



JUNEAU COUNTY ALL HAZARDS MITIGATION PLAN UPDATE

2024

Prepared with the assistance of the North Central Wisconsin Regional Planning Commission



JUNEAU COUNTY ALL HAZARDS MITIGATION PLAN UPDATE

prepared for:

Juneau County Emergency Management

by:

North Central Wisconsin Regional Planning Commission

adopted by Juneau County Board on:

October 15, 2024

This update was prepared at the request and under the supervision of the Juneau 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 Juneau 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.

LEGISLATIVE REQUIREMENT FOR MITIGATION PLANNING

The development of the Juneau County All Hazards Mitigation Plan Update is a response to federal regulations requiring the update of a local hazard mitigation plan every five years. The Disaster Mitigation Act of 2000 (DMA2K) amended the Robert T. Stafford Disaster Relief and Emergency Assistance Act (Stafford Act), creating the framework for state, local (counties and incorporated municipalities), tribal and U.S. territorial governments to engage in hazard mitigation planning to receive certain types of non-emergency disaster assistance. Requirements and procedures to implement hazard mitigation planning provisions may be found in the Code of Federal Regulations, Stafford Act Title 44, Chapter 1, Part 201 (44 CFR Part 201).

Since the DMA2K, additional laws have been passed that help to shape hazard mitigation policy. These are codified in amendments to the Sandy Recovery Improvement Act (SRIA) of 2013, the National Flood Insurance Act of 1968, and the Water Infrastructure Improvements for the Nation (WIIN) Act of 2016.

The following grant programs have hazard mitigation plan adoption requirements: Hazard Mitigation Grant Program (HMGP), Public Assistance Grant Program (PA), Building Resilient Infrastructure and Communities (BRIC), Flood Mitigation Assistance (FMA), Fire Management Assistance Grant Program (FMAG), and Rehabilitation of High Hazard Potential Dams Grant Program (HHPD).

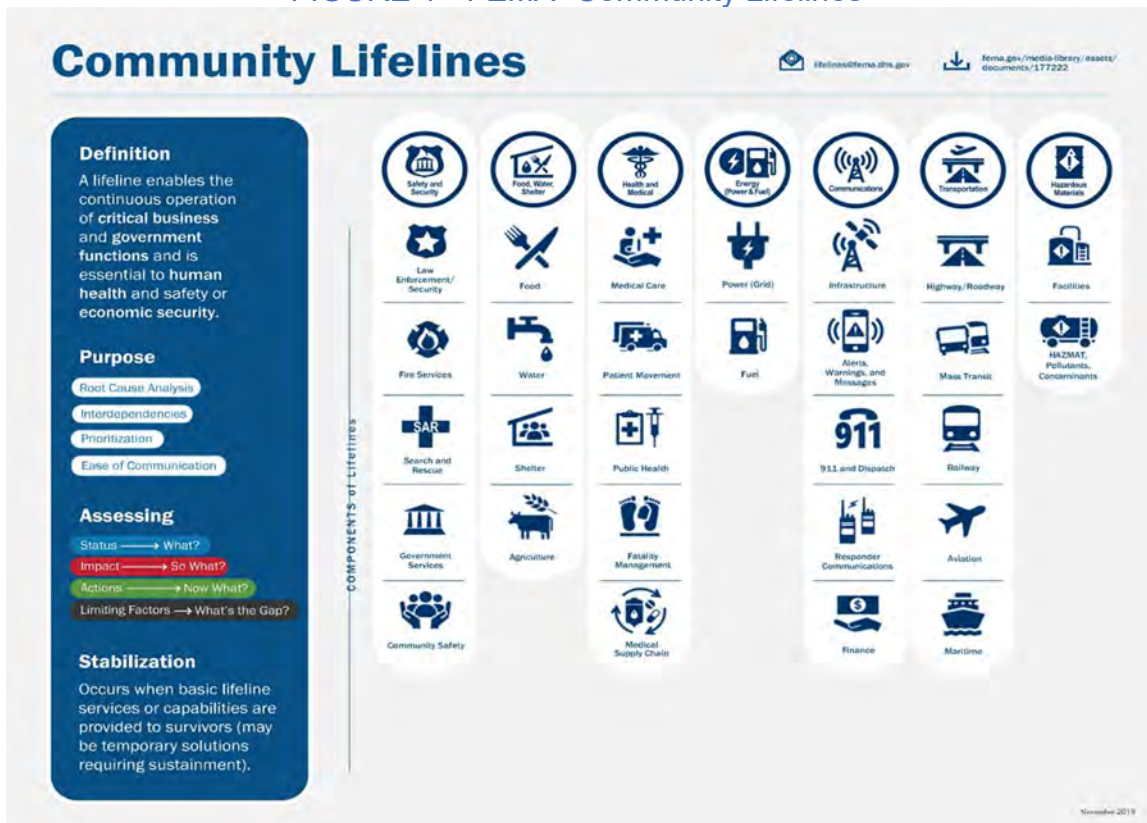
Local hazard mitigation plans form the foundation of a community's long-term strategy to reduce disaster losses and break the cycle of disaster damage, reconstruction and repetitive damage. The Federal Emergency Management Agency (FEMA) supports local mitigation planning to foster partnerships among all levels of government, to develop and strengthen non-governmental and private partnerships, to reduce the costs associated with disaster response and recovery by promoting mitigation activities, and to promote more disaster-resilient and sustainable communities.

Community resilience is the ability of a community to prepare for anticipated hazards, adapt to changing conditions, and withstand and recover rapidly from disruptions. Activities such as disaster preparedness (which includes prevention,

protection, mitigation, response and recovery) and reducing community stressors (the underlying social, economic and environmental conditions that can weaken a community) are key steps to resilience.

"Community lifelines" (see Figure 1) are the infrastructure of resilience that enable the continuous operation of critical government and business functions and is essential to human health and safety or economic security. FEMA developed the community lifelines concept as a disaster response tool, to highlight the priority areas of focus for initial incident stabilization. However, lifelines exist steady-state, and enable all other aspects of society. As such, FEMA now incorporates community lifelines into all of its planning and reporting requirements, including mitigation. Mitigation planning helps to understand risk to and vulnerability of lifelines, to prioritize mitigation investments, and to reduce the likelihood that lifelines will fail as a result of an incident.

FIGURE 1 - FEMA "Community Lifelines"



Source: FEMA.

The Stafford Act lays out requirements for local mitigation plans which are further clarified by FEMA policy guidance.

THE FIVE PARTS OF AN ALL HAZARDS MITIGATION PLAN UPDATE

The Juneau 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 Juneau County Emergency Management Department received a Planning Grant in July of 2022 to update its All Hazards Mitigation Plan through the Hazard Mitigation Grant Program (HMGP).

In September of 2022, the North Central Wisconsin Regional Planning Commission (NCWRPC) finalized a work agreement with Juneau County, and began preparation of the All Hazards Mitigation Plan Update at the request of the County Emergency Management Director.

The update process included regular Task Force Committee meetings as well as extensive involvement from the local units of government within Juneau County and the counties surrounding Juneau. A variety of local and regional agencies were involved in the development of the Plan Update at various stages, and extensive opportunity for public participation was provided including public informational meetings and hearings. All sections of the Plan Update 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 2018 PLAN

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

- ✓ Review of Recommended Revisions - The final Crosswalk for the previous plan approval listed a number of "recommended revisions" which were addressed in this update through the experience of subsequent plan adoptions from other counties.

- ✓ Review and Update of Planning Area Chapter – The planning area description and inventory was improved with additional information and updated statistics.
- ✓ Expanded Hazard Coverage – New hazards addressed in the Update include: pandemic.
- ✓ Review and Update of Risk Assessment - The risk assessment was updated with documentation on recent hazard events. The priority level of hazards facing the County was also reviewed and updated.
- ✓ Climate Change – A new section directly addressing the impacts of climate change is incorporated into the Risk Assessment. The previous plan had only indirect references.
- ✓ High Hazard Dams – High hazard potential dams were specifically addressed in the Risk Assessment as well as other areas of the Plan Update.
- ✓ Review and Update of Mitigation Strategy - The mitigation strategies chapter begins with a complete progress report on the strategies from the 2018 plan, establishment of new set of strategies for next five-year cycle and an updated prioritization of projects.
- ✓ The concept of Community Lifelines is introduced into the Plan, see Chapter 1.
- ✓ The concept of Community Resilience is introduced into the Plan, see Chapter 5.
- ✓ New FEMA plan requirements were addressed, including underserved/vulnerable populations, impacts of climate change on future conditions, effects of climate change and development trends, participating community capability assessment and expanded NFIP requirements.

ALL HAZARDS MITIGATION PLAN UPDATE TASKFORCE

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

- Herb Dannenberg, Chair (County Board Vice-Chair)
- Chris Zindorf
- Steven Thomas

This Committee of the County Board delegated oversight of the update process to the County's Local Emergency Planning Committee or LEPC 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 Jeremy Bonikowske, and the LEPC (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:

- James Newlun – Chair / Tomah Health
- Melissa Gillaume-Cappaert – WI Dept. of Natural Resources, Wildfire
- Tim Cottingham - County Board Chair
- Steven Thomas - County Board / Salvation Army
- Chris Zindorf – County Board
- Tony Kurtz - Wisconsin Assembly Representative
- Andy Zobal – Juneau County Sheriff
- Travis Schultz – Juneau County Highway Commissioner
- Jeremy Bonikowske. - County EM Director
- Tina Burch – Juneau County Health Officer
- Mary Crowley – Juneau County Health Dept.
- Kathy Greenwood – Mile Bluff Medical Center
- Heidi Finucan – Mile Bluff Medical Center
- Corbin Czyscon – WisDNR
- Burlie Williams – Red Cross
- Mike Burns – Allied Cooperative
- Jason Schrank - WisDNR
- Joe Eichten – UP Rail HazMat
- Ross Krizon – Volk Field
- Marc Nelson – CP Rail
- Ken Collins – CN Rail
- Christopher Leopold – Mauston EMS
- Christy Duhr – Salvation Army
- Jeff Neitzel – Leer Inc.
- Bruce Pusel – Parker Hannifin
- Greg Monson - Fruedenburg
- Jeremy Gilbert – Land O’ Lakes, Inc.
- Theresa Brandabur – Camp Williams
- Tony Houdyshell – CP Rail HazMat
- John Gittings -
- Danielle Zimmerman – Representative Kurtz Office
- Russell Kollmanberger -
- Ricardo Reyes -

LOCAL GOVERNMENT INVOLVEMENT

There were a number of opportunities for the local units of government within the County 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 April of 2023 a hazard mitigation issues survey was sent to each town (unincorporated areas) chairperson and clerk 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 12 of 19 towns. A significant amount of information was gleaned from these questionnaires and incorporated into the planning document.

Some of the primary issues identified in the survey results include the following:

- Presence of extensive woodlands: high wind and wildfire (dead tree removal and brushing)
- Blockage of roads and downed power lines (high wind and winter storm)
- Flooding: Road washouts
- Dam Failure
- Presence of extensive recreational facilities: campgrounds, state/county parks, RV parks, resorts and camps, mobile homes and mobile home parks
- Culverts (upgrading, enlarging) / ditching / building up roads
- Emergency notifications, assistance and follow up for older residents
- Limited resources
- HazMat: railroad, interstate, biodiesel plant, Volk Field

All incorporated areas of the County have participated in this plan update or, for those split between Juneau and another county, in the plan of their primary county. The Cities of Mauston, Elroy and New Lison; and the Villages of Camp Douglas, Hustler, Lyndon Station, Necedah, Union Center and Wonewoc were extensively involved in the development of this Plan Update through a formal process. City and Village officials were introduced to the update process by NCWRPC staff and walked through an exercise to develop plan elements specific to each City and Village. The City of Wisconsin Dells is included in the plan of their primary county (Sauk).

Dates and participants for each of the local government meetings were as follows:

<i>City of Elroy</i>	Geena Skowronski	City Administrator
<i>Special Meeting</i>	Karen Sparling	Mayor
<i>September 18, 2023</i>	Tyler Brown	Fire Chief
	Lynn Thorson	City Clerk / Zoning
 <i>City of Mauston</i>	 Michael Zilisch	 Police Chief

<i>Special Meeting October 3, 2023</i>	Allison Schwark Rob Nelson	Zoning Public Works Director
<i>Village of Wonewoc Teleconference July 15, 2024</i>	Lee Kucher	Village Administrator
<i>Village of Union Center Teleconference July 16, 2024</i>	Robin Laubscher	Village Clerk
<i>City of New Lisbon Special Meeting March 4, 2024</i>	Lisa Vinz Nick Wyss	City Clerk Public Works Director
<i>Village of Hustler Teleconference July 24, 2024</i>	Dean Duescher	Village President
<i>Village of Necedah Special Meeting September 27, 2023</i>	Roger Herried Scott Carter Jack Hanson Ryan Meyer	Village Administrator Village President Public Works Police Department
<i>Village of Lyndon Station Email Correspondence February 26, 2023</i>	Michelle Klein	Village Clerk
<i>Village of Camp Douglas Teleconference July 15, 2024</i>	Sarah Stark	Village Clerk-Treasurer

A wide variety of issues and concerns were discussed at each individual community meeting, and a significant amount of information was gleaned from these discussions and incorporated into the planning document. One of the most common points of discussion was flooding, which has been an on-going issue for some time now. Topographical features and numerous streams limit the points of entry and exit. Washouts of key roads/bridges can cut off all or parts of communities for emergency access or evacuation. The rail system and the Interstate were identified as real concerns for most communities, particularly with the variety and quantity of hazardous chemicals being transported. The current level of ambulance service available in the County was identified as a major concern by some. The need for more training on the MABUS system was discussed. Communities discussed radio system concerns: the need for radio upgrades, the costs associated with acquiring new radios, and interoperability.

The participants provided information on hazards that have significance to the area, discussed critical facilities and provided mitigation strategy ideas for the Plan Update.

The superintendents for the school districts within Juneau County were invited to the agency and organization meeting for this plan, see below. In addition, each district was asked to complete a form to gather information for their participation in the planning process. See Appendix A for completed forms.

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 e-conferenced during the update process with staff from Adams, Sauk, Vernon, Monroe, Jackson and Wood counties. Ideas were exchanged about All Hazards Mitigation planning processes and strategies between the various counties.

No significant assets were identified outside the respective planning areas for Juneau County, the Cities of Elroy, Mauston, New Lisbon, the Villages of Camp Douglas, Hustler, Lyndon Station, Necedah, Union Center or Wonewoc.

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. Although many of these categories are satisfied by the Plan Taskforce (see above), to further meet this objective and provide an opportunity for greater participation in the planning process, the NCWRPC invited a diverse group of stakeholders to discuss potential hazard mitigation strategies.

The meeting was held on March 25, 2024 at the Mauston Public Library in Mauston. Agencies and organizations represented include the following:

- Tim Cottingham, Juneau County Board Chair
- Matt Riggs, Oakdale Electric COOP
- Mary Crowley, Juneau County Health Department
- Tamaya Loewe, Juneau Co. Economic Development Corp Exec Director
- Stacy Weller, Amtrak
- Burlie Williams, Red Cross
- Jeremy Bonikowske, Juneau County Emergency Management
- Darryl Landeau, North Central WI Regional Planning Commission

A number of other agencies were invited but chose not to attend.

During the meeting, the Plan Update and its components were introduced to the attendees. Mitigation strategy ideas were solicited, and a number of ideas were discussed at length with the group. Part IV of the Plan was revised based on the meeting.

The meeting resulted in good discussion on a diverse range of topics spanning all four phases of emergency management. The agencies talked about the significant hazardous materials vulnerabilities in Juneau County citing the Interstate, major rail lines and other factors. Not knowing what is being transported is a challenge for local response teams and training is critical. The limited resources of agencies in the County and the stress an incident can cause was discussed. A support network is vital and development of a Community Emergency Response Team (CERT) and medical reserve corps were identified. Building partnerships is key to maintaining the support network, and Juneau County is moving to a community-based preparedness planning model which focuses on identifying and cultivating these partnerships. Also discussed were communications. The Internet is “lacking” in Juneau County, and there are other deficiencies in communication systems. The group identified the need to work on ensuring communications access. Another aspect of communication is information and information sharing. The group discussed approaches to getting public safety messaging to the many short-term visitors to the County.

UNDERSERVED COMMUNITIES AND VULNERABLE POPULATIONS

FEMA has placed an emphasis on underserved communities and socially vulnerable populations. These concepts present an opportunity to expand local hazard mitigation plans to help increase the community benefits of hazard mitigation.

The term “underserved communities” refers to populations sharing a particular characteristic or geography that have been systematically denied a full opportunity to participate in aspects of economic, social and civic life. Social vulnerability is the potential for loss for an individual or social group, recognizing that some characteristics influence an individual’s or group’s ability to prepare for, respond to, cope with or recover from an event.

Within Juneau County and the Cities of Elroy, Mauston & New Lisbon, and the Villages of Camp Douglas, Hustler, Lyndon Station, Necedah, Union Center, & Wonewoc, a number of general population groups that are often identified as underserved or vulnerable were identified. These include school aged children, disabled persons, the elderly, minorities, persons who speak with limited English proficiency and low income individuals or families. Geographic analysis of these populations was conducted by NCWRPC Staff, see Appendix C, to assist with the analysis and discussion of the underserved and/or socially vulnerable populations

within Juneau County. No specific geographic locale was identified for any of these types of groups in Juneau County, the Cities of Elroy, Mauston & New Lisbon, or the Villages of Camp Douglas, Hustler, Lyndon Station, Necedah, Union Center, & Wonewoc, as these populations are spread out across the planning area.

Outreach and involvement to address underserved or vulnerable populations included identifying and contacting agencies and organizations that advocate or serve those individuals. Due to the small, rural nature of the area the number of resources is limited. The following were invited to participate in the mitigation planning process:

- Gina Laack, Director, Aging & Disability Resource Center of Eagle Country
- Mary Crowley, Juneau County Health Department
- Jean Shultz, Juneau County Health Officer
- Dawn Buchholz, Director, Juneau County Human Services
- Dana Anderson, Director, Mauston Housing Authority
- Julie Oleson, Director, Juneau County Housing Authority
- Arianna Lesko, Administrator, Fairview Nursing & Rehab Center
- Collin Hirst, Administrator, Elroy Health Services Nursing Home
- Lauriann Filla, Administrator, Crestview Nursing Home.
- Superintendent, Elroy-Kendal School District
- Superintendent, Mauston School District
- Superintendent, Necedah School District
- Superintendent, New Lisbon School District
- Superintendent, Wonewoc School District

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 A for copies of public meeting notices. A copy of draft Plan Update elements were 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 Mauston Public Library on March 25, 2024. Notices were posted in the local newspaper and on social media. No written comments were submitted, but one individual did attend the meeting as follows:

- Nate Sparby, Lindina

A public meeting was held by the County Emergency Management Committee regarding adoption of the plan, see APPENDIX A for meeting details. No one from the public attended, and thus no public comments were received. In addition, no written comments were submitted. Following Committee approval, the County Board adopted the plan update at a subsequent public meeting, see the resolution in APPENDIX B for details on this meeting. A brief overview of the update process and resulting updated plan was provided by Staff. One member of the public spoke in opposition to approving the plan, referencing liberty and the UN but no specifics.

The Cities of Elroy, Mauston and New Lisbon, and the Villages of Camp Douglas, Hustler, Lyndon Station, Necedah, Union Center and Wonewoc were asked to adopt the Plan Update for their jurisdictions at their own properly posted and open public meeting, see APPENDIX B for the County and other local unit resolutions of adoption.

INCORPORATED PLANS, STUDIES, REPORTS AND TECHNICAL DATA

Many plans, reports, and technical data sources were referenced and incorporated into the Juneau 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 Juneau County geographic information system databases provided much of the base data for the mapping and analysis within the Update. Statistical reports and data from the US Census and Wisconsin Departments of Administration, Revenue and Workforce Development were used for the demographic background in Part 2 of this Update. Land use data in Part 2 was obtained from the Juneau 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 and Tables in Parts 2 and 3 of this Plan. The WisDNR Dams Database also provided information on high hazard dams within the County. NFIP DFIRM flood zone maps for Juneau County provided the mapping of 100-year floodplain areas in Part 2 and for the flooding risk assessment in Part 3. The FEMA Community Status Book was also referenced.

NOAA National Climatic Data Center severe weather event data was used extensively for the risk assessment in Part 3, as well as the 2013 Natural Hazard

Assessment for Juneau County by the National Weather Service. The Wisconsin Initiative on Climate Change Impacts 2021 Assessment Report was used for climate change data and analysis in conjunction with some NOAA climate data charts. 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 update 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 Juneau County Zoning Ordinance, the comprehensive plans and zoning ordinances for the Cities of Elroy, Mauston and New Lisbon, and the Villages of Camp Douglas, Hustler, Lyndon Station, Necedah, Union Center and Wonewoc, the Juneau County Land and Water Resource Management Plan, the 2010 LTPO Preparedness in Wisconsin report, the 2023 Regional Commodity Flow Study for Juneau County, the 2016 Juneau County Mass Care Sheltering Plan, the 2024 Juneau County Integrated Preparedness Plan, the results of the Juneau County Flood Resiliency Scorecard, the North Central Wisconsin Pandemic Assessment and Future Response Plan and the North Central Wisconsin Regional COVID-19 Recovery Plan. Although some of these may not have been directly incorporated, the review provided valuable insight and direction to the update process.

CONTACT INFORMATION

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Go to:

https://www.co.juneau.wi.gov/departments/emergency_management.php

<https://www.ncwrpc.org/> (Keyword Search: Juneau)

<https://wem.wi.gov/about-hazard-mitigation/>

<https://www.fema.gov/emergency-managers/risk-management/hazard-mitigation-planning>

INTRODUCTION

Part 2 of the Juneau County All-Hazard Mitigation Plan Update provides general geographical information on Juneau 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.

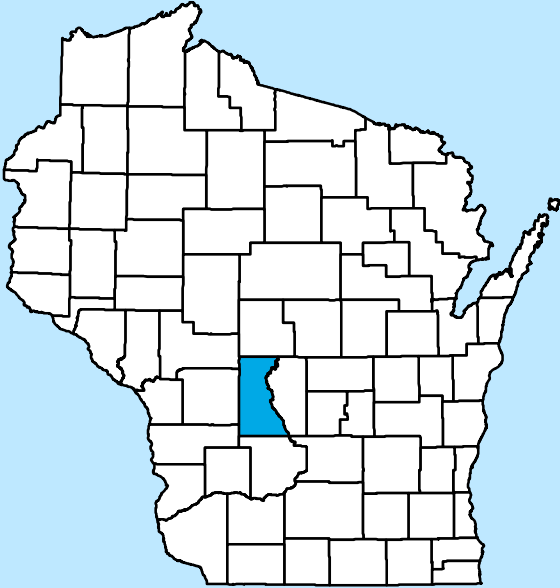
The resulting information is an important element of the update process, since sound alternative mitigation strategies cannot be formulated and evaluated without an in-depth knowledge of the relevant conditions in the study area.




GENERAL GEOGRAPHY

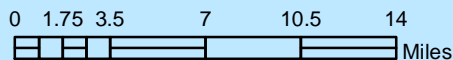
LOCATION

Juneau County is located in central Wisconsin (See Map 1). The largest urban area, and County Seat, is the City of Mauston which is located in the south-central area of the County within the I-90/94 corridor. This corridor has cultivated several other incorporated areas including the Village of Camp Douglas, the City of New Lisbon and the Village of Lyndon Station. The City of Wisconsin Dells is encroaching into the southeast corner of the County, along the corridor as well, but is covered under Columbia County's mitigation plan. Other incorporated areas in Juneau County include the Village of Necedah in the northern half of the County and the Village of Hustler, the City of Elroy, the Village of Union Center and the Village of Wonewoc which are situated in the southwestern corner of the County. In total, there are 29 municipalities (19 towns, 6 villages, and 4 cities) in the Juneau County planning area. These units of government provide the basic structure of the decision-making framework. The County is bounded on the north by Wood County, on the east by Adams, on the south by Columbia and Sauk, and on the west by Vernon, Monroe and Jackson

Juneau County lies 146 miles northwest of Milwaukee; 142 miles southwest of Green Bay; 69 miles east of La Crosse and 78 miles north of Madison. Major metropolitan areas outside of Wisconsin with transportation linkages to Juneau County are Chicago, 218 miles southeast; Minneapolis-St. Paul, 195 miles northwest; and Duluth, 254 miles north.



-  US Highways
-  State Highways
-  Minor Civil Divisions



Source: WIDNR, NCWRPC

This map is neither a legally recorded map nor a survey of the actual boundary of any property depicted. 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

Juneau County is split between the Wisconsin Central Plain and the Western Upland. The County has a total surface area of about 804 square miles, of which 4.8 % is water. The northeastern three-quarters of the County is part of the Central Plain. This area was part of a glacial lake basin and is characterized by flat or gently undulating topography, except for an occasional sandstone butte. The buttes typically rise above the surrounding plain between 100 to 300 feet, with a maximum elevation of 1,262 feet at Sheep Pasture Bluff.

The basin slopes gradually to the southeast. Elevations range from about 980 feet in the northwest corner to about 840 feet in the southeast at the Wisconsin River. The basin has extensive areas of wetlands resulting from flat topography, slowly permeable layers of silt or clay and a high water table.

The southwestern quarter of the County is part of the Western Uplands. This is an unglaciated, hilly area which is mostly well drained. Steep sandstone escarpments mark the northern and eastern boundaries of this area. The hill valleys are typically 200 to 350 feet below the ridgetops and are long and V-shaped with relatively narrow bottoms. In this area, the highest elevation is 1,380 feet at Johnson Hill.

Surface drainage is toward the Wisconsin River. The Lemonweir, Little Yellow and Yellow rivers drain most of the plain area. The Baraboo River is the main tributary in the upland area.

CLIMATE

Juneau County has a continental climate that is characterized by long, cold, snowy winters; warm summers; and springs and falls that are often short. From late fall through spring, the weather changes every few days because of air masses that are part of pressure systems moving eastward and northeastward over the northern states.

In winter, the average temperature is about 20 degrees F., and the normal minimum temperature is about 10 degrees. The lowest temperature on record is -43 degrees, which occurred in 1951. The greatest number of days at or below 0 degrees was 57 in 1978. In summer, the average temperature is about 69 degrees and the normal maximum temperature is about 80 degrees. The highest recorded temperature is 107 degrees, which occurred in 1948. The greatest number of days at or above 90 degrees was 37 in 1955.

Average total annual precipitation is approximately 33.46 inches. Of this, about 70% usually falls in April through September. The heaviest 1-day rainfall on record was 9.54 inches on August 27, 2020. Thunderstorms typically occur on about 39 days each year. Significant hail events occur on an average of two days a year. Average seasonal snowfall is 47.5 inches (2007-8 season had 89.5 inches) with the 24-hour record set on December 1, 1985 at 16 inches.

Prevailing winds are southerly in the summer and westerly in the winter. Average wind speed is highest in the spring at about 10 miles per hour

DEMOGRAPHIC AND ECONOMIC PROFILE

POPULATION AND HOUSEHOLDS

The current 2020 Census data for Juneau County shows a population of 26,718 people for the County. This represents a slight increase of 0.2 percent from the 2010 Census reported population of 26,664 people, which notably lags behind the overall growth rate for the State of Wisconsin. Since 2000, the population of Juneau County has increased by 9.88 percent or by 2,402 people. If the growth rate continues at the current (2010-2020) level, there will be approximately 28,054 people in Juneau County in 2030 and 28,615 people in 2040.

Table 1: Population of Adjacent Counties

County	2010	2020	# Change	%Change
Adams	20,875	20,654	- 221	- 1.1%
Columbia	56,833	58,490	1,657	2.9%
Jackson	20,449	21,145	696	3.4%
Juneau	26,664	26,718	54	0.2%
Monroe	44,673	46,274	1,601	3.6%
Sauk	61,976	65,763	3,787	6.1%
Vernon	29,773	30,714	941	3.2%
Wood	74,749	74,207	- 542	- 0.7%
Wisconsin	5,686,986	5,893,718	206,734	3.6%

Source: U.S. Census, 2010/2020 and NCWRPC, 2023.

Population concentrations and trends are important when prioritizing hazard mitigation strategies. Mauston City is one of the most densely populated and developed areas in the County. The other cities and villages in the County are also notable areas of population concentration. However, the towns of Germantown, Lemonweir, Lyndon, and Necedah also have significant population numbers. Map 2 (below) shows areas of residential population concentrations in the County. Overall population density of the County is about 34.8 persons-per-square-mile and ranges from a high of 988 in the City of Mauston to a low of 1.1 in the Town of Kingston.

Between 2010 and 2020, many communities within Juneau County experienced an increase in their population base (refer to Table 2). The greatest amount of growth occurred in Germantown with a 10.7 percent increase between 2010 and 2020. The towns of Necedah, and Lyndon also had significant growth. Some communities have experienced minor declines in growth. The City of Wisconsin Dells figures are skewed due to the relatively small numbers involved.

Minor Civil Division	2010	2020	2010	2020	'10-'20 %	'10-'20 %
	Population	Population	Households	Households	Population	Households
Armenia town	699	705	302	328	0.86%	8.61%
Clearfield town	728	702	304	301	-3.57%	-0.99%
Cutler town	326	300	142	128	-7.98%	-9.86%
Finley town	97	88	40	41	-9.28%	2.50%
Fountain town	555	592	231	233	6.67%	0.87%
Germantown town	1,471	1,628	678	769	10.67%	13.42%
Kildare town	681	690	262	286	1.32%	9.16%
Kingston town	91	57	43	34	-37.36%	-20.93%
Lemonweir town	1,743	1,658	714	708	-4.88%	-0.84%
Lindina town	718	685	286	284	-4.60%	-0.70%
Lisbon town*	912	892	375	367	-2.19%	-2.13%
Lyndon town	1,384	1,493	541	573	7.88%	5.91%
Marion town	426	444	200	203	4.23%	1.50%
Necedah town	2,327	2,448	887	979	5.20%	10.37%
Orange town	570	540	223	211	-5.26%	-5.38%
Plymouth town	597	578	245	255	-3.18%	4.08%
Seven Mile Creek town	358	348	155	158	-2.79%	1.94%
Summit town	646	666	250	251	3.10%	0.40%
Wonewoc town	687	677	270	246	-1.46%	-8.89%
Camp Douglas village	601	647	244	269	7.65%	10.25%
Hustler village	194	162	84	83	-16.49%	-1.19%
Lyndon Station village	500	498	220	223	-0.40%	1.36%
Necedah village	916	924	376	380	0.87%	1.06%
Union Center village	200	225	95	100	12.50%	5.26%
Wonewoc village	816	758	359	345	-7.11%	-3.90%
Elroy city	1,442	1,356	590	560	-5.96%	-5.08%
Mauston city	4,423	4,347	1,779	1,792	-1.72%	0.73%
New Lisbon city*	2,554	2,606	631	634	2.04%	0.48%
Wisconsin Dells city (part)	2	4	1	0	100.00%	-100.00%
Juneau County	26,664	26,987	10,527	11,188	1.21%	6.28%

*Source: U.S. Census, 2010/2020 and NCWRPC, 2023. *Reflects adjustments for correctional facility population.*

The median age in Juneau County is 45.7 and characterizes it as relatively old in comparison to the State's median age of 39.6. The County has been identified as a retirement area resulting from being a vacation spot for many seasonal homeowners. Location of seasonal housing is a strong indicator in terms of retirement location. In Juneau County, about 21 percent of all housing units have

been identified as seasonal/recreational, compared to 7.1 percent for the State of Wisconsin.

SEASONAL POPULATION

The impact of this seasonal population cannot be overlooked when planning for hazards. Table 3 shows potential seasonal residents by municipality estimated based on seasonal housing data presented in the 2021 American Community Survey. 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 3: Estimated Seasonal Resident Population		
Community	Seasonal Housing Units	Estimated Seasonal Population
Armenia town	288	646
Clearfield town	125	288
Cutler town	122	300
Finley town	73	151
Fountain town	20	62
Germantown town	1,159	2,482
Kildare town	142	379
Kingston town	11	14
Lemonweir town	65	178
Lindina town	31	97
Lisbon town	37	121
Lyndon town	140	307
Marion town	104	228
Necedah town	437	1,031
Orange town	43	145
Plymouth town	50	135
Seven Mile Creek town	42	112
Summit town	34	89
Wonewoc town	15	32
Camp Douglas village	0	0
Hustler village	0	0
Lyndon Station village	14	37
Necedah village	20	45
Union Center village	4	13
Wonewoc village	7	17
Elroy city	10	25
Mauston city	31	65
New Lisbon city	0	0
Wisconsin Dells (part)	0	0
Juneau County Total	3,024	6,999
<i>Source: U.S. Census, 2021 and NCWRPC, 2023.</i>		

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 Juneau County Outdoor Recreation Plan identifies about 3,049 campsites including 13 at Allen Thompson Memorial Park in the City of Elroy, 300 at Castle Rock County Park near Mauston, 150 at Wilderness County Park in the Town of Armenia, 30 at Kennedy County Park near the City of New Lisbon and 673 private sites in various campgrounds across the County. In addition, there are hundreds of resort / motel type rooms within the County in various inns, motels, cabin resorts and bed & breakfasts.

EMPLOYMENT

The County's employment is more seasonal than the state as a whole, being significantly influenced by hospitality, tourism, and agriculture. However, the Manufacturing Sector accounts for about one quarter of the County's economy. Only the Education and Health Services Sector accounts for more employment, comprising 26.2 percent of jobs in Juneau County. The leisure and hospitality sector represent 8.75 percent of the County's employment.

Table 4: Prominent Employers in Juneau County

Employer Name	Location	Industry
Brunner Mfg Inc.	Mauston	Bolt Nut Screw Rivet & Washer Mfg
Festival Foods	Mauston	Supermarkets & Grocery Stores
Freudenberg-Nok	Necedah	Gasket Packing/Sealing Device Mfg
Juneau County	Mauston	General Government Support
Kwik Trip Inc.	Various	Gas Station / Convenience Stores
Leer Inc	New Lisbon	Electric Appliance Wholesalers
MVP Warehousing	Necedah	Real Estate Agents / Brokers
Mastermold	Mauston	Plastics Material & Resin Mfg
Mauston School District	Mauston	Elementary & Secondary Schools
Mile Bluff Medical Center	Various	General Medical & Surgical Hospitals & Nursing Care
Necedah School District	Necedah	Elementary & Secondary Schools
New Lisbon Correctional Institution - DOC	New Lisbon	Correctional Facility
New Lisbon School District	New Lisbon	Elementary & Secondary Schools
Parker-Hannifin Refrigeration Specialties	Mauston	AC Refrigeration & Forced Air Heating
Sand Ridge Treatment Center - DHS	Mauston	Psychiatric & Substance Abuse Hospitals
Volk Field - Dept. of Defense	Camp Douglas	National Security
Walker Stainless Equipment Co	New Lisbon	Plate Work Mfg

Source: WisDWD & NCWRPC, 2023.

The manufacturing, education and health services are well represented on the list of top employers in the County, refer to Table 4. There are a number of notable

manufacturers, with 100 or more employees located in Mauston and other areas of the County. Mauston is also home to two major facilities in the Mile Bluff Medical Center and the Sand Ridge Treatment Center, while several of the school districts serving the County have significant staff levels.

Identifying locations of large employment is important when prioritizing hazard mitigation strategies. Analyzing employment within the County confirms that Mauston is the primary employment and service hub in Juneau County, however, other places like Necedah, New Lisbon and Camp Douglas are also significant employment centers.

In addition to the seasonal swells in employment, the number of people working in a given locality fluctuates on a daily basis. Workers travel jobs within Juneau from surrounding counties and residents flow out of the County for employment. Overall 4,687 residents flow out of the County for work while 3,287 workers are flowing in from surrounding areas. The most significant connections are with Sauk County to the south and Monroe to the west. About 1,689 Juneau residents travel into Sauk for work while 695 Sauk County residents come into Juneau, and about 1,464 Juneau residents travel to Monroe County for work while 925 Monroe residents come to Juneau. Adams County is also a notable link with 495 workers flowing into Juneau and 173 coming from Juneau.

Economic Impact of Job Loss in Juneau County

To help determine the potential impact of a hazard occurrence on the economy of the County, EMSI economic modeling software was used to estimate the cumulative effects of job losses in the some of the top industry sectors of the County. A catastrophic, worst case, scenario is examined. Actual impacts would vary by degree of severity of the event. Table 5 shows a summary of the outcome of the analysis.

Sector	Multiplier	Potential Jobs Impacted	Earnings Lost
Metal Tank Manufacturing	1.24	468	\$ 31,517,522
All Other Metal Product Fabrication	1.09	255	\$ 11,075,626
Gasoline Stations w/ Convenience Stores	1.06	303	\$ 6,112,550
General Medical and Surgical Hospitals	1.14	478	\$ 28,373,585

Source: EMSI Economic Modeling Specialists and NCWRPC, 2016.

LAND USE/LAND COVER AND DEVELOPMENT PATTERNS

Land use is an important determinant in the potential impact a particular hazard may have, and in action 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.

Aerial photos were used by the NCWRPC to digitize a land use Geographic Information System (GIS) coverage of Juneau County. Map 2 shows the land use and development concentrations within the County. Table 6 shows the acreage and percent of each classification.

Use	Acres	% of County
Agriculture	106,822	20.77%
Commercial	1,743	0.34%
Cranberry Bog	2,857	0.56%
Governmental/Institutional	3,934	0.77%
Industrial	733	0.14%
Open Lands	56,649	11.02%
Outdoor Recreation	6,334	1.23%
Residential	10,907	2.12%
Transportation	14,511	2.83%
Water	27,522	5.35%
Woodlands	282,267	54.89%
Total	514,280	100.00%

Source: NCWRPC, 2023.

FORESTRY AND AGRICULTURE

The dominant land uses in Juneau County are forestry and agriculture. Land area in the County is approximately 55 percent forested, comprised of 282,267 acres of woodland. Agricultural land covers another 21 percent of the County's land area. According to UW-Extension, the main agricultural practices in the County are dairy farming but is very diversified with beef, sheep, bison, goat, and emu farms, complement forage and grain production. Specialty crops include cranberries, potatoes, grapes, blueberries, apples and Christmas trees.

The County is extensively forested throughout. Although ag-land is scattered across much of the County except the northwest corner, it is more heavily concentrated along and south of the I-90/94 corridor, as well as the Town of Armenia in the northeast corner.

RESIDENTIAL DEVELOPMENT

Land in residential development makes up about 2 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 about 2,679 mobile homes in 2022. This is about 18 percent of housing units for the County compared to about 3 percent for the entire state.

This is significant due to their vulnerability in natural hazards especially tornados. Map 8 displays the mobile home concentrations within the County.

COMMERCIAL AND INDUSTRIAL DEVELOPMENT

Commercial and industrial development makes up only about 0.48 percent of the total area of the County. Land use for commercial and industrial development is also scattered throughout the County (see "Employment" above). There are six industrial parks located around the County. There are also designated business parks in Mauston and New Lisbon. Commercial activity is concentrated in these cities as well as the other cities and villages around the County.

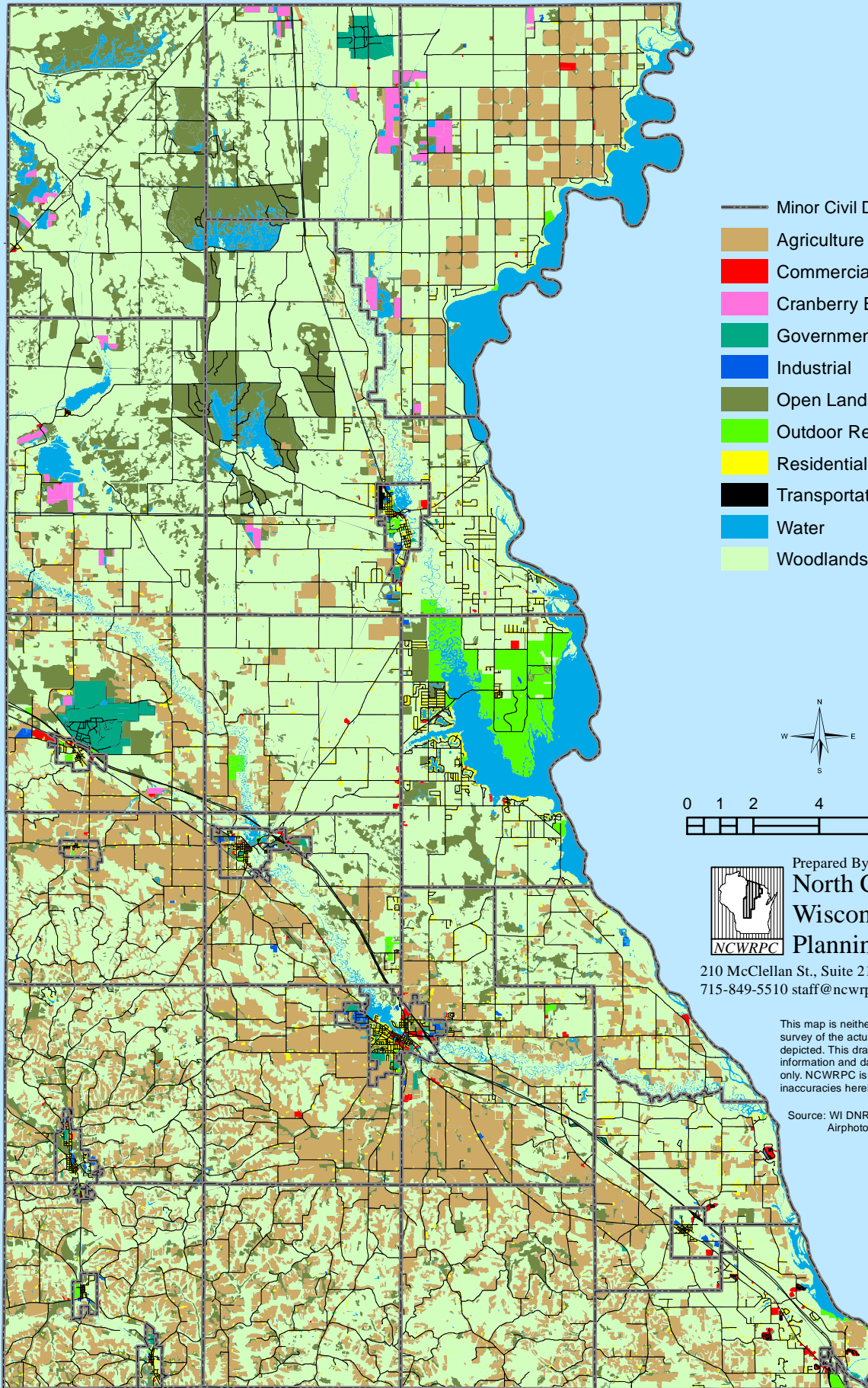
SURFACE WATER

Juneau County is within the Central and Lower Wisconsin River Basins. The basins are divided between ten main watersheds, refer to Map 3. In the Central Wisconsin River Basin, watersheds include Cranberry Creek, Lower Yellow River, and Wisconsin Rapids. In the Lower Wisconsin River Basin, watersheds include Beaver Creek, Crossman Creek/Little Baraboo River, Dell Creek, Little Lemonweir River, Lower Lemonweir River, and Seymour Creek/Upper Baraboo River.

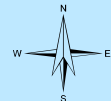
The total surface water area of lakes and streams in Juneau County exceeds 27,000 acres. The many streams, rivers, and flowages in Juneau County furnish an abundant supply of surface water for power generation, irrigation, recreation, and fish & wildlife habitats. Juneau County has a total of about 57 lakes and 73 streams. Many lakes are impoundments to generate power, used for waterfowl, or as cranberry flowages. Nearly all of the lakes are used for recreation. The two largest lakes are Petenwell and Castle Rock; both are flowages on the Wisconsin River. Juneau County has about 378 linear miles of streams; all of which drain to the Wisconsin River.



Castle Rock Lake



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



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Source: WI DNR, NCWRPC,
Airphoto Interpretation 2020

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

Floodplain

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 1% 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), Juneau County and its incorporated cities and villages have a completed Flood Insurance Study and a Flood Insurance Rate Map (FIRM) that encompasses the County, see Table 7 for summary of NFIP status. 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. FEMA has updated Juneau County's FIRM to digital standards. The digital FIRMs are referred to as DFIRM. The NCWRPC downloaded the DFIRM from FEMA's website for use in this plan. Although unofficial, the digital files indicate there are 58,889.4 acres of floodplain in Juneau County, or 11.5 percent of the land area. Map 4 shows the approximate floodplains in Juneau County. Floodplains in

Juneau are extensive in some areas, and flooding is a recurring problem. Currently, there are seven repetitive loss structures, those with multiple flood insurance claims, in Juneau County. Table 8 A & B summarize NFIP compliance efforts for Juneau County and the participating incorporated municipalities.

Table 7 : FEMA Community Status Book Report Communities Participating in National Flood Insurance Program Wisconsin - Juneau County				
Community	Initial FHBM	Initial FIRM	Current Map	Program Entry
Juneau County	09/18/1981	9/18/1991	10/16/2012	9/18/1991
V. of Hustler	08/23/1974	9/18/1991	10/16/2012	8/24/2012
V. Lyndon Station*	05/24/1974	09/01/1986	10/16/2012	12/17/1986
V. of Necedah	01/09/1974	9/18/1991	10/16/2012	1/27/1992
V. of Union Center	11/15/1974	9/18/1991	10/16/2012	3/13/2013
V. of Wonewoc	12/07/1973	9/30/1988	10/16/2012	9/30/1988
C. of Elroy	06/07/1974	9/18/1991	10/16/2012	9/18/1991
C. of Mauston	12/17/1973	9/18/1991	10/16/2012	9/18/1991
C. of New Lisbon	12/17/1973	9/18/1991	10/16/2012	9/18/1991

*Source: FEMA, 2023. *Withdrawn from participation.*

The Biggert-Waters Flood Insurance Reform Act was signed into law in July, 2012. This act implemented significant reforms to the structure of flood insurance under the National Flood Insurance Program (NFIP). Then, on March 21, 2014, President Obama signed the Homeowner Flood Insurance Affordability Act of 2014 (HFIAA) into law amending the NFIP further. These new laws impact the various elements of the NFIP, including Insurance, Flood Mapping, Mitigation, and Floodplain management.

Third generation flood mapping is now underway across the country. Known as Risk MAP or Risk Mapping, Assessment and Planning, this process is being coordinated by the Department of Natural Resources in Wisconsin. Juneau County has not yet been scheduled for Risk MAP at the time of this writing; however, preliminary research and data collection has been done for the Castle Rock watershed.

HFIAA repeals and modifies certain provisions of the Biggert-Waters Flood Insurance Reform Act and makes additional program changes to other aspects of the program not covered by that Act. Many provisions of the Biggert-Waters Flood Insurance Reform Act remain and are still being implemented. The new law lowers the recent rate increases on some policies, prevents some future rate increases, and implements a surcharge on all policyholders. The Act also repeals certain rate increases that have already gone into effect and provides for refunds to those policyholders. Both of these laws are important to local floodplain managers and planners because rate structure increases may increase interest of policy holders that own floodprone properties in alternatives to mitigate both flood risk and flood insurance costs for those properties.

TABLE 8A Compliance with NFIP Requirements – Participating Jurisdictions

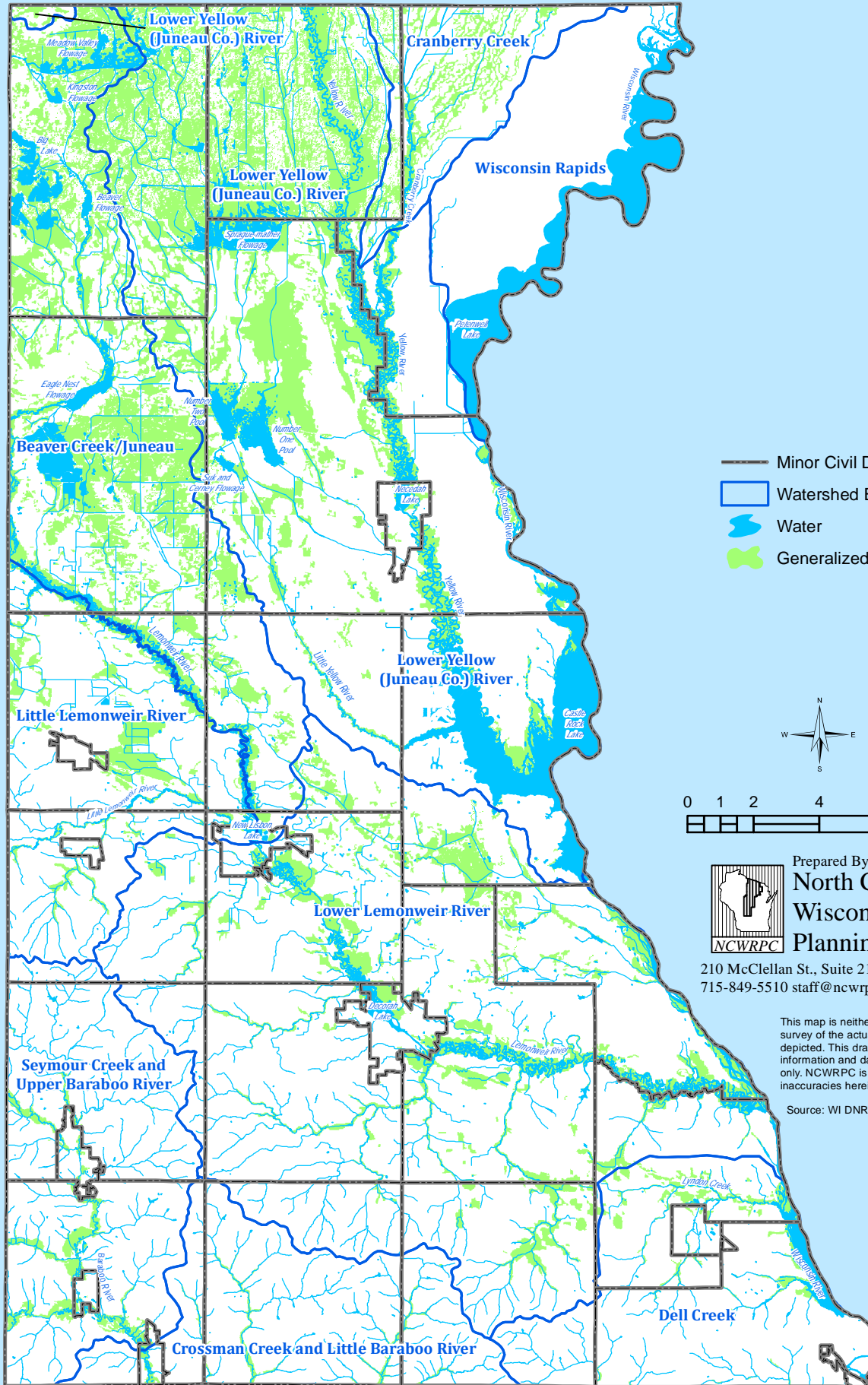
	Juneau County	City of Elroy	City of Mauston	City of New Lisbon	Village of Camp Douglas
NFIP Status	Participating	Participating	Participating	Participating	N/A
Adoption of Minimum NFIP Criteria	Floodplain zoning ordinance adopted based on State Model	Floodplain zoning ordinance adopted based on State Model	Floodplain zoning ordinance adopted based on State Model	Floodplain zoning ordinance adopted based on State Model	N/A
Adoption of Latest FIRM	DFIRM 10/16/12	DFIRM 10/16/12	DFIRM 10/16/12	DFIRM 10/16/12	N/A
Implementation and Enforcement of floodplain regulations	Zoning Administrator administers Juneau County Floodplain Ordinance	City Administrator administers City of Elroy Floodplain Zoning Ordinance	Zoning Administrator administers Chapter 104 Municipal Code – Floodplain Zoning	Building Inspector administers Chapter 500 Municipal Code – Floodplain Zoning	Village Zoning Ordinance identifies that there are no known floodplain areas within the Village, so Floodplain Zoning is not in use.
Designated Agency for NFIP Compliance	Sanitation & Zoning Department / Zoning Administrator	City Administration Department / City Administrator	Zoning/Planning Department / Zoning Administrator	Building Inspection Department / Building Inspector	N/A
Implementation of Substantial Damage Provisions of Ordinance	Zoning Administrator inspects all damaged floodplain structures to determine if substantial damage has occurred after an event.	Building Inspector inspects all damaged floodplain structures to determine if substantial damage has occurred after an event.	Zoning Administrator inspects all damaged floodplain structures to determine if substantial damage has occurred after an event.	Building Inspector inspects all damaged floodplain structures to determine if substantial damage has occurred after an event.	N/A
Floodplain Management Efforts that Contribute to Continued Compliance with NFIP	Comprehensive Planning to keep development from encroaching on floodplains. / Enforcement of Floodplain Ordinance. / Update ordinance as required in conjunction with WisDNR.	Comprehensive Planning to keep development from encroaching on floodplains. / Enforcement of Floodplain Ordinance. / Update ordinance as required in conjunction with WisDNR.	Comprehensive Planning to keep development from encroaching on floodplains. / Enforcement of Floodplain Ordinance. / Update ordinance as required in conjunction with WisDNR.	Comprehensive Planning to keep development from encroaching on floodplains. / Enforcement of Floodplain Ordinance. / Update ordinance as required in conjunction with WisDNR.	N/A
Reasons for Non-participation	N/A	N/A	N/A	N/A	No known floodplain or special flood hazard areas located within Village boundaries at this time.





Source: NCWRPC review of zoning codes and interviews with local zoning officials, 2023.

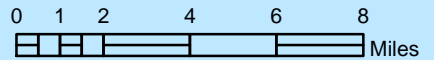
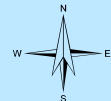
TABLE 8B Compliance with NFIP Requirements – Participating Jurisdictions

	Village of Hustler	Village of Lyndon Station	Village of Necedah	Village of Union Center	Village of Wonewoc
NFIP Status	Participating	Withdrawn	Participating	Participating	Participating
Adoption of Minimum NFIP Criteria	Floodplain zoning ordinance adopted based on State Model	N/A	Floodplain zoning ordinance adopted based on State Model	Floodplain zoning ordinance adopted based on State Model	Floodplain zoning ordinance adopted based on State Model
Adoption of Latest FIRM	DFIRM 10/16/12	N/A	DFIRM 10/16/12	DFIRM 10/16/12	DFIRM 10/16/12
Implementation and Enforcement of floodplain regulations	Building Inspector administers Village of Hustler Floodplain Zoning Ordinance	Building Inspector administers Chapter 325 Municipal Code – Shoreland-Wetland Zoning	Village Administrator administers Village of Necedah Floodplain Zoning Ordinance	Building Inspector administers Village of Union Center Floodplain Zoning Ordinance	Village Administrator administers Village of Wonewoc Floodplain Zoning Ordinance
Designated Agency for NFIP Compliance	Village Plan Commission / Village Board	N/A	Village Administration / Village Administrator	Village Plan Commission / Village Board	Village Administration / Village Administrator
Implementation of Substantial Damage Provisions of Ordinance	Building Inspector inspects all damaged floodplain structures to determine if substantial damage has occurred after an event.	N/A	Building Inspector inspects all damaged floodplain structures to determine if substantial damage has occurred after an event.	Building Inspector inspects all damaged floodplain structures to determine if substantial damage has occurred after an event.	Building Inspector inspects all damaged floodplain structures to determine if substantial damage has occurred after an event.
Floodplain Management Efforts that Contribute to Continued Compliance with NFIP	Comprehensive Planning to keep development from encroaching on floodplains. / Enforcement of Floodplain Ordinance. / Update ordinance as required in conjunction with WisDNR.	N/A.	Comprehensive Planning to keep development from encroaching on floodplains. / Enforcement of Floodplain Ordinance. / Update ordinance as required in conjunction with WisDNR.	Comprehensive Planning to keep development from encroaching on floodplains. / Enforcement of Floodplain Ordinance. / Update ordinance as required in conjunction with WisDNR.	Comprehensive Planning to keep development from encroaching on floodplains. / Enforcement of Floodplain Ordinance. / Update ordinance as required in conjunction with WisDNR.
Reasons for Non-participation	N/A	Existing development isolated from floodplain area which is precluded from future development by shoreland zoning. Historically no major impacts from stream flooding.	N/A	N/A	N/A

Source: NCWRPC review of zoning codes and interviews with local zoning officials, 2023.



-  Minor Civil Divisions
-  Watershed Boundaries
-  Water
-  Generalized Wetlands

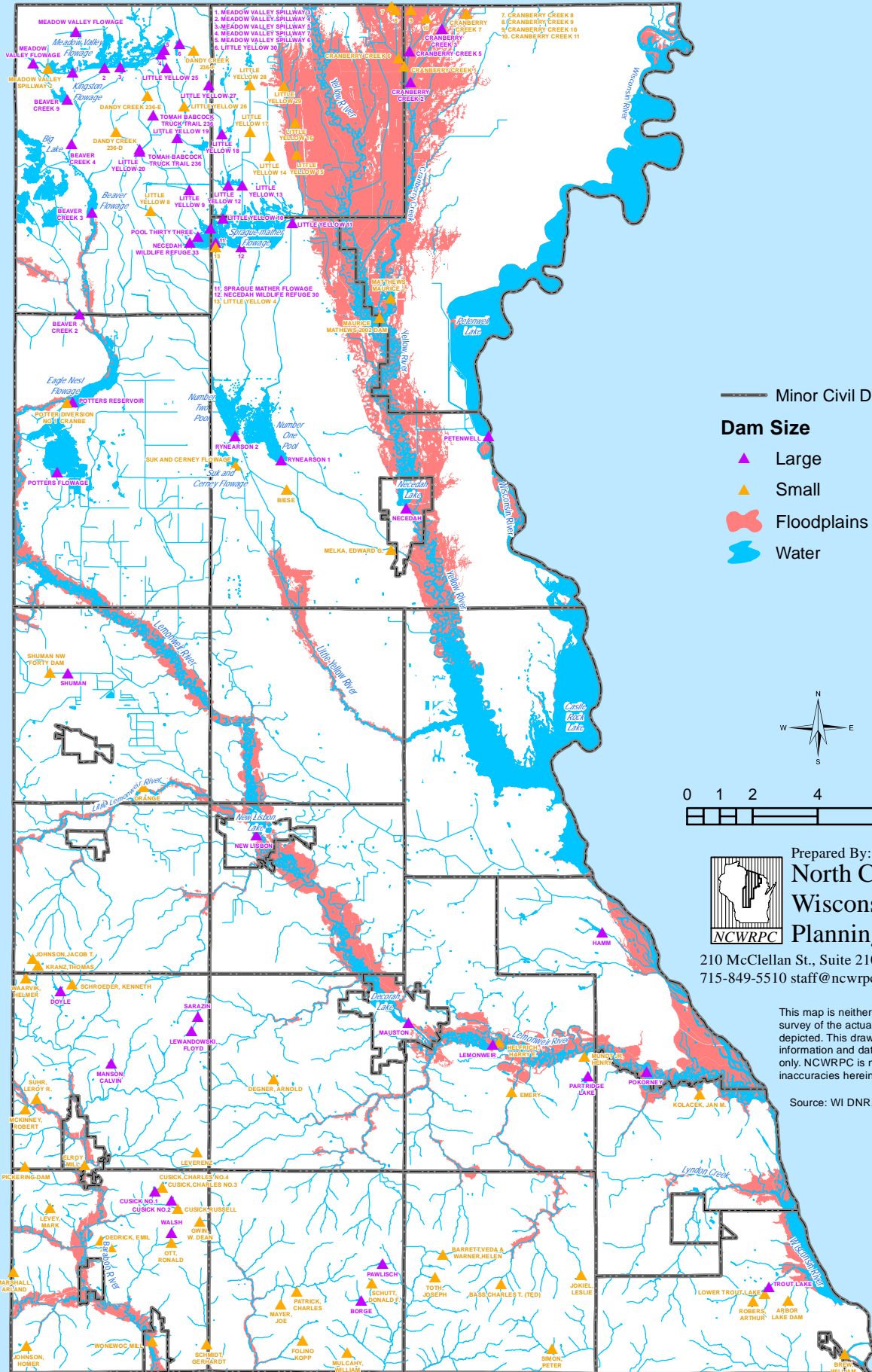


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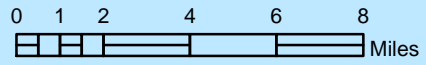
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Source: WI DNR, NCWRPC, WISCLAND



- Minor Civil Divisions
- Dam Size**
- ▲ Large
- ▲ Small
- Floodplains
- Water



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Source: WI DNR, NCWRPC and FEMA

Wetlands

Wetlands perform many indispensable roles in the 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 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 also identified the location of wetlands on their WISCLAND database. According to this, Juneau County has 100,606.22 acres, or 19.6 percent of its total area. Map 3 shows these wetland areas in Juneau County. There are concentrations of wetlands in Juneau County, particularly in the northwest associated with the Necedah National Wildlife Refuge and surrounding natural areas. Additional wetlands are associated with the floodplains discussed above, however, smaller wetlands are scattered throughout the County.

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 6,334 acres or 1.2 percent of the County land area. Other lands may have recreational aspects, particularly woodlands. Governmental, public and institutional lands total about 3,934 acres or about 0.77% of the County land area. The transportation category is primarily the roadway travel corridors for federal, state, county and local highways and roads. Sometimes overlooked, transportation land use can be significant. In Juneau County, surface transportation facilities consume about 14,511 acres of land or about 2.8 percent of total land area. Note that this is almost six times as much land area as is used for commercial and industrial uses in the County.

FUTURE GROWTH AND DEVELOPMENT IN JUNEAU COUNTY

Juneau County's population has increased by only 0.2 percent over the last ten years for a net gain of 54 residents. The County's rate of growth has declined from the very high rates observed during the previous decades. The County's rate of growth has been similar to the State's overall rate in the past. For example, the County grew about 9 percent during the previous decade compared to the state's growth of 10% over that same period. However, if the growth rate continues at its current level (i.e. 2010 to 2020), Juneau County will have grown to a population of about 28,615 in 2040, a gain of about 1,900 residents. This equates to approximately 766 additional structures (housing units), assuming consistent conversion and vacancy rates.

From a net growth perspective, residential migration into Juneau County has been responsible for most of its population growth because natural growth has been low (births vs. deaths). This growth pattern is reflective of an aging population and booming seasonal-to-permanent housing markets.

A market analysis of land use was conducted by UW-Extension that concluded that one of the largest land use trends was the secondary home market and with the economic recovery, this trend should continue and also influence the construction sector. The Towns of Armenia, Germantown, Kildare, Lyndon, and Necedah on the east side of the County are projected to see strong growth as the primary lakeshore/riverfront development areas. More retired persons are expected to migrate into the County looking to convert vacation homes into permanent residences.

The urban areas such as the Cities of Mauston and New Lisbon as well as the Villages of Camp Douglas, Necedah and Union Center will also likely see continued development due to employment opportunities and other local amenities.

New commercial and industrial development is expected to be gradual over time, paralleling population growth. The most significant concentrations of this development will likely be in the incorporated communities and the industrial and business parks in the area. These parks have significant space available and are mostly ready for development with sewer, water, gas, and electric utilities in place. New private sector construction/expansion projects include: solar farm installations in Lemonweir; new commercial storage units in Lemonweir as well as Clearfield and Village of Necedah; new small retail chain stores in Clearfield and City of Elroy; campground expansion in Marion; new clinic in City of Elroy; new senior housing in Village of Necedah; a new mixed-use development in City of Elroy; and in Mauston a variety of new developments include: sports complex, new truck terminal, John Deere Sales, and a future urgent care facility. Notable apartment developments include: ten new 4-plex units in City of New Lisbon; conversion of nursing home into multifamily planned in City of Elroy; and 3 new apartment buildings in Mauston with 2 more planned.

New infrastructure or public facilities will be somewhat minimal, excepting limited replacement of existing facilities. Local government budgets are expected to remain constrained well into the future. These budget constraints will curtail local governments' ability to develop new facilities and result in a tendency to make do with existing infrastructure and delay expansion plans. Projects that are currently underway include: planning for town hall improvements in Clearfield as well as Kildare (community center), boat landing upgrades in Lyndon; planning for new park and salt shed in Germantown; planning for new police building in City of New Lisbon, new public safety building in Village of Necedah, a new WWTP and a new well in City of New Lisbon; WWTP upgrades and floodproofing in City of Elroy; planning for new wells, WWTP upgrades and reservoir rehab in Village of

Necedah; school upgrades in City of Elroy; and in Mauston a variety of projects including: a new fire station, updating the WWTP, a new elementary school (replacement of westside school torn down), addition to high school, new fairgrounds pavilion, and planning for new city hall / police department in the next 3 to 5 years.

Juneau County completed construction of the new, 2-story office building for the health department, human services and the ADRC (aging and disability resource center) in Mauston. The County also completed construction of a new highway shop building in Mauston.

As identified in the Juneau County Comprehensive Plan, there are a number of impediments to development in the County. The Necedah National Wildlife Refuge covers approximately 73,928 acres, or about 14 percent of the County. Camp Williams/Volk Field and the Hardwood Range are federally owned military lands and comprise about 1.9 percent of the County. About a quarter of all lands in the County are publically owned, including right-of-ways. The Comp Plan also identified large amounts of wetlands and floodplains, as well as steep slopes and prime farmland as obstructions to development.

Any new buildings and facilities, including new housing units, will be subject to each hazard addressed in this Plan. Even best efforts to keep new building out of flood plain and dam shadow areas cannot guarantee new construction will be exempt from flooding due to the nature of flooding within the County.

The County's population is generally older, with a median age of 45.7 years, versus statewide median age of 39.6 years. Over the next few decades, the residential base will become even older, aging more quickly than the state as a whole. In fact, the number of persons 60 and older will likely exceed the population 19 and under by 2040. This will have implications affecting the demand for emergency services.

IMPACT OF CHANGES IN POPULATION, LAND USE AND DEVELOPMENT

The dynamics of a given community's population, how land use changes over time and how local development trends affect population and land use have implications for emergency services and hazard mitigation. The Hazard Mitigation Planning Committee identified the following impacts from its assessment of the changes in population, land use and development trends within Juneau County and the participating incorporated municipalities:

- Increases in new housing and other development can increase the vulnerability and risk to hazards. For example, growth and development can increase the risk of flooding by increasing stormwater runoff, disrupting natural drainage systems and reducing flood storage.
- Increases in population and/or housing also result in increasing demand for emergency services, which is a particular challenge during tight

- governmental budgetary conditions, as has been persistent in Wisconsin for some time now.
- With the majority of the County being sparsely populated rural areas, both costs to provide services and response times increase. In addition, communications and mitigating potential impacts are often more challenging (e.g., warning systems and public storm shelters).
 - Juneau County’s population is aging. Demands for senior services in the County will only increase, including for emergency response. The aging population poses unique challenges for emergency preparedness and response services, such as sheltering in place and evacuation strategies. Seniors who reside in remote, rural areas may need special attention during a hazard event (e.g., transportation for dialysis during a winter storm, access to medicine or other medical needs).
 - There is geographic variability across the County. Emergency service needs, mitigation priorities, and local resources will vary by community and area. Many residents have access to resources, tools, equipment, and friends or family that enable them to “weather the storm,” clean up storm damage, and offer support to their neighbors and community.
 - Although the number has been declining, there remains a significant number of mobile homes in the County, which are more vulnerable during certain types of storm events.
 - Juneau County’s many farming and agricultural operations have unique hazard risks and vulnerabilities that must be considered, prepared for, and mitigated, if possible. The large amount of public forest land and shoreland development, with associated outdoor recreational uses and seasonal homes, also have unique risks and challenges.
 - Manufacturing continues to be a significant part of the County’s economy, particularly in the various cities and villages, but does have inherent hazard risks and vulnerabilities, such as large-span buildings, concentrations of employees, or extreme operating parameters (temps, pressures, etc.).

PUBLIC FACILITIES AND SERVICES

TRANSPORTATION

The transportation system of Juneau 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).

The principal highways serving the County are Interstate 90/94 and U.S. Highway 12. The Interstate connects Wisconsin Dells, Lyndon Station, Mauston, New Lisbon, and Camp Douglas, while U.S. Highway 12 serves as an alternative route. STHs 21 and 82 provide the main east-west routes, and state highways 80, 16, and 173 also serve the County. These highways link the County with neighboring

communities and are vital to the manufacturing and tourism sectors of the County's 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 major highways and population centers. Local roads provide access to local development, farming and forest areas, as well as to the County's recreation areas.

Aging and Disability Resource Center of Eagle Country coordinates transit service for elderly and disabled in the County. Vans and mini-buses provide transportation for medical appointments, shopping, banking, and other business during the week for seniors. A volunteer driver network is also available for the elderly and those with disabilities. The City of Mauston has a subsidized shared-ride taxi service.

The Union Pacific Railroad, Canadian Pacific Railway, and the Canadian National all pass through Juneau County with interconnections at Camp Douglas, Necedah and New Lisbon. The Amtrak passenger train also travels through the County; there is a stop in nearby Wisconsin Dells.

There are five airports within Juneau County. The Volk Field Air National Guard Base is located near Camp Douglas. This field can accommodate most modern military aircraft on its single asphalt and concrete paved runway measuring 9,000 ft. The Mauston-New Lisbon Union Airport is jointly owned by its municipal namesakes. It is classified as a basic utility airport and has a 3,686 foot asphalt runway. The Necedah Airport is owned by the Village and is appropriate for small engine planes with its single 2,700 foot asphalt runway. Three Castle Airpark is located northwest of Wonewoc and is privately owned and operated, but open to the public. There is a 2,740 grass runway appropriate for small engines. Lastly, Eloy Municipal Airport is also privately owned, and its 2,550 foot gravel and turf runway is open to the public.

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. There are 10 water suppliers for domestic and commercial use, including each city and village and the Wisconsin Air National Guard Volk Field.

The protection of the wastewater facilities is an important consideration for hazard mitigation planning because of their 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 and associated facilities. There are twelve wastewater treatment centers in the County; the 10 public and 2 serving private developments.

Natural gas service is provided to much of the County by Alliant Energy, Wisconsin Gas Company and Madison Gas & Electric.

The infrastructure of electric and telephone lines should be considered in the events of high wind, ice storms, tornados, flooding, and fire. Alliant Energy and Oakdale Electric Cooperative provide Juneau County with electric service. As of 2001, an independent company, American Transmission Company (ATC), owns, maintains, and operates the major transmission facilities located in the State of Wisconsin, including Juneau County. The general locations of the major electrical transmission facilities, owned by ATC are shown on Map 6. There are several companies providing telephone service in the County including Frontier and Charter.

Nationwide, cellular telephones account for more than 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. 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. Cell service coverage within Juneau County is very good, however, there remain some areas where service can be spotty.

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. The location of fire stations, police departments, and ambulance services in Juneau County are shown on Map 7. Juneau County operates the 911-call center providing dispatch for virtually all of the emergency services discussed below.

There are a number of fire departments that serve the local units of governments in Juneau County. All of the departments rely on volunteers for this service. Additionally, the Volk Field Air National Guard Base in Camp Douglas is home to the Volk Field Combat Readiness Training Center Fire Department which employs career firefighters. The Department of Natural Resources also has two fire protect units: the Babcock Fire Response Unit and the Necedah Fire Response Unit. Four departments are located outside the County – the Cities of Reedsburg and Wisconsin Dells and the villages of LaValle and Lyndon. Juneau County also has a HazMat Team located at Camp Douglas (Volk Field), and there is also a New Lisbon Fire Department HazMat Team.

There are a number of ambulance/EMS service providers within the County, including the Village of Lyndon Station, the Village of Wonewoc, the City of New Lisbon, the Village of Necedah, the City of Elroy, the City of Mauston, and the

Village of Camp Douglas. There are also several outside stations that provide service within the County.

The Juneau County Sheriff’s Department provides service to all of the towns as well as the villages of Hustler and Union Center. The Sheriff’s Department’s office is located in the City of Mauston. The Villages of Necedah, Camp Douglas, Lyndon Station, and Wonewoc as well as the cities of Mauston, Elroy, and New Lisbon operate and maintain their own law enforcement units.

The American Red Cross maintains agreements with the owner/operators of various facilities around the County to act as shelters in the event of an emergency. Schools and churches are the most common shelter facilities. Juneau County is part of southwest chapter of the American Red Cross with ten other counties. The chapter’s administrative office is located in Madison, but a volunteer disaster action team is maintained locally.

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.

There are six hospitals and clinics located throughout the County. The main hospital is the Mile Bluff Medical Center. Outlying clinics include the Elroy Family Medical Center, the Gundersen Clinic, Mile Bluff Clinic, Necedah Family Medical Center, and the New Lisbon Clinic.

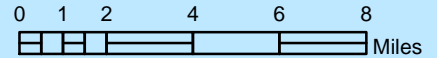
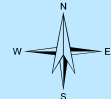
There are three primary nursing homes within the County: Elroy Health Services in Elroy, Fair View in Mauston and Crest View in New Lisbon. Nursing homes are vulnerable, because of the high level of assistance needed with the residents that live there. In addition, there are a number of assisted living facilities within the County. The schools are another facility that are important, since hundreds of the County’s children are there for most of the year. Map 7 shows the location of selected types of critical community facilities within Juneau County.



Crest View Nursing Home, New Lisbon



- Minor Civil Divisions
- US Highways
- State Highways
- County Highways
- Local Roads
- Railroad
- Small General Aviation
- Military Airport
- Grass Strip (Private)
- Water

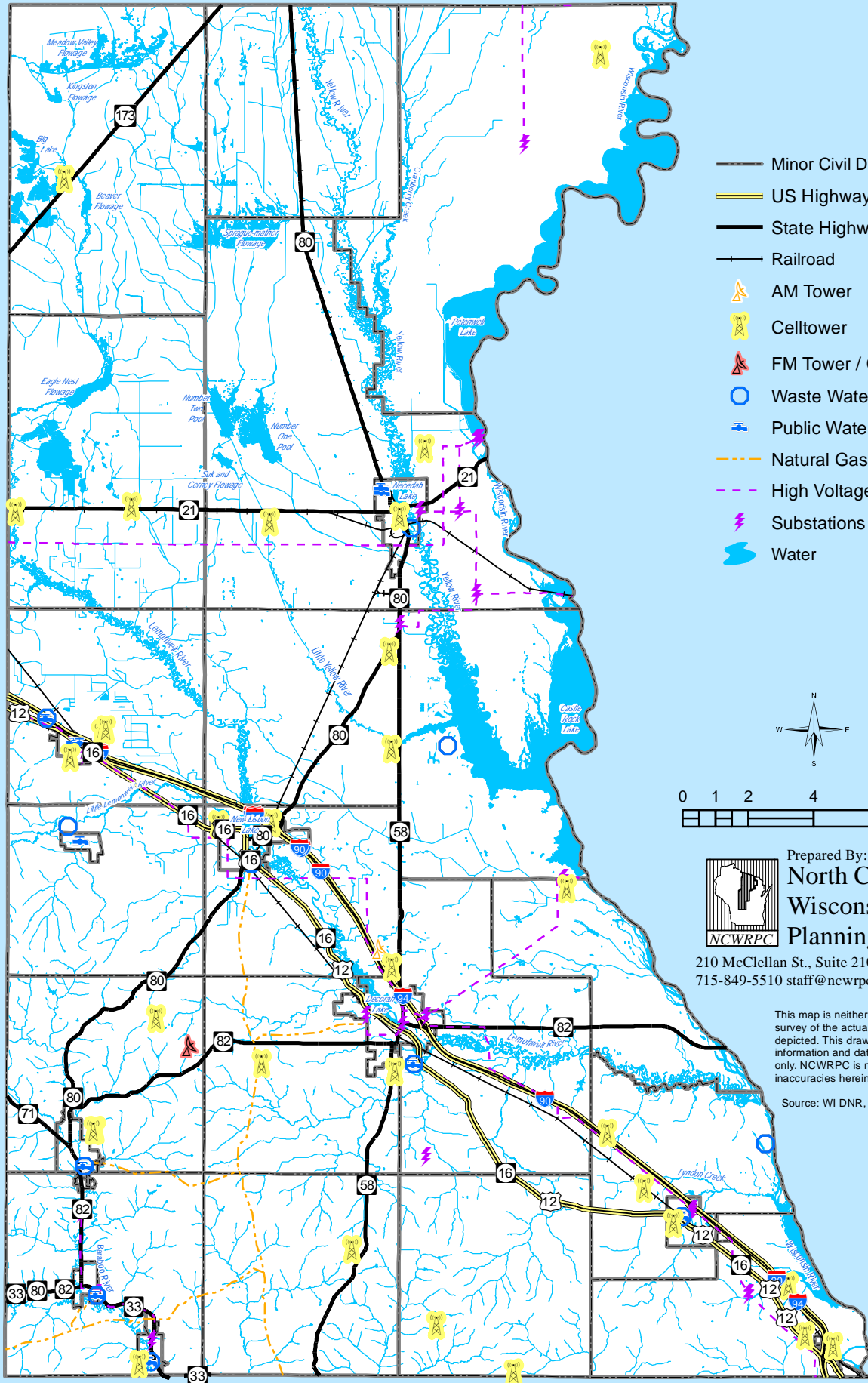


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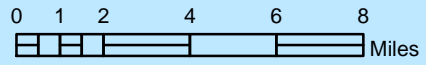
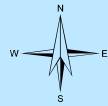
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Source: WI DNR, NCWRPC and Wis DOT



- Minor Civil Divisions
- US Highways
- State Highways
- Railroad
- AM Tower
- Celltower
- FM Tower / Celltower
- Waste Water Treatment Plant
- Public Water Supply
- Natural Gas Pipeline
- High Voltage Powerline
- Substations
- Water

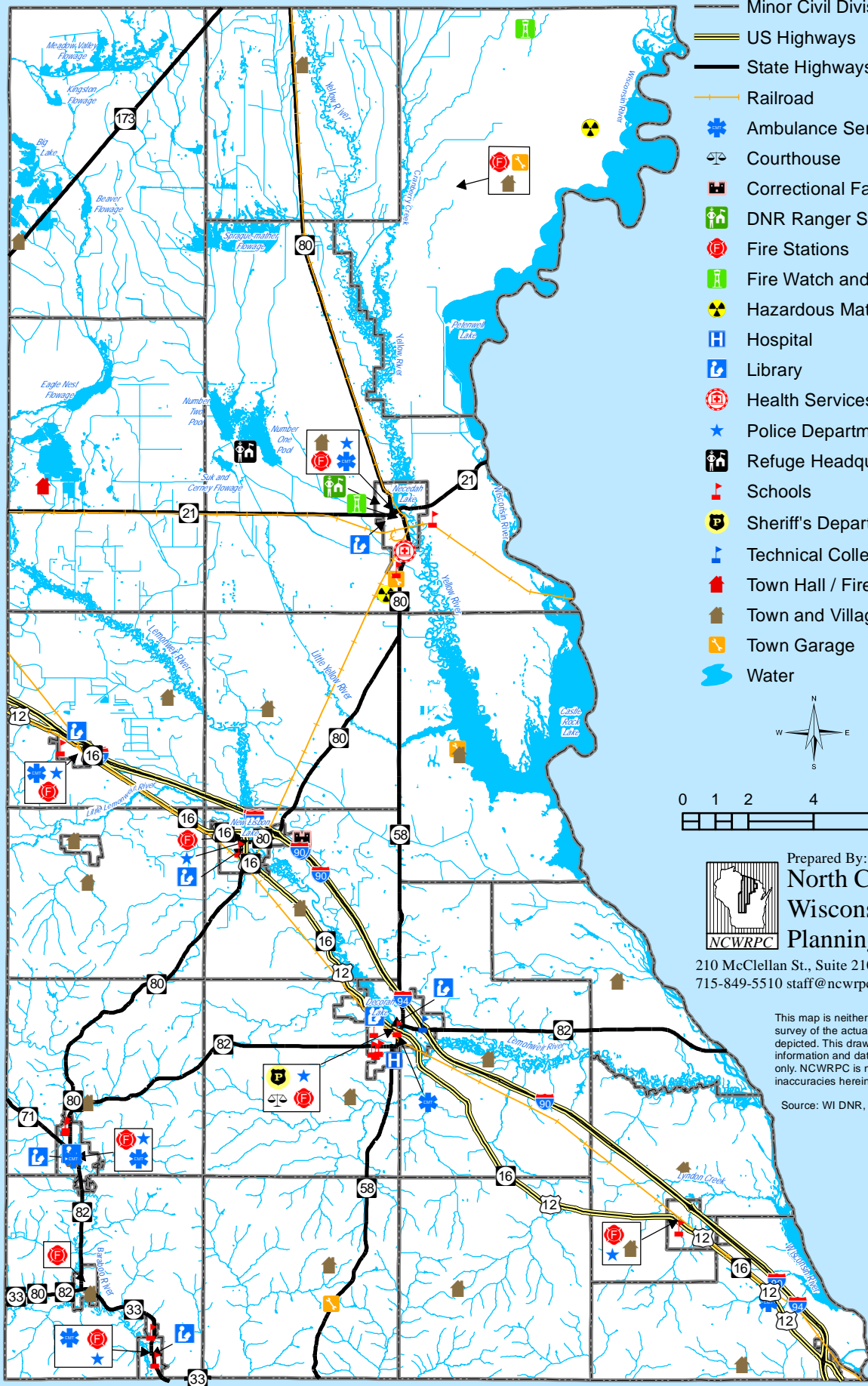


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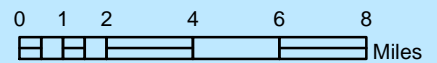
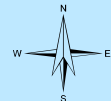
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Source: WI DNR, NCWRPC



- Minor Civil Divisions
- US Highways
- State Highways
- Railroad
- Ambulance Service
- Courthouse
- Correctional Facility
- DNR Ranger Station
- Fire Stations
- Fire Watch and Lookout Tower
- Hazardous Materials Site
- Hospital
- Library
- Health Services
- Police Department
- Refuge Headquarters
- Schools
- Sheriff's Department
- Technical College
- Town Hall / Fire Department
- Town and Village Hall
- Town Garage
- Water



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Source: WI DNR, NCWRPC

INVENTORY & VALUE - STRUCTURES & PROPERTY IN JUNEAU COUNTY

The value of the land and improvements in a community reflects the upper end of the potential for property damages in each community. The 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 9 lists each municipality's total equalized values for all property and the percent each municipality represents of the county total.

Table 9: Property Values by Community, 2022					
Community	Land Value	Improvement Value	MFL Value	Total	% Total
Armenia town	\$61,517,100	\$82,680,700	\$6,302,400	\$150,500,200	3.56%
Clearfield town	\$25,893,200	\$43,147,200	\$10,177,700	\$148,259,726	3.51%
Cutler town	\$15,855,000	\$16,740,600	\$1,438,700	\$66,630,824	1.58%
Finley town	\$7,704,700	\$8,457,500	\$3,789,400	\$36,114,227	0.85%
Fountain town	\$11,643,500	\$29,153,000	\$5,300,100	\$86,893,885	2.05%
Germantown t	\$142,599,000	\$260,815,100	\$4,047,300	\$810,879,774	19.18%
Kildare town	\$29,306,700	\$40,049,400	\$5,772,100	\$144,485,416	3.42%
Kingston town	\$1,855,000	\$2,466,300	\$0	\$8,642,878	0.20%
Lemonweir t	\$34,873,300	\$103,753,500	\$5,718,400	\$282,973,539	6.69%
Lindina town	\$12,507,500	\$42,847,100	\$2,586,400	\$113,296,556	2.68%
Lisbon town	\$19,717,200	\$50,071,500	\$7,198,500	\$146,777,004	3.47%
Lyndon town	\$35,369,700	\$91,287,100	\$2,776,500	\$256,091,663	6.06%
Marion town	\$23,370,250	\$48,160,400	\$6,612,900	\$149,675,027	3.54%
Necedah town	\$66,914,000	\$136,679,900	\$9,171,300	\$416,362,376	9.85%
Orange town	\$14,299,300	\$31,944,800	\$4,585,900	\$97,074,993	2.30%
Plymouth town	\$18,159,600	\$40,852,900	\$6,402,800	\$124,428,775	2.94%
Seven Mile Creek town	\$12,174,200	\$21,530,000	\$6,721,200	\$74,130,406	1.75%
Summit town	\$17,218,300	\$36,735,600	\$4,255,100	\$112,163,880	2.65%
Wonewoc town	\$12,107,900	\$33,211,900	\$1,968,100	\$92,608,676	2.19%
Camp Douglas	\$3,893,300	\$24,695,100	\$79,800	\$57,256,977	1.35%
Hustler village	\$1,031,800	\$8,691,500	\$0	\$19,446,762	0.46%
Lyndon Station	\$3,558,700	\$18,160,600	\$248,300	\$43,687,252	1.03%
Necedah v	\$5,709,100	\$36,051,600	\$0	\$83,522,228	1.98%
Union Center v	\$1,667,300	\$9,733,400	\$0	\$22,801,583	0.54%
Wonewoc v	\$2,469,800	\$18,886,600	\$0	\$42,713,273	1.01%
Elroy city	\$3,855,500	\$45,774,200	\$0	\$99,260,271	2.35%
Mauston city	\$32,162,200	\$162,241,000	\$5,000	\$388,813,263	9.19%
New Lisbon c	\$9,896,800	\$66,157,700	\$0	\$152,109,781	3.60%
Wisconsin Dells city	\$467,200	\$0	\$0	\$934,416	0.02%
Juneau County	\$627,797,150	\$1,510,976,200	\$95,157,900	4,228,535,631	100.00%

Source: Juneau County Land Records, 2022.

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 Juneau County and its local units 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 10a, 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 the remainder of Table 10.

Table 10a: Value of County Owned Properties		
Name	Value*	Location
Courthouse	\$8,516,187	Mauston
Hickory Street Center	\$8,440,575	Mauston
Justice Center	\$22,355,050	Mauston
Landfill	\$712,875	Mauston
Highway Department	\$12,964,961	Various Locations
Necedah Barn	\$727,307	Necedah
New Lisbon Salt Shed	\$407,922	New Lisbon
Wonewoc Barn	\$298,706	Wonewoc
Tower Sites	\$312,632	Various Locations
Forestry/Parks/Zoning	\$1,842,125	Mauston
Park Facilities	\$3,256,619	Various Locations
Misc. Sites	\$156,447	Various Locations
Total	\$59,991,406	Above Locations
<small>*=Includes insured buildings, contents, and property in the open. Source: Statement of Values Local Property Insurance Fund, 2023.</small>		

Table 10b: Value of City of Mauston Owned Properties	
Property	Value*
City Hall/Police Department	\$3,405,828
Parks and Recreation	\$1,420,486
Pump Houses (3)	\$1,101,239
Wastewater Treatment Facilities	\$3,287,200
Lift Station	\$320,768
Library	\$4,731,375
Water Tower	\$1,057,176
North Road Farm	\$569,649
Fire Department	\$1,500,000
Public Works Facility	\$3,692,769
Visitor Information Center	\$70,945
Misc. Other	\$4,690,773
Total	\$25,848,207
<small>*includes insured buildings, contents and property in the open. Source: NCWRPC estimate, 2023.</small>	

Table 10c: Value of City of Elroy Owned Properties	
Property	Value*
City Hall	\$1,166,565
Library	\$2,905,744
City Park	\$1,862,633
Elroy Commons	\$768,275
Wastewater Treatment Plant	\$6,007,698
Museum	\$1,867,562
Public Works Facility	\$730,268
Water Booster Stations (2)	\$477,566
Wellhouses (2)	\$1,831,852
Water Treatment Plant	\$1,341,358
Reservoir	\$874,130
Liftstation	\$297,651
Electric Dept./Powerhouse	\$1,384,196
Misc. Other	\$219,799
Total	\$21,735,298
*includes insured buildings, contents and property in the open. Source: NCWRPC estimate, 2023.	

Table 10d: Value of City of New Lisbon Owned Properties	
Property	Value*
Library	\$3,840,659
Parks and Recreation	\$1,965,687
Cemetary	\$13,973
City Hall	\$1,734,750
Fire Station	\$1,728,263
Water System	\$2,325,218
Municipal Pool	\$1,112,836
Wastewater Treatment Plant	\$11,447,877
Lift Stations (11)	\$2,013,929
Power Plant	\$18,489,890
West Side Substation	\$998,283
Public Works	\$2,001,036
Misc. Other	\$2,759,107
Total	\$50,431,107
*includes insured buildings, contents and property in the open. Source: Statement of Values Local Property Insurance Fund, 2023.	

Table 10e: Value of Village of Camp Douglas Properties

Property	Value*
Village Hall	\$550,000
Water System	\$550,000
Wastewater Treatment System	\$1,100,000
Library	\$825,000
Misc. Other	\$110,000
Total	\$3,135,000

**includes insured building, contents and property in the open.
Source: NCWRPC estimate, 2023.*

Table 10f: Value of Village of Hustler Owned Properties

Property	Value*
Village Hall	\$543,565
Water System	\$543,565
Wastewater Treatment System	\$1,087,130
Museum	\$748,000
Total	\$2,922,260

**includes insured building, contents and property in the open.
Source: NCWRPC estimate, 2023.*

Table 10g: Value of Village of Lyndon Station Properties

Property	Value*
Village Hall /Fire Station	\$2,200,000
Water System	\$550,000
Wastewater Treatment System	\$1,100,000
Misc. Other	\$110,000
Total	\$3,960,000

**includes insured building, contents and property in the open.
Source: NCWRPC estimate, 2023.*

Table 10h: Value of Village of Union Center Properties

Property	Value*
Village Hall	\$550,000
Water System	\$550,000
Wastewater Treatment System	\$1,100,000
Misc. Other	\$110,000
Total	\$2,310,000

**includes insured building, contents and property in the open.
Source: NCWRPC estimate, 2023.*

Table 10i: Value of Village of Necedah Owned Properties	
Property	Value*
Village Municipal Center	\$547,101
Water Towers (2)	\$1,588,829
Airport	\$199,660
Cemetery	\$43,680
Wellhouses (3)	\$2,116,989
Wastewater Treatment Plant	\$6,252,121
Lift Stations (4)	\$525,374
Parks and Recreation	\$1,336,132
Dam	\$6,375,653
Business Incubator	\$524,929
Library	\$1,934,645
Community Center	\$640,035
Public Safety Building (Fire/EMS)	\$806,480
Misc. Other	\$673,501
Total	\$23,565,129
<i>*includes insured buildings, contents and property in the open. Source: Source: Statement of Values Local Property Insurance Fund, 2022.</i>	



Necedah Fire Station

Table 10j: Value of Village of Wonewoc Owned Properties	
Property	Value*
Village Hall	\$550,000
Water System	\$550,000
Wastewater Treatment System	\$1,100,000
Library	\$825,000
Misc. Other	\$110,000
Total	\$3,135,000
<i>*includes insured building, contents and property in the open. Source: NCWRPC estimate, 2023.</i>	

Table 10k: Value of Town Owned Properties		
Municipality	Property	Value*
Armenia town	Town Hall	\$401,382
Clearfield town	Town Hall	\$401,382
Cutler town	Town Hall/Park	\$525,920
Finley town	Town Hall/Garage/Recycle Bldg	\$454,093
Fountain town	Town Hall	\$401,382
Germantown town	Town Hall	\$1,205,800
	Town Park	\$171,400
	Town Maint. Bldg/Garage/Shed	\$714,800
Kildare town	Town Hall/Garage	\$67,191
Kingston town	Town Hall	\$401,382
Lemonweir town	Town Hall/Garage	\$229,568
Lindina town	Town Hall	\$401,382
Lisbon town	Town Hall/Shop	\$506,168
Lyndon town	Town Hall/Garage	\$269,687
Marion town	Town Hall	\$401,382
Necedah town	Town Hall	\$401,382
Orange town	Town Hall/Sand Shed	\$475,568
Plymouth town	Town Hall	\$401,382
Seven Mile Creek town	Town Hall	\$401,382
Summit town	Town Hall	\$401,382
Wonewoc town	Town Hall	\$884,215

**includes insured building, contents and property in the open.
Source: Local Government Insurance Policy Declarations and NCWRPC estimate, 2023.*



Mobile Incident Command Post

INTRODUCTION

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

- Identification of all types of natural hazards that may affect Juneau County;
- An assessment of how climate change may influence these hazards in the future; and
- An analysis of the hazards identified as pertinent to Juneau County.

The Hazard Analysis will consist of:

- Background Information;
- History of previous occurrences of hazard events;
- An assessment of the County's vulnerability to future events; and
- 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 Juneau County All-Hazards Mitigation Plan Update 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 Committee to evaluate and rank the listing of possible hazards to help identify which hazards should be included in the Plan Update according to threat to human safety and possible damage to property. The resulting priority ranking of hazards accepted by the Committee is as follows:

1. Wildfire
2. Flood / Dam Failure
3. Winter Storms / Extreme Cold
4. Severe Thunderstorms High Wind / Lightning / Hail
5. Drought / Extreme Heat
6. Hazardous Materials Incidents
7. Mass Casualty Incidents (i.e.: Civil Disorder / Terrorism / Accident / Other)
8. Epidemic / Pandemic
9. Tornado

This Plan Update 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 pandemic, transportation incidents, civil disturbances, terrorism and other mass casualty events. Juneau County already has extensive planning for these types (i.e. "mass casualty") of occurrences, so they are addressed on a more

general level in this planning process. Although technological or manmade hazards are not required to be covered in local hazard mitigation plans, many counties in Wisconsin, including Juneau, choose to cover haz-mat incidents in their mitigation plans. Pandemic is expanded upon in this plan due to the impact of Covid-19.

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. Juneau County does not have avalanche, coastal hazard, hurricane, tsunami or volcano issues and conditions for landslides, subsidence or expansive soil problems are not significant in the County.

CLIMATE CHANGE & HAZARD RISK ASSESSMENT

While the assessment of hazard risk is largely based on past weather events and existing development trends, projecting future risks and vulnerabilities is also subject to the influence of possible large-scale, longer-term climatic changes. This section explores how the area's climate is changing and how climate change may impact the probability and severity of natural hazards.

There is ongoing debate over the existence, causes, severity, and impacts of global climatic changes, such as global warming. According to the National Academy of Sciences, the Earth's surface temperature has risen by about 1 degree Fahrenheit in the past century, with accelerated warming during the past two decades. There is strong evidence that most of the warming over the last 50 years is attributable to human activities. Increasing global temperatures are expected to raise sea level and impact local climate conditions such as precipitation levels. Changing regional climate could alter forests, crop yields, and water supplies. It could also affect human health, animals, and many types of ecosystems. Most of the United States is expected to warm, although sulfates may limit warming in some areas. Scientists currently are unable to determine which parts of the United States will become wetter or drier, but there is likely to be an overall trend toward increased precipitation and evaporation, more intense rainstorms, and drier soils.

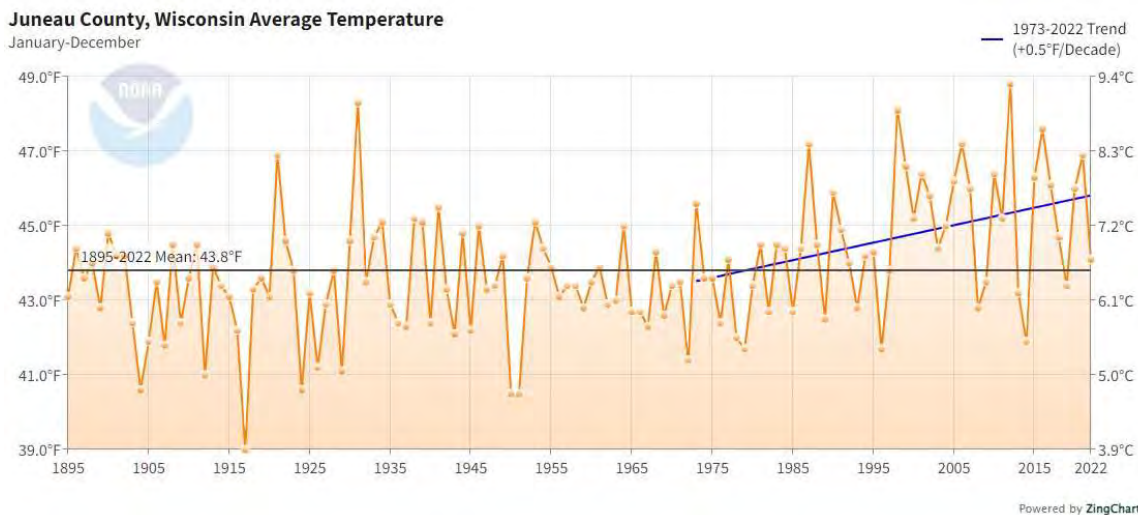
Regardless of the debate over the causes of climate change, there is clear evidence that Wisconsin's climate is indeed changing. The 2003 report entitled *Confronting Climate Change in the Great Lakes Region* published by the Union of Concerned Scientists and the Ecological Society of America projected that by 2030, summers in Wisconsin may resemble those in Illinois overall, in terms of temperature and rainfall. By 2100, the summer climate will generally resemble that of current-day Arkansas, and the winter will feel much like current-day Iowa.

To further document these climate changes and explore their impacts on our State, the Wisconsin Initiative on Climate Change Impacts (WICCI) was formed as a collaborative effort of the University of Wisconsin and the Wisconsin Department

of Natural Resources. The following are some of the key climatic trends being experienced in Wisconsin according to their analysis (www.wicci.wisc.edu):

1. **RISING TEMPERATURES** - Average temperatures are rising and are projected to continue to rise. Between 1950 and 2006, the annual average temperature in southern Juneau County increased between 0.5 and 1.5 degrees while in northern Juneau County the increase has been between 1.5 and 3 degrees. By 2055, annual average temperatures are projected to increase by 4 to 6 degrees across the County. More extreme heat events are also projected. The number of days projected to be 90° F or greater will increase by 22 to 24 days in Juneau County by 2055.
2. **MORE PRECIPITATION** – Juneau County is experiencing more annual precipitation, and is expected to get wetter in the future, but there is significant seasonal and geographic variation to the precipitation. The data shows that the annual average precipitation has increased across most of the County over the past fifty years by about 3 inches with an increase of 3.5 to 4.4 inches in the extreme southern reaches of the County.
3. **HEAVIER PRECIPITATION EVENTS** - Heavy precipitation events appear to be increasing in frequency. In the past, the region experienced heavy precipitation events of two or more inches about ten times per decade (once each year). The County, including its municipalities, is projected to experience 2 additional heavy precipitation events per decade by 2055.

Juneau County Annual Average Temperature, 1895-2022, with 50-Year Trendline

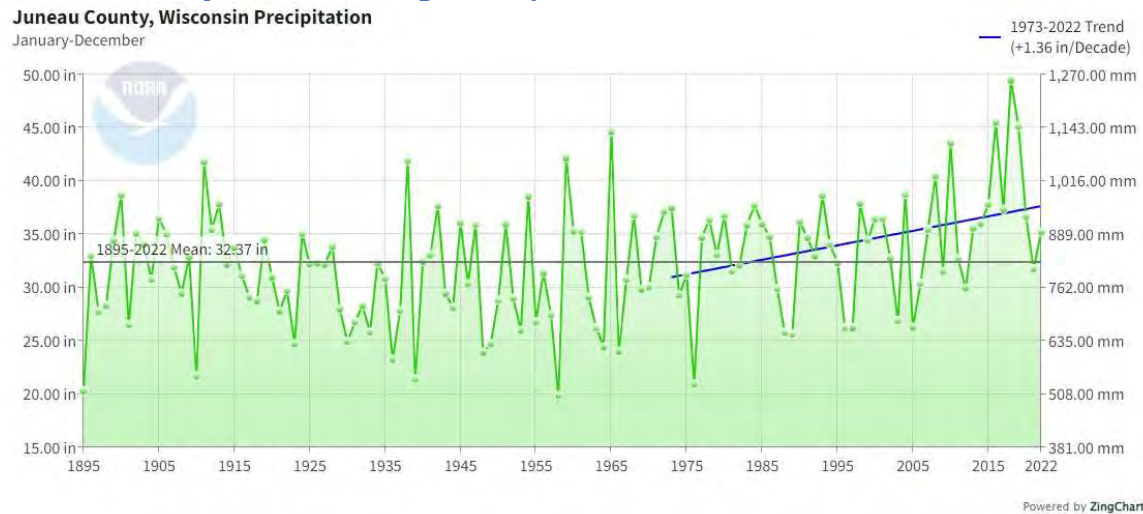


Some potential outcomes from these climate trends in Juneau County may include the following:

- Wildfires are expected to be more frequent and burn more acres.
- Increased likelihood of droughts.
- Warmer winters reduce snowpack and accelerate snowmelt.
- Invasive species and forest pests will benefit from climate change.

- Warmer winters, wetter springs, and extreme weather events are making agricultural production in Wisconsin less competitive and overwhelming conservation practices to keep soil in place and protect water quality.
- More freeze/thaw cycles, posing issues for existing infrastructure.
- More flooding
- More frequent and severe weather events

Juneau County Annual Average Precipitation, 1895-2022, with 50-Year Trendline



HAZARD ANALYSIS

The hazard analysis for each hazard included in this Plan Update 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 the 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 Hazard - Past experience of disasters is an indication of the potential for future disasters for which Juneau County would be vulnerable. A review of past occurrences for each identified hazard in Juneau 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 13 natural disasters affecting Juneau that resulted in a Presidential Declaration from 1971 to 2023. They include the following:

- 1976 - Drought
- 1978 - Flooding
- 1990 - Flooding
- 1992 - Flooding
- 1993 - Flooding
- 2000 - Severe Storms/Flooding/Tornado
- 2001 - Severe Storms/Flooding
- 2004 - Severe Storms/Flooding
- 2008 - Flooding
- 2010 - Flooding
- 2016 - Severe Storms/Flooding
- 2018 - Severe Storms/Flooding
- 2020 - Covid-19 Pandemic

It should be noted that this significantly underestimates the number of hazards that have occurred in Juneau County. Almost every year there are significant weather events or disasters that cause thousands 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) publishes the National Weather Service (NWS) data describing recorded weather events and resulting deaths, injuries, and damages. From January 1, 1950 to December 31, 2023, NOAA reported 503 severe weather events for Juneau County.

Note that since the earlier NOAA data is somewhat incomplete, this report focuses on the 10-year period from 2014 to 2023 for hazard analysis purposes. Other sources of data are used to supplement the NOAA data. These sources included other plans and reports, documents from the Juneau County Emergency Management Department, past local newspaper articles, the Wisconsin Department of Natural Resources (DNR), Wisconsin Emergency Management (WEM), and the National Weather Service.

3. Vulnerability Assessment For Hazard - For each hazard identified, a summary of the impact that may be felt by 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 from 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 11: 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 couple of minutes in a single location or more than 15 to 20 minutes in a ten-mile area.

Tornados are classified into six intensity categories, EF0-EF5. 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 and construction 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 of the year with the first ever February tornado occurring in 2024.

History of Tornados in Juneau County

Juneau County has had 2 verified tornados from 2014 to 2023. These tornados are documented along with 23 other historic tornados in Table 12. Both of these occurred on the same day, June 15, 2022.

Two rounds of storms moved across western Wisconsin during the late morning and afternoon of June 15th. The second round of storms was stronger and produced three tornadoes along with wind damage. An EF2 tornado developed south of Tomah in Monroe County and tracked northeast through the Town of Cutler before dissipating in the Necedah Wildlife Refuge. In Monroe County, this tornado blew over several semis along Interstate 90/94 resulting in two injuries and some structural damage to buildings south of Wyeville, as well as producing extensive tree damage in Monroe and Juneau. An EF1 tornado moved across rural portions of Vernon County east of La Farge causing mainly tree damage.

A second EF1 tornado developed just southwest of Mauston and then tracked through the city before moving northeast and dissipating just west of the Wisconsin River south of Castle Rock Dam. This tornado caused roof damage to the hospital and a restaurant, blew windows out of several vehicles near the hospital, took down several stop lights, blew over parked semis, snapped power poles and downed several trees in a mobile home park that damaged numerous homes. In Veteran's Memorial Park, stands for the baseball field were overturned with some blown across the street and the scoreboard was ripped off its posts. A tree fell on

the roof of an apartment complex damaging the roof and allowing water to leak into some units. Northeast of Mauston, over rural parts of Juneau County, the damage was mainly limited to trees.

Total damages from these storms exceeded \$2 million across 7 counties. Damages in Juneau County were estimated at more than \$875,000 between the two tornados.

Table 12: Reported Tornados In Juneau County

Date	Time CST	Location	Length (Miles)	Width (Feet)	Deaths	Injuries	F- EF Scale
4/19/57	1530		21.1	300	1	0	F4
5/4/64	2000		7.7	100	0	0	F2
5/4/64	2030		1	27	0	0	F1
5/7/64	1450		3.3	30	0	1	F2
5/8/64	1715		23.5	150	0	0	F2
3/31/67			2	200	0	0	F1
8/9/79	1736		2.7	50	0	0	F2
8/29/79	2000		0	33	0	1	F1
3/30/82	1405	Central Juneau	8	33	0	2	F1
7/3/83	1800	Central Juneau	1	50	0	0	F1
7/3/83	1804	Central Juneau	1	50	0	8	F3
7/3/83	1815	Central Juneau	0.3	10	0	0	F0
7/3/83	1915	Central Juneau	0.3	10	0	0	F0
10/16/84	2030	Southern Juneau	17	100	0	3	F2
8/12/85	1840	New Lisbon	17	880	2	22	F2
5/8/88	1608	Central Juneau	5	73	0	1	F1
5/8/88	1615	Central Juneau	0.7	20	0	0	F1
10/8/92	1430	Southern Juneau	2	100	0	0	F1
6/1/00	1500	New Lisbon	6.5	100	0	0	F1
6/23/04	1820	New Lisbon	2	40	0	0	F1
8/18/05	1603	Necedah	6	25	0	0	F1
4/10/11	1714	Necedah	4.37	150	0	0	EF1
5/22/11	1638	Mather	19.32	800	0	0	EF2
6/15/22	1522	Cutler	7.51	250	0	0	EF2
6/15/22	1543	Mauston	8.2	100	0	0	EF1

Source: NOAA Storm Events Database, 2023 - Injuries and deaths are for entire track.

Outside the study period, on May 22, 2011, severe thunderstorms developed along a cold front as it moved through western Wisconsin and produced three confirmed tornadoes. One of these tornadoes was on the ground for almost 65 miles as it tracked from eastern Monroe County, across northern Juneau County, through

southern Wood County and into Portage County before dissipating. Total damages were in excess of 6 million dollars.

This tornado entered into Juneau County southwest of Mather and then tracked northeast across the Necedah Wildlife Refuge between Mather and Finley damaging numerous trees. As the tornado approached Finley, it grew in size and was nearly a half mile wide as it crossed County Road F, east of Finley. In this area, numerous trees were snapped or blown down with some of them landing on nearby homes. At a cranberry business east of Finley, all of the outbuildings and sheds were demolished and tossed into nearby fields, and a loading dock platform and trucks were heavily damaged. Thick wooden power poles in this area were snapped or sheared off over a half mile long stretch. The tornado then weakened as it moved northeast toward the Wood-Juneau County line with damage to trees and some minor roof and siding damage. Total damages across Juneau County from this tornado were estimated to be \$4.4 million.

About a month prior, Juneau had been impacted by another tornado, when a cold front pushed east into Wisconsin during the late afternoon and evening hours of April 10, 2011. Severe thunderstorms developed along the cold front and produced very large hail and three tornadoes over portions of western and central Wisconsin. A National Weather Service storm survey team confirmed an EF1 tornado south of Necedah. The tornado first touched down near the intersection of Paradise Lane and 25th Street and produced EF0 damage. Then it briefly produced EF1 damage for about 3/4 of a mile from T Lane through Padre Pio Drive. A mobile home was rolled over and pine trees were snapped. The tornado continued east-northeast and produced EF0 damage to pine trees around County Road G before ending near the Wisconsin River.

It is interesting to note that tornado was listed as contributing factor in the Presidential Disaster Declaration that included Juneau County in 2000. On June 1, a tornado touched down just north of New Lisbon and tracked southeast before lifting just north of Mauston. Damage consisted of sheared or blown down trees, barns and sheds demolished, garages heavily damaged, and some light structural damage to homes. There were no reports of injuries or deaths, but damage was estimated at about \$550,000. Hardest hit were homes and farms along 8th Avenue north of New Lisbon, along Meredith Road north of Mauston, and along Highway 58 north of Mauston. There was also downburst (microburst) wind damage south and west of New Lisbon along Highway 80 and County Roads B and A. Downburst wind damage was also seen along Interstate 90/94 between Camp Douglas and New Lisbon with hundreds of trees blown down or sheared off. Juneau and Monroe County (where a separate tornado touched down) were declared federal disaster areas due to the extensive storm damage.

Another notable tornado occurred on August 12, 1985 when an F-2 hit New Lisbon. Two people were killed and 22 injured. Approximately 35 mobile homes were

destroyed, and other structures were damaged. Damage was estimated at about \$2.5 million.

While the May 2011 tornado was the most costly in terms of dollars, and the August 1985 tornado was the deadliest, the largest tornado in terms of scale strength was the 1957 F-4 tornado which also had one reported death associated with it. Other tornadoes with injuries associated occurred in 1964 (1), 1979 (1), 1982 (2), 1983 (8), 1984 (3), and 1988 (1).

Tornado Vulnerability Assessment

Though Juneau County is mostly a rural county, there are concentrations of population scattered throughout. Subdivisions, rural unincorporated communities, and the various cities and villages can be regarded as more vulnerable because these areas pose more of a threat to human safety and property damage in more concentrated areas. Map 8 illustrates these areas within the County.

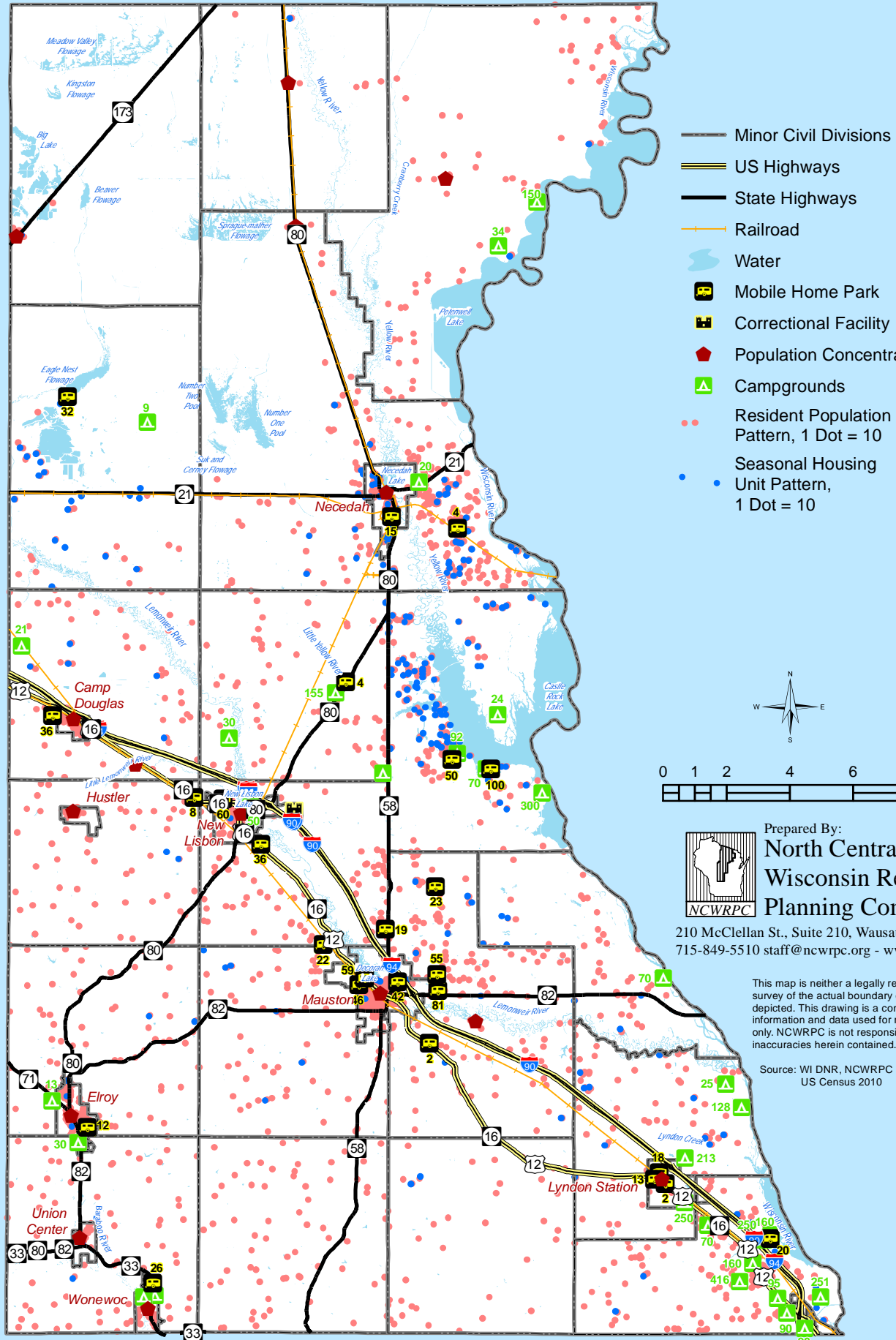
Mobile homes are of significant concern in assessing the hazard risks from tornados. In general, it is much easier for a tornado to damage and destroy a mobile home than standard constructed houses and buildings. Since 18 percent of Juneau County's housing units are mobile homes, vulnerability to health and safety along with property damage is much greater. 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.

The 2022 figures from the U.S. Census indicate there are 2,679 mobile homes in Juneau County. While mobile homes are scattered throughout the County, many are concentrated in mobile home parks. Map 8 also displays the location of the mobile home parks within the County.

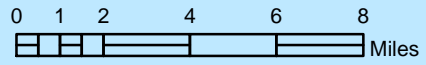
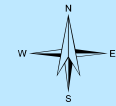
In addition to mobile homes, there are many other areas vulnerable to tornados such as campgrounds. Like mobile homes parks, campgrounds are of concern in the County because often times there is a concentration of people in them and there is little shelter provided. Map 8 also shows the location of campgrounds in the County.

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, "prisons/jails"
- Public Service - police and fire departments
- Utilities - power lines, telephone lines, radio communication
- Transportation – debris clean-up
- Residential – nursing homes, mobile home/parks, garages, trees and limbs, siding, windows
- Businesses – signs, windows, siding, billboards



- Minor Civil Divisions
- == US Highways
- State Highways
- Railroad
- Water
- Mobile Home Park
- Correctional Facility
- Population Concentration
- Campgrounds
- Resident Population Pattern, 1 Dot = 10
- Seasonal Housing Unit Pattern, 1 Dot = 10



Prepared By:
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This map is neither a legally recorded map nor a survey of the actual boundary of any property depicted. This drawing is a compilation of records, information and data used for reference purposes only. NCWRPC is not responsible for any inaccuracies herein contained.

Source: WI DNR, NCWRPC and US Census 2010

- Agricultural - buildings, crops, livestock

Based on review of the historic events of tornados, there are no specific areas in the County that have unusual risks. The events are relatively uniform and a countywide concern. However, during the city/village planning meetings for this Plan Update, Camp Douglas, Elroy, Hustler, Lyndon Station, Mauston, Necedah, Union Center, and Wonewoc identified tornados as a major vulnerability concern due to potential impacts on local electric utilities and roads (blockage) – trees and powerlines downed, and past experiences.

Future Probability and Potential Dollar Losses – Tornados

Based on the historic data presented here (frequency of past events), Juneau County can expect a tornado about once every 5 years on average. This equates to a probability of 0.2 or about a 20 percent chance in a given year. Table 13 indicates the probability of tornados of a specific magnitude. However, these probabilities are slightly skewed by several instances of multiple tornado events occurring on the same day.

Table 13: Probability of Intensity for any given Tornado in Juneau County

Tornado Scale	F/EF0	F/EF1	F/EF2	F/EF3	F/EF4	F/EF5
Number of Reported Tornados*	2	13	8	1	1	0
Probability of Occurrence	8%	52%	32%	4%	4%	<1.0%

*Source: Nat'l Weather Service & NCWRPC – *Based on historical data from 1957 to 2022.*

Historic data is again used to estimate potential future dollar losses due to tornado. Estimated damages resulting from various tornados in Juneau County range from \$0 to \$4.4 million. However, going back to 1957, only two of the 25 historic tornados resulted in damages exceeding \$2 million; one was at \$3/4 million, one was at \$1/2 million, 7 were at \$1/4 million, and the rest were \$100,000 or less. On average, Juneau County might expect damages of \$437,500 per tornado based on the study period of 2014 to 2023. Over the next ten-year period, tornado losses in Juneau County could approach \$1 million.

Climate change can be expected to lead to more frequent, higher intensity tornados. This will affect more people over a wider area of the County and resulting damages will be higher.

HAZARD ANALYSIS: WILDFIRE

Background on Wildfire Hazard

Wildfire refers to uncontrolled, wild, or running fires occurring on forest, marsh, field, cutover, or other lands or involving farm, city, or village property and improvements incidental to the uncontrolled, wild, or running fires occurring on forest, marsh, field, cutover, or other lands.

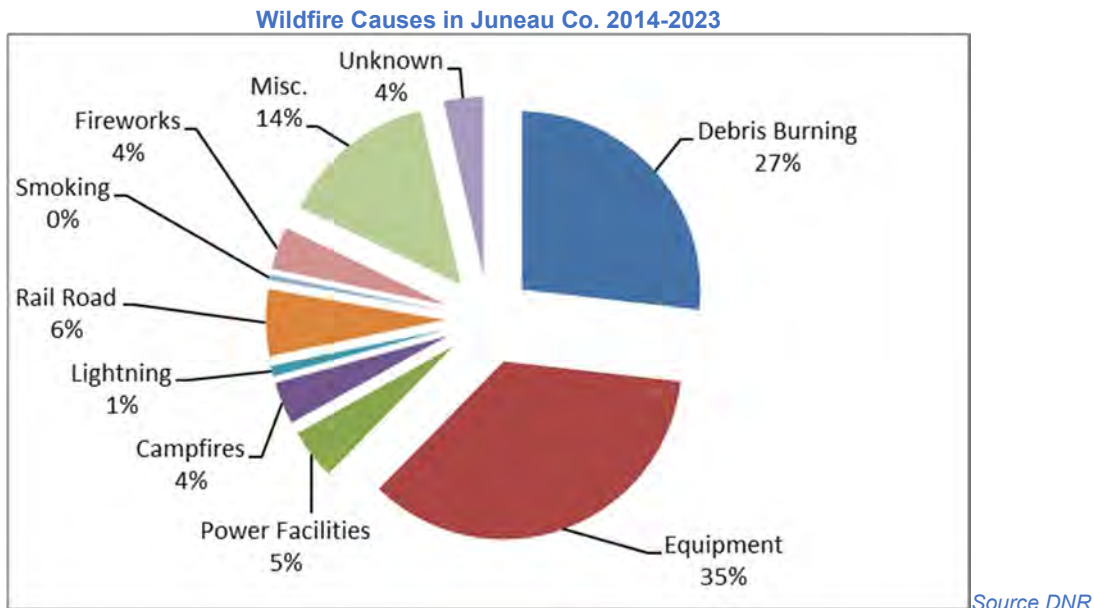
Wildfires can occur at any time the ground is not completely snow covered. The season length and peak months may vary appreciably from year to year. Land use, vegetation, amount of combustible materials present and weather conditions such as wind, low humidity and lack of precipitation are the chief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

History of Wildfire in Juneau 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 Juneau County. Between 2014 and 2023, there was an average of about 41 fires that have burned 122 acres annually. The typical fire in Juneau County burns about 2.9 acres.

April is the leading month for wildfire in Juneau with 21% of the total number of fires between 2014 and 2023. Fires have historically occurred in each month of the year in Juneau, however, there were no fires in January during the study period. The Town of Necedah experienced the most fires between 2005 and 2014 with 89, and led to a total acres burned with 975. Several communities within the County had no wildfires over the study period and thus no area burned.

The chart below breaks down the causes of wildfire within Juneau County between 2014 and 2023 as classified by the WDNR. The principal cause of wildfire in Wisconsin as a whole is typically debris burning, however during the study period debris burning came in second to Equipment which resulted in 147 or 36% of wildfires within the County. Equipment includes vehicle, motor and other tools/machinery related causes except railroad. Debris burning accounted for 111 fires or 27% of wildfires. Lightning, the only natural cause of fire, was responsible for only 4 of the fires or about 1%.



A fire on the afternoon of September 4, 2023 quickly spread near the Necedah National Wildfire Refuge from abnormally dry conditions and strong winds. An automated weather station in Necedah recorded daily minimum relative humidity in the middle 20% range from the end of August through September 4th. These abnormally dry conditions resulted in very dry grasses for much of the area. Combined with increased wind gusts near 25 mph, elevated fire conditions on September 1st worsened to critical by September 3rd. These critical fire weather conditions resulted in a rapidly spreading wildfire that consumed 23.6 acres of land by September 8th. Gusty winds through September 8th also resulted in arduous containment efforts.

A red flag warning was in effect over southern Wisconsin on April 12, 2023 due to critical fire weather conditions. The Governor of Wisconsin issued Executive Order #191, declaring a state of emergency in response to the elevated wildfire conditions. Multiple wildfires were reported from April 12th to 14th, with the two most notable burning west of Warrens in Monroe County and near Necedah. These fires burned 3,092 and 100 acres, respectively, with both requiring evacuations. In the Town of Necedah, areas along three streets were evacuated as the fire spread towards multiple homes.

A wildfire in the Necedah Wildlife Refuge burned 257 acres on April 4, 2021. The fire was started in the late morning by a passing train. Most of the land that was burned was classified by the Wisconsin DNR as non-timbered marsh, bog or lowland brush. Weather conditions from the nearby Necedah RAWS site indicated the relative humidity during the fire ranged from 20 to 25 percent and south winds gusted between 20 and 26 mph with temperatures in the 70s. Damage estimate was over \$60,000.

A wildfire in the Necedah Wildlife Refuge burned 240 acres of lowland marsh on April 18, 2020. While there were no injuries because of the fire, some residents near the refuge had to be evacuated for safety precautions and State Highway 80 north of Necedah was closed. The automated weather station on the refuge reported favorable fire conditions as the relative humidity fell to under 25% with southwest winds of 15 to 20 mph gusting as high as 39 mph.

A small central Wisconsin wildfire destroyed six buildings southeast of Necedah on May 2, 2015. Dry conditions across central Wisconsin helped to fuel the fire that started on a warm afternoon. The fire destroyed three houses and three outbuildings. None of the houses were occupied and were only used for storage. The fire burned about 4 acres. Damage estimate was over \$150,000.

An April 13, 2015 wildfire near Necedah burned 336 acres before being extinguished by the Wisconsin DNR and four local fire departments. The fire was likely started by a passing train and then spread quickly by winds that gusted close to 30 mph. Flames from the fire approached a factory, which was evacuated as a precaution. The smoke spread over a residential neighborhood prompting officials

to evacuate about 44 homes. No structures were burned, but one fire fighter was treated for smoke inhalation. State Highway 80 south of Necedah was closed due to the fire. Damage estimate was over \$57,000.

Dry conditions were enhanced by windy and unseasonably warm weather during the weekend of April 21 through April 22 of 2007. As a result, a number of wildfires occurred, including near Necedah. The fires were contained within a few hours and did not affect any buildings or homes.

In 2005, Juneau County's next door neighbor, Adams County, experienced one of the largest wildfires in Wisconsin history. Known as the Cottonville Fire, the fire began on May 5 when debris burning in a fire pit got out of control. Approximately 3,410 acres were burned covering an area 1.5 miles wide and 7 miles long. Weather conditions were ideal for fire: warm and windy with very low humidity. Like much of Juneau, Adams County is part of Wisconsin's "sand country" where the dominant vegetation includes grass, pine and scrub oak, which are all known to burn quickly and intensely. Fire spread quickly to the tops of the pine trees.



Cottonville Fire (Adams Co.), 2005

Losses included 9 primary homes, 21 seasonal homes, and 60 outbuildings. Damage was sustained to 15 other homes. Evacuation of 200 residents was required. Firefighting efforts were massive with 5 aircraft (1 from Minnesota DNR), 200 WDNR personnel from across the state, 30 volunteer fire departments and law enforcement from State Patrol, Juneau, LaCrosse and Vernon County Sheriffs and Onalaska Police. The fire took 11 hours to bring under control and several days for mop-up. The courts set restitution at over \$1.4 million indicating the level of damages.

Wildfire Vulnerability Assessment

Juneau County has 282,267 acres of forestland, or about 55 percent of the total land 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.

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, see Map 9. 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. Over half of Juneau County is rated very high (Armenia, Necedah - town and village, Clearfield, Germantown, Marion, Kildare, Lyndon and Lyndon Station) or high (Orange, Lisbon and Lemonweir). Cutler, Fountain and Lindina are designated as communities of concern.

WDNR reports on the Cottonville Fire indicate that the loss of buildings was due, in part, to a lack of access (long, narrow driveways) and a lack of defensible space (free of fuels that can transmit fire to the structure and allow firefighters to safely operate).

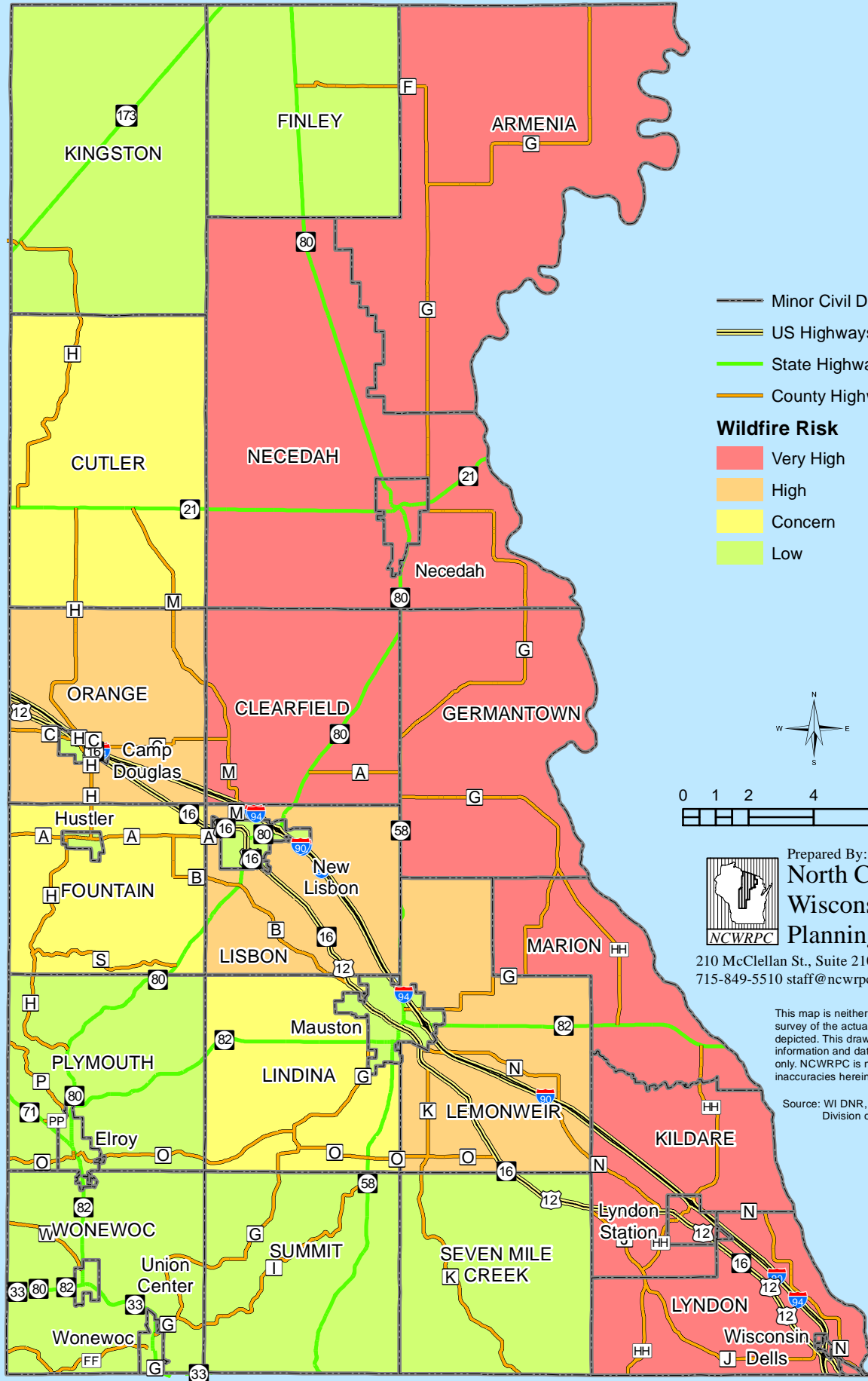
Campgrounds are also a concern because of campfires. Juneau County has a significant number of campgrounds. Locations of the campgrounds are shown on Map 8.

Future Probability and Potential Dollar Losses – Wildfire

Wildfires are relatively common occurrences in Juneau County. Over the 10-year period of analysis, there has been an average of 41 fires per year in the County. In other words, the probability is 1.0 or 100% chance of wildfire each year. However, these fires are typically contained rapidly and remain small, so that each has a minimal impact. The probability of a fire becoming more substantial, like Cottonville, might be estimated at (less than) 10% per year or 0.1.

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, based on the limited damage figures available, it could be estimated that the average cost of a "typical" wildfire in Juneau might be around \$90,000. Based on this general estimate, over the next ten-year period, total wildfire losses in Juneau County could approach \$3.7 million. With 41 fires per year, the County should expect some fires to "get out of hand" and likely approach or exceed the \$1.4 million in damages of the Cottonville Fire.

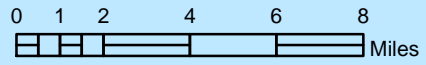
Climate change can be expected to lead to an increase in wildfire occurrences and the conditions for any given fire to get out of control. Rising average annual temperatures will exacerbate drought conditions contributing to wildfire risk.



- Minor Civil Divisions
- US Highways
- State Highways
- County Highways

Wildfire Risk

- Very High
- High
- Concern
- Low



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This map is neither a legally recorded map nor a survey of the actual boundary of any property depicted. This drawing is a compilation of records, information and data used for reference purposes only. NCWRPC is not responsible for any inaccuracies herein contained.

Source: WI DNR, NCWRPC, Division of Forestry - March 2024

HAZARD ANALYSIS: FLOODING/DAM FAILURE

Background on Flood Hazard

There are a variety of classifications for flooding including coastal, dam or levee failure, flash, lake, riverine, stormwater and urban/small stream. Juneau County has the potential for all these types except coastal flooding. 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 or levee 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 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 Juneau County are most common in June; however, they can occur from May through September. Occasionally, intense rainfall or consecutive thunderstorms lead to flash flooding in Juneau County. As most of the county's terrain is relatively flat, ponding of water rather than true flash flooding is more common. While flooding does occur after the snowmelt, these events typically occur in Juneau County after heavy rain patterns.

Flooding is a significant hazard in Juneau County, particularly because it borders the Wisconsin River. As described in Part II, there are approximately 378 miles of streams in Juneau County within ten main watersheds. Four are part of the Central Wisconsin River Basin, while six are a part of the Lower Wisconsin River 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 of this plan. The Federal Emergency Management Agency (FEMA) identifies these floodplains on Digital Flood Insurance Rate Maps (DFIRMs) as downloaded by the NCWRPC from FEMA's website.

There are 113 dams in Juneau County. 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, Juneau County has 48 large dams (including the Petenwell Dam), which have a structural height of over 6 feet and impounds 50 acre-feet or more (See Map 3 and Table 14). Of the others, 48 are regarded as small dams, while seven have not been 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 government has jurisdiction over large dams that produce hydroelectricity. Petenwell Dam is a major producer of hydroelectricity in Juneau 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. Dam failure can happen with little warning resulting in 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. 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.

Table 14: Large Dams in Juneau County			
Official Name/Popular Name	Size	Hazard Rating	EAP Year
Mauston	Large	Low	2019
Petenwell	Large	High	2023
Meadow Valley Spillway 6 / East Pool	Large	Low	2016
Meadow Valley Spillway 7 / SE Pool	Large	Low	2016
Meadow Valley Spillway 3 / West Refuge Dam	Large	Low	2016
Meadow Valley Flowage / Beaver Creek Dam	Large	Low	2016
Meadow Valley Spillway 5 / East Refuge Dam	Large	Low	2016
Meadow Valley Spillway 4 / Mid-Refuge Dam	Large	Low	2016
Meadow Valley Flowage	Large	Low	2016
Shuman	Large	Low	2003
Hamm	Large	Low	2002
Partridge Lake	Large	Low	1995
Necedah	Large	Low	2018
Gnirk Family Trust / Gnirk	Large	Low	N/A
Cranberry Creek 2	Large	Low	N/A
Beaver Creek 9 / Kingston Flowage Dam	Large	Low	2016
Little Yellow 18	Large	Low	N/A
New Lisbon	Large	Low	1997
Necedah Wildlife Refuge 30	Large	Low	N/A
Doyle / Alpine Lake	Large	Low	N/A
Borge	Large	Low	N/A
Potters Reservoir / Beaver Creek 1	Large	Low	N/A
Little Yellow 25 / MV Campground Dam	Large	Low	2016
Necedah Wildlife Refuge 33 / Goose Pool	Large	Low	N/A
Beaver Creek 4 / Mid Beaver Creek Dam	Large	Low	2016
Little Yellow 12	Large	Low	N/A
Little Yellow 11 / Structure 19	Large	Low	N/A
Beaver Creek 3 Beaver Creek Dam	Large	Low	2016
Pawlisch	Large	Low	N/A
Necedah Wildlife Refuge 33	Large	Low	N/A
Little Yellow 19	Large	Low	N/A
Little Yellow 30 / Greenhead Dam	Large	Low	2016
Little Yellow 9	Large	Low	N/A
Little Yellow 13	Large	Low	N/A
Little Yellow 10	Large	Low	N/A
Walsh / Meinholz	Large	Low	2010
Cusick No.2	Large	Low	N/A
Little Yellow 20 / Johnson Corner Dam	Large	Low	2016
Trout Lake / Upper	Large	Low	2020
Sarazin / Sarazin Family Plymouth Ltd	Large	Low	2009
Beaver Creek 2 / Silver Creek Dam	Large	Low	2016
Cusick No.1	Large	Low	N/A
Little Yellow 27 / West Finley Road Dam	Large	Low	2016
Rynearson 1	Large	Significant	N/A
Rynearson 2	Large	Significant	N/A
Pool Thirty-Three	Large	Significant	N/A
Sprague Mather Flowage / Necedah Wildlife Refuge #31	Large	Significant	N/A
Potters Flowage	Large	Significant	N/A

Source: WisDNR, 2023.

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 extensive property damage. A low hazard exists where failure would result in only minimal property damage

and loss of life is unlikely. For Juneau County, there is only one dam that has a high hazard rating: Petenwell. Five dams have a significant rating: Rynearson 1, Rynearson 2, Pool Thirty-Three, Sprague Mather Flowage, and Potters Flowage, as well as, the Orange Dam (classified small) while the rest are rated low.

FEMA has a grant program for rehabilitation of high hazard potential dams (HHPD). However, applicants must be a non-federal, governmental organization or an eligible nonprofit organization as described under section 501(c)(3) of the Internal Revenue Code of 1986 (IRC) and exempt from tax under section 501(a) of such code. For example, if a community has a municipal dam that needs to be rehabilitated, they can apply to the state to receive the grant as a sub-recipient. There could also be a community that has a private dam that poses unacceptable risk, and they may want to be the applicant that would work directly with the state to execute a subaward for the rehabilitation of that dam.

History of Flooding in Juneau County

There has been at least one flooding event in Juneau County in each year of the study period from 2014 through 2023 except for 2014. On August 28, 2020, heavy rain (up to 9.5 inches) from thunderstorms caused flash flooding to occur across the southern sections of Juneau County. In and near Mauston, flood waters almost reached the entrance door to the sheriff's office and numerous roads were covered by water. Numerous rural roads had water over them north of Mauston and New Lisbon. Roads were closed due to high water north of Camp Douglas. In Camp Douglas, several homes were flooded with water waist high in the basements. Damages were estimated at about \$335,000 with an additional \$126,000 in crop damages.

Flooding is a significant hazard in Juneau County. Due to the persistent flooding conditions over the last decade, the U.S. Corps of Engineers was commissioned to do a hydrology/flood study for the area of northern Juneau County and Southern Wood County. The results of the study were pending at the time of this report. Flooding was the principal cause of damage in eleven of the thirteen Presidential Disaster Declarations in Juneau County from 1971 to 2023. The most recent declaration as of this plan occurred in 2018. The other declarations occurred in 2016, 2010, 2008, 2004, 2001, 2000, 1993, 1992, 1990, and 1978.

A line of severe thunderstorms moved across western Wisconsin during the evening of August 27, 2018, dumping large amounts of rain (6 to 10 inches) over multiple counties including Juneau with 9.14 inches reported in Union Center. Runoff from heavy rain caused historic flooding to occur. Along the Baraboo River in Elroy, between 25 and 30 homes had to be evacuated. Numerous homes had water several inches to a few feet deep in the basements. At least 9 homes would have to be torn down. Damages in Elroy totaled nearly \$6.5 million. The flooding along the Baraboo River also hit Wonewoc hard causing officials to evacuate the western half of the town. Dozens of homes had water in the basements with at least 4 of them suffering collapsed walls.

Flooding along the Lemonweir River near Mauston caused Interstates 90/94 to be closed in both directions and washed out a rail line that caused the eastbound Amtrak Empire Builder to be stopped near Tomah. Passengers had to remain on the stopped train overnight until repairs to the rail line were completed. Flooding in Mauston damaged some homes with at least one a total loss when a basement wall collapsed.

Flood waters from Webster Creek covered portions of State Highway 80 between New Lisbon and Elroy. State Highway 33 was under water in places between Union Center and Wonewoc because of flood waters from the Baraboo River. State Highway 82 was closed between Elroy and Mauston due to flood waters from Cleaver Creek. Portions of State Highway 58 south of Mauston was covered in flood waters from Onemile and Stewart Creeks. U.S. Highway 12 was closed between Mauston and Lyndon Station because of flooding on the Lemonweir River. County highways across the southern part of the county that were closed included: N, G, HH and FF. Numerous local and township roads were also closed.

Damages in Juneau County exceeded \$22 million plus at least \$35,000 in crop damages. The Governor declared a state of emergency for the entire state, and a federal disaster declaration was made for Juneau and six other counties including La Crosse, Monroe, Adams, Vernon, Crawford and Richland. As a result, numerous mitigation projects were funded by FEMA for relocations and flood proofing in communities like Elroy and Wonewoc.

A few days later, with the area still saturated, more thunderstorms with heavy rain moved across western Wisconsin during the evening of September 3, 2018. Rainfall amounts of 2 to 5 inches produced some flash flooding. Several roads were closed with high water covering others across the southern portions of Juneau County. In Mauston, flooding from the Lemonweir River closed several city streets and prompted evacuations along Maple Drive where the utilities were shut off. Some homes had water in their basements. Additional damages reached \$230,000 plus \$73,000 in crop damage.

In 2016, heavy rain across most of west central Wisconsin resulted in flooding that caused numerous road and culvert washouts throughout the southern half of Juneau County. Public sector damages exceeded \$108,000, however individual losses were low at an estimated \$8,000. Damage to public infrastructure resulted in a Presidential Disaster Declaration for ten Wisconsin counties, including Juneau.

On September 22, 2010, a stationary front set up across central Wisconsin in the evening. As an unusually moist air mass flowed over this boundary, heavy rain developed and fell repeatedly across the area during the evening and overnight hours. The storm total rainfall at Volk Field was 3.26 inches, while 2.90 inches fell near Necedah. Soils were abnormally wet for this time of year; therefore, the extreme rainfall amounts that fell caused significant widespread flooding and flash

flooding. Juneau and 4 other counties were included in a federal disaster area as a result. The Yellow, Lemonweir and Wisconsin Rivers along with their tributaries flooded, which caused road closures, evacuations, and damage to some roads, homes and businesses. People were evacuated from a campground east of Mauston along the Lemonweir River, while a dozen campers, campsites and sheds were ruined. In Necedah, water rose onto the property of several businesses, while homes on the east side of town were evacuated. Five homes and 2 businesses incurred major damage, while 14 homes and 1 business reported minor damage. Some specific road closures included County Roads G and F, and 11th Street, as well as County Roads HH and N near Lyndon Station. There was \$900,000 in estimated property damage.

On June 7, 2008, a warm front extended west to east across the Upper Mississippi River Valley, producing thunderstorms and excessive rainfall that led to a federal disaster declaration. As the storms congealed into a larger scale line of thunderstorms, they continued to move over the same areas, which led to significant flash flooding through the evening and overnight. Heavy rainfall continued on June 8, enhancing already dangerous flooding conditions across parts of southwest Wisconsin. Many roads were closed due to water over the roadways, mudslides, or partial washouts. Flash flooding hit parts of southern Juneau County hard with water over several roads and some mudslides. Many creeks rose very rapidly as well. Homes along Lincoln, Lake, South Brooklyn, and Franklin streets were evacuated after the river broke its banks on the afternoon of June 8th in the City of Mauston. About 16 families were displaced in Wonewoc as well. Mudslides began to occur along Highways 82 and 80. Sections of the Elroy-Sparta State bicycle trail were also damaged and caused a closure. There was concern about high water in Mauston as well, especially along the Lemonweir River.

Severe storms again resulted in flooding (and disaster declaration) in 2004, 2001, and 2000. Flash flooding was reported near Grand Marsh by the NCDC in 1997 with \$30,000 in damages.

The Flood of 1993 was one of the worst flood events experienced by Juneau County, the state, and entire Midwest. The flooding in Juneau County was a result of several compounding factors including heavy rains and flooding in the fall of 1992. During the winter, Partridge Lake Dam in Juneau County washed out. In the Spring of 1993, the area experienced above average amounts of precipitation. The already saturated ground caused flooding from early June throughout July. Fortunately, before the flood peaks arrived on the Wisconsin River in Juneau County, the Petenwell and Castle Rock Reservoirs were drawn down. This created additional storage capacity that helped ease flow and lowered discharges downstream.

West of the Wisconsin River in the County, there was substantial flooding in a majority of the townships. The City of Mauston, the Village of Wonewoc School

District, and numerous homes all experienced flooding and water damage. Standing water plagued the area for months afterward. Juneau County received approximately \$226,934 in disaster disbursements. The major impacts from flooding were to agriculture lands public roadway washouts. In Juneau County, the ASCS provided emergency financial assistance to approximately 200 farmers. Agricultural disaster assistance funded upwards of 1.3 million, while nearly 11 million dollars was estimated in crop losses. High groundwater eroded road bases and caused excessive runoff that washed out culverts and embankments or stripped gravel surfaces off of town roads. In the private sector, the three most common problems were groundwater in basements, failing septic systems, and polluted wells.

Severe storms again resulted in flooding (and disaster declaration) in 1992, 1990, and 1978.

Major flooding also occurred in 1973 affecting a large portion of the County with flooding along the entire length of the Mississippi River resulting in a disaster declaration. Flood crest at Wisconsin Dells was 20.7 feet compared to 18.2 feet in 1993. Other notable flooding includes 1967 and 1965 with crests measured at Wisconsin Dells of 19.2 and 19.0 feet respectively.

Prior to the construction of the reservoirs at Petenwell and Castle Rock, large-magnitude floods were recorded on the Wisconsin River in September 1911, July 1912, September 1938 and September 1941. A maximum discharge of 72,200 cubic feet per second (cfs) was recorded on September 14, 1938, on the Wisconsin River near Wisconsin Dells just south of the Juneau County line.

Juneau County has not experienced a dam failure with any loss of life or substantial property damage. However, there have been notable incidences of threatened failure in the area. The Town of Rome avoided dam blowouts with the help of many volunteer sandbaggers during the June 2002 flooding when the Lake Camelot dam came within an inch of failure; Lake Arrowhead dam came within seven inches of failure; and Sherwood was about four inches away from failure.

In 2006, the Tri-Lakes dams were again threatening failure. The Kingsway Dam on Upper Lake Camelot is the uppermost dam in a series of dams. Failure of this dam could ultimately lead to failure of 3 other dams downstream and close State Highway 13 as well as various County and local roads. Rapid drawdown of the lakes prevented the dam failure and allowed repair of a failing drain system.

Flood 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, lost 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 the Juneau County area to flooding hazards, basic inventory data described 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. Repetitive loss structure means a structure covered under an NFIP flood insurance policy that (1) has incurred flood-related damage on two occasions, in which the cost of repair, on average, equaled or exceeded 25% of the value of the structure at the time of each such flood event; and (2) at the time of the second incidence of flood-related damage, the contract for flood insurance contains increased cost of compliance coverage (44 CFR § 77.2(i)). Severe repetitive loss structure means a structure that is covered under an NFIP flood insurance policy and has incurred flood-related damage (1) for which four or more separate claims have been made under flood insurance coverage, with the amount of each claim (including building and contents payments) exceeding \$5,000 and with the cumulative amount of such claims payments exceeding \$20,000; or (2) for which at least two separate flood insurance claims payments (building payments only) have been made, with cumulative amount of such claims exceeding the value of the insured structure (44 CFR § 77.2(j)).

The information is used as a floodplain management tool and to supplement information provided by communities for flood mitigation grants administered WEM. According to the report, there are currently seven repetitive loss structures listed with Juneau County, one is in the City of Elroy and four are in the Village of Wonewoc. while two other locations are not specified. Data is limited to protect the privacy of owners. Mitigation grants resulting from the 2018 flood have been resolving some of the flood prone properties in both Elroy and Wonewoc.

Since the repetitive loss structure information is limited, structures within floodplains were analyzed to get a more accurate picture of the potential flood vulnerability in the County, see the methodology outlined below. The floodplain boundaries within Juneau County are shown on Map 4. Table 15 shows the number of structures in each municipality identified as "vulnerable to flooding" according to proximity to floodplains. There were a total of 615 structures identified in the designated floodplain boundaries, see Map 10.

Methodology – Structures within Floodplains:

- 1. NCWRPC downloaded the new DFIRM floodplain maps from the FEMA website into a GIS coverage for the County.*
- 2. NCWRPC building point cover was checked for updates in 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 with the floodplain were then tabulated by municipality.*
- 5. Average Values from US Census data were used to determine the total value for the identified vulnerable structures by municipality.*

Flooding in Juneau County is often felt beyond the floodplain boundaries due to factors such as topography and high groundwater. The drainage (surface runoff) network in the County is poorly defined. During periods of extended rainfall and/or snowmelt, a general condition of flooding exists throughout the communities. During this time, basements and roadways suffer considerable damage.

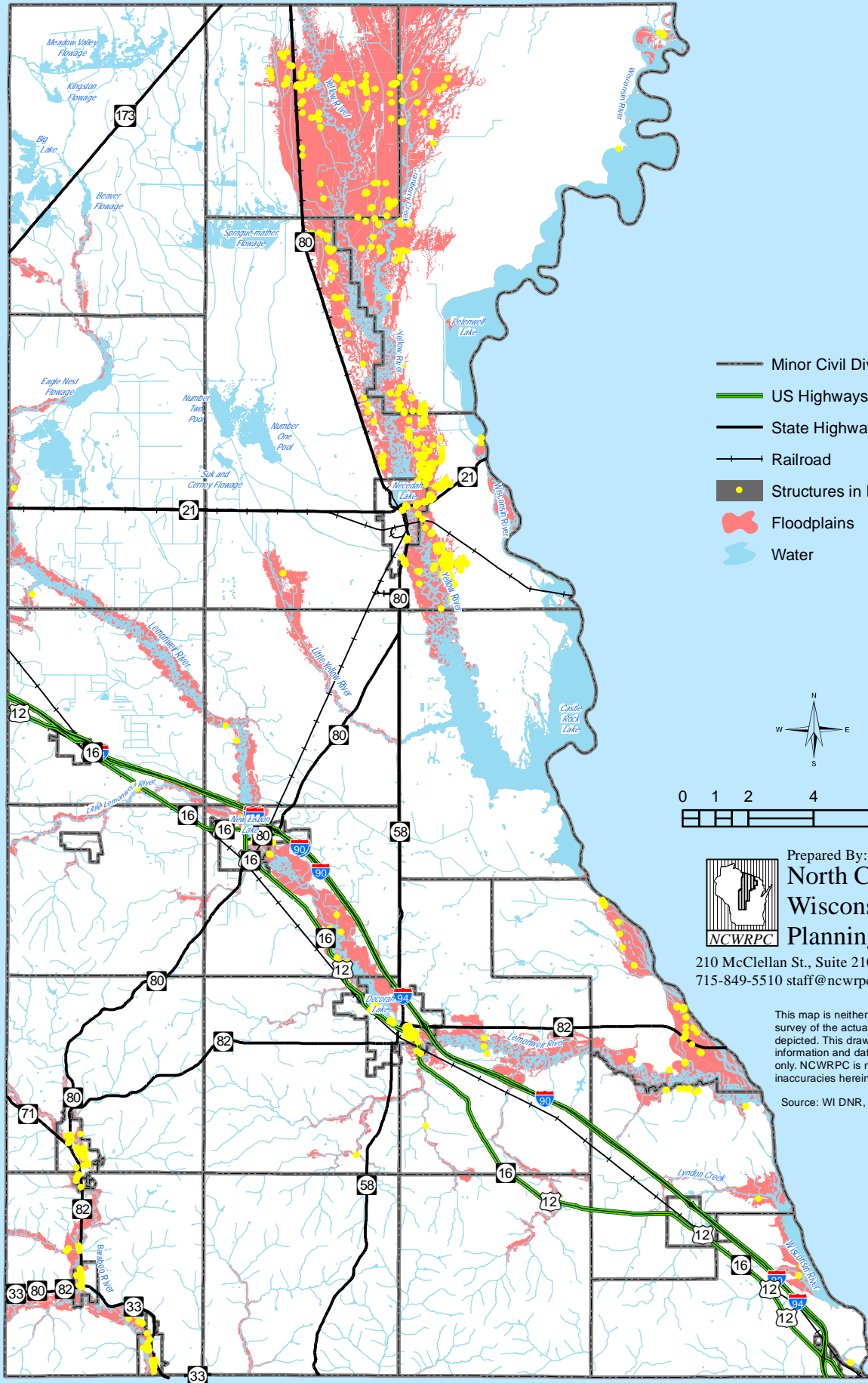
In addition to structural damage from flooding, there would be significant damages to public roadways, particularly to roadway surfaces, culverts and bridges. Flooding would inundate or close roadways due to washouts from a period of a few days up to as much as three months. Such interruptions in the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

Businesses can be forced to close due to septic system problems and other issues resulting from flooding and the high water table. Tourism is an important industry in the County and several campgrounds, lodges, and restaurants may be affected by flooding.

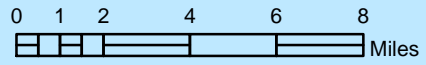
The agriculture industry is a sector that can face substantial losses during a flood. Flood conditions can leave farmers with the following economic setbacks:

- Delayed planting (reduced growing season)
- Prevention of fields from being seeded
- Seed and agricultural chemicals washing out of fields
- Rotting of plants due to excess moisture
- Areas where planted crops 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.



- Minor Civil Divisions
- US Highways
- State Highways
- Railroad
- Structures in Floodplains
- Floodplains
- Water



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This map is neither a legally recorded map nor a survey of the actual boundary of any property depicted. This drawing is a compilation of records, information and data used for reference purposes only. NCWRPC is not responsible for any inaccuracies herein contained.

Source: WI DNR, NCWRPC, FEMA

Economic losses to farmers can generate a ripple effect 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.

Table 15: Improvement Value - Structures in Floodplain, Juneau County

Municipality	Number	Average Value	Total Value
Armenia Town	75	\$123,420	\$9,256,500
Clearfield Town	2	\$136,180	\$272,360
Cutler Town	2	\$137,500	\$275,000
Finley Town	98	\$113,410	\$11,114,180
Fountain Town	0		
Germantown Town	0		
Kildare Town	10	\$140,800	\$1,408,000
Kingston Town	0		
Lemonweir Town	6	\$143,000	\$858,000
Lindina Town	1	\$164,670	\$164,670
Lisbon Town	15	\$153,450	\$2,301,750
Lyndon Town	3	\$154,660	\$463,980
Marion Town	38	\$159,500	\$6,061,000
Necedah Town	225	\$131,560	\$29,601,000
Orange Town	1	\$175,560	\$175,560
Plymouth Town	0		
Seven Mile Creek Town	0		
Summit Town	0		
Wonewoc Town	10	\$170,280	\$1,702,800
Camp Douglas Village	0		
Hustler Village	0		
Lyndon Station Village	0		
Necedah Village	24	\$104,830	\$2,515,920
Union Center Village	13	\$94,930	\$1,234,090
Wonewoc Village	15	\$82,830	\$1,242,450
Elroy City	40	\$89,760	\$3,590,400
Mauston City	35	\$109,780	\$3,842,300
New Lisbon City	2	\$97,900	\$195,800
Wisconsin Dells City	0	N/A	N/A
Juneau County	615	\$130,738	\$76,275,760

Source: NCWRPC, 2023.

The forest products industry is affected similarly to agriculture. Forestlands become too wet for logging operations and many waterlogged 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 10.

The U.S. Army Corps of Engineers hydrology/flood study for northern Juneau and southern Wood County is expected to provide valuable information for future assessment of flood vulnerabilities, including causes for the persistent flood conditions experienced over the last decade and possible solutions.

It should also be noted that Juneau County has completed the Wisconsin Flood Resilience Scorecard. The Scorecard is a comprehensive, community-approach tool that can be used to evaluate flood vulnerabilities through 3 modules: environmental, institutional and social. Each module has five components. Components with scores under 70% indicate areas where action is needed. Juneau scored below the threshold for 10 of the 15 components.

Future Probability and Potential Dollar Losses – Flood

Based on the historic data presented here (frequency of past events), Juneau County can expect some sort of flooding event essentially annually with a 90+% chance. However, a more significant flood event like those associated with disaster declarations in 2016 or 2018 can be expected about every 5 years on average. This equates to a probability of 0.20 or about a 20 percent chance in a given year.

Due to the significant number of dams and particularly large dams with high hazard ratings, dam failure is an important hazard event to plan for in Juneau County. However, based on past experience, the actual probability of a major dam failure is very low.

Historic data is again used to estimate potential future dollar losses due to flood. On average, Juneau County might expect property and crop losses of \$14.8 million on average, per major flood occurrence based on the study period of 2014 to 2023. Over the next ten-year period, flood losses in Juneau County could approach \$29 million.

Climate change can be expected to lead to more annual precipitation with more frequent and heavier high precipitation events. This will lead to more flooding and the potential for dam failure. Flood damages will affect more people over a wider area of the County, and resulting damages will be higher.

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 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, with accumulations of ¼" or greater.

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 Juneau 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 Juneau County

NOAA has reported 24 winter storm events for Juneau County between 2006 and 2015. All of these storms contained some form of snow, sleet, freezing rain, or ice conditions.

Most recently, winter weather impacted holiday travel over November 25-26, 2023. Intermittent light snow from Saturday November 25th through Sunday November 26th resulted in slippery road conditions for the busy Thanksgiving holiday travel weekend. Broadcast media and law enforcement reported multiple slide offs in western and central Wisconsin. Snowfall was slow but steady throughout with accumulations over 3 inches in some areas by Sunday evening.

Between October 30 and 31 of 2023, a rapidly intensifying storm system traversed western Wisconsin through the morning hours, with multiple bands of snow. While overall accumulations were only 1 to 2 inches, the combination of increased snowfall rates with winds gusting over 40 mph resulted in travel conditions quickly deteriorating. As snow bands passed, visibilities quickly dropped below 1 mile and resulted in numerous automobile accidents. Above freezing ground temperatures resulted in elevated roadways becoming hazardous as melted snow froze into the early morning hours. Accidents on Interstates 90 and 94 resulted in closures near Camp Douglas as well as Tomah (Monroe County) and Black River Falls (Jackson County). Damages were estimated at \$40,000 for Juneau.

In April 2023, a large storm system impacted Wisconsin from the evening of the 15th through the 16th. Initially, rain and thunderstorms spread through southern Wisconsin before switching over to snow during the morning hours of April 16. The heaviest snowfall occurred in central Wisconsin during the day April 16, where snowfall totals were exceeded 22 inches in some locations. Observers reported 6 to 10 inches of snowfall across parts of Juneau County with the highest reported total of 11 inches recorded in New Lisbon. Many trees were beginning to leaf out following record-breaking warmth the week prior, and the heavy snow load resulted in tree damage and power outages. The large amount of precipitation associated with this storm greatly impacted flooding along the Mississippi, Black, and Yellow Rivers and ultimately resulted in the Governor of Wisconsin issuing a State of Emergency declaration on April 16.

In February of 2023, a slow-moving storm system produced several days of snow across western Wisconsin. The snow began during the afternoon of February 21st

and continued on and off into the morning of the 23rd. A total of 10 to 13 inches of snow fell across Juneau County. An initial band of snow on the 21st provided 2 to 4 inches with an additional 8 to 10 inches falling from the 22nd into the 23rd. The highest reported total was 13 inches in New Lisbon. The Governor declared an energy emergency that would allow for the swift and efficient restoration of any electric power outages.

A storm brought an extended period of hazardous winter weather to western Wisconsin ahead of the Christmas holiday in 2022. Periods of snow fell from December 21st into the 23rd. Accumulations were in the 3 to 4 inch range within Juneau County with the highest total of 4 inches reported in Mauston. Strong winds of 25 to 35 mph created blowing and drifting snow with some whiteout conditions occurring at times. Gusts of 38 mph were recorded at Necedah. The wind combined with an influx of arctic air to create dangerously cold wind chills from the 22nd into Christmas morning. Values of 25 to 40 below zero were common during this period with the lowest calculated wind chill of -41 at Volk Field. A state patrol officer was injured when another vehicle crashed into the back of a patrol car that was parked along the shoulder of Interstates 90/94 in southern Juneau County. The Governor of Wisconsin declared an energy emergency that allowed suppliers to catch up from weather related delays and for the faster arrival of out of state utility restoration workers. A national food delivery service suspended operations across western Wisconsin during the storm. Damages were estimated at \$30,000 for Juneau.

December 14-15, 2022, saw a winter storm moved across the region with snowfall amounts of 2 to 9 inches reported from western to central Wisconsin, respectively. Snow fall of 6 to 8 inches was reported across Juneau County with the highest reported total of 8 inches in New Lisbon. The storm caused power outages across multiple counties affecting more than 1,000 customers across Juneau.

Minor icing or glazing is a common factor with winter storms during the study period with accumulations ranging from a tenth up to a quarter inch. On January 16, 2017, freezing rain and rain fell across Juneau County. Ice accumulations from the freezing rain were up to 0.15 inches. As temperatures quickly dropped below freezing, the standing water turned into a sheet of ice on roads, parking lots and sidewalks. This led to numerous accidents and school closures with some schools closed for 2-3 days.

Blizzard conditions were reported in Juneau County most recently including: February 24, 2007, February 17, 2008, December 11, 2010 and December 20, 2012.

In 2012, a strong area of low pressure moved out of the Central Plains into the Great Lakes region on December 19th and 20th. As this storm moved by, it produced a period of blizzard conditions during the morning and afternoon of the 20th as sustained north winds of 25 to 35 mph with higher gusts created poor

visibility from falling and blowing snow. Accumulations reached winter storm criteria of 6 inches between midnight and 7 a.m. on the 20th. The Governor issued an executive order declaring a state of emergency before the storm, placing state emergency management, National Guard, State Patrol and other agencies on alert. National Guard troops were used to help rescue stranded drivers in some areas. The strong winds created blizzard conditions across Juneau County during the morning and afternoon of the 20th. As a result of the blizzard, roads were closed, vehicles became trapped in the snow, some power outages occurred and all schools in the County were closed. The highest reported snow total was 9.0 inches in Mauston (other areas of the state received up to 15 inches).

Snow fall totals of 4 to 10 inches were commonly reported with winter storm events over a 2 or more day period from 2014 to 2023. However, the potential for more significant snowfall exists. According to the National Weather Service, the all-time record one-day snow fall is 16 inches that occurred on December 1, 1985. Another example of extreme snowfall in Juneau County occurred between December 11 and 12, 2010, a powerful low-pressure system tracked across the Upper Midwest and Great Lakes region. This storm brought heavy snow and blizzard conditions across portions of western and central Wisconsin. Juneau County was within a large area of the state that received about 20 inches of snow. In addition to the heavy snow, sustained wind speeds of 25 to 30 miles per hour with gusts up to 50 miles per hour caused whiteout conditions, widespread road closures, stranded motorists and power outages. Most roads were reported to be impassable, and vehicles were stuck on roadways.

Arctic cold outbreaks are common in the upper Midwest and sub-zero readings occur 19 times per winter on average depending on snow depth and other factors. Occasionally strong northwest winds will combine with cold outbreaks to create dangerous wind chill conditions. The coldest temperatures are usually in January and February with average lows in the single digits and record lows colder than -25 degrees. The all-time record low in Juneau County is -43 degrees (actual) set in 1951. The NOAA reports 4 extreme cold events between 2014 and 2023.

Most recently, as noted above, in conjunction with a snowstorm from December 21 to 23, 2022, strong winds of 25 to 35 mph from the 23rd into the 24th created blowing and drifting snow with some whiteout conditions occurring at times. The wind combined with an influx of arctic air to create dangerously cold wind chills from the 22nd into Christmas morning. Values of 20 to 40 below zero were observed across Juneau County during this period with the lowest calculated wind chill of -41 at Volk Field. The Governor declared an energy emergency that allowed faster restoration of power and heat.

Between January 29-31, 2019, arctic air in place over western Wisconsin caused air temperatures to drop into the 20s below zero. A few sites recorded temperatures in the 30s below zero on the morning of the 30th with several sites falling into the 30s and 40s below zero on the morning of the 31st. When combined

with wind speeds of 5 to 25 mph, wind chills of 35 to 55 below zero were common across Juneau County from the evening of January 29th into the morning of the 31st. The coldest wind chill to occur was 53 below zero at the automated weather station at Volk Field. The Governor declared a state of emergency because of the cold weather. Most western Wisconsin schools were closed from January 28th through the 31st. The U.S. Post Office suspended delivery operations across all of western Wisconsin on January 30th and 31st.

Wind chills of 35 to 45 below were common across western Wisconsin from January 27 to 28, 2014. These dangerous wind chills occurred behind a strong cold front that moved across the region on January 26. As temperatures fell behind the front, strong northwest winds started pushing the wind chills to 35 below or colder during the early morning of the 27th. Most locations then had wind chills of 35 below or colder into the morning of the 28th, which was when warmer air started to spread back across the area. All the schools across western Wisconsin were closed on both January 27th and 28th. Wind chills of 35 below or colder occurred across Juneau County from the morning of January 27th into the morning of the 28th. The lowest recorded wind chill was 38 below from the automated weather observing equipment at Volk Field.

Winter Storms / Extreme Cold Vulnerability Assessment

Winter storms 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.

The following is a list of things that may be adversely affected by a winter storm. 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 on review of the historic events of winter storms and extreme cold, there are no specific areas in the County that have unusual risks. Winter storms cover a broad area and are a region-wide concern. However, during the city/village planning meetings for this Plan Update, Elroy, Hustler, and Mauston and identified winter weather hazards, particularly heavy snow and ice as a major vulnerability concern due to impacts on electric utilities and power outage.

The extreme cold weather can affect the entire County. The risk to public health includes the chance of getting frostbite and hypothermia, and motor vehicle

accidents. Everyone is at risk for becoming injured in extreme cold weather, either because of a frail body or because of travel in a motor vehicle.

Future Probability & Potential Dollar Losses – Winter Storms/Extreme Cold

Based on historical frequency, Juneau County can expect 2.4 significant winter storms per year on average. In other words, the probability is 1.0 or a 100 % chance in a given year. For extreme cold temperatures, based on historical frequency, Juneau County can expect an occurrence every 2.5 years on average, for a probability of 0.4 or a 40 % chance in a given year.

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.

Climate change can be expected to lead to more frequent, more powerful winter storm events and occurrences of severe cold. Heavier, more frequent winter storms will increase the frequency of power outages, structural collapse and transportation impacts.

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

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 (recently increased from $\frac{3}{4}$ inch) in diameter or greater or a tornado. Strong winds, hail, and lightning will be addressed in this section, however tornados will be referenced as a separate hazard.

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.

Thunderstorms 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 Juneau County

The NOAA database has reported 31 severe storm events for Juneau County between 2006 and 2015. These storms typically contain some form of heavy rain, strong winds, and lightning. About 16 significant hail events, typically related to a severe thunderstorm, were listed during this time period. There was also one notable lightning incident identified.

Most recently, a series of strong to severe storms traversed western into central Wisconsin from the morning hours of October 24 into October 25, 2023, producing heavy rain and mostly small hail. Rainfall amounts ranged from 2 to 5 inches with 2.1 inches reported at Necedah. The increased rainfall resulted in flooding over roadways in west-central Wisconsin during the early morning hours of October 25th. The Yellow River in Necedah also flooded from October 28th into October 30th.

On July 28, 2023, as strong to severe storms traversed into central Wisconsin during the early evening hours, damaging wind gusts resulted in fallen power poles. The clusters of storms continued to intensify as they progressed east through western and central Wisconsin, resulting in widespread damage from wind and hail. Wind gusts of 77 mph reported in Richland County resulted in extensive damage to barns and trees. In Juneau, there were reports of fallen trees and power outages in Mauston and Necedah. Wind gusts of 58 mph were reported at Volk Field and 72 mph near Wonewoc. Total damages reported for Juneau County were around \$95,000.

On August 5, 2019, two rounds of thunderstorms moved across western Wisconsin during the afternoon. Numerous trees and power lines were blown down in and around Mauston. One tree landed on and damaged a garage. After the storm, about two-thirds of the city was without power including more than 2,400 customers. Damages were estimated at about \$25,000.

On May 17, 2017, two lines of severe thunderstorms moved across western Wisconsin during the afternoon and evening. This was the third day in a row that severe weather impacted the area. The storms primarily produced damaging winds, but also dropped one tornado in Trempealeau County east of Galesville. Several trees and power lines were blown down near Mauston and a barn was destroyed south of Mauston. Trees were reported down in Hustler. Damage was estimated at about \$32,000.

On September 2, 2011, severe thunderstorms produced damaging winds during the morning hours across portions of southwest and central Wisconsin. Numerous trees and power lines were down across the area, and over 10,000 residents lost power and schools were either delayed for two hours or closed in these areas. Several trees were blown down near Sandstone Estates with one falling on trailer. NOAA reported damage estimate was \$26,000.

On October 26, 2010, a low-pressure system deepened over northern Minnesota and set the Wisconsin state record for the lowest recorded barometric pressure. This system was responsible for high winds across portions of southwest and central Wisconsin in the morning hours of October 26th and the daytime hours of the 27th. Numerous trees were blown down; some power lines also came down causing power outages across western and central Wisconsin. Sporadic damage to roofs and buildings also occurred. Several trees were reported down across the A peak gust of 61 mph was reported near Necedah and Volk Field had a gust of 56 mph.

The notable lightning event within the study period occurred on March 6, 2017 when a line of thunderstorms developed along a cold front and moved across western Wisconsin during the evening hours. These storms produced a tornado in La Crosse County along with damaging winds and hail. A lightning strike caused a fire that destroyed a house west of Necedah. NOAA damage estimate was \$55,000.

In June 2010, thunderstorms developed along a cold front and moved over central Wisconsin in the evening hours of June 12th. Lightning from the thunderstorms struck an oak tree and killed a dozen cows on a farm near County Highway N.

In June 2008, a warm front extending east to west across the Upper Mississippi River Valley was the focus for a significant severe weather event on June 7. The event produced four tornadoes, numerous reports of wind damage and large hail. On Sunday, June 8, the warm front was lingering across the region, but a cold front was quickly tracking east out of the northern Plains. Showers and storms redeveloped during the day in the vicinity of the warm front, while a line of storms developed out ahead of the cold front, with these tracking across the region Sunday night. The severe weather activity, aside from heavy rain, was not as widespread compared to Saturday, June 7. Two individuals were struck by lightning in the Town of Germantown. One of the victims did require treatment for minor injuries.

The most significant hail event during the study period occurred on September 20, 2022, when scattered thunderstorms moved across part of western Wisconsin during the evening. These storms produced large hail as they tracked from northern Buffalo County into Juneau County. Large hail 2 to 3 inches in diameter was reported north and east of Finley and in Armenia near New Miner. This hail caused damage to some vehicles. The damage estimate was about \$90,000 plus \$5,000 in crop damages.

On August 23 and 24, 2006, Hail as large as baseballs, along with thunderstorm wind gusts as high as 75 mph, were reported across southwest Wisconsin. Waves of hail repeatedly moved over the same areas, especially along the Interstate 94 corridor. There was substantial damage to corn and soybean fields, as well as

cranberry plants. Cranberry crop loss was projected at 50 percent in some areas. The hail also shattered windshields of numerous vehicles, broke windows and damaged roofs and siding of homes. Total crop damage totaled close to 14 million dollars, with damage to vehicles and homes totaling nearly 3 million dollars. Within Juneau County, NOAA damage estimates totaled \$235,000 in property damage and \$365,000 in crop damage.

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 lightning 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 tornados) have caused substantial property and infrastructure damage and have the potential to cause future damage. In order to assess the vulnerability of the Juneau 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 lightning, there are no specific municipalities that have unusual risks. The events are relatively uniform and a countywide concern. However, during the city/village planning meetings for this Plan Update Camp Douglas, Elroy, Hustler, Mauston, Necedah and Wonewoc identified severe thunderstorm as a major vulnerability concern due to potential damages from high winds including impact on local electric utilities and power outages.

Future Probability and Potential Dollar Losses - Severe Thunderstorms

Based on historical frequency, Juneau County can expect 3.1 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 Juneau County is also at 1.0 or 100% chance with about 1.6 incidents in a given year. There is not enough data available regarding lightning events to indicate probability.

According to the NCDRC, historic thunderstorm events with associated high wind and reported damages averaged \$13,517 in damages per incident. Historic

thunderstorm events with associated hail that reported property damage averaged \$51,500 and \$3,500 in reported crop damage. Historic thunderstorm events with associated lightning that reported property damage averaged \$55,000. Losses in Juneau County associated with severe thunderstorms could approach \$1.4 million over the next ten-year period.

Climate change can be expected to lead to more frequent, higher intensity severe thunderstorms and resultant high winds, hail and lightning. This will affect more people over a wider area of the County, and the resulting damages will be higher.

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 Juneau County

Much of Wisconsin was under severe drought during 2023. After significant flooding in early 2023, the state fell into a dry spell that became a full drought by

June. This is classified as a “flash drought” or the rapid onset and intensification of drought conditions which ends similarly quickly, in this case, when heavy rains swept the state in spring 2024. Climatologists indicate that this flip-flop between excessively dry and excessively wet conditions is a key indicator of climate change, and that we’ll see more of it in the future.

NOAA reports for Juneau County indicate lack of rainfall and warmer than average temperatures resulted in severe drought conditions developing in portions of west-central and central Wisconsin by the end of June 2023. Between April 1st and severe drought development by June 27th, rainfall was 6 to 8 inches below normal, or about 50 percent of normal. Abnormally dry conditions continued into July with rainfall being 1-3 inches below normal for the month. All of Juneau was in severe drought by mid-July with about 30% of southern Juneau County upgraded to extreme drought. Although a few storms provided intermittent relief, significantly below normal rainfall maintained the drought conditions through August and September.

Farmers reported variable crop conditions with overall yields 15 to 30 percent of normal. Well below normal cuttings of hay resulted in farmers having to purchase feed for livestock. As a result of the inclement growing conditions, the United States Department of Agriculture issued disaster area declarations for western Wisconsin including Juneau County, and the Wisconsin DNR reported an increase in wildfires attributed to the ongoing drought as 6 times as many acres had already been consumed by wildfires compared to the same time the previous year.

By mid-September, topsoil moisture was less than half of normal. Unirrigated crops either died or were stunted. Corn silage had to be cut weeks early due to the lack of moisture. Well below normal water levels created difficulties for cranberry farmers during the harvest in central Wisconsin and also resulted in a mass die-off of clams along the Wisconsin River. The Wisconsin Department of Natural Resources placed all of southern Wisconsin in high fire danger, implementing burn restrictions for applicable areas. Additionally, many towns frequently issued temporary fire bans due to the widespread dry grasses.

Several storms brought above normal rainfall for October of 2023 which alleviated the drought in northern Juneau County, but severe drought conditions remained in the southern half of the County. November and December had below normal rainfall causing the drought conditions to persist in southern Juneau County. Christmas tree farms reported stunted growth and financial impacts.

Droughty conditions come and go, but this was the only notable significant drought period for Juneau County during the study period of 2014 through 2023.

Prior to the current study period much of the country, including Juneau County, was under drought conditions for an extended period between 2004 and 2013. At one point, the Governor 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.

Beginning in 2013, improved rainfall across the Midwest gradually relieved the drought in Wisconsin. Nationally, however, what is being tagged as the 2012-2015 North American Drought has affected over 80% of the U.S. as well as parts of Canada and Mexico, and drought continues to affect parts of the country. This drought is on track to exceed the 1988-89 drought, which also affected Wisconsin/Juneau County, as the costliest natural disaster in U.S. history.

Juneau County experienced the 1988-1989 drought with the rest of the Midwest. It was characterized not only by below level precipitation, but also persistent dry air and above normal temperatures. Stream flow measuring stations in the state indicated a recurrence interval of between 75 and 100 years. The drought occurred early in the growing season and resulted in a 30-60% crop loss, with agricultural losses set at \$1.3 billion for the state. No statistics were available for the amount of crops lost in Juneau County, but 52 percent of the state's 81,000 farms were estimated to have losses of 50 percent or more, with 14 percent estimated having losses of 70 percent or more. Some rural wells went dry, and water conservation was instituted in the rural areas

The drought of 1976-1977 was most severe in a wide band stretching from north to south across the state. Stream flow measuring stations recorded recurrence intervals from 10 to 30 years. Agricultural losses during this drought were set at \$624 million. Juneau County was one of 64 counties that were declared federal drought areas and deemed eligible for assistance under the Disaster Relief Act.

According to the National Weather Service, Juneau County has been affected by a number of heat waves over the years (17 since 1982 with 3 documented fatalities). The warmest temperature (actual) on record in Juneau County was 107 degrees F set on August 24, 1948.

The NOAA database has three recent listings for extreme heat events over the study period between 2014 and 2023. The most recent was August 22-24, 2023. According to the NOAA, the summer of 2023 was hot, and by mid-August the combination of unusually high temperatures and higher humidity levels built into a heat wave. Excessive heat advisories and warnings were issued on August 22 and lasted through August 24. Maximum heat indices of 96 to 115 degrees were observed across Juneau County. The maximum heat index reached 98 degrees on August 22 in Necedah and Mauston and 115 degrees on August 23 in Mauston according to automated weather stations. Fortunately, no fatalities or serious injuries were reported.

On July 19, 2019, NOAA reported excessive heat with heat indices of 100 to 114 common across Juneau County. The highest calculated heat index was 114 from the automated weather observing equipment at the Mauston airport. Air

temperatures generally peaked at around 90 while dew points climbed into the lower 80s. The highest calculated heat index was 118 near Cataract in Monroe County.

June 29-30, 2018, had two days of excessive heat across western Wisconsin. Heat indices topped-out between 105 and 115 on both days, although the high heat indices were more widespread on the 29th. Air temperatures in the upper 80s to middle 90s with dew points in the middle 70s combined to create the excessive heat. The highest calculated heat index was 115 from weather stations in Mauston and De Soto (Crawford County).

In 2012, a hot air mass settled over Wisconsin in early July, bringing highs of 100 degrees or hotter to central Wisconsin from July 2 through July 9. Relative humidity was low, but heat indices still managed to reach the 100 to 110 range. Volk Field recorded a peak heat index of 113 on July 5th. One person died from heat related causes during the evening of July 9th. The person lived in a house which did not have air conditioning and was taking a medication that did not allow the body to sweat. An average of 3 to 4 people a day were treated for heat related illnesses.

In 2011, warm and humid air invaded western Wisconsin on July 17th and remained in place for the next three days. A number of people were treated for heat related illnesses. Afternoon heat indices routinely topped out between 110 and 120. Within Juneau, the highest recorded heat index was 114 at Volk Field on the 18th with a dew point of 85. Little relief occurred at night, as overnight lows remained above 75 degrees. Most of the counties across western Wisconsin opened cooling centers.

Drought / Extreme Heat Vulnerability Assessment

Droughts can have a dramatic effect on Juneau County. The County has nearly 107,000 acres of farmland or 21% of its land area dedicated to farming. 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 draw water that otherwise would naturally go to aquifers or surface waters. Drought can exacerbate the problem when high withdrawal rates versus little precipitation deplete waterbodies and aquifer supplies, therefore decreasing drinking water supplies, drying streams, and hindering aquatic and terrestrial wildlife. During severe droughts, some wells - mainly private wells - will go dry.

Another significant area of impact from drought includes the tourism sector of the economy. Campgrounds and other outdoor/recreational operations report a downturn in business as potential patrons remain at home.

Droughts can trigger other natural and man-made hazards as well. They greatly increase the risk of 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 towns. Agricultural land is scattered throughout the County but largely the Towns of Armenia, Orange, Fountain, Plymouth, Wonewoc, Lisbon, Lindina, Summit, Lemonweir, Seven Mile Creek, Kildare and Lyndon.

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 Juneau 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, drinking plenty of water, slowing down, and not staying 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), Juneau 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 two major droughts can give some indication of potential impact. The two major droughts in Wisconsin resulted in losses of \$9.6 million (1976-77) to \$18 million (1987-88) per county on average.

Normally, central Wisconsin is known for its cold winters, however, extreme heat waves will affect Juneau County in the future. Juneau County can expect a heat wave once every 3.3 years or a 30 percent chance in a given year based on the historic data presented.

Climate change can be expected to lead to rising average annual temperatures. The increased heat will fuel more extreme weather of all types, including excessive heat which is already one of the most deadly hazards in Wisconsin. Drought conditions will become more frequent and persistent.

HAZARD ANALYSIS: HAZARDOUS MATERIALS INCIDENTS

Background on Hazardous Materials Incidents Hazard

A hazardous materials incident occurs with the uncontrolled release or threatened release of hazardous materials from a fixed site or during transport that may impact public health and safety and/or the environment.

Under the Emergency Planning and Community Right to Know Act (EPCRA), a hazardous material is defined as any chemical that is a physical hazard or health hazard [defined at 29 CFR 1910.1200(c)] for which the Occupational Health and Safety Administration (OSHA) requires a facility to maintain a Material Safety Data Sheet (MSDS). Under EPCRA there is no specific list of hazardous materials. An extremely hazardous substance (EHS) is defined as one of 356 substances on the United States Environmental Protection Agency list of extremely hazardous substances, identified at 40 CFR Part 355.

Wisconsin Emergency Management / State Emergency Response Commission (WEM/SERC) is responsible for implementing EPCRA, also known as the Superfund Amendments and Reauthorization Act (SARA) of 1986, at the state and local levels. WEM/SERC has designated that each of the 72 counties in Wisconsin have Local Emergency Planning Committees (LEPCs) that are set up in accordance with the federal legislation and who are responsible for implementation of EPCRA at the county level. WEM/SERC further designated that the county emergency management director shall be a member of the LEPC to ensure continuity and coordination of emergency response planning.

WEM/SERC is also responsible for administering the Emergency Planning Grant that provides funding on a formula basis to county LEPCs for local planning and program administration and the Equipment Grant which provides matching funding for computer equipment and hazardous materials response equipment. Under 1991 WI Act 104 the WEM/SERC contracts with regional hazardous materials response teams as well as providing hazardous materials response equipment funding, on a matching basis, to county designated hazardous materials response teams.

Each Wisconsin county is designated as an emergency planning district and has a Local Emergency Planning Committee (LEPC) to administer the local program. LEPC membership includes local elected officials, members of emergency response agencies (fire, law enforcement, EMS, health, etc.), and representatives for transportation, public works, the media, community groups, environmental groups, and owners/operators of facilities.

LEPCs are responsible for receiving and maintaining filings of facility submissions. They also maintain a county-wide emergency response plan, develop and maintain facilities' off-site emergency response plans and the county's hazard analysis for

both fixed facilities and transportation. LEPCs assess the county hazmat response resources and equipment, respond to public requests for information under "community right-to-know" law, and conduct hazmat training and exercises. Wisconsin has annual exercise requirements and the LEPC attempts to involve facilities, response agencies, and other local officials in the exercises.

The county-wide emergency response plan includes: the county hazard analysis summary, a list of facilities storing hazardous materials, identification of transportation routes for extremely hazardous substances (EHS), procedures for notification or releases, response to releases, procedures for sheltering and evacuation, and a schedule for training and exercising.

Individual facility off-site plans include: facility name and location, name of facility emergency planning coordinator with 24 hr. contact phone number, list of primary emergency responders, list of resources available from/at facility, list of outside resources available, hazard analysis of the facility with a vulnerability zone for release of EHS stored at facility, identification of special facilities (i.e., schools, hospitals, nursing homes, day care centers, etc.) within the zone, population protection procedures (sheltering and evacuation) and attachments. These plans are developed and maintained by the LEPC.

The statewide Wisconsin Hazardous Material Response System (WHMRS) is intended to assist communities (or regions) who have been overwhelmed by the effects of a hazardous material emergency/release by providing specialized hazardous material resources to aid the stricken communities in incident stabilization and hazard mitigation activities. The focus of the statewide system is to provide quick strike capability to ensure incident assessment, stabilization, and mitigation, thus reducing the threat to the public, responders, and the environment.

To provide a high level of hazardous materials response capabilities to local communities, Wisconsin Emergency Management contracts and manages twenty-one Regional Hazardous Materials Response Teams. The teams are divided into Task Forces: Northeast Task Force, Northwest Task Force, Southeast Task Force, and the Southwest Task Force (includes Juneau). These Task Forces are then divided into Type I, Type II, and Type III teams, all with complimentary capabilities and training requirements. The WHMRS may be activated for an incident involving a hazardous materials spill, leak, explosion, injury or the potential of immediate threat to life, the environment, or property. The WHMRS responds to the most serious of spills and releases requiring the highest level of skin and respiratory protective gear. This includes all chemical, biological, or radiological emergencies.

History of Hazardous Materials Incidents in Juneau County

Juneau County hazardous materials response incidents since 2014 are shown in Table 16. These have been primarily small, low hazard spills. In most cases these incidents were quickly resolved by the County Team.

Date	Description
2019	Large Gas Spill – Mauston Kwik Trip
2021	Gas Spill – Between 100 & 200 gallons at Northside Mobile
2021	Diesel Spill – Highway 82 & 19 th Avenue
2021	Fuel Spill – Mauston Kwik Trip

Source: Juneau County Emergency Management, 2023.

Hazardous Materials Incidents Vulnerability Assessment

In 2023, Juneau County participated in the Southwest Wisconsin Regional Commodity Flow Study for hazardous materials moving through the county. That Study inventoried the risk factors that make hazardous materials incidents a keen concern in Juneau County, which are reviewed below:

Fixed Facilities

The Commodity Flow Study identified 20 facilities within the County meeting reporting the requirements for one or more of the most common extremely hazardous substances. These are sites that have hazardous substances present at any one time in amount equal to or exceeding the chemical-specific threshold planning quantity (TPQ). These substances include sulfuric acid, ammonia, peracetic acid, dichlorvos, formaldehyde, and nitric acid.

Highway

Trucks carry the bulk of hazardous materials to and through the County. Regular shipments of gasoline, propane, acid and other substances are delivered across Wisconsin. Every roadway in the County is a potential route for hazardous material transport, but major transportation routes are Interstate 90/94, US12/16, and State Highways 21, 58, 80, 82 and 173 (see Map 5).

The Commodity Flow Study monitored traffic on Interstate 90/94 at Mauston and counted trucks with Hazardous Warning Placards. The hazardous material type observed and the total number of trucks is shown seen in Table 16a.

Material	# of Trucks
Gasoline	1
Diesel Fuel	4
Flammable Liquid - Mixed	3
Liquid Nitrogen	1
Anhydrous Ammonia	1

Source: SW Wisconsin Regional Commodity Flow Report, 2023.

Railroad

Three major freight railroads operate in Juneau County, including Canadian National (CN), Canadian Pacific (CP) and Union Pacific (UP). Track routing can be seen on Map 5. Rail stations and junctions include: New Lisbon Junction, Marquis Energy Spur (Necedah), CN-UP Junction Loop (Necedah), Camp Douglas Junction, and Volk Field Siding. All three railroads transport a wide range of hazardous materials through the County, see Table 16b. Although trucks transport most of the hazardous materials in the state and the U.S., rail can carry significantly larger loads of hazardous materials.

Material	CN	CP	UP
Petroleum Crude Oil		X	
Alcohols		X	
Environmentally Hazardous Substances (Liquid)		X	
Molten Sulfur		X	X
Hot Asphalt		X	X
Potassium Hydroxide	X		
Chlorine	X		
Sodium Hydroxide	X		
Hydrochloric Acid	X		X
Ethanol-Gasoline	X		
Sulfuric Acid			X
Ferric Chloride Acid			X

Source: Juneau Co. 2013.

Obtaining detailed information for emergency planning from the railroads can be difficult, but the county cited 4,000 rail car loads of hazardous materials moving through the County annually from one carrier and "significantly more than that" on another. Carloads were not mentioned for the third carrier.

Pipeline

No major pipelines directly traverse Juneau County, but the Enbridge Petroleum Pipeline comes in close proximity, particularly at the northeast corner, as it runs through neighboring Adams County. Approximately 1.5 million barrels per day move through this pipeline. There have been significant incidents with this pipeline at varying points along its track through Wisconsin, including a leak of 176,000 gallons of crude oil in Rusk County in 2007. Groundwater contamination was the primary consequence of that spill.

A high capacity natural gas main owned by Northern Natural Gas enters the County from the south and branches out to the distribution network at Elroy, Mauston, New Lisbon, Union Center and Wonewoc. A variety of gas utilities use this network to service customers. According to the Commodities Flow Study,

natural gas pipelines while not common are not rare either and can be very dangerous. Large amounts of explosive gas can escape quickly from a breach.

A hazardous materials incident can have far reaching impacts, however, those communities which are traversed by major highways, rail or pipeline are susceptible to a higher risk, refer to Maps 5 and 6.

Future Probability & Potential Dollar Loss – Hazardous Materials Incidents

Based on the historic data presented here (frequency of past events), Juneau County can expect about a minor hazardous material release about every 2 years on average, which is a probability of 0.5 or a 50 percent chance in a given year.

There is insufficient data to determine the probability of a major incident. However, with the number of verified trucks carrying hazardous materials and major freight rail lines moving through the County, the chances appear to be significant for a catastrophic hazardous materials incident occurring at some point in Juneau County.

As with the probability, there is limited historic data to base an estimate of potential dollar losses from HazMat incidents. However, based on occurrences statewide, damages range from \$100 to \$10.5 million per incident. The higher end of the range is not impossible in Juneau County.



HAZMAT Exercise

The effect of climate change on hazardous materials incidents is unknown at this time.

HAZARD ANALYSIS: MASS CASUALTY INCIDENTS

Background on Mass Casualty Incidents Hazard

A mass casualty incident is any situation in which emergency medical personnel and the scene are overwhelmed by the number and severity of fatalities and/or injuries. Juneau County Emergency Management defines a mass casualty incident as one involving upwards of 35 victims requiring transport by emergency medical services.

For purposes of this study, the Mass Casualty Incidents section will focus on the following situations that are likely to result in mass casualties should they occur:

- *Civil Disorder*
- *Terrorism*
- *Disease or Illness*
- *Transportation Accidents*

- *Other Unanticipated Events (such as building collapse)*

It is important to note that any of the hazards addressed in this plan could lead to a mass casualty incident.

Civil disorder, also known as civil unrest or civil strife, is a broad term that used by law enforcement to describe one or more forms of disturbance caused by a group of people. Civil disturbance is typically a symptom of, and a form of protest against, major socio-political problems; the severity of the action coincides with public expression(s) of displeasure. Examples of civil disorder include, but are not necessarily limited to: illegal parades; sit-ins and other forms of obstructions; riots; sabotage; and other forms of crime. They can be planned or spontaneous demonstration to the public and the government, but can escalate into general chaos.

Terrorism is typically a preplanned targeting of an armed assault or a biological, chemical or explosive (potential WMD, Weapon of Mass Destruction) attack on a high value site or population concentration where a group or individual can maximize the number of human casualties or the amount of damage to a facility or organization. Juneau County has a number of potential targets.

Disease or illness, be it natural or human-caused, is a real concern for emergency managers and health care professionals. Though many of the illnesses that historically created major problems in Juneau County can now be successfully prevented or treated, others continue to pose a serious threat. (See also: Epidemic/Pandemic Hazard later in this section.)

A transportation accident or incident involves the crash or malfunction of a vehicle or system, such as airplane/airliner, railroad train, bus (school or coach) which may involve loss of life, serious injury, property damage, fire and/or explosion, and/or release of hazardous substances (See also: *Hazardous Materials Incidents* earlier in this section.)

History of Mass Casualty Incidents in Juneau County

Mass casualty incidents are extremely infrequent in Juneau County. Historically, the closest thing to a mass casualty event in Juneau County has been confined to incidents such as public health emergencies and school bus crashes. For example, in 1992 a school bus with over 30 students slid off the road and overturned down a steep embankment. One person was injured, but the remainder had to be transported to the hospital to be checked. In 2006, 13 participants of a bicycle rally contracted a serious viral illness, nearly overwhelming Mile Bluff Medical Center.

Civil unrest or terrorist incident has no historical precedence in Juneau County, however, there have been a few suspicious or false alarm incidents that have involved some form of response. In 1995, a bomb scare led to the evacuation of

the Juneau County Courthouse. The Fort McCoy bomb squad was called in to detonate a suspicious package. In 2001, another bomb threat led to evacuation of the Courthouse and search of County facilities. In 2002, reports of mail containing white powdery substance led to HAZMAT screening for anthrax. There have also been instances of bomb threats at area schools (and one hotel) which were managed by county and local law enforcement agencies.

Mass Casualty Incidents Vulnerability Assessment

Although unprecedented in Juneau County, a mass casualty incident could result in a serious threat to life or property and could lead to economic, health or psychological affects that could last for years. A mass casualty incident can occur anywhere in the county. The likelihood of such an event is greater near transportation routes, such as major highways, railroad corridors and airports (specifically Volk Field), or population centers (cities and villages).

Citizens not directly involved in a mass casualty event may have their lives significantly disrupted. Their ability to work, enjoy recreation and in some cases, obtain necessities may be jeopardized. Disruption of infrastructure may occur during very severe events. Public utilities such as water, fuel and electricity may be temporarily unavailable, as well as public infrastructure for communication.

Civil disorder or a terrorist act may occur anywhere in the County. The Wisconsin Air National Guard Base at Volk Field outside Camp Douglas is a high-value military target, while other potential targets for terrorism include the two hydroelectric dams operated by the Wisconsin River Power Company on the Wisconsin River, fuel oil, gasoline and propane storage facilities, municipal utility infrastructure and various schools and churches.

Small pockets of groups with anti-government or anti-tax political leanings have been in Juneau County for decades. These groups have been quiet for many years, but these antigovernment political views quietly persist just below the surface of civil society. Quiet antiabortion and anti-family planning protests sponsored by a local church in Mauston have occurred for years, and occasionally anti-war protests have occurred outside the Volk Field Airbase.

Juneau County has significant potential exposure to a transportation-related mass casualty incident. The County is located under a major air corridor (between Chicago and Minneapolis), and is bisected by a number of major state, federal and Interstate highways and several railroads with both freight and passenger (Amtrak) transport. Tens of thousands of people pass over and through Juneau County daily.

During the city/village planning meetings for this Plan Update, Lyndon Station, Mauston, Necedah and New Lisbon all identified some form of mass casualty event as a major vulnerability concern due to proximity to Volk Field, potential contamination of water supply, train derailment, or interstate crash.

Future Probability & Potential Dollar Loss – Mass Casualty Incidents

There is insufficient data to determine the probability of future mass casualty incidents in Juneau County. However, historically such events have been extremely rare. Although rare events, the potential risk to life and property is very high, so it is important to mitigate against these risks and to be prepared to respond should they occur.

As with the probability, there is limited historic data to base an estimate of potential dollar losses from mass casualty incidents. Associated costs/damages would include emergency services, medical treatment, and restoration/reconstruction. Significant economic disruption could occur due to loss of business revenue, loss of work time and costs of treating injuries or illness.

The broad scope of mass casualty incidents makes it difficult to qualify the effect of climate change. It is possible that climate change could result in increased social distress which may lead to civil disorder. Transportation is heavily influenced by climate, and various natural hazards can lead to transportation incidents, with the most obvious being an increase in severe winter weather contributing to increased risk of more frequent and more severe transportation accidents.

HAZARD ANALYSIS: EPIDEMIC / PANDEMIC**Background On Epidemic / Pandemic Hazard**

Communicable diseases, sometimes called infectious diseases, are illnesses caused by organisms such as bacteria, viruses, fungi and parasites. Sometimes the illness is not due to the organism itself, but rather a toxin that the organism produces after it has been introduced into a human host. Communicable diseases may be transmitted (spread) either by: one infected person to another, from an animal to a human, or from some inanimate object (doorknobs, table tops, etc.) to an individual. Some communicable diseases can be spread in more than one way.

Pandemic Influenza is a global disease outbreak. An outbreak occurs when a new influenza virus emerges for which people have little or no immunity, and for which there is no vaccine. The disease spreads easily from person to person, causes serious illness or death, and can sweep across the county and around the world in a very short time frame.

History of Epidemic / Pandemic in Juneau County

COVID-19 is a disease caused by a new virus strain that began spreading in people in December 2019. On March 11, 2020, the COVID-19 outbreak was characterized as a pandemic by the World Health Organization. Then on April 4, 2020, a Presidential Disaster Declaration was signed for the pandemic in the United States. Over the next three years, the pandemic was dynamic and

constantly changing with cases surging in waves coinciding with new variants of the virus. However, On May 11, 2023, the federal government ended the Public Health Emergency in the U.S. as much of the population had returned to life as normal. A low level of COVID-19 virus activity remained in the community, and there were still concerns about surges or new variants. As of the end of the public health emergency, the U.S. Center for Disease Control has reported that there have been approximately 103,910,034 cases of COVID-19 in the United States alone with a death toll now exceeding 1 million at 1,135,343.

Virus pandemics are naturally occurring events. Global outbreaks have occurred four times in the last century, in 1918, 1957, 1968 and 2009. The greatest loss occurred in 1918 when the Spanish Flu (H1N1) killed an estimated 20-40 million people worldwide between 1918 and 1919. The mortality rate in the United States was 550,000. The Asian Flu (H2N2) occurred from 1957 to 1958 with a mortality rate of 70,000 in the United States. The Hong Kong Flu (H3N2) occurred from 1968 to 1969 with a mortality rate of 34,000 in the United States.

2009 saw the rise of a new variant of the H1N1 virus, popularly referred to as the Swine Flu. Lab confirmed deaths from Swine Flu total about 14,000 worldwide with 3,400 deaths in the United States. However, most experts now agree that the actual death toll attributable to the 2009 Swine Flu is 10 to 15 times the confirmed number. Spread of H1N1 flu occurs in the same way that seasonal flu spreads. Flu viruses are spread mainly from person to person through close range coughing or sneezing by people with influenza. As a result of preparation and mitigation strategies such as vaccinations and public education, the threat of a full blown H1N1 pandemic in the U.S. has receded. The possibility for a pandemic, though, still exists.

A previous pandemic flu threat that still looms is the avian flu. Birds can contract avian flu and pass it along to humans. Some strains of the avian flu are more virulent than others. Public health experts continue to be alert to the risk of a possible re-emergence of an epidemic of avian among people primarily in Asia in 2003. People who had been very close contact with infected birds (for example, people who lived with chickens in their houses) contracted a virulent form of avian flu and there was a high death rate from this disease. Thus far, the avian flu virus has not mutated and has not demonstrated easy transmission from person to person. However, were the virus to mutate in a highly virulent form and become easily transmissible from person to person, there would be significant potential for a pandemic that could disrupt all aspects of society and severely affect the economy.

The Juneau County Health Department tracks communicable disease through a channel of communications at the local, state and regional levels between public health, private physicians, hospitals, and labs. This communication channel allows for prompt investigation of possible outbreaks and unusual situations, and to implement control measures to minimize further transmission of disease to others.

In Juneau County, there have been 9,460 total cases of COVID -19 resulting in 76 deaths as of the end of the public health emergency in May of 2023. For Wisconsin, total cases reached 2,014,524 with 16,485 deaths. By comparison, there were 13,511 confirmed or probable cases of the 2009 H1N1 from April 2009 to March 2010 with 1,320 hospitalized and 55 deaths for Wisconsin.

The next epidemic / pandemic situation may not be a "flu" but could be a developing "super bug" such as antibiotic resistant MRSA or some as yet unknown bacteria or virus.

Epidemic / Pandemic Vulnerability Assessment

Most communicable diseases are dealt with through traditional health department activities. The complexity and magnitude of a Pandemic Influenza outbreak would tax the normal capabilities of the medical service community and the Emergency Management Department would assist in all activities surrounding an event of this severity.

The possibility of a communicable disease epidemic or pandemic outbreak is equal across the County, but the ability to predict where and when an event will occur is very difficult. As COVID-19 has demonstrated, even an isolated little county in central Wisconsin cannot avoid the impacts of a global pandemic. Although Juneau County's overall case rate was slightly higher than the state average (35,436 per 100,000 versus 34,599), the COVID death rate in the County was about the same (285 per 100,000 versus 283).

Future Probability and Potential Dollar Losses – Epidemic / Pandemic

Post COVID-19 the future probability of a communicable disease / pandemic outbreak is difficult to determine. The probability would appear low, but the threat exists, and the impact of a widespread event is very severe as displayed by the effects of COVID-19. Significant economic disruption can occur due to loss of employee work time and costs of treating or preventing spread of the pathogen.

The probability of an outbreak might be calculated across a hundred year period. Based on the four major events identified here, the likelihood of an event occurring in any given year would be 4%.

The effect of climate change on epidemics or pandemics is unknown at this time.

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 Juneau County and the local units of government within the county 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 Juneau County All Hazards Mitigation Plan Update will discuss the following factors in establishing the multi-jurisdictional mitigation strategies:

- Benchmark Progress of Previous Plan from 2018 to 2023
- Review of Mitigation Goals
- Prioritize Identified Mitigation Strategies
- Establish Mitigation Action Plan

PROGRESS REPORT 2018 - 2023

Table 17 identifies the completed, removed/combined or deferred mitigation actions from the previous update in 2018. 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 previous 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 "completed" and will not appear in the updated action plan. In some cases, an incomplete action is not selected for various reasons (noted) and is shown as deleted or removed. 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 Juneau County and the local jurisdictions that participated in the Plan Update.

TABLE 17 BENCHMARK FOR PROGRESS 2018 - 2023			
<i>2018 Plan Measure</i>	<i>Progress Report</i>	<i>Original Status</i>	<i>New Status</i>
Acquire, raze, relocate or flood-proof at-risk structures.	In Elroy, Mauston and Wonewoc residences and businesses have been floodproofed or removed/relocated. Some projects currently in progress.	2018 to 2022 (1)	On-going (15)
Provide better warning of impending flood events.	Various mechanisms in place. Not currently on radar as issue.	2018 to 2022 (2)	Removed (-)
Educate and inform the public on flood hazards.	On-going flood awareness efforts by County depts. County staff attends various local meetings and interact with local officials during flooding and high water incidents. Information disseminated through web site and social media.	Annually, 2018 to 2022 (3)	Annually (Flood Awareness Week) (17)
Educate the public on flood proofing measures.	On-going component of flood awareness effort. Combined with related item above.	Annually, 2018 to 2022 (4)	Combined (17)
Review department responsibilities during a flood event and hold periodic training and exercises.	EM, Sheriff, Highway Health and other Departments all work closely with regular preparedness efforts.	Annually, 2018 to 2022 (5)	Annually (18)
Conduct regular dam and berm inspections.	On-going dam inspection well established by responsible entities such as power company, refuge, city/village, etc.	Annually, 2018 to 2022 (6)	Removed (-)
Develop a county-wide culvert maintenance program.	County has regular culvert maintenance program. Local (city/village/town) culvert improvements are needed.	2019 to 2020 (7)	On-going (19)
Require stormwater catch basins in areas of new development.	Municipalities continue to install detention ponds where needed to alleviate flooding. See Recommendation 27.	2018 to 2022 (8)	Removed (-)
Collect and maintain more accurate flood damage data.	Not seen as part of mission at this time. Removed to focus on other priorities.	2018 to 2022 (9)	Removed (-)
Annually review emergency response procedures.	Seen as an area for additional focus. Coordination between county, cities, villages and towns. Some municipalities may still need to establish written response procedures and responsibilities or update existing.	Annually, 2018 to 2022 (10)	Annually (20)
County/City/Village continued compliance in the NFIP.	On-going compliance in most municipalities.	2018 to 2022 (11)	On-going (21)
Review county & local storm water and erosion management plans.	Needs attention. Some municipalities have been actively working on stormwater management. County Land & Water Resources works on erosion control.	Annually, 2018 to 2022 (12)	Annually (22)
Conduct comprehensive Flood Study of northern Juneau and southern Wood Counties.	Study is completed pending issuance of final report. Next phase is implementation. Outcomes of this study will need to be reviewed and addressed.	2018 (13)	Completed / Move to Implement (23)
Conduct Lake Study of Lemonweir Flowage in Mauston.	No progress to date. Not seen as a priority moving forward.	2019 (14)	Removed (-)
Elevate CTH N and improve rail bridge to protect alternate crossing if Hwy 58 bridge becomes impassable	No progress to date. Funding issue. Limited access north of river remains a potential issue.	2019 to 2022 (15)	2028 (26)
Continue installation of detention ponds to alleviate flooding where appropriate.	Municipalities continue to install detention ponds where needed to alleviate flooding. New locations for basins to reduce flood impacts are expected to be identified.	2018 to 2022 (16)	On-going (27)
Elevate CTHs FF and G to alleviate flooding and prevent cutting off access to community.	Current village officials were not aware of this project idea and did not feel it was warranted at this time. Reconsider in future.	2019 to 2022 (17)	Removed (-)

Table 17 Continued			
2018 Plan Measure	Progress Report	Original Status	New Status
Install floodwall along West Street.	Current village officials were not aware of this project idea and did not feel it was warranted at this time. Reconsider in future.	2018 to 2022 (18)	Removed (-)
Install flood walls to protect wastewater treatment plant and substation.	Engineering analysis and design in progress. Next step is construction.	2018 to 2022 (19)	2025 (30)
Maintain and replace (as necessary) aging sirens and control systems and expand coverage into new areas.	Some municipalities have upgraded their sirens and added sirens for wider coverage, but others are still in need.	2018 to 2022 (20)	As needed (31)
Promote and expand NOAA weather radio distribution to the public.	Program began in 2009. EM assists public in programming radios as requested. New funding needed to distribute more radios.	2019 to 2022 (21)	On-going (32)
Promote tornado and severe storm awareness.	Info provided on County website & Facebook. Regular Storm Spotter training w/NOAA. Annual tornado drill.	Annually, 2018 to 2022 (22)	Annually (33)
Encourage the retrofitting of existing structures and construction of new structures to be more wind-resistant.	On-going component of tornado awareness effort. Combined with related item above.	2018 to 2022 (23)	Combined (33)
Develop a county-wide tree trimming program for low to moderate income homeowners.	No progress to date. Shift recommendation to address need in towns from mitigation survey.	2018 to 2019 (24)	On-going (34)
Identify mobile home parks in the county lacking public storm shelters and encourage construction of these facilities.	Current EM would like to address this issue further. Lack of funding is an issue in implementing this recommendation.	2018 to 2022 (25)	2028 (35)
Conduct information & education on new county shelter plan to address lack of info by agencies. Address issues & changing conditions.	Limited progress to date. Remains an area of on-going need.	2018 to 2022 (26)	On-going (36)
Work to convert overhead to under ground powerlines in key locations.	Area utilities, particularly local municipal utilities have worked to bury powerlines in the most critical areas. Still an area of need.	2018 to 2022 (27)	On-going (37)
Broadcast weather info to the traveling public when inclement weather strikes.	On-going component of winter weather awareness effort. Combined with related item below.	As needed 2018 to 2022 (28)	Combined (38)
Promote winter hazard awareness.	Information provided on County website & Facebook page.	Annually 2018 to 2022 (29)	Annually (38)
Annually review various department winter storm and cold responsibilities.	EM, Sheriff, Highway Health and other Departments all work closely with regular preparedness efforts.	Annually 2018 to 2022 (30)	Annually (39)
Develop a program of sheltering travelers and residents displaced by a winter storm event.	County ADRC building has been used in the past to shelter travelers. Local churches have also opened to assist stranded travelers during snow storms. Need to coordinate with Red Cross, Salvation Army, Amtrak, etc.	2018 to 2021 (31)	2027 (40)
Fund a study of burying select overhead power lines susceptible to winter storms.	Utilities continue to work to bury lines in the most critical areas, independently on a case-by-case basis. Funding is an issue. Smaller, local utilities need financial assistance. Combined with related item above.	2018 to 2022 (32)	Combined (37)
Increase public awareness of the danger of severe heat.	Information provided on County website & Facebook page.	As needed 2018 to 2022 (33)	As needed (41)

Table 17 Continued			
2018 Plan Measure	Progress Report	Original Status	New Status
Assess the state of the county's water supply and develop a comprehensive county-wide water use plan.	No progress to date. Need efforts to begin to address potential drought threat.	2018 to 2022 (34)	2027 (42)
Conduct regular exercises dealing with the evacuation of people threatened by a HAZMAT release.	On-going: County EM organizes regular training and exercises.	Annually 2018 to 2022 (35)	On-going (43)
Implement recommendations within the Juneau Co. Hazardous Materials Commodity Flow Study.	Limited progress to date. Need to review regional commodity flow study and after action report from associated exercise.	2018 to 2022 (36)	On-going (44)
Test more homes and businesses for radon gas exposure.	On-going: County Health Dept. providing Radon Test Kits to the public.	2018 to 2022 (37)	On-going (45)
Continue to offer NIMS training to police, fire, EMS and other county and municipal personnel	NIMS training classes held periodically for emergency responders, public works, and other public officials.	2018 to 2022 (38)	On-going (46)
Review response procedures for ... mass casualty incidents.	EM, Sheriff, Highway Health and other Departments all work closely with regular preparedness efforts.	Annually 2018 to 2022 (39)	Annually (47)
Harden Mauston water towers against unauthorized access and potential contamination.	Fencing has been installed but further security measures including cameras has been recommended.	2018 to 2021 (40)	2026 (48)
Post designated fire evacuation routes in fire prone areas of the county.	Limited progress to date. Incorporate as an expected outcome and combined with fire protocol recommendation.	2019 to 2020 (41)	<i>Combined</i> (50)
Develop evacuation protocols for fast-moving fires.	No progress to date.	2019 to 2020 (42)	2025 (50)
Promote a county-wide education program aimed at adult's safe use of fire in debris disposal and teaching outdoor burning regulations.	Progress in some areas with wildfire protection planning.	2018 to 2022 (43)	Annually (51)
Educate fire inspectors on current fire prevention techniques and their employment in building construction.	On-going: Area Fire Inspectors attend code update training by Wisconsin Technical Colleges and the Department of Safety and Professional Services.	Annually 2018 to 2022 (44)	On-going (52)

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. These goals were established by the Mitigation Planning Team during the development of the Plan Update based on the goals outlined in the previous plan. These goals 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 Juneau County are as follows:

- Prepare and protect residents and visitors from all natural hazards.
- Protect the health, safety, and welfare of county residents and visitors, along with mitigating future loss of property from tornados.
- Protect the safety and property of residents from forest and wildfires.
- Maintain compliance with the National Flood Insurance Program and work to reduce flood risk throughout Juneau County and the Cities and Villages within the County.
- Eliminate the loss of life and reduce the risk of property damage in downstream areas that result from a dam failure.
- Create safety awareness in citizens and travelers of Juneau County to protect them during and after winter storm events or periods of extreme cold.
- Minimize the threat to human life and property damage caused by thunderstorms and associated hail, high wind and lightning.
- Minimize crop loss while maintaining water supplies during times of drought.
- Create safety awareness in citizens and travelers of Juneau County to protect them during periods of extreme heat.
- Protect people and natural resources from adverse effects of hazardous material incidents.
- Protect the health, safety, and welfare of county residents and visitors, along with mitigating future loss of property from mass casualty events.
- Improve County preparedness for handling and recovering from an epidemic/pandemic.

PRIORITIZATION OF STRATEGIES

The Plan Update Taskforce considered a number of factors in identifying 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 18.

Prioritization Factors for Juneau County Mitigation Strategies

<i>Strategy Prioritization Factor</i>	<i>Description of Factor Considerations</i>
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 Update 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 18.

MITIGATION ACTION PLAN

The mitigation strategies are organized by hazard. For each hazard, goals were 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 18.

HAZARD: MULTHAZARD

Goal:

Prepare and protect residents and visitors from all natural hazards.

Action 1:

Expand training and exercise programs to inform long-term planning for ICS, interagency coordination and communication and specialized needs/issues. Juneau County Emergency Management coordinates training and exercises on a variety of hazards. WEM has funding available for training and exercises.

The Juneau County Integrated Preparedness Plan (IPP) identified as a priority the need for planning, training and exercising to strengthen and improve coordination and cooperation in the preparation and response for hazard events. Limited resources of individual communities are a driving factor calling for governments, departments, agencies and other entities to work together, particularly in the case of an extraordinary event when facilities and resources are quickly overrun.

Incident command and contingency planning across agencies should include groups not typically involved despite being significantly impacted.

Government facilities can be quickly overwhelmed during a mass incident. An effort needs to be made through planning and exercises to determine how facilities should be responding to such incidents; including discussion about additional resources that may be needed/are available. Some of the issues training should address include:

- Providing care for populations with functional needs, including maintaining oxygen supply to those dependent, when an incident impairs operations or forces evacuation.
- Work on contingency plans related to what agencies can assist, where they might be needed and how they can assist in these critical areas.
- Address evacuation and sheltering issues/needs including lockdown protocols for facilities, vulnerable population needs, language barriers, short-and long- term housing.
- Develop event notification protocols for government and other facilities: jail, nursing homes, hospitals, event venues, etc.
- Address communications deficiencies: technology barriers often limit or prevent communication within and between communities, departments, and other agencies.

The National Incident Management System, NIMS, is a structure for management of large-scale or multi-jurisdictional incidents. NIMS was developed by the Department of Homeland Security in March 2004, as directed by Presidential Order. It is now required that all jurisdictions at the federal, state and local levels be NIMS compliant. NIMS provides a standardized approach to incident management and response. It establishes a uniform set of processes and procedures that emergency responders at all levels of government must use to conduct response operations. Through NIMS, responders at all levels are to work together more effectively and efficiently to manage domestic incidents no matter what the cause, size or complexity, including catastrophic acts of terrorism and disasters.

NIMS compliance involves the adoption and use of the Incident Command System (ICS), a plain language requirement, the inventorying and typing of resources, etc.

According to FEMA, the ICS is a management system designed to enable effective and efficient domestic incident management by integrating a combination of facilities, equipment, personnel, procedures, and communications operating within a common organizational structure. ICS is normally structured to facilitate activities in major functional areas including: command, operations, planning, logistics, intelligence & investigations, finance and administration. It is a fundamental form of management, with the purpose of enabling incident managers to identify the key concerns associated with the incident, often under urgent conditions, without sacrificing attention to any component of the command system.

Participating Jurisdictions for Action 1:

Lead agencies will be Juneau County Emergency Management to promote and coordinate training and the various cities, villages and towns. Jurisdictions participating in this action will include Juneau County, the Cities of Elroy, Mauston & New Lisbon, the Villages of Camp Douglas, Hustler, Lyndon Station, Necedah, Union Center & Wonewoc, and all Towns.

Action 2:

Local units of government within Juneau County should develop Continuity of Government (COG) Plans, also known as a Continuity of Operations Plans (COOP) to sustain government operations in case of a catastrophic event such as a natural disaster that severely disrupts government facilities. Other agencies and organizations that provide critical services should also engage in COOP development. COOP/COG was identified as a priority in the Juneau County Integrated Preparedness Plan (IPP).

The goal of COOP planning is to ensure that essential functions of an organization such as a government can continue to operate during and after an emergency incident which may prevent access to normally operating systems such as physical plant, data or communications networks, or transportation. This includes system and personnel redundancy, educating staff, backing up and securing critical data, and setting up remote access site(s) to continue operations in the event a particular building(s) becomes inaccessible.

Participating Jurisdictions for Action 2:

Lead agencies will be Juneau County Emergency Management and the various cities, villages and towns. Jurisdictions participating in this action will include Juneau County, the Cities of Elroy, Mauston & New Lisbon, the Villages of Camp Douglas, Hustler, Lyndon Station, Necedah, Union Center & Wonewoc, and all Towns.

Action 3:

Coordinate county and local unit emergency operations plans.

Each partner organization with Juneau County has their own operations plan that supports the personnel, equipment, and readiness for their organization. Juneau County Emergency Management goal is to find commonality in those operations plans and work towards a whole community approach to be reflected in the Juneau County Emergency Management Plan. Local municipalities should update their individual emergency operations plans and coordinate with Juneau County to support the community wide approach. Coordination of emergency management plans was identified as a priority in the Juneau County Integrated Preparedness Plan (IPP).

Participating Jurisdictions for Action 3:

Lead agencies will be Juneau County Emergency Management and the various cities, villages and towns. Jurisdictions participating in this action will include Juneau County, the Cities of Elroy, Mauston & New Lisbon, the Villages of Camp Douglas, Hustler, Lyndon Station, Necedah, Union Center & Wonewoc, and all Towns.

Action 4:

Develop “space weather” plan to address EMP / disruption of communications, power and other critical systems.

Electromagnetic pulse (EMP) and geomagnetic disturbance (GMD) events such as a solar flare pose a significant threat to critical infrastructure. Gaps exist in the hardening of this infrastructure, such as the power grid and communications systems, against these events.

The Juneau County Integrated Preparedness Plan (IPP) has identified as a priority the need to develop a Space Weather Plan with its partner communities to remain effective and operational, in the event of a bad Space Event day. This will also help standardize planning efforts and information dissemination as well as establishing direct points of contact from each organization. The U.S. Department of Homeland Security is conducting research and development to better understand the impacts of EMP/GMD and develop technologies and guidance to protect critical infrastructure. Currently, EMP best practices form a potential framework for EMP/GMD plan development, as follows:

- Assess System Vulnerability
- Determine EMP/GMD Protection Approach
 - Protected Equipment Enclosures
 - Protected Shelters
 - Protected Rooms or Buildings
- Identify External Dependencies
- Determine Requirements for Unattended and Attended Solutions
- Protect Points of Entry
- Develop Activation and Operational Procedures
- Conduct Regular Inspections, Maintenance, Training and Exercises

Participating Jurisdictions for Action 4:

Lead agencies will be Juneau County Emergency Management. Jurisdictions participating in this action will include Juneau County, the Cities of Elroy, Mauston & New Lisbon, the Villages of Camp Douglas, Hustler, Lyndon Station, Necedah, Union Center & Wonewoc, and all Towns.

Action 5:

Develop and maintain a community Emergency Response Team (CERT).

Juneau County should develop a CERT team. Building a team provides an opportunity to leverage community “volunteers” to enhance and support the limited resources available for incident response and management. A CERT team provides some structure and focus for these volunteers. This helps in programming skills (CPR for example) and safety training to make community responders more effective and safer as they answer the call for help. It also provides a mechanism to provide lines of communication as well as to direct resources where needed during a situation. One example that frequently comes up during these discussions is the ability to better coordinate outreach and provide assistance to community elderly, disabled or otherwise dependent.

FEMA has a formal Community Emergency Response Team (CERT) program which educates volunteers about disaster preparedness for the hazards that may occur where they live. FEMA provides training programs and resources to support local CERT efforts.

Participating Jurisdictions for Action 5:

Lead agency will be Juneau County Emergency Management. Juneau County would be the only directly participating jurisdiction.

Action 6:

Update and modernize the County Emergency Operations Center (EOC).

The existing EOC is dated and lacks functionality. Upgrading this facility would provide a better base of operation for incident command and enhance communications and data management.

Participating Jurisdictions for Action 6:

Lead agency will be Juneau County Emergency Management in conjunction with the Sheriff's Office. Juneau County would be the only directly participating jurisdiction.

Action 7:

Obtain new mobile incident command truck to replace aging unit.

The existing mobile command center vehicle is aging and requires increasing maintenance and upkeep. Mobile incident command is vital to emergency response in remote, rural areas of Juneau County due to its size and geography. A mobile unit is also a key element of a continuity of operations plan in the event the main EOC is inaccessible or disabled. The close proximity of the rail line to the primary EOC illustrates this concern.

Participating Jurisdictions for Action 7:

Lead agency will be Juneau County Emergency Management in conjunction with the Sheriff's Office. Juneau County would be the only directly participating jurisdiction.

Action 8:

Develop new local emergency operations center (EOC) with back-up power at City of Elroy.

At the mitigation planning meeting with the City of Elroy, the City identified the need for a local EOC. Due to its remote nature and distance from other facilities are key factors underlying this need. In addition, the potential for access to the City to be cut off by a severe weather event such as major flooding is also a concern.

Participating Jurisdictions for Action 8:

Lead agency will be City of Elroy. The City of Elroy would be the only directly participating jurisdiction.

Action 9:

Develop Community Centers with internal structure rated for high wind/tornado shelter at County Fairgrounds and Necedah High School.

In order to address the need for emergency shelter across the county, Emergency Management has developed proposals for community center multi-purpose rooms at the County Fairgrounds in Mauston and the Necedah High School in Necedah which would also serve as emergency storm shelters. The designs include internal structure rated for tornado and high winds. The County is seeking grant funding to implement these projects.

Participating Jurisdictions for Action 9:

Lead agency will be Juneau County Emergency Management. Juneau County will be the only directly participating jurisdiction.

Action 10:

Install in-building amplifiers for public safety radios at select critical facilities.

Reliability and reception of public safety portable radio sets can be limited under the new narrow banding operations. Large or heavy-duty constructed facilities can impede communications of emergency responders. To address this problem, Emergency Management has developed a proposal to acquire and install in-building amplifiers for key facilities around the county. The County is seeking grant funding to implement this project.

Participating Jurisdictions for Action 10:

Lead agency will be Juneau County Emergency Management. Juneau County will be the only directly participating jurisdiction.

Action 11:

Develop technology-based systems to connect short-term rental visitors with local emergency information.

It can be difficult to reach everyone with early warning notifications and emergency information. This is one reason why Juneau County employs a number of different systems including warning sirens and Code Red. However, these systems are generally geared towards local residents. With the surge in the short-term rental market, there can be large numbers of visitors staying within the County that are not familiar with local resources and information sources. Often, these facilities have no on-site staff to guide guests if a situation develops. This problem was identified and discussed at the interagency meeting for this plan.

It was determined that technology-based solutions be explored to try and address the problem. One promising idea generated during the meeting was the development of a “QR” code system that could be scanned with a smart phone to link the short-term guest(s) with vital information. The QR-code would be imprinted on a plaque and hard mounted near the entry to the building. The guest would observe the plaque on entering and know to scan the code for emergency situation information.

Participating Jurisdictions for Action 11:

Lead agency will be Juneau County Economic Development in conjunction with Emergency Management. Juneau County will be the only directly participating jurisdiction.

Action 12:

Install back up power generators at critical facilities.

There should be a countywide effort to ensure backup power systems are operational and implement backup power systems if they do not exist at all critical facilities. Critical facilities need operational power for communications, heating/cooling, water and sewer, refrigeration of food supplies and medicines, etc. to function effectively. Generators can be used for back-up power at critical facilities. The need for back-up generators in the event of a power outage at each facility should be examined. Back-up power systems need to be maintained to ensure operation in time of need.

Specific needs for power generators identified during the local planning meetings for this plan include Village of Necedah and City of Elroy. The Village of Necedah has determined it needs a larger back-up generator at its municipal center to adequately maintain operations during a power outage. The municipal center houses the village hall, the Necedah Town Hall and Necedah Fire & Rescue. In addition, the village’s lift stations do not have dedicated back-up power to keep the sewerage system operating in a power outage. Back-up power generators should be installed at the Necedah lift stations. The City of Elroy identified the need for a back-up generator at the fire station which would also be able to provide power to a local EOC to be established within the fire station facility.

Participating Jurisdictions for Action 12:

Lead agencies will be Village of Necedah and City of Elroy. Participating jurisdictions will include: Necedah, Elroy and other municipalities as needed.

Action 13:

Install local radio repeater to reinforce emergency communications in Necedah area.

Communities within Juneau County utilize a county-wide tower network for their public safety communications. As a county-wide system there are gaps in signal strength and coverage in some areas compounded by narrow banding.

To improve local area communications, it is recommended that the Village of Necedah install a local radio repeater. This will reinforce emergency communications in the Necedah area and enhance interoperability between police, fire, EMS and public works as well as between the two governments: the village and the town.

Participating Jurisdictions for Action 13:

Lead agencies will be Village of Necedah. Participating jurisdictions will include: the Village of Necedah and the Town of Necedah.

Action 14:

Identify areas needing storm/safety shelters and construct new shelter facilities or upgrade existing facilities for shelter purposes including emergency power where appropriate.

Shelter concerns were identified during the development of this All-Hazards Plan Update. One issue with shelters may stem from lack of knowledge regarding existence of shelters and procedures for use. Public informational efforts are recommended. The local American Red Cross chapter and Salvation Army are potential partners in designating and outfitting shelters and should be brought into the discussions.

Shelters vary by type and function. The purpose 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. One potential problem includes the availability of personnel willing to assume the responsibility of manning the sites along with the overall liability of maintaining such sites.

A community building (or buildings) often looked to is the local school. However, it is important to remember that school buildings can sustain significant damage or be destroyed as well. Officials should evaluate the most appropriate use for school

buildings to meet the community's sheltering needs. Agreements would have to be put in place between the school district and the community / disaster relief agency. Schools often have a variety of useful resources that should be evaluated when planning for shelters, such as large prep kitchens and cold storage facilities. A recent trend in Wisconsin involves collaboration between local municipalities and school districts to supplement a school construction project with FEMA hazard mitigation grant funds to build part of the facility, such as the gymnasium, into a community tornado shelter.

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. Many patients will need to be moved in a timely fashion due to medical issues. Nursing homes should be prepared in advance with transportation and shelter options to handle their residents. Some nursing homes may not know what to do with their residents if their building is extensively damaged.

School District participation identified the need for shelter facilities on the campus of the Necedah Area School District. It is recommended that construction of a new transportation services building/bus garage on the school campus be designed to also serve as an emergency shelter. This facility would provide storm shelter for the school/community in the case of a severe storm/tornado or in the event of wildfires that cause an evacuation or displacement of children/families or community.

The Town Mitigation Planning Survey for this plan explored sheltering needs. A number of towns indicated needs for emergency shelters and potential host locations, including: Town of Clearfield (improve town hall for sheltering purposes), Town of Cutler (possibly near Eagle's Nest Resort), Town of Germantown (shelter needs for a number of areas including Castle Rock Park, Buckhorn Park, Summer Hideaway, Buckhorn Acres Mobile Home Park), Town of Kildare (incorporate storm shelter in plans for new town hall/community center) and Town of Marion (tornado shelter near town hall). The City of New Lisbon also identified the need for emergency shelter, possibly at city hall, the fire station and/or the public library.

Participating Jurisdictions for Action 14:

Lead agencies will be the Town of Clearfield, Cutler, Germantown, Kildare and Marion, the Necedah Area School District, the Village of Necedah and the City of New Lisbon. Participating jurisdictions will include: Clearfield, Cutler,

Germantown, Kildare, Marion, Necedah, New Lisbon and the Necedah Area School District.

HAZARD: FLOODING / DAM FAILURE

Goals:

Maintain compliance with the National Flood Insurance Program and work to reduce flood risk throughout Juneau County and the Cities and Villages within the County.

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

Note: Actions denoted with an asterisk (*) relate to compliance with the National Flood Insurance Program (NFIP).

Action 15*:

Acquire, raze, relocate or flood-proof at-risk structures. 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.

Most of Juneau County’s reported flooding problems stem from storm water runoff. Few, if any, problems have been reported from within the federally designated floodplain in the county. Many of the structures identified as being within the floodplain are elevated above the regional flood level. According to FEMA accounting, there are only 250 structures that may be affected. About 200 of these structures are residential and 50 are other structures. To comply with NFIP, acquisition and razing on a voluntary basis should be considered when flood damage does occur and grant funding becomes available. Where not feasible or cost-effective, other flood proofing measures should be considered. Examples of the application of this recommendation can be seen following the significant flooding events in 2008 and 2018. Properties in Elroy, Mauston and Wonewoc that experienced notable flooding were removed/relocated or flood proofed including residential, commercial and public/utility facilities. Costs involved depend on the structures and their location.

Participating Jurisdictions for Action 15:

Lead agencies will be towns and municipalities with at-risk structures, including but not limited to Elroy, Mauston, Necedah, Union Center and Wonewoc. Other jurisdictions, such as Juneau County, may participate in this recommendation if their structures / facilities become subject to concern over repetitive flooding.

Action 16:

Clean and maintain overflow ditches and levys to relieve stress on dam in Village of Necedah. This recommendation was identified during the mitigation planning meeting for this plan with the Village of Necedah.

Participating Jurisdictions for Action 16:

Lead agency will be the Village of Necedah. The Village of Necedah would be the only directly participating jurisdiction.

Action 17:

Educate and inform the public on flood hazards and flood proofing measures.

Due to the intermittent nature of flood events many people continue to be unaware or downplay the potential danger of flood damage. Years may pass without the occurrence of a major flood event and the collective memories of the population fade as people come and go. New development in itself may not cause new flood conditions but may alter existing drainage patterns adversely. Few people understand how flood warnings and rainfall reports that suggest the potential for a flood event relate to their own property. Juneau County Emergency Management should publicize the potential for flooding on an annual basis. Flyers, advertisements and Public Service Announcements would incur an estimated \$500, annually.

Public awareness of flood proofing measures available is low. Some flood damage is preventable. Much of the flood damage experienced by homeowners during significant flood events in the County could have been avoided with proper drain tiling, sump pumps and landscape design. Also, only about 1% of residences in Juneau County are likely to be covered by flood insurance. Flood insurance is only available through the National Flood Insurance Program. Homeowners are unaware that flooding is often not covered by their insurance policy.

Public education materials and maps should be produced and brought together from Juneau County Emergency Management, Juneau County Land Information Service, Wisconsin Department of Natural Resources and other sources, working with area municipalities, to form a “library” of flood protection resources. Property owners should be encouraged to act to reduce their vulnerability to flood damage.

Participating Jurisdictions for Action 17:

Lead agencies will be Juneau County Emergency Management and Health Department. Participating jurisdictions will include: Juneau County, the Cities of Elroy, Mauston & New Lisbon, the Villages Hustler, Lyndon Station, Necedah, Union Center & Wonewoc, and all Towns with flood-prone areas.

Action 18:

Review department responsibilities during a flood event and hold periodic training and exercises.

Departments that have emergency duties need to understand their roles and responsibilities during flood events and other emergencies. Departments may be unprepared if they have not developed and regularly reviewed their emergency action plans. Specifically, they may be inadequately prepared to respond to a flood event.

An annual review of department roles and responsibilities during flood events should be conducted as a part of the Juneau County Emergency Action Plan. Juneau County Emergency Management will encourage and assist in the implementation of tabletop exercises with various county departments and municipal agencies that have flood response responsibilities. Costs for preparing and conducting these exercises would be roughly \$5000.00 with funding through existing budgets and possible WEM training grants.

Participating Jurisdictions for Action 18:

Lead agency will be Juneau County Emergency Management. Participating jurisdictions will include: Juneau County (appropriate departments), the Cities of Elroy, Mauston & New Lisbon, the Villages of Camp Douglas, Hustler, Lyndon Station, Necedah, Union Center & Wonewoc, and all Towns.

Action 19:

Culvert improvements / replacements including increase size to alleviate drainage issues where appropriate.



Washout Damage

This issue was identified by a number of towns in the mitigation issues survey for this plan update, including Clearfield, Finley, Lisbon, Lemonweir, and Lyndon. This recommendation would also apply to other towns as needed.

Participating Jurisdictions for Action 19:

Lead agencies will be the Towns of Clearfield, Finley, Lisbon, Lemonweir, and Lyndon. Participating jurisdictions will include: Clearfield, Finley, Lisbon, Lemonweir, Lyndon and other towns as needed.

Action 20:

Annually review emergency response procedures for flooding and dam failure events.

The Juneau County Sheriff's Department is the lead response agency during a flood event. The Department has an adequate plan of response to respond to the event, but not all of the officers have had experience or training in responding to a flood event. In addition, the Sheriff's Department emergency response plan includes a means of coordinating their efforts with other departments and agencies in dealing with a flood event, but training and exercising of these response plans

is irregular. This may lead to a lag in response to a flood event. The Sheriff's Department should review emergency response plans on an annual basis with their road officers and include this review as a part of their annual training.

In addition, Juneau County Emergency Management may want to work with other County departments having a role in flood response as well as local municipalities on training and exercising their response and coordinating with the Sheriff's response plan. Some municipalities may need to establish written response procedures and responsibilities or update existing.

Participating Jurisdictions for Action 20:

Lead agency will be Juneau County Emergency Management in coordination with the Sheriff's Department. Participating jurisdictions will include: Juneau County, the Cities of Elroy, Mauston & New Lisbon, the Villages of Camp Douglas, Hustler, Lyndon Station, Necedah, Union Center & Wonewoc, and all Towns.

Action 21*:

Juneau County, the Cities of Elroy, Mauston & New Lisbon, and the Villages of Hustler, Necedah, Union Center & Wonewoc will continue diligent enforcement of their floodplain zoning ordinances and maintain those ordinances through periodic updates as required to accommodate any changes to regulatory standards in conjunction with the Wisconsin Department of Natural Resources.

Juneau County, the Cities of Elroy, Mauston & New Lisbon, and the Villages of Hustler, Necedah, Union Center & Wonewoc are currently communities participating in good standing with the National Flood Insurance Program (NFIP). The County and these cities & villages should work to ensure continued compliance. Compliance primarily entails adopting and enforcing floodplain management regulations that meet minimum criteria. All towns are included under the umbrella of the County through the state mandated county shoreland zoning. These regulations will continue to apply to and be enforced for new and existing buildings and infrastructure.

The Village of Lyndon Station is not currently participating in the NFIP. The Village has withdrawn from the program but will reevaluate this situation in the future. This Plan recommends the Village of Lyndon Station take the necessary steps to come into compliance for participation in the NFIP. By not participating in the program, residents of the Village are not eligible for flood insurance and certain types of disaster aid in the event of a flood event. To enter the program, the Village would have to adopt a compliant floodplain zoning ordinance and the floodplain boundary map from FEMA by resolution and file forms with the WisDNR. Sample documents are available.

Participating Jurisdictions for Action 21:

Lead agencies will be Juneau County Emergency Management and Zoning. Participating jurisdictions will include: Juneau County, the Cities of Elroy, Mauston

& New Lisbon, and the Villages of Hustler, Lyndon Station, Necedah, Union Center & Wonewoc.

Action 22:

Review County and local storm water and erosion management plans.

The Juneau County erosion and storm water management plans should be reviewed annually and updated as necessary to include new development or new storm water management techniques that may be developed. Local municipal ordinances should be reviewed to insure compliance with the county plans.

Participating Jurisdictions for Action 22:

Lead agency will be Juneau County Emergency Management in coordination with the County Land and Water Resources Department. Participating jurisdictions will include: Juneau County, the Cities of Elroy, Mauston & New Lisbon, the Villages of Camp Douglas, Hustler, Lyndon Station, Necedah, Union Center & Wonewoc, and all Towns.

Action 23:

Coordinate implementation of recommendations from COE Comprehensive Flood Study of northern Juneau and southern Wood counties.

The northern part of Juneau County and southern part of Wood County annually have a flooding issue every spring as a result of rain events and snow melt coming down from northern Wisconsin. The flooding appears to be worsening over time. This affects both the Yellow and Wisconsin Rivers. The situation is complicated by the dam on the Yellow River and two tributaries, Cranberry Creek and Hemlock Creek, flowing into the Yellow River. Both areas are part of a large drainage/watershed district and flood plain including a federal wildlife refuge, that are affected by silt, downed trees and other debris in the river. Both Cranberry and Hemlock Creeks are affected by water released by the many cranberry growers in the area. There are a number of other potentially contributing factors: increased agricultural use, timber harvesting, road infrastructure changes, and defunct drainage districts. On-going flooding issues have affected residents of 10 to 15 municipalities.

The Juneau County Board of Supervisors and area municipalities are calling for a comprehensive study of the flood plain, which will identify these areas and others that can be addressed to alleviate the increasing flooding problem in northern Juneau and southern Wood Counties. Assistance has been requested from the US Army Corps of Engineers. At the time of this writing, the Corps study was nearing completion with a final report pending. The recommendations of that study are hereby incorporated in this Juneau County All Hazards Mitigation Plan Update, by reference.

Participating Jurisdictions for Action 23:

Lead agencies will be Juneau County Emergency Management & Land and Water Resources Departments in coordination with the US Army Corps of Engineers. Participating jurisdictions will include: Juneau County, Wood County and the affected cities, villages and towns.

Action 24:

Undertake studies of flood inundation areas around the County to determine what can be done to mitigate flooding and keep roads open.

Areas identified for study include sections along I 90/94 and US 12/16, the southwest corner of the County and other key areas such as Germantown. Funding is needed for a study or studies to coordinate the findings of the northern flood study with projects and management actions at the Necedah Refuge, City of Mauston, Town of Germantown, and others around the county.

Participating Jurisdictions for Action 24:

Lead agencies will be Juneau County Emergency Management & Land and Water Resources Departments in coordination with the US Army Corps of Engineers. Participating jurisdictions will include: Juneau County and affected cities, villages and towns.

Action 25:

Develop long-term action plan to implement recommendations from Juneau County's Flood Resilience Score Card report.

Juneau County has completed the Wisconsin Flood Resilience Scorecard. The Scorecard is a comprehensive, community-approach tool that can be used to evaluate flood vulnerabilities through 3 modules: environmental, institutional and social. Each module has five components. Components with scores under 70% indicate areas where action is needed. Juneau scored below the threshold for 10 of the 15 components, as follows:

- Module 1 – Environmental
 - Precipitation Patterns
 - Slope and Elevation
 - Land Use and Future Development
 - Soils
- Module 2 – Institutional
 - Resource Inventory and Mapping
 - Tools
 - Implementation and Enforcement
- Module 3 – Social
 - Transportation and Housing
 - Health Indicators
 - Community Partnerships

The County should organize a working group to review the recommendations for improving the scores in these areas and develop an action plan for the County. The goal of the action plan is to identify what steps can be taken to improve the overall flood resilience of the County.

Consider appropriate grants or other funding sources to implement tasks and projects from the action plan.

Participating Jurisdictions for Action 25:

Lead agency will be Juneau County EM to coordinate the action plan with appropriate county agencies and affected local municipalities. Participating jurisdictions would include: Juneau County, the Cities of Elroy, Mauston & New Lisbon, the Villages of Camp Douglas, Hustler, Lyndon Station, Necedah, Union Center & Wonewoc, and all Towns.

Action 26:

Elevate CTH N and improve the bridge near the rail crossing outside Mauston to protect alternate crossing if Highway 58 bridge becomes impassable.

State Highway 58 is the only crossing of the Lemonweir River within the City of Mauston. If this bridge were destroyed or otherwise left unpassable due to flooding or other hazard situation, it would severely hamper emergency response within the City and is a major area of concern for the City. Although circuitous and somewhat lengthy, County Highway N provides an alternate crossing of the Lemonweir River to maintain emergency response. However, County N is also subject to flooding. Elevating the highway and improving the bridge is recommended to ensure the ability to cross the Lemonweir River as needed in an emergency situation.

A more complex alternative recommendation would be to construct a new, second crossing of the Lemonweir River possibly somewhere along Water Street / Roosevelt Street. This would provide a faster route for emergency response, but the cost and environmental considerations with a new river crossing are daunting and beyond local capacity.

Participating Jurisdictions for Action 26:

Lead agency will be the City of Mauston in conjunction with the Juneau County Highway Department. Participating jurisdictions would include: the City of Mauston and Juneau County.

Action 27:

Continue installation of detention ponds to alleviate flooding where appropriate.

Some communities around the County such as Elroy and Mauston have been putting in storm water detention ponds to collect storm water runoff and reduce

flooding. Good results have been reported by these communities, and additional ponds are being planned.

Local municipalities should plan and install storm water catch basins where appropriate to help control storm water flooding problems. The County may be able to provide some assistance in this area by incorporating storm water catch basins into highway projects in areas of new or expanding development.

Participating Jurisdictions for Action 27:

Lead agencies will be towns and municipalities with at-risk structures, including but not limited to Elroy, Mauston, Necedah, Union Center and Wonewoc. Participating jurisdictions will include: Juneau County, the Cities of Elroy, Mauston & New Lisbon, the Villages of Camp Douglas, Hustler, Lyndon Station, Necedah, Union Center & Wonewoc, and all Towns with flood-prone areas.

Action 28:

Complete design and construction of Wastewater Treatment Plant (WWTP) upgrades including floodproofing and partial relocation out of floodplain to alleviate future flooding risk.

The Village of Wonewoc WWTP is located in the floodway and has experienced extreme flooding events. The collection system also has significant inflow and infiltration issues and in turn, is not able to handle the peak flows during heavy rain events. In 2018, the plant exceeded the design flow capacity five out of 12 months and experienced a treatment facility overflow. Upgrades and expansion include an extension of the aeration activated sludge system to a new site, and the conversion of the existing wet well to a new floodproofed pump station at the existing WWTP to pump the wastewater to the new site.

Participating Jurisdictions for Action 28:

Lead agency will be the Village of Wonewoc. The Village would be the only directly participating jurisdiction.

Action 29:

Upgrade storm sewer systems in the Village of Wonewoc.

Annual flooding conditions and concern over storm surge coming down the Baraboo River indicate a need to upgrade storm sewers to better handle excessive stormwater and help protect the downtown and other areas of the village from flooding.

Participating Jurisdictions for Action 29:

Lead agency will be the Village of Wonewoc. The Village would be the only directly participating jurisdiction.

Action 30:

Complete access and floodproofing project at the wastewater treatment plant in the City of Elroy.

The City WWTP is vulnerable to flooding and access can be cut off. The City is planning future improvements to the plant and needs to protect that investment. An engineering firm has been contracted to look at these improvements, and it has completed a study on the access and floodproofing needs.

Participating Jurisdictions for Action 30:

Lead agency will be the City of Elroy. The City would be the only directly participating jurisdiction.

HAZARD: SEVERE STORMS - TORNADO / HIGH WINDS/ LIGHTNING / HAIL**Goals:**

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

Minimize the threat to human life and property damage caused by thunderstorms and associated hail, high wind and lightning.

Action 31:

Maintain and replace (as necessary) aging sirens and control systems and expand coverage into new areas.

The outdoor warning system in Juneau County is comprised of a number of units at various locations. New control systems have been installed and can be remotely triggered by Juneau County Dispatch. Some municipalities, like Elroy and Necedah, have invested in new siren units, but others are aging and in need of replacement. The older units also require significant maintenance to keep them functioning properly. In addition, growth and development within the County has pushed beyond the existing umbrella of coverage in some areas of the County such as adjacent to Castle Rock and Petenwell Lakes. The City of Mauston has

Participating Jurisdictions for Action 31:

Lead agencies will be those communities with outdoor warning sirens in place. Participating jurisdictions will include: Juneau County, the Cities of Elroy, Mauston & New Lisbon, the Villages of Camp Douglas, Hustler, Lyndon Station, Necedah, Union Center & Wonewoc, and all Towns with warning sirens in place or in need of coverage.

Action 32:

Promote and expand NOAA weather radio distribution to the public.

Many small businesses and residences both in and out of the coverage area for the emergency warning sirens do not have access to broadcast weather warnings. Even though these people may have access to the Internet or television/radio announcements, these media devices may not be turned on. This puts these people at risk of severe weather.

It is not possible to notify everyone of an approaching storm. However, one innovation that is cost effective and can reach many people is the NOAA weather radio. Juneau County Emergency Management initiated a weather radio distribution program in the spring of 2009, offering a number of radios at cost to the public on a first-come-first-serve basis. The first number of radios sold out in a few hours. A few months later the program was repeated and met with equal success.

Juneau County Emergency Management should continue to offer this program at least once per year, possibly in conjunction with Tornado Awareness Week in the spring. Seed money of about \$3000.00 to purchase additional units through a commercial vendor would be returned upon their sale to the public, thereby having no net impact on the County budget.

Participating Jurisdictions for Action 32:

Lead agency will be Juneau County Emergency Management. Participating jurisdictions will include: Juneau County, the Cities of Elroy, Mauston & New Lisbon, the Villages of Camp Douglas, Hustler, Lyndon Station, Necedah, Union Center & Wonewoc, and all Towns.

Action 33:

Promote Tornado and severe storm awareness. This should include encouragement of retrofitting of existing structures and construction of new structures to be more wind-resistant through information and education.

Juneau County Emergency Management promotes tornado awareness every spring through various media such as the County website and Facebook, as well as participation in the state-wide tornado drill each year. Expanded efforts have been made to reach more people. This includes direct mailings, facility surveys and announcements in a variety of publications. Regular Storm Spotter training classes are sponsored in conjunction with the NOAA National Weather Service office. County department employees have had instruction in where to shelter in the event of a severe storm, and several of the county building's security systems have been reconfigured to sound a unique alarm sound for not only leaving the building (as for a fire) but also for sheltering in the basement (as in the approach of a tornado).

Juneau County Emergency Management should continue to promote tornado and severe storm awareness in order to maintain public knowledge of the threat of tornados and other severe weather and the appropriate safety measures. Building

construction techniques may be inadequate to withstand the stresses of severe weather and tornados. The State of Wisconsin has developed uniform building codes that Juneau County and local municipalities have adopted. The likelihood that additional measures specific to high wind or tornado resistance for new construction would be adopted is remote. Juneau County has many structures built before the development of these uniform building codes. Some of these structures could benefit from additional strengthening by means of approved techniques. One simple addition to the building code – the requirement of a designated “safe room” in new construction – could provide adequate protection for the occupants from a variety of hazards.

Juneau County should encourage, through information and education, the local real estate industry and construction contractors to (1) promote the retrofitting of some structures to be more wind-resistant and (2) to provide additional wind-resistance features to all new construction.

Participating Jurisdictions for Action 33:

Lead agency will be Juneau County Emergency Management. Participating jurisdictions will include: Juneau County, the Cities of Elroy, Mauston & New Lisbon, the Villages of Camp Douglas, Hustler, Lyndon Station, Necedah, Union Center & Wonewoc, and all Towns.



Straight-line Wind Damage, Armenia 2015

Action 34:

Increase trimming of branches/vegetation along road rights-of-way to reduce blockages of town roads during severe weather.

Due to their heavily wooded nature, a number of towns identified the need for increased trimming and removal of trees along town roads to reduce road blockages from downed trees, tree limbs and debris resulting from severe weather.

Participating Jurisdictions for Action 34:

Lead agencies will be Clearfield, Germantown, Kildare and Lemonweir. Participating jurisdictions will include: Clearfield, Germantown, Kildare, Lemonweir, and other towns as needed.

Action 35:

Identify mobile home parks in the County that are lacking public storm shelters and encourage construction of these facilities.

Most mobile home parks in the county lack adequate storm shelters for their residents. The New Lisbon tornado of 1985 demonstrated how lack of adequate shelter from tornados can cause devastation and loss of life. Residents there had

no place to take cover. Mobile home parks in the county should be surveyed for availability of adequate storm shelters. Plans for shelters in those parks lacking adequate shelter would be developed and funding sources for construction of these shelters be sought. Funding could be shared by park owners, rent fees from tenants, possible WEM, FEMA or HUD grants. Cost estimates range from \$100,000 to \$150,000 per shelter, depending on size requirements.

Participating Jurisdictions for Action 35:

Lead agency will be Juneau County Emergency Management. Participating jurisdictions will include: Juneau County, the Cities of Elroy, Mauston & New Lisbon, the Villages of Camp Douglas, Hustler, Lyndon Station, Necedah, Union Center & Wonewoc, and all Towns with mobile home parks or concentrations of mobile homes.

Action 36:

Conduct Information & Education campaign on countywide shelter plan to address lack of information by local agencies. Look for ways to address changing conditions and to address identified issues.

Local officials were not fully aware of Juneau County's Shelter Plan and the work the County has done to update County-wide sheltering information and establish shelters. An effort should be made to inform local officials about the existence of the plan, what the plan entails and how it relates to their area. These municipal officials should also be included in exercises and training related to the Shelter Plan. Some communities are working on establishing shelters within their jurisdictions and should be aware of what the County may have in place.

Shelter issues and concerns include:

- Evacuation and Transport
- Heating / Cooling
- Power Generation Needs
- Manning/Operations/Access
- Homeless
- Animal Evacuation
- Homes Without Basements
- Shelter Deficient Areas
- Possible New Shelter Facilities to Come On-line:

Future development / update of the Shelter Plan should include evaluation of these issues.

Participating Jurisdictions for Action 36:

Lead agency will be Juneau County Emergency Management in conjunction with the Health Department. Participating jurisdictions will include: Juneau County, the Cities of Elroy, Mauston & New Lisbon, the Villages of Camp Douglas, Hustler, Lyndon Station, Necedah, Union Center & Wonewoc, and all Towns.

Action 37:

Work to convert overhead to underground powerlines in key / critical locations.

Traditional overhead delivery of electrical power has been the most economical method of providing this service, particularly in rural areas. New developments have seen underground power lines run for aesthetic reasons and lower long-term maintenance costs. Although Alliant Energy, Oakdale Electric Cooperative and the local municipal utilities are diligent in their right-of-way maintenance, seasonal storms and power outages due to downed trees are an annual event in some areas.

Mitigation planning meetings revealed that there are areas which experience repeated downed power lines and outages in high windstorm conditions (as well as snow load or icing). Many of these areas are served by the local, municipal electric utilities in the County such as Elroy and New Lisbon. These small utilities don't have the resources to bury the overhead powerlines to reduce the risk of power outage. The respective utilities should work with their municipalities to identify critical sections of aerial power line which are vulnerable to downing for conversion to underground lines. Burying overhead power lines reduces the risk of power outage.

Participating Jurisdictions for Action 37:

Lead agencies would be Elroy, New Lisbon, or other municipality in conjunction with their local electric utility. Participating jurisdictions may include: Juneau County, the Cities of Elroy, Mauston & New Lisbon, the Villages of Camp Douglas, Hustler, Lyndon Station, Necedah, Union Center & Wonewoc, and all Towns with electric utilities or frequent power outages.

HAZARD: WINTER STORMS / EXTREME COLD**Goal:**

Create safety awareness in citizens and travelers of Juneau County to protect them during and after winter storm events or periods of extreme cold.

Action 38:

Promote winter hazard awareness.

Public awareness of the danger posed from heavy snow, ice or severe cold may be limited. Juneau County Emergency Management and the county's Highway Department promote winter hazard awareness before each season, similar in nature to tornado awareness in the spring. Although no major problems have been noted in the past, some citizens still suffer adversely from such problems as overexertion from snow shoveling or hypothermia due to exposure to the cold. Currently, the County is using its website and Facebook. Juneau County

Emergency Management should continue to work with the County Health Department and local municipalities to promote winter weather hazard awareness.

Participating Jurisdictions for Action 38:

Lead agency will be Juneau County Emergency Management in conjunction with the Health Department. Participating jurisdictions will include: Juneau County, the Cities of Elroy, Mauston & New Lisbon, the Villages of Camp Douglas, Hustler, Lyndon Station, Necedah, Union Center & Wonewoc, and all Towns.

Action 39:

Annually review various department winter storm and cold responsibilities.

Formal plans for a coordinated emergency response of public utilities and highway departments of the various municipalities in a winter weather event may be inadequate or not well understood. The County and all municipalities within the County have emergency response plans to deal with winter weather events. The degree to which these plans are implemented is dependent on the severity of the winter season. County departments and municipal agencies tasked with dealing with the various aspects of a winter weather event should annually review their responsibilities prior to the winter weather season. Juneau County Emergency Management could coordinate this effort with the municipal officials tasked with emergency response to a winter storm event, perhaps as a county-wide meeting. Mutual aid agreements could be reviewed and response strategies compared.

Participating Jurisdictions for Action 39:

Lead agency will be Juneau County Emergency Management. Participating jurisdictions will include: Juneau County, the Cities of Elroy, Mauston & New Lisbon, the Villages of Camp Douglas, Hustler, Lyndon Station, Necedah, Union Center & Wonewoc, and all Towns.

Action 40:

Develop a program for sheltering travelers and residents displaced by a winter storm event.

Juneau County does not have a program in place for assisting victims of winter storm events. This was made apparent during the winter storm of November 1985, when a severe snowstorm left 350 motorists stranded in Mauston. Cots and blankets were brought in from Ft. McCoy and emergency housing provided to these people in County facilities. Except for the event cited above, Juneau County has seen no general need for warming centers for the homeless or others stranded due to inclement winter weather. However, another significant winter storm event could occur that could displace travelers and residents unexpectedly. The high volume of travelers using the I90/94 corridor and the Amtrak passenger rail service through the County highlight this need.

Juneau County Emergency Management should develop memorandums of understanding with area hotels in the event of another winter weather event displacing travelers or residents. Because winter storm events are regional in nature, assistance from the Red Cross and Salvation Army may be late in coming and short in quantity. Though most displaced people would be able to meet their own costs, a fund should be set up to meet the needs of both resident and traveling poor.

As an extension of the County shelter plan, Juneau County Emergency Management should develop a program for sheltering travelers and residents displaced by a winter storm event. Regional volunteer service organizations active in the County might be able to play a role in assisting with this recommendation, including creation of a fund through donations.

Participating Jurisdictions for Action 40:

Lead agency will be Juneau County Emergency Management in conjunction with the Health Department. Juneau County would be the only directly participating jurisdiction.

HAZARD: DROUGHT / EXTREME HEAT

Goals:

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

Create safety awareness in citizens and travelers of Juneau County to protect them during periods of extreme heat.

Action 41:

Increase public awareness of the danger of severe heat.

Public awareness concerning the health dangers of high temperatures needs to be improved. Municipal fire services, law enforcement, public health and emergency management have all contributed to this effort through various public awareness programs.

Many county and municipal agencies have a knowledge base from which they can contribute in this education effort, for example:

- Law enforcement can remind motorists of the dangers to people and pets left in vehicles with inadequate ventilation in high temperatures.
- Fire services can provide guidance in safe ways to cool a structure, using air conditioning units or attic fans.
- The county agricultural extension agent can provide insight to agribusiness concerning keeping livestock cool and hydrated.
- Public health can provide public service announcements regarding healthy choices for people under heat stress.

Currently, the County is using its website and Facebook. Juneau County Emergency Management should continue to work with the County Health Department and local municipalities to promote severe heat hazard awareness.

Participating Jurisdictions for Action 41:

Lead agency will be Juneau County Emergency Management in conjunction with the Health Department. Participating jurisdictions will include: Juneau County, the Cities of Elroy, Mauston & New Lisbon, the Villages of Camp Douglas, Hustler, Lyndon Station, Necedah, Union Center & Wonewoc, and all Towns.

Action 42:

Assess the state of the County's water supply and develop a comprehensive county-wide water use plan.

As the County continues to develop, the strain on water resources and subsequent threat to life and property are unknown in the event of an extended drought. Municipal water supplies and rural wells have historically developed independently of each other. Well water rights are by law controlled by the property holder, whereas flowing water (i.e. navigable streams, rivers and lakes) are under the authority of the state and owned by everyone (or no one). Lakes and navigable waters are protected from commercial or agriculture use unless specifically permitted or in the event of an emergency declaration. Groundwater in central Wisconsin is plentiful, but the effects of continued development and long-term use of deep-water wells during an extended period of drought are undetermined.

A multi-agency approach is necessary to address this challenging problem:

- The Wisconsin Department of Natural Resources should provide an estimate of surface water and groundwater resources and provide an annual assessment of this resource to Juneau County Emergency Management.
- Municipal agencies should compile current water consumption rates and estimate future use rates over the next five years.
- The county agriculture extension service should conduct a similar survey of all farm operations practicing field irrigation.
- Juneau County Zoning should compile a list of private wells in the county and estimate their consumption rates.
- Juneau County land use planners should recognize the limits to growth in respect to water resources and incorporate these limits into their comprehensive plans.

Such a study would require the involvement of these and other agencies, as well as the cooperation of the municipalities within the County.

Participating Jurisdictions for Action 42:

Lead agency will be Juneau County Emergency Management in conjunction with the Land & Water Resources, County UW-Extension and Health Departments.

Participating jurisdictions will include: Juneau County, the Cities of Elroy, Mauston & New Lisbon, the Villages of Camp Douglas, Hustler, Lyndon Station, Necedah, Union Center & Wonewoc, and all Towns.

HAZARD: HAZARDOUS MATERIALS RELEASE

Goal:

Protect people and natural resources from adverse effects of hazardous material incidents.

Action 43:

Conduct regular exercises dealing with the evacuation of people threatened by a HAZMAT release.

Hazardous materials spills can occur with little or no warning. In the event of a hazardous plume, the event can rapidly cover a large area and involve multiple jurisdictions. In the past, Juneau County has conducted exercises covering a wide range of scenarios including chemical spill from a train derailment, ethanol plant, crude oil spill and others. Juneau County Emergency Management should continue conducting exercises dealing with the evacuation of people from areas of potential hazardous materials release. Exercises should include County Sheriff, municipal police, fire & EMS agencies and other emergency responders and local officials. Costs for preparing and conducting an exercise are roughly \$5000, with funding through existing budgets and possible mitigation grants.

Participating Jurisdictions for Action 43:

Lead agency will be Juneau County Emergency Management in conjunction with Sheriff's Department and local police, fire & EMS departments. Participating jurisdictions will include: Juneau County, the Cities of Elroy, Mauston & New Lisbon, the Villages of Camp Douglas, Hustler, Lyndon Station, Necedah, Union Center & Wonewoc, and all Towns.

Action 44:

Implement recommendations within the Regional Hazardous Materials Commodity Flow Study and After Action Report.

The County should coordinate implementation of the recommendations within the Regional Hazardous Materials Commodity Flow Study regarding precautions and planning to address the presence of "very dangerous materials" moving through Juneau County. The Study notes that the hazardous materials being transported through the through the region are an ever-changing mix of various materials. However, the majority of chemicals observed during the study being transported in the highest volumes include flammable liquids (hydrocarbons), propane and corrosives which are well known in the response community and are within the capabilities of most hazardous materials response teams. The high-hazard and

exotic chemicals that push the capabilities of response teams observed during the study are generally lower volume commodities, which keeps actual risk manageable.

The primary study recommendations are as follows:

- Emergency management agencies should review the report and use the data within to ensure that training, equipment, and capabilities align with the hazards present.
- Emergency management agencies should use the data in the report to continue to advocate for financial support in the form of grants and other reimbursement from regional, state, and federal sources to fund planning, preparedness, response, and recovery functions as they pertain to hazardous materials.
- Continue to advocate for hazardous materials awareness training for anyone tasked with responding to hazardous materials incidents. Fire-department-based hazmat teams possess this training. It is less common for other responders such as law enforcement, emergency medical services, and public works. Awareness training is readily available and inexpensive.
- Continue the regional approach taken with this study and extend it to a regional approach to response and training as appropriate. Local and county hazmat teams should not only know who their regional state hazmat team is and how to contact them, but also should strive to plan and train with them.

Participating Jurisdictions for Action 44:

Lead agency will be Juneau County Emergency Management. Participating jurisdictions will include: Juneau County, the Cities of Elroy, Mauston & New Lisbon, the Villages of Camp Douglas, Hustler, Lyndon Station, Necedah, Union Center & Wonewoc, and all Towns.

Action 45:

Test more homes and businesses for radon gas exposure.

Radon gas continues to be a threat to some homes in Juneau County. The dangers of radon gas, a naturally occurring radioactive gas that has been linked to cases of lung cancer, first became a real concern in the mid 1980's. In 1988, Congress passed the Indoor Radon Abatement Act to help curb exposure to this dangerous substance. Public health departments began distributing radon gas measuring kits to citizens concerned with this potentially deadly threat, especially to those living in older homes with cracks in basement floors and foundations. Of the 76.1 million existing single-family homes in the United States in 2005, only about 2.1 million (less than 3%) had radon-reducing features in place. According to the EPA's Office of Inspector General, this radon abatement program is not achieving desired results because:

- EPA’s ability to achieve results with a voluntary program is limited
- Potential loss of a sale represents a disincentive for real estate agents and sellers to conduct radon tests during real estate transactions
- Added expenses represent a disincentive for builders to use radon-resistant new construction.

An EPA map of Wisconsin radon zones indicates that up to 10% of the homes in Juneau County may have radon rates higher than the recommended acceptable levels. There is currently no legal mandate for public spaces or workplaces to be mitigated for radon gas. Mitigation for radon gas includes shielding newly constructed structures or providing whole-structure air exchange to release the gas to the outside.

The County Health Department currently has radon test kits available for sale to the public. Juneau County Emergency Management and the Health Department should invigorate their information campaign to get more homes and businesses in the county tested for radon gas exposure. Contractors and real estate developers should be encouraged to promote the positive aspects of radon testing and mitigation. Municipalities and towns should also participate in getting the information out to their residents.

Participating Jurisdictions for Action 45:

Lead agency will be Juneau County Emergency Management in conjunction with County Health Department. Participating jurisdictions will include: Juneau County, the Cities of Elroy, Mauston & New Lisbon, the Villages of Camp Douglas, Hustler, Lyndon Station, Necedah, Union Center & Wonewoc, and all Towns.

HAZARD: MASS CASUALTY INCIDENT

Goal:

Protect the health, safety, and welfare of county residents and visitors, along with mitigating future loss of property from mass casualty events.

Action 46:

Continue to offer NIMS training to police, fire, EMS and other County and municipal personnel.

The National Incident Management System, NIMS, is a structure for management of large-scale or multi-jurisdictional incidents. NIMS was developed by the Department of Homeland Security in March 2004, as directed by Presidential Order. It is now required that all jurisdictions at the federal, state and local levels be NIMS compliant. NIMS provides a standardized approach to incident management and response. It establishes a uniform set of processes and procedures that emergency responders at all levels of government must use to conduct response operations. Through NIMS, responders at all levels are to work

together more effectively and efficiently to manage domestic incidents no matter what the cause, size or complexity, including catastrophic acts of terrorism and disasters.

NIMS compliance involves the adoption and use of the Incident Command System (ICS). According to FEMA, the ICS is a management system designed to enable effective and efficient domestic incident management by integrating a combination of facilities, equipment, personnel, procedures, and communications operating within a common organizational structure. ICS is normally structured to facilitate activities in major functional areas including: command, operations, planning, logistics, intelligence & investigations, finance and administration. It is a fundamental form of management, with the purpose of enabling incident managers to identify the key concerns associated with the incident, often under urgent conditions, without sacrificing attention to any component of the command system.

Participating Jurisdictions for Action 46:

Lead agency will be Juneau County Emergency Management to coordinate training. Participating jurisdictions will include: Juneau County, the Cities of Elroy, Mauston & New Lisbon, the Villages of Camp Douglas, Hustler, Lyndon Station, Necedah, Union Center, Wonewoc & all Towns and their respective emergency responders (police, fire, EMS), public works and other county / local officials.

Action 47:

Review response procedures for events involving transportation accidents, pandemic, civil disorder, terrorism, or other potential mass casualty incidents.

Mass casualty incidents can occur with little or no warning. The burden of warning civilian populations at risk during an incident usually falls upon responding law enforcement agencies that also need to deal directly with the threat. Law enforcement agencies in Juneau County have little real experience dealing with widespread civil disorder or a significant terrorist incident. Actual experience has been limited to relatively minor transportation incidents, domestic violence and hostage situations.

Juneau County and its local units of government routinely develop and update plans and procedures for these types of events, and Juneau County Emergency Management periodically coordinates county-wide training and exercises. However, departments that have emergency duties need to understand their roles and responsibilities during mass casualty events and other emergencies, particularly with regard to coordination between various departments and agencies. Departments may be unprepared if they have not regularly reviewed their emergency action plans. Specifically, they may be inadequately prepared to respond to a mass casualty event.

An annual review of department roles and responsibilities during such events should be conducted. Juneau County Emergency Management could coordinate

this effort with the municipal officials tasked with emergency response to a mass casualty event, perhaps as a county-wide meeting. Mutual aid agreements could be reviewed and response strategies compared. Consideration should be given to standardizing notification procedures for the at-risk public during such events.

Participating Jurisdictions for Action 47:

Lead agency will be Juneau County Emergency Management to coordinate and encourage. Participating jurisdictions will include: Juneau County, the Cities of Elroy, Mauston & New Lisbon, the Villages of Camp Douglas, Hustler, Lyndon Station, Necedah, Union Center, Wonewoc & all Towns and their respective emergency responders (police, fire, EMS), public works and local officials.

Action 48:

Improve security (install cameras) at City of Mauston water towers against unauthorized access and potential contamination.

Currently, City of Mauston water towers have basic security measures (fencing, etc.) in place to prevent unauthorized access and possible tampering with the drinking water supply. The City has identified this as a major vulnerability concern. The City should harden security around its water towers to prevent unauthorized access and ensure the safety of its water supply from terrorism, vandalism or other act of civil disorder. It is recommended that the City install security cameras at its water tower locations to enhance monitoring and improve security.

Participating Jurisdictions for Action 48:

Lead agency will be City of Mauston. The City is would be the only directly participating jurisdiction.

HAZARD: WILDFIRE

Goal:

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

Action 49:

Obtain new equipment and training for local fire department (Necedah Fire), including new brush fire control truck.

The Village of Necedah and Necedah Fire & Rescue have identified a need to replace its aging brush fire truck in order to maintain its effectiveness in suppressing wildland fires in the surrounding rural area. The department also needs to update its basic fire fighting equipment and advance it firefighter training.

Participating Jurisdictions for Action 49:

Lead agencies will be the Village of Necedah and Necedah Fire & Rescue. The Village and Fire Department will be the only directly participating jurisdictions.

Action 50:

Develop evacuation protocols for fast-moving fires.

Contacting every household or business in the path of a wildfire takes time and personnel. Dozens of structures may lie in the path of a wind-driven fire. For emergency responders to check each structure and order an evacuation can be a time consuming and dangerous task.

Juneau County Emergency Management should work with other appropriate departments, local officials and emergency responders in the development and exercise of evacuation protocols to aid in the assistance of people in danger of a fast-moving wildfire. One element of these protocols could be the capacity to utilize the 911 telephone system to reverse call people in the projected path of a wildfire.

The rapidly changing dynamics of a situation such as this may benefit from the establishment of designated evacuation routes, especially in areas of the County prone to wildfires. Signage directing people from an area to be evacuated could be temporary, but permanent signage would be more efficient during the actual event.

Some areas of the County have already posted designated fire evacuation routes. Other areas prone to wildfire should be evaluated for evacuation routes and appropriate directional signage. Juneau County Highway Department and Wisconsin DOT involvement may be necessary where county or state roads make up part of the evacuation routes. Public outreach to familiarize residents with the signs and designated routes would also be beneficial.

Participating Jurisdictions for Action 50:

Lead agencies will be fire prone municipalities and their respective fire departments. Participating jurisdictions will include: the Towns of Armenia, Clearfield Cutler, Germantown, Kingston, Lyndon, Marion, Necedah and other fire-concern areas.

Action 51:

Promote a county-wide education program aimed at adults in the safe use of fire in debris disposal and teaching outdoor burning regulations.

Many wildfires are man-caused, accidental and preventable. Municipal fire departments in Juneau County make great efforts to educate the public in all aspects of fire safety. With the exception of annual fire inspections of public buildings and businesses in the County, the primary educational emphasis is aimed at children. Since many of the fires started in Juneau County are brush or debris fires ignited by adults, there appears to be a gap in adults understanding the need to use fire safely.

Juneau County Emergency Management could coordinate an education program involving all of the fire services in Juneau County, and that program would be aimed primarily at adults. Indoor fire safety issues such as smoke and carbon monoxide detectors and the safe use of charcoal grills would receive the same emphasis as in the past, but the following topics should also be presented:

- Outdoor burning regulations
- Safe burning of yard waste and debris
- Alternatives to burning
- What to take along in the event you need to evacuate your home (pills, pets and purses)

Some fire prone areas of the County have created Community Wildfire Protection Plans (CWPPs) such as the Northeast Juneau County CWPP prepared by the North Central Wisconsin Regional Planning Commission for the Towns of Armenia, Necedah, Germantown and the Village of Necedah. This recommendation should be incorporated into the public education and information sections of any new developed or updated CWPPs.

Participating Jurisdictions for Action 51:

Lead agency will be Juneau County Emergency Management to coordinate the effort. Participating jurisdictions will include: Juneau County, the Cities of Elroy, Mauston & New Lisbon, the Villages of Camp Douglas, Hustler, Lyndon Station, Necedah, Union Center, Wonewoc & all Towns and their respective local fire agencies.

Action 52:

Educate fire inspectors on current fire prevention techniques and their employment in building construction.

Development in Juneau County is outpacing the ability for municipal fire departments to inspect new structures for fire safety and compliance to regulations. Most municipal departments have a team of firefighters who conduct fire inspections in their jurisdictions. While structures are inspected, the land adjacent the structure is not regulated as to foliage setback or fire resistant landscape design. Developers, contractors and structure owners don't always consider the use of fire retardant roof and siding materials in new construction and renovation of older structures. Local municipal fire departments should develop checklists of recommended setbacks of foliage, fire resistant landscape design and fire retardant building materials for structures in areas at high risk of wild fire. Fire inspectors attend code updates and training provided by Wisconsin Technical Colleges and the Wisconsin Department of Safety and Professional Services.



Juneau County Firenado

Participating Jurisdictions for Action 52:

Lead agencies will be municipal fire departments. Participating jurisdictions will include: Juneau County, the Cities of Elroy, Mauston & New Lisbon, the Villages of Camp Douglas, Hustler, Lyndon Station, Necedah, Union Center, Wonewoc and all Towns.

HAZARD: EPIDEMIC / PANDEMIC**Goal:**

Improve County preparedness for handling and recovering from an epidemic/pandemic.

Action 53:

Develop a pandemic preparedness response and recovery plan based on lessons from the Covid-19 Pandemic. Integrate and optimize use of the Regional Health Care Coalition. Lessons or issues identified during the Covid Pandemic include, but are not limited to, the following:

- Funding for contact tracing
- Testing sites plan
- Vaccine distribution plan
- Mass vaccination plan
- Personal protective equipment stockpile
- Messaging and message consistency

Each jurisdiction should make its own pandemic preparedness plan that coordinates with the County and adjacent municipalities. This effort should address/include development of memorandums of understanding for intergovernmental coordination and cooperation for testing sites, vaccine distribution/mass vaccination, and supply/distribution of personal protective equipment. The process should include an information and education program to lay the groundwork regarding welfare of the community as a whole.

Participating Jurisdictions for Action 53:

Lead agency will be the Juneau County Health Department with Juneau County Emergency Management. Participating jurisdictions will include: Juneau County, the Cities of Elroy, Mauston & New Lisbon, the Villages of Camp Douglas, Hustler, Lyndon Station, Necedah, Union Center, Wonewoc and all Towns.

Action 54:

Work to implement the recommendations of the North Central Wisconsin Pandemic Assessment and Future Response Plan and the North Central Wisconsin Regional COVID-19 Recovery Plan. Both of these plans were prepared by the North Central Wisconsin Regional Planning Commission.

The purpose of the North Central Wisconsin Pandemic Assessment and Future Response Plan is to analyze various county and tribal response efforts related to the COVID-19 pandemic and to identify approaches to better address future pandemics. The overarching goal is to better prepare the region for future public health related disruptions.

The Regional Health Pandemic Assessment and Future Response Committee included a group of experts representing every county throughout the region. The committee included those directing county health departments and tribal health departments. In addition, coordinators from various agencies including those dealing with healthcare emergency readiness, seniors, persons with disabilities, and other specialty populations served on the committee. This group responded to a questionnaire and met virtually throughout the 2021 calendar year. During these meetings, the committee was able to analyze the response to the COVID-19 global pandemic and identify strengths and weaknesses. Through this process, recommendations were created to better respond to pandemics and similar health related disruptions in the future, as follows:

Recommendation 1: Meet Public Health Mission Objectives

1. Modernize and streamline data management and surveillance technology. Local public health relied on the state through the Wisconsin Electronic Disease Surveillance System (WEDSS). Managing this system was staff intensive. Infrastructural improvements are needed.
2. Continue to explore ways to improve metrics within rural communities.
3. Encourage specific state-level guidance related to recommendations for business, educational and municipal facilities best practices in real time during communicable disease threats.
4. Strengthen the department's collection and dissemination of information that connects determinants of health with health outcomes.

Recommendation 2: Build on Intergovernmental and Interagency Collaboration

1. Continue to forge robust partnerships among health agency department and staff.
2. Continue to improve and enhance internal and external communication.
3. Continue to investigate opportunities for horizontal collaboration (among local health departments) and vertical collaborations (at the federal, state, and local levels).
4. Continue create and enhance interagency partnerships to enhance local public health services.
5. Explore opportunities for larger public health departments to partner with smaller local health departments to share services, where and when this would allow a reduction in duplication and offer enhanced services to smaller departments.
6. Consider a regional approach to establish uniformity and consistency across county and tribal lines.

Recommendation 3: Advance Health Equity

1. Weave equity into all aspects of health planning and policy.
2. Engage interested members of the community to be trusted partners on health planning concepts.
3. Continue to engage and include stakeholders with a focus on equity into all regional and state initiatives. This could include community members and nontraditional partners associated with social determinants of health (SDOH) such as planners, law enforcement, schools, and community organizations.
4. Continue to prioritize health equity and meaningful community engagement.
5. Continue to ensure that outreach and educational efforts address social and structural determinants of health equities.

Recommendation 4: Invest in Public Health

1. Encourage federal and state investment in local public health foundational capabilities.
2. Encourage legislatures to actively protect public health authority at the state and local levels so that experts can continue to promote solutions that encourage economic growth, reduce inequities, and address chronic health conditions.
3. Increase per capita health funding in the State of Wisconsin.
4. Secure more sustained and flexible local public health funding.
5. Bolster recruitment and retention of employees to continue to attract and maintain a talented and diverse workforce.
6. Continue to provide those in leadership roles with training and resources they need to lead a strong and diversified public health department.
7. Explore dynamic staffing models that allow local health departments to expand staffing resources in response to communicable disease threats.

In the aftermath of disasters, the most important questions typically center around recovery, how to become less vulnerable to a disaster, and how to be better prepared to deal with a disaster event in the future. When attempting to find answers to these questions, it is clear that the COVID-19 pandemic has brought many issues and vulnerabilities to the forefront, as communities, businesses, residents, and the entire world-at large were not well-prepared to deal with the health emergencies and economic shocks that resulted from the pandemic.

The purpose of North Central Wisconsin Regional COVID-19 Recovery Plan is to guide economic stabilization, recovery, and resiliency efforts within the North Central Wisconsin Region in the face of the current pandemic as well as future events that cause economic shocks. The plan promotes activities that prevent, prepare for, and respond to the COVID-19 pandemic, and in particular, to the economic injury caused by the pandemic, within North Central Wisconsin.

The plan puts forth a set of strategies that will help the Region's local economies recover from and become more resilient to economic shocks by identifying best-

practices that help spur economic stabilization and recovery in the wake of economic shocks and that will help build local economic resilience. Helping local recovery and resiliency efforts will help the regional economy as a whole recover and grow back even stronger than before the disaster struck.

Participating Jurisdictions for Action 54:

Lead agency will be each respective jurisdiction. Participating jurisdictions will include: Juneau County, the Cities of Elroy, Mauston & New Lisbon, the Villages of Camp Douglas, Hustler, Lyndon Station, Necedah, Union Center, Wonewoc and all Towns.

TABLE 18 SUMMARY OF MITIGATION STRATEGIES JUNEAU COUNTY ALL HAZARDS MITIGATION PLAN UPDATE - 2024					
<i>Mitigation Action (See expanded description in Plan Text)</i>	<i>Responsible Units*</i>	<i>Existing & Potential Resources to Implement</i>	<i>Project** Timeframe</i>	<i>Cost Estimate</i>	<i>Priority Level</i>
MULTI-HAZARD					
1. Expand training/exercise programs to inform long-term planning for ICS, interagency coordination & communication and specialized needs/issues.	Juneau Co. Emergency Management and local municipalities	FEMA / WEM training grants, local budgets	2024-2026	\$5,000 / exercise	Medium
2. Develop continuity of government and continuation of operations plans to ensure essential services in case of a catastrophic event.	Juneau County and local municipalities	Local budgets	2024-2026	Costs to be determined	Medium
3. Coordinate county and local unit emergency operations plans.	Juneau Co. Emergency Management and local municipalities	Local budgets	2024-2026	Staff time	Medium
4. Develop “space weather” plan to address EMP / disruption of communications, power and other critical systems.	Juneau County Emergency Management	Local budgets	2024-2026	Costs to be determined	Medium
5. Develop and maintain a Community Emergency Response Team (CERT).	Juneau County Emergency Management	Local budgets	2027	Costs to be determined	Medium
6. Update and modernize County Emergency Operations Center (EOC).	Juneau Co. EM & Sheriff	Local budgets, PSAP grant program	2027	Costs to be determined	Medium
7. Obtain new mobile incident command truck to replace aging unit.	Juneau Co. EM & Sheriff	Local budgets	2028	Costs to be determined	Medium
8. Develop new local EOC with back-up power at City of Elroy.	City of Elroy	Local budgets, PSAP grant program	2028	Costs to be determined	Low
9. Develop Community Centers w/ internal structure rated for high wind/tornado shelter at County Fairgrounds & Necedah High School.	Juneau County Emergency Management	BRIC grants	2026	Costs to be determined	Medium
10. Install in-building amplifiers for public safety radios at select critical facilities.	Juneau County Emergency Management	BRIC grants	2027	Costs to be determined	Medium
11. Develop technology based systems to connect short-term rental visitors w/ local emergency information.	Juneau County Economic Development	Local budgets	2025	Costs to be determined	Low
12. Install back up power generators at critical facilities.	City of Elroy, Village of Necedah & others as needed	Local budgets, mitigation grants	2025	Costs to be determined	Medium

13. Install local radio repeater to reinforce emergency communications in Necedah area.	Village of Necedah	Local budgets	2028	Costs to be determined	High
14. Identify areas needing storm/safety shelters and construct new shelter facilities or upgrade existing facilities for shelter purposes including emergency power where appropriate.	Towns of Clearfield, Cutler, Finley, Germantown, Kildare, Marion, Village of Necedah, City of New Lisbon, Necedah Area School District & others as needed	CDBG Program, HMGP & BRIC grants, Local budgets	On-going	Costs to be determined	Medium
<i>Mitigation Strategy / Recommendation</i>	<i>Responsible Departments</i>	<i>Existing & Potential Resources to Implement</i>	<i>Project Timeframe</i>	<i>Cost Estimate</i>	<i>Priority Level</i>
HAZARD: FLOODING / DAM FAILURE					
15. Acquire, raze, relocate or flood-proof at-risk structures.***	Municipalities w/ at risk structures	FEMA Flood Mitigation Assistance, local budgets	On-going	Costs to be determined	Medium
16. Clean and maintain overflow ditches and levys to relieve stress on dam.	Village of Necedah	Local budgets	Annually	Costs to be determined	High
17. Educate and inform the public on flood hazards and flood proofing measures.	Juneau Co. EM & Health	Within existing budgets, WEM grant	Annually (Flood Awareness Week)	\$500 / yr	Medium
18. Review department responsibilities during a flood event and hold periodic training and exercises.	Juneau Co. Emergency Management	Within existing budgets, WEM training grants	Annually	\$5,000 / exercise	Medium
19. Culvert improvements / replacement including increase size to alleviate drainage issues.	Towns of Clearfield, Finley, Lisbon, Lemonweir, Lyndon, & others as needed	Within existing budgets - Local Road Aids, DOT Local Bridge Aids	On-going	Costs to be determined	High
20. Annually review emergency response procedures.	Juneau Co. EM & Sheriff	Within existing budgets	Annually	Staff time	Medium
21. County/City/Village continued enforcement of floodplain zoning ordinances and maintenance of ordinances with periodic update as required in coordination with DNR.***	Juneau Co. EM & Zoning, Elroy, Mauston, New Lisbon, Hustler, Lyndon Station, Necedah, Union Center & Wonewoc	Within existing budgets	On-going	Staff time	Medium
22. Review county & local storm water and erosion management plans.	Juneau Co. EM & Land and Water Resources	Within existing budgets	Annually	Staff time	Medium
23. Coordinate Implementation of Recommendations from COE Comprehensive Flood Study of northern Juneau and southern Wood counties.	Juneau Co. EM as Coordinator with Wood County, appropriate county agencies & affected local municipalities	Local budgets, Flood Mitigation Assistance, HMGP & BRIC grants	On-going	Costs to be determined	Medium

24. Undertake studies of flood inundation areas around the county to determine what can be done to mitigate flooding - keep roads open, etc.	Juneau Co. EM & affected local municipalities	FEMA Flood Mitigation Assistance, local budgets, possible US Army COE technical assistance	On-going	Costs to be determined	Medium
25. Develop long-term action plan to implement recommendations for Juneau County's Flood Resilience Score Card report.	Juneau Co. EM as Coordinator with appropriate county agencies & affected local municipalities	FEMA Flood Mitigation Assistance, BRIC, HMGP, local budgets	On-going	Costs to be determined	Medium
26. Elevate CTH N and improve rail bridge to protect alternate crossing if Hwy 58 bridge becomes impassable	City of Mauston	DOT STP-Rural / Local Bridge Aids	2028	Costs to be determined	Medium
27. Continue installation of detention ponds to alleviate flooding where appropriate.	City of Mauston / Flood-prone municipalities	Local budgets	On-going	Costs to be determined	Medium
28. Upgrade Wastewater Treatment Plant with floodproofing measures.	Village of Wonewoc	USDA Rural Development grant, Local budget	2026	\$3.4 million	Medium
29. Storm sewer upgrades.	Village of Wonewoc	USDA, CDBG, FEMA FMA/HMGP/R+BRIC, Local budget	2028	Costs to be determined	Medium
30. Complete access and floodproofing project at WWTP per engineering study.	City of Elroy	FEMA Flood Mitigation Assistance, Local budget	2025	Costs to be determined	Medium
<i>Mitigation Strategy / Recommendation</i>	<i>Responsible Departments</i>	<i>Existing & Potential Resources to Implement</i>	<i>Project Timeframe</i>	<i>Cost Estimate</i>	<i>Priority Level</i>
HAZARD: SEVERE STORMS - TORNADO / HIGH WIND / LIGHTNING / HAIL					
31. Maintain and replace (as necessary) aging sirens and control systems and expand coverage into new areas.	Juneau Co. EM, Elroy, Mauston, New Lisbon, Camp Douglas, Hustler, Lyndon Station, Necedah, Union Center & Wonewoc	Within existing budgets, WEM or FEMA grants	As needed	Costs to be determined	High
32. Promote and expand NOAA weather radio distribution to the public.	Juneau Co. Emergency Management	Mitigation grant (seed money), costs reclaimed through sales	On-going	\$3000	Medium
33. Promote tornado and severe storm awareness.	Juneau Co. Emergency Management	Within existing budgets	Annually:	Staff time	Medium
34. Increase trimming of branches/vegetation along road rights-of-way to reduce blockages of town roads.	Towns of Clearfield, Germantown, Lemonweir & others as needed	Local budgets	On-going	Costs to be determined	Medium
35. Identify mobile home parks in the county lacking public storm shelters and encourage construction of these facilities.	Juneau Co. Emergency Management	FEMA/WEM mitigation grants, possible HUD grant	2028	\$150,000 / shelter	Medium

36. Conduct Information & Education campaign on countywide shelter plan to address lack of information by local agencies. Look for ways to address changing conditions and to address identified issues:	Juneau Co. Emergency Management and Health	Within existing budgets	On-going	Staff time	Medium
37. Work to convert overhead to underground powerlines in key/critical locations.	Municipal electric utilities, Oakdale Electric & Alliant Energy	FEMA/WEM mitigation grants, utility providers	On-going	Costs to be determined	Medium
<i>Mitigation Strategy / Recommendation</i>	<i>Responsible Departments</i>	<i>Existing & Potential Resources to Implement</i>	<i>Project Timeframe</i>	<i>Cost Estimate</i>	<i>Priority Level</i>
HAZARD: WINTER STORM / SEVERE COLD					
38. Promote winter hazard awareness.	Juneau Co. EM & Health, Elroy, Mauston, New Lisbon, Camp Douglas, Hustler, Lyndon Station, Necedah, Union Center & Wonewoc	Within existing budgets	Annually	Staff time	Low
39. Annually review various department winter storm and cold responsibilities.	Juneau Co. Emergency Management	Within existing budgets	Annually	Staff time	Medium
40. Develop a program of sheltering travelers and residents displaced by a winter storm event.	Juneau Co. Emergency Management & Health	Create a fund from donations by local service organizations managed by Juneau Co. EM	2027	Costs to be determined	Medium
<i>Mitigation Strategy / Recommendation</i>	<i>Responsible Departments</i>	<i>Existing & Potential Resources to Implement</i>	<i>Project Timeframe</i>	<i>Cost Estimate</i>	<i>Priority Level</i>
HAZARD: DROUGHT / EXTREME HEAT					
41. Increase public awareness of the danger of severe heat.	Juneau Co. EM & Health, Elroy, Mauston, New Lisbon, Camp Douglas, Hustler, Lyndon Station, Necedah, Union Center & Wonewoc	Within existing budgets	As needed	Staff time	Low
42. Assess the state of the county's water supply and develop a comprehensive county-wide water use plan.	Juneau Co. Land & Water Resources, UW Extension & Health	Grant from WDNR	2027	Costs to be determined	Medium
<i>Mitigation Strategy / Recommendation</i>	<i>Responsible Departments</i>	<i>Existing & Potential Resources to Implement</i>	<i>Project Timeframe</i>	<i>Cost Estimate</i>	<i>Priority Level</i>
HAZARD: HAZARDOUS MATERIALS RELEASE					
43. Conduct regular exercises dealing with the evacuation of people	Juneau Co. EM, Elroy, Mauston, New Lisbon, Camp Douglas,	WEM training grants, HMEP and within existing budgets	On-going	\$5,000 / exercise	Medium

threatened by a HAZMAT release.	Hustler, Lyndon Station, Necedah, Union Center & Wonewoc				
44. Implement recommendations within the Regional Hazardous Materials Commodity Flow Study and After Action Report.	Juneau Co. Emergency Management	WEM / HMEP grants and within existing budgets	On-going	Staff time	Medium
45. Test more homes and businesses for radon gas exposure.	Juneau Co. EM & Health	Within existing budgets	On-going	Staff time; test kits	Medium
<i>Mitigation Strategy / Recommendation</i>	<i>Responsible Departments</i>	<i>Existing & Potential Resources to Implement</i>	<i>Project Timeframe</i>	<i>Cost Estimate</i>	<i>Priority Level</i>
HAZARD: MASS CASUALTY INCIDENT					
46. Continue to offer NIMS training to police, fire, EMS and other county and municipal personnel	Juneau Co. EM, Elroy, Mauston, New Lisbon, Camp Douglas, Hustler, Lyndon Station, Necedah, Union Center & Wonewoc	FEMA, WEM training grants, within existing budgets	On-going	Staff time	High
47. Review response procedures for events involving transportation accidents, civil disorder, terrorism, or other potential mass casualty incidents.	Juneau Co. Emergency Management	Within existing budgets	Annually	Staff time	Medium
48. Improve security (install cameras) at Mauston water towers against unauthorized access and potential contamination.	City of Mauston	Local budget	2026	Costs to be determined	Medium
<i>Mitigation Strategy / Recommendation</i>	<i>Responsible Departments</i>	<i>Existing & Potential Resources to Implement</i>	<i>Project Timeframe</i>	<i>Cost Estimate</i>	<i>Priority Level</i>
HAZARD: WILDFIRE					
49. Obtain new equipment and training for local fire department, including new brush fire control truck.	Necedah Fire	Assistance to Firefighters Grant, local budgets	2028	Costs to be determined	Medium
50. Develop evacuation protocols for wildfires.	Fire-prone municipalities	Within existing budgets	2025	Staff time	High
51. Promote a county-wide education program aimed at adults in the safe use of fire in debris disposal and teaching outdoor burning regulations.	Juneau Co. EM, Elroy, Mauston, New Lisbon, Camp Douglas, Hustler, Lyndon Station, Necedah, Union Center & Wonewoc	Within existing budgets	Annually	Staff time	Medium
52. Educate fire inspectors on current fire prevention techniques and their employment in building construction.	Municipal fire departments	Within existing budgets	On-going	Staff time	Medium

<i>Mitigation Strategy / Recommendation</i>	<i>Responsible Departments</i>	<i>Existing & Potential Resources to Implement</i>	<i>Project Timeframe</i>	<i>Cost Estimate</i>	<i>Priority Level</i>
HAZARD: EPIDEMIC / PANDEMIC					
53. Develop a pandemic preparedness plan based on lessons from the Covid-19 Pandemic.	County Health and EM Depts. / All Cities & Villages / Regional Health Coalition	Local budgets	2026	Staff time	Low
54. Work to implement recommendations of the North Central WI Pandemic Assessment & Future Response Plan and the North Central WI Regional COVID-19 Recovery Plan.	Juneau County, Elroy, Mauston, New Lisbon, Camp Douglas, Hustler, Lyndon Station, Necedah, Union Center & Wonewoc	Local budgets, EDA, USDA, CDBG, Mitigation and other programs	On-going	Costs to be determined	Low
*Specific roles of designated lead agencies varies by recommendation, see full report text for detail. Recommendations may apply to other jurisdictions/entities no shown in Table, see full report text for details.					
Actual project implementation subject to funding and staff availability. *Indicates NFIP compliance item.					

INTRODUCTION

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

PLAN UPDATE ADOPTION

The adoption of the Juneau 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 FEMA 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 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 Juneau 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, villages, towns) within Juneau 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 Juneau 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 links/copies to stakeholders. The County will also make the Plan Update available to the public by linking the report on the Internet.

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.

Community Disaster Resilience

There has been a growing movement in emergency management planning circles toward a "new" buzz word: resilience. There is a wide range of definitions for community resilience and what it entails, but in 2012 the National Academy of Sciences looked at the major federal agencies and independent organizations with work efforts related to resilience and determined that *"resilience is the ability to prepare and plan for, absorb, recover from, and more successfully adapt to adverse events. Enhanced resilience allows better anticipation of disasters and better planning to reduce disaster losses—rather than waiting for an event to occur and paying for it afterward."*

Many weather experts now expect severe weather events to become increasingly more frequent and intense. Recent events seem to corroborate this condition with multiple "short duration - high volume" rainfalls causing devastating flooding around the state in 2015, 2016, 2017 and 2018.

It is recommended that the County acknowledge these changing conditions and begin working toward an approach to incorporating a community resilience component into its planning and operations. County could coordinate with its cities and villages on resiliency efforts.

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.

The most applicable planning process outside of the mitigation plan are the local comprehensive plans for each community. The County's current comprehensive plan was completed in 2009. The 2009 Comprehensive Plan incorporated the original (2005) mitigation plan as outlined below. In addition, the current local comprehensive plans for the Cities and Villages within Juneau County also incorporated the hazard mitigation plan in a similar fashion as outlined below. Most of these municipal comprehensive plans incorporate the current (2018) mitigation plan update, including (with comp plan year): Camp Douglas (2024), Elroy (2021), Hustler (2019) Lyndon Station (2018), Necedah (2024) and New Lisbon (2020). The City of Mauston's current comprehensive plan was completed in 2016 and incorporated the first mitigation plan update (2010). The comprehensive plans for Wonewoc and Union Center are currently out of date being completed prior to 2005 and the original mitigation plan.

The NCWRPC, facilitator of the countywide hazard mitigation plan and updates, also assists with the county and local comprehensive plan updates and works to integrate both plans as part of its standard planning process.

The following outlines how the mitigation plan is incorporated into each of the nine elements of these county and local comprehensive plans:

- *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.

Continuing Incorporation of Mitigation Plan into Other Local Planning Mechanisms

To ensure that the countywide mitigation plan (previous/current/updates moving forward) will continue to be incorporated into other planning mechanisms, the NCWRPC works with county and local officials and staff to schedule comprehensive plan updates. Currently, plan updates are pending for the County, City of Mauston, Village of Lyndon Station, Village of Wonewoc and Village of Union Center. All of these updates have been identified for incorporation of the updated countywide All Hazards Mitigation Plan. County and Regional Planning Commission Staff will also work with county and local community planners to incorporate the mitigation plan into other future planning processes as appropriate.

JURISDICTION CAPABILITY ASSESSMENT

Juneau County, the Cities of Elroy, Mauston, New Lisbon and the Villages of Camp Douglas, Hustler, Lyndon Station, Necedah, Union Center and Wonewoc are all relatively small communities in rural Wisconsin with limited resources and funding. However, they each have some capacity to support mitigation strategies. This section describes the existing authorities, policies, programs, funding and resources that the County and the Cities and Villages have available to support hazard mitigation.

Each jurisdiction has some professional staff available to implement and manage mitigation programs, however, the smaller communities are more constrained. Most directly, Juneau County has an Emergency Management Director whose responsibilities include mitigation. Juneau County does not have a county administrator, so direction/coordination comes from department heads. A number of departments including Sheriff, Health, Highway Land & Water, Land Information and Zoning have expertise that can assist with mitigation. The Cities of Elroy and Mauston and the Villages of Necedah and Wonewoc each have professional administrators while Camp Douglas, Hustler, Lyndon Station, Union Center and New Lisbon handle administrative functions through a mayor/village president and clerk-treasurer system. Each city and village have some form of police, fire, public works, and zoning/building inspector staff that can assist with mitigation. Mitigation

work is often made a part of the annual work plans for many of these departments/individuals.

Another way County, City and Village Staff support mitigation is through involvement in various local planning activities and implementation of projects resulting from those plans. In addition to this countywide All Hazards Mitigation Plan, the County and each City and Village maintain comprehensive plans that guide development and facilities based on risk and hazard areas. Other County plans include the County Emergency Response Plan and the Community Health Assessment and Improvement Plan. The Cities and Villages also maintain emergency operations plans, and some departments such as Public Works and Water/Electric Utilities develop plans to mitigate potential hazards that may affect their street, water and electrical systems.

Juneau County and the Cities of Elroy, Mauston, New Lisbon and the Villages of Camp Douglas, Hustler, Lyndon Station, Necedah, Union Center and Wonewoc also have regulatory authority for programs that control development to minimize risk and avoid hazard areas. These regulatory authorities include the comprehensive planning law, zoning ordinances (including shoreland and floodplain regulations), subdivision and platting ordinances, and building codes.

Funding for mitigation programs comes primarily through taxing authority, annual County, City and Village budgets, and Capital Improvements Programming. However, the County, Cities and Villages often rely on federal and state grant programs for any significant expenditures, for example Elroy and Wonewoc have active mitigation grants at the time of this writing.

Ability to Expand and Improve Mitigation Capabilities

Juneau County and the Cities of Elroy, Mauston, New Lisbon and the Villages of Camp Douglas, Hustler, Lyndon Station, Necedah, Union Center and Wonewoc have been facing significant budget constraints for years, exacerbated by state-imposed levy limits. As a result, each of the communities is heavily dependent on grant funding. These conditions limit each jurisdiction's ability to expand or improve its mitigation capabilities.

Staffing levels and capacity vary among the communities, but generally the smaller communities, such as Hustler, Union Center, Lyndon Station, and Wonewoc, have fewer staff to carry the load, and budget conditions restrict the ability of all jurisdictions to increase staffing levels for mitigation activities.

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. FEMA rules 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 as needed by Emergency Management. The Juneau County Emergency Management Director will evaluate incoming information against the contents of the Plan to determine possible need for revisions; and bring that information to the County Emergency Management Committee to discuss the evaluation and potential revisions to the Plan as needed. The Emergency Management Director is encouraged to consult/coordinate with the NCWRPC in the event of any revision.

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 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 process. 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 – Outreach and Meeting Information



Juneau County Board of Supervisors

Agenda
County Board Room 200
October 15, 2024

9:30 a.m. Call County Board of Supervisors meeting to Order.

Roll Call

Opening Prayer/Pledge of Allegiance

- Approve the minutes of the September 17, 2024, meeting of the Juneau County Board of Supervisors
- Carrie Leonard, Johnson Block – 2023 Audit Report
- Tamaya Loewe, JCEDC Update
- Carol Wirth, Quarles & Brady LLP
- **Resolution 24-38** * Initial Resolution Authorizing the Issuance of Not to Exceed \$8,750,000 Taxable General Obligation Promissory Notes for Capital Improvement Projects
- **Resolution 24-39** * Supplemental Appropriations for 2023
- **Resolution 24-40** * Approval of Cooperative Law Enforcement Program between Juneau County and the Ho Chunk Indian Nation entitled "Agreement for County-Tribal Law Enforcement Programs."
- **Resolution 24-41** * Adopting the 2024 Juneau County All Hazards Mitigation Plan Update
- **Resolution 24-42** * Approving and Adopting the Juneau County Cybersecurity Training Policy
- **Report:**
 - UW-Extension, Pat Wagner
- Next County Board Meeting: November 12, 2024
 - Executive Meeting: November 4, 2024
 - Personnel Committee Meeting: November 7, 2024
 - Finance Committee Meeting: November 1, 2024

* Access to the handicapped will be provided. If special accommodation is needed, please notify the County Clerk's Office by calling 847-9300. This notice must be posted on the bulletin board in the Courthouse prior to the meeting to conform to 19.83 and 19.84 Wis. Stats.

**If you need accommodation to attend this meeting, whether in-person or by remote means, please contact the Juneau County Clerk's office at 608-847-9300.

Juneau County is inviting you to a scheduled Zoom meeting.

Topic: October County Board Meeting



Juneau County Emergency Management

200 Oak Street, Mauston, WI 53948
O:608.847.9393 ★ C:608.547.1706

JEREMY A. BONIKOWSKE, DIRECTOR
JBONIKOWSKE@JUNEAUCOUNTYWI.GOV
ERIN SWAN-KAEHLER, PROGRAM ASSIST
ESWANKAEHLER@JUNEAUCOUNTYWI.GOV



NOTICE

Emergency Management Committee Meeting

DATE: Thursday September 19th, 2024 @ 9:00 a.m.

LOCATION: 220 East State Street

Old Juneau County Courthouse

1st Floor - Room #105

AGENDA:

- a) Call to Order and Certify Compliance with Open Meeting Law.**
 - a. Roll Call / Introduction of Guests.

 - b) Hazard Mitigation Plan (HMP) Presentation / Discussion / Action.**
 - a. North Central Wisconsin Planning Commission Report on 5 Year HMP

 - c) Directors Report.**
 - a. Review/ Approve Minutes of prior meeting.
 - b. Monthly Update
 - c. Digital Radio / WISCOM
 - d. Purchases/ Expenses

 - d) Review and Possible action on items listed below.**
 - a. EM Budget for Finance
 - b. Fiscal Breakdown of Public Radio System

 - e) Next Meeting – TBD**
 - f) Adjournment**
- Respectfully,
Jeremy Bonikowske – Emergency Management Director

Notice: A quorum of the Juneau County Board of Supervisors or various county board committees may be present at this meeting. No business will be discussed, and no action will be taken, by the Juneau County Board or any other county board committee other than the committee listed on this notice. It is anticipated that discussion and action may occur regarding all items posted on the agenda.

If special accommodations are needed, please notify the sponsoring committee by calling 608-847-9393.

ATTENTION: This notice must be posted on the bulletin board in the Courthouse prior to the meeting in order to conform with s.19.83 and 19.84 Wis. Stats.

JUNEAU COUNTY AHMP UPDATE SCHOOL DISTRICT SURVEY/PARTICIPATION FORM

District: Tomah Area School District

Date: 8/1/24

List (names & titles) those who participated in form completion: _____

Michelle M. Clark, TASD Business Manager

BRIEFLY, WHAT NATURAL HAZARDS/DISASTERS ARE OF MOST CONCERN TO THE DISTRICT AND WHY?

Weather related disasters such as a tornado or flood are our biggest concerns because of the impact those types of disasters would have on our families and the students we serve.

Another concern would be the proximity of the railroad to our school. A train derailment involving a chemical spill could be devastating.

WHAT AREAS/FACILITIES UNDER THE DISTRICT'S RESPONSIBILITY ARE VULNERABLE TO HAZARDS/DISASTERS?

The only school within Juneau County that is part of Tomah Area School District is Camp Douglas Elementary that has grades 2nd-5th with about 70 students.

WHAT KIND OF THINGS WOULD THE DISTRICT LIKE TO SEE DONE TO REDUCE THE POTENTIAL IMPACT OF A DISASTER EVENT IN THE DISTRICT (LIST ANY UPCOMING OR POTENTIAL PROJECTS)?

We are in the middle of approving a building project but it would be in Monroe County where most of our other schools are located.

There aren't any upcoming projects for Camp Douglas as far as the District is concerned.

Juneau County AHMP Update School District Survey/Participation Form

District: Necedah Area School District
Date: August 1, 2024
Names of Participants: Tanya Kotlowski, District Administrator
Roger Herried, Board Member and Village Administrator
Kris Saylor, IT Director, Project Manager
Adam McCracken, Building and Grounds Supervisor
Michael Davis, Transportation Supervisor

1. Briefly, what natural hazards/disasters are of most concern to the district and why?

Severe Storms/Tornadoes have been an ongoing issue for the district. We have had insurance claims for lightning strikes and wind damage in the past few years. We have a high amount of trailers/campers in the area during the most vulnerable times of the year, which creates an increased concern for the school community.

Wildfires have also become a common occurrence in our school district, with the last fire taking place right across the street. Fires have caused us to divert bus routes, keep children at the school, and offer families a place to evacuate.

2. What areas/facilities under the district's responsibility are vulnerable to hazards/disasters?

Our campus is vulnerable with transportation services/school buses off-campus, and that we have one outlet to Hwy 80. In the event of a disaster, it is possible we are not able to get buses to the school to evacuate children.

What kind of things would the district like to see done to reduce the potential impact of a disaster event in the district (list any upcoming or potential projects)?

Have transportation services/bus garage on campus, which would also serve a storm shelter for our community in the case of a severe storm/tornado, or in the event of wildfires that causes an evacuation or displacement of children/families or community.

District: RoyalDate: 7/21/11
NORTH CENTRAL WISCONSIN
REGIONAL PLANNING COMMISSIONList (names & titles) those who participated in form completion: Scott Uppena
Superintendent

BRIEFLY, WHAT NATURAL HAZARDS/DISASTERS ARE OF MOST CONCERN TO THE DISTRICT AND WHY?

- Flooding damage
- we have a river that floods our towns/community every 4-5 years.

WHAT AREAS/FACILITIES UNDER THE DISTRICT'S RESPONSIBILITY ARE VULNERABLE TO HAZARDS/DISASTERS?

The high, middle & elementary schools do not flood, but we are the hub of the community and open our doors to provide relief for family affected.

WHAT KIND OF THINGS WOULD THE DISTRICT LIKE TO SEE DONE TO REDUCE THE POTENTIAL IMPACT OF A DISASTER EVENT IN THE DISTRICT (LIST ANY UPCOMING OR POTENTIAL PROJECTS)?

?? (Not sure what else can be done)?



Juneau County Emergency Management

200 Oak Street, Mauston, WI 53948
O:608.847.9393 ★ C:608.547.1706



JEREMY A. BONIKOWSKE, DIRECTOR
JBNIKOWSKE@JUNEAUCOUNTYWI.GOV
ERIN SWAN-KAEHLER, PROGRAM ASSISTANT
ESWANKAEHLER@JUNEAUCOUNTYWI.GOV

NOTICE

Local Emergency Planning Committee Meeting

DATE: Wednesday July 31st, 2024 @ 3:30PM

LOCATION: Juneau County Services Building
200 Hickory Street Room 209A
Mauston, WI 53948

VIRTUAL: Microsoft Teams [Need help?](#)

[Join the meeting now](#)

Meeting ID: 274 574 394 442

Passcode: psHxzm

AGENDA:

- a) Call to Order.
- b) Roll Call.
- c) Discussion / Review of Hazard Mitigation Plan - NCWRPC
- d) Review last meeting Minutes
- e) LEPC Reports.
 - a. Updates from Facilities
- f) Reports for Discussion / Possible Action on Items Below:
 - a. Upcoming Trainings / Integrated Preparedness Plan Review – Jeremy Bonikowske
 - b. Countywide Hazard Strategic Plan – Review / Update
 - c. Public Preparedness Report – Shane Gesler.
 - d. DNR Spills/ Fire Report – Jayson Schrank, Melissa Gilaume-Cappaert, Corbin Czyncon.
 - e. Hazmat Team Report – Jeremy Bonikowske.
 - f. Volk Field Report – Chief Dave Ferris / Or Rep.
 - g. County Wide Railroad Reports – Railroad Personnel.
 - h. Next Meeting – Location/ Time TBD

(Access to the handicapped will be provided. If special accommodations are needed, please notify the committee by calling (608) 847-9393.

ATTENTION: This notice must be posted on the bulletin board in the Courthouse prior to the meeting in order to conform with s. 19.83 and 19.84 Wis. Stats.

MISSION STATEMENT

We are dedicated to the best interests of those who live, work, and visit within Nature's Paradise. We serve with excellence and integrity in all aspects of county government, while committed to the well-being and prosperity of Juneau County.

LEPC / Hazard Mitigation / IPP

July 30th 2024 @ 1530 / Services Bldg #209

Name Department

Shane Gesler	JC - Health Dept. - Preparedness
Christopher Leopold	MAUSTON EMS
Darryl Landeau	NCWRPC
Kathy Greenwood	Mile Bluff
Jeremy Bonkowski	OEM
Joe Eichten	UP Rail
Melissa Guillaume-Copart	DNR fire
Jeremy Gilbert	Puring
Dennis Dodge	Parker

Community: Village of Hustler
form completion: _____

Date: 7-24-24
List those who participated in
Dean Puescher, Village President

BRIEFLY, WHAT NATURAL HAZARDS/DISASTERS ARE OF MOST CONCERN TO THE VILLAGE AND WHY?

- X Hail & windstorms
- Flooding not an issue
- X Snow/Ice freezing - Power

WHAT AREAS/FACILITIES ARE VULNERABLE TO HAZARDS/DISASTERS IN THE VILLAGE?

? / older homes

WHAT KIND OF THINGS WOULD THE VILLAGE LIKE TO SEE DONE TO REDUCE THE POTENTIAL IMPACT OF A DISASTER EVENT IN THE VILLAGE (Looking for new project ideas - think big as if money was no object, we won't hold you to it.) REFER TO ATTACHED TABLE FROM PREVIOUS PLAN FOR IDEAS.

met w/ County - revised Emergency Response Plan

water update needed - New Lisbon (?)

Contract fire (Ambul) Amb.

have generator - village hall (war w/ing)

Community: Village of Union Center
form completion: Robin Laubscher, Village Clerk

Date: 7-16-24

List those who participated in

BRIEFLY, WHAT NATURAL HAZARDS/DISASTERS ARE OF MOST CONCERN TO THE VILLAGE AND WHY?

* Flooding: in general - more frequent in recent yrs

WHAT AREAS/FACILITIES ARE VULNERABLE TO HAZARDS/DISASTERS IN THE VILLAGE?

* Sewer Plant & Public works - low lying

* few homes near golf course were in past

WHAT KIND OF THINGS WOULD THE VILLAGE LIKE TO SEE DONE TO REDUCE THE POTENTIAL IMPACT OF A DISASTER EVENT IN THE VILLAGE (Looking for new project ideas - think big as if money was no object, we won't hold you to it.) REFER TO ATTACHED TABLE FROM PREVIOUS PLAN FOR IDEAS.

* Nothing being discussed at this time.

Community: Wonewoc

Date: 7-15-24

form completion: Lee Kucher Village Admin.

List those who participated in

BRIEFLY, WHAT NATURAL HAZARDS/DISASTERS ARE OF MOST CONCERN TO THE VILLAGE AND WHY?

* Floods: River on the st. for water table - closed streets

* winds -

Tornado - sirens & protocols in place

WHAT AREAS/FACILITIES ARE VULNERABLE TO HAZARDS/DISASTERS IN THE VILLAGE?

village Hall - built above flood (100yr)

11 homes removed - mitigation great

moving WWTP out of flood plain (USDA)

nothing else really

WHAT KIND OF THINGS WOULD THE VILLAGE LIKE TO SEE DONE TO REDUCE THE POTENTIAL IMPACT OF A DISASTER EVENT IN THE VILLAGE (Looking for new project ideas - think big as if money was no object, we won't hold you to it.) REFER TO ATTACHED TABLE FROM PREVIOUS PLAN FOR IDEAS.

"No" - flood stuff - 11 homes + WWTP projects
"mitigate the major risk"

- storm sewer upgrades

Community: Camp Douglas

Date: 7-15-24

form completion:

Sarah Stark, Village Clerk-Treasurer

List those who participated in

BRIEFLY, WHAT NATURAL HAZARDS/DISASTERS ARE OF MOST CONCERN TO THE VILLAGE AND WHY?

- * Flooding in 2020 basements - furnaces / Public Works Bldg even though not near any river / stream - low lying areas
- * Tornadoes - power, damage to homes - Severe T-storm outage

WHAT AREAS/FACILITIES ARE VULNERABLE TO HAZARDS/DISASTERS IN THE VILLAGE? Low Lying Areas: Flash Flooding in 2020

- main street
- Public Works Bldg
- 12/16

WHAT KIND OF THINGS WOULD THE VILLAGE LIKE TO SEE DONE TO REDUCE THE POTENTIAL IMPACT OF A DISASTER EVENT IN THE VILLAGE (Looking for new project ideas - think big as if money was no object, we won't hold you to it.) REFER TO ATTACHED TABLE FROM PREVIOUS PLAN FOR IDEAS.

- talked about storm sewers - main st. how move water
- nothing really I'd discussed



Juneau County Emergency Management

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JBONIKOWSKE@JUNEAUCOUNTYWI.GOV
ERIN SWAN-KAEHLER, PROGRAM ASSISTANT
ESWANKAEHLER@JUNEAUCOUNTYWI.GOV

NOTICE

Local Emergency Planning Committee Meeting

DATE: Wednesday April 3rd 2024 @ 2:30PM

LOCATION: Juneau County Services Building
200 Hickory Street Room 209A
Mauston, WI 53948

VIRTUAL: Microsoft Teams meeting

Join on your computer, mobile app or room device

[Click here to join the meeting](#)

Meeting ID: 269 846 301 730

Passcode: cbGxgx

AGENDA:

- a) Call to Order.
- b) Roll Call.
- c) Discussion / Review of Hazard Mitigation Plan - NCWRPC
- d) Minutes of: December 21st, 2023 LEPC Meeting.
- e) LEPC Reports.
 - a. Updates from Facilities
- f) Reports for Discussion / Possible Action on Items Below:
 - a. Upcoming Trainings / Integrated Preparedness Plan Review – Jeremy Bonikowske
 - b. Discuss / Approve State of Wisconsin as Compliance Inspector
 - c. LEPC Legal Publication Notice – Submitted
 - d. Review / Approve By-laws
 - e. Public Preparedness Report – Mary Crowley.
 - c. DNR Spills/ Fire Report – Jayson Schrank, Melissa Gilaume-Cappaert, Corbin Czyncon.
 - d. Hazmat Team Report – Jeremy Bonikowske.
 - e. Volk Field Report – Chief Dave Ferris / Or Rep.
 - f. County Wide Railroad Reports – Railroad Personnel.
 - g. Next Meeting – July 24th 2024, Location TBD

(Access to the handicapped will be provided. If special accommodations are needed, please notify the committee by calling (608) 847-9393.

ATTENTION: This notice must be posted on the bulletin board in the Courthouse prior to the meeting in order to conform with s. 19.83 and 19.84 Wis. Stats.

MISSION STATEMENT

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Juneau County All Hazards Mitigation Plan Update

Public Informational Meeting SIGN-IN

March 25, 2024 - 5:30 PM

	Name	Area of Residence	Email
1	Nate Sparby	Lindana	nsparby@live.com
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North Central Wisconsin Regional Planning Commission

210 McClellan Street Suite 210
Wausau, WI 54403

ORDER NUMBER 199180

JUNEAU COUNTY
ALL HAZARDS MITIGATION PLAN
PUBLIC INFORMATIONAL MEETING
Notice is hereby given by the Juneau County Emergency Management Department that there will be a public informational meeting at the Hatch Public Library - Conference Room in Mauston, 111 W State St., Mauston, WI on Monday, March 25, 2024 beginning at 5:30 p.m. to discuss the updating of the County's All Hazards Mitigation Plan. The meeting will be an open house format and will provide information about 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. For information on the Juneau County Hazard Mitigation Plan visit www.ncwrpc.org/juneau-county-mitigation-plan. A link is available to provide comments for project staff if you cannot attend the meeting. All interested parties are encouraged to attend. Please contact the Juneau County Emergency Management Director, Jeremy Bonikowske at jbonikowske@juneau-countywi.gov for more information. JCST: March 21, 2024 199180 WNAXLP

APR 2 2024
NORTH CENTRAL WISCONSIN
REGIONAL PLANNING COMMISSION

STATE OF INDIANA

} ss.

Lake County

I, Robin Nelson being duly sworn, doth depose and say that he/she is an authorized representative of Lee Enterprises, publishers of

PJCT Juneau County Star Times

a newspaper, in the city of Mauston, Juneau County, State of Wisconsin, and that an advertisement of which the annexed is a true copy, taken from said paper, was published therein on the dates listed below.

Sworn to and subscribed before me this 2 day of MARCH, 2024

(Signed) [Signature]
(Title) Principal Clerk

Christina Palma
Notary Public, Indiana

My Commission expires

Section: Legals
Category: 0100 LEGAL NOTICE
PUBLISHED ON: 03/21/2024



TOTAL AD COST: 18.08
FILED ON: 3/21/2024

Juneau County All Hazards Mitigation Plan Update

Agency and Interest Group Meeting SIGN-IN

March 25, 2024 – 3:30 PM

	Name	Department/Organization	Email
1	Mary Crowley	Juneau Co Health	mcrowley@juneaucounty.wi.gov
2	Tom Lott	Juneau Co Board of Supervisors	TCCHAIR@JUNEAUCOUNTY.WI.GOV
3	Matt Rygg	OAKDALE ELECTRIC COOP.	MRZGGS@OAKDALE.ECC.COM
4	Tamara Coewe	Juneau County Economic Development	
5	Stacy Weller	AUTRAK	
6	Burtie Williams	Red Cross	burtie.williams@redcross.org
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NORTH CENTRAL WISCONSIN REGIONAL PLANNING COMMISSION



210 McClellan Street, Suite 210, Wausau, Wisconsin 54403
Telephone: (715) 849-5510 Fax: (715) 849-5110
Web Page: www.ncwrpc.org Email: staff@ncwrpc.org

SERVING ADAMS, FOREST, JUNEAU, LANGLADE, JUNEAU, MARATHON, ONEIDA, PORTAGE, VILAS AND WOOD COUNTIES

MEMORANDUM

TO: Government agencies, County department staff, and other private or non-profit organizations within Juneau County
FROM: Darryl L. Landeau, AICP: Senior Planner *DLL*
DATE: March 11, 2024
RE: Juneau Co. All-Hazards Mitigation Plan Update Interest Group Meeting Notice

Juneau County has received a grant through the Federal Emergency Management Agency (FEMA) to complete an update of its All-Hazards Mitigation Plan to protect the health and safety of residents from the impacts of natural hazards and to minimize and prevent damages caused by these events. The North Central Wisconsin Regional Planning Commission (NCWRPC) is assisting Juneau County with this plan.

As a requirement of the planning process, an opportunity must be provided to local and regional agencies involved in hazard mitigation activities, and agencies that have the authority to regulate development, as well as business, academia and private and non-profit interests to be involved. To meet this requirement, a stakeholder / interest group meeting is scheduled for the following date and place:

When: Monday, March 25, 2024 at 3:30 p.m.
Where: Hatch Public Library – Conference Room
111 W. State Street, Mauston

Although in person attendance is preferred, a virtual option is available if you have distance or scheduling issues. Instructions for accessing virtual attendance can be found on the reverse side of this letter.

In addition to meeting FEMA requirements, this meeting will be a way to gather ideas on how to safeguard the residents and visitors of Juneau County and protect property in the event of natural disasters. Since you live and/or do business in or around Juneau County, your input in this process is very valuable.

Please call or email me if you have any questions regarding this meeting. My number is 715-849-5510 ext. 308, and my email is dlandeau@ncwrpc.org. Or, contact Jeremy Bonikowske, the County's Emergency Management Director at 608-847-9393 or jbonikowske@juneaucountywi.gov. I highly encourage at least one staff person from your department or agency with responsibilities relating to or potentially impacted by natural hazards / disaster to attend.

Thank you.

Angela Dehler
Mile Bluff Medical Center
1050 Division St.
Mauston, WI 53948

Dave Donnelly, Administrator
Juneau County Zoning
650 Prairie St.
Mauston, WI 53948

Dawn Buchholz, Director
Juneau County Human Services
200 Hickory St.
Mauston, WI 53948

Alliant Energy
338 E State St.
Mauston, WI 53948

Dustin Ladd, Co. Conservationist
Juneau Land & Water Resources
1001 Division St.
Mauston, WI 53948

Dana Anderson, Director
Mauston Housing Authority
208 W. Monroe St.
Mauston, WI 53948

Arianna Lesko, Administrator
Fairview Nursing & Rehab. Ctr
1050 Division St.
Mauston, WI 53948

Lauriann Filla, Administrator
Crestview Nursing Home
612 View St.
New Lisbon, WI 53950

Elroy-Kendall School Dist.
Superintendent of Schools
PO Box 125
Elroy, WI 53929

New Lisbon School District
Superintendent of Schools
PO Box 205
New Lisbon, WI 53950

Gina Laack, Director
ADRC of Eagle Country
200 Hickory St.
Mauston, WI 53948

Sheriff Andrew Zobal
Juneau Co. Sheriff's Office
200 Oak St., Rm 1110
Mauston, WI 53948

David Seitz, Manager
Mauston-New Lisbon Union Airport
W7493 Ferdon Rd
New Lisbon, WI 53950

Brian Loyd, Administrator
Juneau Co. Land Forestry Parks
650 Prairie St.
Mauston, WI 53948

Chair Timothy Cottingham
Juneau County Administrative Coord.
220 E. State St., Rm 112
Mauston, WI 53948

Julie Oleson, Director
Juneau Co. Housing Auth.
717 E. State. St.
Mauston, WI 53948

Collin Hirst, Administrator
Elroy Health Services
307 Royall Ave.
Elroy, WI 53929

Mauston School District
Superintendent of Schools
508 Grayside Ave.
Mauston, WI 53948

Wonewoc Union Center District
Superintendent of Schools
P.O. Box 368
Wonewoc, WI 53968

Tamaya Loewe, Director
Juneau Co. Economic Dev Corp
122 Main St.
Camp Douglas, WI 54618

Jean Schultz, Health Officer
Juneau Co. Health Dept
200 Hickory St.
Mauston, WI 53948

Pat Wagner, Director
Juneau Co. UW Extension
220 E. State St., Rm 104
Mauston, WI 53948

Travis Schultz, Commissioner
Juneau County Highway Dept
930 E. State St.
Mauston, WI 53948

Rob Anderson, Forester
WisDNR
PO Box 288
Mauston, WI 53948

Adam Steffen, Director
Juneau Co. Farm Service Agency
1001 Division St.
Mauston, WI 53948

Oliver Dupree, Program Director
Ed Bryant Scout Reservation
N6960 Cty Hwy G
Mauston, WI 53948

Necedah School District
Superintendent of Schools
1801 S. Main St.
Necedah, WI 54646

**JUNEAU County All Hazard Mitigation Plan Update
City/Village Inclusion Form**

1. City/Village of New Lisbon
2. List those who participated in form completion: Nick Wyss, Dir. of Public Works ; City Clerk / Treasurer Lisa Vinz
3. Date of completion: 3/4/24
4. 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
- Temperature Extremes
- Thunderstorms
- Lightning
- Hail
- High Winds
- Tornadoes
- Winter Storms (heavy snow, freezing rain, ice)
- Hazardous Materials Incidents
- Other _____

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

Due to close proximity to railroads and river flooding. Due to close proximity to the interstate ; rail delivering hazardous materials are at risk.

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

Any area close to rail, interstate ;
River.

6. 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.)

7. 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.

8. The mitigation plan needs to specifically address new development. Please describe any new residential and commercial developments with the town that have occurred in the last 5 years. Please describe any new public infrastructure or community facilities developed during this time as well.

New multi family development on Allen Road -
By end of 2025 there will be 10 - 4 plus units.

9. Please describe any public infrastructure / community facilities currently being considered or planned for the future.

Proposed New Police Dept. Structure @ 600 Block
of East Bridge Street.

10. 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?

City Hall
Fire Station
Library

11. **Please Attach:** 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 provides this information. If you would be willing to provide us a copy of this form for your village, we would greatly appreciate it. Please include the copy when you return this survey or mail separately to the address below.

12. Please feel free to comment on any other related issues to hazard mitigation.

Please return completed form to:

Darryl Landeau
NCWRPC
210 McClellan St., Suite 210
Wausau WI 54403

OR dlandeau@ncwrpc.org

THANK YOU FOR YOUR ASSISTANCE

Juneau County All Hazards Mitigation Plan Update

City of Mauston – Virtual Meeting “Sign-In” (Attendance)

October 3, 2023 – 1:30 PM

	Name	Department/Organization	Notes
1	<i>Michael Zilisch</i>	Police Chief	
2	<i>Abbigail Schwartk</i>	Zoning	
3	Rob Nelson	Public Works Director	
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Juneau County All Hazards Mitigation Plan Update

Village of Necedah Planning Meeting SIGN-IN

September 27, 2023 - 2:30 PM

	Name	Department	Email
1	Roger Herrick	Administration	necedahadmin@necedah.us
2	Ryan Meyer	POLICE DEPARTMENT	rmeyer.necedahpd.wi@gmail.com
3	JACK HANSON	Public works	necedahpwd@tds.net
4	Scott Carter	Village President	scarter@taylorandmartin.com
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Juneau County Emergency Management

200 Oak Street, Mauston, WI 53948
O:608.847.9393 ★ C:608.547.1706



JEREMY A. BONIKOWSKE, DIRECTOR
JBONIKOWSKE@JUNEAU COUNTY.WI.GOV
KATHY NILES, PROGRAM ASSIST
JUNEAUEM@CO.JUNEAU.WI.US

NOTICE

Local Emergency Planning Committee Meeting

DATE: Wednesday, September 27th, 2023 at 08:30 a.m.

LOCATION: Juneau County Services Building
200 Hickory Street Room 209A
Mauston, WI 53948

VIRTUAL:

Topic: LEPC

Time: Sep 27, 2023 08:30 AM Central Time (US and Canada)

Join Zoom Meeting

<https://us02web.zoom.us/j/81085610769?pwd=SjdKNTJ3R3lMa01QYWtaRnc4NVVvZz09>

Meeting ID: 810 8561 0769

Passcode: 309626+

AGENDA:

- a) Call to Order.
- b) Roll Call.
- c) Discussion / Review of Hazard Mitigation Plan
- d) Minutes of: June 29th, 2023 LEPC Meeting.
- e) LEPC Reports.
 - a. Updates from Facilities
- f) Reports for Discussion / Possible Action on Items Below:
 - a. Upcoming Trainings – Jeremy Bonikowske
 - b. Public Preparedness Report – Mary Crowley.
 - c. DNR Spills/ Fire Report – Jayson Schrank, Melissa Gilaume-Cappaert, Corbin Czyscon.
 - d. Hazmat Team Report – Jeremy Bonikowske.
 - e. Volk Field Report – Chief Dave Ferris / Or Rep.
 - f. County Wide Railroad Reports – Railroad Personnel.
 - g. Next Meeting – December, Location TBD

(Access to the handicapped will be provided. If special accommodations are needed, please notify the sponsoring committee by calling (608) 847-9393.

ATTENTION: This notice must be posted on the bulletin board in the Courthouse prior to the meeting in order to conform with s. 19.83 and 19.84 Wis. Stats.

MISSION STATEMENT

We are dedicated to the best interests of those who live, work, and visit within Nature's Paradise. We serve with excellence and integrity in all aspects of county government, while committed to the well-being and prosperity of Juneau County.

Juneau County All Hazards Mitigation Plan Update

City of Elroy – Virtual Meeting “Sign-In” (Attendance)

September 18, 2023 – 9:00 AM

	Name	Department/Organization	Notes
1	<i>Geena Skowronski</i>	City Administrator	
2	<i>Karen Sparling</i>	Mayor	
3	<i>Tyler Brown</i>	Fire Chief	
4	<i>Lynn Thorson</i>	City Clerk / Zoning	
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Juneau County Emergency Management

200 Oak Street, Mauston, WI 53948
O:608.847.9393 ★ C:608.547.1706



JEREMY A. BONIKOWSKE, DIRECTOR
JBONIKOWSKE@JUNEAUCOUNTYWI.GOV
KATHY NILES, PROGRAM ASSIST
JUNEAUEM@CO.JUNEAU.WI.US

NOTICE

Local Emergency Planning Committee Meeting

DATE: Thursday June 29th, 2023 at 10:30 p.m.

LOCATION: Juneau County Services Building
200 Hickory Street Room 209A
Mauston, WI 53948

VIRTUAL:

Time: Jun 29, 2023 10:30 AM Central Time (US and Canada)

Join Zoom Meeting

<https://us02web.zoom.us/j/82316371558?pwd=dE1NdzZhOVJXRWVqUEczbitMcFI1QT09>

Meeting ID: 823 1637 1558

Passcode: 663109

AGENDA:

- a) **Call to Order.**
- b) **Roll Call.**
- c) **Discussion / Review of Hazard Mitigation Plan**
- d) **Minutes of: March 30th, 2023 LEPC Meeting.**
- e) **LEPC Reports.**
 - a. **Request for Information**
 - b. **Commodity Flow Tabletop AAR**
 - c. **Membership Review**
- f) **Reports for Discussion / Possible Action on Items Below:**
 - a. **Strategic Plan Review. Approve Plan**
 - b. **Functional AAR of Ammonia Nitrate – The Almost Boom!**
 - d. **Public Preparedness Report – Mary Crowley.**
 - e. **DNR Spills/ Fire Report – Jayson Schrank, Melissa Gilaume-Cappaert, Corbin Czynscon.**
 - f. **Hazmat Team Report – Jeremy Bonikowske.**
 - g. **Volk Field Report – Chief Dave Ferris / Or Rep.**
 - h. **County Wide Railroad Reports – Railroad Personnel.**
 - i. **Next Meeting – Location TBD**

(Access to the handicapped will be provided. If special accommodations are needed, please notify the sponsoring committee by calling (608) 847-9393.

ATTENTION: This notice must be posted on the bulletin board in the Courthouse prior to the meeting in order to conform with s. 19.83 and 19.84 Wis. Stats.

MISSION STATEMENT

We are dedicated to the best interests of those who live, work, and visit within Nature's Paradise. We serve with excellence and integrity in all aspects of county government, while committed to the well-being and prosperity of Juneau County.



Juneau County Emergency Management

200 Oak Street ● Mauston, WI 53948 ● O: 608.847.9393 ● C: 608.547.1506 ● F: 608.847.9401

JEREMY A. BONIKOWSKE, DIRECTOR

KATHY NILES, PROGRAM ASSISTANT

NOTICE

Local Emergency Planning Committee Meeting

DATE: Thursday March 30th, 2023 at 10:30 p.m.

**LOCATION: Marquis Energy
N9585 State Road 80
Necedah, WI 54646**

VIRTUAL:

Meeting link

meet.google.com/qaw-bahy-wyf

Join by phone

(US) [#43.1 608-909-0101](tel:+16089090101)

PIN: 655262960

AGENDA:

- a) **Call to Order.**
- b) **Roll Call.**
- c) **Discussion / Review of Hazard Mitigation Plan**
- d) **Minutes of: December 29th, 2022 LEPC Meeting.**
- e) **LEPC Reports.**
 - a. **Facility Reports Sent Out**
 - b. **Commodity Flow Tabletop**
- f) **Reports for Discussion / Possible Action on Items Below:**
 - ~~a.~~ **LEPC Rules Review, Adoption of Rules. Vote to Approve**
 - ~~b.~~ **Public Announcement Published. Published January 19th**
 - ~~c.~~ **Compliance Inspector Designee. State of Wisconsin is Current**
 - ~~d.~~ **Public Preparedness Report – Mary Crowley.**
 - ~~e.~~ **DNR Spills/ Fire Report – Jayson Schrank, Melissa Gilaume-Cappaert, Corbin Czynscon.**
 - ~~f.~~ **Hazmat Team Report – Jeremy Bonikowske.**
 - ~~g.~~ **Volk Field Report – Chief Dave Ferris / Or Rep.**
 - ~~h.~~ **County Wide Railroad Reports – Railroad Personnel.**
 - ~~i.~~ **Next Meeting – Location TBD**

(Access to the handicapped will be provided. If special accommodations are needed, please notify the sponsoring committee by calling (608) 847-9393.

ATTENTION: This notice must be posted on the bulletin board in the Courthouse prior to the meeting in order to conform with s. 19.83 and 19.84 Wis. Stats.

3/30/23

Juneau County LEPC Sign In Sheet

<u>Name</u>	<u>Organization/Company</u>	<u>Phone Number</u>	<u>Email</u>
Lynn Willard	JUNEAU CT	608-547-1908	lwillard350@gmail.com
James Newton	JH	608-377-8282	jnewton@tenahhealth.org
Steve E. Thomas	JUNEAU City Bd.	608-844-9503	steapskypilot@gmail.com
Andy Hare	Marquis Energy-WI	608-548-4759	andyhare@marquiseenergy.com
Marshall Matthe	Marquis Energy-WI	608 547-3223	Marshallmatthe@marquiseenergy.com
Jeremy Brinkowski	Juneau City EM	608 547 1766	jbrinkowski@juneaucountywi.gov
Darryl Landeau	NLWRPC	715-849-5510	dlandeau@nlwrpc.org
Kathy Niles	Juneau EM		Knits@co.juneau.wi.us
JEFF COOTS	MARQUIS ENERGY-WI	608-565-3596	JEFF COOTS@MARQUISENERGY.COM
CHRISTOPHER LEOPOLD	MAUSTON EMS	608-847-2223	CLEOPOLD@MAUSTONEMS.ORG
John Endres	Juneau County Supervisor	608-547-7651	jendres@juneaucountywi.gov
Mary Crowley	Juneau Co Health Dept	608-847-9373	mcrowley@co.juneau.wi.us
Corbin Cyston	WIS DNR		

Appendix B – Resolutions of Plan Adoption

Juneau County Board of Supervisors

Courthouse, 220 East State Street
Mauston, Wisconsin 53948



RESOLUTION No. 24 - 41

DATE: October 15, 2024

INTRODUCED BY: Emergency Management Committee

SYNOPSIS: Adopting The 2024 Juneau County All Hazards Mitigation Plan Update

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

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

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

WHEREAS, Juneau County adopted its last All Hazards Mitigation Plan Update on January 23, 2018; and

WHEREAS, an update of the All Hazards Mitigation Plan is required every five years; and

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

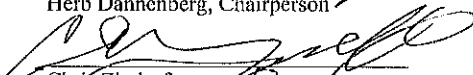
NOW, THEREFORE, BE IT RESOLVED, that the Juneau County Board of Supervisors shall and hereby does adopt the 2024 Juneau County All Hazards Mitigation Plan Update as an official plan; and


BE IT FURTHER RESOLVED, that the Juneau County Emergency Management Department shall submit, on behalf of the County and other participating municipalities, the adopted All Hazards Mitigation Plan Update for filing with Wisconsin Emergency Management and Federal Emergency Management Agency officials.

INTRODUCED AND RECOMMENDED FOR ADOPTION ON OCTOBER 15, 2024.

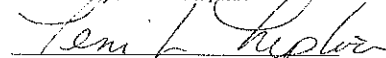
EMERGENCY MANAGEMENT COMMITTEE:


Herb Dannenberg, Chairperson


Chris Zindorf


Steve Thomas

Adopted by the County Board of Supervisors of
Juneau County on October 15, 2024


Terri L. Treptow, Juneau County Clerk

RESOLUTION # _____ (City/Village)

ADOPTING THE 2024 JUNEAU COUNTY ALL HAZARDS MITIGATION PLAN UPDATE

WHEREAS, the [City/Village] of [_____] 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, an update of the All Hazards Mitigation Plan is required every five years; and

WHEREAS, [City/Village] of [_____] participated jointly in the planning process with Juneau County and the other local units of government within the County to prepare an update to the existing multi-jurisdictional All Hazards Mitigation Plan;

NOW, THEREFORE, BE IT RESOLVED, that the [City Council/Village Board] of the [City/Village] of [_____] hereby adopts the 2024 Juneau County All Hazards Mitigation Plan Update as an official plan; and

BE IT FURTHER RESOLVED, that the Juneau County Emergency Management Department will submit, on behalf of the municipality, a signed copy of this resolution adopting the All Hazards Mitigation Plan Update for filing with Wisconsin Emergency Management and Federal Emergency Management Agency officials..

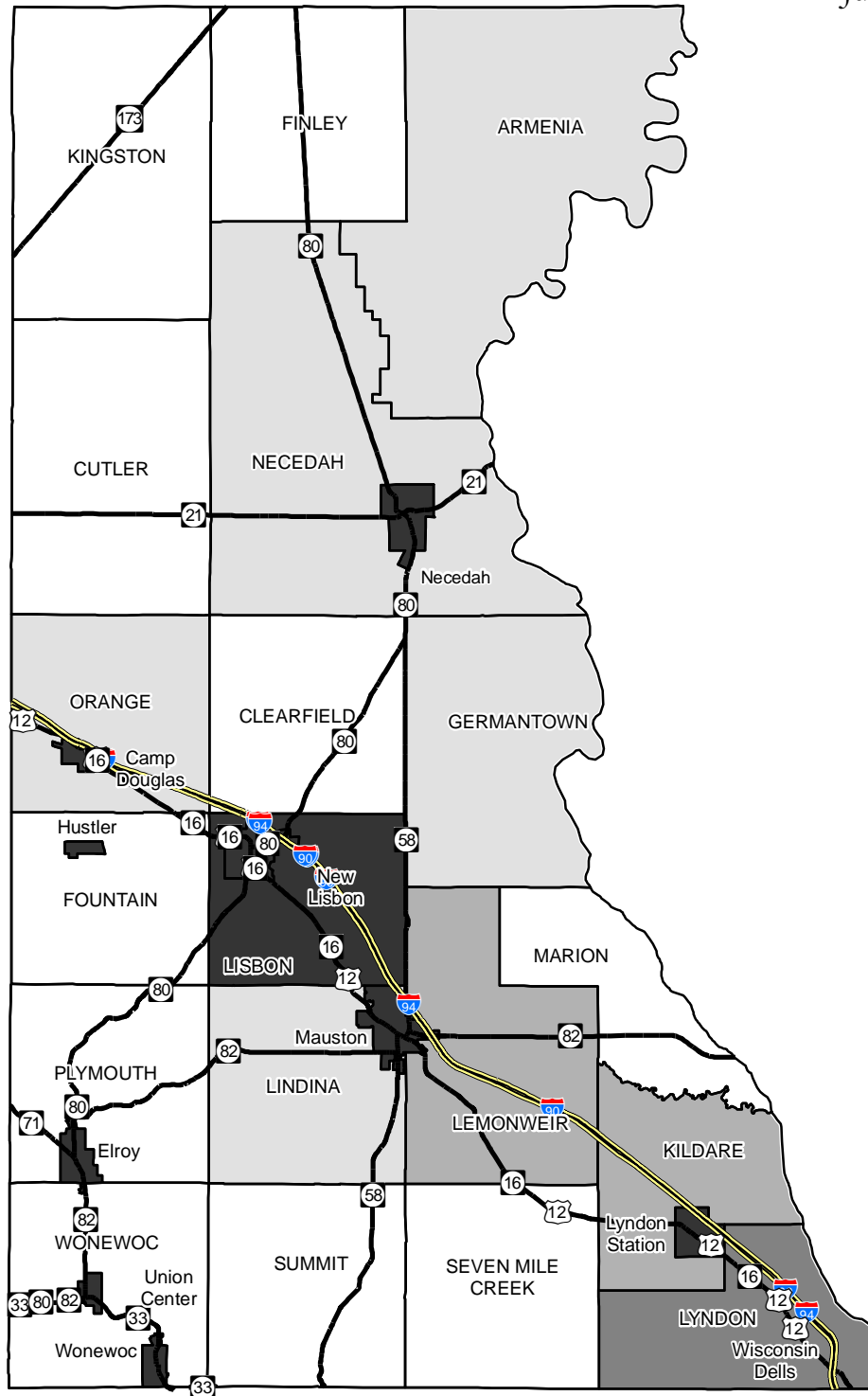
PASSED:_____.

Certifying Official

Appendix C – Underserved/Vulnerable Populations

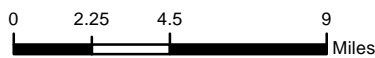
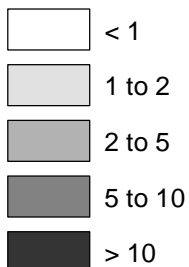
Population Density of Persons of Minority Status / By MCD

Juneau County



Legend

Minorities / SqMi



Source: WI DNR, NCWRPC, US Census ACS 2018-22

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.



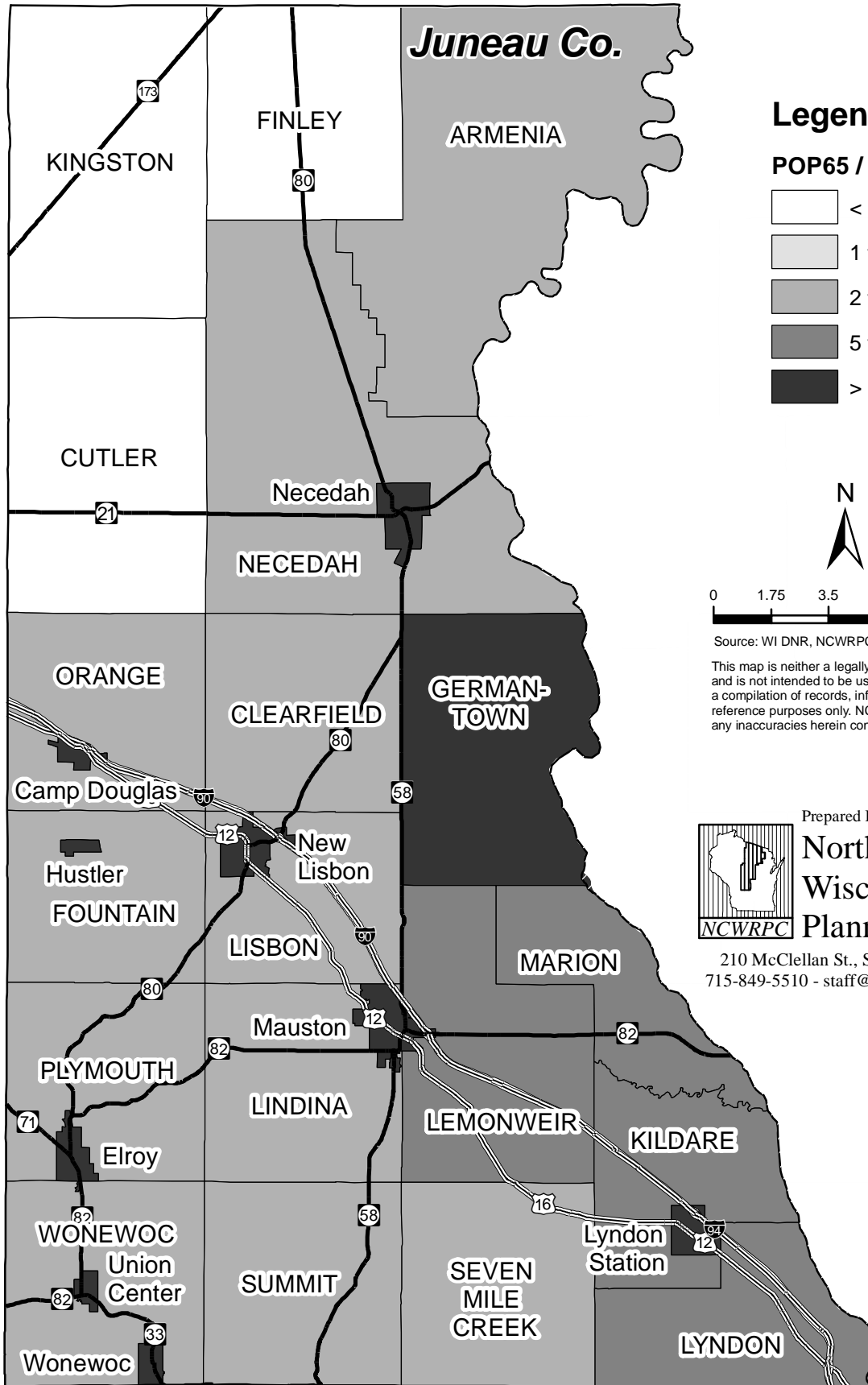
Prepared By:

**North Central
Wisconsin Regional
Planning Commission**

210 McClellan St., Suite 210, Wausau, WI 54403
715-849-5510 - staff@ncwrpc.org - www.ncwrpc.org

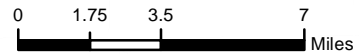
Population Density of Persons over 65 / By MCD

Juneau County



Legend

POP65 / Sq. Mi



Source: WI DNR, NCWRPC, US Census ACS 2017-21

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Prepared By:

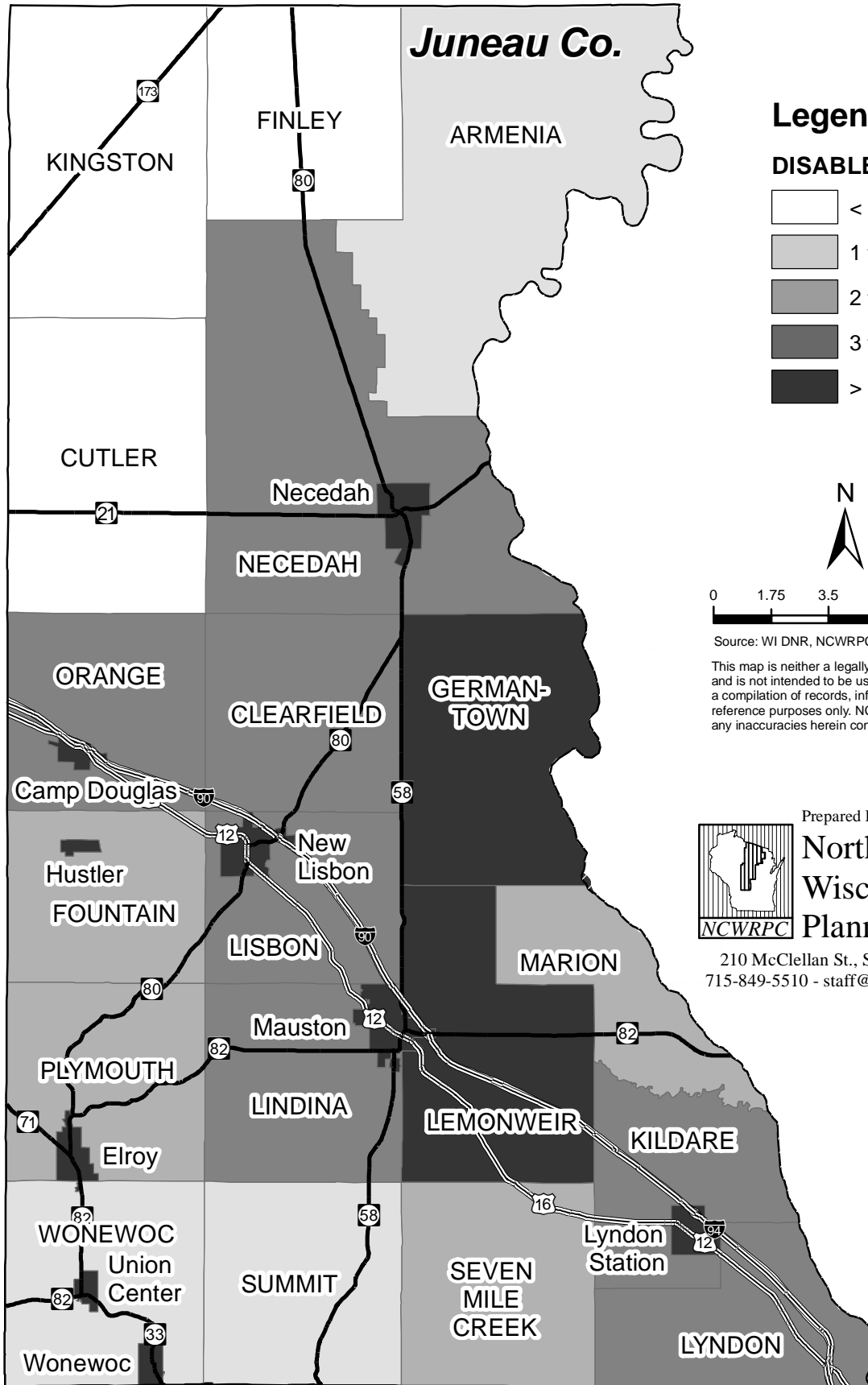


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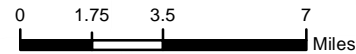
Population Density of Persons with Disabilities / By MCD

Juneau County



Legend

DISABLED / Per Sq. Mi



Source: WI DNR, NCWRPC, US Census ACS 2017-21

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Prepared By:

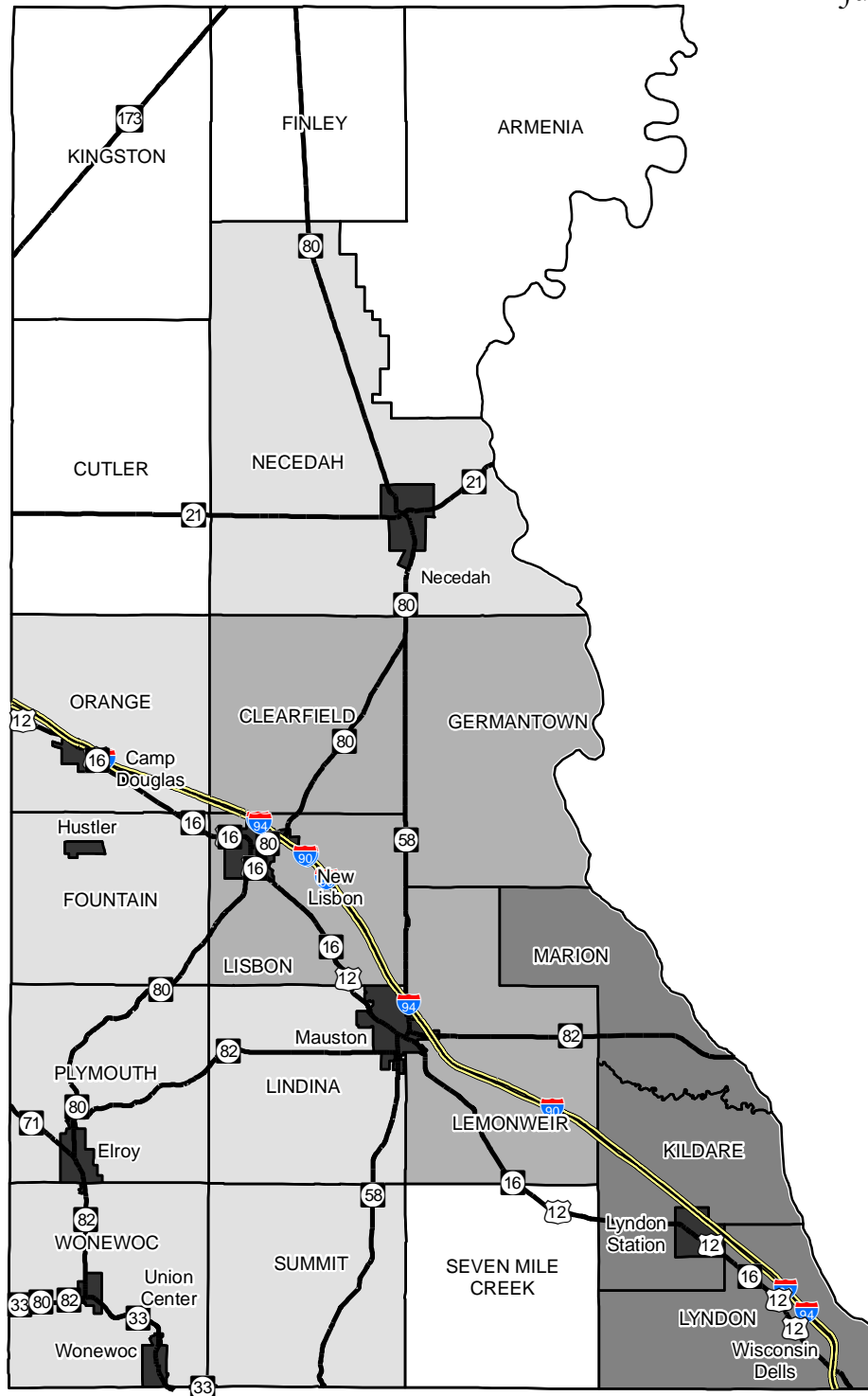


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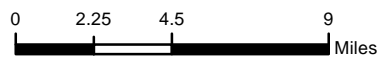
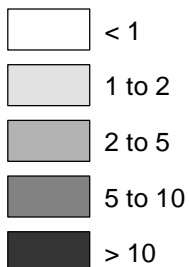
Population Density of Persons Living Below Poverty Level / By MCD

Juneau County



Legend

POVERTY / SqMi



Source: WI DNR, NCWRPC, US Census ACS 2018-22

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Prepared By:

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