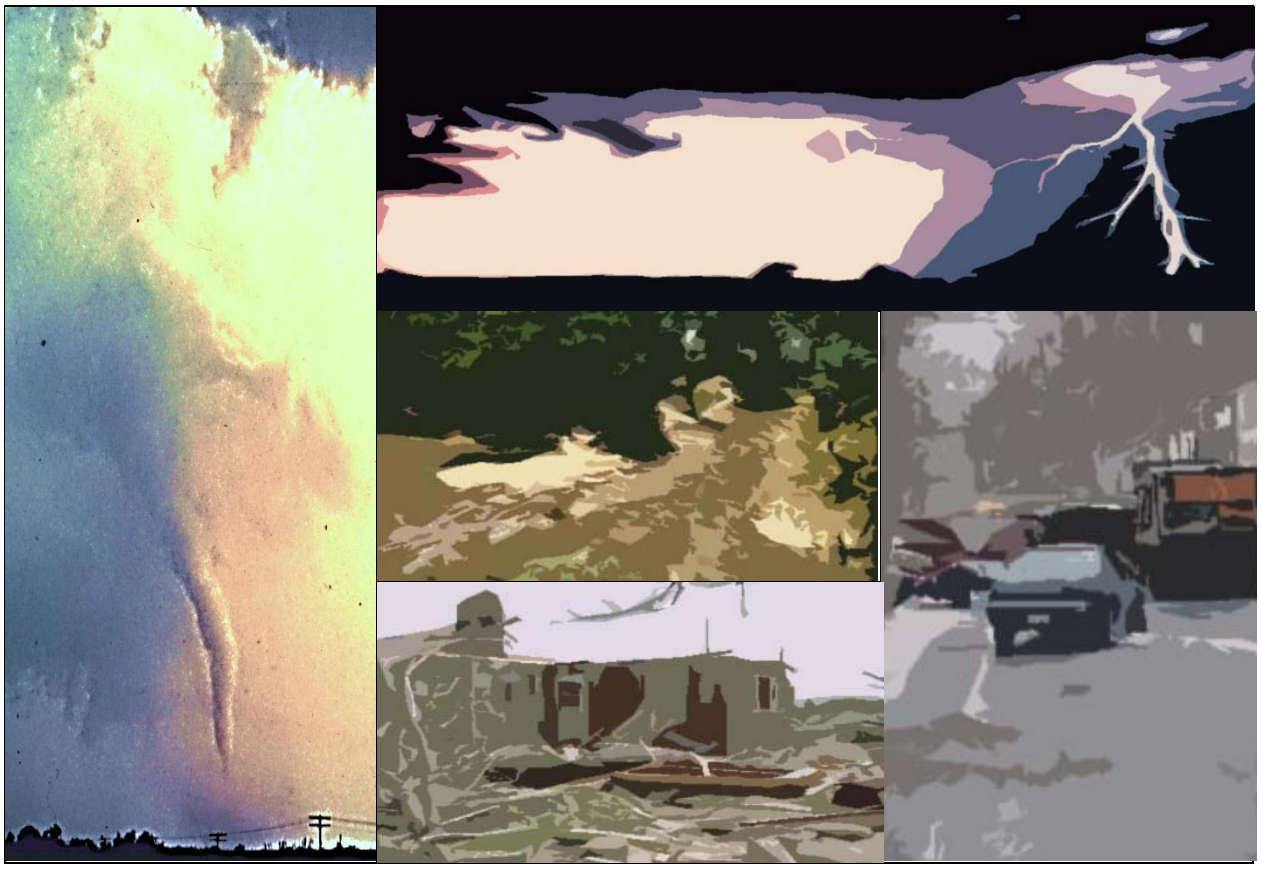
LINCOLN COUNTY

ALL HAZARDS MITIGATION PLAN

UPDATE



Lincoln County Emergency Management

Prepared by: North Central Wisconsin Regional Planning Commission

LINCOLN COUNTY ALL HAZARDS MITIGATION PLAN UPDATE

prepared for:

Lincoln County Emergency Management

by:

North Central Wisconsin Regional Planning Commission

adopted by Lincoln County Board on:

February 21, 2012

This update was prepared at the request and under the supervision of the Lincoln County Emergency Management Committee and its Emergency Management Director by the North Central Wisconsin Regional Planning Commission (NCWRPC). For more information, contact:

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Introduction

Part I of the Lincoln County All Hazards Mitigation Plan (AHMP) Update describes and documents the process used to develop the plan update. This includes how it was prepared and who (committee, organizations, departments, staff, consultants, etc.) was involved in the update process. It also describes the local government involvement, the time period in which the update was prepared, and who to contact to answer questions and make recommendations for future amendments to the plan.

Disaster Mitigation Act of 2000

The development of the Lincoln County All Hazards Mitigation Plan Update is a response to the passage of the Disaster Mitigation Act of 2000 (DMA2K). On October 30, 2000, DMA2K was signed into law by the U.S. Congress in an attempt to stem the losses from disasters, reduce future public and private expenditures, and to speed up response and recovery from disasters. This Act (Public Law 106-390) amended the Robert T. Stafford Relief and Emergency Assistance Act. The following is a summary of the parts of DMA2K that pertain to local governments and tribal organizations:

- The Act establishes a new requirement for local governments and tribal organizations to prepare an All Hazards Mitigation Plan in order to be eligible for funding from FEMA through the Pre-Disaster Mitigation Assistance Program and Hazard Mitigation Grant Program.

- The Act establishes a requirement that natural hazards such as tornados, floods, wildfires need to be addressed in the risk assessment and vulnerability analysis parts of the All Hazards Mitigation Plan. Manmade such as hazardous waste spills is encouraged but not required to be addressed.

- The Act authorizes up to seven percent of Hazard Mitigation Grant Program funds available to a state after a federal disaster to be used for development of state, local, and tribal organization All Hazards Mitigation Plans.

- The Act establishes November 1, 2004 as the date by which local governments and tribal organizations are to prepare and adopt their respective plans in order to be eligible for the FEMA Hazard Mitigation Grant Program and November 1, 2003 Pre-Disaster Mitigation Program.

- If a plan is not prepared by November 1, 2004, and a major disaster is declared, in order for a local government or tribal organization to be eligible to receive funding through the Hazard Mitigation Grant Program, they must agree to prepare an All Hazards Mitigation Plan within one year.

- In addition, by not having an All Hazard Mitigation Plan, local governments and tribal organizations cannot utilize funding through the Pre-Disaster Mitigation Grant Program.

- All Hazard Mitigation Plans must be updated every five years.

The Five Parts of an All Hazards Mitigation Plan Update

The Lincoln County All Hazards Mitigation Plan Update was categorized into five parts in order to address FEMA's local mitigation plan requirements. The five parts are as followed:

- Part I: Update Planning Process
- Part II: Planning Area
- Part III: Risk Assessment
- Part IV: Mitigation Strategy
- Part V: Plan Maintenance Process and Adoption

Development of the All Hazards Mitigation Plan Update

The Lincoln County Emergency Management Department applied for a Pre-Disaster Mitigation (PDM) Program planning grant in 2009, however, this application was not awarded. Then in late 2010, County Emergency Management applied to the Hazard Mitigation Grant Program (HMGP) and was awarded a planning grant.

In 2011, the North Central Wisconsin Regional Planning Commission (NCWRPC) finalized a work agreement with Lincoln County and began preparation of the All Hazards Mitigation Plan Update at the request of the County Emergency Management Director in July 2011.

The update process included regular Mitigation Planning Task Force Committee meetings as well as extensive involvement from the local units of government within Lincoln County and the counties surrounding Lincoln. A variety of local and regional agencies were involved in the development of the plan at various stages, and extensive opportunity for public participation was provided including public informational meetings and hearings. All sections of the plan report were reviewed and analyzed by the planning team at subsequent meetings and revised as established in the design of the update process for this Plan.

The remainder of this chapter expands on and provides more detail on key aspects of the update development process.

Key Elements Of The Update To The Original 2005 Plan

The major enhancements to the Lincoln County All Hazards Mitigation Plan developed through this update are as follows:

- ✓ Review of Recommended Revisions - The final Crosswalk for the original plan approval recommended improving the descriptions of methodology for estimating potential loses, breaking down potential losses to structures for FMA, particularly by jurisdiction. The Update clarifies methodology used and details potential losses to structures in Tables 13 (by jurisdiction) and 14.

- ✓ Review and update of planning area chapter - The planning area description and inventory was expanded and improved with additional information and updated statistics.

- ✓ Review and update of risk assessment - The risk assessment was updated with documentation on recent hazard events and new DFIRM floodplain mapping. The priority level of hazards facing the County was also reviewed and updated.

- ✓ Review and update of Mitigation Strategy - The mitigation strategies chapter begins with a complete progress report on the strategies from the 2005 plan, establishment of new set of strategies for next five-year cycle and an updated prioritization of projects.

All Hazards Mitigation Plan Update Taskforce

The Lincoln County All Hazard Mitigation Plan Update was prepared under the authorization of the Lincoln County Emergency Management Committee:

- Robert Lussow, Chair (County Board Chair)
- Mayor Robert Lee, Vice Chair (Mayor City of Tomahawk)
- Mayor William Bialecki (Mayor City of Merrill)
- Dan Caylor
- Ronald Krueger
- Bruce Giese
- Ronald Mittelstaedt

This Committee of the County Board delegated oversight of the update process to the County's Land Services Group which consists of a broad

cross section of government, agency and interest group representatives from across the County. Periodic meetings were held with the NCWRPC staff, the County Emergency Management Director (Brian Sladek), and the Land Services Group (dba Mitigation Planning Task Force) to provide guidance and input on the types of hazards to be considered, appropriate mitigation strategies, and to review draft reports. Task Force members and their representation are as follows:

- Chad Besaw, Survey Technician
- Dan Bowers, Zoning Specialist
- Tony Dallman, County Surveyor
- Diane Hanson, County Conservationist; Interim Zoning Administrator
- Sheriff Jeff Jaeger
- Audrey Jensen, Geographic Information Systems Specialist
- Eric Johnson, Conservation Specialist
- Marge Johnson, Real Property Lister
- Kevin Kleinschmidt, Forestry, Land and Parks Administrator
- Sarah Koss, Register Of Deeds
- Jan Lemmer, County Treasurer
- Jackie Leonhard, Broker, Northwoods Community Realty, LLC
- Art Lersch, University of Wisconsin-Extension
- Dan Miller, Solid Waste Manager
- Ron Mittelsteadt, County Board
- Sheila Pudelko, County Clerk
- Frank Saal, County Board
- Randy Scholz, Adminstrative Coordinator
- Brian Sladek, County Emergency Management Director
- Jack Sroka, Lincoln County Economic Development Corporation
- Tim Tarras, Geographic Information Systems Specialist

Local Government Involvement

There were a number of opportunities for the local units of government to become involved in the update process. All incorporated jurisdictions participated in the original plan as well as this update through one or more of these opportunities. In addition, unincorporated jurisdictions received a survey and may have participated in other opportunities during the process.

In September of 2011 a hazard mitigation issues survey was sent to each town chairperson and clerk, see APPENDIX A, requesting which hazards are a concern, input on past and future mitigation measures, and to document other information that could be incorporated into the All Hazards Mitigation Plan Update. Responses were received from 7 of 16

towns. A significant amount of information was gleaned from these questionnaires and incorporated into the planning document.

The City of Tomahawk was formally introduced to the update process at a separate meeting on September 13, 2011. The participants at this meeting provided information on hazards that have significance to the area, discussed critical facilities and provided mitigation strategy ideas for the plan. The following City officials participated in this planning meeting:

- Steve Bartz, City Council
- Rejeana Ebert, City Council
- Bruce Hetzel, City Council
- Don Johnson, Chief of Police
- Jeff Kahle, City Council
- Robert Lee, Mayor
- Mickey Loka, City Council
- DJ Nelson, City Council
- Roger Schlegel, City Council
- AJ Theiler, President City Water and Sewer Commission
- Mike Tolvstad, Superintendent City Dept. of Public Works

Discussion from this meeting indicated that the City recognizes the flooding potential due to the dams that the City is built around, but is more concerned about the threats posed to its critical emergency infrastructure and water supply. Two things are of particular concern to City officials: 1) the proximity of a major LP gas storage facility to its police, fire and public works facilities and 2) the proximity of railroad tracks carrying toxic chemicals past its municipal water supply wells. Possible ways to help the City deal with these problems include construction of an emergency command center a safe distance from the LP storage and development of a second well field and water tower.

The City of Merrill was formally introduced to the update process at a separate meeting on September 26, 2011. The participants at this meeting provided information on hazards that have significance to the area, discussed critical facilities and provided mitigation strategy ideas for the plan. The following City officials participated in this planning meeting:

- Robert Ashbeck, Deputy Health Officer
- Bill Bialecki, Mayor
- Bill Heideman, City Clerk
- Bob Odegard, Chief of Fire and Ambulance Dept.
- Ryan Schartzman, City Council
- Ned Seubert, Chief of Police

- David Sukow, City Council, Chair of Health and Safety Committee

Discussion revolved around tornados and spring run-off. Flooding is an annual annoyance but not a major problem lately. However, the potential for significant flooding impact is there and the City is interested in working with WPS on advance flood warning. The City also brought up the issue of resident's reliance on satellite TV and the problems it poses for local emergency warning. They also discussed the need for an updated radio communications system and emergency power back-up for critical facilities.

Neighboring Community Involvement

One of the requirements of the update process was to include neighboring communities. In previous plans, the NCWRPC experienced low attendance in response to invitations to county emergency management staff from surrounding counties. As a result, NCWRPC staff corresponded via email during the update process between October and November of 2011 with the group of EM staff from Oneida, Langlade, Marathon, Taylor and Price counties. A link was provided for access to Lincoln plan information on the Internet.

Brandon Kosharek from Price County noted that the County does not yet have an adopted all hazards mitigation plan but is in the process of developing one and will review the Lincoln plan as part of that process. Ken Kortenhof from Oneida County concurred with the proposed recommendation in the Lincoln plan for a cross-county wildfire protection plan for southwestern Oneida County and northern Lincoln County.

Local and Regional Agency Involvement

Another requirement of the update process was to involve local and regional agencies that have a role in hazard mitigation activities, and agencies that have the authority to regulate development, as well as businesses, academia, and other private and non-profit interests. To meet this objective, membership of the planning taskforce, i.e.: zoning and University Extension (see above), filled some of these qualifications.

In addition, planning staff met with Wisconsin Department of Natural Resources Forest Ranger Rich LaValley on August 29, 2011 and Northeast Region Statewide Interoperability Plan Implementation Coordinator Andy Faust on October 31, 2011. To further outreach to a wider range of local and regional agencies, the Lincoln County Emergency Services Group was asked to review the strategies proposed in the draft plan.

During the meeting with Ranger LaValley, a number of issues related to wildfire protection were discussed, including approaches to community wildfire protection planning in Lincoln County, emergency response zone map development, cross training structural firefighters for wildfire suppression, Firewise information and education and conditions in areas of Lincoln County that limit emergency access.

Mr. Faust discussed some of the projects he is involved with that relate to emergency management and hazard mitigation within Lincoln County. Some of these activities include: NEWCOM - the North East Wisconsin Public Safety Communications interagency group; WROC - the Wisconsin Regional Orthophotography Consortium; and WHAM - the Wisconsin Hazard Assessment and Mapping program.

In his role as the Northeast Region Statewide Interoperability Plan Implementation Coordinator, Mr. Faust coordinates regional training such as the recent two day training exercise and subsequent action report relating to response to long term power outage situations. He discussed how the findings and outcomes of this exercise could be useful in communities concerned about the potential consequences of long term power outage. Long term power outage is one issue identified by the Mitigation Plan Taskforce.

The Lincoln County Emergency Services Group was emailed plan information including website link and a copy of the proposed mitigation strategies to review and comment. Members of the Emergency Services Group contacted are as follows:

- Jason Bondioli, Corning First Reponders
- Chris Clabots, Russell First Responders
- Doug Duchac, Lincoln County EMS / Ministry Health
- Tim Fischer, Lincoln County 911 Coordinator
- Shelley Hersil, Lincoln County Health Dept.
- Sheriff Jeff Jaeger, Lincoln County Sheriff's Office
- Doug Jennings, Northcentral Technical College
- Chief Don Johnson, Tomahawk Police Dept.
- Chief Wayne Kinnally, Nokomis Fire Dept.
- Chief Robert Kressel, Russell Fire Dept.
- Ranger Rich LaValley, Wisconsin Dept. of Natural Resources
- Shelly Mondeik, Northcentral Technical College
- Ken Neff, Merrill Police Dept.
- Ron Nerva, Wisconsin Dept. of Natural Resources
- Bob Odegard, Merrill Fire Dept.
- Chief John Peeters, Tomahawk Fire Dept.

- Warden Rick Peters, Wisconsin Dept. of Natural Resources
- Robert Pound, Maine Fire Dept.
- Paul Proulx, Lincoln County Coroner
- Kent Reinhardt, Wisconsin Public Service Corp. - Merrill Manager
- Wendy Savage, American Red Cross
- Robyn Schertz, Good Samaritan Hospital EMS Medical Director
- Andy Shaney, Wisconsin Dept. of Natural Resources
- Chief Ned Suebert, Merrill Police Dept.
- Bruce Sunde, Lincoln Hills School - Security Director
- John Uttech, Pine River Fire Dept.
- Sharon Uttech, Pine River First Responders
- Misty Ward, Good Samaritan Hospital
- Chief Stan Wendt, Corning Fire Dept.
- Paul Winter, Tomahawk Fire Dept. - Battalion Chief
- Peter Wurl, Wisconsin Public Service - Tomahawk Manager

Comments received back from the group include information on communications "gaps" within the County along with the suggestion that cell phone service issues be included along with public emergency radio communications in this regard. It was also suggested that elderly housing, nursing homes, and private industry be encouraged to have emergency action plans ready and available in case of emergencies.

In addition, WPS acknowledged reviewing and discussing the plan between offices. The Sheriff's Office offered corrections for its parts in the plan.

Public Review Process and Plan Adoption

Opportunities for public comment were provided to review the Plan Update during the drafting stage and prior to Plan Update approval. See APPENDIX C for copies of public meeting notices. A copy of the draft Plan Update was made available on the Internet during the planning process. Links that open an email submission form to the County Emergency Management Director or NCWRPC Staff were provided for questions or comments. The final Plan Update document will remain on the Internet until the next draft update is posted for review. The public can continue to submit questions or comments at any time via the email link. (See Contact Information, below, for web addresses.)

County Emergency Management Committee meetings are always open to the public (unless entering into legal closed session), and the public can bring questions or comments regarding this Plan Update to any regular meeting. Meeting schedules can be obtained by checking the

County website, contacting the County Clerk's Office or the Emergency Management Director (see Contact Information, below).

A public informational meeting on the draft update was held at the Lincoln County Service Center on November 16, 2011. Notices were posted in the local newspapers. Unfortunately, no members of the public chose to attend this meeting. In addition, no comments were received via U.S. Mail or email as a result of this meeting.

A public hearing was held by the County Emergency Management Committee on February 2, 2012 prior to forwarding to County Board for approval. No one from the public attended and thus no public comments were received. In addition, no written comments were submitted. Following the public hearing, the County Board approved the Plan Update at its February 21 meeting. The adopting resolution is included in APPENDIX B.

Each incorporated municipality was asked to adopt the Plan Update for its jurisdiction at their own properly posted and open public meeting, see APPENDIX B for the local units' resolutions of adoption.

Incorporated Plans, Studies, Reports And Technical Data

Many plans, reports, and technical data sources were referenced and incorporated into the Lincoln County All Hazards Mitigation Plan Update. These sources include but are not necessarily limited to the following:

Wisconsin Department of Natural Resources, North Central Wisconsin Regional Planning Commission and Lincoln County geographic information system databases provided much of the base data for the mapping and analysis within the Plan. Statistical reports and data from the US Census and Wisconsin Departments of Administration, Revenue and Workforce Development where used for the demographic background in Part 2 of this Plan. Land use data in Part 2 was obtained from the Lincoln County Comprehensive Plan.

Wisconsin Department of Natural Resources Wetlands Inventory and Dams Database were used to identify and map wetlands and dams within the County for Maps 2 and 3 in Part 2 and Table 12 in Part 3. Emergency Action Plans for the various dams provided the mapping of dam failure inundation areas (Map 13) for dam failure risk assessment in Part 3. Digital Flood Insurance Rate Maps (DFIRM) for Lincoln County provided the mapping of 100-year floodplain areas, Map 4 in Part 2, for flooding risk assessment, Map 12 in Part 3.

NOAA National Climatic Data Center severe weather event data was used extensively for the risk assessment in Part 3. The wildfire section of the risk assessment was based on the Wisconsin Department of Natural Resources' fire occurrence database and statewide Communities At Risk (CAR) assessment.

Other plans, reports, and documents were reviewed by staff during the planning process including but not limited to the State of Wisconsin Hazard Mitigation Plan; the Hazard Analysis for the State of Wisconsin, the Wisconsin Repetitive Loss Report, the Flood Insurance Study(ies)…for Lincoln County, Merrill & Tomahawk, the Lincoln County Zoning Ordinance, the Lincoln County Land and Water Resource Management Plan, and the Lincoln County Lincoln County Emergency Operations Plan. Although these may not have been directly incorporated, the review provided valuable insight and direction to the planning process.

Contact Information

Questions or comments related to this Plan Update can be directed to the County Emergency Management Director at any time. For more information contact:

Brian Sladek, Director
Lincoln County Emergency Management
Lincoln County Safety Building
1104 East First Street
Merrill, WI 54452

715-536-6228

bsladek@co.Lincoln.wi.us

Go to:

http://www.co.lincoln.wi.us/departments/?department=5b606eddbb7e

http://www.ncwrpc.org/lincoln/ahmp.html

http://emergencymanagement.wi.gov/mitigation/default.asp

http://www.fema.gov/government/mitigation.shtm

INTRODUCTION

Part II of the Lincoln County All-Hazard Mitigation Plan provides general geographical information on Lincoln County including demographic and economic characteristics. The general development patterns of the County are described in terms of current land use and future development trends.

In addition to developing an understanding of the planning area, this chapter represents the beginning stages of assessing vulnerability by inventorying the numbers, types and values of existing buildings, infrastructure and critical facilities within each participating jurisdiction in the planning area. This overall summary of each jurisdiction's vulnerability to hazards describes the potential impact on the community.

Land use and development trends are analyzed to project the number and type of potential future buildings, infrastructure and critical facilities within each jurisdiction so that mitigation options can be considered in future land use decisions.

The resulting information is an important element of the planning process, since sound alternative mitigation strategies cannot be formulated and evaluated without an in-depth knowledge of the relevant conditions in the study area.

GENERAL GEOGRAPHY

LOCATION

Lincoln County is located in north-central Wisconsin (See Map 1). The largest urban areas are the City of Merrill, located along the Wisconsin River in the south-central portion of the county and the City of Tomahawk, located along the Wisconsin River in the north-central portion of the county. There are also several unincorporated villages/hamlets. The county is bounded on the north by Oneida County, on the east by Langlade County, on the south by Marathon County, and on the west by Taylor and Price Counties.

Lincoln County lies approximately 110 miles northwest of Green Bay; 118 miles northwest of the Fox Valley; 210 miles northwest of Milwaukee; 15 miles north of Wausau; 7 miles south of Rhinelander; 167 miles north of Madison; and 185 miles northeast of La Crosse. Major metropolitan areas outside of Wisconsin with transportation linkages to Lincoln County are Chicago, 299 miles southeast; Minneapolis-St. Paul, 190 miles west; and Duluth, 213 miles north.

CIVIL DIVISIONS

There are 18 municipalities (16 towns, City of Tomahawk, and City of Merrill) in the Lincoln County planning area. These units of government provide the basic structure of the decision-making framework. The County has a total surface area of 907 square miles, of which 3.0% is water. The area and proportion of the County within each civil division are presented in Table 1.

Table 1 Geographical Size by Municipality

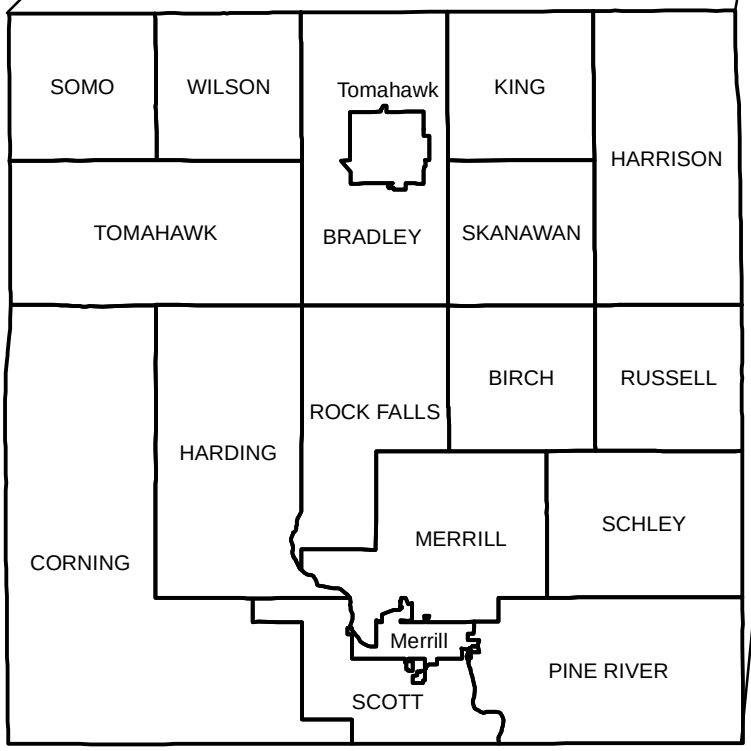
	Area in square miles			
Municipality	**Water area**	**Land area**	**Total area**	**Area as % of County**
Birch town	0.35	35.76	36.11	4.0%
Bradley town	7.83	55.73	63.56	7.0%
Corning town	0.09	146.51	146.60	16.2%
Harding town	0.71	72.10	72.81	8.0%
Harrison town	2.91	69.45	72.36	8.0%
King town	3.04	33.87	36.91	4.1%
Merrill town	1.31	52.05	53.36	5.9%
Pine River town	0.31	63.95	64.26	7.1%
Rock Falls town	1.43	47.78	49.21	5.4%
Russell town	0.15	36.16	36.31	4.0%
Schley town	0.05	48.29	48.34	5.3%
Scott town	0.48	30.17	30.65	3.4%
Skanawan town	0.53	35.39	35.92	4.0%
Somo town	0.00	36.36	36.36	4.0%
Tomahawk town	1.50	70.07	71.57	7.9%
Wilson town	1.17	35.18	36.35	4.0%
Tomahawk city	1.40	7.44	8.84	1.0%
Merrill city	0.49	7.04	7.53	0.8%
Lincoln County	23.75	883.30	907.05	100.0%

Source: U.S. Census and NCWRPC

Map 1

Locational Map

Lincoln County, Wisconsin



This map is neither a legally recorded map nor a survey and is not intended to be used as one. This drawing is a compilation of records, information and data used for reference purposes only. NCWRPC is not responsible for any inaccuracies herein contained.

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TOPOGRAPHY

Lincoln County is in the Northern Highland physiographic region of Wisconsin. This region has some of the highest elevations in the state, and elevations in the County range from about 1,910 feet above sea level just east of Ament Lake in the northeast to about 1,220 at the point where the Wisconsin River leaves the County. Merrill is about 1,300 feet above sea level, and Tomahawk is about 1,450.

The physiography, relief and drainage of the County are primarily the result of glaciation. They are modified by ridges of hard bedrock in the southern part of the County. The landscape is very diverse. Moraines, eskers, kames, ice-contact lake basins, and drift-mantled ridges and hills of bedrock are generally in the highest positions on the landscape. These landforms are interspersed with lower areas of outwash plains, drumlins, lake plains, and bogs and other depressional areas where organic soils have formed.

The most prominent physiographic feature is the broad belt of end moraine that extends across the County from the northeastern part to the south-central and then through the west-central area. This end moraine area has the highest elevations and the roughest terrain in the County.

CLIMATE

Winters in Lincoln County are very cold, and summers are short but fairly warm. The short frost-freeze period limits the production of crops. The prevailing wind is from the southwest, and average windspeed is highest in spring at 12 miles per hour. Precipitation is fairly well distributed throughout the year, reaching peak in summer, and snow covers the ground during much of the period from late fall through early spring.

In winter, the average temperature is 15 degrees F with the average daily minimum at 4 degrees. The lowest temperature on record (Merrill) was -48 in January of 1909. Soils usually freeze to depth ranging from a few inches up to one foot, but occasionally can freeze to several feet when cold temps occur before appreciable snow cover. In summer, the average temperature is 66 degrees and the average daily maximum temperature is 79 degrees. The highest recorded temperature was 110 degrees in July of 1936.

Average total annual precipitation is 31.41 inches. Of this about 70% usually falls in April through September. The heaviest 1-day rainfall on record (Merrill) was 11.25 inches over July 23 and 24 of 1912. Thunderstorms occur on about 34 days each year. Average seasonal

snowfall is about 42 inches, with 98.8 inches (1921-22) being the greatest total on record.

DEMOGRAPHIC AND ECONOMIC PROFILE

POPULATION AND HOUSEHOLDS

The official state 2009 population estimate for Lincoln County shows a population of 30,781 people for the County. This represents a nearly 4% increase over the 2000 Census reported population of 29,641 people. This is a moderate growth rate, but low compared too many of the surrounding counties and slightly below the state average (refer to Table 2). If the growth rate continues at the current level, there will be approximately 31,966 people in Lincoln County in 2018, and 33,196 people in 2027.

Population concentrations and trends are important when prioritizing hazard mitigation strategies. Approximately 48 percent of the population is classified by the Census as urban and 52 percent is rural. The City of Merrill is the most densely populated and developed area in the county. Other areas of population concentrations are the City of Tomahawk, waterfront development in the Towns of Harrison, King, Bradley, Wilson, Merrill, and Harding, and the unincorporated "villages" of Gleason, Bloomville, and Irma. Map 2 (Land Use) shows areas of population concentrations in the County. Overall population density of the County is 34.8 persons-per-square-mile and ranges from a high of 1,439 in the City of Merrill to a low of 4.2 in the Town of Somo.

Table 2 Population of Adjacent Counties

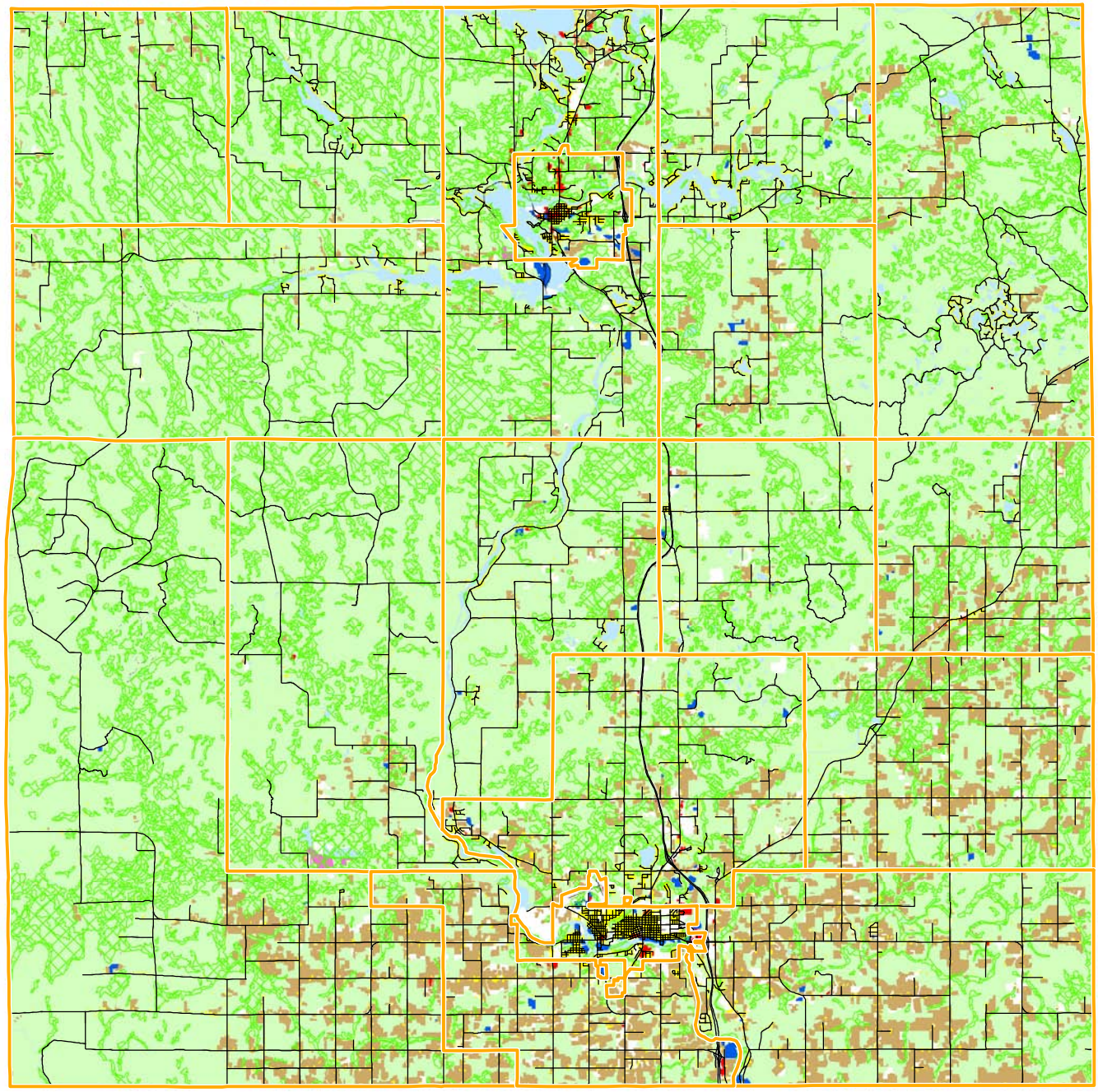
County	2000	2009	Change	% Change
Lincoln	29,641	30,781	1,140	3.8%
Langlade	20,740	21,844	1,104	5.3%
Marathon	125,834	136,376	10,542	8.4%
Oneida	36,776	39,129	2,353	6.4%
Price	15,822	16,173	351	2.2%
Taylor	19,680	20,177	497	2.5%
Wisconsin	5,363,690	5,688,040	324,350	6.0%

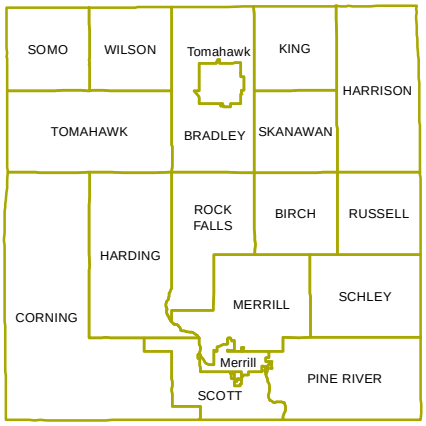
Source: U.S. Census, WisDOA and NCWRPC

Map 2

NCWRPC Generalized Land Use

Lincoln County, Wisconsin





- Minor Civil Divisions
- Wetlands
- Agricultural
- Commercial
- Cranberry Bog
- Governmental / Institutional
- Outdoor Recreation
- Industrial
- Open Grass Lands
- Residential
- Transportation
- Water
- Woodlands

N W E S

0 1.25 2.5 5 7.5 Miles

Source: Vandewalle & Associates, Lincoln Co & NCWRPC

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Between 2000 and 2009, most of the communities within Lincoln County have experienced an increase in their population base with the exception of the City of Merrill and the Town of Birch (refer to Table 3). The highest level of growth occurred in the Town of Somo with a 26.4% increase between 2000 and 2009. Other northern tier towns also experienced significant growth including Harrison, Skanawan, Tomahawk and Wilson. Water bodies in the northern half of the county are significant attractions and retirees converting cabins to year-round residences have fueled this growth.

Table 3 Population and Households of Civil Divisions

Civil Division	Census 2000 Population	Census 2000 Households	Estimated 2009 Population	Estimated 2009 Households	2000 – 2009 % Change in Population	2000 – 2009 % Change in Households
Birch town	801	179	696	156	-13.1	-13.0
Bradley town	2,573	1,094	2,774	1,180	7.8	7.9
Corning town	826	299	884	320	7.0	7.1
Harding town	334	129	355	137	6.3	6.3
Harrison town	793	314	928	367	17.0	16.8
King town	842	362	911	391	8.2	8.0
Merrill town	2,979	1,125	3,153	1,190	5.8	5.8
Pine River town	1,877	673	1,982	710	5.6	5.6
Rock Falls town	598	231	665	257	11.2	11.2
Russell town	693	271	731	286	5.5	5.4
Schley town	909	356	966	379	6.3	6.4
Scott town	1,287	458	1,389	494	7.9	7.9
Skanawan town	354	141	399	159	12.7	12.7
Somo town	121	57	153	72	26.4	26.6
Tomahawk town	439	192	502	219	14.4	14.2
Wilson town	299	130	339	147	13.4	13.4
Tomahawk city	3,770	1,527	3,824	1,620	1.4	6.1
Merrill city	10,146	4,183	10,130	4,329	-0.2	3.5
Lincoln County Total	**29,641**	**11,721**	**30,781**	**12,513**	**3.8**	**6.8**

Source: U.S. Census, WisDOA and NCWRPC

According to the Wisconsin Department of Workforce Development the average age in Lincoln County is 41 or 2.9 years older than the state average of 38.1 years. By 2020 the expected average age of County residents will be 42.9 years and 44.6 by 2030. This puts the County's average age above the state's expected averages of 39.6 in 2020 and 41 in 2030.

SEASONAL POPULATION

In addition to the regular full-time resident population, the impact of seasonal population cannot be overlooked when planning for hazards. Although not as significant as in neighboring Oneida County, 13.3% of Lincoln's housing stock has been identified as seasonal/recreational. Table 4 shows estimated seasonal residents by municipality. Determining when and for how long these seasonal residents will be in the County is problematic, but the numbers give some indication of what weekend or other peak period population levels might be.

Table 4 Estimated Seasonal Resident Population

Civil Division	Est. 2009 Seasonal Housing Units	Est. 2009 Seasonal Population
Birch town	50	222
Bradley town	560	1316
Corning town	87	239
Harding town	98	253
Harrison town	339	857
King town	70	164
Merrill town	51	135
Pine River town	27	77
Rock Falls town	176	455
Russell town	42	108
Schley town	30	76
Scott town	10	27
Skanawan town	76	190
Somo town	35	75
Tomahawk town	210	481
Wilson town	222	511
Tomahawk city	45	105
Merrill city	20	46
Lincoln County	2081	5118

Source: U.S. Census and NCWRPC

Another component of the seasonal population includes short-term accommodations such as campgrounds or hotel-style lodging. The scope of this plan did not provide for a detailed inventory of accommodations; however the Wisconsin DNR completed a general inventory as part of its statewide comprehensive outdoor recreation plan. That inventory

identified 713 hotel/motel beds, 28 bed and breakfast beds and 76 other types of beds available around the County. The DNR also identified 574 campsites in various campgrounds across the County as well as educational/recreational camps with capacity for 406 individuals.

EMPLOYMENT

Jobs in the manufacturing sector, producing everything from wood products to motorcycle accessories and parts to paper and metal products, play an important role in Lincoln County. As Table 5 portrays, five of the top ten employers in Lincoln County are in the manufacturing sector. According to the statistics from the Department of Workforce Development, manufacturing accounts for 29% of the county's total workforce. Jobs associated with transportation, communication and utilities make up about 19% of the work workforce and 15% goes to healthcare and education. Identifying locations of large employment is important when prioritizing hazard mitigation strategies. It is difficult to predict the long-term effect of the recent downturn in the economy on the local employment picture.

Table 5 Top Employers in Lincoln County

Company	Product or Service	Size	Location
Merrill Public School	Public Education	500-999	Various locations
Church Mutual Insurance Co.	Insurance Carrier	500-999	City of Merrill
County of Lincoln	County Public Employment	250-499	Various locations
Packaging Corp. of America	Paper Mill	250-499	City of Tomahawk
Semling Menke Co, Inc.	Wood Windows and Doors	250-499	City of Merrill
Harley-Davidson Motor Co.	Motorcycles and Parts	250-499	City of Tomahawk
Lincoln Wood Products, Inc.	Wood Window and Doors	100-249	City of Merrill
Good Samaritan Health Center	Medical and Surgical care	100-249	City of Merrill
Hurd Windows and Doors	Wood Window and Doors	100-249	City of Merrill
School District of Tomahawk	Public Education	100-249	City of Tomahawk

Source: Wisconsin DWD County Workforce Profile and NCWRPC

LAND USE/LAND COVER AND DEVELOPMENT PATTERNS

Land use is an important determinant in the potential impact a particular hazard may have, and in actions which may be taken to mitigate the hazard impacts. An understanding of the amount, type, and spatial distribution of urban and rural land uses within the County is an important consideration in the development of a sound hazard mitigation plan.

The North Central Wisconsin Regional Planning Commission (NCWRPC) has categorized land use in Lincoln County into eight classifications based on land use data within the Lincoln County Comprehensive Plan. That data was compiled from a number of sources which are mostly broad and generalized. This generalized land use provides a "big-picture" understanding of land use and development patterns with in Lincoln County. Map 2 shows the land use and surface water in Lincoln County. Table 6 shows the acreage and percent of each classification.

FORESTRY AND AGRICULTURE

The dominant land-use in Lincoln County is forestry. Land area in the county is approximately 60 percent forested, comprised of approximately 353,000 acres of woodland. Agricultural land covers another 9.8 percent of the county's land area, which is mostly located on previously forested tracts that were cleared by early settlers. Dairy, beef, cash crops, ginseng, strawberries, cranberries, and apples make up the core of what Lincoln County farmers produce off the land. A short growing season, irregular topography, and relatively poor soil productivity, limits most of the agricultural production to the southern portions of the county.

COMMERCIAL AND INDUSTRIAL DEVELOPMENT

Commercial and industrial development makes up only about 0.5 percent of the total area of the County. Land use for commercial and industrial development is mostly located in the two cites of Merrill and Tomahawk. There are two designated industrial parks in Lincoln County. They are in the Cities of Merrill and Tomahawk. Other industrial sites are located in the Towns of Bradley and Merrill. Commercial activity is also located in the City of Merrill and Tomahawk and the Towns of Bradley and Merrill where it serves as a sub-regional service center supported by the surrounding forestry and agri-business industry. Commercial activity in the unincorporated areas is primarily dominated by private commercial recreation.

RESIDENTIAL DEVELOPMENT

Land in residential development makes up approximately 2.4 percent of the total county area. Residential concentrations are scattered

throughout the county (see "Population and Households" above). Much of the scattered rural development is related to direct recreational demand as various types of housing have clustered along streams and lakes.

There are a number of mobile home parks in the county. According to the U.S. Census, there were 1,407 mobile homes in 2000. This is about 10 percent of housing units for the County compared to about 4 percent for the entire state. This is significant due to their vulnerability in natural hazards especially tornadoes. Map 11 (Tornado Vulnerability) displays the mobile home concentrations within the County.

Table 6 Land Use in Lincoln County

Description	Acres	Percent
Agriculture	57,513	9.8%
Commercial, Industrial, Institutional	5,645	1.0%
Forest	353,582	60.4%
Recreation	5,721	1.0%
Residential	14,235	2.4%
Rural/Open Lands	24,478	4.2%
Surface Waters	17,589	3.0%
Wetlands	106,237	18.2%
Total	585,000	100%

Source: NCWRPC and Lincoln Co. Comp. Plan

SURFACE WATER

Lincoln County is located in the Upper Wisconsin River drainage basin. There are thirteen watersheds within the County, with six major tributaries – Somo, Spirit, New Wood, Copper, Pine and Prairie Rivers all flowing into the Wisconsin River, which generally bisects the county from north to south. The 285-foot drop of the Wisconsin River is moderated by six water control structures, which help to control flooding.

Within the watersheds, there are 246 interior rivers and streams covering about 668 miles (see Map 3). All the streams, like the lakes, are important in the hydrological and ecological regime and should be protected by shoreland zoning and physical protective measures.

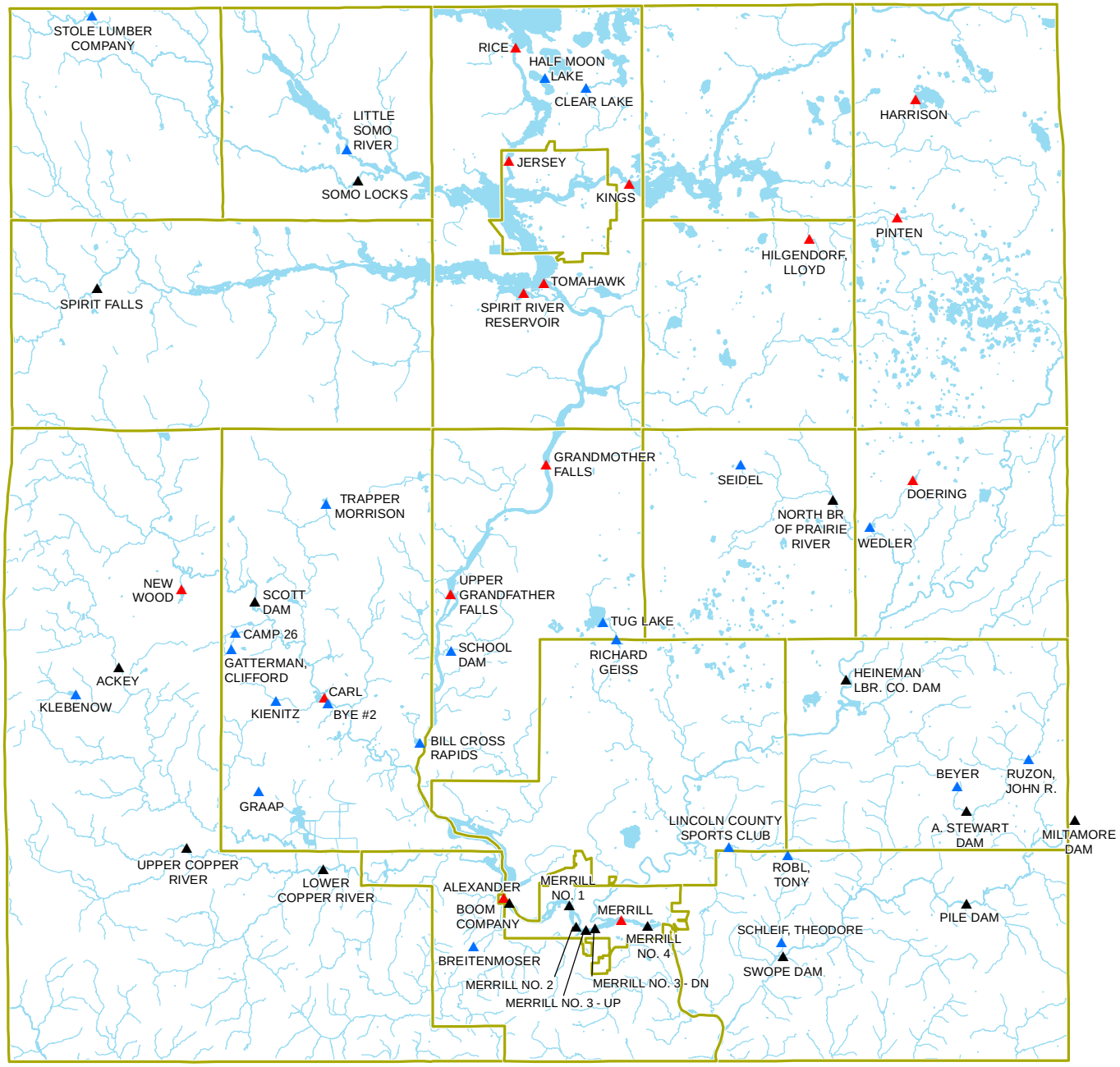
The total surface water area of lakes and streams in Lincoln County contains approximately 17,589 acres. More than half of the county's 500 plus lakes are artificial impoundments on the Wisconsin River. Lake Mohawksin is the largest of these lakes at 1,909 acres. Over eighty-six percent of the lakes are less than 10 acres, while only 3% are over 100 acres.

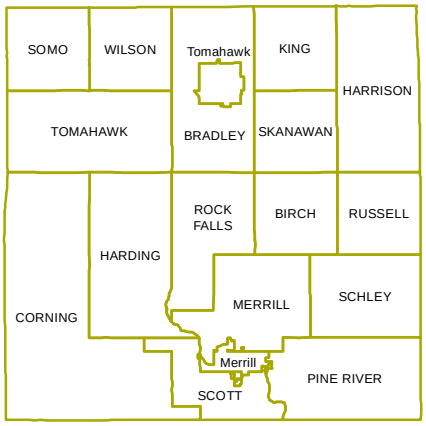
Floodplains and wetlands are important subsidiary components to the surface water system as described below.

Map 3

Surface Water & Dams

Lincoln County, Wisconsin





Minor Civil Divisions

Dam Size

- Large
- Small
- Unknown

Water

N W E S

0 1.25 2.5 5 7.5 Miles

Source: NCWRPC & WI DNR

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Floodplains

The primary value of floodplains is their role in natural flood control. Flood plains represent areas where excess water can be accommodated whether through drainage by streams or through storage by wetlands and other natural detention/retention areas. Specific areas that will be inundated will depend upon the amount of water, the distance and speed that water travels, and the topography of the area. If uninterrupted by development, the areas shown on a map as floodplains should be able to handle the severest (regional) flood, i.e. those that have a probability of occurring once every one hundred years.

There is a value in preserving and protecting these natural flood control areas from encroachment. First, by preventing development in the floodplain, the cost of building dikes, levies, or other man-made flood control devices will be saved. Second, for each structure that is constructed in a flood-prone area, that flood-prone area expands, potentially subjecting other structures originally built outside the delineated flood hazard area to the risk of flooding. Each new structure (or modification to existing) placed in the flood plain puts more life and property in danger.

Counties, cities, and villages are required to adopt reasonable and effective floodplain zoning ordinances. The requirement is found in section 87.30 of the Wisconsin Statutes and Chapter NR 116 of the Wisconsin Administrative Code. Floodplain zoning is designed to protect individuals, private property, and public investments from flood damage.

Floodplain zoning maps identify areas where major floods occur. Regulations prohibit development in the floodway, the most dangerous flood area. In other flood areas, the flood fringe, development that is built above flood levels and otherwise flood-protected is allowed if it is in accordance with local ordinances. For regulatory purposes, a floodplain is generally defined as land where there is a one percent chance of flooding in any year (also known as the 100-year floodplain).

In order to participate in the Federal Emergency Management Agency's (FEMA) National Flood Insurance Program (NFIP), the County, City of Merrill, and City of Tomahawk have completed a Flood Insurance Study and a Flood Insurance Rate Map (FIRM) that encompasses Lincoln County. This FIRM delineates the "A" Zones including the floodway and flood fringe which are those areas inundated by the 100-year flood within the County.

Lincoln County recently participated with FEMA in updating its FIRM to new digital standards. The new digital FIRMs are referred to as DFIRM. The NCWRPC downloaded the DFIRM from the County for use in this plan. Although unofficial, the digital files indicate there are 18,100 acres of floodplain in Lincoln County, or 3.1 percent of the land area. Map 4 shows the approximate floodplains in Lincoln County. Floodplains in Lincoln are generally small and floods occur only during periods of exceptionally heavy rainfall. Currently, there are no repetitive loss structures, those with multiple flood insurance claims, in Lincoln County.

Wetlands

Wetlands perform many indispensable roles in the proper function of the hydrologic cycle and local ecological systems. In terms of hazard mitigation, they act as water storage devices in times of high water. Like sponges, wetlands are able to absorb excess water and release it back into the watershed slowly, preventing flooding and minimizing flood damage. As more impermeable surfaces are developed, this excess capacity for water runoff storage becomes increasingly important.

The DNR has identified the location of wetlands on their WISCLAND database. According to this, Lincoln County has 106,237 acres, or 18 percent of its total area. Map 2 shows these wetland areas to be scattered throughout Lincoln County. There are no main concentrations of wetlands, except that cattails and bulrushes in shallow water, and alder, sedges and grasses in the saturated areas dominate wetland communities.

Eradication of wetlands can occur through the use of fill material. This can destroy the hydrological function of the site and open the area to improper development. The Wisconsin Department of Natural Resources (DNR) has promulgated minimum standards for managing wetlands.

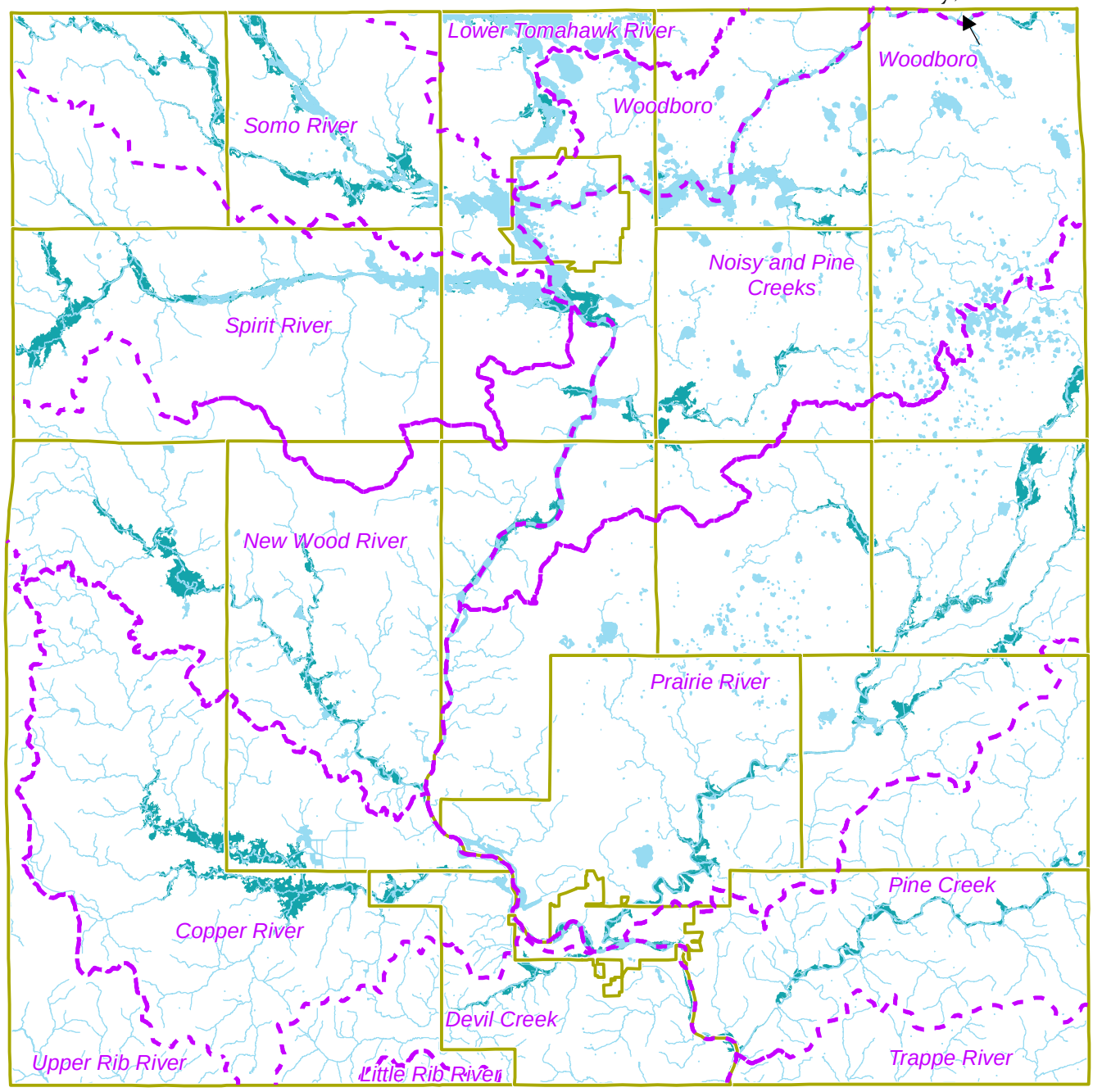
OTHER LAND COVER/USES

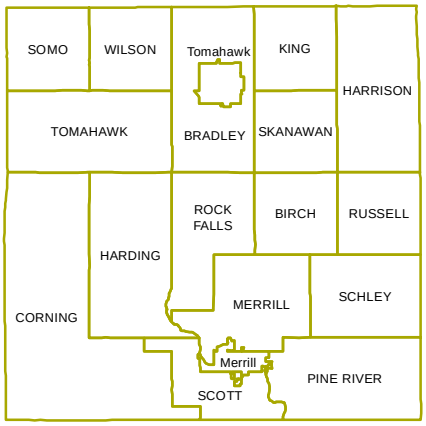
Recreational lands including parks and outdoor sports facilities total about 5,721 acres or about 1 percent of the County area. Other lands may have recreational aspects, particularly woodlands. Governmental, public and institutional lands total about 0.5% of the County area. Rural open lands cover about 24,478 acres or 4.2% of County area. These include grasslands, scrub and other barren lands.

Map 4

Floodplains & Watersheds Map

Lincoln County, Wisconsin





Watershed Boundaries

Minor Civil Divisions

Water

FLD_ZONE

DFirm Floodplain

N
W E
S

0 1.25 2.5 5 7.5 Miles

Source: NCWRPC, WI DNR, FEMA

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FUTURE GROWTH AND DEVELOPMENT IN LINCOLN COUNTY

Natural features, including the Wisconsin River, and the region's major transportation corridors, particularly U.S. 51, have largely dictated the County's land use pattern. . The County's adopted Comprehensive plan predicts this will continue to be the case.

Lincoln County's population has increased 4% over the last nine years. By 2027, Lincoln County will have grown to a population of about 33,196, a gain of 3,555 residents from the 2000 Census, if the growth rate continues at the current level. This equates to a need for approximately 1,445 new housing units within the County. In light of the recent nation-wide economic downturn, this may be an overly optimistic projection, however, it is difficult to predict the long-term effect on overall growth and development in the County. The following discusses how these new housing units might be dispersed across the County and what other development will be brought along with it.

The northern two-thirds of the County is dominated by publicly and privately owned forest lands. The nature of these types of land use is that of a limiting effect on development. Development will still occur, as it almost always does. The land use types show us what kind of development we can reasonably expect. The Forest-Private, Forest-Private Managed, Woodland/Woodlots and Forest-Public dominate the landscape. Forest-Public uses are most prevalent in the Towns of Harding, Harrison, Somo, Tomahawk and Wilson. So growth will be slower here. Forest-Private Managed uses cover large portions of the Towns of Corning, Harding and King, and will see slow but steady growth over time.

Agricultural areas cover much of the southern portion of the County, throughout the Towns of Schley, Pine River and Russell, particularly along the Prairie River basin. Several Christmas tree farms are interspersed with general agricultural uses in the Town of Pine River. Tree farms are also common in King, Skanawan and Wilson. As with the forestry based communities mentioned above, the agri-forestry nature of these towns indicate a slow growth dispersed widely across the landscape over time. Commercial developments will be very minimal, and typically of a home-based business variety. New infrastructure or public facilities will be very minimal, if any.

The central part of the County contains large areas of recreational land. Public recreation uses like Council Grounds State Park, Newwood Wildlife Area, Menard Island Resource Area and Underdown Recreation Area, can be found in The Towns of Birch and Merrill. Private recreational uses

like golf courses, racetracks and campgrounds, are located in the Towns of Bradley, Rock Falls, Merrill and Scott. These recreational amenities along with easy access to the U.S. 51 freeway make these areas somewhat more attractive for residential developments; however, development is still expected to be primarily dispersed, low-density. Commercial developments will again be very minimal, as well as, new infrastructure or public facilities.

There are two basic exceptions to the development pattern described thus far: the Cities of Merrill and Tomahawk and the County's waterfront areas. Within the central recreation area lie the two cities of Merrill (south central) and Tomahawk (north central). It is in and around these cities where the most significant concentrated new residential development will occur. Sizeable new subdivisions are already been platted. These areas in and around the cities contain the most intensive land uses in the County including a mixture of residential, commercial and industrial. More substantial infrastructure is also anticipated in association with this other development. New roads, sewer and water lines are the most common infrastructure to expand with new development adjacent to the cities.

New public facilities include Lincoln County's administration / service center building on the east side of Merrill. The Town of Pine River opened a new fire station which was constructed in 2006 as an expansion of the town hall. The Town of Birch built a new town hall and the Town of Scott built and addition to its existing town hall. A new hospital facility has been built in Tomahawk. Future public facilities being planned include new fire stations in Corning and Tomahawk, new town hall in Schley, and a town hall addition in Somo. No other significant public/infrastructure related buildings are currently anticipated.

Waterfront residential development is most prominent in the Towns of Bradley, Harding, Harrison, King, Merrill and Wilson. Waterfront areas in these municipalities will continue to see development pressure.

PUBLIC FACILITIES AND SERVICES

TRANSPORTATION

The transportation system of Lincoln County provides the basis for movement of goods and people into, out of, through, and within the County. An efficient transportation system is essential to the sound social and economic development of the County and the Region. The analysis of transportation routes should be considered in the possible event of a disaster (See Map 5).

Two major U.S. Highways, U.S.H. 8 and U.S.H. 51 serve Lincoln County. U.S. 8 runs an east-west arc through the extreme northern portion of the county, while U.S. 51 runs a north-south course through the center of the county. U.S. 51 is a four-lane facility and links the county to Interstate 39 at Wausau.

Four state highways access the county. Highways 64 and 86 run east-west paths. Highway 86 is in the northern half of the county through Tomahawk, while Highway 64 serves the southern half, running through the City of Merrill. Highway 107 moves north-south connecting Tomahawk and Merrill. Highway 17 cuts a northeasterly track through the southeast corner of the county. These highways link the county with neighboring communities and are vital to the county's tourism and recreation-based economy.

Networks of county trunk highways collect traffic from rural land uses. These county highways serve an important role in linking the area's agricultural and timber resources to the county's two cities and major highways. Local roads provide access to local development, farming and forest areas, as well as the county's lake areas.

The U.S./State and County highways in Lincoln County include approximately 109 bridges. The majority of the 19 state bridges are under/over passes along U.S. 51. The county system contains 90 bridges.

Lincoln County Commission on Aging coordinates transit services for the elderly and disabled in the county. A private operator is contracted to run six county buses/vans for rural Lincoln County and the City of Tomahawk, Monday through Friday between 6 & 9:30 and 2 & 5:30 or by special arrangement. In Merrill, the city's transit service provides this function as well as regular bus service and school routes with five medium buses between 7 & 5:30, Monday through Friday.

The Tomahawk Railway and the Canadian National (CN) Railroad serve Lincoln County. The Tomahawk Railway is a 6-mile rail line serving the mills and distribution center in the City of Tomahawk. The CN line runs through the center of the County and connects Merrill and Tomahawk to Wausau in the south and Ashland to the north. On average, four trains pass through Merrill and Tomahawk each day, two in each direction. The longer trains contain 75 to 100 cars and are typically hauling wood and paper products, pulp, coal, or steel products.

The Merrill Municipal Airport located north of the City of Merrill and the Tomahawk Municipal Airport located west of the City of Tomahawk serve

the area. Both airports provide general aviation service for private airplanes and daily airfreight. The Merrill Municipal Airport is a general utility airport, which is designed to accommodate aircraft of less than 12,500 pounds gross weight, with approach speeds below 121 knots and wingspans of less than 79 feet. The Tomahawk Municipal Airport is a basic utility-B airport, which is designed to accommodate aircraft of less than 12,500 pounds gross weight, with approach speeds below 121 knots and wingspans of less than 49 feet. There are private landing strips located in the Towns of Schley, Russell, Rock Falls, and Corning. The nearest commercial passenger service is located in Rhinelander or Wausau.

UTILITIES

Utility systems are important in hazard mitigation planning because of the dependency on water, wastewater treatment, gas service, electricity, and communications. Because of this reliance and vulnerability to hazards, utility systems must be identified for this Plan, see Map 6

The protection of the public water supply facilities from potential contamination from hazards such as flooding is a consideration for hazard mitigation planning. The City of Merrill and Tomahawk provide municipal water supplies for domestic and commercial use, while the Lincoln Hills School provides water for their students.

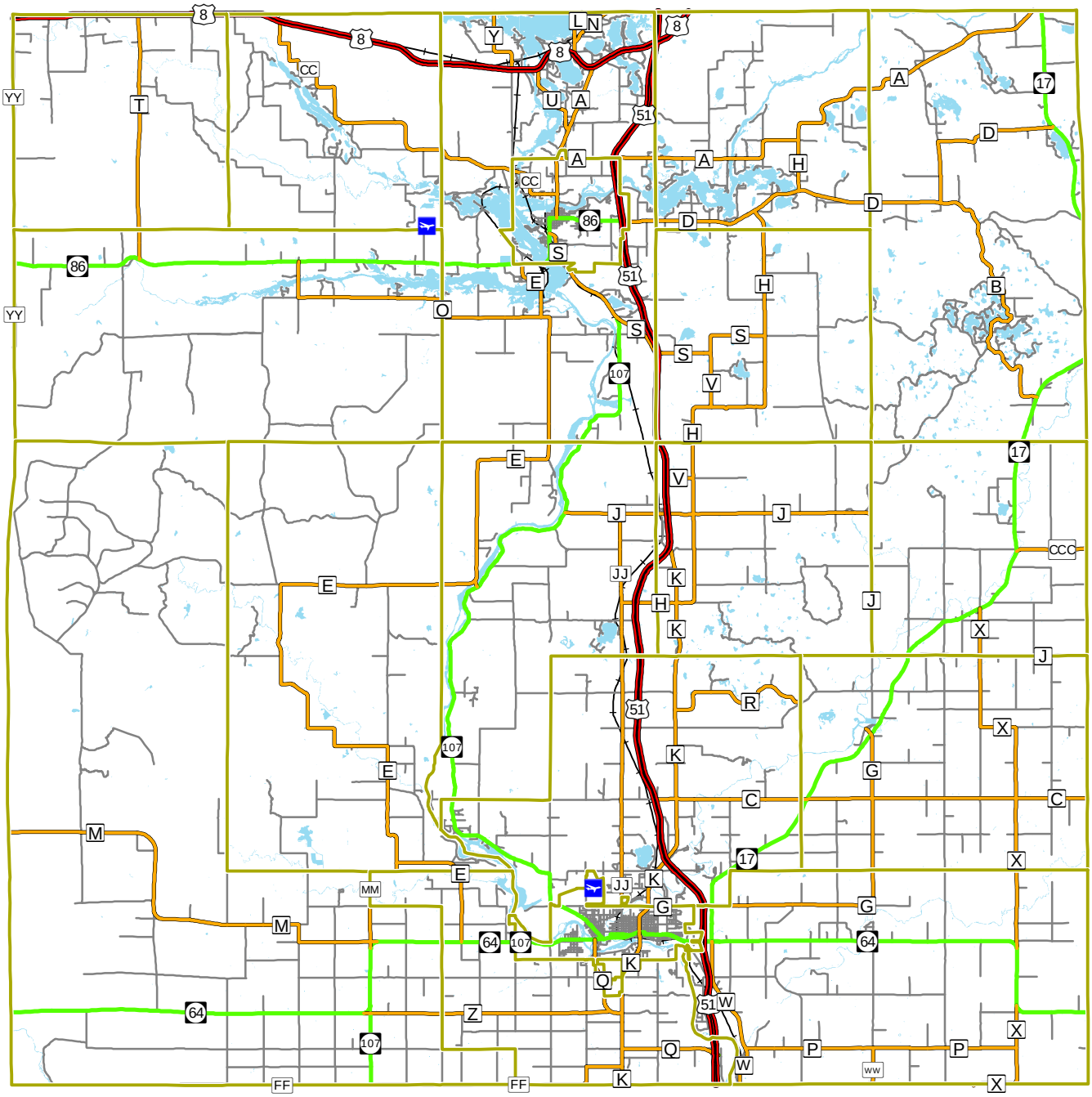
The protection of the wastewater facilities is an important consideration for hazard mitigation planning because of its potential to contaminate nearby waterbodies in the event of high water. Also of concern during periods of flooding is the threat of damage to infrastructure of associated facilities. Three municipal wastewater treatment facilities serve Lincoln County. The Cities of Merrill and Tomahawk, along with the Gleason area in the Town of Russell are provided with service.

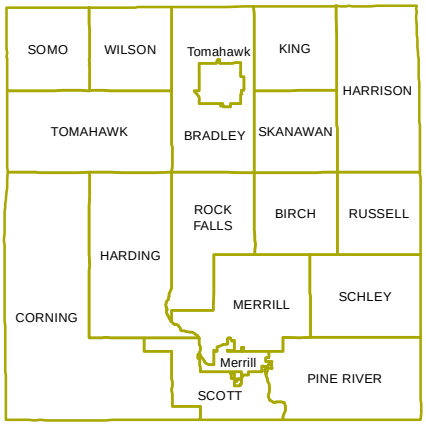
The infrastructure of electric and telephone lines should be considered in the events of high wind, ice storms, tornadoes, flooding, and fire. Wisconsin Public Service provides Lincoln County with electric service throughout the County. As of 2001, an independent company, American Transmission Company LLC (ATC), owns, maintains, and operates the major transmission facilities located in the State of Wisconsin, including Lincoln County. The general locations of the major electrical transmission facilities, owned by ATC are shown on Map 6. Frontier is the primary provider of telephone service in the County.

Map 5

Transportation Map

Lincoln County, Wisconsin





- Airport
- Minor Civil Divisions
- US Highway
- State Highways
- County Highways
- Local Roads
- Railroad
- Water

N W E S

0 1.25 2.5 5 7.5 Miles

Source: NCWRPC & WI DNR

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Nationwide, cellular radiotelephone systems account for about half of all 911 calls. Service coverage is based upon the handset receiving a direct line-of-sight signal from a system provider's antenna on a tower. See Map 6 for tower locations within the County. Limitations for receiving a signal include topography and the thickness & type of building materials. Signals generally cannot travel well in dense forest cover, over tall hills, or through thick or multiple cement walls. There are remote areas of the County where there are gaps in cellular coverage or service is spotty.

The ANR pipeline is the main source of natural gas in the County. A segment of the pipeline traverses the County north-south between Merrill and Tomahawk. A spur line to serve the City of Antigo in Langlade County branches off the main north-south line near the Marathon County line and lies just inside Lincoln County.

EMERGENCY SERVICES AND FACILITIES

The type and location of public emergency services are an important consideration in hazard mitigation planning, because of the potential direct involvement of such facilities in certain hazard situations.

There are six fire service providers that serve the local units of governments in Lincoln County. The Cities of Merrill and Tomahawk, and Towns of Russell, Corning, and Pine River offer fire services to the areas and one department, Crescent, lies outside the County. The Merrill Fire Department is the only one that provides full-time service, while the remainder of the departments relies on volunteers for this service. The location of each fire service area is shown on Map 7.

There are three EMS and three First Responder providers to the County. Merrill EMS provides service to the southern half of Lincoln County, which includes 10 municipalities. Tomahawk EMS provides service to the northern half of Lincoln County, which includes 9 municipalities. Oneida County EMS provides service to the northeastern portion of the Town of Harrison. Tripoli First Responders provide service to the Towns of Somo and Wilson. Russell First Responders provide service to the Towns of Harrison, Russell, Birch, and Schley. Pine River First Responders serve the Town of Pine River. Map 8 shows the locations of EMS service areas.

The Lincoln County Sheriff's Office provides service to all the towns and the cities for law enforcement. The County has twenty-seven sworn officers, twenty-one jail employees, and thirteen other employees. The Cities of Merrill and Tomahawk also have their own police departments. The locations of police service areas are on Map 9. The main correctional

facilities within the County include the Lincoln County Jail in Merrill and Lincoln Hills School, a state facility for troubled youth, near Irma.

To coordinate these services, Lincoln County has created an *Emergency Operations Plan (EOP).* This provides a general overview for county and municipal emergency response personnel during response to a number of disasters. This document serves to coordinate the County and local units of government during times of response and recovery. It also provides a link between the County and municipal plans.

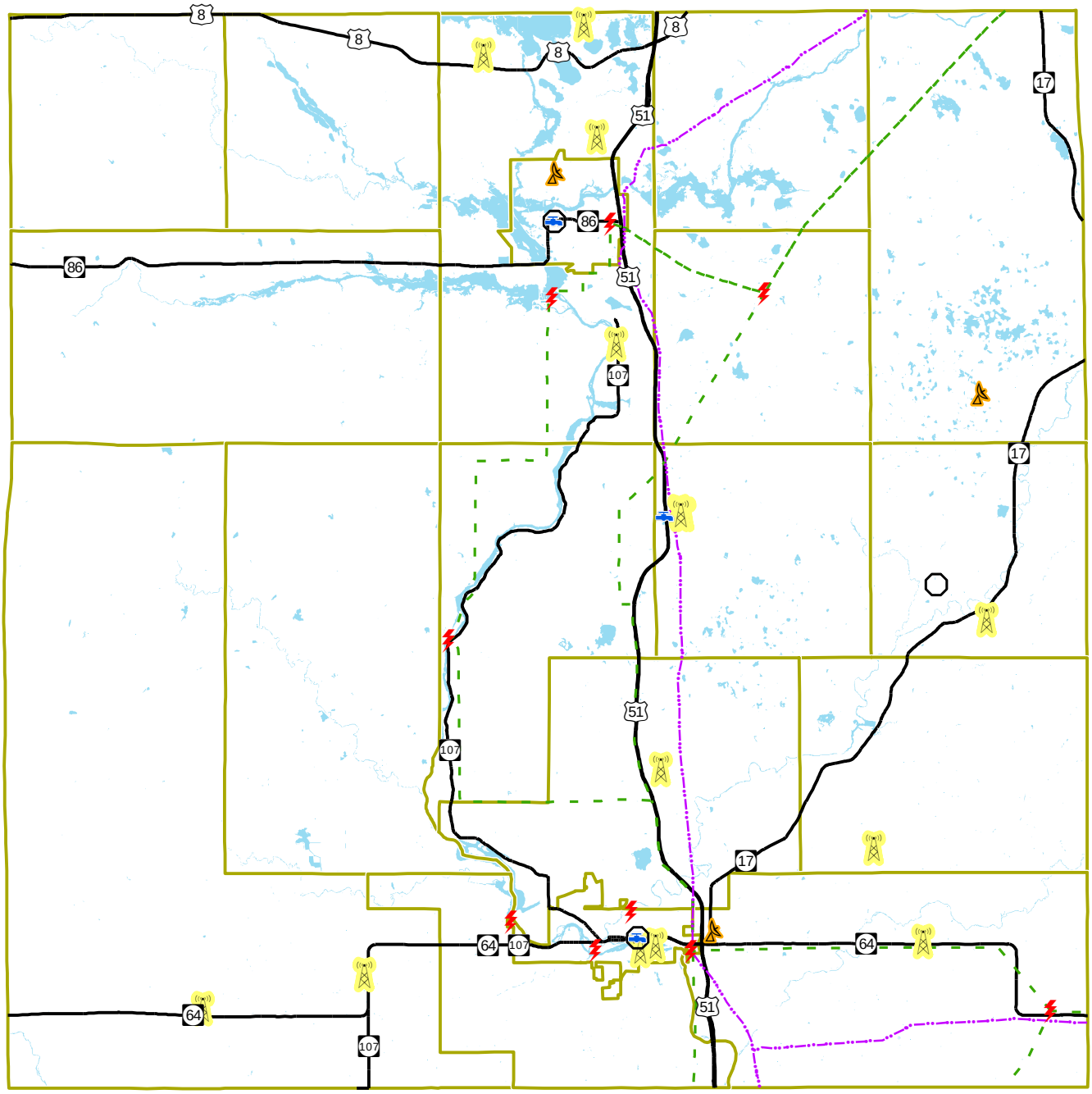
CRITICAL COMMUNITY FACILITIES

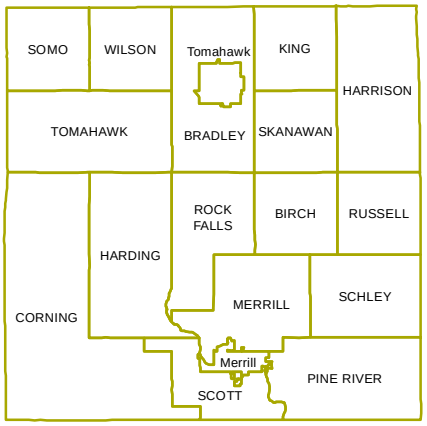
In addition to emergency service facilities, other community facilities are also important in hazard mitigation planning. Government administration buildings serve as the headquarters that link to resources in helping solve potential problems. Hospitals are very important for knowing where injured residents have to be transported and as to how many people each hospital can handle if a hazard would breakout. The County has hospitals in Merrill and Tomahawk. Nursing homes are vulnerable, because of the high level of assistance with the residents that live there. The schools are another facility that are important, since hundreds of the county's children are there for most of the year. Map 10 shows the location of selected types of critical community facilities within Lincoln County.

Map 6

Utilities Map

Lincoln County, Wisconsin





- Minor Civil Divisions
- US Highways; State Highways
- Public Water Supply
- Waste Water Treatment Plant
- AM / FM Towers
- Communication Towers
- Substations
- High Voltage Powerline
- Pipeline
- Water

N W E S

0 1.25 2.5 5 7.5 Miles

Source: NCWRPC & WI DNR

This map is neither a legally recorded map nor a survey and is not intended to be used as one. This drawing is a compilation of records, information and data used for reference purposes only. NCWRPC is not responsible for any inaccuracies herein contained.

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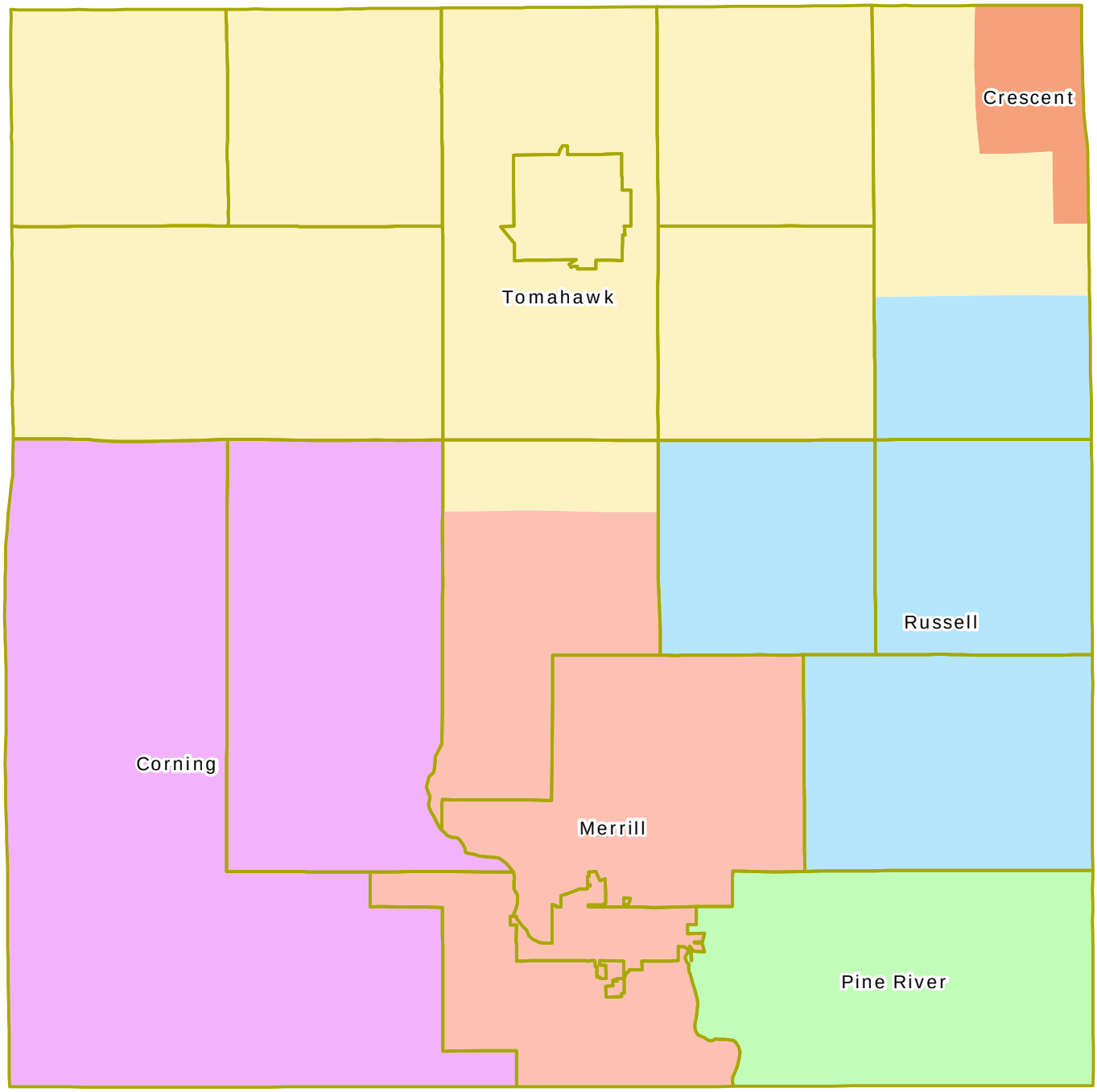
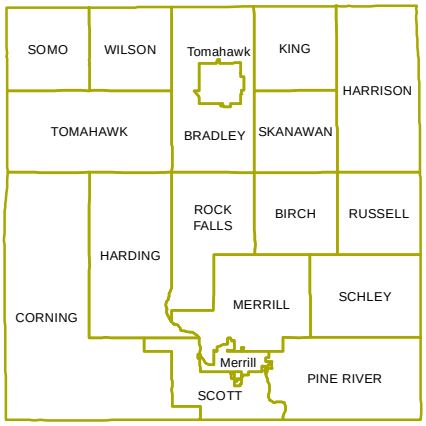
Map 7

Fire Service Map

Lincoln County, Wisconsin





Minor Civil Divisions

Fire Service Areas

- Corning
- Crescent
- Merrill
- Pine River
- Russell
- Tomahawk

N W E S

0 1.25 2.5 5 7.5 Miles

Source: NCWRPC & WI DNR

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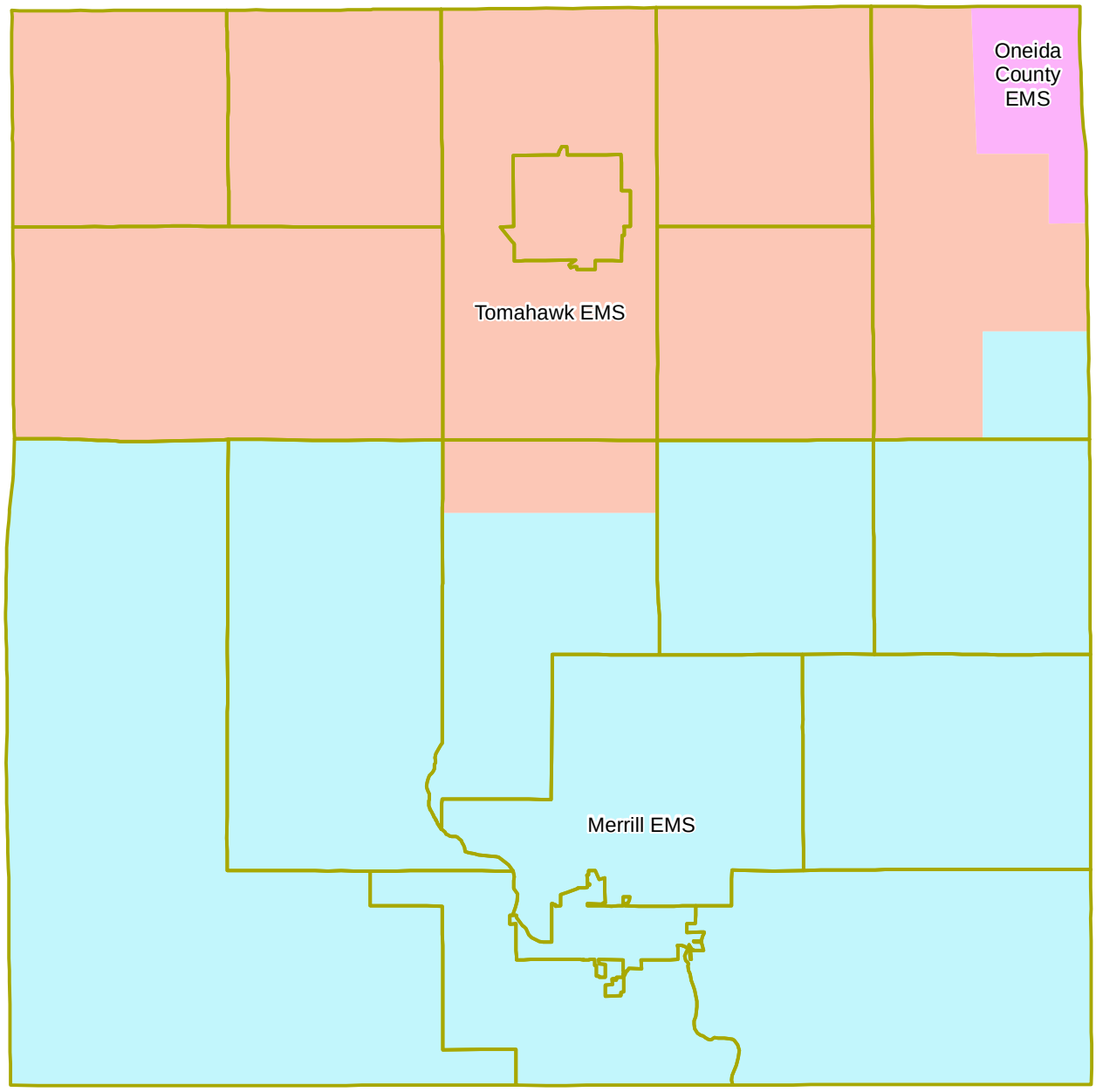
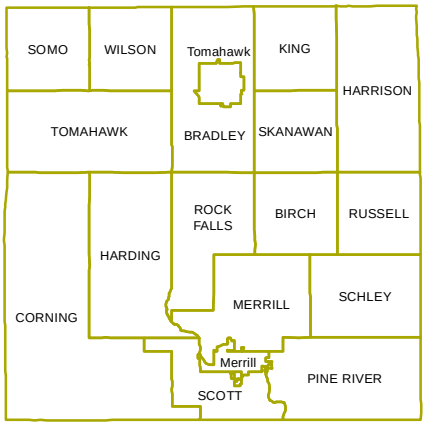
Map 8

EMS Service Map

Lincoln County, Wisconsin





Minor Civil Divisions

EMS Service Areas

- Merrill EMS
- Oneida County EMS
- Tomahawk EMS

N
W E
S

0 1.5 3 6 9 Miles

Source: NCWRPC & WI DNR

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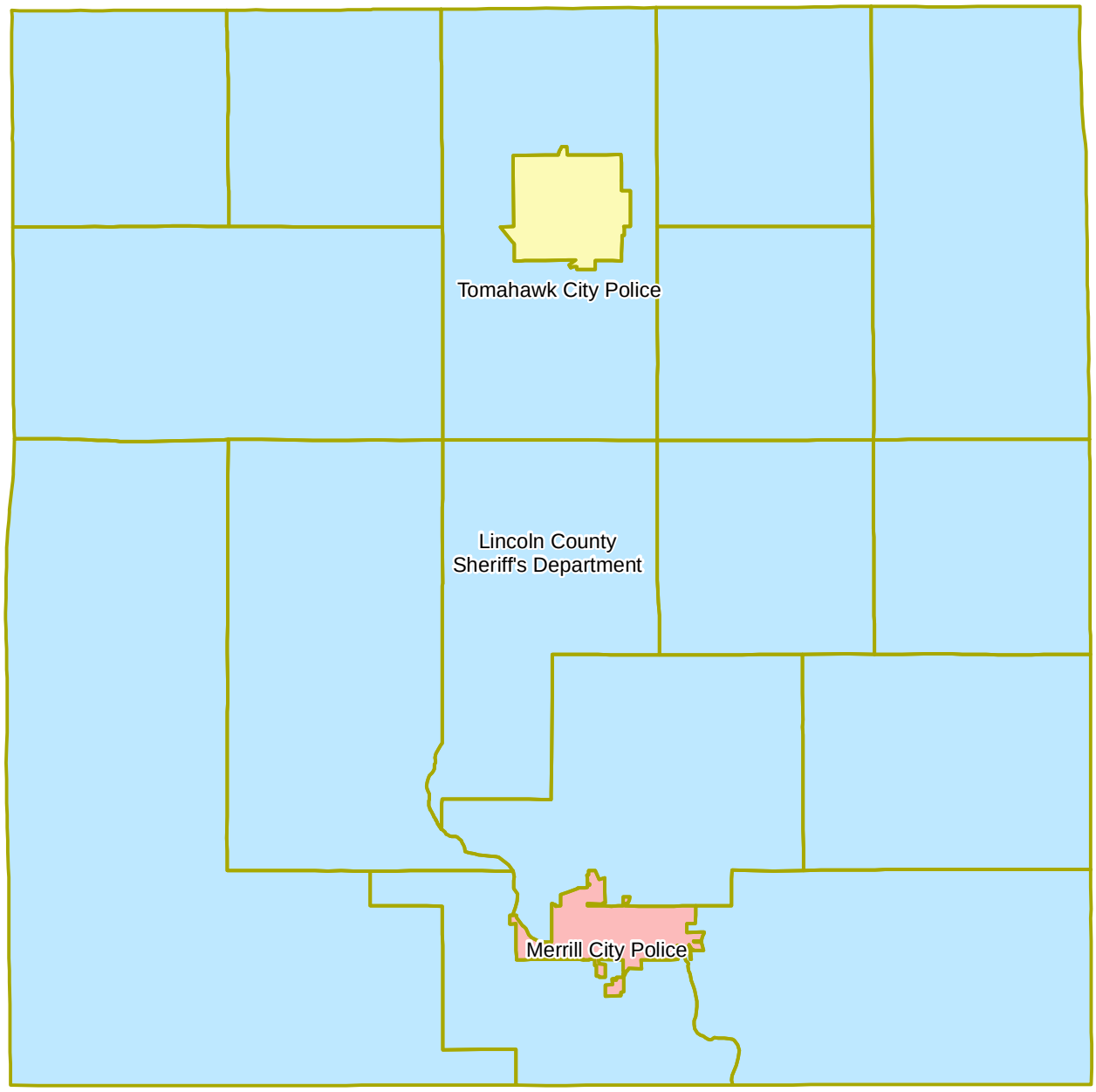
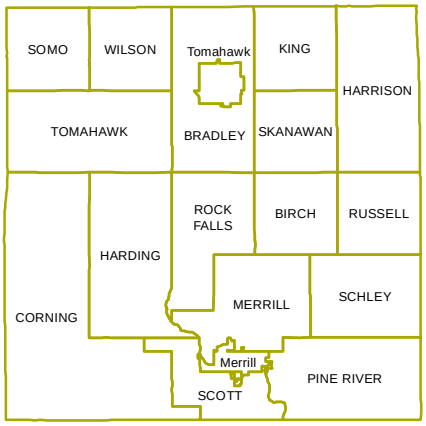
Map 9

Police Service Map

Lincoln County, Wisconsin





Minor Civil Divisions

Police Service Areas

- Lincoln County Sheriff's Department
- Merrill City Police
- Tomahawk City Police

N
W E
S

0 1.5 3 6 9 Miles

Source: NCWRPC & WI DNR

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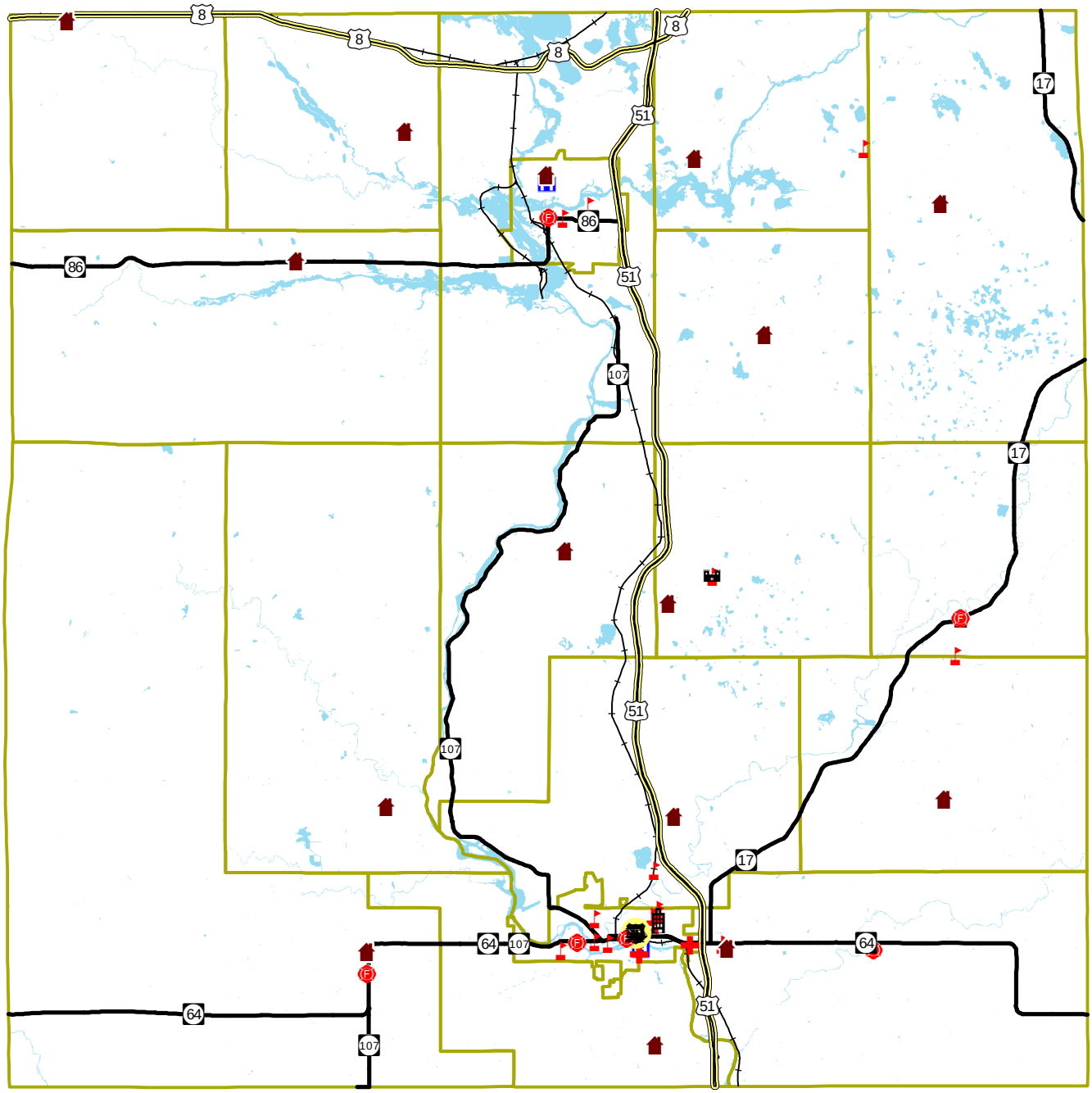
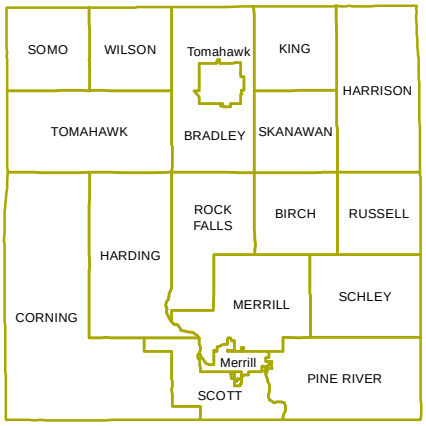
Map 10

Critical Facilities Map

Lincoln County, Wisconsin





Minor Civil Divisions
US Highway
State Highways
Railroad
Water
City Hall
Correctional Facility
Court House
Fire Station
Health Services
Hospital
County Land Service Center
Police Department
School
Sheriff Department
Town Hall

N
W
E
S

0 1.5 3 6 9 Miles

Source: NCWRPC & WI DNR

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INVENTORY & VALUE OF STRUCTURES/PROPERTY IN LINCOLN COUNTY

The value of the real estate and personal property in a community reflects the upper end of the potential for property damages in each community. The annual equalized value of each municipality represents the Department of Revenue estimate of market value (Agricultural land is included at Use Value) of all taxable property. Property tax levies of jurisdictions are apportioned to each municipality on the basis of equalized value. Table 7 lists each municipality's total equalized values for real estate, personal property, and all property and the percent each municipality represents of the county total.

Table 7 Equalized Value by Municipality

Municipality	Real Estate	Personal Property	Total	% of Total
Birch town	$36,330,800	$325,600	$36,659,400	1.5%
Bradley town	$455,829,100	$9,057,300	$464,886,400	19.5%
Corning town	$69,552,800	$1,771,400	$71,324,200	3.0%
Harding town	$44,576,200	$5,900	$44,582,100	1.9%
Harrison town	$166,194,500	$722,500	$166,917,000	7.0%
King town	$175,022,200	$611,200	$175,633,400	7.4%
Merrill town	$177,951,300	$1,035,300	$178,986,600	7.5%
Pine River town	$131,892,200	$777,400	$132,669,600	5.6%
Rock Falls town	$79,062,700	$990,800	$80,053,500	3.4%
Russell town	$42,663,800	$591,800	$43,255,600	1.8%
Schley town	$63,643,800	$465,400	$64,109,200	2.7%
Scott town	$98,478,000	$955,700	$99,433,700	4.2%
Skanawan town	$53,142,000	$637,400	$53,779,400	2.3%
Somo town	$19,205,500	$19,300	$19,224,800	0.8%
Tomahawk town	$70,629,800	$645,000	$71,274,800	3.0%
Wilson town	$63,330,300	$1,324,700	$64,655,000	2.7%
Tomahawk city	$212,938,300	$9,281,600	$222,219,600	9.3%
Merrill city	$374,896,600	$16,038,800	$390,935,400	16.4%
Lincoln County	$2,335,339,000	$45,257,100	$2,380,597,000	100.0%

Source: WI Department of Revenue

As stated above, the valuation of property in a community reflects the potential for property damages across the community. However, only taxable properties are included in this valuation. Tax exempt government properties are not included. With Lincoln County owning many critical facilities that are needed in times of disaster, the potential for damages to these structures could be devastating for the county. In Table 8a, the county owned critical facilities are listed with the general location they are in and the value of the facilities. Estimates for local government facilities are given in Table 8b - d.

Table 8a Value of County Owned Properties

Name	Value*	Location
Lincoln Industries	$1,223,616	Tomahawk City
Pine Crest Nursing Home	$15,735,085	Merrill City
Main Highway Dept.	$4,803,406	Merrill City
Highway Sign Shop	$879,092	Merrill City
Highway Dept. Shop	$1,175,181	Tomahawk City
Highway, other	$618,386	various locations
Sheriff/Safety Building	$26,906,958	Merrill City
Service Center	$6,606,312	Merrill City
Fairgrounds	$1,512,563	Merrill City
Health/Human Services	$4,678,709	Merrill City
Group Homes - various	$2,087,584	Merrill/Tomahawk
Disabilities Center	$1,355,748	Merrill City
Courthouse	$6,749,654	Merrill City
Humane Society	$200,100	Merrill City
Solid Waste	$1,306,805	Merrill City
Outdoor Recreation	$267,138	Various Locations
Mill Street	$21,591	Merrill City
Forestry	$60,335	Harrison Town
Forestry Shop	$1,614,619	Birch Town
Total	$77,802,880	

*=Includes insured buildings, contents, and property in the open.
Source: Statement of Values State of Wisconsin Local Government Property Insurance Fund.

Table 8b Value of City Owned Properties Merrill	
Property	**Value***
Airport	$1,687,760
City Hall/Police	$8,707,336
Fire Station 1	$2,682,744
Fire Station 2	$798,207
City Garage	$2,418,489
Library	$8,915,618
Wastewater Plant	$15,766,737
Weinbrenner Factory	$9,376,294
Warehouse	$696,423
Pump Houses (5)	$580,669
Lift Stations (2)	$197,859
MARC	$3,352,884
Other Parks and Rec.	$2,262,544
Misc Other	$2,870,372
Total	$60,313,936

**includes insured building contents and property in the open.*
Source: Local Gov't Property Insurance Statement of Values

Table 8c Value of City Owned Properties Tomahawk	
Property	**Value***
Airport	$575,387
City Hall	$1,571,621
Fire Station	$1,056,758
Harley North	$1,125,359
City Garage	$1,437,971
Library	$3,651,723
Wastewater Plant	$4,134,162
Senior Center	$298,563
Historical Society	$286,942
Museum/Square	$95,348
Waterworks	$2,340,491
Lift Stations (4)	$505,135
Kwahamot Ski Area	$350,840
Other Parks and Rec.	$3,424,480
Misc Other	$2,980,450
Total	$23,835,230

**includes insured building contents and property in the open.*
Source: Local Gov't Property Insurance Statement of Values

Table 8d:	Value of Town Owned Properties	
Municipality	**Property**	**Value***
Birch town	Town Hall	$100,000
Bradley town	Town Hall/Community Center	$415,000
	Other Buildings	$282,000
	Other Property	$152,000
Corning town	Town Hall	$100,000
	Fire Station	$200,000
Harding town	Town Hall	$110,000
	Storage Garage	$14,000
	Outhouse	$8,000
Harrison town	Town Hall	$100,000
King town	Town Hall	$100,000
Merrill town	Variety of properties	$275,000
Pine River town	Town Hall/Fire Station/Misc.	$1,580,241
Rock Falls town	Town Hall	$100,000
Russell town	Town Hall/Fire Station	$287,000
Schley town	Town Hall	$100,000
Scott town	Town Hall	$100,000
Skanawan town	Town Hall	$100,000
Somo town	Town Hall	$100,000
Tomahawk town	Town Hall	$100,000
Wilson town	Town Hall	$90,000
	Storage Building	$10,000
	Storage Building	$11,000
	Storage Building	$5,000

*=Includes insured buildings, contents, and property in the open

Source: Local Government Property Insurance Declarations and NCWRPC Estimates.

INTRODUCTION

Analyzing the hazards facing a community is an important and vital step in the mitigation planning process. Before mitigation strategies can be determined, a risk assessment must be made. Part III of this Lincoln County All-Hazards Mitigation Plan will focus on the following:

- Identification of all types of natural hazards that can affect Lincoln County
- An analysis of the hazards identified as pertinent to Lincoln County

The hazard analysis will consist of:

- Background information
- History of previous occurrences of hazard events
- An analysis of the County's vulnerability to future events
- An estimate of future probability and potential losses from the hazard

HAZARD IDENTIFICATION

The process of identifying those hazards that should be specifically addressed in the Lincoln County All Hazards Mitigation Plan was based on consideration of a number of factors. The process included a review of past hazard events to determine the probability of future occurrences and threat to human safety and property damage.

Worksheets from the Wisconsin Guide to All-Hazards Mitigation Planning were used by the Planning Taskforce to evaluate and rank the listing of possible hazards to help identify which hazards should be included in the Plan according to threat to human safety and possible damage to property.

After review of the hazard scoring exercise, the Committee decided to move flooding ahead of thunderstorms in priority because flooding is a serious recurring problem and the dams in the County are getting older and becoming more of a concern. Fog was moved down (and off) the list because there is little that can be done in terms of mitigation for fog even though it is a common problem in the County. Insect infestation and livestock disease did not make the cut, scoring too low to warrant further consideration by the Committee.

The top 13 hazards were selected and grouped by the Mitigation Planning Committee as follows, in priority order:

1. Tornado
2. Winter Storms/Extreme Cold
3. Flooding/Dam Failure
4. Thunderstorm/High Wind/Lightning/Hail
5. Drought/Extreme Heat
6. Forest/Wild Fires

This plan focuses on natural hazards that have or could cause disasters that can be mitigated on a local level. Technological or manmade hazards include things like transportation incidents, hazardous material incidents, civil disturbances, mass casualty events, war, and terrorism. Lincoln County already has action plans for these types of events, so they are not included in this planning process. Low magnitude earthquakes occur in Wisconsin every few years, but none have exceeded a magnitude of 3.9, which would have vibrations similar to the passing of a semi-truck, therefore, earthquakes are not covered in this plan. Lincoln County does not have avalanche, coastal hazard, hurricane, tsunami or volcano issues and conditions for landslide, subsidence or expansive soil problems are not significant in the County.

HAZARD ANALYSIS

The hazard analysis for each hazard included in this plan is broken down into four components, as follows:

1. Background on Hazard - The next step after identifying a hazard is to define the hazard and give some general background behind it. This can include occurrence of hazard within the County or State. This section may also give some indication of the risk to public health and safety and to personal and public property.

2. History of Hazards - Past experiences of disasters is an indication of the potential for future disasters for which Lincoln County would be vulnerable. A review of past occurrences for each identified hazard in Lincoln County was completed.

Some disasters have had damages that exceeded the capabilities of local communities and state agencies. Federal assistance is then requested. Federal assistance may be offered through a variety of programs. Assistance may be directed to agricultural producers, individuals and families, businesses, or local governments. There have been seven natural disasters in Lincoln County, where a Presidential Declaration was requested from 1971-2010. They include the following:

- 1971 Flooding
- 1973 Flooding – Presidential Disaster Declaration
- 1975 Army Worm Infestation
- 1976 Drought – Presidential Disaster Declaration
- 1977 High Winds/Hail – Presidential Disaster Declaration
- 1993 Flooding – Presidential Disaster Declaration
- 2002 Severe Storms/Flooding/Tornado – Presidential Disaster Declaration

It should be noted that this significantly underestimates the number of hazards that have occurred in Lincoln County. Almost every year there are significant weather events or disasters that cause millions of dollars in damage for which no Federal disaster assistance is requested. Major indicators of hazard severity are the deaths, injuries, and economic losses resulting from natural hazards and disasters.

The National Oceanic and Atmospheric Administration (NOAA) and National Climatic Data Center (NCDC) publish the National Weather Service (NWS) data describing recorded weather events and resulting deaths, injuries, and damages. From May 3, 1955 to December 31, 2010, NCDC reported 306 weather events for Lincoln County.

Note that since the NCDC data is somewhat incomplete, this report focuses on the 20-year period from 1991 through 2010 (279 events). Other sources of data are used to supplement the NCDC data. These sources included other plans, reports, documents from Lincoln County Emergency Management, past local newspaper articles, the Wisconsin Department of Natural Resources, Wisconsin Emergency Management (WEM), and the National Weather Service.

3. Vulnerability Assessment For Hazards - For each hazard identified, a summary of the impact that may be caused to the community is given. When possible, existing buildings, infrastructures, and critical facilities located in the hazard areas are identified. Critical facilities are community buildings that are especially important to the health and welfare of the population following hazard events. Examples of such facilities include hospitals, police & fire stations, town halls, and shelters.

Because this is a multi-jurisdictional plan, FEMA requires that the plan assess each jurisdiction's risks where they vary from the risks facing the entire planning area. This section of the plan will identify variations in vulnerability for specific municipalities where they occur.

4. Future Probability and Potential Dollar Losses for Hazard - The historic data and vulnerability assessment for each hazard is used to project the potential future probability of that hazard occurring in the county and the potential damages in dollars that might be reasonably expected. This section sets the benchmark to mitigate for each hazard.

HAZARD ANALYSIS: TORNADOS

Background on Tornado Hazard:
A tornado is a relatively short-lived storm composed of an intense rotating column of air, extending from a thunderstorm cloud system. It is nearly always visible as a funnel, although its lower end does not necessarily touch the ground. Average winds in a tornado, although never accurately measured, are between 100 and 200 miles per hour, but some tornados may have winds in excess of 300 miles per hour.

Table 9
Tornado Wind and Damage Scale

Tornado Scale	Wind Speeds	Damage
EF0	65 to 85 MPH	Some damage to chimneys, TV antennas, roof shingles, trees, and windows.
EF1	86 to 110 MPH	Automobiles overturned, carports destroyed, trees uprooted
EF2	111 to 135 MPH	Roofs blown off homes, sheds and outbuildings demolished, mobile homes overturned.
EF3	136 to 165 MPH	Exterior walls and roofs blown off homes. Metal buildings collapsed or are severely damaged. Forests and farmland flattened.
EF4	166 to 200 MPH	Few walls, if any, standing in well-built homes. Large steel and concrete missiles thrown far distances.
EF5	OVER 200 MPH	Homes leveled with all debris removed. Schools, motels, and other larger structures have considerable damage with exterior walls and roofs gone. Top stories demolished

Source: National Weather Service

A tornado path averages four miles, but may reach up to 300 miles in length. Widths average 300 to 400 yards, but severe tornados have cut swaths a mile or more in width, or have formed groups of two or three funnels traveling together. On average, tornados move between 25 and 45 miles per hour, but speeds over land of up to 70 miles per hour have been recorded. Tornados rarely last more than a few minutes in one location or 15 to 20 minutes in a ten-mile area.

Tornados are classified into six intensity categories, EF0-EF5, see Table 9. This scale is an updated or "enhanced" version of the Fujita Tornado Scale (or "F Scale"). The scale estimates wind speeds within tornados based upon the damage done to buildings and structures. It is used by the National Weather Service in investigating tornados and by engineers in correlating building design standards against anticipated damage caused by different wind speeds.

Wisconsin lies along the northern edge of the nation's maximum frequency belt for tornados, known as "Tornado Alley". Tornado Alley extends northeast from Oklahoma into Iowa and then across to Michigan and Ohio. Winter, spring and fall tornados are more likely to occur in southern Wisconsin than in northern counties. Tornados have occurred in Wisconsin every month except February.

History of Tornados in Lincoln County:

The most recent tornado event occurred on April 10, 2011. Wind speeds reached 140 mph, placing the tornado in the EF3 category. A number of people were injured and total damages were cited around $11 million, however, it did not qualify for Federal disaster assistance. Several businesses in the Merrill Industrial Park were heavily damaged and numerous residences in the Town of Merrill were destroyed. Costs for debris removal, law enforcement and road repairs was approximately $450,000 and will be partly covered by the Wisconsin Disaster Fund.

In addition to the 2011 event, Lincoln County has had 21 verified tornados from 1955 to 2010, with 14 since 1991 (Table 10). In addition, there have been five reported funnel clouds since 1995 which are not included in these statistics. The most recent funnel cloud report came on July 29, 2008 when a funnel cloud was spotted about 1 mile southeast of Merrill. Although there were no specific damage reports for Lincoln County, the thunderstorms responsible for the funnel cloud produced large hail, wind damage and three weak tornados in the area. Another interesting report came on April 11, 2010 when a "dust devil" was reported to have caused about $600 damage at a residence in Gilbert just south of Tomahawk.

On July 11, 2004. Clusters of thunderstorms moved across north-central Wisconsin during the late afternoon and early evening. A strong upper atmospheric disturbance enhanced rotation in the storms and several funnel

clouds developed in Lincoln and surrounding areas. Some of the funnels touched down as tornadoes, including a pair of tornadoes simultaneously west of the Tomahawk Airport. Two other tornadoes were spotted in Lincoln County; one near Irma and another west of Tomahawk.

A more severe event occurred on September 30, 2002, when a F2 tornado touched down for 3 miles uprooting and snapping off thousands of trees in its path. A house in the path also sustained major structural damage, all of the outbuildings on the property were demolished, and a camping trailer was crushed after being thrown 300 feet. A car was also thrown into a tree, resting 15 feet above the ground and two barns were also destroyed. The total estimated damage accounted for was roughly $75,000. The storms also knocked out power to around 3,000 customers in the Tomahawk area and about 600 customers in the Rhinelander and Crandon areas. This tornado, combined with other tornados, storm damage and flooding across 19 counties resulted in a disaster declaration

Table 10 Reported Tornados in Lincoln County

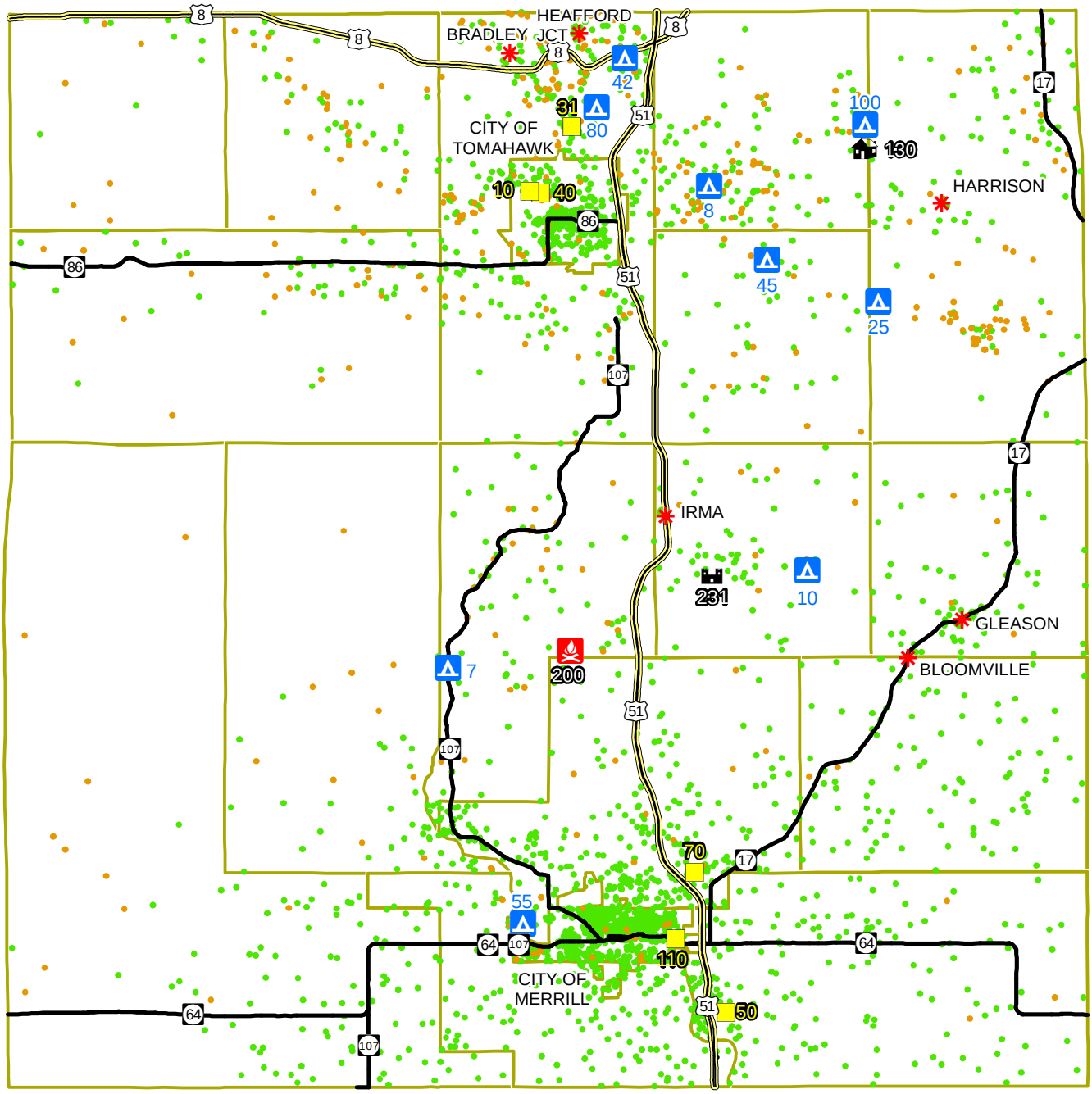
DATE	TIME	LOCATION	LENGTH (miles)	WIDTH (yards)	DEATHS	INJURIES	F-SCALE
4/10/2011	1800 CST	T. Merrill	22	?	0	3	F3
7/11/2004	1640 CST	T.Wilson	0.1	10	0	0	F0
7/11/2004	1613 CST	T.Wilson	0.1	10	0	0	F0
7/11/2004	1613 CST	T.Wilson	0.1	10	0	0	F0
7/11/2004	1545 CST	Irma	0.1	10	0	0	F0
9/30/2002	1830 CST	T. Tomahawk	3	250	0	0	F2
7/30/2002	1825 CST	T. Merrill	0.1	25	0	0	F0
7/30/2002	1808 CST	T. Merrill	9	200	0	0	F0
7/30/2002	1747 CST	T. Merrill	1	150	0	0	F0
4/18/2002	1549 CST	T. Bradley	0.1	25	0	0	F0
5/5/1999	1630 CST	T. Tomahawk	0.1	25	0	0	F0
3/29/1998	1928 CST	T. Tomahawk	5	75	0	0	F0
7/16/1997	1438 CST	T. Merrill	1	100	0	0	F2
7/18/1996	1620 CST	T. Tomahawk	3	100	0	0	F1
6/14/1991	1155 CDT	T. Harding	1	50	0	0	F1
6/16/1979	1540 CST	T. Skanawan	N/A	N/A	0	0	F1
6/16/1979	1530 CST	T. Skanawan	N/A	N/A	0	0	F1
6/13/1976	2045 CST	T. Pine River	6	50	0	0	F1
7/24/1962	1700 CST	T. Corning	1	50	0	0	F2
9/3/1961	1700 CST	T. Corning	1	33	0	0	F1
6/30/1958	1730 CST	T. Russell	2	50	0	0	F2
5/3/1955	1800 CST	T. Rock Falls	7	33	0	2	F1

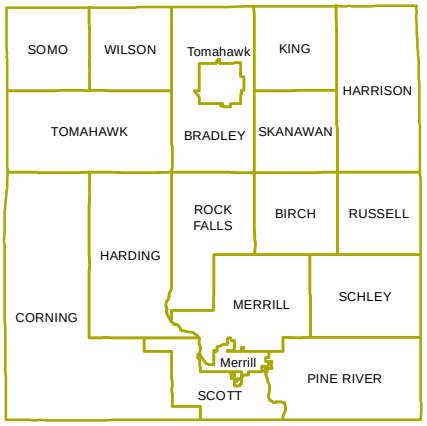
Source: National Climatic Data Center

Map 11

Tornado Vulnerability

Lincoln County, Wisconsin





Minor Civil Divisions
US Highway
State Highways
Mobile Home Parks
Communities
Campgrounds
Treehaven - UW Stevens Point
Lincoln Hills School
Birch Trail Girl Scout Camp
Seasonal Housing Unit Pattern
Resident Population Pattern

N W E S

0 1.25 2.5 5 7.5 Miles

Source: NCWRPC, WI DNR, FEMA

This map is neither a legally recorded map nor a survey and is not intended to be used as one. This drawing is a compilation of records, information and data used for reference purposes only. NCWRPC is not responsible for any inaccuracies herein contained.

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On July 30, 2002, two months before the F2 tornado, three of four confirmed F0 tornados touched down in Lincoln County and the other touched down in Marathon County. The damage from these three tornados totaled $105,000 destroying a barn and an outbuilding, tearing roofs off numerous buildings, and moving others off of their foundations. The tornados also demolished a mobile home and snapped many trees and tree limbs.

Out of the 22 tornados in Lincoln County, none claimed a life and the May 3, 1955 tornado was the only one in addition to 2011 to have noted injuries, however several others have caused significant damages. The July 16, 1997, F2 tornado touched down in the Town of Pine River and damaged several homes, vehicles, and silos, and it destroyed several barns, sheds, and crops.

Tornado Vulnerability Assessment:
Though Lincoln County is mostly a rural county, there are concentrations of population scattered throughout the County. Subdivisions, rural unincorporated communities, and the cities of Merrill and Tomahawk can be regarded as more vulnerable because tornados pose more of a threat to human safety and property damage in more concentrated areas, see Map 11.

Mobile homes are of significant concern in assessing the hazard risks from tornados, since they comprise about 10 percent of Lincoln County's housing units. In general, it is much easier for a tornado to damage and destroy a mobile home than a standard site-built home. Research by the NWS shows that between 1985 and 1998, 40 percent of all deaths in the nation from tornados were in mobile homes, compared to 29 percent in permanent homes, and 11 percent in vehicles.

While mobile homes are scattered throughout the County, many are concentrated in mobile home parks. Lincoln County has approximately 6 mobile home parks, see Map 11 for locations. Within these park sites, there are approximately 302 individual sites. The largest is located in the City of Merrill with about 110 sites. The second largest is just north of the City in the Town of Merrill with about 70 sites. The total number of mobile homes reported in the 2000 Census reported for Lincoln County was 1,407.

Besides mobile homes, campground patrons are vulnerable to tornados because there usually is little shelter provided. Treehaven is the University of Wisconsin – Stevens Point field station where summer environmental classes are taught, and about 130 students and staff reside from May – August. Lincoln Hills School is a Type 1 Secured Juvenile Correctional Facility, where an average daily budgeted population of 345 are housed. Tornado shelters are provided onsite at both Treehaven and Lincoln Hills School.

The following is a list of things that may be affected by a tornado. Much of this list can be referenced in Part II.

- Community facilities – hospitals, schools
- Public Service – police and fire departments
- Utilities – power lines, telephone lines, radio communication
- Transportation – debris clean-up
- Residential – nursing homes, garages, trees and limbs, siding, & windows
- Businesses – signs, windows, siding, & billboards
- Agricultural – buildings, crops, & livestock

Based on review of the historic events of tornados, there are no specific areas in the county that have unusual risk of occurrence. The events are a countywide concern. General vulnerability by geographic area (local unit of government) is identified in Map 11.

Future Probability and Potential Dollar Losses – Tornados:
Based on the historic data presented here (frequency of past events - 1991 to 2010), Lincoln County can expect a tornado about once every 1.4 years on average. This equates to a probability of 0.70 or about a 70 percent chance in a given year. Table 11 indicates the probability of tornados of a specific magnitude. However, these probabilities are slightly skewed by multiple tornado events, 3 on July 30, 2002 and 4 on July 11, 2004. The County did not experience a tornado between 2004 and 2011.

Table 11
Probability of Intensity for any given Tornado in Lincoln County

Tornado Scale	F0	F1	F2	F3	F4	F5
Number of Reported Tornados*	10	2	2	0	0	0
Probability of Occurrence	71%	14%	14%	<1.0%	<1.0%	<1.0%

*Source: National Weather Service & NCWRPC – *Based on historical data from 1991 through 2010.*

Historic data is again used to estimate potential future dollar losses due to a tornado. Estimated damages resulting from various tornados in Lincoln County range from $0 to $11 million, including the 2011 event. On average, Lincoln County might expect damages of $572,818 per tornado, however, only one of the 21 historic tornados, in addition to the 2011 event, resulted in damages exceeding $500,000, four others had $250,000, and the rest were $100,000 or less. Over the next ten-year period, tornado losses in Lincoln County could approach $4,100,000.

HAZARD ANALYSIS: WINTER STORMS / EXTREME COLD

Background on Winter Storms/Extreme Cold Hazard:
A variety of weather phenomena and conditions can occur during winter storms. For clarification, the following are National Weather Service approved descriptions of winter storm elements:

Heavy snowfall – the accumulation of six or more inches of snow in a 12-hour period or eight or more inches in a 24-hour period.

Blizzard – the occurrence of sustained wind speeds in excess of 35 miles per hour accompanied by heavy snowfall or large amounts of blowing or drifting snow.

Ice Storm – an occurrence where rain falls from warmer upper layers of the atmosphere to the colder ground, freezing upon contact with the ground and exposed objects near the ground.

Freezing drizzle/freezing rain – the effect of drizzle or rain freezing upon impact on objects that have a temperature of 32 degrees Fahrenheit or below.

Sleet – solid grains or pellets of ice formed by the freezing of raindrops or the refreezing of largely melted snowflakes. This ice does not cling to surfaces.

Wind chill – an apparent temperature that describes the combined effect of wind and low air temperatures on exposed skin.

Winter storms can vary in size and strength and include heavy snowfall, blizzards, ice storms, freezing drizzle/freezing rain, sleet, wind chill, and blowing and drifting snow conditions. Extremely cold temperatures accompanied by strong winds can result in wind chills that cause bodily injury such as frostbite and death.

True blizzards are rare in Wisconsin. They are more likely to occur in the northwestern part of the state than in south-central Wisconsin, even though heavy snowfalls are more frequent in the southeast. However, blizzard-like conditions often exist during heavy snowstorms when gusty winds cause the severe blowing and drifting of snow. Heavy snow and ice storms have been part of nearly every winter in Lincoln County.

Dangerously cold conditions can be the result of the combination of cold temperatures and high winds. The combination of cold temperatures and high wind creates a perceived temperature known as "wind chill". Wind chill is the apparent temperature that describes the combined effect of wind and air temperatures on exposed skin. When wind blows across the skin, it removes the insulating layer of warm air adjacent to the skin. When all factors are the same,

the faster the wind blows the greater the heat loss, which results in a colder feeling. As winds increase, heat is carried away from the body at a faster rate, driving down both the skin temperature and eventually the internal body temperature.

The National Weather Service issues wind chill advisories when wind chill readings of -20 to -34 degrees are expected. Wind chill warnings are issued when wind chill values are expected at or below -35 degrees. Extreme cold events are most likely during the months of January and February.

History of Winter Storms/Extreme Cold in Lincoln County:
The NCDC has reported 63 significant winter storm events for Lincoln County since 1991. All of these storms contained some form of snow, sleet, freezing rain, or ice conditions.

Most recently, the National Weather Service has classified a December 2010 snowstorm as a blizzard. In Merrill, 14.7 inches of snow fell with winds gusting up to 40 mph between December 11 and 12, causing numerous cancellations and rescheduling. The snow developed as low pressure moved from Wyoming to Lake Michigan. The pressure difference between an arctic high over southern Canada and the low pressure storm system generated strong winds resulting in severe blowing snow and blizzard conditions across the State. The Governor declared a state of emergency in all 72 counties and the state's Emergency Operations Center was activated. The State Patrol advised against traveling as it was difficult to keep the blowing and drifting snow off the highways. There were numerous slide-offs and accidents across the state including 9 slide-offs and 3 other crashes reported by the Lincoln County Sheriff's Office, although no injuries were noted. Frigid temperatures followed the storm with actual air temps dropping to -23 degrees.

On December 8, 2009 heavy snow developed as low pressure rapidly deepened as it moved into Lake Michigan. Strong winds generated by the deepening low created blowing snow created blowing snow and near blizzard conditions on the morning of the 9th across northeast Wisconsin. During the height of the snow, lightning and thunder were reported in central Wisconsin. Snow fall totals ranged from 8 to 16 inches across northern, central and east-central Wisconsin.

On January 1, 2005 an approaching storm system aloft forced warmer air and abundant moisture over sub-freezing air north of a surface warm front. The warm, moist air loft and cold air at the surface resulted in freezing rain and a significant accumulation of ice across much of central Wisconsin.

In April of 2003, a high-pressure system moved into Wisconsin from southern Canada, bringing unseasonable cold air into northern Wisconsin and at the same time, a low-pressure system was moving east in northern Illinois. This frontal boundary caused a mixture of freezing rain and sleet to develop north of the front, which caused ice to form on trees, power lines, and roads. Central and Northern Wisconsin became hazardous and numerous accidents were reported, with four fatal accidents happening in central Wisconsin. Downed electrical lines caused power outages to roughly 21,000 customers in east-central Wisconsin. One day later, another storm moved in, bringing strong winds and 8 to 10 inches of snow in northeast Wisconsin.

From the NCDC, 10 extreme cold temperature events have affected Lincoln County from 1991 to 2010. The most recent was on February 10, 2008 when temperatures dropped into the 10 below to 20 below zero range overnight behind a departing low pressure system. Strong northwest winds of 15 to 30 mph with 40 mph gusts produced bitter cold wind chills (-47 in Antigo and -45 in Rhinelander).

An extended cold streak occurred in February of 1996 when a frigid artic air mass became entrenched across central and northeast Wisconsin. Actual temperatures remained below zero for more than 130 hours straight and dropped to 45 below at Harrison. The extreme cold temps combined with west winds of 10 to 15 mph produced wind chills from 50 to 70 below zero on February 2. The cold weather was responsible for many school closures, stalled vehicles, frozen pipes, and broken water lines, as well as, electrical and phone outages resulted from snapped lines. All outdoor events at the Badger State Games had to be canceled and ski hills were closed.

Winter Storms/Extreme Cold Vulnerability Assessment:
Winter storms and extreme cold present a serious threat to the health and safety of affected citizens and can result in significant damage to property. Heavy snow or accumulated ice can cause the structural collapse of buildings, down power lines, motor vehicle accidents, or isolate people from assistance or services. Extreme cold includes the risk of frostbite and hypothermia.

The following is a list of things that may be adversely affected by a winter storm or extreme cold. Much of these community assets can be referenced in Part II:

- Infrastructure – operation of emergency services, operation of public facilities and schools
- Utilities – down power and telephone lines
- Transportation – automobile accidents, roadway plowing, salting/sanding
- Residential – roofs
- Businesses –commerce

- Agricultural – livestock

Based in review of the historic events of winter storms and extreme cold, there are no specific areas in the county that have an unusually high risk. The risk for winter storms and extreme cold is relatively uniform and a county-wide concern.

Future Probability and Potential Dollar Losses – Winter Storms/Extreme Cold:
Based on historical frequency, Lincoln County can expect 3.2 major winter storms per year on average. In other words the probability is 1.00 or a 100% chance in a given year.

For extreme cold temperatures, based on historical frequency, Lincoln County can expect an occurrence about every 2 years on average for a probability of 0.5 or a 50% chance in a given year. However, since extreme cold temperatures often accompany winter storms, a probability of 100% chance in a given year cannot be ruled out.

Estimating potential future losses for winter storms is difficult. Damages and losses are typically widespread. Auto accidents and additional snow removal time are typical impacts of winter storms, and such claims are not aggregated or tracked for monetary damage. Winter storms do have the potential to be extremely destructive, particularly in the case of ice storms. Potential future losses per incident might range from $5,000 to $2 million based on experiences from other counties.

HAZARD ANALYSIS: FLOODING/DAM FAILURE

Background on Flood/Dam Failure Hazard:
There are a variety of classifications for flooding including coastal, dam failure, flash, lake, riverine, stormwater and urban/small stream. Lincoln County has the potential for all these types except coastal. The following descriptions of the types of flooding are compiled from various FEMA and other notable hazard planning sources:

Coastal – Different from other types of flooding which relate to movement of water through a watershed, coastal flooding is due to the effect of severe storm systems on tides resulting in a storm surge. Primarily known as an ocean-based event, the Great Lakes coastal areas can also be affected.

Dam Failure – More of a technology related hazard than a natural hazard, various factors can result in the failure of the structural technology that is a dam, thus causing flooding of areas downstream of the dam often similar in effect to flash flooding.

Flash – Involves a rapid rise in water level moving at high velocity with large amounts of debris which can lead to damage including tearing out of trees, undermining buildings and bridges, and scouring new channels. Dam failure, ice jams and obstruction of the waterway can also lead to flash flooding. Urban /built-up areas are increasingly subject to flash flooding due to removal of vegetation, covering of ground with impermeable surfaces and construction of drainage systems.

Lake – Prolonged wet weather patterns can induce water-level rises that threaten lakeshore areas.

Riverine – Also known as overbank flooding, this is the most common type of flooding event. The amount of flooding is a function of the size and topography of the watershed, the regional climate, soil and land use characteristics. In steep valleys, flooding is usually rapid and deep, but of short duration, while flooding in flat areas is typically slow, relatively shallow, and may last for long periods.

The cause of flooding in rivers is typically prolonged periods of rainfall from weather systems covering large areas. These systems may saturate the ground and overload the streams and reservoirs in the smaller sub-basins that drain into larger rivers. Annual spring floods are typically due to the melting of snowpack.

Stormwater – Water from a storm event that exceeds the capacity of local drainage systems, either man-made or natural, can result in flooding. Inadequate storm sewers and drainage systems are often the primary factor resulting in this type of flooding.

Urban and Small Stream – Locally heavy rainfall can lead to flooding in smaller rivers and streams. Streams through urban or built-up areas are more susceptible due to increased surface runoff and constricted stream channels.

Major floods in Lincoln County tend to occur in the spring when melting snow adds to normal runoff and in summer or early fall after intense rainfalls. Flooding occurs in the spring due to snowmelt and frozen soil. This build up continues until the river or stream overflows its banks, for as long as a week or two and then slowly recedes inch by inch. The timing and location of this type of flooding is fairly predictable and allows ample time for evacuation of people and protection of property.

Flooding is a notable hazard in Lincoln County, particularly because the Wisconsin River runs right through the middle of the county and the two major cities. As described in Part II, there are approximately 668 miles of rivers and

streams in Lincoln County within 13 watersheds. All but a small portion of the County is within the Upper Wisconsin River (Headwaters) Basin.

Floodplains exist along the Wisconsin River and the tributaries that feed into it. These floodplains are narrow along tributaries and lakes but extensive throughout the County. Floodplains are described in Part II and shown on Map 4. The Federal Emergency Management Agency (FEMA) identifies these floodplains on Digital Flood Insurance Rate Maps (DFIRMs), which the NCWRPC obtained from Lincoln County. While not officially certified, this digital floodplain data is a useful planning tool.

Table 12 Levees and Large Dams Affecting Lincoln County

DAM NAME	DAM SIZE TYPE	MILES FROM NEXT CITY	HAZARD RATING	NAME OF NEXT CITY	OWNER	UPDATED EAP YEAR
WILLOW RIVER RESERVOIR	LARGE	25	**HIGH**	HEAFFORD JCT.	WI VALLEY IMPROVEMENT CO.	2009
ALEXANDER	LARGE	1	**HIGH**	MERRILL	WI PUBLIC SERVICE CORP.	2009
CARL	LARGE	0	LOW		THOMAS CARL (?)	2010
DOERING	LARGE	0	LOW		DOERING ENTERPRISES	
GRANDMOTHER FALLS	LARGE	16	**HIGH**	MERRILL	PACKAGING CORP. OF AMER.	2009
HARRISON	LARGE	0	LOW		LINCOLN COUNTY FOREST	2007
JERSEY	LARGE	0	**HIGH**	TOMAHAWK	WI PUBLIC SERVICE CORP.	2009
JUNE LAKE	LARGE	0	LOW		HANSON BROS LLC	2010
KINGS	LARGE	1	**HIGH**	TOMAHAWK	TOMAHAWK POWER & PULP	1996
MERRILL	LARGE	0	LOW	MERRILL	WI PUBLIC SERVICE CORP.	2010
MERRILL NO. 1	LEVEE	0			CITY OF MERRILL	
MERRILL NO. 2	LEVEE	0			CITY OF MERRILL	
MERRILL NO. 3 – UP	LEVEE	0			CITY OF MERRILL	
MERRILL NO. 3 – DN	LEVEE	0			CITY OF MERRILL	
MERRILL NO. 4	LEVEE	0			CITY OF MERRILL	
NEW WOOD	LARGE	0	LOW		WI DNR -WILDLIFE BIOLOGIST	2009
PINTEN	LARGE	0	LOW		PINTEN TRUST	
RICE	LARGE	2	**HIGH**	TOMAHAWK	WI VALLEY IMPROVEMENT CO.	2008
SPIRIT RIVER RESERVOIR	LARGE	1	**SIGNIFICANT**	RIVER OAKS	WI VALLEY IMPROVEMENT CO.	2008
TOMAHAWK (Pride's)	LARGE	2	**HIGH**	RIVER OAKS	WI PUBLIC SERVICE CORP.	2010
UPPER GRANDFATHER FALLS	LARGE	10	**HIGH**	MERRILL	WI PUBLIC SERVICE CORP.	2009

Source: WDNR

There are 58 dams in Lincoln County (see Map 3), but most do not pose a significant hazard if they would fail. These dams serve many useful purposes including agricultural uses, providing recreational areas, electrical power generation, erosion control, water level control, and flood control. According to the DNR, Lincoln County has 15 large dams, 24 small dams and the other 19 were not classified. The Wisconsin DNR regulates all dams on waterways to some degree; however the small dams are not stringently regulated for safety purposes. The Federal Energy Regulatory Commission has jurisdiction over large

dams that produce hydroelectricity. Grandmother Falls, Jersey, King, Merrill, and Tomahawk are the major producers of hydroelectricity in Lincoln County.

A dam can fail for a number of reasons such as excessive rainfall or melting snow. It can also be the result of poor construction or maintenance, flood damage, weakening caused by burrowing animals or vegetation, surface erosion, vandalism or a combination of these factors. Dam failures can happen with little warning resulting in the loss of life and significant property damage in an extensive area downstream of the dam.

The WDNR assigns hazard ratings to large dams within the state, see Table 12 for Lincoln County. When assigning hazard ratings, two factors are considered: existing land use and land use controls (zoning) downstream of the dam. Dams are classified into three categories that identify the potential hazard to life and property downstream should the dam fail. A high hazard indicates that a failure would most probably result in the loss of life. A significant hazard indicates a failure could result in significant property damage. A low hazard exists where failure would result in only minimal property damage and loss of life is unlikely. For Lincoln County, there are nine dams that have a high hazard rating – Rice, Jersey, Kings, Tomahawk, Upper Grandfather Falls, and Alexander. Spirit River Reservoir is the only one having a significant rating, while the rest are rated low. The Willow Reservoir Dam in Oneida County has a high hazard rating and is upstream from Lincoln County.

All dams perceived as posing a threat to downstream development have a dam failure analysis performed in order to identify the hydraulic shadow (that area of land downstream from a dam that would be inundated by water upon failure of the dam during a regional flood). This information is used to develop an Emergency Action Plan (EAP) for the dam, which includes provisions for notifying emergency personnel and warning affected downstream residents of a failure.

History of Flooding/Dam Failure in Lincoln County:

Flooding is significant hazard of concern in Lincoln County, being the principal cause of damage in three of five Presidential Disaster Declarations in Lincoln County (1973, 1993, 2002) since 1971. Disaster declaration was requested for flooding in 1971 but not awarded. NCDC has reported 8 flooding events in Lincoln County between 1991 and 2010.

The most recent flood events noted by NCDC occurred in September of 2010. Heavy rain fell across the County between September 22 and 23, causing streams to overflow their banks and resulting in the closure of 21 roads, mainly in the southern part of the County. A number of other roads were passable but had water near or over the roadway. Many basements had water in them and

Merrill area schools were closed due to flooding and high water. Rainfall totals across exceeded 2.5 inches. The highest recorded total was 4.38 inches at Spirit Falls where the NCDC reported flash flooding. Flooding continued across the southern part of the County for several days after the rainfall ended. Minor flooding continued along the Wisconsin River into the morning of the 26th.

Warm temperatures during the second week in April 2002 led to significant runoff from snow melt across much of northern Wisconsin. Additional rainfall then resulted in minor flooding in the Wisconsin River basin. A boat landing and some low areas on a County highway become covered by water. The flooding primarily affected agricultural lands and parks. The flooding combined with other storm damage across the area including tornadoes led to a disaster declaration.

In September of 2000, the Tomahawk area experienced urban and small stream flooding resulting from severe storms with heavy rain. The storms caused widespread problems including minor street flooding in Tomahawk.

Heavy runoff from spring snow melt compounded by rain in April 1996 resulted in widespread minor flooding across northern Wisconsin. With numerous roads and culverts washed out in several counties including Lincoln. The Wisconsin River in Merrill rose to 2 feet above flood stage on April 21. Street flooding was reported in the Merrill area. A faulty gate on the Prairie River Dam was blamed for a water back up that resulted in the flooding of the 1200 block of 14th Street and a park. Area basements were filled with 3 feet of water and eight homes suffered damage.

One of the worst flood events experienced by Lincoln County, the state, and entire Midwest was the Flood of 1993. The flooding in Lincoln County was a result of several compounding factors including heavy rains and flooding in the fall of 1992, above average amounts of precipitation in the spring of 1993, and unusually heavy amounts of rain onto already saturated ground from early June throughout July.

Lincoln County was one of the 47 counties that were included under the disaster declaration; however their eligibility was only for individual assistance. Public facilities suffered minor impact compared to other counties. One highway built through a swamp had some damage, along with minor flooding problems reported at the City of Merrill Library and High School. Individual assistance disaster aid paid out $41,540 to private citizens. The majority of these funds were used for basement damage (furnace or water heater and personal property), damage to septic systems, or contaminated wells.

The local businesses and economy were also impacted from the flood. Some stores suffered basement flooding, which resulted in merchandise damage. Tourism levels measured slightly lower than normal, and the logging industry reported inventories to be very low, resulting in increased prices. The farmers in Lincoln County received the greatest impact. While some fields were flooded by riverside overflows, the excessive moisture and saturated soils were the greater problem. Emergency financial assistance was provided to over 52 farmers encompassing 78 farms. Agricultural disaster assistance funds paid out over $120,000, but the estimated crop losses countywide were over $4 million.

Another flood event of note where Lincoln County received public assistance was in 1973. The 1973 flood affected a total of thirty-five counties, which were along the Mississippi and Wisconsin Rivers and bordering the Great Lakes. Total private and public damage losses were set at $24 million.

Lincoln County has not experienced a dam break with any loss of life or substantial property damage.

Flood/Dam Failure Vulnerability Assessment:
Flood events in the County have caused substantial property and infrastructure damage in the past and have the potential to cause future damage, since a significant number of structures still exist in the floodplain. Looking at past events, the following have been significantly impacted by flooding:

- Infrastructure – flooded public facilities, and schools
- Utilities - down electric lines/poles/transformers, telephone lines, and radio communication
- Roadways – washouts, inundated roadways, debris clean-up
- Residential structures – flooded basements, damaged septic systems
- Businesses – loss of commerce
- Agriculture - inundated cropland

To assess the vulnerability of Lincoln County to flooding hazards, basic inventory data in Part II must be analyzed. For this purpose, consideration should be given to structures (specifically critical facilities), infrastructure, and cropland.

One of the first reports to reference in assessing vulnerability to structures during flooding is the State of Wisconsin Repetitive Loss Report. This Report provides the status of repetitive loss structures by community. FEMA, through the Federal Insurance Administration, classifies a repetitive loss structure "when more than one flood insurance claim of at least $1,000 is made within a ten-year period." The information is used as a floodplain management tool and to supplement information provided by communities for flood mitigation grants administrated WEM. According to the report, there are no repetitive loss structures in Lincoln

County. Since no structures are listed in the Repetitive Loss Report, structures within floodplains were analyzed. The floodplain boundaries (as well as the watershed boundaries) within Lincoln County are shown on Map 4. These areas are generally located along the Wisconsin River and its major tributaries.

Table 13 shows the number of structures in each municipality identified as "vulnerable to flooding" according to proximity to floodplains. There were a total of 320 structures identified as within the designated floodplain boundaries (see Map 12). by the NCWRPC following the methodology below.

Methodology – Structures within Floodplains:

1. NCWRPC imported the County's DFIRM digital floodplain maps from into a GIS coverage for the County.
2. A building point cover was digitized from digital aerial photos along the floodplain areas.
3. The floodplain coverage was then combined with the building point coverage to identify those structures within the floodplain boundary.
4. Total structures within the floodplain were then tabulated by municipality.
5. Average values from U.S. Census data were used to determine the total value for the identified vulnerable structures.

Table 13
Approximate Values of Structures in Floodplains in Lincoln County

Municipality	Number	Total Value	Average Value
Birch town	1	$78,220	$78,220
Bradley town	20	$2,606,300	$130,315
Corning town	4	$382,316	$95,579
Harding town	3	$373,434	$124,478
Harrison town	0	$0	$134,801
King town	5	$641,950	$128,390
Merrill town	55	$6,098,455	$110,881
Pine River town	3	$361,650	$120,550
Rock Falls town	62	$6,975,000	$112,500
Russell town	21	$1,591,149	$75,769
Schley town	5	$423,865	$84,773
Scott town	2	$215,044	$107,522
Skanawan town	0	$0	$103,702
Somo town	1	$75,357	$75,357
Tomahawk town	21	$2,094,918	$99,758
Wilson town	8	$823,232	$102,904
Merrill city	109	$9,157,526	$84,014
Tomahawk city	0	$0	$96,958
Lincoln County	320	$32,147,840	$100,462

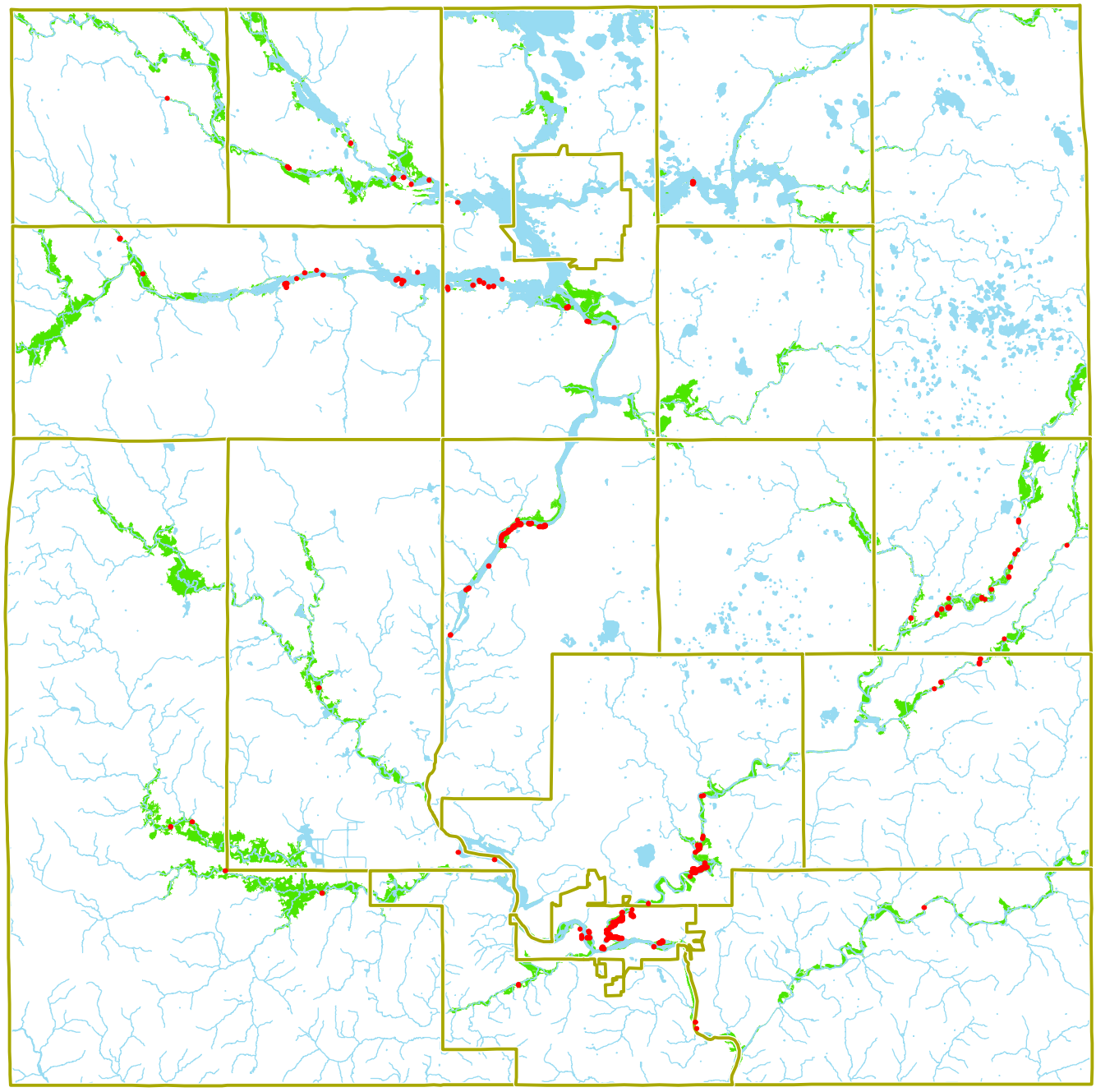
Source: U.S. Census and NCWRPC

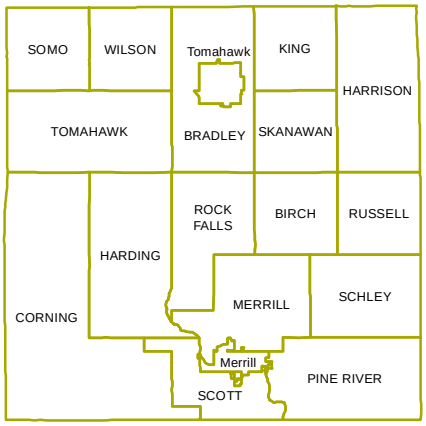
Lincoln County has seven dams within its boundaries that have a high hazard rating, and one that has a significant hazard rating. The Willow Reservoir dam, upstream from Lincoln County, is large with a high hazard rating that would affect Lincoln County if it failed. All nine of these major dam complexes, located on the Wisconsin River and its tributaries, have Emergency Action Plans.

Map 12

Flood Vulnerability

Lincoln County, Wisconsin





Minor Civil Divisions

Structures in DFirm Floodplain

DFirm Floodplain

Water

N
W
E
S

0 1.25 2.5 5 7.5 Miles

Source: NCWRPC, WI DNR, FEMA

This map is neither a legally recorded map nor a survey and is not intended to be used as one. This drawing is a compilation of records, information and data used for reference purposes only. NCWRPC is not responsible for any inaccuracies herein contained.

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Included in the plans are the warning procedures, identified areas that could be expected to flood during a dam break, and water flow coordination procedures among all the dams on the Wisconsin River.

To understand the potential risk from dam failure, a similar methodology was followed, starting with NCWRPC digitization of the inundation maps from the EAPs (Map 13). Average values for structures within the inundation areas are tabulated.

Table 14 Approximate Value of Structures in Dam Failure Inundation Area

Dam	# Structures (Lincoln Co.)	Total Improvement Value	Average Value Per Structure
Willow River Reservoir	225	$29,320,875	$130,315
Rice	26	$2,666,768	$102,568
Jersey	10	$1,069,650	$106,965
Kings	140	$13,574,120	$96,958
Tomahawk	24	$2,771,256	$115,469
Spirit River Reservoir	2	$260,630	$130,315
Grandmother Falls	10	$1,125,000	$112,500
Upper Grandfather Falls	0		
Alexander	213	$17,894,982	$84,014

Source: US CENSUS and NCWRPC

In addition to structural damage from flooding, there would be significant damage to public roadways, particularly to roadway surfaces, culverts, and bridges. Flooding would inundate or close roadways due to washouts from a period of a few days up to as much as several months. Such interruptions in the County transportation network would cause travel delays through detours.

The agriculture industry is a sector that faces substantial losses, during floods, cool, rainy/wet, sunshine deficient climatic conditions of the spring and summer create a general condition of high water and saturated soils throughout the County.

Flood conditions can leave farmers with the following economic setbacks:

- Delayed planting (reduced growing season)
- Seed and agricultural chemicals washing out of fields
- Rotting of plants due to excess moisture
- Areas where planted crops are left in the fields due to excessive moisture
- Crops not reaching full maturity or stunted growth

- Requirements by farmers to expend higher amounts of money on additional soil amendments
- Lower quality (nutritional value) of harvestable crops as a feed source.

Reductions in quantity can result in loss of revenues from cash crops and increased expenses for purchasing the needed livestock feed from outside sources. Additionally, reductions in crop quality result in lower prices received for cash crops and increased amounts spent for nutritional supplements to animal feed, which need to be added even in much of the purchased feed.

The saturated soil conditions responsible for these woes can occur anywhere throughout the County. Agricultural land in Lincoln County is primarily located in the southeastern portions of the county. These farming areas were previously forested tracts that were cleared by early settlers, which is composed of hard pan soils with poor drainage qualities.

Economic losses to farmers can generate a ripple affect to the local community as well. Reduction in farm income will curtail the farmers' ability to purchase new equipment and make other improvements. Farmers will have less money to spend at farm dealers, farm supplies, building/hardware suppliers, fertilizer, feed and seed dealers, and other agribusiness and retail establishments. The State itself will have reduced tax revenues. Farmers will have less money to save and invest, and suffer still more increases in debt load.

The forest products industry is affected similarly to agriculture. Forestlands become too wet for logging operations and many water logged tree plantations suffer high mortality rates. Mill inventories become very low, resulting in increased prices for consumers.

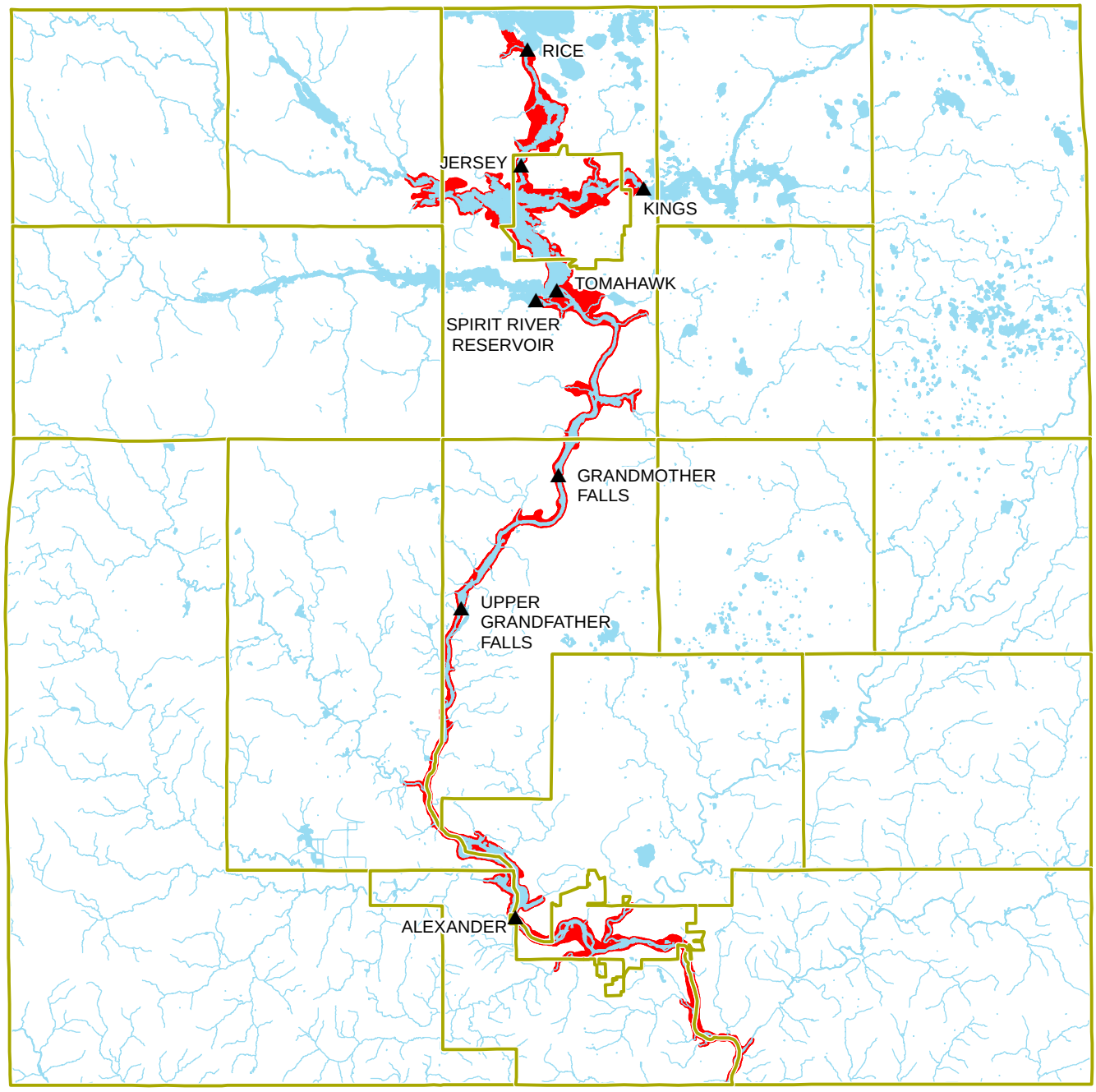
The areas considered to have a higher risk for impact from flooding include those communities with structures in floodplains as shown in Map 12 or those with structures in dam break inundation areas as shown in Map 13.

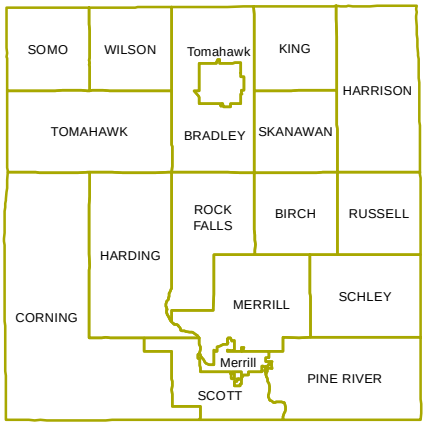
Future Probability and Potential Dollar Losses – Flood/Dam Failure:
Based on the historic data presented here (frequency of past events - 1991 to 2010), Lincoln County can expect a flood event about every 2.5 years on average. This equates to a probability of 0.4 or about a 40 percent chance in a given year. However, the impact of many of these events is relatively minor. During the 20-year period, two of the recorded floods resulted in a Presidential Disaster Declaration. Taking this into consideration, the County might expect a significant flood every 10 years on average. This equates to a probability of 0.1 or a 10 percent chance in a given year.

Map 13

Dam Failure Inundation Areas

Lincoln County, Wisconsin





Minor Civil Divisions

Dam Locations

Inudation Areas

Water

N
W E
S

0 1.25 2.5 5 7.5 Miles

Source: NCWRPC, WI DNR, FEMA

This map is neither a legally recorded map nor a survey and is not intended to be used as one. This drawing is a compilation of records, information and data used for reference purposes only. NCWRPC is not responsible for any inaccuracies herein contained.

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Historic data is again used from the 8 floods to estimate potential future dollar losses due to flood. Based on the past flood events for which we have loss figures, Lincoln County can anticipate property and crop losses of approximately $508,128, on average, between the public and private sector for each significant flood occurrence. Over the next ten-year period, flood losses in Lincoln County could approach $508,000.

Potential flood losses for structures by jurisdiction are reflected in Table 13. While structures outside mapped floodplains may also be lost or damaged in a flood, structures within flood plains represent the greatest risk for flood damages.

As indicated earlier, no dam breaks have been identified within Lincoln County. Therefore, there is no historic frequency upon which to base a future probability, other than to say that the probability of a dam failure is very low. However, the number of significant dams and the risk illustrated in their EAPs make dam failure an important hazard to plan for. Table 14 shows potential structural losses from failure of each significant dam that would affect Lincoln County.

HAZARD ANALYSIS: SEVERE THUNDERSTORM / HIGH WIND / HAIL / LIGHTNING

Background on Severe Thunderstorm Hazard:
The National Weather Service definition of a *severe thunderstorm* is a thunderstorm event that produces any of the following: downbursts with winds of 58 miles per hour or greater (often with gusts of 74 miles per hour or greater), hail 1 inch in diameter or greater, or a tornado. Strong winds, hail, and lightning will be addressed in this section; however, tornadoes are referenced as a separate hazard due to their unique severity.

Lightning results from discharge of energy between positive and negative areas separated by rising and falling air within a thunderstorm. This discharge heats the surrounding air to 50,000 degrees. Hail results as the warm rising air cools, forming ice crystals which are held by the updrafts until accumulating enough weight to fall. The hail size depends on strength of the updrafts keeping it up.

Thunderstorm frequency is measured in terms of incidence of thunderstorm days or days on which thunderstorms are observed. Wisconsin averages between 30 and 50 thunderstorm days per year depending on location. A given county may experience ten or more thunderstorm days per year. The southwestern area of the state normally has more thunderstorms than the rest of the state.

History of Severe Thunderstorms in Lincoln County:
The NCDC has reported 86 severe storm events for Lincoln County between 1991 and 2010. These storms typically contain some form of heavy rain and strong winds. About 49 significant hail events, typically related to a severe thunderstorm were listed during this time period. There were also 8 notable lightning incidents identified. In 1977, one of the five Presidential Disaster Declarations (since 1971) for Lincoln County has been associated with severe storms since 1971 with high winds and hail being the primary cause of damages.

The most recent thunderstorm noted by NCDC occurred on July 27, 2010, following an earlier strong thunderstorm on July 14. A cold front combined with a warm and humid air mass triggering thunderstorms that moved northeast Wisconsin. The storms produced hail to golf ball size, wind gusts to 95 mph, funnel clouds and heavy rainfall that led to flash flooding in some areas. Numerous trees and power lines were downed with power outages around Merrill. Winds were estimated at 60 mph at the intersection of County J and I-39.

On October 11, 2003 strong winds that accompanied a cold front downed trees and power lines in parts of central Wisconsin. Siding was torn off of homes along 5 miles west of Merrill.

One person was injured on April 23, 2001 when a mobile home was flipped on its side by thunderstorm winds 5 miles northeast of Tomahawk. This storm also downed more than 100 trees near Alice Lake. Two cottages were destroyed and six others were damaged when trees landed on them.

The most recent hail event noted by NCDC occurred on April 24, 2009, as storms moved into an unstable air mass resulting in golf ball sized hail several miles west of Merrill. Softball size hail fell near Highway 86 and County D near Tomahawk during a wide-spread hail event on April 25, 2008. In April of 2002, a warm front ran into an unstable air mass resulting in an outbreak of thunderstorms and tornadoes. Hail 3-inches in diameter was reported between Bloomville and Bradley.

Lightning struck and burned a vacant house near Tomahawk on September 25, 1998. A lightning strike punched a hole in the roof and significantly damaged the electrical system of a home 3 miles northwest of Merrill on September 10, 1996. In May 1996, lightning started a fire that destroyed a home 3 miles southeast of Merrill.

Severe Thunderstorm Vulnerability Assessment:
The National Weather Service can forecast and track a line of thunderstorms that may be likely to produce severe high winds, hail, and lightening, but where these related hazards form or touch down and how powerful they might be remains unpredictable. The distribution of thunderstorms and related hazard events have been widely scattered throughout the County.

Many thunderstorm events (without tornadoes) have caused substantial property and infrastructure damage, and have the potential to cause future damage. In order to assess the vulnerability of the Lincoln County area to thunderstorms and related storm hazards, a review of the past events indicate significant impacts to:

- Infrastructure – hospitals, schools, street signs, police and fire departments
- Utilities – electric lines/poles/transformers, telephone lines, radio communication
- Transportation – debris clean-up
- Residential – mobile homes, garages, trees and limbs, siding, & windows
- Businesses – signs, windows, siding, & billboards
- Agricultural – buildings, crops, & livestock
- Vehicles – campers, boats, windshields, body, & paint

Based on review of the historic patterns of thunderstorms associated with high wind, hail, or lightening, there are no specific municipalities that have unusual risks. The events are relatively uniform and a countywide concern.

Future Probability and Potential Dollar Losses – Severe Thunderstorms:
Based on historical frequency, Lincoln County can expect 4.3 thunderstorm events per year on average. In other words, the probability is 1.0 or a 100% chance of multiple storms in a given year. The probability of a thunderstorm with damaging hail in Lincoln County is also at 1.0 or 100% chance with about 2.5 incidents in a given year. The probability of a significant lightning event is about 0.4 or a 40% chance in a given year.

According to the NCDC, historic thunderstorm events with associated high wind averaged $16,174 in damage per incident. There was insufficient data to calculate average hail damages. Historic thunderstorm events with associated lightning averaged $19,000 in property damage. Losses in Lincoln County associated with severe thunderstorms including high wind and lightning could approach $771,482 over the next ten-year period.

HAZARD ANALYSIS: DROUGHT/EXTREME HEAT

Background on Drought/Extreme Heat Hazard:
A drought is an extended period of unusually dry weather, which may be accompanied by extreme heat (temperatures which are 10 or more degrees above the normal high temperature for the period). There are basically two types of drought in Wisconsin: agricultural and hydrologic. Agricultural drought is a dry period of sufficient length and intensity that markedly reduces crop yields. Hydrologic drought is a dry period of sufficient length and intensity to affect lake and stream levels and the height of the groundwater table. These two types of drought may, but do not necessarily, occur at the same time.

Droughts, both agricultural and hydrologic, are relatively common in the state. Small droughts of shortened duration have occurred at an interval of about every ten years since the 1930's.

Extended periods of warm, humid weather can create significant risks for people, particularly the elderly who may lack air conditioning or proper insulation or ventilation in their homes. Animals are also at risk during extended periods of heat and humidity. The National Weather Service issues a Heat Advisory when the Heat Index ranges from 105 to 114 degrees daytime and remains at or above 80 degrees at night, during a 24-hour period. The heat index combines the effects of heat and humidity to better reflect the risk of warm weather to people and animals. When heat and humidity combine to reduce the amount of evaporation of sweat from the body, outdoor activity becomes dangerous even for those in good shape. The index measures the apparent temperature in the shade. People exposed to the sun would

experience an even higher apparent temperature. A heat index of 105 is considered dangerous and prolonged exposure can result in heat stroke, exhaustion and cramps. People should be reminded to use extreme caution when the heat index is between 95 and 105. A heat index of 95 occurs when the temperature is 90 degrees and the relative humidity is 50 percent.

History of Drought/Extreme Heat in Lincoln County:
National Weather Service reports indicate that much of Wisconsin including Lincoln County has just recently begun to recover from an extended period of drought conditions that began in 2005. The Governor had declared a state of emergency to get assistance to the state's agricultural sectors. The extended dry conditions posed serious challenges for farmers from drought stressed crops to issues providing feed for livestock.

Lincoln County was one of 64 counties that were included in a Presidential Emergency Declaration for the drought of 1976-1977. Statewide agricultural losses during this drought were set at $624 million. A number of wells in the County went dry and financial assistance was needed to drill new ones. Federal assistance totaled only 19% of losses attributed to the drought.

Lincoln County also experienced a dry spell in 1999.

The NCDC data lists 5 incidences of extreme heat in Lincoln County since 1991. Between July 23 and July 31, 1999, consecutive days of high temperatures combined with high humidity levels resulted in numerous heat related illnesses. The heat caused some roads to buckle. In October of 1995, unseasonable, record warmth under full sunshine allowed temperatures to reach record levels across Wisconsin.

Extreme heat plagued Lincoln two additional times in 1995. On July 13, when a heat wave came across Wisconsin for three days, temperatures across the state reached highs of 100 to 109 degrees. Heat indices peaked at 120 to 130 on the 13th and 110 to 122 on the 14th. Overnight temperatures only dropped to 85 to 100. About 100,000 livestock and other animals perished across the state. This was one of the worst natural disasters to affect Wisconsin. During this heat wave, 141 lives were claimed with 70 directly related and 71 in-directly related. Most deaths occurred in the major urban centers. That extreme heat event was preceded by a long spell of unseasonable hot, muggy weather across most of Wisconsin with heat indices from 98 to 104 degrees between June 17 and 27.

An extended period of hot and humid affected most of the state from mid to late June in 1994. Daily temperatures were 90 to 100 degrees. The heat caused asphalt pavements to buckle, and there were a high number of fish kills in lakes and rivers. There were a number of cases of heat exhaustion.

Drought/Extreme Heat Vulnerability Assessment:
Droughts can have a dramatic effect on the farms located throughout Lincoln County. With agriculture being a critical sector of the County's economy, droughts have disastrous effects. Even small droughts of limited duration can significantly reduce crop growth and yields, adversely affecting farm income. More substantial events can decimate croplands and result in total loss, hurting the local economy.

Irrigation can negatively impact the environment by drawing water that naturally goes to aquifers and surface water. Drought can exacerbate the problem when high withdrawal rates versus little precipitation deplete water bodies and aquifer supplies, thereby decreasing drinking water supplies, drying streams, and hindering aquatic and terrestrial wildlife. During severe droughts, some wells - mainly private wells - will go dry.

Droughts can trigger other natural and man-made hazards as well. They greatly increase the risk of forest fires and wildfires because of extreme dryness. In addition, the loss of vegetation in the absence of sufficient water can result in flooding, even from average rainfall, following drought conditions.

The following is a list of things that may be adversely affected by a drought. Much of these community assets can be referenced in Part II.

- Infrastructure – municipal water supplies
- Surface water –groundwater reserves, recreation, and wildlife
- Forests
- Agricultural – crops, livestock

The areas most susceptible to drought conditions would be agricultural communities. Agricultural land is scattered throughout the south and southeast parts of the County. The principle towns include Corning, Scott, Pine River, Schley and Russell, but several other towns also contain varying amounts of agricultural land.

According to the Wisconsin Emergency Management, excessive heat has become the most deadly hazard in Wisconsin in recent times. Extreme heat can happen anywhere within Lincoln County affecting everyone, however the elderly and young are the ones with the highest risk of getting heat related injuries, which can lead to death. Ways to prevent injuries include wearing light-colored clothing, drink plenty of water, slow down, and do not stay in the sun for too long.

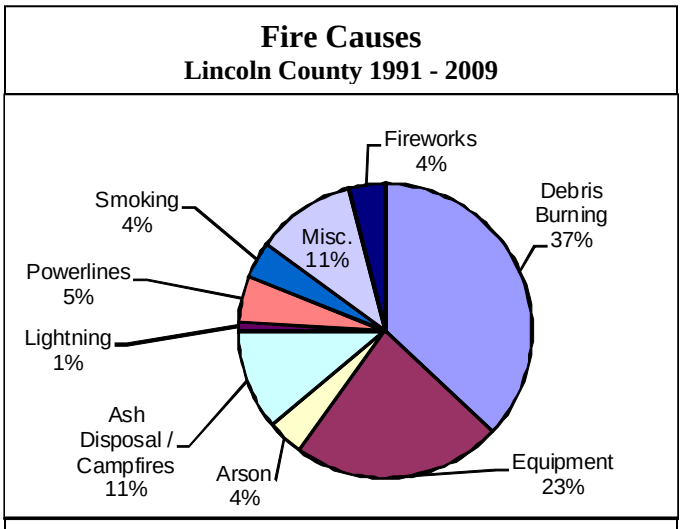
Future Probability and Potential Dollar Losses – Drought/Extreme Heat:
Based on the historic data presented here (frequency of past events), Lincoln County can expect a drought every ten years on average, which is a probability of 0.10 or a 10 percent chance in a given year. Significant severe drought is somewhat less common, affecting Wisconsin once about every 15 years.

Drought is another hazard lacking good loss figures at the county level. However, a look at aggregate data for the last two major droughts can give some indication of potential impact. The last two major droughts in Wisconsin resulted in losses of $9.6 million (1976-77) to $18 million (1987-88) per county on average.

Normally, northern Wisconsin is known for its cold winters, however, extreme heat waves will affect Lincoln County in the future. Lincoln County can expect a heat wave once every 5 years or a 20 percent chance in a given year based on the historic data presented.

HAZARD ANALYSIS: FOREST FIRES/WILDFIRES

Background on Forest Fires/ Wildfires Hazard:
A forest fire is an uncontrolled fire occurring in a forest or in woodlands outside the limits of incorporated villages or cities. A wildfire is any instance of uncontrolled burning in brush, marshes, grasslands or field lands. For the purpose of this analysis, both of these kinds of fires are being considered together.



Source: WDNR

Forest fires and wildfires can occur at any time whenever the ground is not completely snow covered. The season length and peak months may vary appreciably from year to year. Land use, vegetation, amount of combustible materials present and weather conditions such as wind, low humidity and lack of precipitation are the chief factors for fire season length.

History of Forest Fires/Wildfires in Lincoln County:
The Wisconsin DNR maintains a database of wildfire data. This data represents the most comprehensive source of information for analyzing fire trends in an area such as Lincoln County. However, the data is only current through 2009, so a 19-year span is used for analysis. Between 1991 and 2009, there was an average of 26 fires that have burned 29 acres, annually. The typical fire in Lincoln County burns about 1.1 acres.

April is the leading month for wildfire in Lincoln with 42% of the total number of fires between 1991 and 2009. However, wildfires have occurred in each month of the year in Lincoln.

The Town of Bradley experienced the most wildfires between 1991 and 2009 with 69. However, the Town of Merrill leads the County in total acres burned with 156. The Town of Somo had the fewest fires with 5 over that period. Town of Tomahawk had the least area burned, among non-urban areas, with just under 5 acres affected.

The chart above breaks down the causes of wildfire within Lincoln County between 1991 and 2009 as classified by the WDNR. The principle cause of wildfire in Lincoln County and Wisconsin as a whole is debris burning which resulted in 37% of wildfires within the County. Equipment is the next leading category at 23% and includes vehicle, motor and other machinery related causes except railroad. Arson resulted in about 4% of wildfires, and lightning, the only natural cause of fire, was responsible for around 1%.

There is some correlation between drought or heat waves and increased risk of wildfire in Lincoln County. The drought conditions from 2005 to 2010 shows a significant spike in the number and size of fires (with the exception of 2007 where the numbers are way down). Fire numbers also spike in the heatwave years of 1994 and 1995, however the numbers are comparably down a bit in the 1999 dry spell year.

Forest Fires/Wildfires Vulnerability Assessment:
Lincoln County has approximately 353,582 acres of forestland, or 60 percent of the area, scattered throughout the County. The potential for property damage from fire increases each year as more recreational and retirement homes are developed on wooded land.

Rural buildings may be more vulnerable because of lack of access. Access to buildings off main roads is sometimes long, narrow driveways with minimal vertical clearance and no turn around areas large enough for emergency vehicles making it hard for emergency vehicles to combat fires. These buildings

also may not have much of a defensible space because of little area between the structures themselves and highly flammable vegetation.

Campgrounds are also a concern because campfires cause 7 percent of fires. Lincoln County has six campgrounds as shown on Map 11.

The trend toward introducing more human development into fire prone areas has brought about the term wildland urban interface or WUI. The WUI identifies areas where structures and human development meet or intermingle with undeveloped wildlands. It is within these areas where wildfire poses the greatest risk to human lives and property.

The WDNR has completed a statewide evaluation of fire risk, referred to as the CAR or Communities At Risk assessment. This assessment uses extensive DNR geo-databases to analyze and map hazardous woodland fuel types and the degree of the intermixing of development with wildlands. The maps identify the level of risk for each community on a scale of very high, high, moderate, or low, and also have a community of concern designation. The Towns of Bradley, King, Merrill and the City of Tomahawk are rated high. Birch, Harding, Harrison, Russell, Skanawan, Tomahawk and Wilson have a moderate risk level. The Towns of Corning, Pine River, Rock Falls, Schley, Scott, Somo, and the City of Merrill are rated low risk for wildfire.

Future Probability and Potential Dollar Losses – Forest Fires/Wildfires:
Forest and wild fires are relatively common occurrences in Lincoln County. Over the 19 year analysis, there has been an average of 26 fires per year in the County. In other words, the probability is 1.0 or 100% chance of wildfire each year.

Because of the relatively small impact of typical individual fires in the County, loss data is not tracked. This makes it difficult to develop an estimate of potential future dollar losses. However, with 26 fires per year, the County should expect some fires to "get out of hand" with the potential to easily exceed the $1.4 million in damages of the Cottonville Fire that recently occurred in southern Wisconsin.

INTRODUCTION

Hazard mitigation is any action taken to reduce or eliminate the long-term risk to human life and property damage from natural hazards. This chapter describes the mitigation goals and actions to be taken by Lincoln County and its local units of government for each of the hazards identified in Part III – Risk Assessment. The intention is to reduce or avoid long-term vulnerability to the identified hazards.

Part IV of the Lincoln County All Hazards Mitigation Plan will discuss the following factors in establishing the multi-jurisdictional mitigation strategies:

- Benchmark Progress of Previous Plan 2005-2011
- Review of Mitigation Goals
- Prioritize Identified Mitigation Strategies
- Establish Mitigation Action Plan

PROGRESS REPORT 2005 - 2011

Table 15 identifies the completed, deleted or deferred mitigation actions from the original 2005 Plan. For each action recommendation, a brief status report is provided which describes the progress made on that measure. If an item remains unchanged, a description is provided as to why no action has been taken and whether that item is deferred to the new plan.

The table also provides the new status of each recommendation with regard to the updated plan alongside the original timeframe target for comparison. Many of the recommendations are on-going efforts and are carried over as such in the updated action plan. Some have had significant progress or have been deferred, but are recommended for further action with new target date or on-going status. If the recommendation has been completed with no further specific action anticipated within the next five year planning period, it is shown as "Removed from list" and will not appear in the updated action plan. In some cases, an incomplete action is not selected for various reasons (noted) and is also shown as "Removed from list". In a few cases, related recommendations are combined as indicated.

This progress report serves as a benchmark for progress in achieving the multi-jurisdictional mitigation goals of Lincoln County and the local jurisdictions that participated in the Plan.

TABLE 15 BENCHMARK FOR PROGRESS 2005 - 2011 PLAN			
2005-2011 Plan Measure	***Progress Report***	***Original Status***	***New Status***
Continue to promote the increased use of National Oceanic and Atmospheric Administration (NOAA) weather radios	County EM continues to promote use of the radios.	On-going (1)	On-going (1)
Continue to add/update Emergency Management Department link off their existing County web site	Website actively maintained with hazard information.	On-going (2)	On-going (2)
Verify that back-up utilities are available at all critical facilities.	No progress to date.	On-going (3)	On-going (3)
Create second street to the hospital in the City of Tomahawk	Not yet completed. Wetlands issues blocking progress.	2006 (4)	2015 (4)
Develop county-wide early warning systems possibly including all telephone message cast and cable TV broadcast, among others	Limited progress to date. County has explored some options including CodeRed.	On-going (5)	On-going (5)
Develop county-wide disaster shelter plan possibly including i.d. available shelters, trailer park shelter needs, notification procedures, etc.	Limited progress to date. The County has had a joint committee working on this issue.	On-going (6)	On-going (6)
Establish a second well field for the City of Tomahawk	Budget constraint has been the limiting factor for this recommendation.	2008 (7)	2016 (7)
Construct a second water tower in the City of Tomahawk.	Due to similarities, was combined with item above by planning committee.	2010 (8)	Combined with above (7)
Work to improve county's rural addressing system as part of Enhanced 911 development.	Virtually complete. County's Master Street Address Guide (MSAG) at 99% - in maintenance and error fixing mode.	2006 (9)	Removed from list (-)
Consider increasing emergency outdoor siren coverage in the City of Merrill.	Completed. City recently installed new warning sirens.	2006 (10)	Removed from list (-)
Analyze water towers for tornado strength.	No progress to date.	2007 (11)	2013 (14)
Establish ordinance for mobile homes to have tie-downs with ground anchors.	Updated building codes now require. Recommendation modified to "encourage" achors.	2006 (12)	On-going (15)
Establish shelters in Towns of King, Merrill and Schley.	Combined with *Shelter Planning* recommendation above by planning committee.	2008 (13)	Combined w/ related item (6)

TABLE 15 *Continued*

2005-2011 Plan Measure	***Progress Report***	***Original Status***	***New Status***
Promote winter hazards awareness at home and while traveling.	County does annual winter awareness "PR" campaign.	Annual (14)	Annual (16)
Acquire digital aerial photography with appropriate contour levels (2 ft) to facilitate update and modernization of FEMA Flood Insurance Rate Maps	Competed. 2010 aerial photography acquired. FIRMs update to DFIRMs.	2010 (15)	Removed from list (-)
Establish additional elevation points on critical streams where more information is needed.	Completed. Update work done and DFIRM production finished.	2008 (16)	Removed from list (-)
Evaluate and repair levees in the City of Merrill.	Not considered a needed project at local mitigation planning meeting at this time.	2006 (17)	Removed from list (-)
Evaluate effects of roadway and bridge flooding in the 6th Ward area in the City of Merrill.	Not considered a needed project at local mitigation planning meeting at this time.	2007 (18)	Removed from list (-)
Culvert sizing evaluation and maintenance program.	County Hwys program in place and on-going. Locals encouraged to develop as well.	2006 (19)	Ongoing (19)
Require stormwater plans for new development on the urban fringe.	Completed. State and Local regulations now require.	2006 (20)	Removed from list (-)
Review and test Emergency Action Plan (EAP) for each significant and high hazard dam.	County recently finished round of updates for many of the EAPs. A few remain outstanding.	On-going (21)	On-going (20)
Verify that tornado sirens are protected from lightning strikes.	Removed from list by planning committee.	2005 (22)	Removed from list (-)
Determine if critical facilities are adequately grounded to eliminate lightning damage. Install surge protection as necessary.	No progress to date.	2005 (23)	2014 (22)
Review local building codes for revisions to improve ability to withstand wind and lightning.	Updated building codes now require higher standards for storm resistance. Removed from list by planning committee.	On-going (24)	Removed from list (-)
Assist population with reducing heat disorders through awareness program.	County does heat awareness "PR" campaign as needed.	As needed (25)	As needed (24)

TABLE 15 *Continued*			
2005-2011 Plan Measure	***Progress Report***	***Original Status***	***New Status***
Develop countywide drought mitigation plans for multi-agency approaches to water conservation, drought prediction, stream and groundwater monitoring.	No progress to date.	On-going (26)	As needed (25)
Use education programs aimed at mitigating fires.	No progress to date. Incorporate Firewise.	Annual (27)	Annual (26)
Construct Kings Hill water main loop connector to ensure adequate water pressure for fire flow in developing parts of the City.	Not a wildfire related issue per say - removed from list by planning committee.	2010 (28)	Removed from list (-)
Development of new fire department /district.	Completed. Town of Pine River established its own fire district and constructed new fire station.	2006 (29)	Removed from list (-)
Develop driveway ordinances and private road standards to ensure emergency vehicle access.	Many towns have ordinances, etc. along these lines, but more could be done in some areas of the County.	2006 (30)	2015 (28)
Insect Infestation & Livestock Disease Outbreak measures	No progress to date - removed from list by planning committee.	Annual / On-going (31 - 34)	Removed from list (-)

LOCAL HAZARD MITIGATION GOALS

The mitigation strategy is based on a set of goals to reduce or avoid long-term vulnerabilities to the hazards identified in the Risk Assessment. The goals were established by the previous Mitigation Plan Taskforce during the development of the original plan. The update Plan Taskforce reviewed the goals and concurred that these goals, with some minor revisions, continue to represent the desired conditions to strive for through the mitigation efforts of the County and municipalities.

The mitigation goals for reducing or avoiding the long-term vulnerability of Lincoln County are as follows:

- Prepare and protect residents and visitors from all natural hazards.
- Protect health, safety, and general welfare of county residents and visitors, along with mitigating future loss of property from tornados.
- Create safety awareness in citizens and travelers of Lincoln County to protect them during and after winter storm and extreme cold events.
- Lessen the impact floods have on people, property and the environment.
- Eliminate the loss of life and reduce the risk of property damage in downstream areas that result from a dam failure.
- Minimize the threat to human life and property damaged caused by severe storms and associated hail, lightning and high wind.
- Create safety awareness in citizens of Lincoln County to help protect themselves during extreme heat events.
- Minimize crop loss while maintaining water supplies during times of drought.
- Protect the safety and property of residents from forest and wildfires.

PRIORITIZATION OF STRATEGIES

The Mitigation Planning Committee considered a number of factors in identifing and ranking proposed mitigation strategies. The matrix, below, describes the factors incorporated into the prioritization process. The resulting priority of each strategy is shown in the summary Table 16.

Prioritization Factors for Lincoln County Mitigation Strategies

Strategy Prioritization Factor	*Description of Factor Considerations*
Priority of Hazard Type	The ranking of hazard types, tornado, flooding, etc., accounts for threat to human safety and possible property damage and was carried over to groups of strategies by hazard type. Strategies believed to benefit multiple hazards (listed under "All Hazards") were valued higher.
Ease of Implementation	Strategies where existing staff and resources are adequate were valued higher than those where additional resources are necessary. Consideration was also given to strategies that meet other countywide goals or incorporated as part of another county project. Project timing was also a consideration as to when funding such as grant applications might be available and when various activities could be scheduled.
Perceived Cost versus Potential Benefit	Although a detailed cost-benefit analysis was deemed beyond the scope of this study, the Committee weighed the perceived costs of each strategy against the potential benefit anticipated. Proposals that seemed economically unfeasible were rejected.
Multi-jurisdictional Application	Strategies benefiting multiple jurisdictions were valued more than those pertaining to fewer jurisdictions.

Members of the Taskforce scored each strategy based on these prioritization factors and assigned a high, medium or low rating to reflect their relative level of priority for that strategy. A 3-point weighted scale was used to average the scores into the overall high, medium or low priority for the County or local units as shown in Table 16.

MITIGATION ACTION PLAN

The mitigation strategies are organized by hazard beginning with some overall strategies that apply to a number of different hazards and are listed under the category, "all hazards". For each hazard, a goal was established as to what the County intends to achieve by implementing the specific action strategies and is based on the risk assessment findings. Each action strategy is then briefly described and followed by a discussion of the jurisdictions/agencies that will pursue the action including the proposed lead jurisdiction/agency.

Each section of this part is broken down as follows:

Goal:
Broad, long-term mitigation goals to reduce or avoid vulnerabilities to the identified hazard are stated.

Action:
Each action strategy proposed to aid in achieving the overall goal for the identified hazard is described. A given action strategy may be comprised of a number of related sub-actions.

Participating Jurisdictions:
The proposed lead agency or lead jurisdiction is identified along with a listing of the other agencies or jurisdictions that the recommended action applies to. This does not preclude other agencies or jurisdictions from participating in the action.

The chapter concludes with a summary of the recommended mitigation strategies shown in Table 16. Table 16 also contains project cost estimates where available and potential time frames.

Hazard: All Hazards

Goal:
Prepare and protect residents and visitors from all natural hazards.

Action 1:
The county should continue to promote the increased coverage and use of National Oceanic and Atmospheric Administration (NOAA) weather radios. NOAA weather radios receive signals from a nationwide network of radio stations broadcasting continuous weather information from the nearest National Weather Service office. All National Weather Service forecasts, watches, warnings, and other hazard information like dam failures are broadcast 24 hours

/ 7 days a week. The NOAA weather radio is a single source for comprehensive weather and emergency information; because the Emergency Alert System (formerly the Emergency Broadcast System) broadcasts use the same network of radio stations as one of many electronic methods to broadcast other hazard information.

Participating Jurisdictions for Action 1:
Lead agency will be Lincoln County Emergency Management. Jurisdictions participating in this action will include Lincoln County, City of Merrill, City of Tomahawk, and all Towns including: Birch, Bradley, Corning, Harding, Harrison, King, Merrill, Pine River, Rock Falls, Russell, Schley, Scott, Skanawan, Somo, Tomahawk, and Wilson.

Action 2:
The County should continue to add and update information on an Emergency Management web page link off the existing County website. The web page should contain information describing the types of hazards and how to respond to a hazard threat. The site should also contain information on ordinances pertaining to hazards (i.e. County floodplain zoning), locations of shelters, and links to other sites that provide valuable information on weather conditions, burning permits, etc.

Participating Jurisdictions for Action 2:
Lead agency will be Lincoln County Emergency Management. The only directly participating jurisdiction will be Lincoln County.

Action 3:
There should be a countywide effort to itemize and test back-up utilities at all critical facilities. Critical facilities need operational utilities such as power, communications, water and sewer to function effectively. The need for back-up generators should electricity be cut off, obtaining alterative sources of potable water, and dealing with wastewater are issues that need to be examined. Back-up power (heat) is especially important at facilities that may be used to shelter people in case of a power outage during extreme cold weather. The City of Merrill has identified this as a need and has already installed emergency power generators for City Hall. Existing back-up systems need to be maintained to ensure operation in time of need.

Participating Jurisdictions for Action 3:
Lead agencies will be Lincoln County Emergency Management, all Cities and all Towns. Jurisdictions participating in this action will include Lincoln County, City of Merrill, City of Tomahawk, and all Towns.

Action 4:
The City of Tomahawk needs to create a second street to the hospital located in the City. The Sacred Heart Hospital in Tomahawk currently has access via only one public street. There are no side or rear streets adjacent to the hospital property. A number of hazards could cut off the access road causing a significant problem in getting disaster victims into the facility for the appropriate level of care as well as impeding the flow of medical equipment and supplies.

The design and cost of the roadway will depend on the selected location. Currently, there are wetland issues surrounding the property, and the City must work with the Wisconsin DNR and US Army Corps of Engineers. This plan urges the Department of Natural Resources and Corps of Engineers to facilitate wetland permitting associated with establishing an alternate access to the hospital.

Participating Jurisdictions for Action 4:
Lead agency will be the City of Tomahawk. The only directly participating jurisdiction will be the City of Tomahawk.

Action 5:
Early warning related concerns were identified during the development of this All-Hazards Plan. The rural nature of much of the county, maintenance, liability technology issues, and funding are concerns raised during the discussion. The City of Merrill recently installed new warning sirens that cover a majority of the city.

Some counties in Wisconsin have been experimenting with new technology based alternatives to the traditional warning mechanisms. One example is CodeRED, which is a phone-based early warning system that can deliver targeted emergency notifications to phone numbers in an affected area.

Development of early warning and communication systems to include Emergency Alert System (EAS) capabilities and expanded use of emerging technologies is recommended. Currently, NOAA weather radio is the primary trigger for activating the EAS on commercial radio, television and cable systems. Another concern identified is the lack of access to cable television in certain parts of the county due to its rural nature and sparse population. Many residents rely on satellite television which has no connection to the emergency alert system and no access for local officials. Local access to these types of warning systems could facilitate more timely notification of a hazard situation as well as the ability to tailor important information or instructions for the specific area.

Participating Jurisdictions for Action 5:
Lead agency will be Lincoln County Emergency Management, all Cities and all Towns. Jurisdictions participating in this action will include Lincoln County, City of Merrill, City of Tomahawk, and all Towns.

Action 6:
Shelter related concerns were identified during the development of this All-Hazards Plan. Issues identified included mobile home parks, campgrounds seasonal housing, power outage and disruption of fuel supplies, among others. The County has had a joint committee working on this issue, particularly with regard to special needs populations, but progress has been slow.

To address these concerns, the County should work to develop a countywide disaster shelter plan. The Towns of King, Merrill, Schley, Skananwan and Somo identified an interest or need for shelter facilities and should work cooperatively with the County to create detailed plans specific to their situations. Shelters may be eligible for funding under the Community Development Block Grant (CDBG) program. One issue with shelters may stem from lack of knowledge regarding existence of shelters and procedures for use. Plan distribution and public informational efforts are recommended.

The plan should identify available shelters by function and determine where coverage is deficient. The function of a shelter is to protect people during a disaster event, to accommodate displaced people in the aftermath, or both. Existing facilities (schools, churches, public buildings, etc.) should be evaluated for suitability or locations determined for new structures. Mobile home parks, campgrounds and County parks within the County lack shelters and are a particular concern.

Establish zones to help people to identify which shelter they should go to and procedures for notification. It is also important to evaluate shelters for suitability for various types of hazards. For example, a shelter located within a floodplain may not be the best place to send people during a storm that could result in flooding. Adequate heat (and back-up source of energy to run it) is an important consideration when seeking to shelter people during a winter weather power outage. Local sponsors should be identified to help maintain shelters and ensure they are open in time of need. Transportation options should also be considered especially for the elderly and those with disabilities. The transportation and subsequent shelter of persons with special medical or other needs are critical factors to address.

Participating Jurisdictions for Action 6:
Lead agencies will be Lincoln County Emergency Management and Health Departments, all Cities and all Towns. Jurisdictions participating in this action will

include Lincoln County, City of Merrill, City of Tomahawk, and all Towns, particularly including:, King, Merrill, Schley, Skanawan and Somo.

Action 7:
The City of Tomahawk should establish a second municipal well field and a second water tower. Currently, the City gets its entire water supply from a single well field and water tower. An incident affecting the water supply would likely impact all of the City's wells and/or water tower simultaneously. Many of the hazards covered in this plan have that potential. Another concern is the rail ine that runs near the wells which carries potentially hazardous cargo that could threaten the water supply. The potential loss of water supply for the entire City presents public health concerns from lack of drinking water and economic concerns due to lack of water for industrial processes and tourism impacts. Further, a second tower would provide extra water storage capacity to help mitigate municipal well problems. Adequate fire flow is an issue in newly developing parts of the City that could be addressed through enhanced pressurization from the new second water tower.

Participating Jurisdictions for Action 7:
Lead agency will be the City of Tomahawk. The only directly participating jurisdiction will be the City of Tomahawk.

Action 8:
A county-wide emergency response zone atlas should be developed. Often referred to as a fire zone atlas, these atlas books were originally conceived to help direct firefighting and evacuation operations in rural areas at high risk for wildfire. A number of counties across the state have developed, or are developing these atlases, typically sponsored by and/or in conjunction with the WisDNR. Recognizing their potential value in responding to a wide variety of hazard events, many counties are utilizing them as a tool in responding to and managing other situations beyond fire.

Zones are drawn around groups of structures based on factors related to access and evacuation. The zones are named, colored-coded and indexed for ease of reference. Atlas books are distributed to police, fire and EMS units responsible for responding to emergency situations in rural areas of the county covered by the atlas.

Participating Jurisdictions for Action 8:
Lead agency will be Lincoln County Emergency Management in conjunction with the Wisconsin Department of Natural Resources. Jurisdictions participating in this action will include Lincoln County, the Cities of Merrill and Tomahawk, and all Towns including corresponding police, fire and EMS departments.

Action 9:
The City of Tomahawk's critical emergency response facilities: police, fire and public works departments are all located within close proximity of each other downtown. So, a hazard event causing significant damage to one facility would also likely inflict similar damage on the others. In addition, a large LP gas facility is located adjacent to this area as well. A hazard causing an incident at the LP facility could threaten significant damage or complete destruction of these critical city operations. As a result of these conditions, the City would like to establish an emergency operations center away from this central location to serve as a command post for city operations in the event a hazard threatens or destroys its downtown facilities.

Participating Jurisdictions for Action 9:
Lead agency will be the City of Tomahawk. The only directly participating jurisdiction will be the City of Tomahawk

Action 10:
Due to on-going changes in regulations and technology, the City of Merrill has identified the need to upgrade and modernize its emergency communications equipment including radios for police and fire. Necessary upgrades include mandated frequency narrow-banding. Interoperability is an important consideration for a small community that may work with a lot of outside services and mutual aid.

Participating Jurisdictions for Action 10:
Lead agency will be the City of Merrill. The only directly participating jurisdiction will be the City of Merrill.

Action 11:
The County's new emergency operations center location needs additional outfitting including emergency radio communications equipment and HAM radio set. The County should also look at potential needed updates to its mobile command post.

Participating Jurisdictions for Action 11:
Lead agencies will be Lincoln County Emergency Management and Sheriff's Office. Lincoln County will be the only directly participating jurisdiction in this action.

Action 12:
Existing County radio communication towers have good coverage from their high elevation location on Irma Hill. However, there are small areas or "gaps" that have been identified where communications could be improved. Western Corning is a candidate for an additional tower. In the southeast corner of the

County, the Town of Pine River has a tower at its new fire department location; however, a repeater is needed to improve communications coverage in that part of the County. The County should work with the Town of Pine River to acquire and install this repeater. In the far northwestern part of the County (i.e. Somo and Tomahawk) coverage can be "iffy" depending on weather conditions. The northwestern corner of the County (Harrison) is also a concern.

Participating Jurisdictions for Action 12:
Lead agency will be Lincoln County Emergency Management. Lincoln County and the Town of Pine River will be the participating jurisdictions in this action.

Action 13:
The Town of Corning has expressed a need to improve its addressing on seasonal dwellings and other structures in the Town to improve emergency response.

Participating Jurisdictions for Action 13:
Lead agency will be the Town of Corning. The only directly participating jurisdiction in this action will be the Town of Corning.

Hazard: Tornado

Goal:
Protect health, safety, and general welfare of county residents and visitors, along with mitigating future loss of property from tornados.

Action 14:
The Cities of Merrill and Tomahawk should analyze water towers for strength and stability against tornadoes.

Participating Jurisdictions for Action 14:
Lead agency will be the Cities of Merrill and Tomahawk. The only directly participating jurisdictions will be the City of Merrill and the City of Tomahawk.

Action 15:
The County, cities and towns should encourage builders and owners of manufactured and mobile homes to use tie-downs with ground anchors to help secure the main structure and any exterior attachments such as carports and porches. Using these devices can reduce the risk of damage to mobile and manufactured homes. Local units with zoning (or other related) ordinances should strengthen applicable provisions and improve enforcement.

Participating Jurisdictions for Action 15:
Lead agencies will be Lincoln County Planning and Zoning Department, all Cities and all towns. Jurisdictions participating in this action will include Lincoln County, City of Merrill, City of Tomahawk, and all Towns.

Hazard: Winter Storm/Extreme Cold

Goal:
Create safety awareness in citizens and travelers of Lincoln County to protect them during and after winter storm and extreme cold events.

Action 16:
The County should promote winter hazards awareness, including home and travel safety measures, such as avoiding travel during winter storms and periods of extreme cold. If travel cannot be avoided, having a shovel, sand, warm clothing, food, water, and back-up heating system should be encouraged to have in vehicles.

Participating Jurisdictions for Action 16:
Lead agencies will be Lincoln County Emergency Management, all Cities and all Towns. Jurisdictions participating in this action will include Lincoln County, City of Merrill, City of Tomahawk, and all Towns.

Hazard: Flood / Dam Failure

Goal:
Lessen the impact floods have on people, property and the environment.

Goal:
Eliminate the loss of life and reduce the risk of property damage in downstream areas that result from a dam failure.

Action 17*:
Communities within Lincoln County currently participating in the National Flood Insurance Program (NFIP) should work to ensure continued compliance. Compliance primarily entails adopting and enforcing floodplain management regulations that meet minimum criteria. Lincoln County and the cities of Merrill and Tomahawk are in the program. All towns are included under the umbrella of the County through the state mandated county shoreland zoning. These floodplain management regulations will continue to apply to and be enforced for new and existing buildings and infrastructure.

Participating Jurisdictions for Action 17:
Lead agencies include Lincoln County Planning and Zoning, the City of Merrill and the City of Tomahawk. The only directly participating jurisdictions are Lincoln County, the City of Merrill and the City of Tomahawk.

Action 18*:
To mitigate the long-term impacts of flooding, if evidence of recurring flooding is an issue with specific properties after a significant flood event, the County or other appropriate jurisdiction should investigate, as a possible solution, the voluntary acquisition and removal of buildings in the floodplain with flood damage. Property owners should be informed of their floodplain status and related insurance issues. A survey to gauge interest in buy-out and relocation of properties within the floodplain is recommended to help evaluate the County's options in capturing part of a major stream of federal mitigation dollars.

Participating Jurisdictions for Action 18:
Lead agencies include Lincoln County Planning and Zoning and Emergency Management, the City of Merrill and the City of Tomahawk. Participating jurisdictions will include: Lincoln County, the City of Merrill and the City of Tomahawk.

Action 19:
The County and local units of government should inventory the drainage culverts in roads of their respective jurisdictions. Each culvert should be evaluated for sizing and maintenance status. A program should be implemented that regularly maintains free flow through the culvert and phases in replacement of undersized units. This is critical to minimizing flood damage to roadways and preventing washouts.

Participating Jurisdictions for Action 19:
Lead agencies will be Lincoln County Highway Department, all Cities and all Towns. Jurisdictions participating in this action will include Lincoln County, City of Merrill, City of Tomahawk, and all Towns.

Action 20:
Lincoln County continues to work with owners and operators to review and test dam failure Emergency Action Plan (EAP) for each significant and high hazard dam within Lincoln County. FEMA guidelines for dam safety indicate that training and exercises are necessary to maintain operational readiness, timeliness and responsiveness. The status of training and levels of readiness should be evaluated in periodic simulated emergency exercises for response personnel and the dam owner/operator.

Emergency situations and/or dam failures are not common events, but the dams within the County are aging and as a result becoming more of a concern. The EAP can become outdated, lose its effectiveness and no longer be workable if the plan is not practiced. Those involved may become unfamiliar with their roles and responsibilities, especially with the turn over of local officials. If the plan is not updated, the information contained in it may become outdated and useless.

There are five types of exercises, including: orientation seminar, drill, tabletop exercise, functional exercise and full-scale exercise. They range in complexity from simple to more complex, but it is not required that every exercise program include all five types.

Participating Jurisdictions for Action 20:
Lead agency will be Lincoln County Emergency Management. Participating jurisdictions will include the Cities of Merrill and Tomahawk, and those Towns that could be affected, including Bradley, Wilson, Rock Falls, Harding, Merrill, Scott and Pine River. Federal and state officials should also be invited including DNR and State Patrol, as well as dam owners/operators.

Action 21:
In their hazard mitigation issues surveys, both the towns of Birch and Wilson indicated the need for improved ditching along town roads to better manage water and control flooding. The Town of Birch is interested in doing improved ditching techniques with rock retainers and sumps for water management to reduce flash flooding.

Participating Jurisdictions for Action 21:
Lead agencies will be the towns of Birch and Wilson. Participating jurisdictions include the Town of Birch and the Town of Wilson.

Hazard: Severe Thunderstorm/Hail/Lightning/Wind

Goal:
Minimize the threat to human life and property damaged caused by severe storms and associated hail, lightning and high wind.

Action 22:
Determine if critical facilities such as hospitals, police buildings, fire halls, administration buildings, schools, and telecommunication antennas are adequately grounded to eliminate lightning damage. Lincoln County Emergency Management could coordinate efforts with cooperation from local units and private operators such as the hospitals.

Where necessary, install lightning grade surge protection devices for critical electronic components used by government, public service and public safety facilities, such as warning systems, control systems, communications and computers.

Participating Jurisdictions for Action 22:
Lead agencies will be Lincoln County Emergency Management, all Cities and all Towns. Jurisdictions participating in this action will include Lincoln County, City of Merrill, City of Tomahawk, and all Towns.

Action 23:
Due to the wide variety of recreation activities throughout the County, public awareness of proven lightening safety guidelines to reduce risk should be promoted. Areas of concern include golf courses, country clubs, parks, ball fields (and other athletic fields), public beaches and boat launches. Efforts should be made to get managers and staff of such facilities "up to speed" with procedures and training for lightning safety. Another common measure is erecting of signs that inform people when to get out of the water or off a golf course (etc.) when lightening threatens.

Participating Jurisdictions for Action 23:
Lead agencies will be Lincoln County Emergency Management, all Cities and all Towns. Jurisdictions participating in this action will include Lincoln County, City of Merrill, City of Tomahawk, and all Towns.

Hazard: Drought/Extreme Heat

Goal:
Create safety awareness in citizens of Lincoln County to help protect themselves during extreme heat events.

Goal:
Minimize crop loss while maintaining water supplies during times of drought.

Action 24:
To assist the population in reducing heat disorders, the County should promote extreme heat hazards awareness, including safety tips, medical information, and contact information for health officials. Information regarding checking on neighbors or other known residents that live alone or that may be at a disadvantage in fending for themselves should be included.

Participating Jurisdictions for Action 24:
Lead agencies will be Lincoln County Emergency Management and Health Departments, all Cities and all Towns. Jurisdictions participating in this action will include Lincoln County, City of Merrill, City of Tomahawk, and all Towns.

Action 25:
Develop countywide drought mitigation plan to encourage multi-agency approaches to water conservation, drought prediction and stream and groundwater monitoring. Droughts probably have the greatest impact on agricultural areas, and given the significance of the agricultural sector of the County's economy, drought becomes an important hazard to prepare for.

Even droughts of limited duration can reduce crop growth and yields, adversely affecting farm income. More substantial events can decimate croplands and result in total loss, negatively impacting both the individual producer and the local economy. Continuous monitoring of hydrologic conditions is important to identify and assess drought conditions.

Participating Jurisdictions for Action 25:
Lead agency will be Lincoln County Emergency Management, Land and Water Conservation and UWEX departments. Jurisdictions participating in this action will include Lincoln County, City of Merrill, City of Tomahawk, and all Towns.

Hazard: Forest/Wild Fires

Goal:
Protect the safety and property of residents from forest and wildfires.

Action 26:
The County should develop education and information for homeowners on protecting their homes and other structures from fires. Since Lincoln County is mostly rural with vast woodlands, emphasis should be placed on construction and establishing defensible areas around structures. Roofs and exterior siding should be made of ignition-resistant materials. At least 30 feet should be left between homes and surrounding combustible vegetation. Outreach efforts can exist in the form of web sites, local newspaper articles, and pamphlets to homeowners.

Participating Jurisdictions for Action 26:
Lead agency will be Lincoln County Emergency Management. The only directly participating jurisdiction will be Lincoln County.

Action 27:
Local fire departments should coordinate with the Department of Natural Resources to provide cross-training and exercises for responding to larger wildfires.

Participating Jurisdictions for Action 27:
Lead agencies will be the various area Fire Departments and Wisconsin Department of Natural Resources Flre District Staff. Participating jurisdictions will include local Fire Departments.

Action 28:
Local units of government should develop driveway ordinances and minimum standards for private roads to support emergency vehicle access where lacking. The ability of emergency response units to reach a site is often the critical factor in the effectiveness of the response. Inadequate private access roads or driveways are common problems in rural areas. In some cases emergency units cannot physically reach a target site due to narrowness, tight corners, steep slopes, etc. Other problems include lack of space to maneuver or turn around.

Participating Jurisdictions for Action 28:
Lead agencies will be all Towns. Jurisdictions participating in this action will include all Towns.

Action 29:
Due to the nature of the pine "fuel" resulting in high risk for wildfire in the northern half of the County, Lincoln County should work with the northern towns, the City of Tomahawk and the Wisconsin Department of Natural Resources to develop an area-wide Community Wildfire Protection Plan (CWPP). Similar conditions also exist in southwestern Oneida County, presenting an opportunity to coordinate on a multicounty collaborative effort. The boundaries of the WisDNR Tomahawk Fire Response Unit make a logical planning area based on the similar conditions and risks throughout.

A CWPP identifies and prioritizes areas for hazardous fuels reduction treatments and recommends types and methods of treatment that will protect at-risk areas and critical infrastructure. WisDNR has grant funding available for community wildfire protection planning.

Participating Jurisdictions for Action 29:
Lead agency will be Lincoln County Emergency Management in conjunction with the Wisconsin Department of Natural Resources. Jurisdictions participating in this action will include: Lincoln County, the City of Tomahawk, the northern Towns, and the WisDNR, as well as Oneida County and towns in southwestern Oneida County.

TABLE 16 SUMMARY OF MITIGATION STRATEGIES LINCOLN COUNTY ALL HAZARDS MITIGATION PLAN					
MITIGATION MEASURES **(See Expanded Description in Plan Text)**	**RESPONSIBLE UNITS**	**COST ESTIMATE**	**EXISTING AND POTENTIAL RESOURCES TO IMPLEMENT**	**PROJECT ** TIMEFRAME**	**PRIORITY LEVEL**
ALL HAZARDS					
1. Continue to promote the increased use of National Oceanic and Atmospheric Administration (NOAA) weather radios.	County EM Dept.	Staff Time	Radio sales cover cost of radios.	On-going	HIGH
2. Continue to add/update Emergency Management Department link off existing County website.	County EM Dept.	Staff Time	Dept. Budget	On-going	MEDIUM
3. Verify that back-up utilities are available at all critical facilities.	County EM Dept. / All Cities / All Towns	Staff Time	Dept. Budget	On-going	HIGH
4. Create second street to the hospital in the City of Tomahawk. Work with DNR and Corps of Engineers on wetland issues.	City of Tomahawk	100,000	General Fund / Local Road Aids	2015	HIGH
5. Work toward development of county-wide early warning systems possibly including all telephone message cast (e.g. "Code Red") and cable TV broadcast, among others.	County EM Dept. / All Cities / All Towns	Costs to be determined	General Funds / Dept. Budgets	On-going	HIGH
6. Consider developing county-wide disaster shelter plan possibly including i.d. available shelters, trailer park shelter needs, notification procedures, etc.	County EM Dept. / County Health Dept/ All Cities / All Towns	Costs to be determined	General Funds / Dept. Budgets	On-going	HIGH
7. Establish a second well field and water tower for the City of Tomahawk	City of Tomahawk	Costs to be determined	General Fund / US RDA Water Facilities Grant/Loan	2016	MEDIUM
8. Develop Emergency Response Zone Atlas - print and distribute.	County EM Dept.	20,000	Wisconsin DNR tech. assist. and funding / WEM funding	2013	MEDIUM
9. Establish an "off-site" emergency command post to mitigate proximity of Tomahawk's police, fire and public works facilities to each other and to high hazard threats (LP gas).	City of Tomahawk	150,000	General Fund / Federal Assistance to Firefighters Grant (AFG)	2014	MEDIUM
10. Update radio / emergency communications system within the City of Merrill.	City of Merrill	Costs to be determined	General Fund / OJA Funding Programs	2013	MEDIUM
11. Continue to develop and enhance new County EOC location as well as County mobile command post.	County EM Dept. / Sheriff's Office	Costs to be determined	General Fund / OJA Funding Programs	2016	MEDIUM

MITIGATION MEASURES (See Expanded Description in Plan Text)	RESPONSIBLE UNITS	COST ESTIMATE	EXISTING AND POTENTIAL RESOURCES TO IMPLEMENT	PROJECT ** TIMEFRAME	PRIORITY LEVEL
12. Address gaps in emergency interoperable communications coverage by installing communications towers/repeaters in problems areas like eastern Pine River and western Corning.	County EM Dept. / Sheriff's Office	Costs to be determined	General Fund / OJA Funding Programs	2015	MEDIUM
13. Improve addressing on seasonal dwellings / other structures to improve emergency response in Corning.	Town of Corning	Staff Time	Fee for address plaques.	2013	MEDIUM
TORNADO					
14. Analyze water towers for tornado strength.	City of Merrill / City of Tomahawk	Costs to be determined	General Funds	2013	MEDIUM
15. Encourage mobile homes and exterior attachments such as carports and porches to have tie-downs with ground anchors.	County P&Z Dept. / All Cities / All Towns	Staff Time	Dept. Budgets	On-going	LOW
WINTER STORM / EXTREME COLD					
16. Promote winter hazards awareness including home and travel safety measures.	County EM Dept. / All Cities / All Towns	Staff Time	Dept. Budget	Annual	HIGH
FLOOD / DAM FAILURE					
17. County/City continued compliance in the National Flood Insurance Program (NFIP)*.	County P&Z Dept. / City of Merrill / City of Tomahawk	Staff Time	Dept. Budgets	On-going	MEDIUM
18. If evidence of recurring flooding is an issue with specific properties after a significant flood event, investigate, as a possible solution, the voluntary acquisition/removal of buildings in a floodplain with flood damage.* (FEMA NFIP requirement)	County P&Z Dept. / City of Merrill / City of Tomahawk	Costs to be determined	Mitigation Grants	As needed	MEDIUM
19. Culvert sizing evaluation and maintenance program.	County Hwy Dept. / All Cities / All Towns	Costs to be determined	Dept. Budgets	On-going	MEDIUM
20. Continue to work with dam owners to review and test Emergency Action Plan (EAP) for each significant and high hazard dam.	County EM Dept.	Staff Time	Dept. Budget	On-going	MEDIUM
21. Improve ditching along town roads in Birch and Wilson to better manage water and control flooding.	Towns of Birch and Wilson	Costs to be determined	General Funds	2013	MEDIUM

MITIGATION MEASURES (See Expanded Description in Plan Text)	RESPONSIBLE UNITS	COST ESTIMATE	EXISTING AND POTENTIAL RESOURCES TO IMPLEMENT	PROJECT ** TIMEFRAME	PRIORITY LEVEL
SEVERE THUNDERSTORM / HAIL / LIGHTNING / WIND					
22. Determine if critical facilities are adequately grounded to eliminate lightning damage. Install surge protection as necessary.	County EM Dept. / All Cities / All Towns	Staff Time	Dept. Budget	2014	MEDIUM
23. Promote lightning safety awareness to reduce risk.	County EM Dept. / All Cities / All Towns	Staff Time	Dept. Budget	Annual	LOW
DROUGHT / EXTREME HEAT					
24. Assist population with reducing heat disorders through awareness program as needed.	County EM Dept. / County Health Dept/ All Cities / All Towns	Staff Time	Dept. Budgets	As needed	MEDIUM
25. Develop countywide drought mitigation plans for multi-agency approaches to water conservation, drought prediction, stream and groundwater monitoring.	County EM Dept. / County Land Conservation./ County UWEX	Staff Time	Dept. Budgets	As needed	LOW
FOREST / WILDFIRE					
26. Promote Firewise program and related educational materials to increase community awareness of wildfire risk within the County.	County EM Dept.	Staff Time	Dept. Budget	Annual	MEDIUM
27. Provide wildland / structural crossover firefighter training for local/volunteer fire departments in conjunction with the DNR.	Area Fire Depts. WisDNR District	Costs to be determined	Dept Budgets	2013	MEDIUM
28. Develop driveway ordinances and private road standards as well as possible zoning recommendations to ensure emergency vehicle access where lacking.	Various Towns	Costs to be determined	General Funds	2015	MEDIUM
29. Develop "area-wide" Community Wildfire Protection Plan For Tomahawk fire district covering northern Lincoln County and southwestern Oneida.	County EM Dept. / northern Towns / City of Tomahawk / WisDNR	24,999	WisDNR National Fire Plan Funding	2013	MEDIUM

*Denotes actions related to compliance with NFIP.
**Actual project implementation dependent on funding and staff availability.

INTRODUCTION

Part V of the Lincoln County All Hazards Mitigation Plan Update describes the plan adoption, implementation, and evaluation and maintenance.

PLAN UPDATE ADOPTION

The adoption of the Lincoln County All Hazards Mitigation Plan Update lends itself to serve as a guiding document for all local government officials. It also certifies to program and grant administrators from the FEMA and WEM that the plan's recommendations have been properly considered and approved by the governing authority and the jurisdiction's citizens. Finally, it helps to ensure the continuity of mitigation programs and policies over time because elected officials, staff, and other community decision-makers can refer to the official document when making decisions about the community's future.

Before adoption of the Plan Update by the incorporated areas, the update must be sent to the state and federal level to verify that all DMA2K requirements are met. Once a draft of the updated Plan has been completed, it is submitted to the State Hazard Mitigation Officer (SHMO) at the state level at WEM. Previous drafts of the update have already been reviewed prior to this submittal. The SHMO will determine if the updated Plan meets DMA2K and/or other state program requirements. Upon approval of the draft by WEM, the SHMO is responsible for showing the update to the FEMA Region V Office for review.

Prior to final approval by WEM and FEMA, the update must be formally adopted by Lincoln County and its incorporated areas by resolution. Incorporated communities that do not adopt the Plan Update cannot apply for mitigation grant funds unless they opt to prepare, adopt, and submit their own plan. Adoption of the Plan Update gives the jurisdiction a legal basis to enact ordinances, policies, or programs to reduce hazard losses and to implement other mitigation actions.

All general purpose units of government (i.e. cities, towns) within Lincoln County were offered one or more avenues to participate in the development of this Plan Update. Adoption of the Plan by a local unit of government certifies their participation. The Lincoln County Board has adopted this Update. Resolutions of adoption are contained in APPENDIX B.

PLAN UPDATE IMPLEMENTATION

ADMINISTRATIVE RESPONSIBILITIES

Once the Plan Update has been approved, stakeholders must be informed. The County Emergency Management Director will distribute notice of availability to stakeholders. The County will also make the Plan Update available to the public by linking the report on their web site.

Along with monitoring the progress of the action projects, the County Emergency Management Director and Emergency Management Committee should also work to secure funding to implement the Plan Update. State and federal agencies, nonprofit organizations, and foundations continually make grants available. Emergency Management should research these grant opportunities to determine eligibility for the County and its local units of government.

When implementing this Plan Update, the County Emergency Management Committee and staff team should consider innovative ways to involve active participation from nonprofit organizations, businesses, and citizens to implement the update. The relationship between these groups will result in greater exposure of the Plan Update and provide greater probability of implementation of the action projects listed.

The role of department administrators, elected officials, and local administrators are to ensure that adopted actions from Part IV are considered in their budgets. It is understood that projects may not be carried out as they are scheduled in Part IV due to budget constraints. However, since many of these action projects are considered an investment in safeguarding the publics' health, safety, and property, they should be carefully considered as a priority.

PROMOTE SUCCESS OF IDENTIFIED PROJECTS

Upon implementing a project covered by this Plan Update, it is important to promote the accomplishment to the stakeholders and to the communities. This will help inform people that the update is being implemented and is effective.

INCORPORATION INTO OTHER LOCAL PLANNING MECHANISMS

FEMA requires a process by which the mitigation plan is incorporated into other planning mechanisms where appropriate. When undergoing any planning process, County departments, local units of government and/or any professional staff assisting them, typically review and incorporate any related pre-existing plans as a matter of course. However, to help ensure this outcome, Lincoln County has established a two-part process to

incorporate the All Hazards Mitigation Plan into other County and local planning efforts as follows:

- Notification of County Departments and Local Units of Government - Upon adoption of the All Hazards Mitigation Plan, the County EM Director will distribute a letter that explains how the Plan applies to other planning efforts they might undertake and how to obtain copies of the Mitigation Plan.

- Promotion by EM Director - The EM Director will promote incorporation of the All Hazards Mitigation Plan as is made aware of or becomes a participant in any new planning process.

A number of upcoming planning efforts have been identified for incorporation of the All Hazards Mitigation Plan. Upcoming planning efforts at the County or local levels include: Community Wildfire Protection Plans (CWPPs), updates to the Comprehensive Plans for the all local units, and a county-wide Farmland Preservation Plan.

Currently, the County's All Hazard Mitigation Plan is already being incorporated into another planning process, the Lincoln County Comprehensive Plan, as follows.

Lincoln County Comprehensive Plan

The following concepts were considered when developing the Lincoln County and local unit comprehensive plans, based on the nine elements of the Wisconsin comprehensive planning law:

- *Issues and Opportunities Element* – a summary of major hazards local government is vulnerable to, and what is proposed to done to mitigate future losses from the hazards.
- *Housing Element* – an inventory of the properties that are in the floodplain boundaries, the location of mobile homes, recommendation on building codes, shelter opportunities, and a survey of homeowners that may be interested in a voluntary buyout and relocation program.
- *Utilities and Community Facilities Element* – identify critical facilities such as shelter, schools, medical, water infrastructure, etc. and make recommendations on how to mitigate specific risks factors
- *Transportation Element* – identify any transportation routes or facilities that are more at risk during flooding, winter storms, or hazardous material spills.
- *Agricultural, Natural Resources, and Cultural Resources Element* – identify the floodplains and agricultural areas that area at risk to hazardous events. Incorporate recommendations on how to mitigate future losses to agricultural areas.

- *Economic Development Element* – describe the impact past hazards have had on County and municipal business.
- *Intergovernmental Cooperation Element* - identify intergovernmental police, fire, and rescue service sharing agreements that are in effect, or which may merit further investigation, consider cost-sharing and resource pooling on government services and facilities.
- *Land Use Element* - describe how flooding have impacted land uses and what is being done to mitigate negative land use impacts from flooding; map and identify hazard areas such as floodplains, hazardous materials areas, and soils with limitations.
- *Implementation Element* – have action plans from this Plan implemented into comprehensive plans.

PLAN UPDATE EVALUATION AND MAINTENANCE

Planning is an ongoing process. Because of this, this document should grow and adapt in order to keep pace with growth and change of the County and its local jurisdictions. DMA2K requires that local plans be evaluated and updated at least every five years to remain eligible for assistance.

The Plan will be reviewed and evaluated on an annual basis. Within this period, the County Emergency Management Director will evaluate incoming information against the contents of the Plan as needed to prepare for revisions. It is recommended that the County Emergency Management Committee discuss evaluation and revisions to the Plan one year from its adoption and annually thereafter as it fits the Committee's scheduling. The Emergency Management Director is encouraged to consult/coordinate with the NCWRPC at the time of revision.

County Emergency Management Committee meetings are always open to the public, and the public can bring questions or comments regarding this Plan Update to any regular meeting. The final Plan Update document will be available on the Internet until the next draft update is posted for review. The public can continue to submit questions or comments at any time via an email link.

The Plan must also be evaluated and revised following disaster events to determine if the recommended actions are appropriate given the impact of the event. The risk assessment (Part III) should also be reviewed to see if any changes are necessary based on the pattern of disaster damages.

Full updates are required every five years. As a result, every fifth year, the annual review will be expanded to an overall plan update to meet FEMA requirements. All stakeholders and the public will again be involved in the update. The County will conduct a survey and open comment meeting. This also provides an opportunity to inform on the progress of any projects.

The County Emergency Management Committee and County Board must approve all changes and updates to the Plan.

Appendix A – Local Unit Survey

OFFICE OF EMERGENCY MANAGEMENT

1104 EAST FIRST STREET

MERRILL, WI 54452 715-536-6228

BRIAN M. SLADEK - DIRECTOR

MEMORANDUM

TO: Town Chairpersons and Clerks

FROM: Brian Sladek, Lincoln County Emergency Management

DATE: September 26, 2011

RE: Lincoln County All Hazards Mitigation Plan Survey

Lincoln County has received a grant through the Federal Emergency Management Agency (FEMA) to complete an All Hazards Mitigation Plan for the purposes of reducing the County's vulnerability to the impacts of a natural disaster. The County must have an approved plan to maintain eligibility of the County and its local units for certain FEMA disaster funds that would be available after a disaster declaration.

The County is being assisted by the North Central Wisconsin Regional Planning Commission (NCWRPC) to develop this plan. We are currently seeking information from town officials. The enclosed survey has been created for this purpose.

Please complete and return the survey to me by October 26, 2011. Your participation in completing this survey is critical in completing a plan that satisfies FEMA's requirements. If you have any questions, please feel free to call me at 715-536-6228 or Darryl Landeau of the NCWRPC at 715-849-5510 or email to dlandeau@ncwrpc.org.

Return completed surveys to:

Brian Sladek
Lincoln Co Emergency Mgmt
1104 E. First Street
Merrill, WI 54452

Lincoln County
All Hazards Mitigation Plan Town Government Survey

1. Town of _____

2. Which of the following hazards (if any) do you consider your community to be more vulnerable than others? (check all that apply)

   ☐ Flooding
   ☐ Dam Failures
   ☐ Drought
   ☐ Forest Fires and Wildfires
   ☐ Insect Infestation
   ☐ Thunderstorms
   ☐ Lightening
   ☐ Hail
   ☐ High Winds
   ☐ Tornados
   ☐ Winter Storms (heavy snow, freezing rain)
   ☐ Other_____

   If you checked any of the above, please describe why your community is more vulnerable to each of those hazards over others.

3. Please identify any public or private facilities or specific areas of the community that may be more vulnerable to a natural hazard.

4. Please list any projects or actions your community has taken to minimize or eliminate the risks of future natural hazards? (i.e. acquired land/structures in floodplains, dam/levee maintenance, constructed tornado shelters, specific road improvements, etc.)

5. Please list projects or actions your community may be interested in doing in the future to reduce or eliminate the impacts of a natural hazard.

6. Does your community have any consultant reports or engineering studies that may be relevant to natural hazards (i.e.: for repairing or strengthening buildings, roads, bridges, etc., or a stormwater plan / ordinance)? If so, please list even if not yet implemented:

   Who can we contact regarding more information on the above listed items:

   ☐ Chairperson
   ☐ Clerk
   ☐ Other (list name and number):_____

7. Does your community have an emergency action plan in place to guide what actions need to be taken in the event of a natural disaster?

   ☐ Yes
   ☐ No

8. Is there a need for emergency shelters in your community?

   ☐ Yes
   ☐ No

   If so, where are some possible locations to place or construct a shelter facility?

9. Please describe any areas in your community that became isolated and inaccessible during or after a past disaster where access by law enforcement or rescue personnel was hampered?

10. **One of the plan requirements is to quantify the value of critical infrastructure such as government buildings and property. Your Statement of Values form from the Local Government Property Insurance Fund or a similar declarations page from a private insurer. If you would be willing to provide us a copy of this form for your town, we would greatly appreciate it. Please include the copy when you return this survey or mail separately to the address below.**

11. Please feel free to comment on any other related issues to this plan.

Return completed surveys to:
Brian Sladek, Lincoln Co Emergency Mgmt, 1104 E. First Street, Merrill, WI 54452

THANK YOU FOR YOUR ASSISTANCE!

Appendix B – Resolutions of Plan Adoption

Resolution 2012 – 02-07

Motion by: Woller

Second by: Giese

Dist.	Supervisor	Y	N	Abs
13	Alber			
18	Bailey			
12	Berndt			
3	Bloomer			
1	Caylor			
19	Fox			
10	Giese			
8	Krueger			
15	Lee			
16	Loka			
14	Lussow			
20	Meyer			
11	Mittelsteadt			
17	Nelson			
4	Pampuch			
22	Rankin			
7	Rusch			
5	Saal			
21	Simon			
2	Weaver			
6	Woller			
9	Zeitz			
	Totals			

Carried
Defeated
Amended

Voice vote
Roll call

Title: Adopting the Lincoln County All Hazards Mitigation Plan Update

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

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

WHEREAS, an adopted All Hazards Mitigation Plan is required as a condition of future grant funding for mitigation projects; and

WHEREAS, Lincoln County adopted its initial All Hazards Mitigation Plan on July 19, 2005; and

WHEREAS, Lincoln County participated jointly in the planning process with the other local jurisdictions within Lincoln County to prepare this update to the existing multi-jurisdictional All Hazards Mitigation Plan;

NOW, THEREFORE BE IT RESOLVED, that the Lincoln County Board of Supervisors, hereby adopts the Lincoln County All Hazards Mitigation Plan Update as an official plan; and

BE IT FURTHER RESOLVED, that the Lincoln County Emergency Management Director will submit, on behalf of the County and other participating jurisdictions, the adopted All Hazards Mitigation Plan Update to Wisconsin Emergency Management and Federal Emergency Management Agency officials for final review and approval.

Dated this 21st day of February, 2012

Introduced by: Emergency Management Committee
Committee Action: EM Committee Passed Unanimously on 02/02/12

Fiscal Impact: Continued eligibility for certain state and federal grant programs.

Drafted by: Brian M. Sladek, Director
Lincoln County Emergency Management

STATE OF WISCONSIN)
) SS:
COUNTY OF LINCOLN)

I hereby certify that this resolution/ordinance is a true and correct copy of a resolution/ordinance adopted by Lincoln County Board of Supervisors on:

February 21, 2012

Sheila Pudelko

Sheila Pudelko, County Clerk

1209261

RESOLUTION NO. 2249

A RESOLUTION ADOPTING THE LINCOLN COUNTY ALL HAZARDS MITIGATION PLAN UPDATE

WHEREAS, the City of Merrill 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 All Hazards Mitigation Plan is required as a condition of future grant funding for mitigation projects; and,

WHEREAS, the City of Merrill adopted the initial All Hazards Mitigation Plan on October 11, 2005; and,

WHEREAS, City of Merrill participated jointly in the planning process with Lincoln County and the other local units of government with the County to prepare an update to the existing multi-jurisdictional All Hazards Mitigation Plan;

NOW THEREFORE, BE IT RESOLVED BY THE COMMON COUNCIL OF THE CITY OF MERRILL, WISCONSIN this 11th day of September, 2012, that the City of Merrill hereby adopts the Lincoln County All Hazards Mitigation Plan Update as an official plan; and,

BE IT FURTHER RESOLVED, that Lincoln County Emergency Management Department will submit, on behalf of the City, the adopted All Hazards Mitigation Plan Update to Wisconsin Emergency Management and Federal Emergency Management Agency officials for final review and approval.

Recommended by: Mayor Bialecki

Moved: Alderman Schwartzman

Passed: September 11, 2012

CITY OF MERRILL, WISCONSIN

William R. Bialecki
Mayor

William N. Heideman
City Clerk

CITY OF TOMAHAWK
RESOLUTION 2012-11

A RESOLUTION ADOPTING THE LINCOLN COUNTY ALL HAZARDS MITIGATION PLAN UPDATE

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

WHEREAS, under taking hazard mitigation actions before disasters occur will reduce the potential for harm to people and property and save tax payer dollars; and

WHEREAS, an adopted All Hazards Mitigation Plan is required as a condition of future grant funding for mitigation projects; and

WHEREAS, the City of Tomahawk participated jointly in the planning process with Linoln County and other local units of government within the County to prepare and update the existing multi-jurisdictional All Hazards Mitigation Plan;

NOW, THEREFORE BE IT RESOLVED, that the City Council of the City of Tomahawk, hereby adopts the Lincoln County All Hazards Mitigation Plan Update as an official plan; and

BE IT FURTHER RESOLVED, that the Lincoln County Emergency Management Department will submit, on behalf of the City, the adopted All Hazards Mitigation Plan Update to Wisconsin Emergency Management and Federal Emergency Management Agency officials for final review and approval.

PASSED and APPROVED this 2nd day of October, 2012.

Robert J. Lee, Mayor

ATTEST:

Amanda L. Bartz, Clerk-Treasurer

Appendix C – Meeting Notices

LINCOLN COUNTY BOARD OF SUPERVISORS
Tuesday, February 21, 2012
9:00 a.m.
Meeting Location: Lincoln County Service Center, County Board Room, 801 N. Sales St., Merrill, WI 54452

AGENDA

1. Call to Order
2. Pledge of Allegiance
3. Roll Call
4. Announcements/Recognitions/Awards/ Appointments
   a. Announcements - None
   b. Service Recognitions: February 2012 - NONE
   c. Appointments & Re-Appointments –
      Pine Crest Board of Trustees – Kathy Wulf, term 1/1/12 – 12/31/14
5. Reading & Approval of the Journal – January 17, 2012
6. Letters, Petitions and Memorials
   a. Letters:
      1. Mary Ann Martin – Lake District for Bridge and Nokomis Lakes
      2. Thank you card from H.A.V.E.N., Inc.
      3. WCA Training – Stevens Point – 3/26/12 - Creating Treatment and Diversion (TAD) Programs in Your County
      4. Town of Pine River Resolution Authorization to Participate in Preparation of a Cooperative Boundary Plan, pursuant to § 66.0307
      5. Town of Pine River Resolution - Resolution Opposing New EPA Boiler MACT Regulations Affection the PCA Tomahawk Mill
      6. Town of Pine River Resolution in Support of Keeping Pine River Elementary School Open as an Elementary School
      7. Nicolet Area Technical College Letter Dated 2/10/12 RE: Board Appointment
   b. Memorials - None
7. Reports of Standing & Special Committees
   a. 2011 Preliminary Year-End Budget Report – Finance Director
   b. 2012 Year-To-Date Budget Report – Finance Director
   c. 2013 Budget Guidelines and Timetable – Finance Director
   d. Administrative Coordinator's Written Report – January – Randy Scholz
   e. Ad-Hoc Committee Presentation – John Bailey
8. Resolutions and Ordinances
   1. a. Resolution 2012-02-04 Conveyance of Right of Way to the State of Wisconsin (Town of Merrill)
      b. Resolution 2012-02-05 To Reimburse Marathon County for Lincoln County's Pro-Rata Share of the Cost of Computer System for North Central Health Care
      c. Resolution 2012-02-06 To Approve Changes to ADRC-CW Intergovernmental Cooperation Agreement between Lincoln, Langlade, Marathon and Wood Counties
      d. Resolution 2012-02-07 Adopting the Lincoln County All Hazards Mitigation Plan Update
      e. Resolution 2012-02-08 Resolution Supporting H.R. 2250 in the U.S. House of Representative and U.S. Senate Bill 1392 to Provide Additional Time for the Administrator of the Environmental Protection Agency to Issue Achievable Standards for Industrial, Commercial, and Institutional Boilers, Process Heaters, and Incinerators, and for Other Purposes
   2. a. Ordinance 2012-02-582 To Amend Chapter 3.25, Lincoln County Code – Coroner's Fees
      b. Ordinance 2012-02-583 An Ordinance Amending the General Code of the County of Lincoln - Chapter 17, Sections 17.1.12 and 17.2.03, Zoning Ordinance as a Result of a Comprehensive Plan Amendment and Rezoning Petition Submitted by Charles and Rebecca Jaecks for Property in the Town of Tomahawk
      c. Ordinance 2012-02-584 An Ordinance Amending the General Code of the County of Lincoln - Chapter 17, 17.2.03, Zoning Ordinance as a Result of a Rezoning Petition Submitted by Floyd Goytowski for Property in the Town of Schley
9. Report of Claims - None
10. Approval for Mileage and Per Diem for Board Meeting
11. Next County Board Meeting Date: Tuesday, March 20, 2012, 6:00 P.M. Meeting Location: William Buedingen Training Room, W6147 State Road 86 – Tomahawk.
12. Adjourn

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LINCOLN COUNTY

Emergency Management Committee
Thursday, February 2nd, 2012, 8:00 a.m.
Safety Building – South Meeting Room

AGENDA

1. Call Meeting to Order
2. Approve Minutes of Previous Meeting(s)
3. Review Monthly Vouchers
4. 8:10 a.m. Public Hearing on County Pre-Disaster Mitigation Plan Update
5. County Pre-Disaster Mitigation Plan Update – Resolution
6. 2011 EMPG Grant
7. 2011 EPCRA Grant
8. Wisconsin Disaster Fund – Report
9. Training Grants Tomahawk Fire Dept. & Merrill Fire Dept.
10. Directors Report
11. Set Next Meeting Date
12. Adjourn

DISTRIBUTION:

Emergency Management Committee Members
Administrative Coordinator
Other County Board Supervisors
Department Heads
News Media – Notified on _____ at _____ m. by _____
Bulletin Boards:
Courthouse – Posted on_____at_____ .m. by _____

Service Center – Posted on_____ at_____ .m. by_____

Tomahawk Annex – Posted on_____ at_____ .m. by _____

There may be a quorum of other Lincoln County committees present at this meeting.

Requests for reasonable accommodations for disabilities or limitations should be made prior to the date of this meeting. Please do so as early as possible so that proper arrangements can be made. Requests are kept confidential.

PUBLIC HEARING

The Lincoln County Emergency Management Department will hold a public hearing at the Lincoln County Safety Building – South Meeting Room, 1104 E. 1st Street, Merrill, WI on Thursday, February 2nd, 2012 at 8:10 a.m. to receive comments on the Update to the Lincoln County Pre-disaster Mitigation Plan.

Both written and oral comments will be accepted and entered into the record. Written comments are welcome and can be submitted prior to and during the public hearing. Draft copies of the plan are available for review on the Lincoln County website (http://www.co.lincoln.wi.us) and at the Lincoln County Emergency Management Office in the County Safety Building, 1104 E. 1st Street, Merrill, WI 54452

For further information and questions, contact the Lincoln County Emergency management Department at the above address or phone (715) 536-6228. Or e-mail your comments to bsladek@co.liincoln.wi.us

LINCOLN COUNTY
HAZARD MITIGATION PLAN
PUBLIC INFORMATIONAL MEETING

Notice is hereby given that there will be a public informational meeting at the Lincoln County Service Center Room 248, 801 N. Sales St., Merrill on Wednesday, November 16, from 3:30 to 4:30 p.m. to discuss the County's draft All Hazards Mitigation Plan.

The meeting will be an open house format and provide information about the natural hazards that can affect the County and the strategies being developed to mitigate against future losses and reduce public expenditure for response and recovery. A copy of the draft plan can be reviewed on the web at http://www.ncwrpc.org/lincoln/ahmp.html.

All interested parties are encouraged to attend. Contact County Emergency Management Director Brian Sladek at 715-536-6228 for more information.

10/31/11

WNAXLP (XYZ500) 35-1 E

Courier
11/2/11

LINCOLN COUNTY HAZARD MITIGATION PLAN PUBLIC INFORMATIONAL MEETING

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The meeting will be an open house format and provide information about the natural hazards that can affect the County and the strategies being developed to mitigate against future losses and reduce public expenditure for response and recovery. A copy of the draft plan can be reviewed on the web at http://www.ncwrpc.org/lincoln/ahmp.html.

All interested parties are encouraged to attend. Contact County Emergency Management Director Brian Sladek at 715-536-6228 for more information.

Published 10/31/11

CITY OF MERRILL
HEALTH AND SAFETY COMMITTEE
Monday, September 26, 2011 at 5:00 P.M.
City Hall Basement Conference Room
1004 E. First St.

Voting members of Committee: Alderman Dave Sukow (Chairperson), Alderman Ryan Schwartzman and Alderman John Burgener

AGENDA

1. Call to order

2. Vouchers

3. Picnic and/or Liquor License Applications:

   a. Application from JT Degner, LLC, Tammy S. Degner, Agent, for a Class B Combination license for Bluejays Nest, 3209 East Main Street, effective October 12th, 2011

   b. Any other applications

4. City-County Hazard Mitigation Plan Update from North Central WI Regional Planning Commission (NCWRPC)

5. Discuss "school" traffic on North Prospect Street

6. Consider drafting an ordinance prohibiting use of hand-held mobile telephones and mobile electronic devices while driving

7. Nuisance Complaints & Exterior Maintenance Report

8. Monthly reports:
   a. Fire Chief Odegard
   b. Police Chief Seubert
   c. Lincoln County Humane Society

9. Establish date and time of next regular meeting

10. Public Comment

11. Adjournment