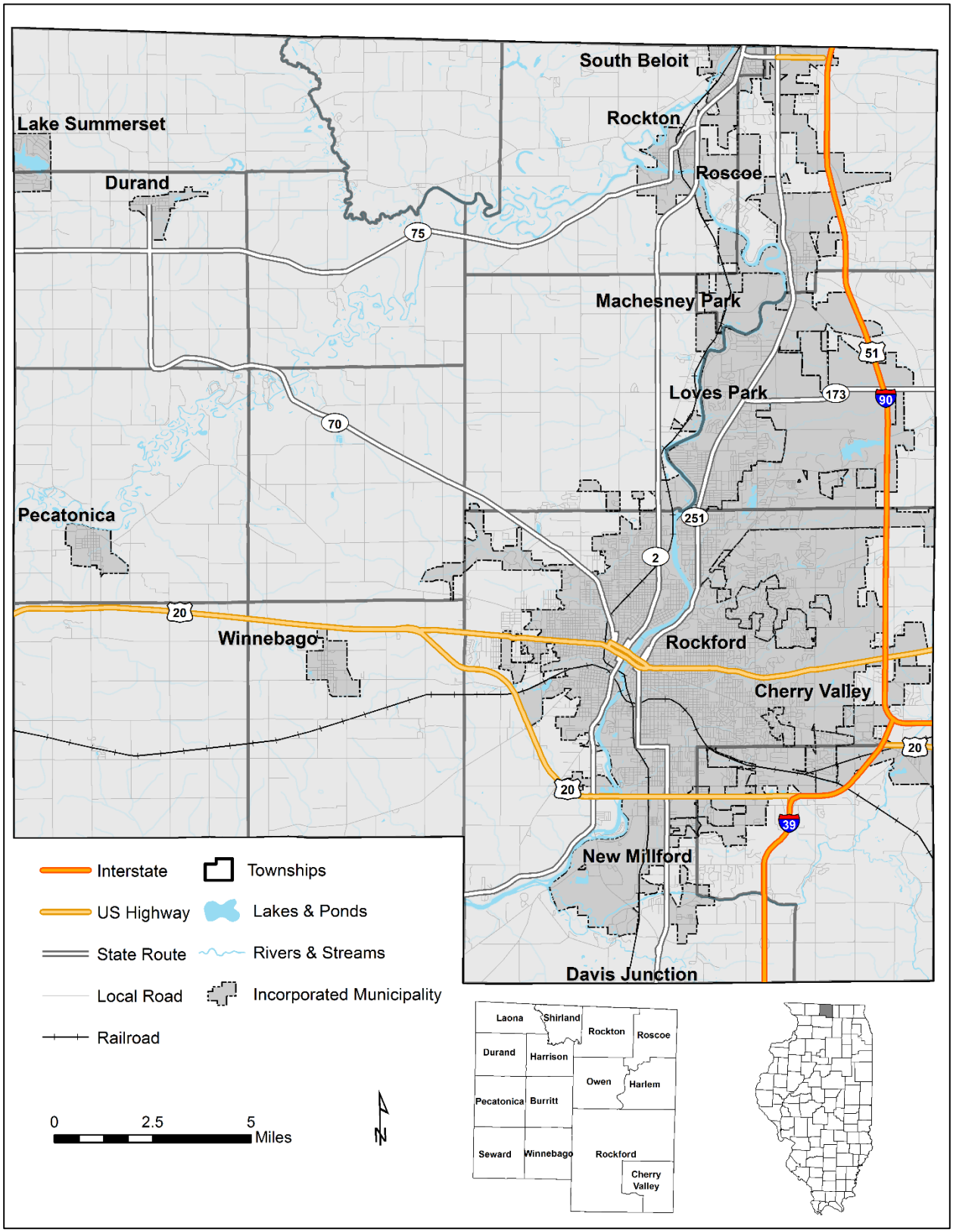
Section 3. County Profile

3.1 County Background

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 soon changed to Rockford, after the ford that existed across the Rock River. The 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.

Figure 3-1 displays the geographical location of Winnebago County and its incorporated municipalities. Winnebago County covers 519 square miles and is located in north-central Illinois, 90 miles northwest of Chicago and 60 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 other cities 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.

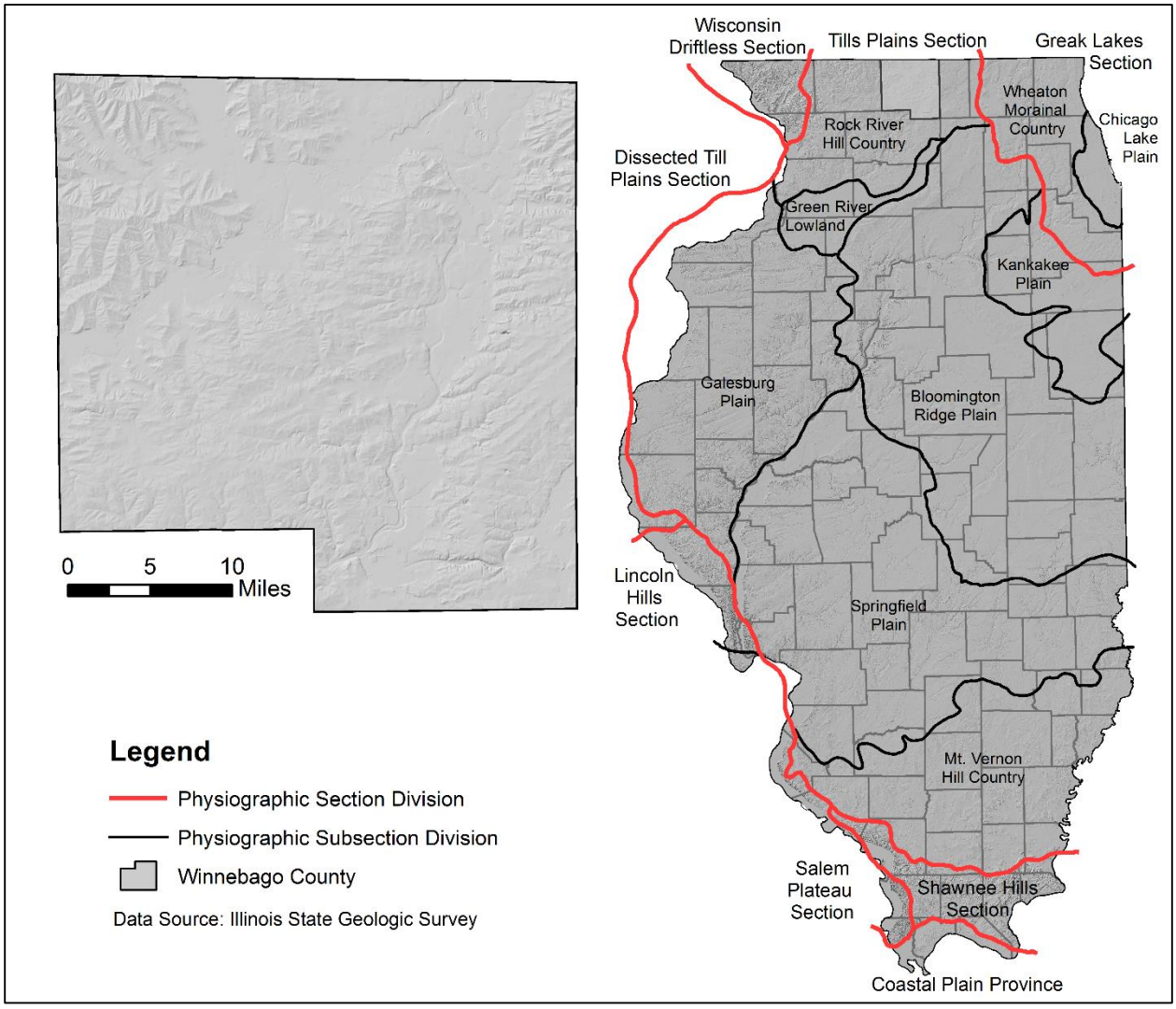
Figure 3-1: Winnebago County's Geographic Location



3.2 Topography

Winnebago County is situated within the Central Lowlands Province, Rock River Hill County Subsection of the Till Plains Section physiographic division of Illinois (Figure 3-2). 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.

Figure 3-2: Physiographic Divisions of Winnebago County and Surrounding Terrain



3.3 Climate

Winnebago County has a continental climate which features warm summers and cold winters with wide temperature variations. According to the National Weather Service, the average annual temperature is 53.51°F. The highest temperature on record is 111°F and the lowest is -23°F. Average annual precipitation is 40.09 inches, with most precipitation occurring in spring and summer months. Average annual snowfall is approximately 15.00 inches. Average annual humidity is 80.84%. Average annual wind speed is 20.44 mph.

3.4 Demographic

Winnebago County's population is 295,266, an increase of 2.93% from 2000 to 2010 (U.S. Census Bureau, 2010 Census). The population is spread through 14 townships: Burritt, Cherry Valley, Durand, Harlem, Harrison, Laona, Owen, Pecatonica, Rockford, Rockton, Roscoe, Seward, Shirland, and Winnebago. Table 3-1 includes the breakdown of population by township. Winnebago County has 12 incorporated jurisdictions, including: Cherry Valley, Davis Junction, Durand, Lake Summerset, Loves Park, Machesney Park, New Milford, Pecatonica, Rockford, Rockton, South Beloit, and Winnebago. The largest incorporated jurisdiction in Winnebago County is Rockford, which has a population of approximately 152,871 (U.S. Census Bureau, 2010 Census).

Table 3-1: Population by Township

Township	2010 Population	Percent of County
Burritt	947	0.32%
Cherry Valley	19,831	6.72%
Durand	2,394	0.81%
Harlem	40,158	13.60%
Harrison	670	0.23%
Laona	1,250	0.42%
Owen	3,803	1.29%
Pecatonica	4,355	1.47%
Rockford	178,527	60.46%
Rockton	16,441	5.57%
Roscoe	19,694	6.67%
Seward	917	0.31%
Shirland	988	0.33%
Winnebago	5,291	1.79%

3.5 Economy

The American Community Survey (2008-2012) reported that the civilian labor force comprised 60.8% of the workforce in Winnebago County. Table 3-2 includes the employment distribution by industrial sector. Manufacturing, retail trade, and education represent the largest sectors, employing 56.1% of the workforce. The annual per capita income in Winnebago County is $24,404 (American Community Survey, 2008-2012).

Table 3-2: Industrial Employment Sector

Industrial Sector	2008-2012 County Distribution
Agriculture, forestry, fishing, hunting, and mining	0.5%
Construction	5.0%
Manufacturing	22.0%
Wholesale trade	2.4%
Retail trade	11.3%
Transportation, warehousing and utilities	5.8%
Information	1.7%
Finance, insurance, real estate, and rental/leasing	4.9%
Professional, technical services	7.8%
Educational, health, and social services	22.8%
Arts, entertainment, recreation	7.7%

Industrial Sector	2008-2012 County Distribution
Other services	5.3%
Public administration	2.9%

3.6 Industry

Winnebago County's major employers include Chrysler, Rockford Public Schools and Rockford Health Systems. Table 3-3 lists the major employers and the approximate number of employees in Winnebago County.

Table 3-3: Winnebago County's Major Employers

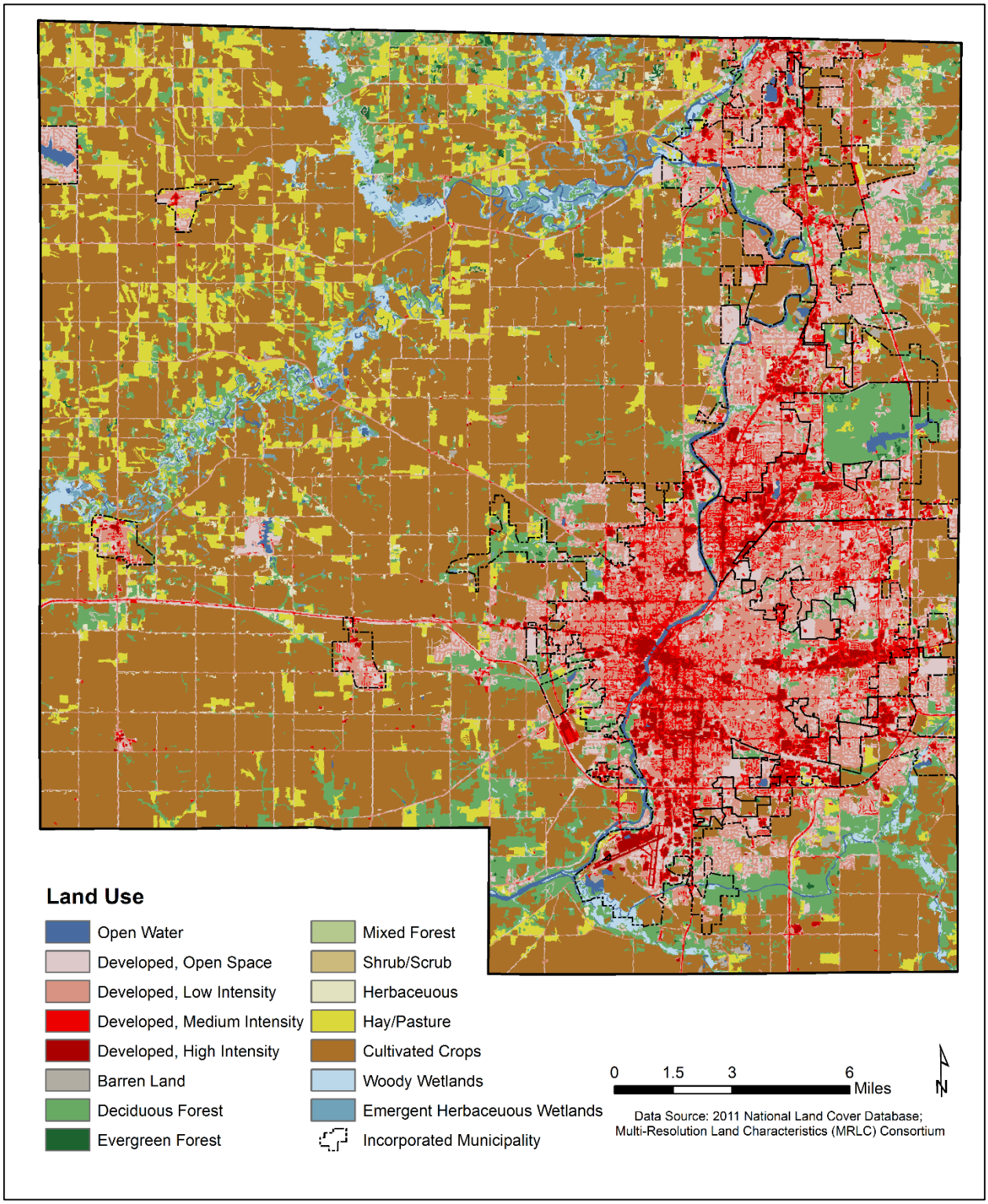
Employer	Industry	Approximate Number of Employees
Chrysler	Automotive	4,500
Rockford Public Schools	Education	3,730
Rockford Health System	Health Care	3,000
SwedishAmerican Health System	Health Care	2,988
UTC Aerospace	Aerospace	2,200
OSF Healthcare	Health Care	1,800
Rockford Park District	Government	1,739
Winnebago County	Government	1,731
Wal-Mart Stores	Retail	1,611
Woodward	Aerospace	1,400
UPS	Parcel Sorting Hub	1,200
City of Rockford	Government	1,122
AndersonBrecon	Pharmaceutical	1,100
Harlem Consolidated Schools	Education	1,099
Belivdere Schools	Education	967
Lowe's	Distribution	900
Kraft Foods	Food	850
NCO Group	Telemarketing	800
Taylor Co	Ice Cream Machines	725

Source: Winnebago County Regional Planning and Economic Development

3.7 Land Use and Development Trends

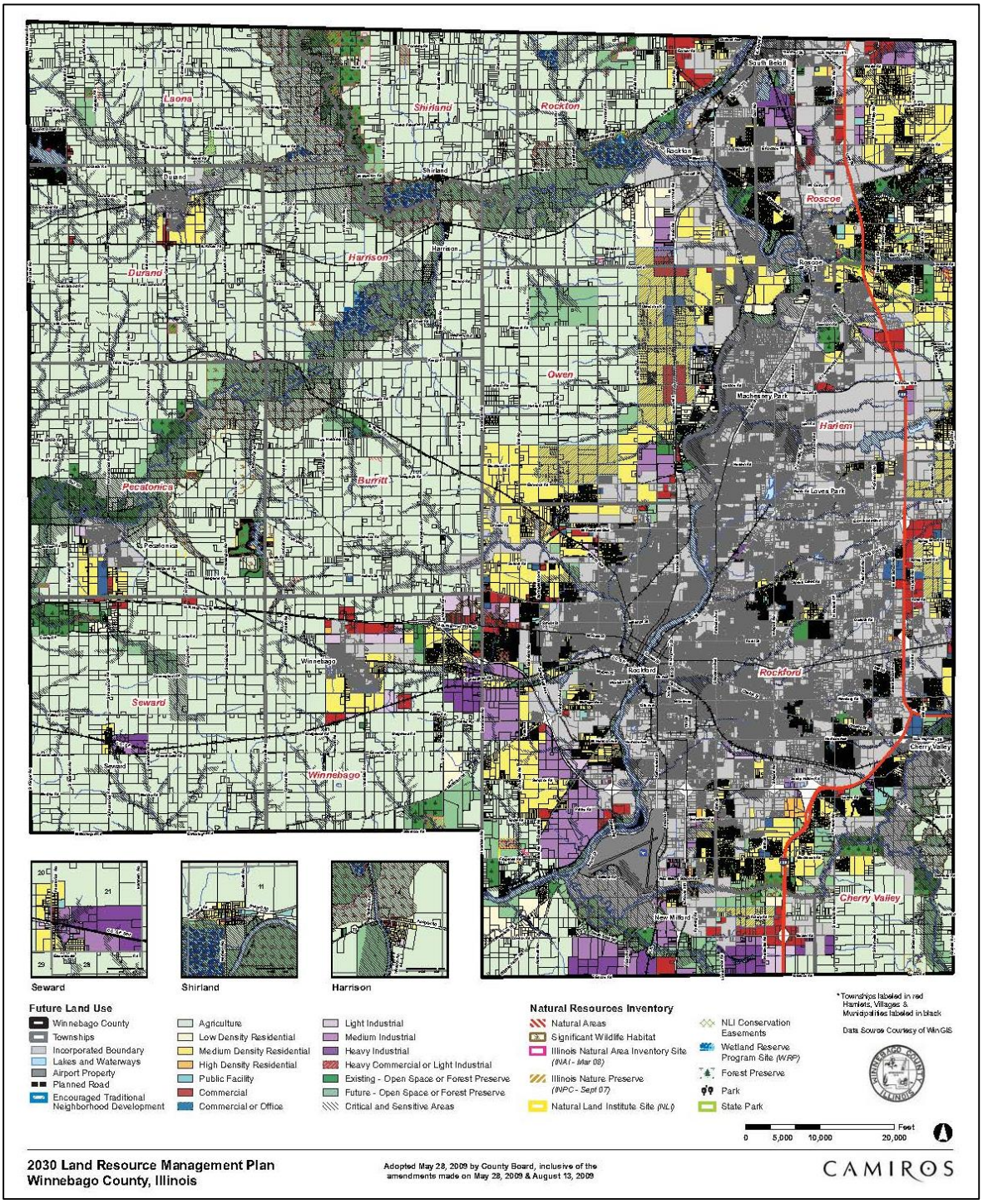
Figure 3-3 depicts the land use within Winnebago County. The predominant land covers in Winnebago County are cultivated crops and hay/pasture, followed by deciduous forest and low/medium intensity urban development (National Land Cover Data Set, 2011). Agricultural lands are found almost everywhere in Winnebago. 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, Loves Park and Machesney Park, with rural development to the west.

Figure 3-3: Land Use in Winnebago County



Winnebago County has adopted a 2030 Land Resource Management Plan to implement its vision for the future of the County. The land use decisions and growth management strategies found in the plan aim to preserve Winnebago County's unique quality of life, which results from its ability to balance the rural and urban characters that make up the county. Figure 3-4 shows the planned future development of the County.

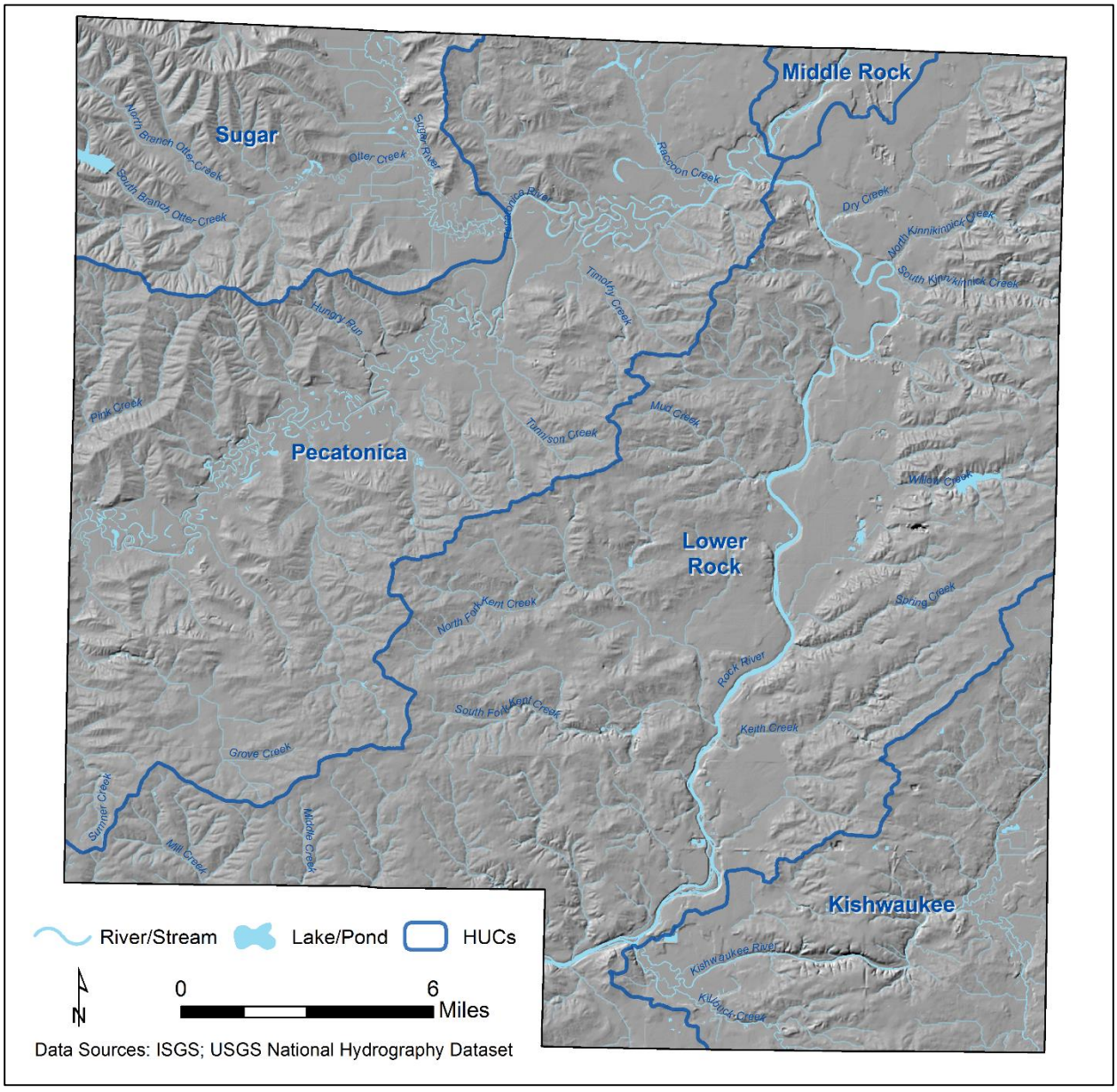
Figure 3-4: Future Land Use in Winnebago County



3.8 Major Lakes, Rivers, and Watersheds

Winnebago County has several water bodies, with Rock River being the most significant. According to the USGS, Winnebago County consists of five drainage basins: Kishwaukee, Lower Rock, Middle Rock, Pecatonica, and Sugar. Figure 3-5 depicts the hydrologic units within Winnebago County.

Figure 3-5: Major Lakes and Rivers in 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.

Section 4. Risk Assessment

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 three components—hazard identification, vulnerability analysis, and risk analysis.

4.1 Hazard Identification

4.1.1 Existing Plans

SIU and the planning team reviewed local planning documents (Table 2-4) to identify historical hazards and help identify risk.

4.1.2 National Hazard Records

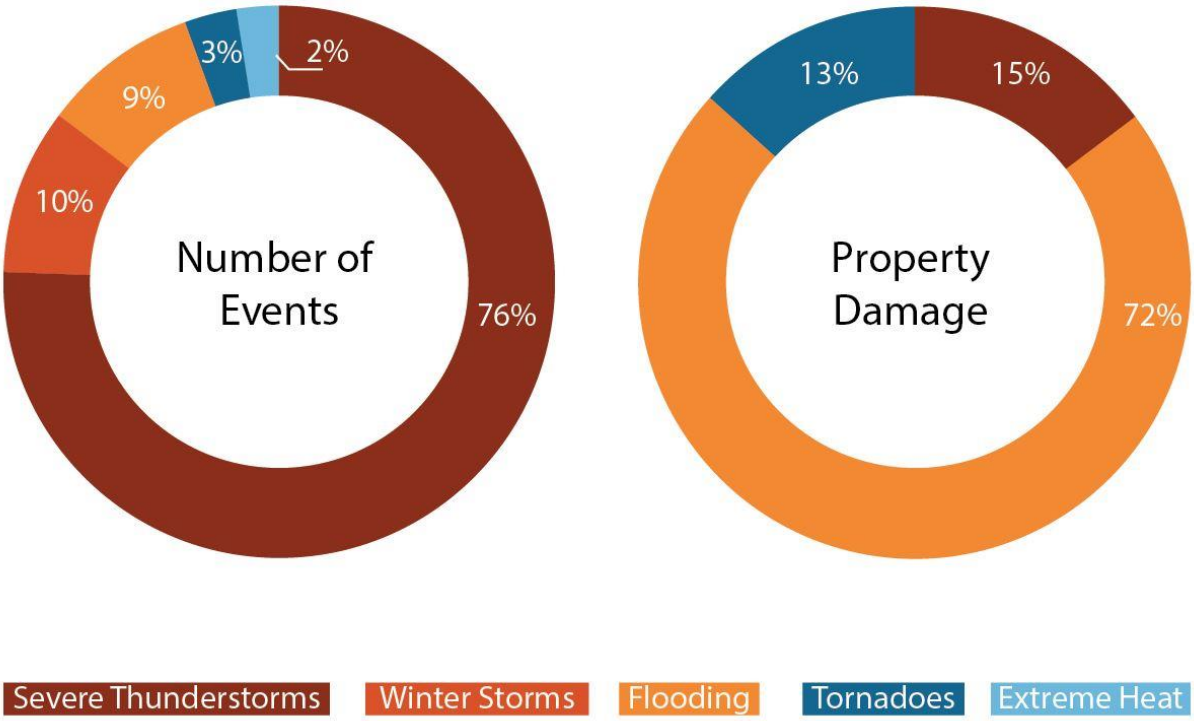
To assist the planning team, SIU compiled historical storm event data from the National Climatic Data Center (NCDC). NCDC records are estimates of damage reported to the National Weather Service from various local, state, and federal sources. However, these estimates are often preliminary in nature and may not match the final assessment of economic and property losses.

The NCDC data included 231 reported events in Winnebago County from 1955-Feb 2014 (the most updated information as of the date of this plan). The following hazard-profile sections each include a summary table of events related to each hazard type. Table 4-1 summarizes meteorological hazards reported by NCDC for Winnebago County. Figures 4-1 summarize the relative frequency of NCDC 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 NCDC website. In addition to NCDC data, SIU mapped Storm Prediction Center (SPC) data associated with tornadoes, strong winds, and hail using SPC-recorded latitudes and longitudes. Appendix D includes a map of these events.

Table 4-1: Summary of Meteorological Hazards Reported by the NCDC for Winnebago County

Hazards	Time Period		Number of Events	Property Damage (Millions of Dollars)	Deaths	Injuries
	Start	End				
Flooding	1996	2012	42	$29.63	1	0
Severe Thunderstorm	1960	2012	343	$6.11	1	2
Tornado	1958	2011	13	$5.44	0	0
Winter Storm	1996	2014	44	$0	0	0
Extreme Heat	1999	2012	11	$0	3	0

Figure 4-1: Number of Meteorological Events Reported and Percent of the Total Damage Associated with Each Hazard for Winnebago County



4.1.3 FEMA Disaster Information

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. Figure 4-2 depicts the disasters and emergencies that have been declared for the state of Illinois and Winnebago County since 1965. Table 4-2 lists specific information for each disaster declaration in Winnebago County.

Figure 4-2: FEMA-declared Emergencies and Disasters in Illinois

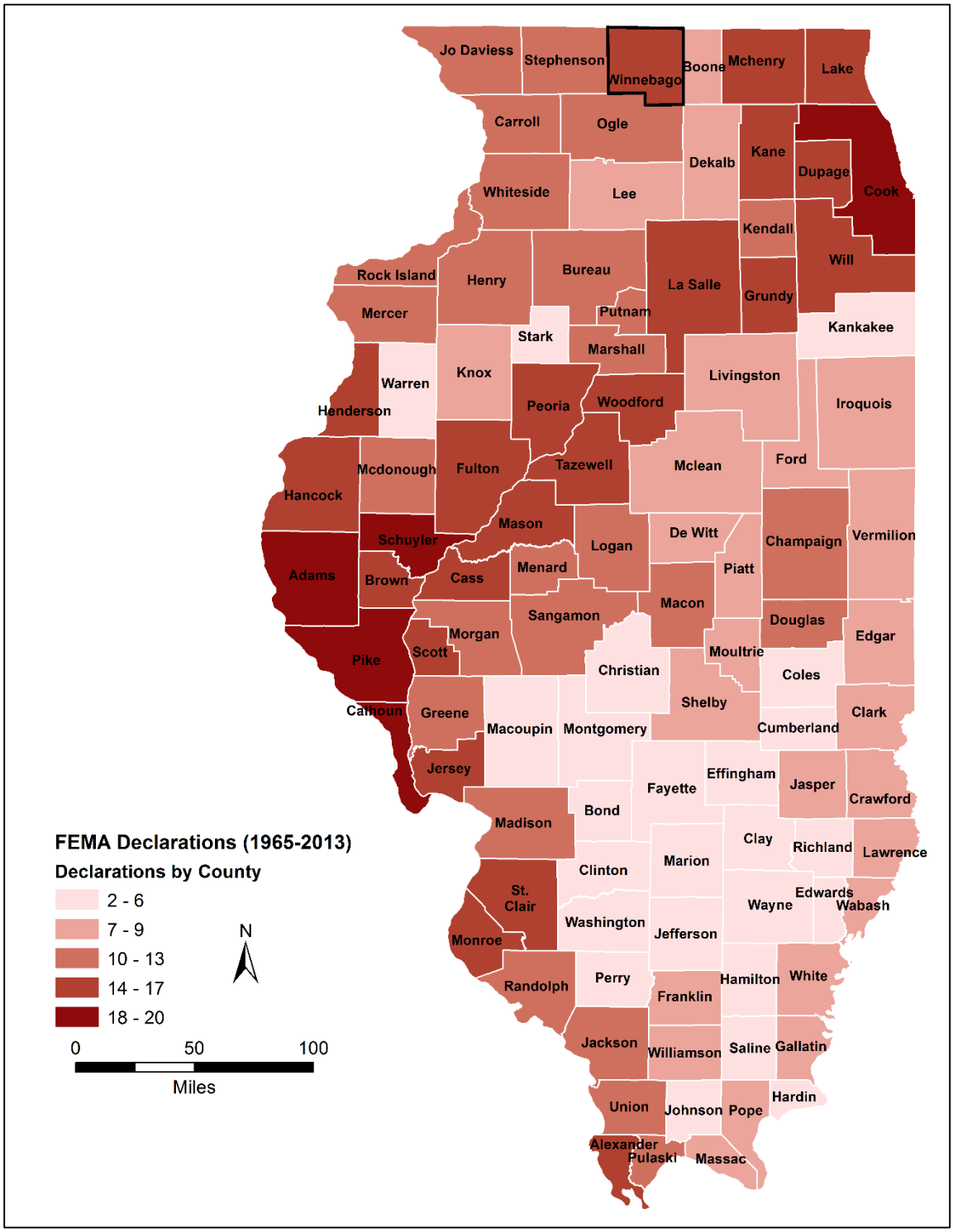


Table 4-2: Details of FEMA-declared Emergencies and Disasters in Winnebago County

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

4.1.4 Hazard Ranking Methodology

Based on planning team input, national datasets, and existing plans, Table 4-3 lists the hazards Winnebago County will address in the MHMP. In addition, these hazards ranked the highest based on the Risk Priority Index (RPI) discussed in section 4.1.5.

Table 4-3: Planning Team Hazard List

Hazard
Flooding
Severe Storms
Tornadoes
Hazmat
Winter Storms
Drought/Extreme Heat
Dam and Levee Failure
Earthquakes

4.1.5 Risk Priority Index

The RPI quantifies risk as the product of hazard probability and magnitude so planning team members can prioritize mitigation strategies for high-risk-priority hazards. Planning team members use historical hazard data to determine probability and knowledge of local conditions to determine the possible severity of a hazard. Tables 4-4 and 4-5 display the criteria the planning team used to quantify hazard probability and magnitude.

Table 4-4: Future Occurrence Ranking

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

Table 4-5: Hazard Magnitude

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

The product of hazard probability and magnitude is the RPI. The planning team members ranked specified hazards based on the RPI, with larger numbers corresponding to greater risk. After evaluating the calculated RPI, the planning team adjusted the ranking to better suit the County. Table 4-6 identifies the RPI and adjusted ranking for each hazard specified by the planning team.

Table 4-6: Winnebago County Hazard Priority Index and Ranking

Hazard	Probability	Magnitude/Severity	Risk Priority Index	Rank
Flooding	4	2	8	1
Severe Storms	4	1	4	2
Tornadoes	3	4	12	3
Hazmat	3	4	12	4
Winter Storms	4	1	4	5
Drought/Extreme Heat	3	2	6	6

Hazard	Probability	Magnitude/Severity	Risk Priority Index	Rank
Dam and Levee Failure	2	2	4	7
Earthquakes	1	4	4	8

4.1.6 Jurisdictional Hazard Ranking

Each jurisdiction created its own RPI because hazard susceptibility may differ by jurisdiction. During the five-year review of the plan, the planning team will update this table to ensure these jurisdictional rankings accurately reflect each community's assessment of these hazards. Table 4-7 lists the jurisdictions and their respective hazard rankings (Ranking 1 being the highest concern). The jurisdictions made these rankings at Meeting 2, and community perceptions may change throughout the planning process.

Table 4-7: Hazard Ranking by Jurisdiction

Jurisdiction	Flooding	Severe Storms	Tornadoes	Hazmat	Winter Storms	Drought / Heat	Dam / Levee Failure	Earthquakes
Winnebago Co.	1	2	3	4	5	6	7	8
Cherry Valley	2	4	3	-	1	-	-	-
Durand	2	1	3	5	4	6	7	8
Loves Park	2	1	3	5	4	6	7	8
Machesney Park	1	2	4	7	5	6	3	8
New Milford	1	2	3	4	5	6	7	8
Pecatonica	1	2	3	4	5	6	7	8
Rockford	1	4	2	5	6	7	3	8
Rockton	1	2	3	4	5	6	7	8
Roscoe	1	2	3	4	5	6	7	8
South Beloit	1	2	3	4	5	6	7	8
Winnebago	1	3	2	6	4	5	7	-
RRWRD	3	2	1	-	4	-	-	-
NPPWD	1	2	3	5	6	4	7	8

4.1.7 GIS and Hazus-MH

The third step in this 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.

Table 4-8 indicates the analysis type (i.e. GIS, Hazus-MH, or historical records) used for each hazard assessment.

Table 4-8: Risk Assessment Tool Used for Each Hazard

Hazard	Risk Assessment Tool(s)
Flooding	Hazus-MH
Severe Thunderstorm	Historical Records
Tornadoes	GIS-based
Hazmat	GIS-based
Winter Storms	Historical Records
Drought / Heat	Historical Records
Dam Failure	Historical Records
Earthquakes	Hazus-MH

4.2 Vulnerability Assessment

4.2.1 Asset Inventory

Processes and Sources for Identifying Assets

SIU first updated the Hazus-MH default critical facilities data using state resources. At meeting one, the planning team used their resources to further update this information. SIU and the county used local GIS data to verify the locations of all critical facilities. SIU GIS analysts incorporated these updates and corrections to the Hazus-MH data tables prior to performing the risk assessment. The updated Hazus-MH inventory contributed to a Level 2 analysis, which improved the accuracy of the risk assessment.

Updates to the default Hazus-MH data include:

- Updating the Hazus-MH defaults, critical facilities, and essential facilities based on the most recent available data sources.
- Reviewing, revising, and verifying locations of critical and essential point facilities with local input.
- Applying the essential facility updates (schools, medical care facilities, fire stations, police stations, and EOCs) to the Hazus-MH model data.
- Updating Hazus-MH reports of essential facility losses.

SIU made the following assumptions during analysis:

- SIU used Hazus-MH aggregate data to model the building exposure for all earthquake analysis. SIU assumes that the aggregate data is an accurate representation of Winnebago County.
- SIU restricts the analysis to the county boundaries. Events that occur near the county boundaries do not contain damage assessments from adjacent counties.
- SIU assumes that for each tax-assessment parcel, there is only one building that bares all the associated values (both structure and content).
- SIU assumed that for each tax-assessment parcel that all structures are wood-framed, one-story, slab-on-grade structures, unless otherwise stated in assessment records. These assumptions are based on sensitivity analyses of Hazus and regional knowledge.

Essential Facilities List

Table 4-9 identifies the number of essential facilities identified in Winnebago County. Essential facilities are a subset of critical facilities. Winnebago County provided a comprehensive list of critical facilities that is maintained by the WinGIS (Winnebago County GIS Department). Appendix E include a list of the

essential facilities in Winnebago County and Appendix F displays a large format map of the locations of all critical facilities within the county.

Table 4-9: Essential Facilities

Facility	Number of Facilities
Care Facilities	18
Emergency Operations Centers	2
Fire Stations	39
Police Stations	18
Schools	148

Facility Replacement Costs

Table 4-10 identifies facility replacement costs and total building exposure. Winnebago County provided local assessment data for updates to replacement costs. Table 4-10 also includes the estimated number of buildings within each occupancy class.

Table 4-10: Building Exposure

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
Total:	**65,534**	**$23,566,822,629**

4.3 Future Developments

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. Winnebago County will address specific mitigation strategies in Section 5 to alleviate such issues.

Winnebago County is vulnerable to a variety of natural hazards, therefore the county government—in partnership with state government—must make a commitment to hazard mitigation. Winnebago County is committed to ensuring that county 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.

4.4 Hazard Profile

4.4.1 Flooding Hazard

Hazard Definition for Flooding

Flooding is a significant natural hazard throughout the United States. The type, magnitude, and severity of flooding are functions of 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. SIU classifies floods as one of two types in this plan: upstream floods or downstream floods. Both types of floods are common in Illinois.

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 NCDC database reported 42 flood events in Winnebago County since 1996. The most significant flood event occurred in 2006. On September 4, 2006 thunderstorms developed over southeast Winnebago County. Some areas of eastern Rockford 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 20th 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 4-11 identified NCDC-recorded flooding events that caused damage, death or injury in Winnebago County. Additional details of individual hazard events are on the NCDC website.

Table 4-11: NCDC-recorded Flooding Events that caused Death, Damage or Injury in Winnebago County

Location or County*	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

Location or County*	Date	Deaths	Injuries	Property Damage (x $1000)
South Beloit	07/2010	0	0	$632
	Total:	**1**	**0**	**$29,632**

*NCDC 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.

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 ≥ 25% of the market value of the structure at the time of each flood loss.

The Illinois Emergency Management Agency was contacted to determine the location of repetitive loss structures in Winnebago County. Records indicate that there are 180 repetitive loss structures within the county. The total amount paid for building replacement and building contents for damage to these repetitive loss structures is $9,726,160.44. Table 4-12 describes the repetitive loss structures for each jurisdiction.

Table 4-12: Repetitive Loss Structures for each Jurisdiction in Winnebago County

Jurisdiction	Number of Properties	Total Paid
Cherry Valley	1	$4,400.80
Machesney Park	33	$1,740,266.06
Rockford	132	$7,417,976.18
Rockton	1	$6,553.78
Roscoe	13	$556,963.62

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 tributes 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 and Loves Park. Flood peaks have been increased by recent urbanization of uplands. Urbanization often is accompanied by floodplain filling or encroachment which reduces the cannel 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 flooding in Winnebago County is probable. According to the Risk Priority Index (RPI) and County input, flooding is ranked as the number one hazard.

RPI = Probability x Magnitude/Severity

Probability	x	Magnitude/Severity	=	RPI
4	x	2	=	8

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). Appendix E include a list of the essential facilities in Winnebago County and Appendix F 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.

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 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 4-3 depicts the building inventory within the 100-year floodplain and Table 4-13 shows the loss estimates by occupancy class.

Figure 4-3: Buildings within the 100-year floodplain in Winnebago County

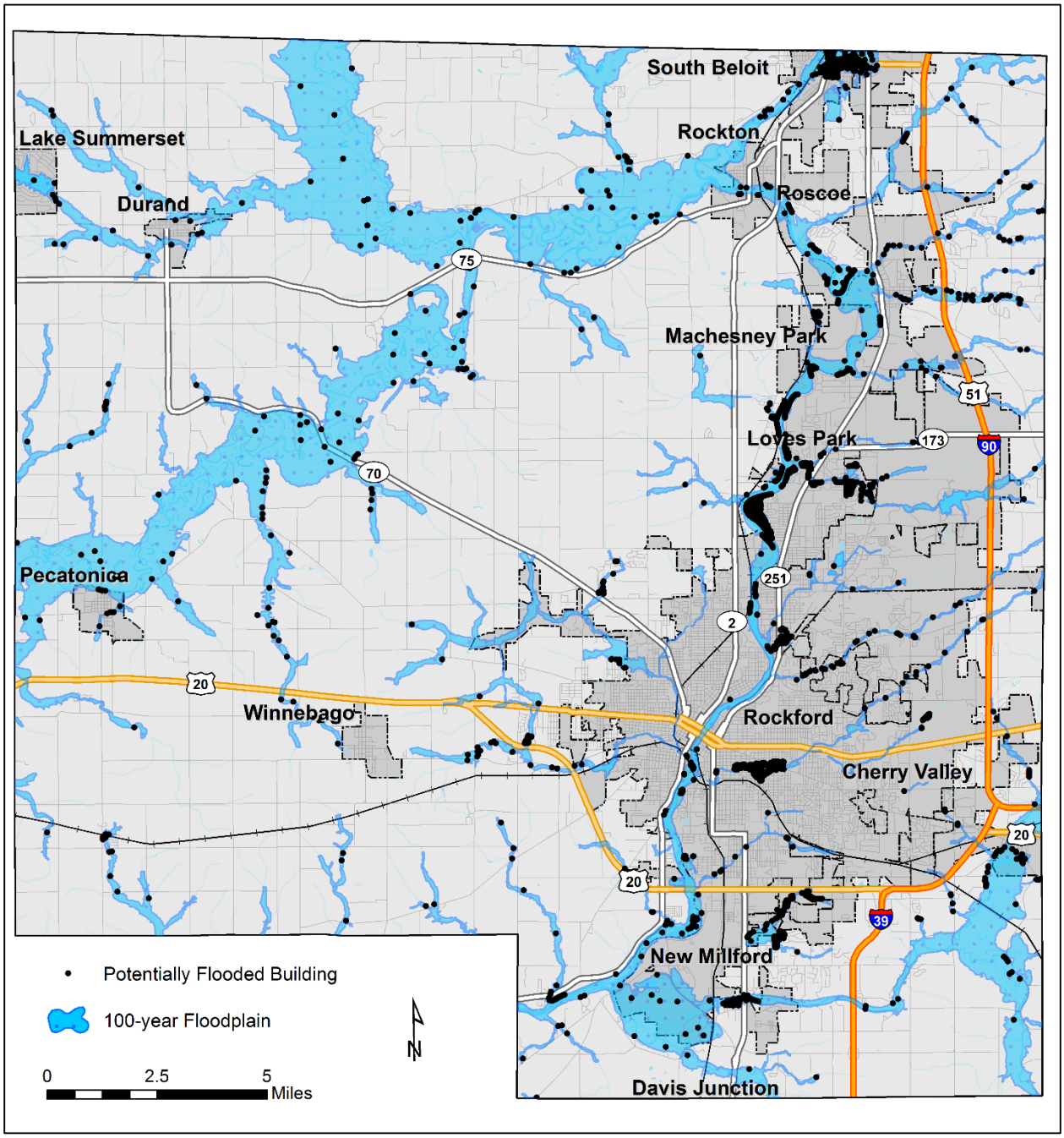


Table 4-13: Estimated Flood Losses within the 100-year Floodplain

Occupancy Class	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

Occupancy Class	Number of Structures	Estimated Building Related Losses
Religious	7	$1,068,478
Government	4	$8,345
Education	0	$0
Total:	**2719**	**$289,944,020**

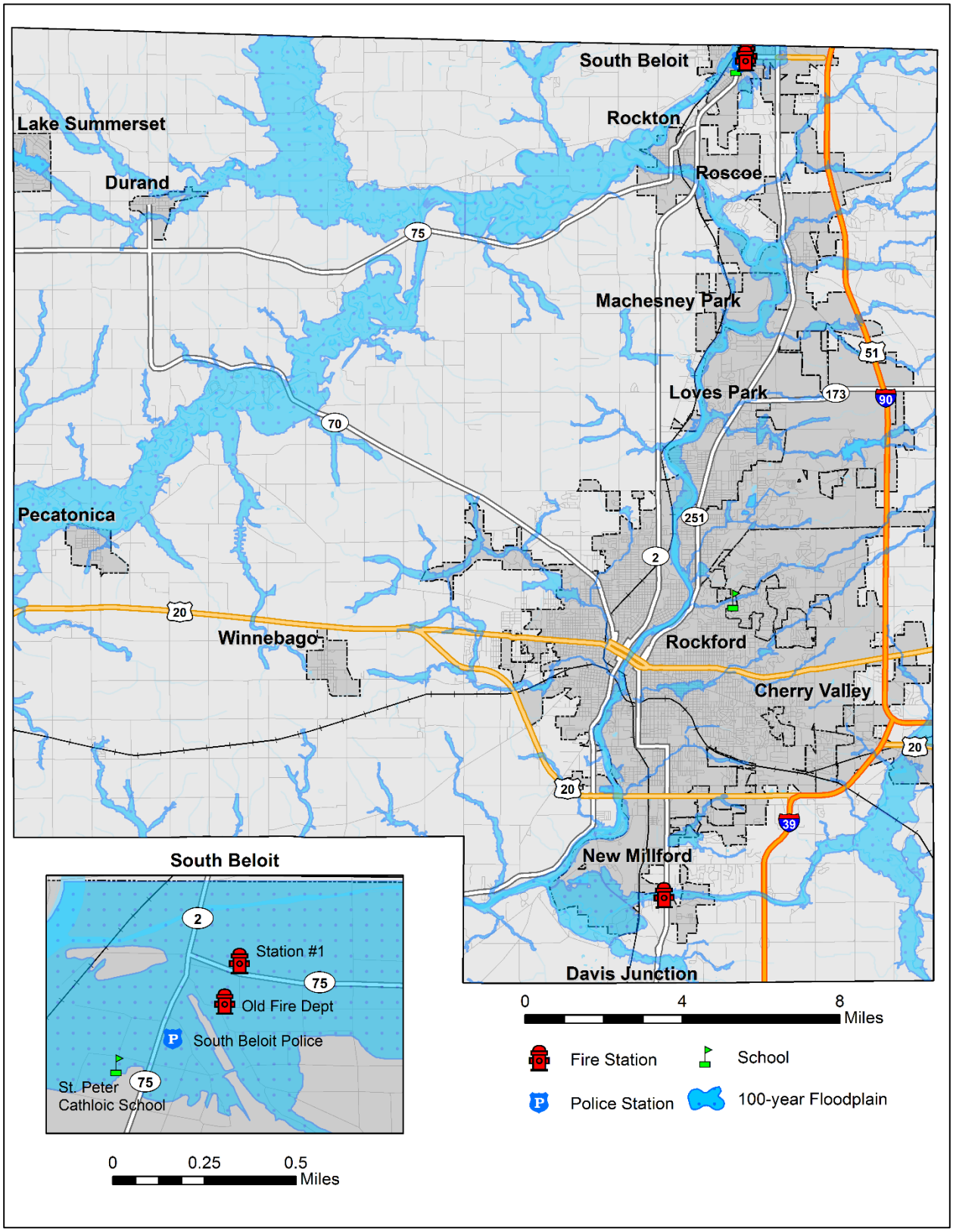
Essential Facilities Damage

The analysis identified six essential facilities that are subject to flooding. Table 4-14 and Figure 4-4 identified the essential facilities within the 100-year floodplain.

Table 4-14: Essential Facilities within the 100-year Floodplain

Essential Facility	Facility Name
Fire Departments	South Beloit Fire Station #1
	New Milford Fire
	South Beloit Fire (Old Fire Dept.)
Police Departments	South Beloit Police Department
Schools	Eisenhower Middle School
	St. Peter Catholic School

Figure 4-4: Map of Essential Facilities within the 100-year Floodplain



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.

Appendix E includes a list of the essential facilities in Winnebago County and Appendix F displays a large format map of the locations of all critical facilities within the county.

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.

4.4.2 Thunderstorm Hazard

Hazard Definition – 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 NCDC database reported 132 hailstorms in Winnebago County since 1974. Hailstorms occur nearly every year in the late spring and early summer months. The most recent reported occurrence was on November of 2012, when a powerful low pressure system across the plains states steered warmth and moisture northward for nearly two days. Hail was reported in Cherry Valley. The NCDC database reported

no occurrences of significant hail storms (such as those that cause death damage or injury) in Winnebago County.

The NCDC database reported eight lightning events in Winnebago County since 1996. The most recent reported event was on March 2011, when a line of thunderstorms moved across parts of northeast and eastern Illinois during the morning hours of May 25th producing a tornado near St. Anne as well as heavy rain and some flooding. A two story, eight unit apartment building was struck by lightning, although it is unclear if this occurred in Winnebago County. The roof was engulfed in flames and the building was a total loss. All of the 15 occupants were able to exit the building safely and no injuries were reported. Table 4-15 identifies NCDC-recorded lightning that caused damage, death, or injury in Winnebago County. Additional details of individual hazard events are on the NCDC website.

Table 4-15: NCDC-Recorded Lightning that Caused Damage, Death, or Injury in Winnebago County

Location or County*	Date	Deaths	Injuries	Property Damage (x $1000)
East Rockford	04/2008	0	0	$1
Pecatonica	06/2009	0	0	$10
Seward	05/2011	0	0	$10
Loves park	11/2010	0	0	$20
Harlem	05/2011	0	0	$400
Roscoe	07/2010	0	0	$50
Winnebago county	09/2006	0	0	$50
Total:		**0**	**0**	**$5440**

*NCDC 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.

The NCDC database reported 203 wind storms in Winnebago County since 1960. Table 4-16 identifies selected NCDC-recorded wind storms that caused major damage, death, or injury in Winnebago County. Additional details of individual hazard events are on the NCDC website.

Table 4-16: Selected NCDC-Recorded Wind Storms that Caused Major Damage, Death, or Injury in Winnebago County

Location or County*	Date	Deaths	Injuries	Property Damage (x $1000)
Rockford Airport	05/2011	1	0	$50
Winnebago County	11/1988	0	1	$0.5
Loves Park	09/2010	1	0	$0.5
Winnebago County	05/2008	0	0	$10
Rockford	04/2009	0	0	$10
Winnebago County	10/2010	0	0	$10
Winnebago County	04/2010	0	0	$10
Winnebago County	04/2011	0	0	$10
Winnebago County	10/2010	0	0	$100
North Park	07/2011	0	0	$15
Winnebago County	05/2007	0	0	$2
Winnebago County	09/2010	0	0	$2
Rockton	06/2007	0	0	$20

Location or County*	Date	Deaths	Injuries	Property Damage (x $1000)
Cherry Valley	06/2010	0	0	$20
North Park	06/2010	0	0	$20
South Beloit	05/2011	0	0	$25
Countywide	05/2001	0	0	$25
Roscoe	03/2009	0	0	$50
Harlem	11/2010	0	0	$50
New Milford	05/2011	0	0	$50
Rockford	07/1995	0	0	$50
Pecatonica	07/2003	0	0	$5,000
	Total:	**2**	**1**	**$5,529**

*NCDC 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.

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.

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.

Risk Identification for Thunderstorm Hazard

Based on historical information, the occurrence of future high winds, hail, and lightning is likely. The county should expect high winds, hail, and lightning of widely varying magnitudes in the future. According to the RPI and the County, severe thunderstorms ranked as the number two hazard.

RPI = Probability x Magnitude/Severity

Probability	x	Magnitude/Severity	=	RPI
4	x	1	=	4

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. Table 4-9 and 4-10 show the existing buildings and infrastructure in Winnebago County.

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 jurisdiction. 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). Appendix E include a list of the essential facilities in Winnebago County and Appendix F displays a large format map of the locations of all critical facilities within the county.

Building Inventory

Table 4-10 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).

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

SIU determined that Winnebago County has incurred $6,110,000 in damages relating to thunderstorms, including hail, lightning, and high winds since 1960. NCDC 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, SIU cannot reliably constrain potential dollar losses for a future event; however, based on average property damage in the past decade, SIU estimates that Winnebago County incurs property damages of approximately $117,500 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. Building more warning sirens will warn the community of approaching storms to ensure the safety of Winnebago County residents.

4.4.3 Tornadoes Hazard

Hazard Definition

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 4-17 outlines the Enhanced Fujita intensity scale.

Table 4-17: Enhanced Fujita Tornado Rating

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 swept clean, automobiles become missiles and thrown for 100 yards or more, steel-reinforced concrete structures badly damaged.

Previous Occurrences of Tornadoes

The NCDC database reported 13 tornadoes/funnel clouds in Winnebago County since 1958. The most recent recorded event occurred on May 2011 when a brief tornado touched down in the Rockton area between Route 251 and Interstate 90, just north of Rockton Road. Damage was observed around the Roscoe Fire Station, where a large garage door was blown in. Winds were estimated to be as high as 90-100 mph. Table 4-18 identifies NCDC-recorded tornadoes that caused damage, death, or injury in Winnebago County. Additional details of individual hazard events are on the NCDC website.

Table 4-18: NCDC-Recorded Tornadoes That Caused Damage, Death, or Injury in Winnebago County

Location or County*	Date	EF-Scale	Deaths	Injuries	Property Damage (x $1000)
Harlem Township	11/2010	2	0	6	5000
Winnebago County	08/1979	2	0	0	250
Seward Township	05/2011	1	0	0	100
Winnebago County	08/1958	2	0	0	25
Winnebago County	06/1967	N/A	0	0	25
Winnebago County	08/1990	1	0	0	25

Location or County*	Date	EF-Scale	Deaths	Injuries	Property Damage (x $1000)
South Beloit	05/2011	1	0	0	15
		Total:	**0**	**6**	**$5440**

*NCDC 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.

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, the probability of future tornadoes in Winnebago County is likely. The county should expect tornadoes with varying magnitudes to occur in the future. Tornadoes ranked as the number three hazard according to the RPI and County.

RPI = Probability x Magnitude/Severity

Probability	x	Magnitude/Severity	=	RPI
3	x	4	=	12

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. Tables 4-9 and 4-10 display the existing buildings and infrastructure in Winnebago County.

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 jurisdiction. 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). Appendix E include a list of the essential facilities in Winnebago County and Appendix F displays a large format map of the locations of all critical facilities within the county.

Building Inventory

Table 4-10 lists the building exposure in terms of types and numbers of buildings for the entire county. 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.

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 planning team selected these scenarios at Meeting 2. The following analysis quantifies the anticipated impacts of tornadoes in the county in terms of numbers and types of buildings and infrastructure damaged.

SIU used GIS-overlay modeling 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 4-19 depicts tornado damage curves 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 4-19: Tornado Path Widths and Damage Curves

Fujita Scale	Path Width (feet)	Maximum Expected Damage
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 4-5 and Table 4-20 illustrate the zone analysis. Figure 4-6 depicts the selected hypothetical tornado paths

Figure 4-5: Tornado Analysis (Damage Curves) Using GIS Buffers

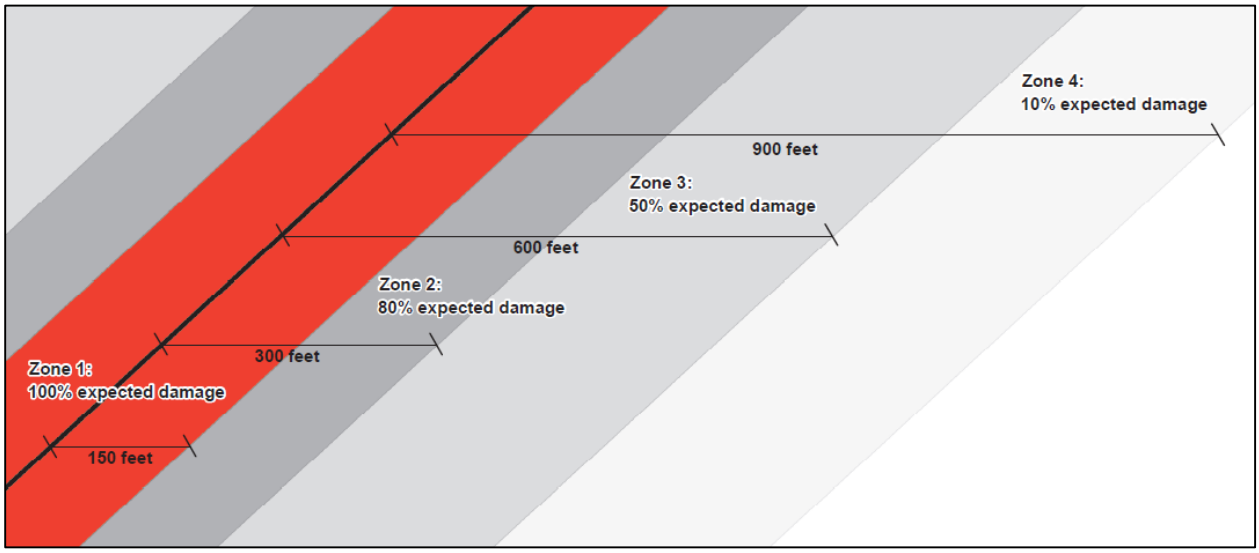
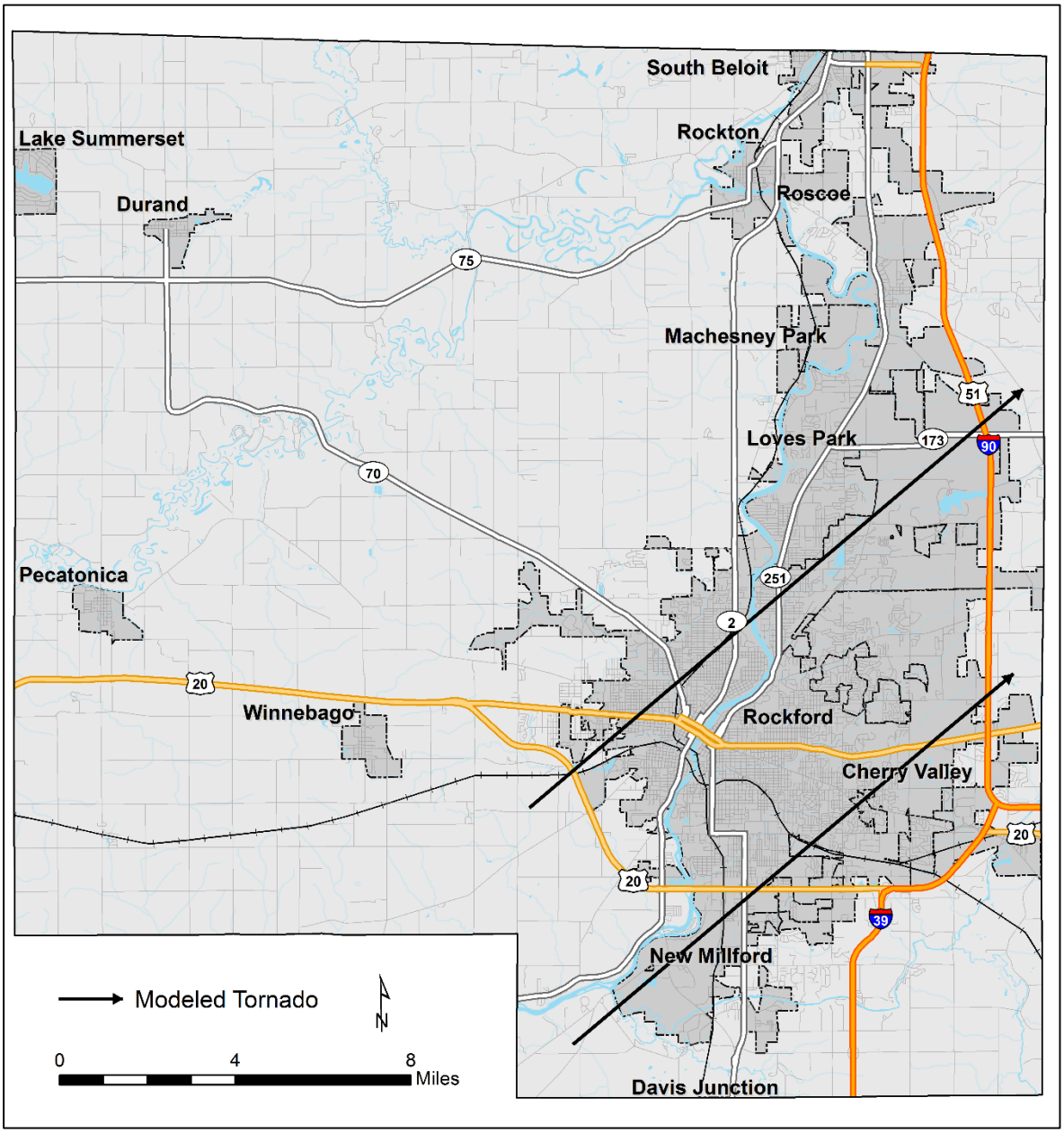


Table 4-20: F4 Tornado Analysis Using GIS Buffers

Zone	Buffer (feet)	Damage Curve
1	0-150	100%
2	150-300	80%
3	300-600	50%
4	600-900	10%

Figure 4-6: Modeled Tornado Tracks for Winnebago County



Modeled Impacts of a F4 Tornado in Rockford and Cherry Valley

Table 4-21 and Figure 4-8 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 4-21: 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

Occupancy	Zone 1	Zone 2	Zone 3	Zone 4
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
Total:	**$145,358,379**	**$175,528,001**	**$172,331,936**	**$30,335,686**

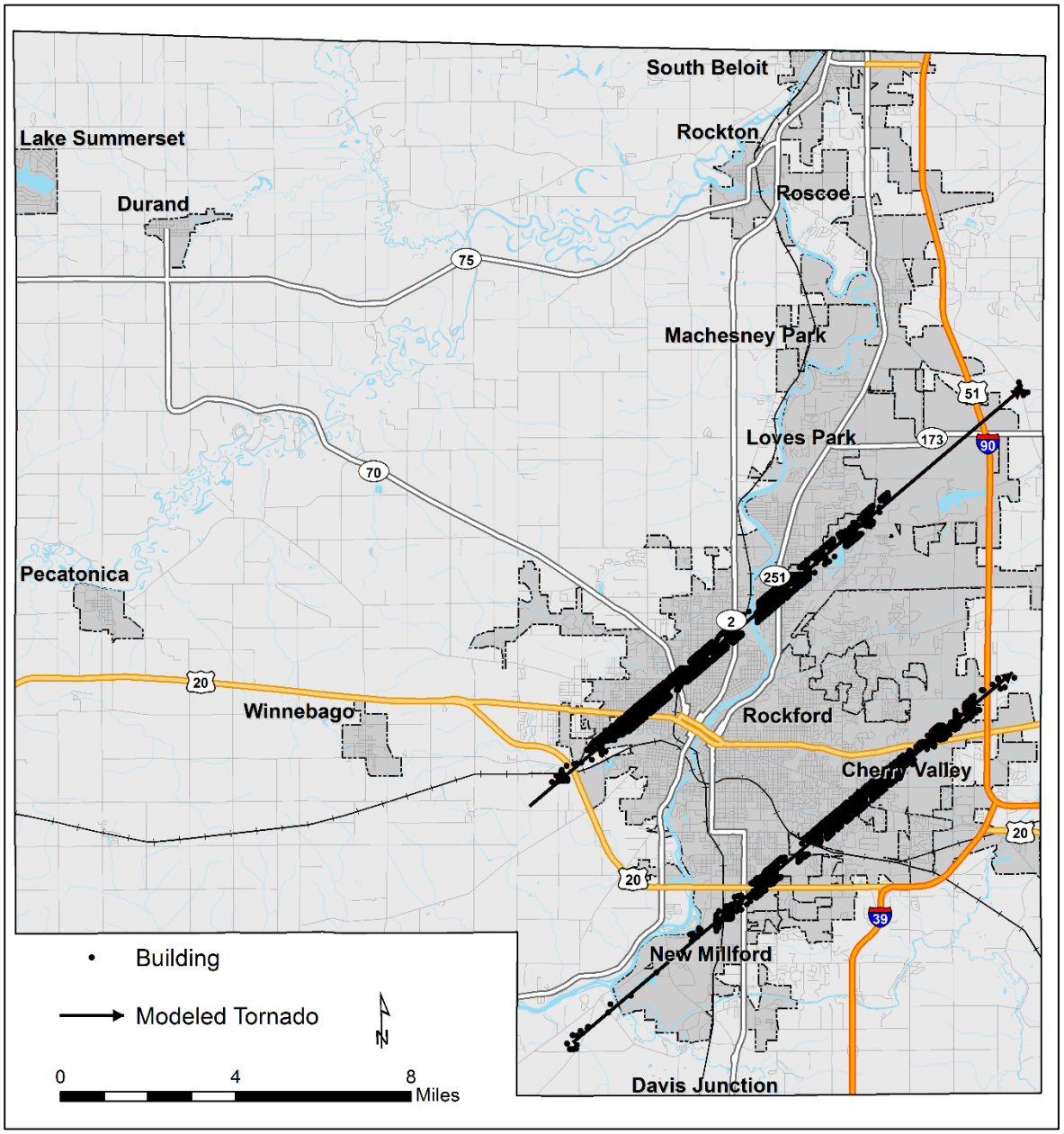
Modeled Impacts of a F4 Tornado in Rockford and Loves Park

Table 4-22 and Figure 4-7 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 4-22: 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
Total:	**$127,203,561**	**$102,478,982**	**$113,621,358**	**$28,187,019**

Figure 4-7: Building Inventory Affected by the EF4 Tornadoes Modeled for Winnebago County



Essential Facilities Damage

Figure 4-8 shows the geographic locations of the essential facilities affected by the two tornado scenarios. Table 4-23 identifies the affected facilities in City of Rockford and the Village of Cherry Valley. There are 15 essential facility located within 900 feet of the hypothetical tornado path in City of Rockford and the Village of Cherry Valley. Table 4-24 identifies the affected facilities in City of Rockford and the City of Loves Park. There are 15 essential facility located within 900 feet of the hypothetical tornado path in City of Rockford and the City of Loves Park.

Figure 4-8: Critical Facilities Affected by the EF4 Tornadoes Modeled for Winnebago County

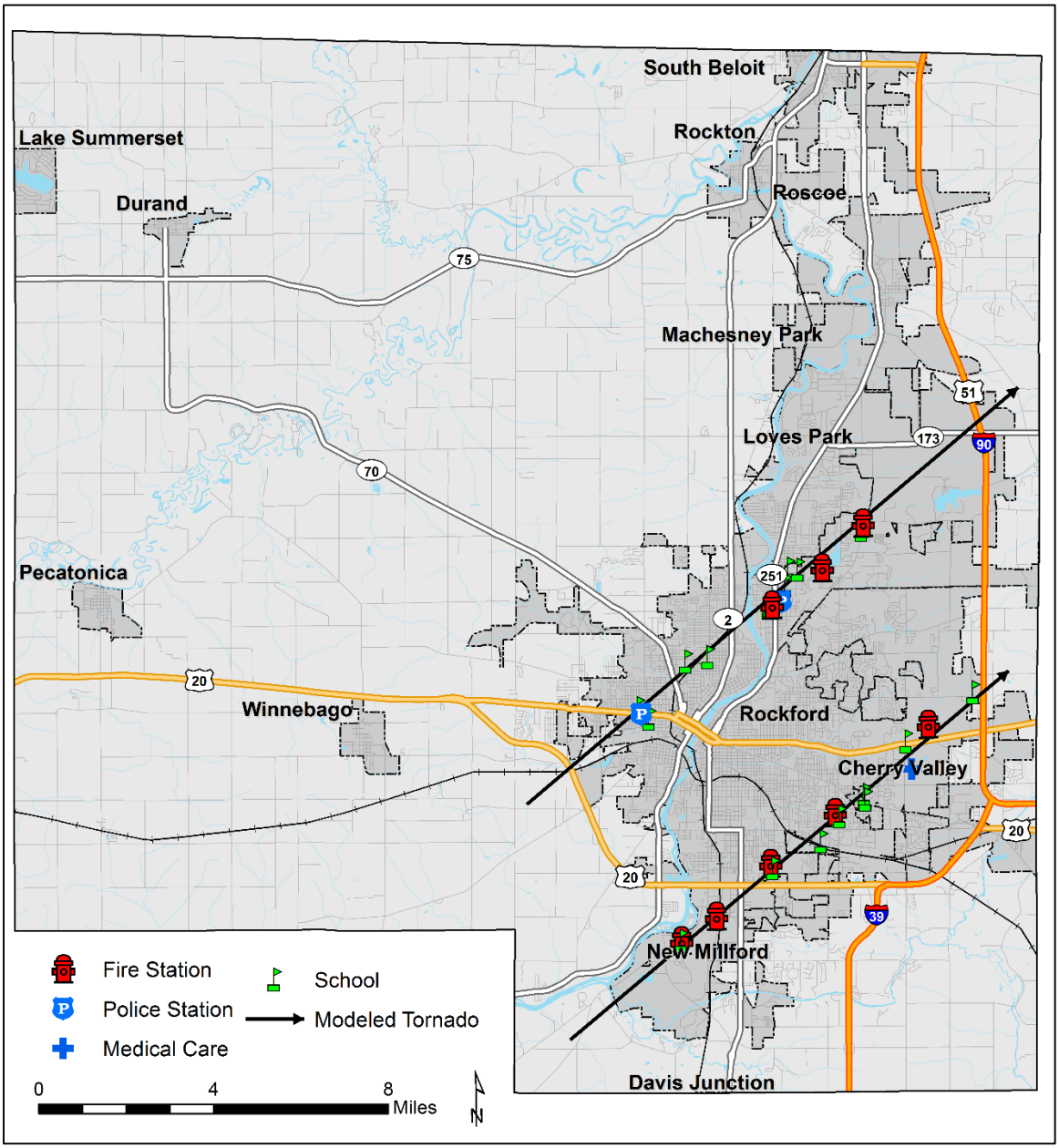


Table 4-23: Essential Facilities Affected in Rockford and Cherry Valley

Essential Facility	Facility Name
Schools	Ellis Arts Academy
	Grace Lutheran Preschool and Nursery
	Harlem Middle School
	Lewis Lemon School
	Loves Park Elementary School

	Rock Cut Elementary School
	St Bridget School
	Welsh School
	West Middle School
	Windsor Elementary School
Fire Departments	Loves Park Fire (Grand Ave)
	Loves Park Fire (Windsor Rd)
	North Park Fire (Harlem Rd)
Police Departments	Loves Park Police Dept.
	Police Substation (State St)

Table 4-24: Essential Facilities Affected in Rockford and Loves Park

Essential Facility	Facility Name
Schools	Alpine Academy
	Embry Riddle Aeronautical University
	Hillman School
	Nashold School
	Rasmussen College
	Rockford Christian School
	Thompson School
	Woodside Congregational Church Pre-School
Fire Departments	Greater Rockford Airport Fire
	Rockford Fire Station #11
	Rockford Fire Maintenance Facility
	Rockford Fire Station #5
	Rockford Fire Station #7
Care Facilities	Van Matre Healthsouth Rehab Hospital

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. Table 4-10 includes the building exposure for Winnebago County. All critical facilities in the county are at risk. Appendix E include a list of the essential facilities in Winnebago County and Appendix F 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. The county needs to build new structures with more sturdy construction, and harden existing structures to lessen the potential impacts of severe weather. Building more warning sirens will warn the community of approaching storms to ensure the safety of Winnebago County residents.

4.4.4 Hazardous Material Storage and Transportation Hazard

Hazard Definition

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.

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.

Risk Identification of Hazardous Materials Storage and Transportation Hazard

Based on input from the planning team, the occurrence of a hazardous materials accident is likely. According to the RPI and County input, "hazardous materials storage and transport" ranked as the number four hazard in Winnebago County.

RPI = Probability x Magnitude/Severity

Probability	x	Magnitude/Severity	=	RPI
3	x	4	=	12

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. Table 4-10 includes the building exposure for Winnebago County, as determined from building inventory. 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 jurisdiction. 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). Appendix E include a list of the essential facilities in Winnebago County and Appendix F displays a large format map of the locations of all critical facilities within the county.

Building Inventory

Table 4-10 includes the building exposure including types and numbers of buildings for the entire county. 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.

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 planning 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 chemical 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.

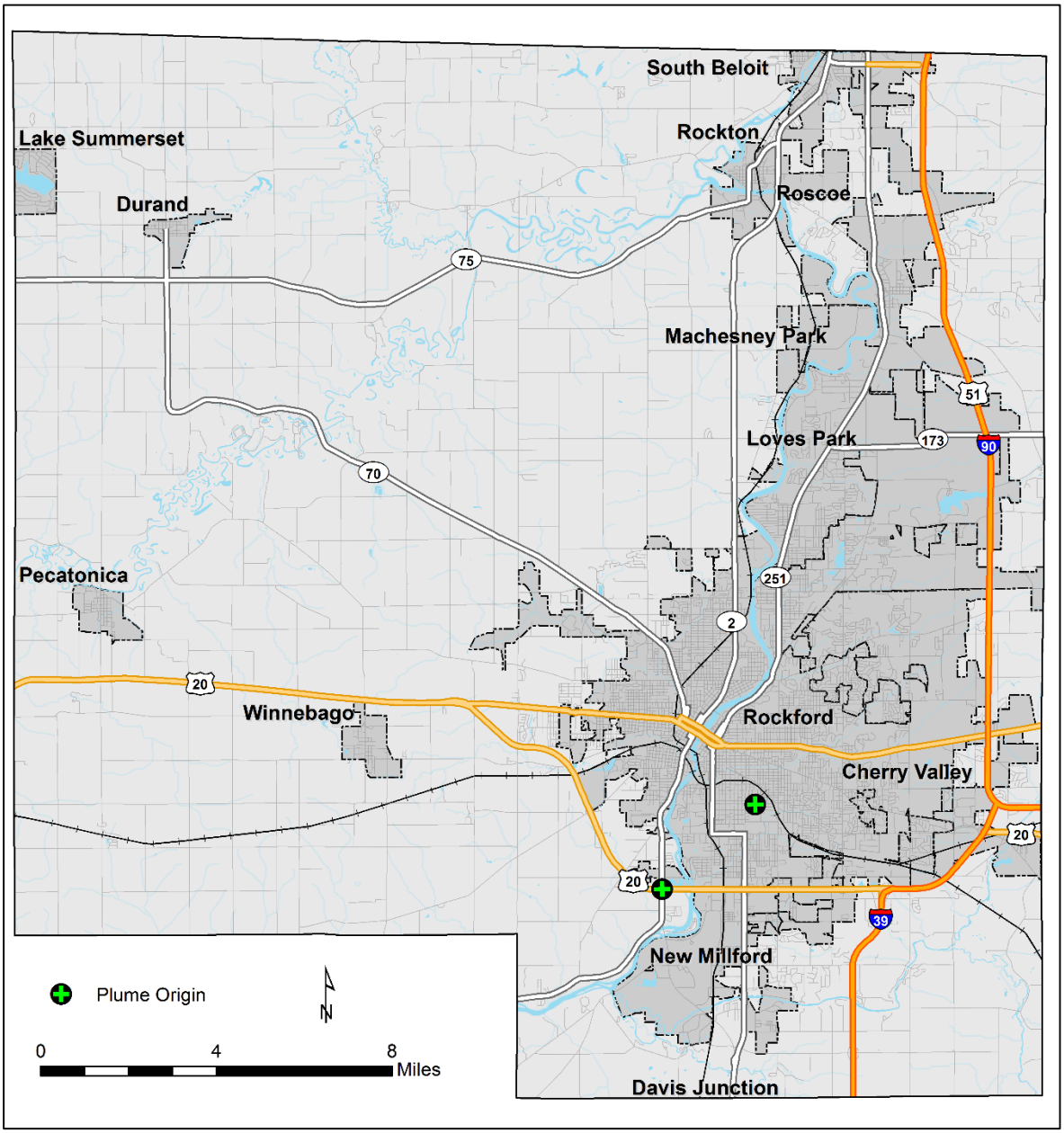
Ammonia is a clear colorless gas with a strong odor. Ammonia is shipped as a liquid under its own vapor pressure. The density of liquid ammonia is 6 lb/gal. Contact with the unconfined liquid can cause frostbite. Gas is generally regarded as nonflammable but does burn within certain vapor concentration 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).
SOURCE: http://cameochemicals.noaa.gov/chemical/4860

Chlorine is a greenish yellow gas with a pungent to suffocating odor. The gas liquefies above -35°C 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 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).
SOURCE: http://cameochemicals.noaa.gov/chemical/2862

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 planning team and obtained average monthly conditions for Rockford from NOAA's Monthly Weather Summary. Figures 4-9 depicts the plume origins of the two modeled hazardous chemical releases in Winnebago County.

Figure 4-9: ALOHA Modeled Hazardous Chemical Plume Origins in Winnebago County



Analysis Parameters for Ammonia Release

The ALOHA atmospheric modeling parameters for the ammonia release, depicted in Figure 4-10, 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.

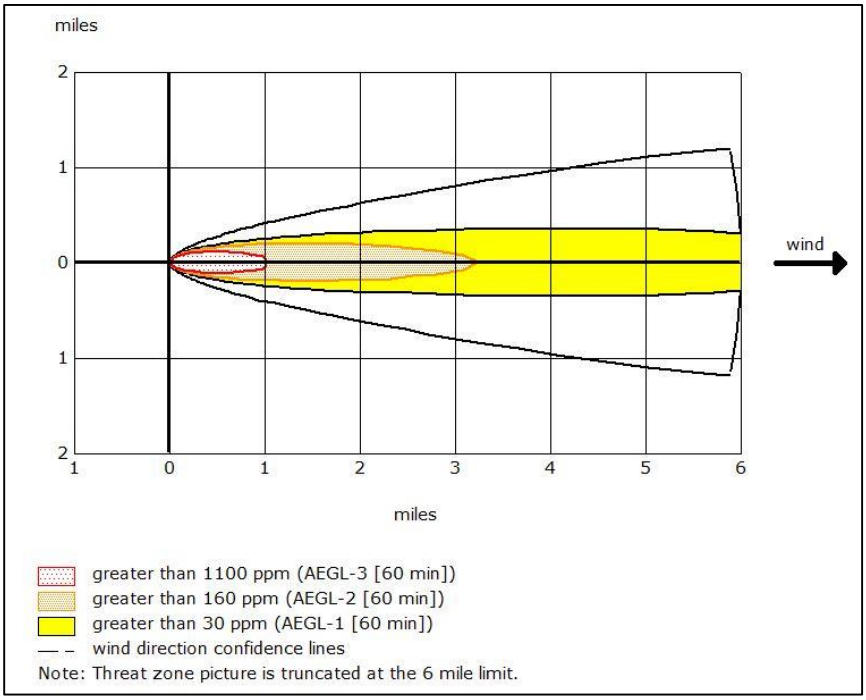
Figure 4-10: ALOHA Modeling Parameters for Ammonia Release

```
SITE DATA:
  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)

CHEMICAL DATA:
  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%

ATMOSPHERIC DATA: (MANUAL INPUT OF DATA)
  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%

SOURCE STRENGTH:
  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).
```

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 4-11 depicts the plume footprint generated by ALOHA.

Figure 4-11: ALOHA Generate Plume Footprint of Ammonia Scenario



Analysis Parameters for Chlorine Release

The ALOHA atmospheric modeling parameters for the chlorine release, depicted in Figure 4-12, 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 planning team.

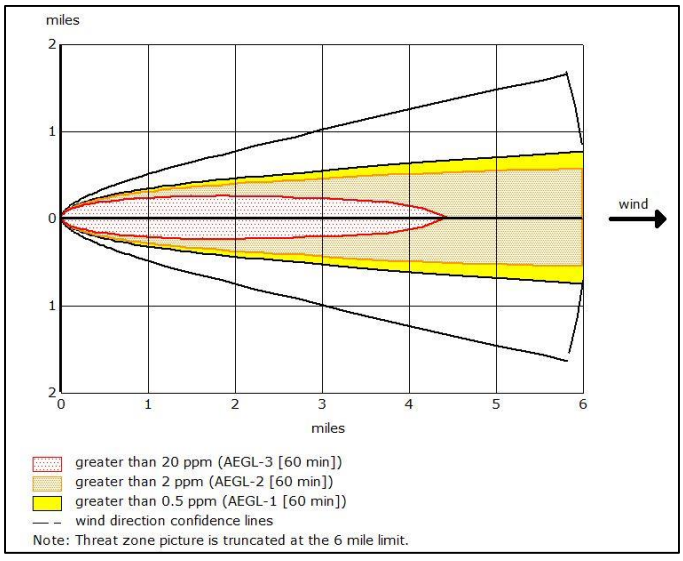
Figure 4-12: ALOHA Modeling Parameters for Chlorine Release

```
SITE DATA:
  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)

CHEMICAL DATA:
  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%

ATMOSPHERIC DATA: (MANUAL INPUT OF DATA)
  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%

SOURCE STRENGTH:
  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).
```

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 4-13 depicts the plume footprint generated by ALOHA.

Figure 4-13: ALOHA Generate Plume Footprint of 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). 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 8hours. 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/m3) of a substance above which it is predicted that the general population, including susceptible individuals, could experience notable discomfort, irritation, or certain asymptomatic nonsensory 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/m3) 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/m3) 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 nondisabling odor, taste, and sensory irritation or certain asymptomatic, nonsensory 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.

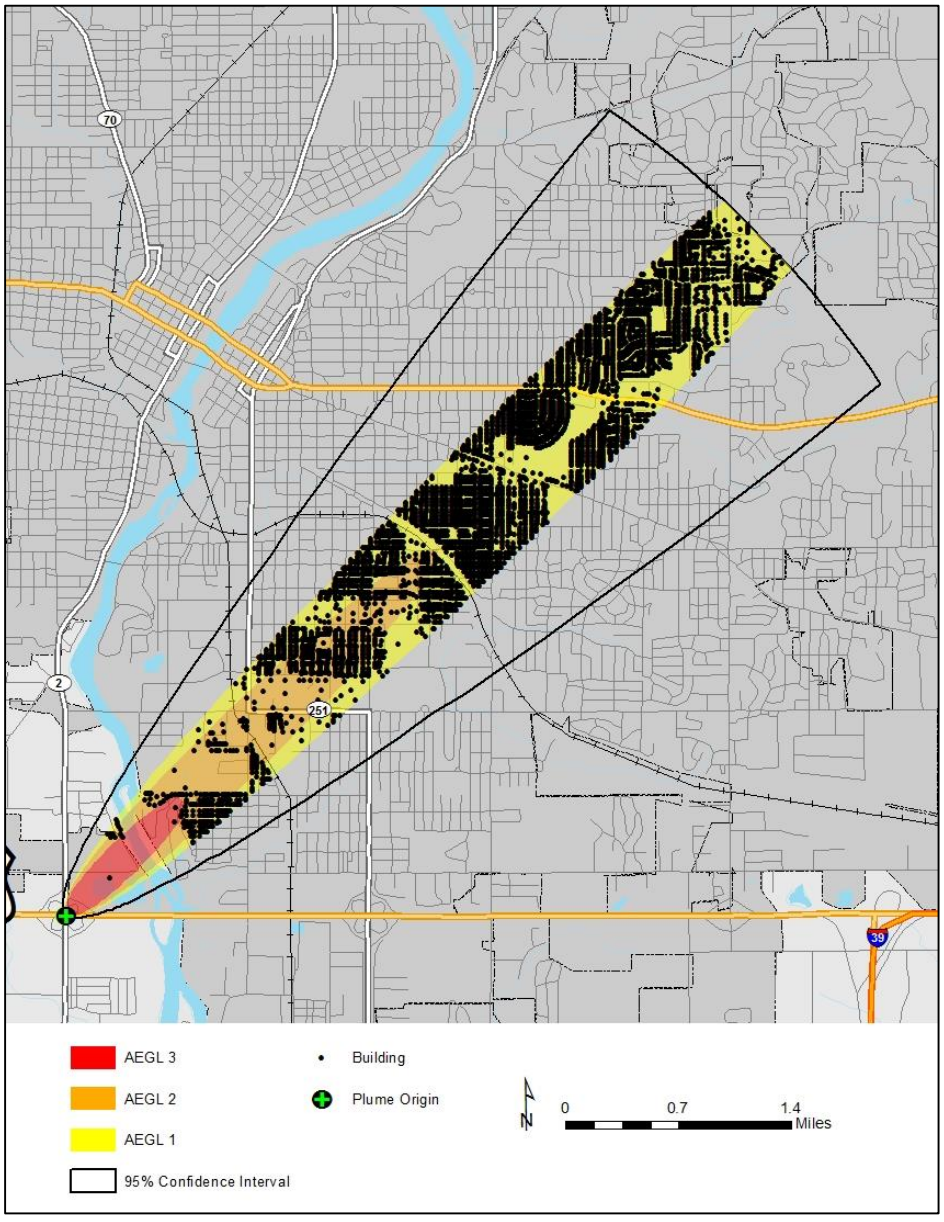
Results for Ammonia Release

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: ≥ 20.0 ppm, AEGL 2: ≥ 2.0 ppm and AEGL 1: ≥ 0.5 ppm). There are 4,625 building within the ammonia plume. Table 4-25 lists building exposure by AEGL zone. Figure 4-14 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 $1,108,928,571.

Table 4-25: 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
Total:	**$956,044,353**	**$150,787,602**	**$2,096,616**	**3909**	**706**	**10**

Figure 4-14: ALOHA Plume Footprint and Buildings Exposed to Ammonia Release



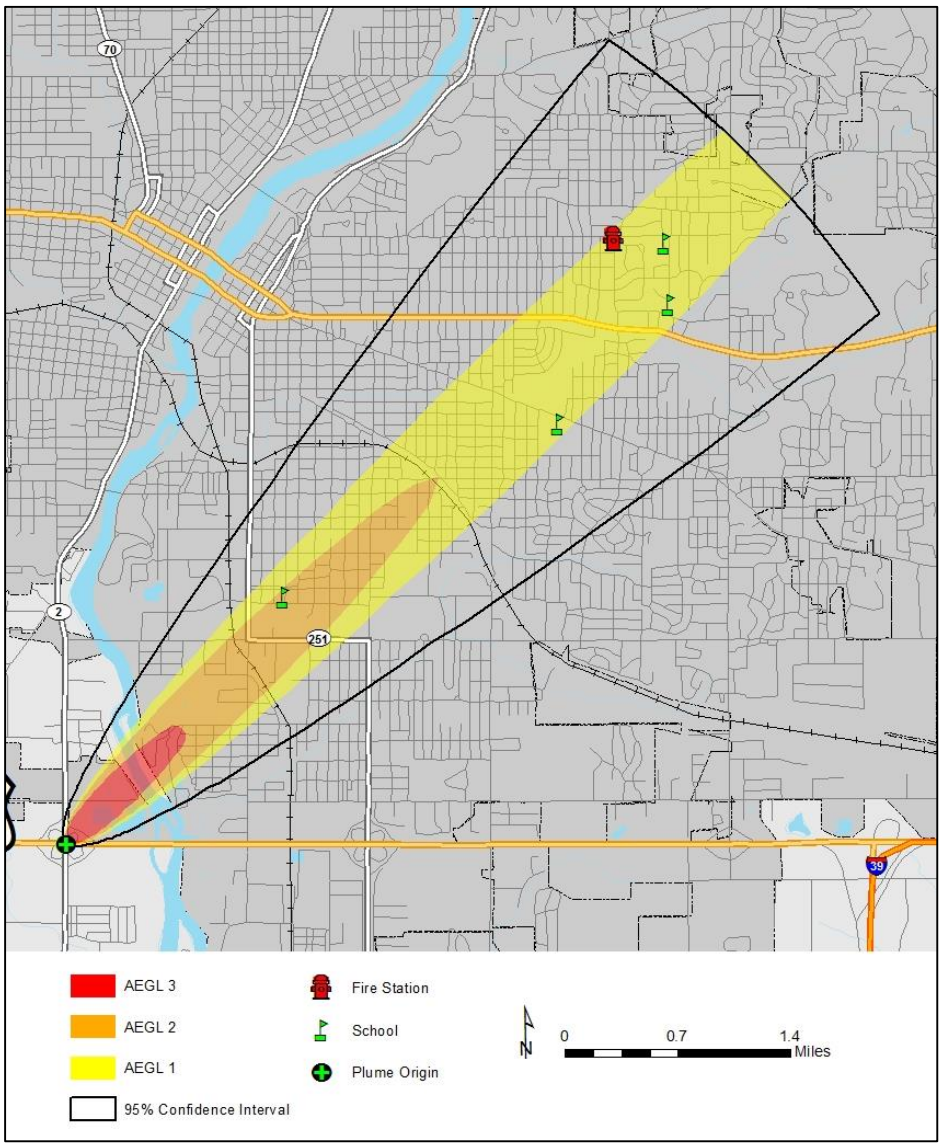
Essential Facilities Damage

There are 5 essential facilities within the limits of the ammonia scenario. Table 4-26 and Figure 4-15 identifies the affected facilities.

Table 4-26: Essential Facilities within the Ammonia Plume Footprint

Essential Facility	Facility Name
Fire Departments	Rockford Christian School
	Rockford Fire Station #10
Schools	East High School
	Johnson School
	Lydia Academy

Figure 4-15: Map of Essential Facilities within the Ammonia Plume Footprint



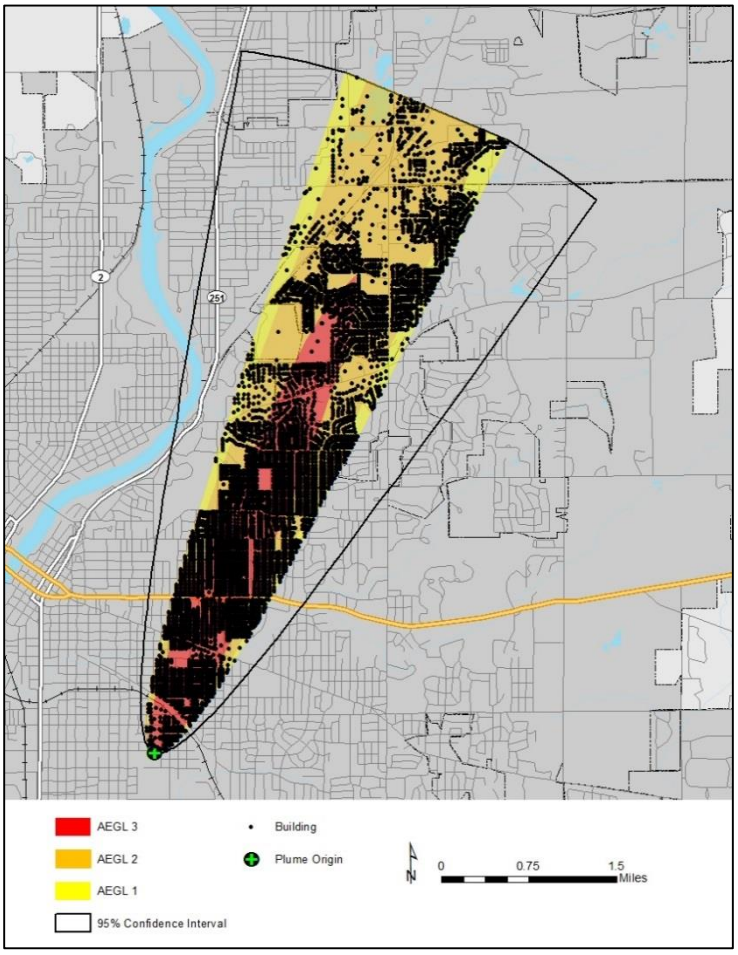
Results for Chlorine Release

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: ≥ 20.0 ppm, AEGL 2: ≥ 2.0 ppm and AEGL 1: ≥ 0.5 ppm). There are 8,144 building within the chlorine plume. Table 4-27 lists building exposure by AEGL zone. Figure 4-16 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 4-27: 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
Total:	**$421,317,468**	**$1,312,953,825**	**$768,811,371**	**1248**	**3701**	**3195**

Figure 4-16: ALOHA Plume Footprint and Buildings Exposed to Chlorine Release



Essential Facilities Damage

There are 14 essential facilities within the limits of the ammonia scenario. Table 4-28 and Figure 4-17 identifies the affected facilities.

Figure 4-17: Map of Essential Facilities within the Chlorine Plume Footprint

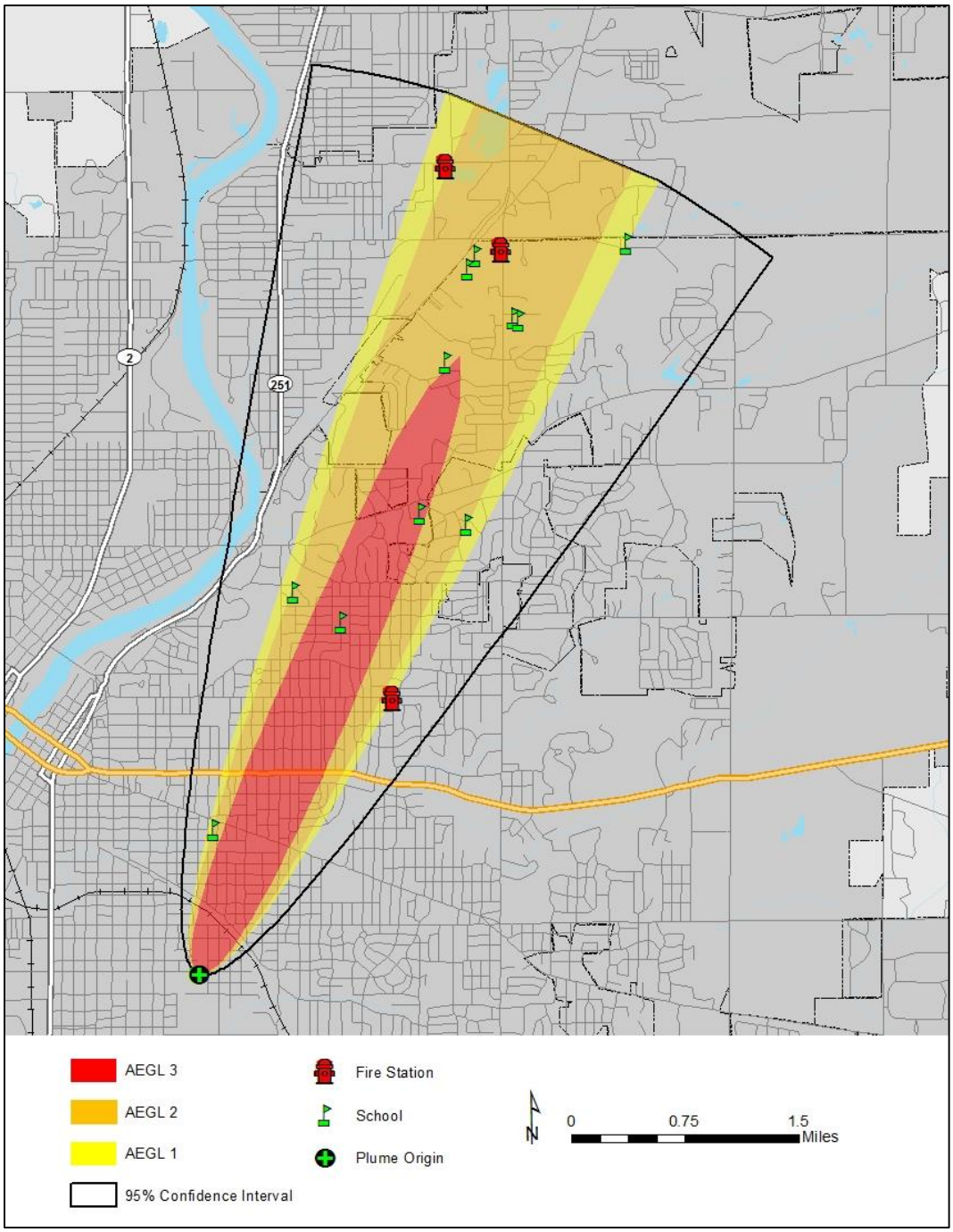


Table 4-28: Essential Facilities within the Chlorine Plume Footprint

Essential Facility	Facility Name
Schools	Bloom School
	Carlson School
	Eisenhower Middle School
	Kindercare Learning Center
	Luther Academy Lutheran High School
	Lutheran High
	Marsh School
	Nelson School
	North Love Christian
	Rainbow Academy
	University of Illinois College of Medicine
Fire Departments	Love Park Fire (Windsor Rd)
	Rockford Fire Station #10
	North Park Fire (Alpine Rd)

Building Inventory Damage

Table 4-10 lists the building exposure, including type and number of buildings, for the entire county. 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.

Suggestion 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.

4.4.5 Winter Storm Hazard

Hazard Definition of Winter Storm Hazard

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 NCDC database identified 44 winter storm and extreme cold events for Winnebago County since 1996. Of the events listed on the NCDC database, no property damage, deaths, or injuries were reported. Additional details of individual hazard events are on the NCDC website. The most recent reported event occurred in January of 2014 when temperatures plummeted across northern Illinois with breezy conditions leading to wind chill values falling into the -30°F to -35°F range following a strong arctic front.

Geographic Location of Winter Storm Hazard

Severe winter storms are regional in nature. Most of the NCDC 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.

Risk Identification of Winter Storm Hazard

Based on historical information and input from the planning team, the occurrence of future winter storms is likely. The county should expect winter storms of varying magnitudes. According to the RPI and county input, winter storms ranked as the number five hazard.

RPI = Probability x Magnitude/Severity

Probability	x	Magnitude/Severity	=	RPI
4	x	1	=	4

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. Table 4-10 includes the building exposure for Winnebago County, as determined from the building inventory.

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. Appendix E include a list of the essential facilities in Winnebago County and Appendix F displays a large format map of the locations of all critical facilities within the county.

Building Inventory

Table 4-10 lists the building exposure in terms of types and numbers of buildings for the entire county. 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

SIU determined that since 1996 Winnebago County has incurred significant property damages for some winter storms, including sleet/ice and heavy snow although it was not reported by the NCDC.

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.

4.4.6 Drought and Extreme Heat Hazard

Hazard Definition for Drought Hazard

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 1999. The most recent recorded event occurred on July 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 1st and August 1st 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 4-18 identifies NCDC-recorded drought/heat wave events that caused damage, death, or injury in Winnebago County. Additional details of individual hazard events are on the NCDC website.

Table 4-29: NCDC-Recorded Extreme Heat Events That Caused Damage, Death, or Injury

Location or County*	Date	Deaths	Injuries	Property Damage (x $1000)
Winnebago County	07/1999	2	0	$0
Winnebago County	08/2006	1	0	$0
	Total:	**3**	**0**	**$0**

*NCDC 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.

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.

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/or Extreme Heat

Based on input from the Winnebago County planning team, drought occurrence is likely. Drought and/or extreme heat ranked as the number six hazard, according to the RPI and county input.

RPI = Probability x Magnitude/Severity

Probability	x	Magnitude/Severity	=	RPI
3	x	2	=	6

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. Table 4-10 includes the building exposure for Winnebago County, as determined from the building inventory.

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 jurisdiction, 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. Appendix E include a list of the essential facilities in Winnebago County and Appendix F displays a large format map of the locations of all critical facilities within the county.

Building Inventory

Table 4-10 lists the building exposure, including types and numbers of buildings for the entire county. 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.

Suggestion of 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.

4.4.7 Dam and Levee Failure

Hazard Definition for Dam and 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 below creates large amounts of potential energy, creating the potential for 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 planning team, there are no records or local knowledge of any dam or levee failure in the county.

Risk Identification for Dam and Levee Failure

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. According to the RPI and county input, dam failure ranked as the number seven hazard.

RPI = Probability x Magnitude/Severity

Probability	x	Magnitude/Severity	=	RPI
2	x	2	=	4

Geographic Location of Dams and Levees in Winnebago County

Table 4-30 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 4-30: Dams 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	-
Fordam 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 Summerset 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 4-31 summarizes the National Levee Database.

Table 4-31: Levees 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.

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). Appendix E include a list of the essential facilities in Winnebago County and Appendix F 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.

Analysis of 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.

4.4.8 Earthquake Hazard

Hazard Definition

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 4-32 provides a comparison of magnitude and intensity, and Table 4-33 provides qualitative descriptions of intensity, for a sense of what a given magnitude might feel like.

Table 4-32: Comparison of Earthquake Magnitude and Intensity

Magnitude (M)	Typical Maximum Modified Mercalli Intensity
1.0 – 3.0	I
3.0 – 3.9	II – III

Magnitude (M)	Typical Maximum Modified Mercalli Intensity
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 4-33: 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^2, 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^2 (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).

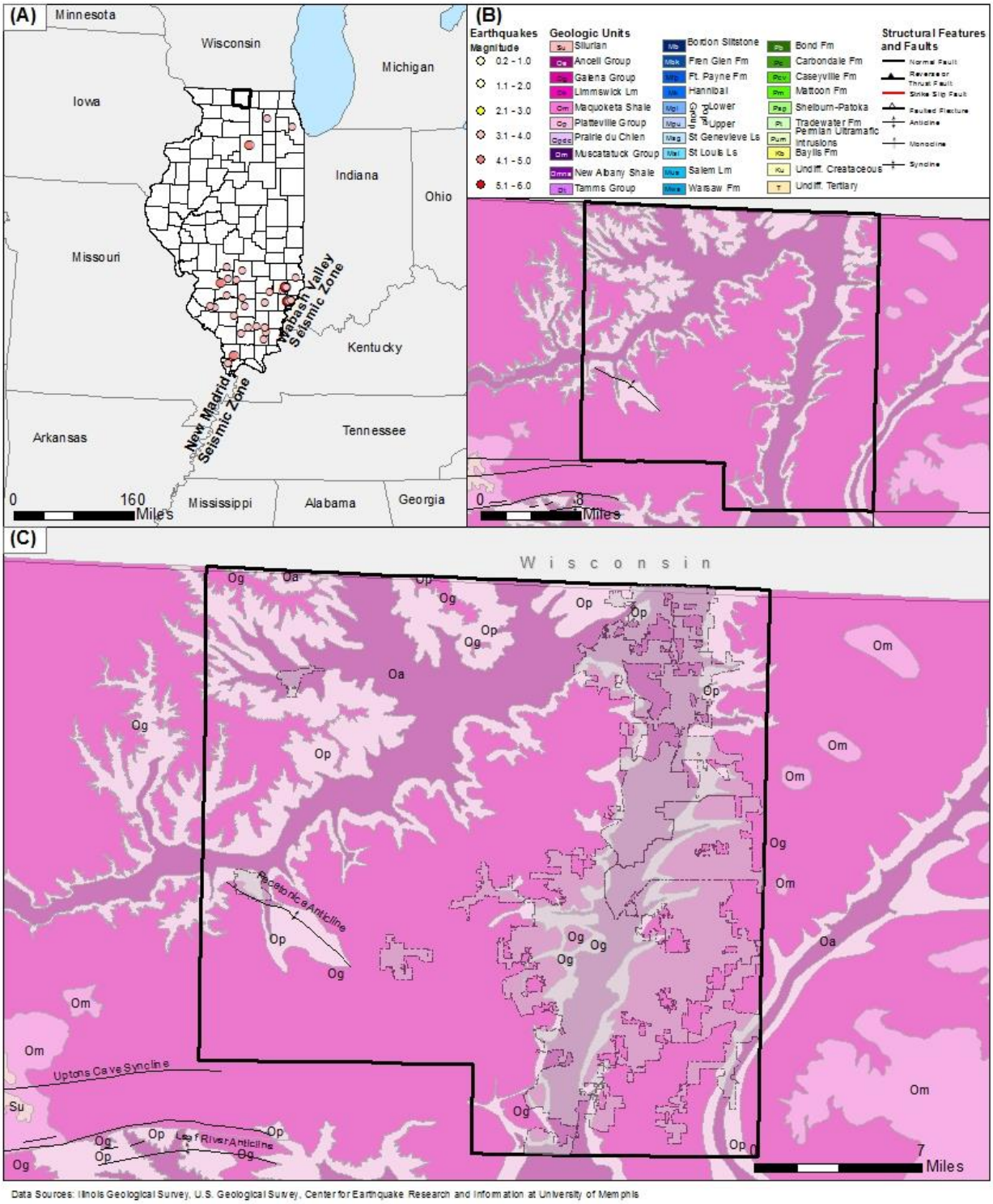
Earthquakes measured in Illinois typically vary in magnitude from very low microseismic events of M=1-3 to larger events up to M=5.4. The most recent earthquake in Illinois—as of the date of this report—was a M2.3 event in Feburary, 2014 approximately 6 miles NNW of Mound City in Pulaski County. In Northern Illinois, the most recent earthquake was a M3.2 event in November 2013 approximately 1 mile NW of Summit in Cook County. 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. 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 (≤ 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 4-18 depicts the following: (A) location of notable earthquakes in Illinois region; (B) generalized geologic bedrock map with earthquake epicenters and geologic structures; (C) geologic and earthquake epicenter map of Winnebago County.

Figure 4-18: Recorded Earthquakes in the Illinois and Geology of Winnebago County



Data Sources: Illinois Geological Survey, U.S. Geological Survey, Center for Earthquake Research and Information at University of Memphis

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. SIU used a National Earthquake Hazards Reduction Program (NEHRP) compliant soils map provided by FEMA for the analysis. The map identifies the soils most susceptible to failure.

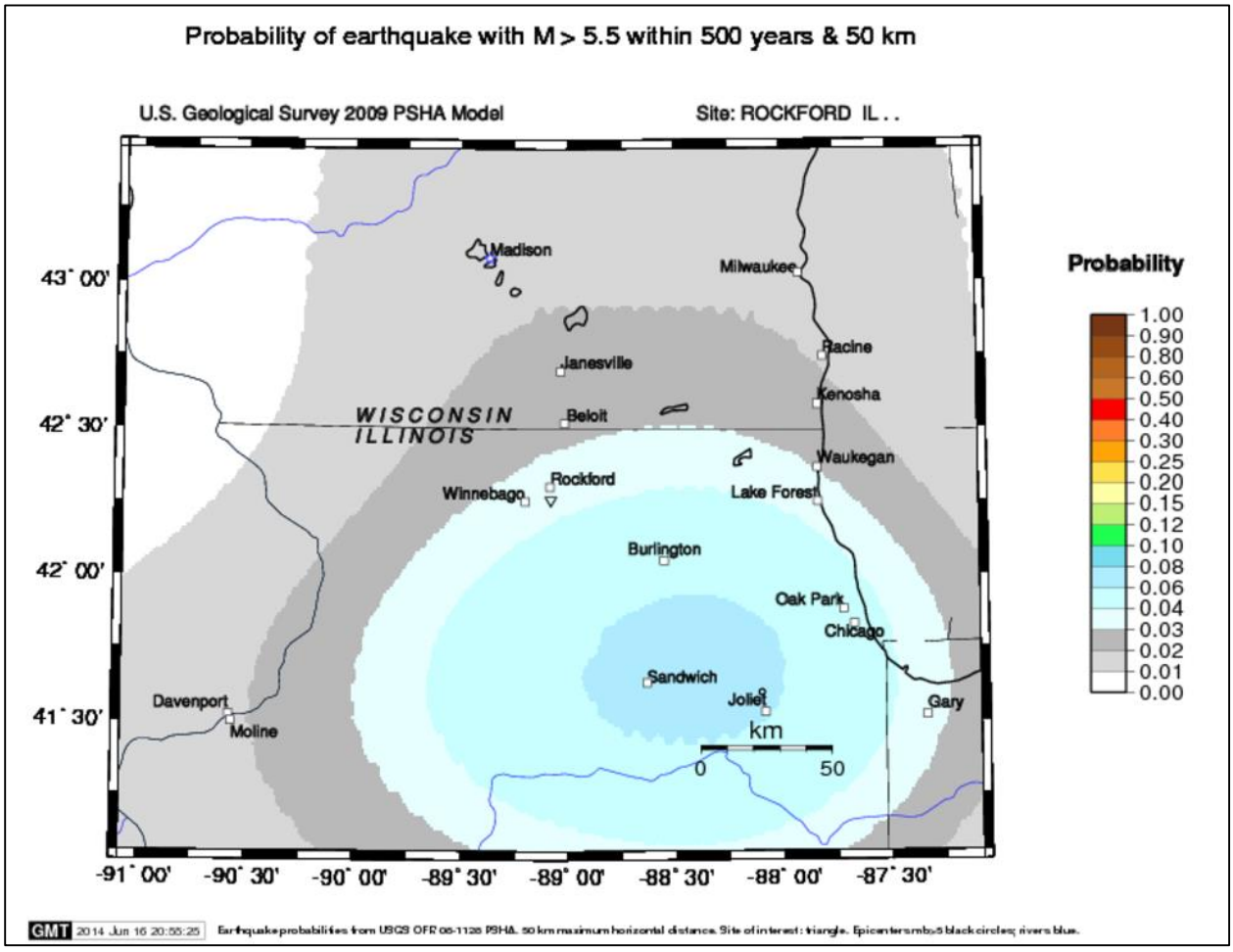
Risk Identification for Earthquake Hazard

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 cause catastrophic damage are unlikely. Figure 4-19 illustrates the probability of a M5.5 event occurring within the next 500 years in the Winnebago County region. According to the Winnebago County planning team's assessment, earthquakes are ranked as the number eight hazard.

RPI = Probability x Magnitude/Severity

Probability	x	Magnitude/Severity	=	RPI
1	x	4	=	4

Figure 4-19: USGS Probability Map for a M5.5 Earthquake Occurring in the Next 500 Years within Winnebago County



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). Appendix E include a list of the essential facilities in Winnebago County and Appendix F displays a large format map of the locations of all critical facilities within the county.

Building Inventory

Table 4-10 displays the building exposure in terms of types and numbers of buildings for the entire county. 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 SIU, 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.

Hazus-MH Analyses for Four Earthquake Scenarios

SIU reviewed existing geological information and recommendations from the planning 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 generally not been 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 NEHRP soil classification map 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 4-34 and 4-35 show the results of the 500-year probabilistic analysis. The total economic loss estimated for the M5.5 probabilistic earthquake 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 4-34: 500-Year Probabilistic Earthquake Damage Estimates by Building Occupancy

	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
Total:	**108,834**		**1,144**		**256**		**24**		**1**	

Table 4-35: 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

Category	Area	Single Family	Other Residential	Commercial	Industrial	Other	Total
	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 4-36 and 4-37 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 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 4-36: M5.5 Deterministic Earthquake Damage Estimates by Building Occupancy

	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
Total:	**101,936**		**6,281**		**1,785**		**237**		**21**	

Table 4-37: 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

Category	Area	Single Family	Other Residential	Commercial	Industrial	Other	Total
	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 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.

At Meeting 4, the MHMP team discussed specific mitigation strategies for reducing earthquake hazard. The discussion included strategies to harden and protect future and existing structures against the possible termination of public services and systems including power lines, water and sanitary lines, and public communication (see Section 5).

Section 5. Mitigation Strategies

5.1 Community Capability Assessment

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 4). Mitigation is an ongoing process that adapts over time to accommodate a community's needs.

5.1.1 Successful Mitigation 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 after Winnebago County's 2007 Multi-Hazard Mitigation Plan was formally adopted.

Winnebago County

Acquisition of 12 Flood Prone Structures

The U.S. Department of Homeland Security's Federal Emergency Management Agency (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.

Winnebago County

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.

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.

Machesney Park

Acquisition of 26 Flood Prone Structures

Machesney Park was awarded 2.5 million dollars from the HMGP program and acquired 26 flood-prone structures on the Rock River, and converted the property to open space. Twenty-six homes were demolished with deed restriction applied to the land.

Winnebago County

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.

5.1.2 National Flood Insurance Program (NFIP)

Table 5-1 includes a summary of additional information for Winnebago County participation in the NFIP. 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. Communities with a flood risk who choose not to participate in the NFIP include the Village of Winnebago. The Village of Winnebago may have elected not to participate in the NFIP because it does not have a flood risk – no FEMA-identified floodplains lie within the Village boundaries. As of 10/15/1981, the Village of Rockton has been suspended from the NFIP. Winnebago County will continue to provide information to these jurisdictions regarding the benefits of the program.

Table 5-1: Information on Winnebago County's Participation in the NFIP*

Community	Participation Date	FIRM Date	CRS Date	CRS Rating	Floodplain Ordinance
Winnebago County	11/19/1980	09/06/2006	N/A	N/A	08/2006
Cherry Valley	03/16/1981	02/18/2011	N/A	N/A	03/2004
Durand	09/02/1981	09/06/2006	N/A	N/A	08/2006
Loves Park	10/17/1978	02/18/2011	N/A	N/A	02/2011
Machesney Park	09/30/1981	09/06/2006	N/A	N/A	03/1995
New Milford	09/06/2006	09/06/2006	N/A	N/A	06/2006
Pecatonica	12/01/1981	09/06/2006	N/A	N/A	09/2006
Rockford	12/04/1979	09/06/2006	N/A	N/A	9/2011
Roscoe	03/01/1982	09/06/2006	N/A	N/A	03/1993
South Beloit	01/02/1980	09/06/2006	N/A	N/A	08/1976

*NFIP status and information are documented in the Community Status Book Report updated on 08/21/2014.

The county and incorporated areas do not participate in the NFIP'S Community Rating System (CRS). The CRS is a voluntary incentive program that recognizes and encourages community floodplain management activities that exceed the minimum NFIP requirements. As a result, flood insurance premium rates are discounted to reflect the reduced flood risk resulting from the community actions meeting the three goals of the CRS: (1) reduce flood losses; (2) facilitate accurate insurance rating; and (3) promote the awareness of flood insurance.

Since the establishment of the NFIP in 1978, Winnebago County had 1,379 flood insurance claims. Table 5-2 summarizes the claims since 1978.

Table 5-2: Policy and Claim Statistics* for Flood Insurance in Winnebago County

Community	Closed Losses	Open Losses	CWOP Losses	Total Losses	Payments
Winnebago County	271	0	75	346	$3,041,205.23
Machesney Park	288	3	63	354	$7,435,180.64
Pecatonica	1	0	0	1	$39,205.85
Rockford	498	1	92	591	$9,149,640.87
Roscoe	42	0	8	50	$261,456.18
South Beloit	22	0	15	37	$119,766.94

*NFIP policy and claim statistics since 1978 until the most recently updated date of 6/30/2014. Closed Losses refer to losses that are paid; open losses are losses that are not paid in full; CWOP losses are losses that are closed without payment; and total losses refers to all losses submitted regardless of status. Lastly, total payments refer to the total amount paid on losses.

5.1.3 Jurisdiction Ordinances

Ordinances that directly pertain, or can pertain, to disaster mitigation are listed in Table 5-3 and are discussed in more detail, if information was provided, in this section.

Table 5-3: Winnebago County's Jurisdiction Ordinances and Most Recent Amendment Dates

Community Name	Zoning	Storm water Mgmt	Floods	Subdivision Control	Burning	Seismic	Erosion Mgmt	Land Use Plan	Building Codes
Winnebago County	05/1995	08/2006	08/2006	1964	10/2006	-	08/2006	02/2009	08/2010
Cherry Valley	06/2011	03/2004	08/2006	-	01/2004	-	07/2000	03/2004	06/2007
Durand	06/2012	08/2006	08/2006	05/1999	10/2008	-	-	2007	06/2007
Loves Park	04/2003	02/2011	08/2006	02/2011	06/2010	04/2010	02/2011	-	04/2010
Machesney Park	08/2013	03/1995	-	01/2008	10/1999	-	-	05/2010	12/2013
New Milford	09/2007	06/2006	-	06/2006	10/2010	-	06/2006	-	08/2010
Pecatonica	03/2014	09/2006	09/2006	-	04/2012	-	09/2006	-	05/2010
Rockford	01/2013	09/2011	09/2011	02/2007	10/2010	-	09/2011	09/2004	10/2010
Rockton	11/2004	11/2004	11/2006	11/2004	11/2004	-	11/2004	11/2004	11/2004
Roscoe	03/1993	05/1998	08/2006	03/1993	02/1975	-	04/2006	-	03/2009
South Beloit	08/1976	11/1995	06/2006	09/2005	03/2011	-	09/2011	-	04/2013
Winnebago Village	12/2004	05/1998	08/2006	03/1993	05/1996	-	12/2006	-	03/2009

5.1.4 Fire Insurance Ratings

Table 5-4 lists Winnebago County's fire departments and respective information.

Table 5-4: Winnebago County Fire Departments, Insurance Ratings, and Number of Employees/Volunteers

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	4/8	86
Loves Park Fire Protection District	5/9	67
New Milford Fire Protection District	7	15
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
Shirland Fire Protection District	5/8	20
South Beloit Fire Protection District	3	32
West Suburban Fire Protection District	7/9	21
Win-Bur-Sew Fire Protection District	4/7	47

*The Greater Rockford Airport Fire only handles aircraft fires – no structure fires. There is no rating system for the level of fire protection they provide.

5.2 Mitigation Goals

In Section 4 of this plan, the risk assessment identified Winnebago County as prone to several hazards. The mitigation planning 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.

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 or revise existing plans/maps for Winnebago County

Objective: Support compliance with the NFIP for each jurisdiction 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.

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.

5.3 Mitigation Actions/Plans

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 storm water 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.

After Meeting 3, held on 06/25/2014, the mitigation planning team was presented with the task of individually listing potential mitigation activities using the FEMA evaluation criteria. The planning team brought their mitigation ideas to Meeting 4, held on 06/26/2014. 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 jurisdiction 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?

5.4 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.

At Meeting 4, the planning team prioritized mitigation actions based on a number of factors. The factors were the STAPLE+E criteria listed in Table 5-5. For each incorporated jurisdiction, a rating of high, medium, or low was assessed for each mitigation item and is listed next to each item in Table 5-6 through 5-20.

Table 5-5: Summary of STAPLE+E Criteria

S – Social	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.
T – Technical	Mitigation actions are technically most effective if they provide a long-term reduction of losses and have minimal secondary adverse impacts.
A – Administrative	Mitigation actions are easier to implement if the jurisdiction has the necessary staffing and funding.
P – Political	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.
L – Legal	It is critical that the jurisdiction or implementing agency have the legal authority to implement and enforce a mitigation action.

E – Economic	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.
E – Environmental	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, the estimated costs were discussed. The overall benefits were considered when prioritizing mitigation items from high to low. An official cost-benefit review is conducted prior to the implementation of any mitigation actions. Tables 5-6 through 5-20 presents mitigation projects for each incorporated jurisdiction developed by the planning committee, as well as actions that are ongoing or already completed. The objective of this updated plan is to generate proactive mitigation strategies with clear goals and objectives.

The Winnebago County Highway Department will be the local champion for the mitigation actions. The Winnebago County Board and the city and town councils will be an integral part of the implementation process. Federal and state assistance will be necessary for a number of the identified actions.

Table 5-6: List of Mitigation Strategies Developed at Meeting 4 for Winnebago County*

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Priority	Comments
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	High	Ongoing within Winnebago County.
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	High	Ongoing mitigation item. Winnebago County website is utilized.
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	High	Ongoing mitigation item. The Health Department will distribute information packets prior to and immediately following hazardous events.
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	High	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.
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	High	Winnebago County currently has designated heating/cooling shelters and plans to distribute the locations of the shelters to residents in the county.
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	High	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.

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Priority	Comments
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	High	Winnebago County Local Emergency Planning Committee (LEPC) oversees the various mutual aid agreements within the county.
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 caus secondary effects on hazards	All Hazards	High	Certain critical facilities within Winnebago County have alternative power sources in the event of a hazardous event.
Enhance Communication Systems	Goal: Lessen the impacts of hazards to new and existing infrastructure Objective: Equip public facilities and communities to guard against damage caus secondary effects on hazards	All Hazards	High	The County plans to improve emergency alarms in rural areas
Data Acquisition for Future Hazard Mitigation Planning	Goal: Create new or revise existing plans/maps Objective: Review and update existing GIS datasets	All Hazards	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.
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	High	Ongoing within Winnebago County.
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	High	Winnebago County will work to develop mutual aid agreements in event of an earthquake.

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Priority	Comments
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	High	This mitigation item is ongoing and is addressed by current ordinances. The County will continue to maintain update these ordinances.
Participate in the NFIP	Goal: Create new or revise existing plans/maps Objective: Support compliance with the NFIP	Flooding / Dam and Levee Failure	High	Ongoing within Winnebago County. The county will continue to educate and encourage communities/jurisdictions to join the NFIP.
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	Winnebago County will investigate the feasibility of joining the CRS.
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	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.
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	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.
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	High	Winnebago County has building code restrictions and flood protection requirements in place. The County will continue to maintain and update these ordinances.

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Priority	Comments
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	High	Winnebago County Emergency Services participate in response planning for such events.
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	High	Flood protection overlay districts and conservation design are included in the proposed Unified Development Ordinance.
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	High	This mitigation item is ongoing within Winnebago County and is part of the building code requirement for specified sites.
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	Winnebago County requires HAZMAT response plans for specified building sites and facilities.
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	High	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.
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	This mitigation item is ongoing and is overseen by the Winnebago County LEPC.
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	High	This mitigation item is ongoing within Winnebago County and is part of the building code requirement for specified structures.

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Priority	Comments
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	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.
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	High	This mitigation item is ongoing and is regular practice of the Highway Department.

*All strategies are ranked as high priority because they relate to programs and policies currently in effect/ongoing or to programs and policies in which Winnebago County is currently planning to implement.

Table 5-7: List of Mitigation Strategies Developed at Meeting 4 for Cherry Valley

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Priority	Comments
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	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.
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	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.
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 caus secondary effects on hazards	All Hazards	High	Cherry Valley will be adding back-up generators to another well house as well as to new public work facilities (Spring 2015).

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Priority	Comments
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	High	Cherry Valley will be implementing additional action plans to minimize tree damage to power lines as well as other infrastructure.
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	Low	The special needs population in Cherry Valley continues to grow and will be one of the larger demographic groups.
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	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.
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.
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	High	Cherry Valley plans to develop an ordinance that restricts outdoor burning during periods of drought and extreme heat.
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	High	Cherry Valley will continue to improve the village's floodplain ordinances to restrict development with the floodplain.

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Priority	Comments
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.
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.
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.
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.
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	Medium	Cherry Valley will continue to improve the village's construction ordinances to develop construction standards specific to weather/climate stressors.
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	High	Cherry Valley would like to seek funding to install snow fences in areas prone to drifting snow accumulation.

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Priority	Comments
Heating and Cooling Shelters	Goal: Lessen the impacts of hazards to new and existing infrastructure Objective: Improve emergency sheltering	Winter Storms / Extreme Heat	Medium	Cherry Valley wishes to seek funding to increase the number of heating and cooling shelters in the village.

Table 5-8: List of Mitigation Strategies Developed at Meeting 4 for Durand

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Priority	Comments
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
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	High	Currently, the Durand Fire Department has mutual aid agreements with other local departments. Durand Police Department is also involved with mutual aid agreements.
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 caus secondary effects on hazards	All Hazards	High	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.
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	High	Durand wishes to improve first responder training in the city. This will be handled by the Durand Fire and EMS.

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Priority	Comments
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	Low	The Village of Durand is currently redesigning their website. A section of the village website can be devoted to hazard mitigation awareness.
Enhance / Create Alternate Emergency Operations Center	Goal: Lessen the impacts of hazards to new and existing infrastructure Objective: Improve EOC emergency shelteri	All Hazards	Medium	Durand's primary EOC is the Durand Fire Department. The secondary EOC is the Village Hall and/or Durand School.
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 caus secondary effects on hazards	All Hazards	Medium/High	The Village's portable generator is capable of providing power to the well in order to keep the elevated water tower filled.
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	High	The Village currently has existing burning ordinances as well as a water ban ordinance that can be implemented when needed.
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	High	Durand will continue to maintain update floodplain ordinances.
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	Low	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.

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Priority	Comments
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	Medium	Durand currently monitors high flow areas. The Village will seek funding to replace culverts on an as needed basis.
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	Medium	Durand Fire Department will continue to work with the Winnebago County LEPC to improve the County's HAZMAT response plans.
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	Durand Fire Department will continue to work with the Winnebago County LEPC to improve the County's HAZMAT response plans.
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	Medium	Current building codes address this issue including anchoring of utility sheds.

Table 5-9: List of Mitigation Strategies Developed at Meeting 4 for Loves Park

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Priority	Comments
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	High	Loves Park will work with Winnebago County to improve Public Education and Awareness.
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	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.

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Priority	Comments
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 caus secondary effects on hazards	All Hazards	High	Loves Park wishes to seek funding to obtain back-up generators for critical facilities within the village.
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	High	Loves Park wishes to improve first responder training in the city and will work with Winnebago County on this mitigation item.
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.
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	Low	The City of Loves Park will continue to maintain update burn ordinances.
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	High	Loves Park participates in the NFIP and will continue to education its residents on the benefits of the NFIP.
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.

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Priority	Comments
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	High	This mitigation item is ongoing.
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.
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.
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.
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	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.
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.
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	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.

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Priority	Comments
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.

Table 5-10: List of Mitigation Strategies Developed at Meeting 4 for Machesney Park

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Priority	Comments
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.
Mutual Aid Agreements	Goal: Create new or revise existing plans/maps Objective: Evaluate and strengthen the communication and transportation abilities of emergency services	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.
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 caus secondary effects on hazards	All Hazards	High	Machesney Park wishes to seek funding to obtain back-up generators for critical facilities.
Data Acquisition for Future Hazard Mitigation Planning	Goal: Create new or revise existing plans/maps Objective: Review and update existing GIS datasets	All Hazards	High	Machesney park will continues to assist WinGIS in maintaining its list of critical and essential facilities in the county
Establish Local Emergency Planning Committee	Goal: Create new or revise existing plans/maps Objective: Evaluate and strengthen the communication and transportation abilities of emergency services	All Hazards	Low	Machesney Park will work with the Winnebago County Local Emergency Planning Committee (LEPC).

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Priority	Comments
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.
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.
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.
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.
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	Medium	Machesney Park will be implementing additional action plans to minimize tree damage to power lines as well as other infrastructure.
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.

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Priority	Comments
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	Medium	Machesney Park will continue to maintain update burn ordinances.
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.
Participate in the NFIP	Goal: Create new or revise existing plans/maps Objective: Support compliance with the NFIP	Flooding / Dam and Levee Failure	High	Machesney Park participates in the NFIP and will continue to maintain compliance with the NFIP by evaluating and improving existing ordinances.
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	High	Machesney Park participates in the NFIP and will continue to education its residents on the benefits of the NFIP.
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	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.
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	High	Machesney Park has building code restrictions and flood protection requirements in place. The village will continue to maintain and update these ordinances.

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Priority	Comments
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	High	Machesney Park wishes to seek funding to improve open space preservation and decrease the amount of infrastructure exposed to flooding.
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	High	Machesney Park created a conservation overlay district which identified all structures in the floodway.
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	Low	Machesney Park will work with Winnebago County Emergency Services to participate in response planning for such events.
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	Medium	Machesney park wishes to seek funding to elevate structures in flood prone areas.
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.
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.
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.

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Priority	Comments
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	Medium	This mitigation item is ongoing. Machesney Park will work with the County to improve this mitigation item.
Heating and Cooling Shelters	Goal: Lessen the impacts of hazards to new and existing infrastructure Objective: Improve emergency sheltering	Winter Storms / Extreme Heat	Medium	Machesney Park wishes to seek funding to increase the number of heating and cooling shelters for its residents. The Village Hall is set up as a cooling shelter.

Table 5-11: List of Mitigation Strategies Developed at Meeting 4 for New Milford

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Priority	Comments
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	The Village of New Milford has a website that residents can get information about Emergency Procedures. Data is updated every three months.
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	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.
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 caus secondary effects on hazards	All Hazards	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.
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	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.

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Priority	Comments
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	Medium	New Milford will continue to work with the Winnebago County LEPC to improve the County's HAZMAT response plans.
Install Tornado Safe Room	Goal: Lessen the impacts of hazards to new and existing infrastructure Objective: Improve emergency sheltering	Severe Storms / Tornadoes	High	The Village is working to secure funding to provide a safe room for residents of the mobile home parks.
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	Medium	Through stricter ordinances and building codes, the Village is currently working with Mobile Home owners to ensure each unit is anchored properly.
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	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.

Table 5-12: List of Mitigation Strategies Developed at Meeting 4 for Pecatonica

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Priority	Comments
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	This will be overseen by the Village Board, thru press releases and Village website notices pertaining to mitigation issues.
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. We have a base plan on record currently but need to update.

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Priority	Comments
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.
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 caus secondary effects on hazards	All Hazards	Medium	The Village will attempt to secure funding to purchase generators for all Village buildings. This will be addressed by full Village Board.
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 / Medium	This mitigation item will be assigned to emergency planning committee.
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	Medium	Public works / Public safety committee will review ordinances on a yearly basis.
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	Low	This mitigation item will be addressed by the Public Works Director. Plan already in place but will be updated and reviewed yearly.
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.

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Priority	Comments
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	Medium	This will be addressed by the emergency planning committee.
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	Medium	The Pecatonica Fire – Police and Public works departments all have currant plans in place.
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	Public Works Department has plan in place in conjunction with the Police Department.
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	Low	This mitigation item is ongoing and is handled by the Public works department.
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.
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.
Heating and Cooling Shelters	Goal: Lessen the impacts of hazards to new and existing infrastructure Objective: Improve emergency sheltering	Winter Storms / Extreme Heat	Low	The Village has two Buildings assigned for this but will try to establish two more shelters in different areas of the Village.

Table 5-13: List of Mitigation Strategies Developed at Meeting 4 for Rockford

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Priority	Comments
Create Evacuation Notification Strategies	Goal: Improve Emergency Response procedures Objective: Create Evacuation Notification Strategies	All Hazards	High	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.
Create a Public Works Recovery Plan	Goal: Improve Emergency Response procedures Objective: Create a Public Works Recovery Plan	All Hazards	High	To be completed by end of 2014 Funding source from City of Rockford general funds. PW Emergency Manager oversee this mitigation item.
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	High	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.
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	High	Currently in progress. Funding source from City of Rockford general funds. All City of Rockford Departments oversee this mitigation item.
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	High	Currently in progress. Funding source from City of Rockford general funds. PIO, PW Emergency Manager, ESDA Coordinator, and Police oversee this mitigation item.
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	High	Currently in progress. Funding source from City of Rockford general funds. The Building Code Official oversees this mitigation item.

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Priority	Comments
Train Additional Staff in Emergency Management	Goal: Improve Emergency Response procedures Objective: Train Additional Staff in Emergency Management	All Hazards	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.
Map City Wells and Cone of Influence	Goal: Monitor Water Supply Objective: Map city wells and cone of influence	Extreme Heat and Drought	High	Maps have been completed. Funding source was from the City of Rockford water funds. The Water Superintendent oversees this mitigation item.
Map Groundwater Ordinances and Plume of Contamination	Goal: Monitor Water Supply Objective: Map groundwater ordinances & plume of contamination	Extreme Heat and Drought	High	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.
Provide and publicize heating and cooling shelters	Goal: Plan for Drought Objective: Provide and publicize heating and cooling shelters	Extreme Heat and Drought	High	This mitigation item is ongoing. Funding source from the City of Rockford general funds. PIO and ESDA Coordinator oversee this mitigation item.
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	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.
Begin Integrated Planning For Water Quality Improvements	Goal: Monitor Water Supply Objective: Begin Integrated Planning For Water Quality Improvements	Extreme Heat and Drought	Medium	The City of Rockford applied for technical assistance from EPA June 2014 to start a pilot planning project with RRWRD. If assistance is granted the expected pilot completion end date is 2015. Funding sources for continued planning efforts is limited. The Stormwater Administrator, City Engineer, Water Superintendent oversee this mitigation item.
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	Medium	Design is underway with an expected completion date of mid- 2015; Funding sources from the City of Rockford Water and CIP funds.

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Priority	Comments
Restrict Water Usage During Drought Events	Goal: Require water conservation during drought conditions Objective: Restrict Water Usage During Drought Events	Extreme Heat and Drought	Medium	This mitigation item is ongoing when required. Funding source from the City of Rockford Water funds. The Water Superintendent oversees this mitigation item.
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	High	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.
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	High	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.
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	High	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.
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	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.

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Priority	Comments
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	High	This mitigation item is ongoing and is enforced through Zoning/Building permits. Zoning Officer and Building Code Official oversee this mitigation item.
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	High	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.
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	High	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.
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	High	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.
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	High	Expected application completion end of 2015. Funding source from City of Rockford general funds. The Stormwater Administrator oversees this mitigation item.
Improve Compliance with the NFIP	Goal: Manage the floodplain beyond minimum requirements Objective: Improve compliance with the NFIP	Flooding / Dam and Levee Failure	High	This mitigation item is ongoing. Limited funding source from City of Rockford general funds. The Stormwater Administrator oversees this mitigation item.

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Priority	Comments
Flood-Proof, Relocate, Elevate and Demolish At-Risk Properties	Goal: Manage the floodplain beyond minimum requirements Objectives: Flood-proof, relocate, elevate and demolish at risk properties	Flooding / Dam and Levee Failure	High	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.
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	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.
Continue Watershed Assessment and Planning	Goal: Form Partnerships to support floodplain management Objective: Continue Watershed Assessment and Planning	Flooding / Dam and Levee Failure	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.
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	Medium	This mitigation item is ongoing. Funding source from the City of Rockford general funds. The Fire Department oversees this mitigation item.
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	Medium	This mitigation item is ongoing. Funding source from the City of Rockford general funds. The Fire Department oversees this mitigation item
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	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.

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Priority	Comments
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	Medium	This mitigation item is ongoing. Funding source from the City of Rockford general funds. The PIO and ESDA Coordinator oversee this mitigation item.
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	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.
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	Medium	This mitigation item is ongoing. Funding source from the City of Rockford Water funds. The Water Superintendent oversees this mitigation item.

Table 5-14: List of Mitigation Strategies Developed at Meeting 4 for Rockton

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Priority	Comments
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	Rockton plans to update its website to include emergency information for residents.
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 caus secondary effects on hazards	All Hazards	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.

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Priority	Comments
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.
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	Medium	Rockton will be implementing additional action plans to minimize tree damage to power lines as well as other infrastructure.
Mutual Aid Agreements	Goal: Create new or revise existing plans/maps Objective: Evaluate and strengthen the communication and transportation abilities of emergency services	All Hazards	Medium/High	Rockton 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.
Establish Local Emergency Planning Committee	Goal: Create new or revise existing plans/maps Objective: Evaluate and strengthen the communication and transportation abilities of emergency services	All Hazards	Medium/High	Rockton will develop a Local Emergency Planning Committee and work with the Winnebago County Local Emergency Planning Committee (LEPC).
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	High	Rockton plans to create a comprehensive list of structures located in the floodplain.
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	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.

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Priority	Comments
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.
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	High	The Village is proactive in its ordinances on open space maintenance polices to ensure land is used for this purpose throughout the village.
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.
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.
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.
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	Low	This mitigation item is ongoing in the County the Highway Department. Rockton will work with the County to improve this mitigation item.
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.

Table 5-15: List of Mitigation Strategies Developed at Meeting 4 for Roscoe

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Priority	Comments
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 caus secondary effects on hazards	All Hazards	High	Roscoe wishes to seek funding to obtain additional back-up generators for critical facilities.
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	Roscoe plans to improve the emergency communication system currently in place.
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	Medium	Roscoe will implement additional action plans to minimize tree damage to power lines as well as other infrastructure.
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	Medium/High	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.
Establish Local Emergency Planning Committee	Goal: Create new or revise existing plans/maps Objective: Evaluate and strengthen the communication and transportation abilities of emergency services	All Hazards	Medium/High	Roscoe will develop a Local Emergency Planning Committee and work with the Winnebago County Local Emergency Planning Committee (LEPC).

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Priority	Comments
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.
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	Low	Roscoe will continue to maintain update burn ordinances.
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.
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	Medium	Roscoe will work to identify all flood prone structures in the village.
Develop Alternate Traffic Routes	Goal: Create new or revise esisting plans/maps	HAZMAT	Low	Roscoe will work to develop alternate traffic routes in the event of a HAZMAT release.
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.
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	Medium	Roscoe will work with the County to improve this mitigation item.

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Priority	Comments
Heating and Cooling Shelters	Goal: Lessen the impacts of hazards to new and existing infrastructure Objective: Improve emergency sheltering	Winter Storms / Extreme Heat	Medium	Roscoe wishes to seek funding to increase the number of heating and cooling shelters for its residents.

Table 5-16: List of Mitigation Strategies Developed at Meeting 4 for South Beloit

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Priority	Comments
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	South Beloit will increase its public education at the library, sewer billing and city websites. Press releases will also be distributed.
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	High	Material will be available at the city hall.
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	High	Nursing homes currently have mutual aid agreements in place. This agreement includes developing and maintaining a special needs population list for each nursing home.
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	Low	South Beloit currently has designated heating/cooling shelters and plans to distribute the locations of the shelters to residents in the county.

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Priority	Comments
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	High	South Beloit currently has mutual aid agreements in place for the Fire Departments and Public Works.
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 caus secondary effects on hazards	All Hazards	High	City Hall, Police and Fire Department, and the Sewer Plant have portable generators.
Data Acquisition for Future Hazard Mitigation Planning	Goal: Create new or revise existing plans/maps Objective: Review and update existing GIS datasets	All Hazards	High	WinGIS maintains a list of critical and essential facilities in the county.
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	High	Ongoing with Fire and Police.
Participate in the NFIP	Goal: Create new or revise existing plans/maps Objective: Support compliance with the NFIP	Flooding / Dam and Levee Failure	High	Ongoing. The South Beloit will contribute to map revisions.
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	Low	South Beloit will continue to seek funding for future property acquisitions.
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	Medium	Ordinances in the village requires all new structures to be raised above the flood level.

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Priority	Comments
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	High	South Beloit has building code restrictions and flood protection requirements in place. South Beloit will continue to maintain and update these ordinances.
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	Medium	South Beloit will continue working to preserve green space along Turtle Creek and Rock River.
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	High	This mitigation item is ongoing through city ordinances.
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	High	Current building codes address this issue including anchoring.
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	High	South Beloit will continue to maintain and update this ordinance.
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	Medium	South Beloit will be implementing additional action plans to minimize tree damage to power lines as well as other infrastructure.

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Priority	Comments
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.
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.
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.

Table 5-17: List of Mitigation Strategies Developed at Meeting 4 for Winnebago Village

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Priority	Comments
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	The Village Board plans to improve public education and awareness of hazard mitigation. Potential funding sources have not be identified at this point.
Mutual Aid Agreements	Goal: Create new or revise existing plans/maps Objective: Evaluate and strengthen the communication and transportation abilities of emergency services	All Hazards	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.

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Priority	Comments
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 caus secondary effects on hazards	All Hazards	High	The Village Board will oversee this project. Potential funding sources and start/end date have not be identified at this point.
Participate in the NFIP	Goal: Create new or revise existing plans/maps Objective: Support compliance with the NFIP	Flooding / Dam and Levee Failure	High	The Village of Winnebago participates in the NFIP and will continue to maintain compliance with the NFIP by evaluating and improving existing ordinances.
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	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.
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	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.
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.
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	High	The Village Board will oversee this project. Potential funding sources and start/end date have not be identified at this point.
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 Village Board will oversee this project and informally initiated through the village, school district, and fire department.

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Priority	Comments
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	High	The Village Board will oversee this project. The goal is to implement a new burn ordinance.

Table 5-18: List of Mitigation Strategies Developed at Meeting 4 for Shirland School District #134

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Priority	Comments
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	High	Shirland School District has an Emergency and Crisis Response Plan in place for 2014-2015. 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.
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 caus secondary effects on hazards	All Hazards	High	Shirland School District experiences frequent power outages. The School District would like to seek funding to obtain a back-up generator.
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	High	Ongoing within Shirland School District.

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Priority	Comments
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	Medium	Ongoing mitigation item in the County. The Health Department will distribute information packets prior to and immediately following hazardous events. Shirland School District will actively participate.
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	High	The Shirland School District has mutual aid agreements with Local Emergency Officials in the event of a Hazardous Event.
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	High	Shirland School District currently has a School Emergency Management Team and are integrated into the Unified Command Structure.

Table 5-19: List of Mitigation Strategies Developed at Meeting 4 for Rock River Water Reclamation District (RRWRD)

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Priority	Comments
Mutual Aid Agreements	Goal: Create new or revise existing plans/maps Objective: Evaluate and strengthen the communication and transportation abilities of emergency services	All Hazards	Medium	RRWRD will formalize existing agreements. RRWRD does not anticipate accumulating any cost for this strategy, no funding will be sought after.
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 caus secondary effects on hazards	All Hazards	High	All critical lift stations and WWTPs have back-up generators.

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Priority	Comments
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	High	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.

Table 5-20: List of Mitigation Strategies Developed at Meeting 4 for North Park Public Water District (NPPWD)

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Priority	Comments
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	Medium	NPPWD plans to raise awareness of the danger to water utilities during extreme cold (i.e., frozen services)
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.
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 caus secondary effects on hazards	All Hazards	High	NPPWD wishes to seek funding to obtain back-up generators for critical water facilities within the Machesney park, Roscoe and Loves Park area.
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	Low	NPPWD has identified several structures that would benefit from structure elevation renovations. NPPWD will seek federal funding for future projects.

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Priority	Comments
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	Medium	NPPWD would like to seek funding to install backflow assemblies to protect cross contamination of public water.
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.
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	Low	NPPWD would like to convert above ground power lines to minimize the amount of infrastructure exposed to severe storms and tornadoes.
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	NPPWD will work with the Winnebago County LEPC to improve the County's HAZMAT response plans.
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	NPPWD will work with the Winnebago County LEPC to improve the County's HAZMAT response plans.
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	Low	NPPWD will continue to work with the municipalities it serves to maintain/update burn ordinances.
Heating and Cooling Shelters	Goal: Lessen the impacts of hazards to new and existing infrastructure Objective: Improve emergency sheltering	Winter Storms / Extreme Heat	Medium	NPPWD will continue to work with the municipalities it serves to increase the number of heating and cooling shelters for its residents.

Mitigation Item	Goals and Objects Satisfied	Hazards Addressed	Priority	Comments
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	NPPWD will work with Winnebago County will work to develop mutual aid agreements in event of an earthquake.

5.5 Multi-Jurisdictional Mitigation Strategy

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 jurisdiction covered under this plan.

Each of the eight incorporated communities within and including Winnebago County was invited to participate in brainstorming sessions in which goals, objectives, and strategies were discussed and prioritized. Each participant in these sessions was armed with possible mitigation goals and strategies provided by FEMA, as well as information about mitigation projects discussed in neighboring communities and counties. All potential strategies and goals that arose through this process are included in this plan. The county planning team used FEMA's evaluation criteria to gauge the priority of all items. A final draft of the disaster mitigation plan was presented to all members to allow for final edits and approval of the priorities.

Section 6. Plan Maintenance

6.1 Monitoring, Evaluation, and Updating the MHMP

Throughout the five-year planning cycle, the Winnebago County Highway Department will reconvene the mitigation planning team to monitor, evaluate, and update the plan on an annual basis. Additionally, a meeting will be held in 2018 to address the five-year update of this plan. Members of the planning committee are readily available to engage in email correspondence between annual meetings. 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.

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. 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.

Updates or modifications to the MHMP during the five-year planning process will require a public notice and a meeting prior to submitting revisions to the individual jurisdictions for approval. The plan will be updated via written changes, submissions as the committee deems appropriate and necessary, and as approved by the Winnebago County Board.

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. This updated Hazus-MH GIS data has been returned to the county for use and maintenance in the county's system. As newer data becomes available, these updated data will be used for future risk assessments and vulnerability analyses.

6.2 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 jurisdictions will update the zoning plans and ordinances listed in Table 5-3 as necessary and as part of regularly scheduled updates. Each community will be responsible for updating its own plans and ordinances.

6.3 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 mitigation planning team 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 maintained in each jurisdiction and in the Winnebago County Highway Department.

References

United States Environmental Protection Agency (EPA). Acute Exposure Guide Line Levels (AEGLs) Program. http://www.epa.gov/oppt/aegl/index.htm, last accessed June 2014.

Bauer, R.A., Su, W., 2007, Soil Site Class Map Production for Comprehensive Seismic Loss Modeling for the State of Illinois. Illinois Geologic Survey.

National Climatic Data Center (NCDC). 2008. The Storm Events Database. http://www.ncdc.noaa.gov/stormevents/ , last accessed February 2014.

National Oceanic and Atmospheric Administration (NOAA). 2014. Fujita Tornado Damage Scale. http://www.spc.noaa.gov/faq/tornado/f-scale.html, last accessed December 16, 2011.

Stover, C.W., Coffman J.L. 1993, Seismicity of the United States, 1568-1989 (Revised), U.S. Geological Survey Professional Paper 1527. United States Government Printing Office, Washington.

United States Geologic Survey (USGS). 2008. Earthquake Hazards Program, Magnitude / Intensity Comparison. http://earthquake.usgs.gov/learning/topics/mag_vs_int.php, last accessed, July 10, 2008.

United States Geologic Survey (USGS). 2008. Earthquake Hazards Program, Illinois Earthquake History. http://earthquake.usgs.gov/regional/states/illinois/history.php, last accessed, July 10, 2008.

United States Geologic Survey (USGS). 2007. Earthquake Hazard in the Heart of America. http://pubs.usgs.gov/fs/2006/3125/pdf/FS06-3125_508.pdf, last accessed July 10, 2008.

Definitions

100-year Floodplain Areas subject to inundation by the 1-percent-annual-chance flood event.

Critical Facility 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, educations facilities, and non-emergency healthcare facilities.

Community Rating System (CRS) 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.

Comprehensive Plan 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.

Disaster Mitigation Act of 2000 (DMA 2000) 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.

Essential Facility 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.

Federal Emergency Management Agency 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.

Hazard A source of potential danger or adverse condition.

Hazard Mitigation Any sustained action to reduce or eliminate long-term risk to human life and property from hazards.

Hazard Mitigation Grant Program (HMPG)	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.
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	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	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	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

A B **C** **D** **E** **F** **G** **H** **I** J K L **M** **N** O **P** Q **R** **S** T **U** V W X Y Z

A
AEGL – Acute Exposure Guideline Levels
ALOHA – Areal Locations of Hazardous Atmospheres

C
CERI – Center for Earthquake Research and Information
CRS – Community Rating System

D
DEM – Digital Elevation Model
DFIRM – Digital Flood Insurance Rate Map
DMA – Disaster Mitigation Act of 2000

E
EMA – Emergency Management Agency
EPA – Environmental Protection Agency

F
FEMA – Federal Emergency Management Agency
FIRM – Flood Insurance Rate Map

G
GIS – Geographic Information System

H
Hazus-MH – Hazards USA Multi-Hazard
HMGP – Hazard Mitigation Grant Program
HUC – Hydrologic Unit Code

I
IA – Individual Assistance
IDOT – Illinois Department of Transportation
IEMA – Illinois Emergency Management Agency

M
MHMP – Multi-Hazard Mitigation Plan

N
NCDC – National Climatic Data Center

NEHRP – National Earthquake Hazards Reduction Program
NFIP – National Flood Insurance Program
NOAA – National Oceanic and Atmospheric Administration

P

PA – Public Assistance
PPM – Parts Per Million

R

RPI – Risk Priority Index

S

SIU – Southern Illinois University Carbondale
SPC – Storm Prediction Center

U

USGS – United States Geological Survey

Appendices

Table of Contents

Appendix A. MHMP Meeting Minutes

WINNEBAGO COUNTY MULTI-HAZARD MITIGATION PLANNING
INTRODUCTION TO THE KICKOFF MEETING

Tuesday, January 7, 2014
10:00 a.m.
Winnebago County Highway Department

I. Welcome by Don Krizan (WCHD) & introductions by participants (sign-in sheet attached).

II. Review of Mitigation Planning by Krizan:

i. Plan availability on Winnebago County website (http://wincoil.us/): Departments – Highway Department – Additional Pages/Highway Programs & Information – Adopted County Wide Multi-Hazard Mitigation Plan (MHMP)
ii. The Planning Team – MHMP pp. 11-14
iii. Plan Maintenance – MHMP pp. 150-151

III. Discussion of Advisory Group / Public Participation and In-Kind Match Documentation:

i. Krizan cited resource people and agencies including the airport authority, colleges & other schools, utilities, railroads, WinGIS, fire/police, development planners & building inspectors, healthcare providers.
ii. Jim Wise (Village of Cherry Valley) recommended including the local National Guard.
iii. Marcy Leach (City of Rockford) suggested that the Winnebago County Local Emergency Planning Committee (http://www.winn-lepc.org/) includes many of the resource people and agencies we are seeking.
iv. Krizan pointed out that it will be beneficial to gather input regarding historical hazards/events and that local historians, librarians, and interested volunteers might be enlisted for data gathering.
v. Krizan reported that all participating jurisdictions and agencies involved in this update process will be asked to provide salary/benefit rates for each individual participant. Correspondence regarding this matter will be sent to all parties in the near future.

IV. Discussion of future meetings and update deadline:

i. Wise and Leach voiced opinions that the tentative schedule of meetings and activities for this update is too tight and that additional time will be required.
ii. Krizan indicated that an extension of the deadline is currently being sought.
iii. With consideration given to the availability of SIU's Project Manager, Amanda Damptz, the **Kickoff Meeting was rescheduled for Wednesday, January 22nd, at 10:00 a.m.**, at the Winnebago County Highway Department.

V. Krizan will distribute a brief summary of the meeting topics and the list of participants.

VI. Adjournment

Respectfully submitted,

Don Krizan

Winnebago County Multi-Hazard Mitigation Planning
Tuesday, January 7, 2014
Winnebago County Highway Department
10:00 a.m.

Sign – In Sheet

	NAME	ADDRESS	ORGANIZATION	PHONE	FAX	E-MAIL
1	Dale Adams	110 E Main St, Rockton, IL	Village Of Rockton	815-624-7600	815-624-4955	MAYORDADAMS@MSN.COM
2	Chad Hunter	300 Roosevelt Rd Machesney Park	Village of Machesney Park	815-877-5432	815-637-7557	chadh@machesneypark.org
3	Dennis McMullen	700 W Locust St	Cos, Inc, Wgt, NM	815-378-8837		denny.mcmullen@[illegible]
4	Chad Insko	108 W Main St, Winnebago IL	Village of Winnebago	815-985-8675	815-335-7580	cinsko@villageofwinnebago.com
5	Chris Dornbush	404 Elm St Rockford IL	Winnebago County	815-319-4350	815-319-4351	cdornbush@wincoil.us
6	Jim Wise		Cherry Valley	815 332 1241		jwise@cherryvalley.org
7	Troy Krup	404 Elm St. RKFD, IL	Winnebago County	815-319-4350	815-319-4351	tkrup@wincoil.org
8	Steve Girard	"	"	"	"	sgirard@wincoil.us
9	Marcy Leach	425 E. State St	City of RKFD	815-967-6746		marcy.leach@rockfordil.gov
10	Dean Kuhth	"	"	815-961-3789		dean.kuth@rockfordil.gov
11	Wayne Vlk	WCHD	WCHD	815-319-4060		wvlk@wincoil.us
12	Frank Hodina	WCHD	WCHD	815-319-4035		fhodina@wincoil.us
13	Don Krizan	"	"	815-319-4020		dkrizan@wincoil.us

1/3/2014

WINNEBAGO COUNTY MULTI-HAZARD MITIGATION PLANNING
KICKOFF MEETING (MEETING 1B)

Minutes

Wednesday, January 22, 2014
10:00 a.m.
Winnebago County Highway Department

I. Welcome by Don Krizan, WCHD

II. Introductions by participants (sign-in sheet attached) & introduction of special guests:

- i. Prof. Nicholas Pinter, Program Director, Natural Hazards Research & Mitigation Group, SIU
- ii. Amanda Damptz, Project Manager, Natural Hazards Research & Mitigation Group, SIU

III. Advisory Group Update:

- i. Fred Diehl, Chairman, WC Local Emergency Planning Committee, contacted regarding participation (Krizan)
- ii. Updating of utilities e-mail list underway (Krizan)
- iii. IL National Guard contact established by Jim Wise, Village of Cherry Valley

IV. Planning Group reminders reviewed (Krizan)

- i. Documentation of historical hazards/events
- ii. Salary/benefit information request

V. Update presentation (Pinter/Damptz)

VI. Discussion / next steps

- i. Review/update of community profiles
- ii. Review/update of critical facilities list
- iii. Utilizing WinGIS & County website for providing access to critical facilities data
- iv. Collecting/assembling historical hazard information
- v. Meeting No. 2 to be held Feb. 18th or 25th, or early March, possibly at RMAP

VII. Adjournment

Respectfully submitted,

Don Krizan

Winnebago County Multi-Hazard Mitigation Planning
Kickoff Meeting
Wednesday, January 22, 2014
Winnebago County Highway Department
10:00 a.m.

Sign – In Sheet

Meeting 1B
Sheet 1 of 2

Note: If you attended the previous meeting, just write your initials after your name.

NAME	Initials	ORGANIZATION	ADDRESS	PHONE	FAX	E-MAIL
Jim Claeyssen		Village of Cherry Valley				jclaeyssen@cherryvalley.org
Jim Wise						jwise@cherryvalley.org
Chuck Freeman						cfreeman@cherryvalley.org
Gary Haughton		Village of Durand				ghaughton@stateline-isp.com
Darryl Lindberg		City of Loves Park				lpmayor@aol.com
Gail Daughtry						lpmayor2@aol.com
Dan Jacobson	DJ					danjacobson@loves-park.il.us
Jerry Bolin		Village of Machesney Park				jerryb@machesneypark.org
Chad Hunter						chadh@machesneypark.org
Greg Anderson						grega@machesneypark.org
Dennis McMullen	DCM	Village of New Milford (also, Cherry Valley and Rockton)				denny.mcmullen@civilideas.com
Dan Barber		Village of Pecatonica				dbarber@villageofpecatonica.com
Dana Ryall						dryall@villageofpecatonica.com
Marcy Leach	ML	City of Rockford				marcy.leach@rockfordil.gov
Dean Kurth	DK					dean.kurth@rockfordil.gov
Dale Adams		Village of Rockton				mayordadams@msn.com
Dave Krienke		Village of Roscoe				dkrienke@villageofroscoe.com
Ken Morse		City of South Beloit				sbfd335@yahoo.com
Franklin Eubank		Village of Winnebago				feubank@villageofwinnebago.com
Chad Insko						cinsko@villageofwinnebago.com
Joe Vanderwerff		County of Winnebago				jvanderwerff@wincoil.us
Wayne Vik						wvik@wincoil.us
Frank Hodina						fhodina@wincoil.us
Jim Hughes						jehughes@wincoil.us
Chris Dornbush	CD					cdornbush@wincoil.us
Steve Girard						sgirard@wincoil.us
Troy Krup						tkrup@wincoil.us
Don Krizan						dkrizan@wincoil.us
Amanda Damptz	AD	SIU-Carbondale				adamptz@siu.edu
Todd Stockburger	TJS	Village of Winnebago				CHIEF @ BAGO POLICE.com
Nicholas Pinter		SIUC				
* Amanda Damptz		SIUC				
THADDEUS MACK		CITY OF ROCKFORD	425 E STATE ST	815 987 9612		
*duplicate signature line						

Winnebago County Multi-Hazard Mitigation Planning
Kickoff Meeting
Wednesday, January 22, 2014
Winnebago County Highway Department
10:00 a.m.

Meeting 1B
Sheet 2 of 2

Sign – In Sheet

NAME	ORGANIZATION	ADDRESS	PHONE	FAX	E-MAIL
Emily Roen	Village of Roscoe		815-877-0746		eroen@fehr-graham.com
Jamie Evans	Village of Roscoe		815-623-2829		jevans[illegible]@roscoepolice.com
Robert Smith	Village of Pecatonica		815-239-1600		rsmith@villageofpecatonica.com
Joe Carl	City of Rockford		815-987-5568		
* Chad Hunter	Village of Machesney Park		815-877-5432		chadh@machesneypark.org
* Greg Anderson	" " "		815 877-5432		Greg a@ " " "
* Dale Adams	Rockton		815-624-7600		[illegible]
* duplicate signature line					

WINNEBAGO COUNTY MULTI-HAZARD MITIGATION PLANNING
MEETING 2: REVIEW OF HISTORICAL HAZARDS

Minutes

Tuesday, March 25, 2014
10:00 a.m.
RMAP Regional Design Center, 315 N. Main Street, Rockford

1 Welcome by Don Krizan, WCHD
- 1.1 The Plan Update is intended to enhance, not duplicate, planning to deal with hazards and hazard mitigation in Winnebago County.
- 1.2 A hazard mitigation plan and its periodic updates are a requirement of the federal government for receiving pre-disaster mitigation funds to support plan implementation.
- 1.3 The topic of this meeting is to initiate the process of listing and prioritizing the hazards to be addressed in the plan.

2 Introductions by participants (sign-in sheet attached)

3 Reminders regarding information to be provided by Planning Group (Krizan)
- 3.1 Critical / essential facilities reports
- 3.2 Salary rates for public (non-federally-funded) employees; occupation titles for non-public partners
- 3.3 In-kind match submittals for Quarterly Report to be submitted April 15th

4 Acknowledgments (Krizan)
- 4.1 Planning Subgroup: Jim Wise, Marcy Leach, Thaddeus Mack, Joe Corl, Jamie Evans
- 4.2 Historical data collection: Thaddeus Mack
- 4.3 Agency critical facilities reporting: County & municipal staff
- 4.4 Utility critical facilities reporting: Comcast, ComEd, IL American Water, Nicor, North Park Water, RRWRD, US Signal, Windstream

5 Review, discussion, selection, prioritization of hazards & identification of hazards for modeling presented by Nicholas Pinter and Amanda Damptz, SIU
- 5.1 Selection & prioritization results (meeting participants):

Jurisdiction	Hazard							
	Flooding	Severe Storms	Tornadoes	Hazmat	Winter Storms	Drought / Heat	Levee / Dam Failure	Earthquakes
Winnebago County	1	2	3	4	5	6	7	8
Cherry Valley	2	4	3	-	1	-	-	-
Durand								
Loves Park								
Machesney Park								
New Milford	1	2	3	4	5	6	7	8
Pecatonica	1	2	3	4	5	6	7	8
Rockford	2	3	1	5	4	-	6	-
Rockton	1	2	3	4	5	6	7	8
Roscoe								
South Beloit	1	2	3	4	5	6	7	8
Winnebago, Village	1	3	2	6	4	5	7	-

- 5.2 Selection & location of hazard scenarios to be modeled (Damptz & meeting participants):
  - 5.2.1 Flood – 100 year flood
  - 5.2.2 Tornado: F4 Scenario through Rockford/Cherry Valley
  - 5.2.3 Tornado: F4 Scenario through Rockford/Loves Park
  - 5.2.4 Hazmat: transportation accident on Rt-20 and IL-2 (ammonia)
  - 5.2.5 Hazmat: building leak at Viking Chemical 1827 18th Ave, Rockford (chlorine)
  - 5.2.6 Earthquake: Deterministic 5.5M, epicenter in Rockford
  - 5.2.7 Earthquake: 5.0M, 100-year probability, epicenter in Rockford
  - 5.2.8 Earthquake: 5.5M, 500-year probability, epicenter in Rockford

6 Next steps (Damptz)
- 6.1 Meeting 3 – Detailed Risk Assessment (public)
  - 6.1.1 SIU will present the draft detailed risk assessment to the Planning Group and to the public.
  - 6.1.2 Public questions and comments will be welcomed.
- 6.2 Meeting 4 – Developing Mitigation Strategies
  - 6.2.1 SIU will assist the Planning Group with identifying and prioritizing mitigation strategies and projects that address the threats identified in the risk assessment.
  - 6.2.2 At this point in the Update process, a draft of the updated plan can be assembled.
- 6.3 Meeting dates are to be determined.

7 Adjournment

Respectfully submitted,
Don Krizan

Winnebago County Multi-Hazard Mitigation Planning
Meeting 2: Review of Historical Hazards
Tuesday, March 25, 2014
10:00 a.m.
RMAP Regional Design Center, 315 N. Main Street, Rockford

Sign – In Sheet 2 of 2

SIGN-IN SHEET 2 FOR NEW ATTENDEES.

NAME	ORGANIZATION / TITLE	ADDRESS	PHONE	FAX	E-MAIL
Gordy Nygren	Village of Rockton	110 East Main St	815-624-7600	815-624-0418	Nygren@rocktonvillage.com
David Pietrala	NICOR GAS	300 W. TERRA COTTA AVE	815-218-9423		david.pietryla@aglresources.com
Jerry Stoll	Rock River Water Reclamation District	3333 Kishwaukee St	815-387-7588		jstoll@rrwrd.dst.il.us
ANDREW QUINTANILLA	CITY OF LOVES PARK	100 HEART BLVD	815 654 5033		
Michael Owens	Comcast CATV	4450 Kishwaukee St	815-509-7976		michael_owens4@cable.comcast.com
Paul Callighan	Com Ed	123 Energy Ave, Rockford	815-490-2724	490-2726	paul.callighan@ComEd.com
GARY OWENS	ILLINOIS American Water SouthBeloit	633 Progressive Ln	815 978 4767	815 624 2242	Gary.Owens@amwater.com
THADDEUS MACK	CITY OF ROCKFORD	425 E STATE ST	987-5612		THADDEUS.MACK@ROCKFORDIL.GOV
PAULO JAVIER	FRONTIER COMM	2239 Newburg Rd, Belvidere IL	815-547-0295		PAULO.J.JAVIER@FTR.COM
Fred Diehl	RPS 205 / LEPC	501 7th St Rockford, IL 61104	815 966-3069		Diehlf@RPS205.com
Colin Belle	RMAP	313 N Main St.	815 967 4321		Colin.Belle@rockfordil.gov
Colleen Hoesly	" "	" "	967-7067		colleen.hoesly@rockfordil.gov
Bill Fallen	PECATONICA CUSD 321	1300 Main St Pecatonica	239-1639	239-2125	billfallen@pecschools.com
ERIC STROMBERG	NORTH PARK PUBLIC WATER	1350 TURRET DR MP	633 5461		ericstromberg@northparkwater.org
Dave Peters	WinGIS	404 Elm St Rockford 61101	319-4457		dpeters@wingis.org
TODD STOCKBURGER	WINNEBAGO PD	108 W. MAIN	335-2020	335-2475	chief@bagopd.com
Chad Insko	Winnebago Public Works	108 W. MAIN	885-8635		chadinsko@gmail.com
ALICE OHRTMANN	RRWRD	3501 Kishwaukee	387-7635		aohrtmann@rrwrd.dst.il.us

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Winnebago County Multi-Hazard Mitigation Planning
Meeting 2: Review of Historical Hazards
Tuesday, March 25, 2014
10:00 a.m.
RMAP Regional Design Center, 315 N. Main Street, Rockford

Sign – In Sheet 1 of 2

SIGN-IN SHEET 1 FOR AGENCY REPRESENTATIVES AND PREVIOUS ATTENDEES. NEW ATTENDEES, PLEASE USE SIGN-IN SHEET 2.

NAME	Initials	ORGANIZATION	TITLE	E-MAIL
Jim Claeyssen	JC	Village of Cherry Valley	Village President	jclaeyssen@cherryvalley.org
Jim Wise	JW		Village Administrator	jwise@cherryvalley.org
Chuck Freeman	CF		Director of Public Works	cfreeman@cherryvalley.org
Gary Haughton		Village of Durand	Village President	ghaughton@stateline-isp.com
Darryl Lindberg		City of Loves Park	Mayor	lpmayor@aol.com
Gail Daughtry			Secretary	lpmayor2@aol.com
Dan Jacobson			Director of Public Works	danjacobson@loves-park.il.us
Jerry Bolin		Village of Machesney Park	Village President	jerryb@machesneypark.org
Chad Hunter			Superintendent of Public Works	chadh@machesneypark.org
Greg Anderson			Community Development Coordinator	grega@machesneypark.org
Dennis McMullen	DM	Village of New Milford (also, Cherry Valley and Rockton)	Village Engineer	denny.mcmullen@civilideas.com
Dan Barber	DB	Village of Pecatonica	Village President	dbarber@villageofpecatonica.com
Dana Ryall			Village Clerk	dryall@villageofpecatonica.com
Robert Smith	RS		Chief of Police	rsmith@villageofpecatonica.com
Marcy Leach (and LEPC rep.)	ML	City of Rockford	Engineering Operations Manager	marcy.leach@rockfordil.gov
Dean Kurth			Environmental Storm Water Project Manager	dean.kurth@rockfordil.gov
Thaddeus Mack	TM		Planner/Building Plans Examiner	thaddeus.mack@rockfordil.gov
Joseph Corl	JC		Division Chief, Fire Department	joe.corl@rockfordil.gov
Dale Adams		Village of Rockton	Mayor	mayordadams@msn.com
Dave Krienke		Village of Roscoe	Village President	dkrienke@villageofroscoe.com
Jamie Evans			Chief of Police	jevans7892@roscoepolice.com
Emily Roen	ER		Village Engineer	eroen@fehr-graham.com
Ken Morse		City of South Beloit	Fire Chief	sbfd335@yahoo.com
Franklin Eubank		Village of Winnebago	Village President	feubank@villageofwinnebago.com
Chad Insko	CI		Director of Utilities	cinsko@villageofwinnebago.com
Todd Stockburger	TS		Chief of Police	chief@bagopolice.com
Joe Vanderwerff		County of Winnebago	County Engineer	jvanderwerff@wincoil.us
Wayne Vik			Assistant County Engineer	wvik@wincoil.us
Frank Hodina			Civil Engineer Senior	fhodina@wincoil.us
Jim Hughes			Director of Development Services	jchughes@wincoil.us
Chris Dornbush	CD		Cartographer	cdornbush@wincoil.us
Steve Girard	SG		Building Official	sgirard@wincoil.us
Troy Krup	TK		Planning & Zoning Officer	tkrup@wincoil.us
Burnie Turner	BT		Director, WinGIS	bturner@wingis.org
Don Krizan	DK		Civil Engineer Senior	dkrizan@wincoil.us
Amanda Damptz	✓	SIU-Carbondale	Staff Researcher & Project Manager, SIU	adamptz@siu.edu
Nicholas Pinter	✓		Director, Nat. Hazards Research/Mitigation Gp, SIU	npinter@geo.siu.edu

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Winnebago County Multi-Hazard Mitigation Planning
Meeting 3: Public Meeting

Agenda

Wednesday, June 25, 2014
7:00 p.m.
RMAP Regional Design Center, 315 N. Main Street, Rockford

I. Welcome by Don Krizan, WCHD

II. Introduction by participants (sign-in sheet attached) & introduction of guests:

i. Prof. Nicholas Pinter, Program Director, Natural Hazards Research & Mitigation Group, SIU
ii. Amanda Damptz, Project Manager, Natural Hazards Research & Mitigation Group, SIU

III. Brief Overview of Winnebago County Plan Status (Krizan)

IV. Presentation (Pinter)

i. Natural Hazards and Historical Disasters in Winnebago County
ii. Introduction to Mitigation Strategies

V. Discussion / Next Steps (Pinter and Krizan)

i. Review of selected Hazards for individual Jurisdictions with potential adjustments
ii. Collection of pertinent information for plan
iii. Meeting 4 to be held on June 26, 9:00 am at RMAP

VI. Adjournment

Winnebago County Multi-Hazard Mitigation Planning Meeting Attendance

Please print clearly

PUBLIC MEETING (NO. 3)
6/25/2014

Name and Contact Information (email or phone)	Your Initials	Your Reason for Attending (check only ONE box)	Job Title(s)	Employer(s)	Roundtrip Mileage to attend this meeting
Jeremy Wiggans	JW	☐ As a Public Employee ☐ As a Private Employee ☐ As an Interested Citizen			
Jamie Evans		☐ As a Public Employee ☒ As a Private Employee ☐ As an Interested Citizen	Chief of Police	Village of Roscoe	17
Don Krizan	DK	☐ As a Public Employee ☒ As a Private Employee ☐ As an Interested Citizen	Civil Engr. Sr.	CH Hwy Dept.	
Joe Vanderwerff Sr	JV	☒ As a Public Employee ☐ As a Private Employee ☐ As an Interested Citizen	County Engineer	Winn. Co. Hwy Dept	
Chad Hunter	CH	☒ As a Public Employee ☐ As a Private Employee ☐ As an Interested Citizen			
Ed Carl		☒ As a Public Employee ☐ As a Private Employee ☐ As an Interested Citizen	EMA	City of Rockford	
Carrie Houston		☐ As a Public Employee ☐ As a Private Employee ☐ As an Interested Citizen	Village Planner	Village of Machesney Park	
Dean Kvarth	DK	☐ As a Public Employee ☐ As a Private Employee ☐ As an Interested Citizen			
Jon Wise	JW	☐ As a Public Employee ☒ As a Private Employee	Administrator	Cherry Valley	

Meeting 3 – June 25, 2014 Page 1

Winnebago County Multi-Hazard Mitigation Planning
Meeting 4: Mitigation Strategies

Agenda

Thursday, June 26, 2014
9:00 a.m.
RMAP Regional Design Center, 315 N. Main Street, Rockford

I. Welcome by Don Krizan, WCHD

II. Introduction by participants (sign-in sheet attached) & introduction of guests:

i. Amanda Damptz, Project Manager, Natural Hazards Research & Mitigation Group, SIU

III. Reminders (Krizan)

i. Collection of pertinent information for plan
ii. Outline of plan completion schedule
iii. Upcoming deadlines
i. July 18th – Mitigation strategies submitted to Krizan
ii. July 21st – SIU submits plan to Winnebago County for Review
iii. Early/Mid-August – Submit plan to IEMA

IV. Presentation (Damptz)

i. Introduction to Mitigation Strategies and Review of Successful Mitigation Projects

V. Developing Mitigation Strategies Workshop (Damptz)

VI. Discussion / Next Steps (Krizan and Damptz)

i. Collection of pertinent information for plan
ii. Review of upcoming deadlines
iii. Meeting 5 to be held on July 23, 9:00 am at RMAP

VII. Adjournment

Winnebago County Multi-Hazard Mitigation Planning
Meeting 4: Developing Mitigation Strategies
Thursday, June 26, 2014
9:00 a.m.
Regional Design Center, 315 N. Main Street, Rockford

Sign – In Sheet 1 of 3

SIGN-IN SHEET 1 FOR AGENCY REPRESENTATIVES.

NAME	Initials	ORGANIZATION	TITLE	E-MAIL
Jim Claeyssen		Village of Cherry Valley	Village President	jclaeyssen@cherryvalley.org
Jim Wise	JW		Village Administrator	jwise@cherryvalley.org
Chuck Freeman			Director of Public Works	cfreeman@cherryvalley.org
Gary Haughton		Village of Durand	Village President	ghaughton@stateline-isp.com
Darryl Lindberg		City of Loves Park	Mayor	lpmayor@aol.com
Dan Jacobson			Director of Public Works	danjacobson@loves-park.il.us
Andrew Quintanilla	[illegible]		Zoning Officer	andrewquintanilla@loves-park.il.us
Jerry Bolin		Village of Machesney Park	Village President	jerryb@machesneypark.org
Chad Hunter	[illegible]		Superintendent of Public Works	chadh@machesneypark.org
Carrie Houston	[illegible]		Planning & Zoning Specialist	carrieh@machesneypark.org
Dennis McMullen		Village of New Milford (also, Cherry Valley and Rockton)	Village Engineer	denny.mcmullen@civilideas.com
Dan Barber		Village of Pecatonica	Village President	dbarber@villageofpecatonica.com
Dana Ryall			Village Clerk	dryall@villageofpecatonica.com
Robert Smith			Chief of Police	rsmith@villageofpecatonica.com
Marcy Leach		City of Rockford	Engineering Operations Manager	marcy.leach@rockfordil.gov
Dean Kurth	DK		Environmental Storm Water Project Manager	dean.kurth@rockfordil.gov
Thaddeus Mack	TM		Planner/Building Plans Examiner	thaddeus.mack@rockfordil.gov
Joseph Corl	JC		Division Chief, Fire Department	joe.corl@rockfordil.gov
Dale Adams		Village of Rockton	Mayor	mayordadams@msn.com
Gordy Nygren			Public Works Manager	nygren@rocktonvillage.com
Dave Krienke		Village of Roscoe	Village President	dkrienke@villageofroscoe.com
Jamie Evans	[illegible]		Chief of Police	jevans7892@roscoepolice.com
Emily Roen			Village Engineer	eroen@fehr-graham.com
Ken Morse		City of South Beloit	Fire Chief	sbfd335@yahoo.com
Jeff Reininger			Public Works Director	j.reininger@southbeloit.org
Franklin Eubank		Village of Winnebago	Village President	feubank@villageofwinnebago.com
Chad Insko			Director of Utilities	cinsko@villageofwinnebago.com
Todd Stockburger	[illegible]		Chief of Police	chief@bagopolice.com
Joe Vanderwerff		County of Winnebago	County Engineer	jvanderwerff@wincoil.us
Wayne Vik			Assistant County Engineer	wvik@wincoil.us
Frank Hodina			Civil Engineer Senior	fhodina@wincoil.us
Don Krizan	DLK		Civil engineer Senior	dkrizan@wincoil.us
Chris Dornbush	CD		Cartographer	cdornbush@wincoil.us
Steve Girard	[illegible]		Building Official	sgirard@wincoil.us
Troy Krup	[illegible]		Planning & Zoning Officer	tkrup@wincoil.us
Burnie Turner			Director, WinGIS	bturner@wingis.org
Dave Peters			Database Administrator, WinGIS	dpeters@wincoil.us
Amanda Damptz		SIU-Carbondale	Staff Researcher & Project Manager, SIU	adamptz@siu.edu
Nicholas Pinter			Director, Nat. Hazards Research/Mitigation Gp, SIU	npinter@geo.siu.edu

Winnebago County Multi-Hazard Mitigation Planning
Meeting 4: Developing Mitigation Strategies
Thursday, June 26, 2014
9:00 a.m.
Regional Design Center, 315 N. Main Street, Rockford

Sign – In Sheet 2 of 3

SIGN-IN SHEET 2 FOR UTILITY REPRESENTATIVES.

NAME	Initials	ORGANIZATION	TITLE	E-MAIL
Janice Bolender		American Transmission Company		jbolender@atcllc.com
Hector Garcia			Legal Mandate Project Manager	hg2929@att.com
Steven Larson		AT&T	Legal Mandate Supervisor	dp5451@att.com
Sandra L. Spendal			Legal Mandate Department	ss548q@att.com
Robert Bailey			Legal Mandate Engineer	rb3137@att.com
Tom Phillips		Charter Communications	Construction Coordinator	thomas.phillips@chartercom.com
Jeff Jamison				jeffrey_jamison@cable.comcast.com
Mike Owens			Regional Construction Manager	michael_owens4@cable.comcast.com
Donna Zies		Comcast		donna_zies@cable.comcast.com
Tom Yuccas				thomas_yuccas@cable.comcast.com
Joan Sage				joan_sage@cable.comcast.com
Paul Callighan		ComEd	External Affairs Official	paul.callighan@comed.com
Nora Fernandez			Public Relocation Official	nora.fernandez@comed.com
Paulo Javier			Outside Plant Engineer	paulo.t.javier@ftr.com
Kalin Hinshaw		Frontier Communications	Senior Manager, Network Engineering	kalin.hinshaw@ftr.com
Don Belmore			Outside Plant Engineer	donald.j.belmore@ftr.com
Gary Owens		Illinois American Water - South Beloit	Operations Supervisor II	gary.owens@amwater.com
Chris Winter				cwinter@nicor.com
Dina Hines		Nicor		dhines@nicor.com
David Pietryla	DP		Community Relations & Economic Development Manager	david.pietryla@aglresources.com
Liz Generosa-Goad				lgoad@aglresources.com
Ed Rice		North Park Public Water District		erice@northparkwater.org
Eric Stromberg			GIS Coordinator	estromberg@northparkwater.org
Tod Benson				todb@rock.coop
Gary Jones				garyj@rock.coop
Steve Knudson		Rock Energy Cooperative		stevek@rock.coop
Rod Magnuson				rodm@rock.coop
Denny Schultz				dennys@rock.coop
Mike Weber			Engineering Supervisor	mweber@rrwrd.dst.il.us
Jude Torre			Chief Inspector	jtorre@rrwrd.dst.il.us
Alice Ohrtmann	AO	Rock River Water Reclamation District	Industrial Waste Surveillance Supervisor	aohrtmann@rrwrd.dst.il.us
Terry Stoll			Supporting Services Supervisor	tstoll@rrwrd.dst.il.us
Dana Carroll			Engineering Manager	dcarroll@rrwrd.dst.il.us
Chris Lentine		US Signal	OSP Engineer	clentine@ussignalcom.com
Andres Bravo		Windstream		andres.bravo@windstream.com

Winnebago County Multi-Hazard Mitigation Planning
Meeting 4: Developing Mitigation Strategies
Thursday, June 26, 2014
9:00 a.m.
Regional Design Center, 315 N. Main Street, Rockford

Sign – In Sheet 3 of 3

SIGN-IN SHEET 3 FOR NEW ATTENDEES.

NAME	ORGANIZATION / TITLE	ADDRESS	PHONE	FAX	E-MAIL
Colleen Hoesly	RMAP				
Colin Belle	RMAP				

County of Winnebago

HIGHWAY DEPARTMENT

424 North Springfield Avenue
Rockford, Illinois 61101-5097

Joseph A. Vanderwerff, Sr. P.E.
County Engineer

Phone (815) 319-4000
Fax (815) 319-4001

**WINNEBAGO COUNTY MULTI-HAZARD MITIGATION PLANNING
MEETING 5: DRAFT PLAN REVIEW**

Agenda

**Wednesday, July 23, 2014
9:00 a.m.
RMAP Regional Design Center, 315 N. Main Street, Rockford**

1. Sign-In –
2. Welcome / Introductions (Don Krizan, WC Highway Department) –
3. Reminders (Krizan):
   a. Mitigation Strategies Worksheets (municipalities, school districts, utilities)
   b. Critical needs:
      i. Damage photos
      ii. Dams with Emergency Action Plans
      iii. Historical dam breeches/failures
      iv. List of HAZMAT spills
      v. Fire department info including district, rating, employees
      vi. List of adopted ordinances with adoption dates
   c. By end of July – WC (Planning Group and utilities) submits revisions to SIU
   d. By early August – SIU submits final Update to Winnebago County
   e. Early to mid-August – WC submits Update to IEMA
   f. Early to mid-October – IEMA approves Update
   g. Mid-November – WC Board adopts approved Update
   h. November - December – municipalities adopt Update
4. Plan review (group) –
5. Questions –
6. Adjournment –

It is our mission to provide high quality services and promote a safe community for all people in Winnebago County.

**Winnebago County Multi-Hazard Mitigation Planning
Meeting 5: Draft Plan Review
Wednesday, July 23, 2014
9:00 a.m.
Regional Design Center, 315 N. Main Street, Rockford**

Sign – In Sheet 1 of 3

SIGN-IN SHEET 1 FOR AGENCY REPRESENTATIVES.

NAME	Initials	ORGANIZATION	TITLE	E-MAIL
Jim Claeyssen		Village of Cherry Valley	Village President	jclaeyssen@cherryvalley.org
Jim Wise			Village Administrator	jwise@cherryvalley.org
Chuck Freeman			Director of Public Works	cfreeman@cherryvalley.org
Gary Haughton		Village of Durand	Village President	ghaughton@stateline-isp.com
Darryl Lindberg		City of Loves Park	Mayor	lpmayor@aol.com
Dan Jacobson	DJ		Director of Public Works	danjacobson@loves-park.il.us
Andrew Quintanilla			Zoning Officer	andrewquintanilla@loves-park.il.us
Jerry Bolin		Village of Machesney Park	Village President	jerryb@machesneypark.org
Chad Hunter	CH		Superintendent of Public Works	chadh@machesneypark.org
Carrie Houston			Planning & Zoning Specialist	carrieh@machesneypark.org
Dennis McMullen		Village of New Milford (also, Cherry Valley and Rockton)	Village Engineer	denny.mcmullen@civilideas.com
Dan Barber		Village of Pecatonica	Village President	dbarber@villageofpecatonica.com
Dana Ryall			Village Clerk	dryall@villageofpecatonica.com
Robert Smith			Chief of Police	rsmith@villageofpecatonica.com
Marcy Leach		City of Rockford	Engineering Operations Manager	marcy.leach@rockfordil.gov
Dean Kurth			Environmental Storm Water Project Manager	dean.kurth@rockfordil.gov
Thaddeus Mack			Planner/Building Plans Examiner	thaddeus.mack@rockfordil.gov
Joseph Corl			Division Chief, Fire Department	joe.corl@rockfordil.gov
Dale Adams		Village of Rockton	Mayor	mayordadams@msn.com
Gordy Nygren			Public Works Manager	nygren@rocktonvillage.com
Dave Krienke		Village of Roscoe	Village President	dkrienke@villageofroscoe.com
Jamie Evans			Chief of Police	jevans7892@roscoepolice.com
Emily Roen			Village Engineer	eroen@fehr-graham.com
Ken Morse		City of South Beloit	Fire Chief	sbfd335@yahoo.com
Jeff Reininger			Public Works Director	j.reininger@southbeloit.org
Franklin Eubank		Village of Winnebago	Village President	feubank@villageofwinnebago.com
Chad Insko			Director of Utilities	cinsko@villageofwinnebago.com
Todd Stockburger			Chief of Police	chief@bagopolice.com
Joe Vanderwerff		County of Winnebago	County Engineer	jvanderwerff@wincoil.us
Wayne Vik			Assistant County Engineer	wvik@wincoil.us
Frank Hodina			Civil Engineer Senior	fhodina@wincoil.us
Don Krizan	DK		Civil engineer Senior	dkrizan@wincoil.us
Chris Dornbush			Cartographer	cdornbush@wincoil.us
Steve Girard			Building Official	sgirard@wincoil.us
Troy Krup			Planning & Zoning Officer	tkrup@wincoil.us
Burnie Turner			Director, WinGIS	bturner@wingis.org
Dave Peters			Database Administrator, WinGIS	dpeters@wincoil.us
Sally Claassen			Director, Purchasing & Facilities	sclaassen@wincoil.us
Todd Marshall			Director, Environmental Health	tmarshall@wincoil.us
Jerry Wiltfang			Director, Emergency Operations	wiltfangj@wcso-il.us
Amanda Damptz		SIU-Carbondale	Staff Researcher & Project Manager, SIU	adamptz@siu.edu
Nicholas Pinter			Director, Nat. Hazards Research/Mitigation Gp, SIU	npinter@geo.siu.edu
Fred Diehl		Other Agencies	Chairman, Winnebago County LEPC	diehlf@rps205.com
Colleen Hoesly			Metropolitan Planner, RMAP	colleen.hoesly@rockfordil.gov
Colin Belle			Metropolitan Planner, RMAP	colin.belle@rockfordil.gov

Winnebago County Multi-Hazard Mitigation Planning
Meeting 5: Draft Plan Review
Wednesday, July 23, 2014
9:00 a.m.
Regional Design Center, 315 N. Main Street, Rockford

Sign – In Sheet 2 of 3

SIGN-IN SHEET 2 FOR UTILITY REPRESENTATIVES.

NAME	Initials	ORGANIZATION	TITLE	E-MAIL
Janice Bolender		American Transmission Company		jbolender@atclic.com
Hector Garcia		AT&T	Legal Mandate Project Manager	hg2929@att.com
Steven Larson			Legal Mandate Supervisor	dp5451@att.com
Sandra L. Spendal			Legal Mandate Department	ss548g@att.com
Robert Bailey			Legal Mandate Engineer	rb3137@att.com
Tom Phillips		Charter Communications	Construction Coordinator	thomas.phillips@chartercom.com
Jeff Jamison		Comcast		jeffrey_jamison@cable.comcast.com
Mike Owens			Regional Construction Manager	michael_owens4@cable.comcast.com
Donna Zies				donna_zies@cable.comcast.com
Tom Yuccas				thomas_yuccas@cable.comcast.com
Joan Sage				joan_sage@cable.comcast.com
Paul Callighan		ComEd	External Affairs Official	paul.callighan@comed.com
Nora Fernandez			Public Relocation Official	nora.fernandez@comed.com
Paulo Javier		Frontier Communications	Outside Plant Engineer	paulo.t.javier@ftr.com
Kalin Hinshaw			Senior Manager, Network Engineering	kalin.hinshaw@ftr.com
Don Belmore			Outside Plant Engineer	donald.j.belmore@ftr.com
Gary Owens		Illinois American Water - South Beloit	Operations Supervisor II	gary.owens@amwater.com
Chris Winter		Nicor		cwinter@nicor.com
Dina Hines				dhines@nicor.com
David Pietryla			Community Relations & Economic Development Manager	david.pietryla@aglresources.com
Liz Generosa-Goad				lgoad@aglresources.com
Ed Rice		North Park Public Water District		erice@northparkwater.org
Eric Stromberg	ES		GIS Coordinator	estromberg@northparkwater.org
Tod Benson		Rock Energy Cooperative		todb@rock.coop
Gary Jones				garyj@rock.coop
Steve Knudson				stevek@rock.coop
Rod Magnuson				rodm@rock.coop
Denny Schultz				dennys@rock.coop
Mike Weber		Rock River Water Reclamation District	Engineering Supervisor	mweber@rrwrd.dst.il.us
Jude Torre			Chief Inspector	jtorre@rrwrd.dst.il.us
Alice Ohrtmann	AHO		Industrial Waste Surveillance Supervisor	aohrtmann@rrwrd.dst.il.us
Terry Stoll			Supporting Services Supervisor	tstoll@rrwrd.dst.il.us
Dana Carroll			Engineering Manager	dcarroll@rrwrd.dst.il.us
Chris Lentine		US Signal	OSP Engineer	clentine@ussignalcom.com
Andres Bravo		Windstream		andres.bravo@windstream.com

Appendix B. Local Press Release and Newspaper Articles

The Rock River Times

THE VOICE OF THE COMMUNITY SINCE 1987

NEWS COMMENTARY ENTERTAINMENT CALENDARS CLASSIFIEDS LIVING

BREAKING NEWS

Home > News > Local News > Winnebago County Multi-Hazard Mitigation planning group public meeting June 25

Winnebago County Multi-Hazard Mitigation planning group public meeting June 25

June 18, 2014

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Online Staff Report

The Winnebago County Multi-Hazard Mitigation Plan Steering Committee will host a public information and strategy planning session at 7 p.m., Wednesday, June 25, at the Regional Design Center, 315 N. Main St., in Rockford. Through a grant funded by the Federal Emergency Management Agency (FEMA), the County has formed an alliance with Southern Illinois University Carbondale (SIU) to identify potential natural hazards and produce an Update to the current Multi-Hazard Mitigation Plan (MHMP).

A planning group, comprised of the County, municipalities, other agencies and utilities, has selected a list of potential hazards that could occur within the county, and is in the process of developing a list of mitigation measures intended to eliminate or reduce the negative impact of those hazards. The list of hazards includes flooding, severe storms, tornadoes, hazardous materials releases, winter storms, extreme heat and drought, dam failures and earthquakes. Examples of mitigation projects include construction of storm shelters, purchase of properties that lie in flood-prone areas, enhancement of fire protection capabilities, and further coordination of emergency response teams.

Since funds for mitigation projects are only available to jurisdictions that have a FEMA-approved MHMP, completion of the Update by FEMA's Dec. 31 deadline is critical for those communities currently planning or implementing mitigation projects.

The public is invited to attend this June 25 meeting to learn about the MHMP Update and to provide the planning group with input regarding the planning process.

For more information about the MHMP, refer to the Winnebago County website at http://www.wincoil.us or contact Don Krizan at the Winnebago County Highway Department, (815) 319-4000.

Posted June 18, 2014

rrstar.com

HOME NEWS SPORTS ENTERTAINMENT BUSINESS OPINION OBITUARIES

FEATURED » TRANSFORM ROCKFORD SONGS FROM SCREW CITY TRANSFORM ROCKFORD MAY TV BOOK

NEWS NOW » Carolyn Hax: Too much talk on one subject irks friends ... Annie's Mailbox: Relative's

Multi-Hazard Mitigation Planning meeting to take place June 25

Posted Jun. 20, 2014 @ 3:09 pm

ROCKFORD — The Winnebago County Multi-Hazard Mitigation Plan Steering Committee will host a public information meeting at 7 p.m. June 25 at the Regional Design Center, 315 N. Main St.

The planning group has selected a list of potential hazards that might occur within the county. Hazards include flooding, severe storms, tornadoes, hazardous materials releases, winter storms, extreme heat and drought, dam failures and earthquakes.

Examples of mitigation projects include construction of storm shelters, purchase of properties that lie in flood-prone areas, enhancement of fire-protection capabilities and further coordination of emergency response teams. Funds for mitigation projects are only available to jurisdictions that have a Federal Emergency Management Agency-approved Multi-Hazard Mitigation Plan, which needs to be completed by Dec. 31, according to a news release.

For information: 815-319-4000; wincoil.us.

Transparency Initiative | Search:

WINNEBAGO COUNTY ILLINOIS

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features

PHANTOM REGIMENT - The Phantom Regiment is a youth organization dedicated to the development of self-esteem and self-reliance. MORE >

WINDSOR LAKE - Paddle and Trail and the Rockford Park District are looking to make Windsor Lake a year-round facility and would like your input

live here work here visit here

wincoil.us

What Would You Like To Do?

Economic Development Circuit Clerk County Clerk Assessments Treasurer Court Services

Public Meeting of the Winnebago County Multi-Hazard Mitigation Planning Group

You are here: Home » Departments » Highway Department » Highway News » Press Releases & Traffic Alerts » Press Release: Public Meeting of the Winnebago County Multi-Hazard Mitigation Planning Group

Date: Tuesday, June 10, 2014

Press Room
FOR IMMEDIATE RELEASE
June 10, 2014

Contact:
Don Krizan
Winnebago County Highway Department
dkrizan@wincoil.us / 815.319.4000

WINNEBAGO COUNTY BOARD CHAIRMAN SCOTT CHRISTIANSEN ANNOUNCES

Public Meeting of the Winnebago County Multi-Hazard Mitigation Planning Group

The Winnebago County Multi-Hazard Mitigation Plan Steering Committee will host a public information and strategy planning session at 7:00 p.m. on Wednesday, June 25th, at the Regional Design Center, 315 N. Main Street, in Rockford. Through a grant funded by the Federal Emergency Management Agency (FEMA), the County has formed an alliance with Southern Illinois University Carbondale (SIU) to identify potential natural hazards and produce an Update to the current Multi-Hazard Mitigation Plan (MHMP).

A planning group, comprised of the County, municipalities, other agencies, and utilities, has selected a list of potential hazards that could occur within the County, and is in the process of developing a list of mitigation measures intended to eliminate or reduce the negative impact of those hazards. The list of hazards includes flooding, severe storms, tornadoes, hazardous materials releases, winter storms, extreme heat and drought, dam failures, and earthquakes. Examples of mitigation projects include construction of storm shelters, purchase of properties that lie in flood-prone areas, enhancement of fire protection capabilities, and further coordination of emergency response teams.

Since funds for mitigation projects are only available to jurisdictions that have a FEMA approved MHMP, completion of the Update by FEMA's December 31st deadline is critical for those communities currently planning or implementing mitigation projects.

The public is invited to attend this June 25th meeting to learn about the MHMP Update and to provide the planning group with input regarding the planning process.

For more information about the MHMP, please refer to the Winnebago County website at http://www.wincoil.us or contact Don Krizan at the Winnebago County Highway Department, (815) 319-4000.

PRESS RELEASE

Winnebago County Board Office • 404 Elm Street • Rockford, IL 61101 • 815-319-4225 • Fax: 815-319-4226

Press Room
FOR IMMEDIATE RELEASE
June 10, 2014

Contact: Don Krizan
Winnebago County Highway Department
dkrizan@wincoil.us / 815.319.4000

WINNEBAGO COUNTY BOARD CHAIRMAN SCOTT CHRISTIANSEN ANNOUNCES

PUBLIC MEETING OF THE WINNEBAGO COUNTY MULTI-HAZARD MITIGATION PLANNING GROUP

The Winnebago County Multi-Hazard Mitigation Plan Steering Committee will host a public information and strategy planning session at 7:00 p.m. on Wednesday, June 25th, at the Regional Design Center, 315 N. Main Street, in Rockford. Through a grant funded by the Federal Emergency Management Agency (FEMA), the County has formed an alliance with Southern Illinois University Carbondale (SIU) to identify potential natural hazards and produce an Update to the current Multi-Hazard Mitigation Plan (MHMP).

A planning group, comprised of the County, municipalities, other agencies, and utilities, has selected a list of potential hazards that could occur within the County, and is in the process of developing a list of mitigation measures intended to eliminate or reduce the negative impact of those hazards. The list of hazards includes flooding, severe storms, tornadoes, hazardous materials releases, winter storms, extreme heat and drought, dam failures, and earthquakes. Examples of mitigation projects include construction of storm shelters, purchase of properties that lie in flood-prone areas, enhancement of fire protection capabilities, and further coordination of emergency response teams.

Since funds for mitigation projects are only available to jurisdictions that have a FEMA approved MHMP, completion of the Update by FEMA's December 31st deadline is critical for those communities currently planning or implementing mitigation projects.

The public is invited to attend this June 25th meeting to learn about the MHMP Update and to provide the planning group with input regarding the planning process.

For more information about the MHMP, please refer to the Winnebago County website at http://www.wincoil.us or contact Don Krizan at the Winnebago County Highway Department, (815) 319-4000.

Appendix C. Adopting Resolutions

Resolution #_____

ADOPTING THE WINNEBAGO COUNTY MULTI-HAZARD MITIGATION PLAN

WHEREAS, Winnebago County recognizes the threat that natural hazards pose to people and property; and

WHEREAS, undertaking hazard mitigation actions before disasters occur will reduce the potential for harm to people and property and save taxpayer dollars; and

WHEREAS, an adopted multi-hazard mitigation plan is required as a condition of future grant funding for mitigation projects; and

WHERAS, Winnebago County participated jointly in the planning process with the other local units of government within the County to prepare a Multi-Hazard Mitigation Plan;

NOW, THEREFORE, BE IT RESOLVED, that Winnebago County hereby adopts the Winnebago County Multi-Hazard Mitigation Plan as an official plan; and

BE IT FURTHER RESOLVED that the Winnebago County Highway Department will submit on behalf of the participating municipalities the adopted Multi-Hazard Mitigation Plan to the Illinois Department of Homeland Security and the Federal Emergency Management Agency for final review and approval.

ADOPTED THIS _____ Day of _____, 2014.

_____
County Board Chairman

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County Board Member

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County Board Member

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County Board Member

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County Board Member

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Attested by: County Clerk

Resolution #_____

ADOPTING THE WINNEBAGO COUNTY MULTI-HAZARD MITIGATION PLAN

WHEREAS, the Village of Cherry Valley recognizes the threat that natural hazards pose to people and property; and

WHEREAS, undertaking hazard mitigation actions before disasters occur will reduce the potential for harm to people and property and save taxpayer dollars; and

WHEREAS, an adopted multi-hazard mitigation plan is required as a condition of future grant funding for mitigation projects; and

WHERAS, the Village of Cherry Valley participated jointly in the planning process with the other local units of government within the County to prepare a Multi-Hazard Mitigation Plan;

NOW, THEREFORE, BE IT RESOLVED, that the Village of Cherry Valley hereby adopts the Winnebago County Multi-Hazard Mitigation Plan as an official plan; and

BE IT FURTHER RESOLVED that the Winnebago County Highway Department will submit on behalf of the participating municipalities the adopted Multi-Hazard Mitigation Plan to the Illinois Department of Homeland Security and the Federal Emergency Management Agency for final review and approval.

ADOPTED THIS _____ Day of _____, 2014.

_____
Village President

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Village Council Member

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Village Council Member

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Village Council Member

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Village Council Member

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Attested by: Village Clerk

Resolution #_____

ADOPTING THE WINNEBAGO COUNTY MULTI-HAZARD MITIGATION PLAN

WHEREAS, the Village of Durand recognizes the threat that natural hazards pose to people and property; and

WHEREAS, undertaking hazard mitigation actions before disasters occur will reduce the potential for harm to people and property and save taxpayer dollars; and

WHEREAS, an adopted multi-hazard mitigation plan is required as a condition of future grant funding for mitigation projects; and

WHERAS, the Village of Durand participated jointly in the planning process with the other local units of government within the County to prepare a Multi-Hazard Mitigation Plan;

NOW, THEREFORE, BE IT RESOLVED, that the Village of Durand hereby adopts the Winnebago County Multi-Hazard Mitigation Plan as an official plan; and

BE IT FURTHER RESOLVED that the Winnebago County Highway Department will submit on behalf of the participating municipalities the adopted Multi-Hazard Mitigation Plan to the Illinois Department of Homeland Security and the Federal Emergency Management Agency for final review and approval.

ADOPTED THIS _____ Day of _____, 2014.

_____
Village President

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Village Council Member

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Village Council Member

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Village Council Member

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Village Council Member

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Attested by: Village Clerk

Resolution #_____

ADOPTING THE WINNEBAGO COUNTY MULTI-HAZARD MITIGATION PLAN

WHEREAS, the City of Loves Park recognizes the threat that natural hazards pose to people and property; and

WHEREAS, undertaking hazard mitigation actions before disasters occur will reduce the potential for harm to people and property and save taxpayer dollars; and

WHEREAS, an adopted multi-hazard mitigation plan is required as a condition of future grant funding for mitigation projects; and

WHERAS, the City of Loves Park participated jointly in the planning process with the other local units of government within the County to prepare a Multi-Hazard Mitigation Plan;

NOW, THEREFORE, BE IT RESOLVED, that the City of Loves Park hereby adopts the Winnebago County Multi-Hazard Mitigation Plan as an official plan; and

BE IT FURTHER RESOLVED that the Winnebago County Highway Department will submit on behalf of the participating municipalities the adopted Multi-Hazard Mitigation Plan to the Illinois Department of Homeland Security and the Federal Emergency Management Agency for final review and approval.

ADOPTED THIS _____ Day of _____, 2014.

_____
City Board Chairman

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City Board Member

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City Board Member

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City Board Member

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City Board Member

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Attested by: City Clerk

Resolution #_____

ADOPTING THE WINNEBAGO COUNTY MULTI-HAZARD MITIGATION PLAN

WHEREAS, the Village of Machesney Park recognizes the threat that natural hazards pose to people and property; and

WHEREAS, undertaking hazard mitigation actions before disasters occur will reduce the potential for harm to people and property and save taxpayer dollars; and

WHEREAS, an adopted multi-hazard mitigation plan is required as a condition of future grant funding for mitigation projects; and

WHERAS, the Village of Machesney Park participated jointly in the planning process with the other local units of government within the County to prepare a Multi-Hazard Mitigation Plan;

NOW, THEREFORE, BE IT RESOLVED, that the Village of Machesney Park hereby adopts the Winnebago County Multi-Hazard Mitigation Plan as an official plan; and

BE IT FURTHER RESOLVED that the Winnebago County Highway Department will submit on behalf of the participating municipalities the adopted Multi-Hazard Mitigation Plan to the Illinois Department of Homeland Security and the Federal Emergency Management Agency for final review and approval.

ADOPTED THIS _____ Day of _____, 2014.

_____
Village President

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Village Council Member

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Village Council Member

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Village Council Member

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Village Council Member

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Attested by: Village Clerk

Resolution #_____

ADOPTING THE WINNEBAGO COUNTY MULTI-HAZARD MITIGATION PLAN

WHEREAS, the Village of New Milford recognizes the threat that natural hazards pose to people and property; and

WHEREAS, undertaking hazard mitigation actions before disasters occur will reduce the potential for harm to people and property and save taxpayer dollars; and

WHEREAS, an adopted multi-hazard mitigation plan is required as a condition of future grant funding for mitigation projects; and

WHERAS, the Village of New Milford participated jointly in the planning process with the other local units of government within the County to prepare a Multi-Hazard Mitigation Plan;

NOW, THEREFORE, BE IT RESOLVED, that the Village of New Milford hereby adopts the Winnebago County Multi-Hazard Mitigation Plan as an official plan; and

BE IT FURTHER RESOLVED that the Winnebago County Highway Department will submit on behalf of the participating municipalities the adopted Multi-Hazard Mitigation Plan to the Illinois Department of Homeland Security and the Federal Emergency Management Agency for final review and approval.

ADOPTED THIS _____ Day of _____, 2014.

_____
Village President

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Village Council Member

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Village Council Member

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Village Council Member

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Village Council Member

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Attested by: Village Clerk

Resolution #_____

ADOPTING THE WINNEBAGO COUNTY MULTI-HAZARD MITIGATION PLAN

WHEREAS, the Village of Pecatonica recognizes the threat that natural hazards pose to people and property; and

WHEREAS, undertaking hazard mitigation actions before disasters occur will reduce the potential for harm to people and property and save taxpayer dollars; and

WHEREAS, an adopted multi-hazard mitigation plan is required as a condition of future grant funding for mitigation projects; and

WHERAS, the Village of Pecatonica participated jointly in the planning process with the other local units of government within the County to prepare a Multi-Hazard Mitigation Plan;

NOW, THEREFORE, BE IT RESOLVED, that the Village of Pecatonica hereby adopts the Winnebago County Multi-Hazard Mitigation Plan as an official plan; and

BE IT FURTHER RESOLVED that the Winnebago County Highway Department will submit on behalf of the participating municipalities the adopted Multi-Hazard Mitigation Plan to the Illinois Department of Homeland Security and the Federal Emergency Management Agency for final review and approval.

ADOPTED THIS _____ Day of _____, 2014.

_____
Village President

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Village Council Member

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Village Council Member

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Village Council Member

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Village Council Member

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Attested by: Village Clerk

Resolution #_____

ADOPTING THE WINNEBAGO COUNTY MULTI-HAZARD MITIGATION PLAN

WHEREAS, the City of Rockford recognizes the threat that natural hazards pose to people and property; and

WHEREAS, undertaking hazard mitigation actions before disasters occur will reduce the potential for harm to people and property and save taxpayer dollars; and

WHEREAS, an adopted multi-hazard mitigation plan is required as a condition of future grant funding for mitigation projects; and

WHERAS, the City of Rockford participated jointly in the planning process with the other local units of government within the County to prepare a Multi-Hazard Mitigation Plan;

NOW, THEREFORE, BE IT RESOLVED, that the City of Rockford hereby adopts the Winnebago County Multi-Hazard Mitigation Plan as an official plan; and

BE IT FURTHER RESOLVED that the Winnebago County Highway Department will submit on behalf of the participating municipalities the adopted Multi-Hazard Mitigation Plan to the Illinois Department of Homeland Security and the Federal Emergency Management Agency for final review and approval.

ADOPTED THIS _____ Day of _____, 2014.

_____
City Board Chairman

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City Board Member

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City Board Member

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City Board Member

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City Board Member

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Attested by: City Clerk

Resolution #_____

ADOPTING THE WINNEBAGO COUNTY MULTI-HAZARD MITIGATION PLAN

WHEREAS, the Village of Rockton recognizes the threat that natural hazards pose to people and property; and

WHEREAS, undertaking hazard mitigation actions before disasters occur will reduce the potential for harm to people and property and save taxpayer dollars; and

WHEREAS, an adopted multi-hazard mitigation plan is required as a condition of future grant funding for mitigation projects; and

WHERAS, the Village of Rockton participated jointly in the planning process with the other local units of government within the County to prepare a Multi-Hazard Mitigation Plan;

NOW, THEREFORE, BE IT RESOLVED, that the Village of Rockton hereby adopts the Winnebago County Multi-Hazard Mitigation Plan as an official plan; and

BE IT FURTHER RESOLVED that the Winnebago County Highway Department will submit on behalf of the participating municipalities the adopted Multi-Hazard Mitigation Plan to the Illinois Department of Homeland Security and the Federal Emergency Management Agency for final review and approval.

ADOPTED THIS _____ Day of _____, 2014.

_____
Village President

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Village Council Member

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Village Council Member

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Village Council Member

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Village Council Member

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Attested by: Village Clerk

Resolution #_____

ADOPTING THE WINNEBAGO COUNTY MULTI-HAZARD MITIGATION PLAN

WHEREAS, the Village of Roscoe recognizes the threat that natural hazards pose to people and property; and

WHEREAS, undertaking hazard mitigation actions before disasters occur will reduce the potential for harm to people and property and save taxpayer dollars; and

WHEREAS, an adopted multi-hazard mitigation plan is required as a condition of future grant funding for mitigation projects; and

WHERAS, the Village of Roscoe participated jointly in the planning process with the other local units of government within the County to prepare a Multi-Hazard Mitigation Plan;

NOW, THEREFORE, BE IT RESOLVED, that the Village of Roscoe hereby adopts the Winnebago County Multi-Hazard Mitigation Plan as an official plan; and

BE IT FURTHER RESOLVED that the Winnebago County Highway Department will submit on behalf of the participating municipalities the adopted Multi-Hazard Mitigation Plan to the Illinois Department of Homeland Security and the Federal Emergency Management Agency for final review and approval.

ADOPTED THIS _____ Day of _____, 2014.

_____
Village President

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Village Council Member

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Village Council Member

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Village Council Member

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Village Council Member

_____
Attested by: Village Clerk

Resolution #_____

ADOPTING THE WINNEBAGO COUNTY MULTI-HAZARD MITIGATION PLAN

WHEREAS, the City of South Beloit recognizes the threat that natural hazards pose to people and property; and

WHEREAS, undertaking hazard mitigation actions before disasters occur will reduce the potential for harm to people and property and save taxpayer dollars; and

WHEREAS, an adopted multi-hazard mitigation plan is required as a condition of future grant funding for mitigation projects; and

WHERAS, the City of South Beloit participated jointly in the planning process with the other local units of government within the County to prepare a Multi-Hazard Mitigation Plan;

NOW, THEREFORE, BE IT RESOLVED, that the City of South Beloit hereby adopts the Winnebago County Multi-Hazard Mitigation Plan as an official plan; and

BE IT FURTHER RESOLVED that the Winnebago County Highway Department will submit on behalf of the participating municipalities the adopted Multi-Hazard Mitigation Plan to the Illinois Department of Homeland Security and the Federal Emergency Management Agency for final review and approval.

ADOPTED THIS _____ Day of _____, 2014.

_____
City Board Chairman

_____
City Board Member

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City Board Member

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City Board Member

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City Board Member

_____
Attested by: City Clerk

Resolution #_____

ADOPTING THE WINNEBAGO COUNTY MULTI-HAZARD MITIGATION PLAN

WHEREAS, the Shirland School District #134 recognizes the threat that natural hazards pose to people and property; and

WHEREAS, undertaking hazard mitigation actions before disasters occur will reduce the potential for harm to people and property and save taxpayer dollars; and

WHEREAS, an adopted multi-hazard mitigation plan is required as a condition of future grant funding for mitigation projects; and

WHERAS, the Shirland School District #134 participated jointly in the planning process with the other local units of government within the County to prepare a Multi-Hazard Mitigation Plan;

NOW, THEREFORE, BE IT RESOLVED, that the Shirland School District #134 hereby adopts the Winnebago County Multi-Hazard Mitigation Plan as an official plan; and

BE IT FURTHER RESOLVED that the Winnebago County Highway Department will submit on behalf of the participating municipalities the adopted Multi-Hazard Mitigation Plan to the Illinois Department of Homeland Security and the Federal Emergency Management Agency for final review and approval.

ADOPTED THIS _____ Day of _____, 2014.

_____
School Board President

_____
School Board Vice President

_____
School Board Member

_____
School Board Member

_____
School Board Member

_____
Attested by: School Board Clerk

Resolution #_____

ADOPTING THE WINNEBAGO COUNTY MULTI-HAZARD MITIGATION PLAN

WHEREAS, the Village of Winnebago recognizes the threat that natural hazards pose to people and property; and

WHEREAS, undertaking hazard mitigation actions before disasters occur will reduce the potential for harm to people and property and save taxpayer dollars; and

WHEREAS, an adopted multi-hazard mitigation plan is required as a condition of future grant funding for mitigation projects; and

WHERAS, the Village of Winnebago participated jointly in the planning process with the other local units of government within the County to prepare a Multi-Hazard Mitigation Plan;

NOW, THEREFORE, BE IT RESOLVED, that the Village of Winnebago hereby adopts the Winnebago County Multi-Hazard Mitigation Plan as an official plan; and

BE IT FURTHER RESOLVED that the Winnebago County Highway Department will submit on behalf of the participating municipalities the adopted Multi-Hazard Mitigation Plan to the Illinois Department of Homeland Security and the Federal Emergency Management Agency for final review and approval.

ADOPTED THIS _____ Day of _____, 2014.

_____
Village President

_____
Village Council Member

_____
Village Council Member

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Village Council Member

_____
Village Council Member

_____
Attested by: Village Clerk

Resolution #_____

ADOPTING THE WINNEBAGO COUNTY MULTI-HAZARD MITIGATION PLAN

WHEREAS, the North Park Public Water District recognizes the threat that natural hazards pose to people and property; and

WHEREAS, undertaking hazard mitigation actions before disasters occur will reduce the potential for harm to people and property and save taxpayer dollars; and

WHEREAS, an adopted multi-hazard mitigation plan is required as a condition of future grant funding for mitigation projects; and

WHERAS, the North Park Public Water District participated jointly in the planning process with the other local units of government within the County to prepare a Multi-Hazard Mitigation Plan;

NOW, THEREFORE, BE IT RESOLVED, that the North Park Public Water District hereby adopts the Winnebago County Multi-Hazard Mitigation Plan as an official plan; and

BE IT FURTHER RESOLVED that the Winnebago County Highway Department will submit on behalf of the participating municipalities the adopted Multi-Hazard Mitigation Plan to the Illinois Department of Homeland Security and the Federal Emergency Management Agency for final review and approval.

ADOPTED THIS _____ Day of _____, 2014.

_____
Board of Trustees Chairman

_____
Board of Trustees Member

_____
Board of Trustees Member

_____
Board of Trustees Member

_____
Board of Trustees Member

_____
Attested by: Board of Trustees Clerk

Resolution #_____

ADOPTING THE WINNEBAGO COUNTY MULTI-HAZARD MITIGATION PLAN

WHEREAS, the Rock River Water Reclamation District recognizes the threat that natural hazards pose to people and property; and

WHEREAS, undertaking hazard mitigation actions before disasters occur will reduce the potential for harm to people and property and save taxpayer dollars; and

WHEREAS, an adopted multi-hazard mitigation plan is required as a condition of future grant funding for mitigation projects; and

WHERAS, the Rock River Water Reclamation District participated jointly in the planning process with the other local units of government within the County to prepare a Multi-Hazard Mitigation Plan;

NOW, THEREFORE, BE IT RESOLVED, that the Rock River Water Reclamation District hereby adopts the Winnebago County Multi-Hazard Mitigation Plan as an official plan; and

BE IT FURTHER RESOLVED that the Winnebago County Highway Department will submit on behalf of the participating municipalities the adopted Multi-Hazard Mitigation Plan to the Illinois Department of Homeland Security and the Federal Emergency Management Agency for final review and approval.

ADOPTED THIS _____ Day of _____, 2014.

_____
Board of Trustees Chairman

_____
Board of Trustees Member

_____
Board of Trustees Member

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Board of Trustees Member

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Board of Trustees Member

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Attested by: Board of Trustees Clerk

Appendix D. Historical Hazards

See Attached Large Format Map and Newspaper Clippings

Appendix E. List of Essential Facilities

Not all data is available for every facility. Other facility specifics may be available upon request.

Emergency Operations Center Facilities

Facility Name	Address	City	Replacement Cost *(in $1000)*
Rockford Fire & 911 Center	204 S First St	Rockford	$3,300
Winnebago County Justice Center	650 W State St	Rockford	

Fire Station Facilities

Facility Name	Address	City	Replacement Cost *(in $1000)*	Comments
Blackhawk Fire	3738 S Main St	Rockford		
Cherry Valley Fire	120 E State St	Cherry Valley		Station #1
Cherry Valley Fire	4919 Blackhawk Rd	Rockford		Station #2
Durand Fire	115 W Howard St	Durand		Station #1
Durand Fire	17255 Goodrich Rd	Durand		Station #3
Greater Rockford Airport Fire	60 Airport Dr	Rockford		
Harlem Roscoe Fire	825 Ralston Rd	Machesney Park		Station #2
Harlem Roscoe Fire	13974 Willowbrook Rd	Roscoe	$1,300	Station #3
Harlem Roscoe Fire	13974 Willowbrook Rd	Roscoe	$600	Training Tower
Harlem Roscoe Fire	10544 Main St	Roscoe	$4,100	Station #1
Loves Park Fire	400 Grand Ave	Loves Park	$1,1169,703	
Loves Park Fire	1527 Windsor Rd	Loves Park	$784,973	
New Milford Fire	2177 Will James Rd	Rockford		
North Park Fire	600 Wood Ave	Machesney Park		
North Park Fire	3924 N Alpine Rd	Rockford		
North Park Fire	2191 Harlem Rd	Loves Park		
Northwest Fire	3222 N Central Ave	Rockford		
Northwest Fire	6420 Old River Rd	Rockford		
Pecatonica Fire	1221 Main St	Pecatonica		
Rockford Fire	528 Woodlawn Ave	Rockford	$2,500	Station #1
Rockford Fire	3407 Rural St	Rockford	$2,000	Station #10
Rockford Fire	1004 7th St	Rockford	$1,500	Station #2
Rockford Fire	2959 Shaw Woods Dr	Rockford	$2,000	Station #4
Rockford Fire	3329 W State St	Rockford	$2,500	Station #6
Rockford Fire	4979 Falcon Rd	Rockford	$4,000	Station #7
Rockford Fire	505 Sherman Ave	Rockford	$2,500	Station #8
Rockford Fire & 911 Center	204 S First St	Rockford	$3,300	Headquarters
Rockford Fire	2323 Sawyer Rd	Rockford		Maintenance Facility
Rockford Fire	2117 Calgary Ct	Rockford	$2,500	Station #11
Rockford Fire	391 N Trainer Rd	Rockford	$1,500	Station #5
Rockford Fire	2416 Halsted Rd	Rockford	$2,500	Station #9
Rockford Fire	1520 S Main St	Rockford	$2,000	Station #3 (to be discontinued 2015)
Rockford Fire	802 Marchesano	Rockford	$5,000	Station #3 (under construction; to be completed 2015)
Rockton Fire	201 N Blackhawk	Rockton		Station #1
Shirland Fire	13086 Mitchell St	Shirland		Station #1
South Beloit Fire	429 Gardner St	South Beloit	$5,000	Station #1
South Beloit Fire (Old Fire Dept)	402 Clark St	South Beloit		
West Suburban Fire	3816 W State St	Rockford		
Win-Bur-Sew Fire	110 E Main St	Winnebago		

Police Station Facilities

Facility Name	Address	City	Replacement Cost *(in $1000)*	Comments
Cherry Valley Police	806 E State St	Cherry Valley	$1,554	
Durand Police	308 W Main St	Durand		
Illinois State Police	16450 W State Rd	Pecatonica	$1,554	
Loves Park Police	540 Loves Park Dr	Loves Park	$1,554	
Machesney Park Sheriff	300 Roosevelt Rd	Machesney Park		
Pecatonica Police	405 Main St	Pecatonica	$1,554	
Rockford Park District Police	1300 N 2nd St	Rockford		
Rockford Police	420 W State St	Rockford	$1,554	
Rockford Police	365 7th St	Rockford		Police Substation
Rockford Police	1801 W State St	Rockford		Police Substation
Rockford Police	1005 S Main St	Rockford		Police Substation - SWIFFT
Rockford Police	1280 S Alpine Rd	Rockford		Police Substation
Rockton Police	110 E Main St	Rockton	$1,554	
Roscoe Police	10595 Main St	Roscoe	$956	
South Beloit Police	519 Blackhawk Blvd	South Beloit	$3,500	
Winnebago County Sheriff	420 W State St	Rockford	$1,554	
Winnebago Police	108 W Main St	Winnebago	$285	
Winnebago Police	104 W Main St	Winnebago	$40	Police Garage

School Facilities

Facility Name	Address	City	Replacement Cost *(in $1000)*	Comments
Alpine Academy	5001 Forest View Ave	Rockford		Elementary/ Preschool
Alpine Christian	325 N Alpine Rd	Rockford		Elementary School
Auburn High School	5110 Auburn St	Rockford	$38,400.24	High School
Barbour Language Academy	1500 Clover Ave	Rockford	$16,748.01	Elementary School
Beyer School	333 15th Ave	Rockford	$9,824.43	Elementary School
Blackhawk Elementary School	840 Blackhawk Blvd	South Beloit		Elementary School
Bloom School	2912 Brendanwood Rd	Rockford	$11,119.27	Elementary School
Boylan High School	4000 St Francis Dr	Rockford		High School
Brookview School	1750 Madron Rd	Rockford	$9,439.63	Elementary School
Carlson School	4015 Pepper St	Rockford	$9,317.53	Elementary School
Cathedral Baptist School	5622 35th St	Rockford		Preschool
Cherry Valley School	619 State St	Cherry Valley	$5,382.91	Elementary School
Childrens Place Preschool	325 N Alpine Rd	Rockford		Preschool
Christ the Rock Lutheran Pre-school	8330 Newburg Rd	Rockford		Preschool
Christian Life School	5950 Spring Creek Rd	Rockford		High School
Clark Elementary School	464 Oak Grove	South Beloit		Elementary School
Conklin School	3003 Halsted Rd	Rockford	$8,521.62	Elementary School
Creative Learners Pre school	112 S Cherry St	Cherry Valley		Preschool
Dolan Education Center	10104 Farm School Rd	Durand		High School
Dorothy Simon Elementary School	309 S Benton St	Winnebago		Elementary School
Durand Elementary School	200 W South St	Durand		Elementary School
Durand High School	200 W South St	Durand		High School
Durand Junior High	200 W South St	Durand		Middle/Junior High
East High School	2929 Charles St	Rockford	$54,906.43	High School
Eisenhower Middle School	3525 Spring Creek Rd	Rockford	$28,729.12	Middle/Junior High
Ellis Arts Academy	222 S Central Ave	Rockford	$20,391.94	Elementary School
Embry Riddle Aeronautical University	60 Airport Dr	Rockford		College/University
Fairview Early Chldhd	512 Fairview Ave	Rockford	$9,369.55	
Faith Tabernacle Church	4312 20th St	Rockford		Preschool
Firstborn Christian Academy	8213 N Alpine Rd	Machesney Park		Elementary School
Flinn Middle School	2525 Ohio Pkwy	Rockford	$29,184.88	Middle/Junior High
Froberg School	4555 20th St	Rockford	$6,799.87	Elementary School
Galapagos Rockford Charter School	2605 School St	Rockford		Elementary School
Gloria Dei	4700 Augustana Dr	Rockford		Elementary School
Grace Lutheran Preschool and Nursery	343 Grand Ave	Loves Park		Preschool
Gregory School	4820 Carol Ct	Rockford	$7,454.10	Elementary School
Guilford High School	5620 Spring Creek Rd	Rockford	$46,391.30	High School

Facility Name	Address	City	Replacement Cost *(in $1000)*	Comments
Hand n Hand Child Care Center	8301 Mitchell Rd	Roscoe		Preschool
Harlem High School	1 Huskie Cir	Machesney Park		High School
Harlem Middle School	735 Windsor Rd	Loves Park		Middle/Junior High
Haskell Academy	515 Maple St	Rockford	$8,555.84	Elementary School
Hillman School	3701 Greendale Dr	Rockford	$10,548.08	Elementary School
Holy Family	4401 Highcrest Rd	Rockford		Preschool
Hononegah High School	307 Salem St	Rockton		High School
Innovative Learning Center	1907 Kishwaukee Street	Rockford	$600.00	
Jackson School	315 Summit St	Rockford		Elementary School
Jean McNair Elementary School	304 E McNair Rd	Winnebago		Elementary School
Jefferson High School	4145 Samuelson Rd	Rockford		High School
Johnson School	3805 Rural St	Rockford	$8,658.98	Elementary School
Judson College	1055 Featherstone Rd	Rockford		College/University
Kennedy Middle School	520 Pierpont Ave	Rockford	$28,673.74	Middle/Junior High
Kiddie Kollege Pre School/Daycare	5950 Spring Creek Rd	Rockford		Preschool
Kindercare Learning Center	3890 Northridge Dr	Rockford		Preschool
Kindercare Learning Center	308 N Mulford Rd	Rockford		Preschool
Kindercare Learning Center	6473 E Riverside Blvd	Rockford		Preschool
Kindercare Learning Center	4345 Maray Dr	Rockford		Preschool
King School	1306 S Court St	Rockford	$8,083.40	Elementary School
Kinnikinnick School	5410 Pine Ln	Roscoe		Elementary School
Kishwaukee School	526 Catlin St	Rockford	$11,814.67	Elementary School
La Voz Latina	730 N Church St	Rockford		College/University
Lathrop School	2603 Clover Ave	Rockford	$9,342.17	Elementary School
Ledgewood Elementary School	11685 Southgate Rd	Roscoe		Elementary School
Lewis Lemon School	1993 Mulberry St	Rockford	$13,051.38	Elementary School
Lincoln Middle School	1500 Charles St	Rockford	$43,388.31	Middle/Junior High
Loves Park Elementary School	344 Grand Ave	Loves Park		Elementary School
Luther Academy Lutheran High School	3411 N Alpine Rd	Rockford		High School
Lutheran High	3411 N Alpine Rd	Rockford		High School
Lydia Academy	2323 S 6th St; Suite 2	Rockford		High School
Machesney Intermediate School	8615 N 2nd St	Machesney Park		Middle/Junior High
Macintosh Elementary School	525 Pierpont Ave	Rockford	$8,860.07	Elementary School
Maple Elementary School	1405 Maple Ave	Loves Park		Elementary School
Maria Montessori	4704 N Rockton Ave	Rockford	$8,935.25	Elementary School
Marquette Elementary School	8500 Victory Ln	Machesney Park		Elementary School
Marsh School	2021 Hawthorne Dr	Rockford	$13,519.55	Elementary School
Maryville Academy	10102 Farm School Rd	Durand		Middle/Junior High
Montessori Learning Path	200 N First St	Rockford		Preschool
Muhl School	3615 Westgate Pkwy	Rockford		Elementary School
Nashold School	3303 20th St	Rockford	$8,683.73	Elementary School
Nelson School	623 15th St	Rockford	$11,223.11	Elementary School
New Milford School	2128 New Milford Rd	Rockford	$7,495.09	Elementary School
North Love Christian	5301 E Riverside Blvd	Rockford		Elementary School
Northern Illinois University - Rockford	8500 E State St	Rockford		College/University
Olson Park Elementary School	1414 Minahan Dr	Machesney Park		Elementary School
Parker Elementary School	808 Harlem Rd	Machesney Park		Preschool
Pecatonica Elementary School	721 Reed St	Pecatonica		Elementary School
Pecatonica High School	1300 Main St	Pecatonica		High School
Pecatonica Middle School	1200 Main St	Pecatonica		Middle/Junior High
Pecatonica Preschool	420 1/2 Washington	Pecatonica		Preschool
Prairie Hill School	14714 Willowbrook Rd	South Beloit		Elementary School
Rainbow Academy	6413 Forest Hills Rd	Rockford		Preschool
Ralston Elementary School	710 Ralston Rd	Machesney Park		Elementary School
Rasmussen College	6000 E State St	Rockford		College/University
RESA	1800 Ogilby Rd	Rockford		Middle/Junior High
Riverdale School	3520 Kishwaukee St	Rockford	$11,755.85	Elementary School
Riverview Elementary School	306 Miller Ave	South Beloit		Elementary School
Rock Cut Elementary School	7944 Forest Hills Rd	Loves Park		Elementary School
Rock Valley College	3301 N Mulford Rd	Rockford		College/University
Rockford Business College	4230 Newburg Rd	Rockford		College/University

Facility Name	Address	City	Replacement Cost *(in $1000)*	Comments
Rockford Career College	1130 S Alpine Rd	Rockford		College/University
Rockford Christian School	1401 N Bell School Rd	Rockford		High School
Rockford Christian Schools	1401 N Bell School Rd	Rockford		Preschool
Rockford Christian Schools	220 Hemlock Ln	Rockford		Preschool
Rockford Early Learning Counsel	2323 S 6th St	Rockford		Preschool
Rockford Environmental Science Academy	1800 Ogilby Rd	Rockford	$28,308.96	Middle/Junior High
Rockford University	5050 E State St	Rockford		College/University
Rockton Grade School	1050 E Union St	Rockton		Elementary School
Rolling Green School	3615 Westgate Pkwy	Rockford	$19,222.54	Elementary School
Roosevelt Alt. High School	978 Haskell Ave	Rockford	$30,031.39	High School
Roscoe Middle School	6121 Elevator Rd	Roscoe		Middle/Junior High
Roscoe Middle 7892	6121 Elevator Rd	Roscoe		Middle/Junior High
Saint Anthony College of Nursing	5658 E State St	Rockford		College/University
Seward Early Learning Center	2970 Tracey St	Seward		Elementary School
Shepherd-the Valley Pre School	2715 S Mulford Rd	Rockford		Preschool
Shirland School	8020 North St			Elementary School
South Beloit High School	245 Prairie Hill Rd	South Beloit		High School
South Beloit Junior High School	840 Blackhawk Blvd	South Beloit		Middle/Junior High
Spring Creek School	5222 Spring Creek Rd	Rockford	$9,535.61	Elementary School
St Bridget School	604 Clifford Ave	Loves Park		Elementary School
St Edwards Grade School	3020 11th St	Rockford		Elementary School
St James School	409 N First St	Rockford		Elementary School
St Mark Lutheran Church Preschool	675 N Mulford Rd	Rockford		Preschool
St Peter Catholic School	320 Elmwood	South Beloit		Elementary School
St Peter School	1231 N Court St	Rockford		Elementary School
Stephen Mack Middle School	11810 Old River Rd	Rockton		Middle/Junior High
Sterling Holley Center	2000 Christina Street	Rockford	$11,034.28	
Stiles School	315 LaClede Ave	Rockford	$4,197.00	Elementary School
Stone Creek School	11633 Southgate Rd	Roscoe		Elementary School
Stone Creek7892	11633 South Gate Dr	Roscoe		Elementary School
Summerdale School	3320 Glenwood Ave	Rockford	$9,158.20	Elementary School
Thompson School	4949 Marion Ave	Rockford	$9,313.24	Elementary School
Thurgood Marshall School	4664 N Rockton Ave	Rockford	$25,944.31	Middle/Junior High
Toy Box Day Care	1105 N Court	Rockford		Preschool
University of Illinois College of Medicine	1601 Parkview Ave	Rockford		College/University
Village Nursery School	10816 Main St	Roscoe		Preschool
Walker School	1520 Post Ave	Rockford	$11,167.23	Elementary School
Washington School	1421 West St	Rockford	$21,283.80	Elementary School
Welsh School	2100 Huffman Blvd	Rockford	$9,885.81	Elementary School
West Middle School	1900 N Rockton Ave	Rockford	$51,194.28	Middle/Junior High
West View School	1720 Halsted Rd	Rockford	$6,735.86	Elementary School
White Swan School	7550 Mill Rd	Rockford	$6,820.47	Elementary School
Whitehead School	2325 Ohio Pkwy	Rockford	$10,426.78	Elementary School
Whitman Post Elementary School	1060 E Union St	Rockton		Elementary School
Willowbrook Middle School	6605 Prairie Hill Rd	South Beloit		Middle/Junior High
Windsor Elementary School	935 Windsor Rd	Loves Park		Elementary School
Winnebago High School	200 E McNair Rd	Winnebago		High School
Winnebago Middle School	407 N Elida Rd	Winnebago		Middle/Junior High
Winnebago Pre-school	106 S Benton St	Winnebago		Preschool
Woodside Church Preschool	2324 S Alpine Rd	Rockford		Preschool

Medical Care Facilities

Facility Name	Address	City	Replacement Cost *(in $1000)*	Comments
Heart Hospital at Swedish American	1401 E State St	Rockford	$15,540	Hospital - 357 Beds
H D Singer Mental Health Center	4402 N Main St	Rockford	$15,540	Hospital - 162 Beds
Rockford Memorial Hospital	2400 N Rockton Ave	Rockford	$15,540	Hospital - 396 Beds
St Anthony Medical Center	5666 E State St	Rockford	$15,540	Hospital - 226 Beds
Swedish American Regional Cancer Center	3535 N Bell School Rd	Rockford		Hospital
Van Matre HealthSouth Rehab Hospital	950 S Mulford Rd	Rockford		Hospital - 55 Beds

Facility Name	Address	City	Replacement Cost *(in $1000)*	Comments
Beloit Clinic	1701 Blackhawk Blvd	South Beloit		Clinic
Golide Floberg Center	58 W Rockton Rd	Rockton		Clinic
NorthPointe Health and Wellness Center	5605 E Rockton Rd	Rockton		Clinic
OSF Healthcare Clinic	4686 E Rockton Rd	Rockton		Clinic
Pecatonica Health Associates	1301 Main St	Pecatonica		Clinic
Physicians Immediate Care	11475 N 2nd St	Machesney Park		Clinic
Physicians Immediate Care	1000 E Riverside Blvd	Loves Park		Clinic
Physicians Immediate Care	3475 S Alpine Rd	Rockford		Clinic
Rockford Health Physicians - Roscoe	5000 Prairie Rose Dr	Roscoe		Clinic
Roscoe Immediate Care	5005 Hononegah Rd	Roscoe		Clinic
SwedishAmerican - Rockton Clinic	4282 E Rockton Rd	Rockton		Clinic
WCHD - Sandcastle Clinic	201 S 8th St	South Beloit		Clinic

Appendix F. Critical Facilities Map

See Attached Large Format Map of Critical Facilities.