



MARATHON COUNTY ALL HAZARDS MITIGATION PLAN UPDATE

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



MARATHON COUNTY ALL HAZARDS MITIGATION PLAN UPDATE

prepared for:

Marathon County Emergency Management

by:

North Central Wisconsin Regional Planning Commission

adopted by Marathon County Board on:

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This update was prepared at the request and under the supervision of the Marathon County Public Safety 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 Marathon 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 Marathon 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).

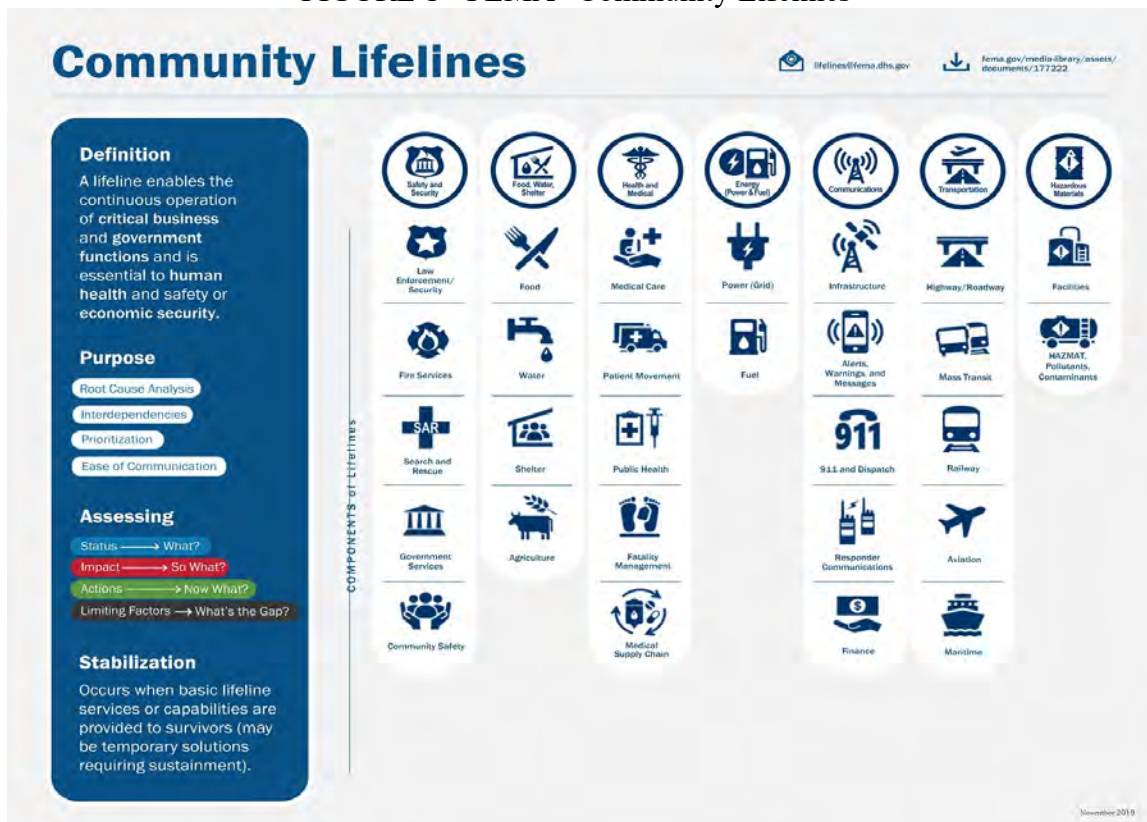
Local hazard mitigation plans form the foundation of a community's long-term strategy to reduce disaster losses and break the cycle of disaster damage, reconstruction and repetitive damage. The Federal Emergency Management Agency (FEMA) supports local mitigation planning to foster partnerships among 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 Marathon 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 Marathon County Emergency Management Department received a Planning Grant in the Fall of 2020 to update its All Hazards Mitigation Plan through the Pre-Disaster Mitigation Grant Program (PDM) now BRIC. This will be the third edition of County's mitigation plan.

In Winter of 2020, the North Central Wisconsin Regional Planning Commission (NCWRPC) finalized a work agreement with Marathon County, and NCWRPC Staff began preparation of the All Hazards Mitigation Plan Update at the request of the County Emergency Management Director in early 2021.

The update process included regular Task Force Committee meetings as well as extensive involvement from the local units of government within Marathon County and the counties surrounding Marathon. 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. 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 2017 PLAN

The major enhancements to the Marathon County All Hazards Mitigation Plan developed 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 expanded and 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 impact of climate change is incorporated into the Risk Assessment. The previous plan made 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 2017 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.
- ✓ Concept of Community Resilience is introduced into the Plan, see Chapter 5.

ALL HAZARDS MITIGATION PLAN UPDATE TASKFORCE

The Marathon County All Hazard Mitigation Plan Update was prepared under the guidance of an advisory taskforce that consisted of members of the County's Local Emergency Planning Committee or LEPC, as a 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 Staff, and the Task Force to provide 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:

Robert Barteck	Chief, City of Wausau Fire Dept.
Sosah Connahvichah	Linetec Inc.
Michael Puerner	Marathon Co. Corporation Counsel
Sarah Dowidat	Marathon Co. Administrator's Office
Ryan Berdal	Marathon Co. Sheriff's Office
Frank Hanousek	Citizen Member
Meleesa Johnson	Marathon Co. Solid Waste
Jeremy Kopp	Deputy Chief, City of Wausau Fire Dept.

Steve Lewens	Domtar Paper Co.
Scott Parks	Marathon Co. Sheriff
Nathan Pauls	City of Wausau Police Dept.
Bill Penker, Vice Chair	Community Service
John Peralta, Chair	Marathon Co, Solid Waste
Bob Pound	SAFER Fire Dept.
Ed Radtke	Aspirus Wausau Hospital
Philip Rentmeester	M.C. Emergency Mgmt.
Katie Rosenberg	Mayor, City of Wausau
Sarah Rothmeyer	North Central Health Care
Aaron Ruff	Marathon Co. Health Dept.
Kelly Zagrzebski	Wisconsin Public Service Corp.

LOCAL GOVERNMENT INVOLVEMENT

There were a number of opportunities for the local units of government to become involved in the update process. All jurisdictions participated in the original plan as well as this update through one or more of these opportunities.

In April of 2021 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 16 of 40 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:

- Forest Fire / wildfire risk.
- Transport of hazardous materials.
- Flood control.
- Proximity to rivers and/or dams.
- Bridges and culverts in low lying areas.
- Flooding in low lying areas.
- Culvert washouts.
- Culverts (upgrading, enlarging) / ditching / building up roads

All incorporated areas of the County have participated in this Plan Update or, for those split between Marathon and another county, in the plan of their primary county. The Cities of Mosinee, Schofield and Wausau; and the Villages of Athens, Edgar, Elderon, Fenwood, Hatley, Kronenwetter, Maine, Marathon City, Rothschild, Spencer, Stratford, Unity and Weston 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 Cities of Abbotsford (Clark), Colby (Clark) and

Marshfield (Wood); and the Villages of Birnamwood (Shawano) and Dorchester (Clark) are included in the plans of their primary county as indicated.

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

<i>City of Wausau Special Meeting Virtual January 10, 2022</i>	Katie Rosenberg Eric Lindeman Ben Bliven Jeremy Kopp Dustin Kraege Phil Rentmeester	Mayor Director of Public Works Chief of Police Deputy Fire Chief Public Works Superintendent Marathon Co. EM Director
<i>Village of Spencer Special Meeting February 23, 2022</i>	Paul Hensch Shawn Bauer	Village Administrator Police Chief
<i>Village of Edgar Special Meeting Teleconference May 23, 2022</i>	Jennifer Lopez	Village Administrator
<i>Village of Marathon City Special Meeting Teleconference May 23, 2022</i>	Andrew Kurtz	Village Administrator
<i>Village of Kronenwetter Community Life, Infrastructure and Public Property Committee Meeting April 4, 2022</i>	Ken Charneski, Chair Trenton Karch Heather Roth Richard Downey Jared Grande Jennifer Poyer	Trustee Citizen Committee Member Citizen Committee Member Village Administrator Community Development Director Village Communication Specialist
<i>City of Schofield Special Meeting January 7, 2022</i>	Kregg Hoehn Mark Thuot Phil Rentmeester	Mayor Public Works Director Marathon Co. EM Director
<i>City of Mosinee Special Meeting January 6, 2022</i>	Jeff Gates Kevin Breit Ken Grams Phil Rentmeester	City Administrator Director of Public Works Chief of Police Marathon Co. EM Director
<i>Village of Rothschild Special Meeting Virtual January 10, 2022</i>	George Peterson Tim Vergara Gary Olsen Jeremy Hunt	Village President Public Works Director Village Administrator Chief of Police

	Rob Bowen	Fire Chief
<i>Village of Weston Special Meeting January 18, 2022</i>	Keith Donner Josh Finke Josh Swenson Dan Raczkowski Michael Wodalski Clay Schulz John Rusinek Shawn Osterbrink Mark Maloney James Williams	Village Administrator Deputy Fire Chief SAFER Utility Superintendent Deputy Dir. of Public Works Director of Public Works Chief, Everest Metro PD Capt., Everest Metro PD Director of Parks and Rec. Village President Marathon Co EM Assist. Dir.
<i>Village of Maine Special Meeting January 24, 2022</i>	Keith Rusch Betty Hoenisch James Williams	Village Administrator Village President Marathon Co EM Assist. Dir.
<i>Village of Stratford Special Meeting Teleconference May 25, 2022</i>	Jamie Heindl	Village Clerk
<i>Village of Fenwood Special Meeting Teleconference May 23, 2022</i>	Edward Mielke	Village President
<i>Village of Elderon Special Meeting May 16, 2022</i>	Scott Dombeck Rob Wyman	Village President Village Clerk
<i>Village of Athens Special Meeting March 10, 2022</i>	Lisa Czech Tracy Westfall	Village Clerk Village Trustee & Chair, Police & Fire Commission
<i>Village of Hatley Special Meeting Teleconference May 24, 2022</i>	Dave Narloch	Village President
<i>Village of Unity Special Meeting July 2022</i>	Heidi Maldonis	Village Clerk

For this cycle of planning, there seemed to be fewer “common themes” that emerged from the planning meetings as communities seemed to be focused on their own unique internal problems. This was underscored by one thing that did come out of a number of the meetings which was the need for more/improved planning, training and exercising for improved coordination and cooperation in the preparation and response for hazard events. The interdependence of the Wausau Metro Area really highlighted this, however, it was also identified in other non-metro cities/villages, but on a smaller scale. Limited resources of individual communities were cited as a driving factor calling for governments, departments, agencies and other entities to work together, particularly in the case of an extraordinary event. There was discussion of incident command and contingency planning across agencies, including many not typically involved despite being significantly impacted.

Related to this interdependence a number of other concerns were identified. In the Metro Area, critical utilities such as sewer and water are interconnected. However, the connection points are limited and redundancy is lacking. If a connection line were to be broken, it could leave significant areas without water for drinking or firefighting and/or no where for sewage to go. This can lead to obvious public health and safety issues which would be exacerbated if in conjunction with a natural disaster. Transportation between Metro communities is another issue complicated by major waterways in the area. Communities identified the need for one or more additional bridge crossings to facilitate emergency response and evacuation. Communications have been an on-going concern with barriers to emergency communications within and between communities and departments. Access to (sharing) resources such as fuel, generators/pumps, and other equipment.

Other issues noted during the local government meetings include the following:

- Need to harden the 911 Center and other critical public facilities
- Flood control and storage and other stormwater system upgrades in communities like Wausau, Mosinee, Schofield, Kronenwetter and Rib Mountain
- Back-up power needs for critical facilities
- Emergency shelter needs for parks and fairgrounds in Wausau, among others

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

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 teleconferenced during the update process with staff from Lincoln, Taylor, Langlade, Shawano, Portage, Wood, Waupaca, and Clark counties. Ideas were exchanged about All Hazards Mitigation planning processes and strategies between the various counties.

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-private 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 virtually via WebEx on February 16, 2022. Agencies and organizations represented include the following:

James Williams	County Emergency Management
Mark Cihlar	Central Wisconsin Airport
Sheriff Scott Parks	County Sheriff’s Office
Darryl Landeau	N. Central WI Regional Plan Commission
Lauren Miskimins	County Conservation, Planning & Zoning
Steven Johnson	Wausau Manor Nursing Home
Sarah Rothmeyer	North Central Health Care
Jeff Pritchard	County Conservation, Planning & Zoning
Philip Rentmeester	County Emergency Management
Hanna Johnson	WI Dept. of Natural Resources
Nelson Pasha	County Dept. of Social Services
Becky Mroczenski	County Health Department
Jamie Polley	City/County Parks Dept.
Maizie Reif	WI Dept. of Natural Resources
Kelly Zagrzebski	Wisconsin Public Service
Andy Sims	City/County Parks Dept.
Terry Kaiser	County Facilities Management

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. Meeting attendees brought up issues including, but not limited to:

- Impacts on communications center: back-up power, back-up location, effects of incident on staffing levels.
- County (government) facilities can be quickly overwhelmed during a mass incident. An effort (planning/exercises) needs to be made to determine how facilities should be responding to such incidents; including discussion about additional resources that may be needed/are available.

- Continuity of operations planning for public and private facilities/entities.
- Providing care for populations with functional needs, including maintaining oxygen supply to those dependent, when an incident impairs operations or forces evacuation. Training and exercises.
- Maintaining operation of NCHC (and other) Crisis Center(s) to provide crisis intervention services when facilities and/or staff are compromised or must be evacuated. Training and exercises.
- Work on contingency plans what agencies can assist and how they can assist in these critical areas.
- In addition to police (sheriff), fire and EMS, other departments (parks, highways, etc) will be responding to an incident and will require fuel to keep vehicles and equipment operating.
- Address evacuation and sheltering issues/needs – planning, training, exercising; including lockdown protocols for county (and other) facilities, vulnerable population needs, language barriers, short and long term housing.
- County facility (jail, nursing home, etc.) event notification protocols.
- Facility natural gas supply disruption back-up plans.

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 Public Safety 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 Marathon County Courthouse on February 23, 2022, see APPENDIX A for meeting details. Notices were posted at the Courthouse and the local newspaper including their on-line listings. However, no one from the public attended, and thus no public comments were received. In addition, no written comments were submitted.

An open, public meeting was held by the County Public Safety Committee to review the Plan Update prior to forwarding it the County Board for approval, 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 the public review, the County Board approved the plan update at a subsequent 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, and there was some general discussion by the Board.

The Cities and Villages 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 units resolutions of adoption.

INCORPORATED PLANS, STUDIES, REPORTS AND TECHNICAL DATA

Many plans, reports, and technical data sources were referenced and incorporated into the Marathon 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 Marathon 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 Marathon 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 3 and 4 in Part 2 and Table 17 in Part 3. The WisDNR Dams Database provided information on high hazard potential dams with the County. NFIP DFIRM flood zone maps for Marathon County provided the mapping of 100-year floodplain areas, Map 4 in Part 2, for flooding risk assessment, Map 9 in Part 3.

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

Other plans, reports, and documents were reviewed by staff during the 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 Marathon County Zoning Ordinance, the Marathon County Land and Water Resource Management Plan, the 2010 LTPO Preparedness in Wisconsin report, the 2014 Commodity Flow Study for Marathon County, the North Central Wisconsin Pandemic Assessment and Future Response Plan and the North Central Wisconsin Regional COVID-19 Recovery Plan. Although 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:

www.co.marathon.wi.us/Departments/EmergencyManagement.aspx

www.ncwrpc.org/marathon/hazard/index.html



INTRODUCTION

Part II of the Marathon County All-Hazards Mitigation Plan Update provides general geographical information on Marathon 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.

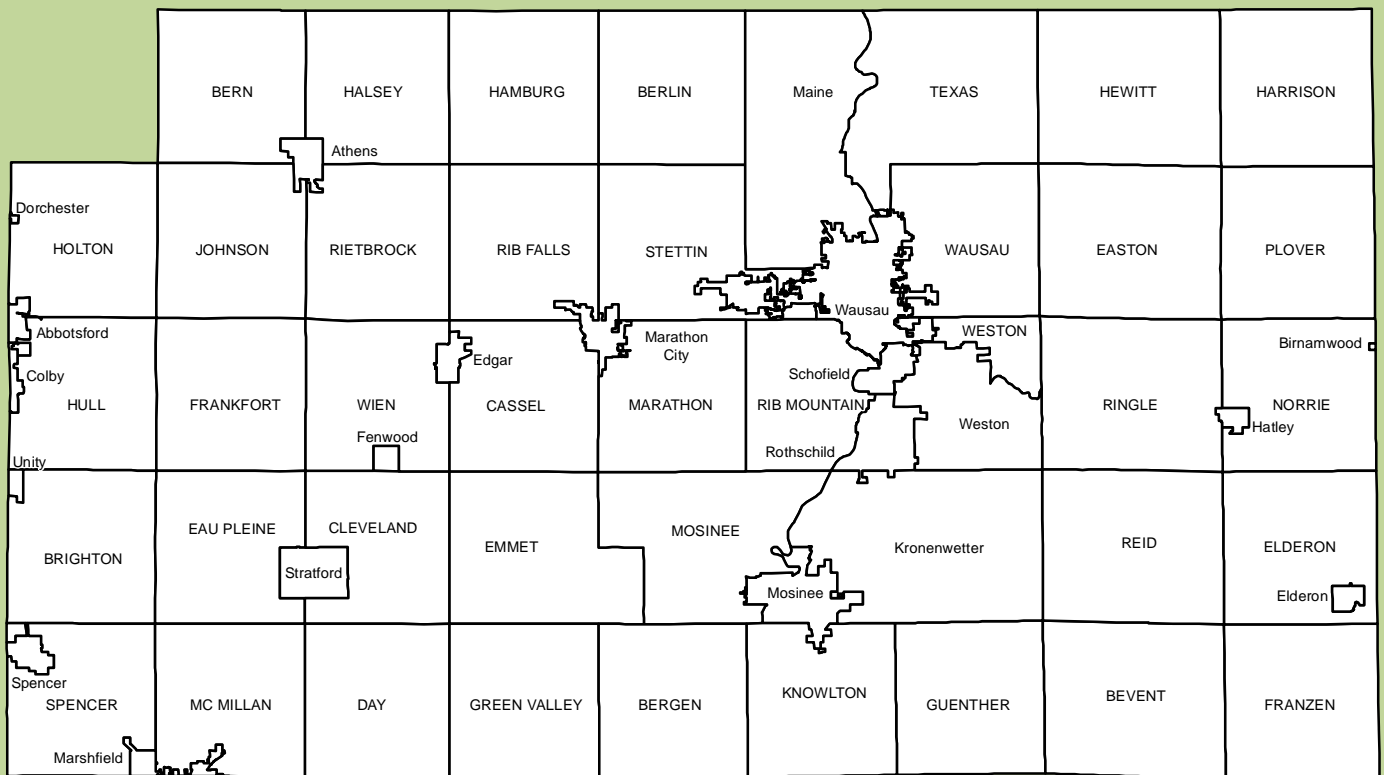
The resulting information is an important element of the update process, since sound alternative mitigation strategies cannot be formulated and evaluated without an in-depth knowledge of the relevant conditions in the study area.

GENERAL GEOGRAPHY

LOCATION

Marathon County is located in Central Wisconsin (See Map 1). The largest urban area is the Wausau Metropolitan Area, just slightly north and east of the center of the County, which is comprised of several cities and villages, including Wausau, Brokaw, Kronenwetter, Mosinee, Rothschild, Schofield, Weston and the Town of Rib Mountain. There are a number of other smaller cities and villages spread around the County, including several that straddle the county boundary (covered under the mitigation plan of the county containing the higher percentage of land area), as well as a variety of unincorporated "hamlets" (concentrations of development within rural towns). Because of the relatively high density urban area at its core, the U.S. Census Bureau has designated the entire county as a Metropolitan Statistical Area or MSA.

The County is bounded on the north by Lincoln, Taylor and Langlade Counties, on the east by Shawano, on the south by Portage, Wood and Waupaca, and on the west by Clark County. Marathon County lies 186 miles north of Milwaukee; 107 miles northwest of Green Bay; and 140 miles north of Madison. Major metropolitan areas outside of Wisconsin with transportation linkages to Marathon County are Chicago, 280 miles southeast; Minneapolis-St. Paul, 186 miles west; and Duluth, 233 miles northwest.



Source: NCWRPC, Marathon County Geo Services

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.



Prepared By:

**North Central
Wisconsin Regional
Planning Commission**

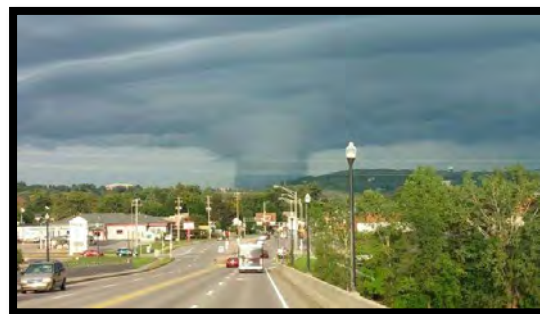
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MUNICIPALITIES

There are 62 municipalities (40 towns, 15 villages, and 6 cities) in the Marathon County planning area. The City of Wausau is the County Seat. These units of government comprise the basic structure of the decision-making framework. The County has a total surface area of 1,576 square miles, of which about 2 percent is water. The area and proportion of the County within each place is presented in Tables 1 a and b.

Table 1a: Municipalities - Geographical Size by Incorporated Areas				
Incorporated Areas	Approximate Area in Square Miles			Area as % of County
	Land	Water	Total	
<i>Marathon County total</i>	<i>1,544.98</i>	<i>31.33</i>	<i>1,576.31</i>	<i>100.0%</i>
City of Abbotsford*	1.61	0.00	1.61	0.1%
City of Colby*	0.80	0.00	0.80	0.1%
City of Marshfield*	2.03	0.00	2.03	0.1%
City of Mosinee	7.77	0.77	8.55	0.5%
City of Schofield	1.90	1.07	2.97	0.2%
City of Wausau	19.30	1.26	20.56	1.3%
Village of Athens	2.46	0.00	2.46	0.2%
Village of Birnamwood*	0.06	0.00	0.06	<0.1%
Village of Dorchester*	0.12	0.00	0.12	<0.1%
Village of Edgar	1.82	0.00	1.82	0.1%
Village of Elderon	1.10	0.06	1.16	0.1%
Village of Fenwood	0.99	0.00	0.99	0.1%
Village of Hatley	1.05	0.00	1.05	0.1%
Village of Kronenwetter	51.70	0.36	52.06	3.3%
Village of Maine	43.08	0.58	43.66	2.8%
Village of Marathon City	3.85	0.01	3.86	0.2%
Village of Rothschild	6.53	0.37	6.91	0.4%
Village of Spencer	2.01	0.00	2.01	0.1%
Village of Stratford	5.31	0.04	5.34	0.3%
Village of Unity*	0.66	0.00	0.66	<0.1%
Village of Weston	21.55	0.03	21.57	1.4%

*Source: U.S. Census 2010 and NCWRPC, updated 2021. *Denotes split between two counties.*



Lenticular Cloud Formation over Wausau, 2014

Table 1b: Municipalities - Geographical Size by Unincorporated Areas				
Unincorporated Areas (Town of)	Approximate Area in Square Miles			Area as % of County
	Land	Water	Total	
Bergen	27.06	7.76	34.82	2.2%
Berlin	34.71	0.00	34.71	2.2%
Bern	34.05	0.01	34.06	2.2%
Bevent	42.12	0.64	42.76	2.7%
Brighton	34.23	0.02	34.25	2.2%
Cassel	32.88	0.01	32.89	2.1%
Cleveland	29.65	0.86	30.51	1.9%
Day	33.75	0.24	33.99	2.2%
Easton	42.84	0.02	42.86	2.7%
Eau Pleine	33.22	0.01	33.23	2.1%
Elderon	34.56	0.35	34.91	2.2%
Emmet	39.87	0.37	40.24	2.6%
Frankfort	35.06	0.01	35.07	2.2%
Franzen	36.30	0.30	36.60	2.3%
Green Valley	28.97	6.23	35.20	2.2%
Guenther	34.67	0.04	34.71	2.2%
Halsey	33.14	0.00	33.14	2.1%
Hamburg	35.35	0.00	35.35	2.2%
Harrison	36.63	0.03	36.66	2.3%
Hewitt	43.49	0.00	43.49	2.8%
Holton	34.50	0.01	34.51	2.2%
Hull	32.48	0.07	32.55	2.1%
Johnson	35.10	0.00	35.10	2.2%
Knowlton	29.16	5.06	34.22	2.1%
McMillan	33.99	0.20	34.20	2.2%
Marathon	32.87	0.03	32.90	2.1%
Mosinee	37.22	1.25	38.47	2.4%
Norrie	34.51	0.63	35.14	2.2%
Plover	36.03	0.04	36.08	2.3%
Reid	41.68	0.56	42.25	2.7%
Rib Falls	34.57	0.04	34.60	2.3%
Rib Mountain	24.57	0.99	25.56	1.6%
Rietbrock	33.92	0.00	33.92	2.2%
Ringle	42.12	0.07	42.19	2.7%
Spencer	31.39	0.20	31.60	2.0%
Stettin	35.66	0.19	35.85	2.3%
Texas	44.44	0.46	44.90	2.9%
Wausau	32.23	0.00	32.23	2.0%
Weston	8.66	0.06	8.72	0.6%
Wien	31.53	0.01	31.54	2.0%

Source: US Census 2010 and NCWRPC, updated 2021.

TOPOGRAPHY

Rib Mountain, located just west of the Wausau metropolitan area, is the highest elevation in Marathon County and the third highest point in the State of Wisconsin. Rib Mountain has an elevation of 1,924 feet above sea level. The lowest elevation in Marathon County is 1,100 feet above sea level at the southern end of the County where the Wisconsin River flows into Portage County. The majority of the County's topography ranges in elevation from 1,200 feet to 1,450 feet above sea level with a local elevation difference of less than 100 feet. The Wisconsin River bisects the County into two, fairly distinct halves. The eastern half of the County has retained a more wooded character while the western half contains large expanses of farmland.

The drainage pattern in the County is typical of a glaciated region: irregular and poorly defined. The majority of the County is drained by the Wisconsin River and its tributaries. But the Wolf River drains a portion in the southeastern part of the County, and a very small portion of western Marathon County is drained by the Black River.

CLIMATE

Marathon County has a continental climate that is typically 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 18 degrees F., and the average daily minimum temperature is 9 degrees. The lowest temperature on record is - 40 degrees F., which occurred in 1951. The number of days at or below 0 degrees has varied from five in 2011 to 64 in 1916. In summer, the average temperature is 67 degrees F. and the average daily maximum temperature is 78 degrees F. The highest recorded temperature is 107 degrees F., which occurred in 1936. The number of days at or above 90 degrees has varied from 0 which last occurred in 2008 to 34 in 1955.

Total annual precipitation is about 32 inches. Of this, about 70% usually falls in April through September. Thunderstorms occur on about 38 days each year. Average annual snowfall is about 60 inches. The prevailing wind is from the Northwest, with the highest average wind speed of 12 mph during spring.

DEMOGRAPHIC AND ECONOMIC PROFILE

POPULATION AND HOUSEHOLDS

The official state population estimate for Marathon County shows a population of 137,237 people for 2020. This represents a nearly 2.5% increase over the 2010 Census reported population of 134,063. As with most counties in the area, this is a significant decline from

growth rates observed the last couple of decades. At current rates, Marathon trails the state slightly, but leads in its local area, tied with Portage County (refer to Table 2). If the growth rate continues at the current level, there will be approximately 140,531 people in Marathon County in 2030 and 143,904 people in 2040.

Population concentrations and trends are important when prioritizing hazard mitigation strategies. Approximately 60 percent of the population is classified by the Census as urban and 40 percent is rural. The Wausau metropolitan area is the most densely populated and developed area in the County. Map 2 shows areas of residential population concentrations in the County. Overall population density of the County is 87.1 persons-per-square-mile and ranges from a high of 1,891.2 in the City of Wausau to a low of 10.0 in the Town of Guenther.

Table 2 Population of Adjacent Counties				
	2010	2020	# Change	% Change
Marathon	134,063	137,237	3,174	2.4
Lincoln	28,743	28,800	57	0.2
Langlade	19,977	20,063	86	0.4
Shawano	41,949	41,739	-210	-0.5
Waupaca	52,410	52,155	-255	-0.5
Portage	70,019	71,670	1,651	2.4
Wood	74,749	75,381	632	0.9
Clark	34,690	34,725	35	0.1
Taylor	20,689	20,793	104	0.5
Wisconsin	5,686,986	5,854,594	167,608	3.0

Source: US Census 2010 & WIDOA 2020.

Between 2010 and 2020, some communities within the County experienced a slight decrease in their population (refer to Tables 3 a and b). However, most have gained residents. These increases are widely variable across communities, but the majority closely track the County growth rate around 2.5%. Notable exceptions include the villages of Kronenwetter and Weston, both part of the Wausau metro-area, which added 948 and 778 new people, respectively. The most significant growth has taken place in and around the County's urban areas, and this is expected to continue moving forward.

Table 3a Municipalities - Pop & Households by Incorporated Areas						
Incorporated Areas	2010	2010	2020	2020	% '10-'20	% '10-'20
	Population	Households	Population	Households	Population	Households
<i>County total</i>	134,063	53,176	137,237	55,466	2.4%	4.31%
City of Abbotsford*	694	226	650	242	- 6.34%	7.08%
City of Colby*	498	199	554	249	11.24%	25.13%
City of Marshfield*	900	394	1,108	331	23.11%	-15.99%
City of Mosinee	3,988	1,660	4,124	1,965	3.41%	18.37%
City of Schofield	2,169	994	2,201	1,030	1.48%	3.62%
City of Wausau	39,106	16,487	38,884	17,113	- 0.57%	3.80%
Village of Athens	1,105	471	1,116	497	1.00%	5.52%
V. Birnamwood*	16	6	20	12	25.00%	100.00%
V. Dorchester*	5	1	4	1	- 20.00%	0.00%
Village of Edgar	1,479	597	1,466	617	- 0.88%	3.35%
Village of Elderon	179	80	177	112	- 1.12%	40.00%
V. of Fenwood	152	64	153	74	0.66%	15.63%
Village of Hatley	574	223	637	221	10.98%	-0.90%
V. Kronenwetter	7,210	2,652	8,158	2,923	13.15%	10.22%
Village of Maine	2,337	890	2,619	1,077	1.20%	21.01%
V. Marathon City	1,524	638	1,588	593	4.20%	-7.05%
V. Rothschild	5,269	2,199	5,328	2,236	1.12%	1.68%
Village of Spencer	1,925	816	1,913	784	- 0.62%	-3.92%
Village of Stratford	1,578	666	1,610	666	2.03%	0.00%
Village of Unity*	204	84	197	84	- 3.43%	0.00%
Village of Weston	14,868	5,772	15,646	6,047	5.23%	4.76%

*Source: US Census 2010, WIDOA 2020 & NCWRPC estimates 2021. *Denotes split between two counties.*

According to the Wisconsin Department of Workforce Development the median age in Marathon County is 40.7. This is up from 39.4 in 2017. This is a notable trend affecting many parts of the state. As the population continues to age, it is anticipated that more than 21 percent of the population will be 65 or older and by 2030. This will have implications affecting the demand for emergency services.

Marathon County has a high population of Southeast Asian immigrants, particularly in the metro-area. In the rural farming areas, there is a high population of Hispanic and Latino immigrants. Minorities as a percent of the total population more than doubled from 3% in 1990 to 6.2% in 2000 and is at 10.9% as of the 2017 U.S. Census estimate. The language barrier is a potential issue in emergency response, recovery and mitigation efforts. In 2014, 8.1% of all Marathon County residents speak a language other than English as their primary language, according to the Census.

Table 3b Municipalities - Pop & Households by Unincorporated Areas						
Unincorporated Areas (Town of)	2010 Population	2010 Households	2020 Population	2020 Households	% '10-'20 Population	% '10-'20 Households
Bergen	641	250	635	284	- 0.94%	13.60%
Berlin	945	364	957	356	1.27%	-2.20%
Bern	591	189	616	215	4.23%	13.76%
Bevent	1,118	454	1,138	445	1.79%	-1.98%
Brighton	612	214	607	195	- 0.82%	-8.88%
Cassel	911	322	937	348	2.85%	8.07%
Cleveland	1,488	530	1,524	552	2.42%	4.15%
Day	1,085	410	1,093	406	0.74%	-0.98%
Easton	1,111	426	1,150	408	3.51%	-4.23%
Eau Pleine	773	298	759	351	- 1.81%	17.79%
Elderon	606	245	619	236	2.15%	-3.67%
Emmet	931	324	961	342	3.22%	5.56%
Frankfort	670	242	652	231	- 2.69%	-4.55%
Franzen	578	219	590	199	2.08%	-9.13%
Green Valley	541	218	557	191	2.96%	-12.39%
Guenther	341	133	346	114	1.47%	-14.29%
Halsey	651	208	672	226	3.23%	8.65%
Hamburg	918	322	926	342	0.87%	6.21%
Harrison	374	150	382	173	2.14%	15.33%
Hewitt	606	239	637	276	5.12%	15.48%
Holton	873	308	883	330	1.15%	7.14%
Hull	750	262	746	246	- 0.53%	-6.11%
Johnson	985	310	990	324	0.51%	4.52%
Knowlton	1,910	760	1,972	797	3.25%	4.87%
Marathon	1,048	396	1,037	396	- 1.05%	0.00%
McMillan	1,968	709	2,043	793	3.81%	11.85%
Mosinee	2,174	814	2,206	931	1.47%	14.37%
Norrie	976	368	994	383	1.84%	4.08%
Plover	689	250	698	253	1.31%	1.20%
Reid	1,215	489	1,242	541	2.22%	10.63%
Rib Falls	993	345	999	367	0.60%	6.38%
Rib Mountain	6,825	2,650	7,001	2,567	2.58%	-3.13%
Rietbrock	981	332	991	303	1.02%	-8.73%
Ringle	1,711	619	1,771	623	3.51%	0.65%
Spencer	1,581	550	1,640	600	3.73%	9.09%
Stettin	2,554	999	2,595	1,148	1.61%	14.91%
Texas	1,615	645	1,598	687	- 1.05%	6.51%
Wausau	2,229	860	2,364	923	6.06%	7.33%
Weston	639	228	695	215	8.76%	-5.70%
Wien	825	283	861	276	4.36%	-2.47%

Source: US Census 2010, WIDOA 2020 & NCWRPC estimates 2021.

SEASONAL POPULATION

In addition to the regular full-time resident population, the impact of seasonal populations cannot be overlooked when planning for hazards. Marathon County is not known as a vacation home mecca like Wisconsin's northern counties, however, the number of housing units identified as seasonal/recreational (only 1.6% of total units) by the US Census adds up to a significant number across the County. In addition, there is a significant seasonal migrant worker component resulting from the high concentration of ginseng and other agricultural production in the County.

Based on the number of units identified by the Census, an estimated seasonal resident population by municipality is shown in Tables 4 a and b. 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 4a Estimated Seasonal Population - Incorporated Areas		
Incorporated Areas	Estimated Seasonal Housing Units	Estimated Seasonal Population
<i>Marathon County Total</i>	963	2,321
City of Abbotsford*	0	0
City of Colby*	0	0
City of Marshfield*	45	108
City of Mosinee	0	0
City of Schofield	5	12
City of Wausau	169	407
Village of Athens	3	7
Village of Birnamwood*	0	0
Village of Dorchester*	0	0
Village of Edgar	10	24
Village of Elderon	0	0
Village of Fenwood	0	0
Village of Hatley	0	0
Village of Kronenwetter	0	0
Village of Maine	0	0
Village of Marathon City	0	0
Village of Rothschild	0	0
Village of Spencer	15	36
Village of Stratford	0	0
Village of Unity*	0	0
Village of Weston	52	125
<i>Source: US Census 2019 & NCWRPC 2021. *Denotes split between two counties.</i>		

Table 4b Estimated Seasonal Population - Unincorporated Areas		
Unincorporated Areas (Town of)	Estimated Seasonal Housing Units	Estimated Seasonal Population
Bergen	13	31
Berlin	7	17
Bern	8	19
Bevent	62	149
Brighton	0	0
Cassel	1	2
Cleveland	30	72
Day	0	0
Easton	7	17
Eau Pleine	0	0
Elderon	45	108
Emmet	20	48
Frankfort	8	19
Franzen	7	17
Green Valley	67	161
Guenther	8	19
Halsey	16	39
Hamburg	0	0
Harrison	21	51
Hewitt	0	0
Holton	7	17
Hull	0	0
Johnson	0	0
Knowlton	88	212
McMillan	0	0
Maine*	0	0
Marathon	0	0
Mosinee	38	92
Norrie	35	84
Plover	48	116
Reid	0	0
Rib Falls	37	89
Rib Mountain	6	14
Rietbrock	16	39
Ringle	0	0
Spencer	29	70
Stettin	9	22
Texas	14	34
Wausau	6	14
Weston	11	27
Wien	13	31
<i>Source: US Census 2019 & NCWRPC 2021.</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 Wisconsin DNR completed a general inventory as part of its statewide comprehensive outdoor recreation plan. That inventory identified 1,875 hotel/motel beds, 29 bed and breakfast beds and 16 tourist rooming house beds available around the County. The DNR also identified nine campgrounds with 646 campsites across the County as well as seven educational/recreational camps with capacity for 134 individuals.

EMPLOYMENT

The manufacturing sector has the greatest impact on Marathon County employment having the most employees at about 16,779 jobs in 2018 which is more than 23% of total employment. The trade, transportation & utilities industry is the second largest sector in the County with 15,330 positions or 21.5% of total employment. The education and health sector has the third highest number of employees at about 14,039 or 19.7%.

Table 5 Prominent Employers in Marathon County			
Company	Product or Service	# Employees	Location
Aspirus Wausau Hospital	medical/surgical hospitals	1000 or more	C. Wausau
Greenheck Fan Corp.	fan and blower mfg	1000 or more	C. Schofield
Kolbe and Kolbe Millwork Company, Inc.	wood window and door manufacturing	500-999	C. Wausau
Footlocker/Eastbay	mail-order houses	500-999	C. Wausau
Marathon Cheese	dairy product wholesalers	500-999	V. Marathon
DC Everest School District	public K-12 schools	500-999	C. Schofield
North Central Health Care	psychiatric and substance abuse hospitals	500-999	C. Wausau
North Central Technical College	junior colleges	500-999	C. Wausau
Liberty Mutual Group Inc.	Direct property and casualty insurers	500-999	C. Wausau
Wausau Metals/Milco/Linetec	Metal window and door manufacturing	500-999	C. Wausau

Source: Wisconsin Department of Workforce Development, 2013

The importance of the manufacturing sector to the economy is reflected through three spots on the top-10 employer list (Table 5) with Greenheck Fan, Kolbe & Kolbe Millwork and Wausau Metals. Although the trade, transportation & utilities sector is second in the County in employment, it is represented on the list of top employers in the County by only one firm, Eastbay. This sector is comprised of many smaller firms throughout the County. The education and health sector may be third in overall employment, but it has the largest employer in the County with Aspirus (hospital and clinics), as well as three other spots in the top ten with North Central Health Care (psychiatric), DC Everest School District and

Northcentral Technical College. Marshfield Clinic Health System is also a prominent employer in this area. Insurance, both health and property, is also a significant employment sector in the county as represented by Liberty Mutual in the top employers list. UMR is a division of United Healthcare (insurance) and major employer in Wausau.

Identifying locations of large employment is important when prioritizing hazard mitigation strategies. The listing of top employers further demonstrates that the Wausau area is the primary employment and service hub in the County.

In addition to seasonal swells in employment, the number of people working in a given locality fluctuates on a daily basis. The County is a net importer of labor. In other words, the County has more jobs than residents who work. Approximately 18 percent of the County's workforce enters from other counties while only about 15 percent of working residents travel to work outside the County. The top three counties that people commute between are Lincoln, Portage and Wood.

ECONOMIC IMPACT OF JOB LOSS IN MARATHON 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 some select industry sectors of the County. A catastrophic, worst case, scenario is examined. Actual impacts would vary by degree of severity of the event. APPENDIX C contains a detailed printout of the analysis, and Table 6 shows a summary.

Table 6 Economic Impact of Catastrophic Event on Employment in Select Major Industry Sectors within Marathon County			
Sector	Potential Jobs Impacted	Multiplier	Earnings
Animal Prod. & Aquaculture	3,194	1.46	\$100,943,433
Mail Order Houses	1,884	1.38	\$66,599,862
Fan/Blower/Air Purification Mfg	1,872	1.29	\$109,706,179
Wood Window/Door Mfg	1,670	1.37	\$68,672,580

Source: EMSI Economic Modeling Specialists and NCWRPC, 2015.

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.

Land use in Marathon County was categorized into different classifications. Aerial photos were used to digitize a land use Geographic Information System (GIS) coverage. Map 2 shows the land use and development concentrations in Marathon County. Table 7 shows the acreage and percent of each classification.

Generalized Land Use in Marathon County		
Description	Acres	Percent
Agriculture*	496,659	49.3%
Commercial and Industrial	11,684	1.1%
Public / Institutional	2,438	0.2%
Outdoor Recreation	2,313	0.2%
Residential	47,604	4.7%
Transportation	33,016	3.3%
Water	28,331	2.8%
Woodlands	387,718	38.4%
Total	1,009,763	100.0%

*Source: Marathon County Comprehensive Plan, 2016. *Broadly Includes farm areas in addition to active cropland: cranberry, open field & grasslands and other lands.*

FORESTRY AND AGRICULTURE

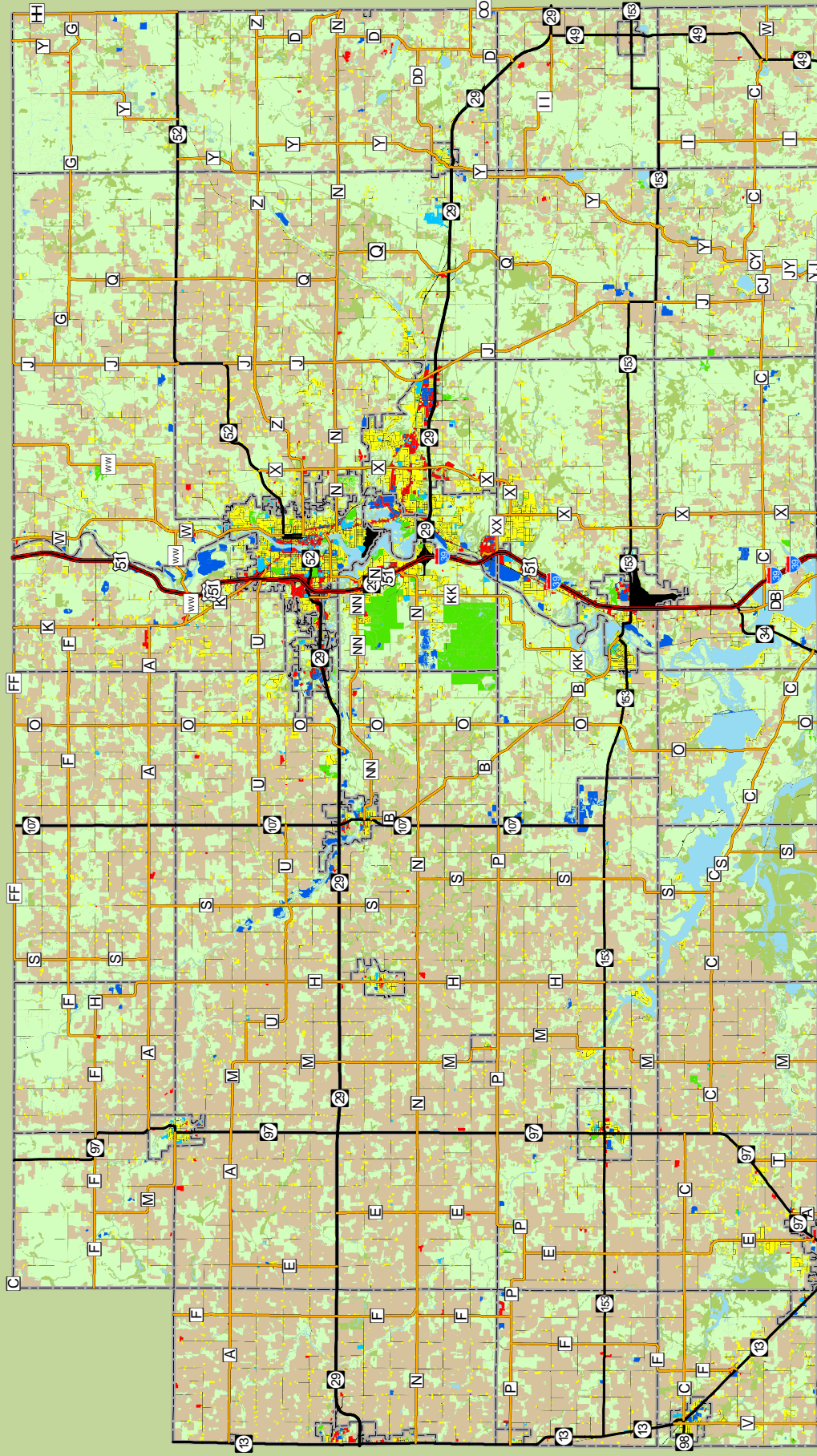
The dominant land-uses in Marathon County are forestry and agriculture. Land area in the County is approximately 38 percent forested, comprised of 387,718 acres of woodland. Agricultural land covers another 49 percent of the county's land area. The main agricultural practices in the County are dairy farming, cattle ranching grain, vegetables, other crops and hay. Other leading crops include ginseng and maple syrup. The county has the most acres in the state in forage and ranks near the top for corn silage and oats grown for grain. Agriculture is scattered throughout the County but much of it is concentrated in the western half.

RESIDENTIAL DEVELOPMENT

Land in residential development makes up only 4.7 percent of the total County area. Residential land is scattered throughout the County (see “Population and Households” above), but a heavy concentration comprises the Wausau metro-area. The various small cities, villages and unincorporated hamlets around the County also represent higher density residential development.


There are a number of mobile home parks in the County. According to the U.S. Census, there were 1,555 mobile homes in 2019. This is about 2.6 percent of the housing units for the County compared to 3.3 percent for the entire state. Mobile home concentrations are significant due to their vulnerability to natural hazards, especially tornadoes. Map 8 displays the mobile home concentrations within the County.

Generalized Land Use



Legend

Minor Civil Divisions	Governmental / Institutional	Residential
US Highways	Industrial	Transportation
State Highways	Open Lands	Utility
County Highways	Outdoor Recreation	Water
Agriculture	Railroad	Woodlands
Commercial		

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Source: NCWRPC, WI DNR, LU 2020, Marathon County Geo Services

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.

COMMERCIAL AND INDUSTRIAL DEVELOPMENT

Commercial and industrial development makes up only about 1.1 percent of the total area of the County. Land use for commercial and industrial development is also scattered throughout the County. Commercial is concentrated along main transportation corridors and in urban areas. The Wausau metro-area is a regional economic hub. There are small clusters of commercial land located on main streets in many of the small cities, villages and unincorporated places throughout the County. Concentrations of industrial uses can be found in the 10 designated industrial parks in Marathon County. They are located in Athens, Brokaw, Colby, Edgar, Kronenwetter, Mosinee, Spencer, Stratford, Weston, and Wausau.

SURFACE WATER

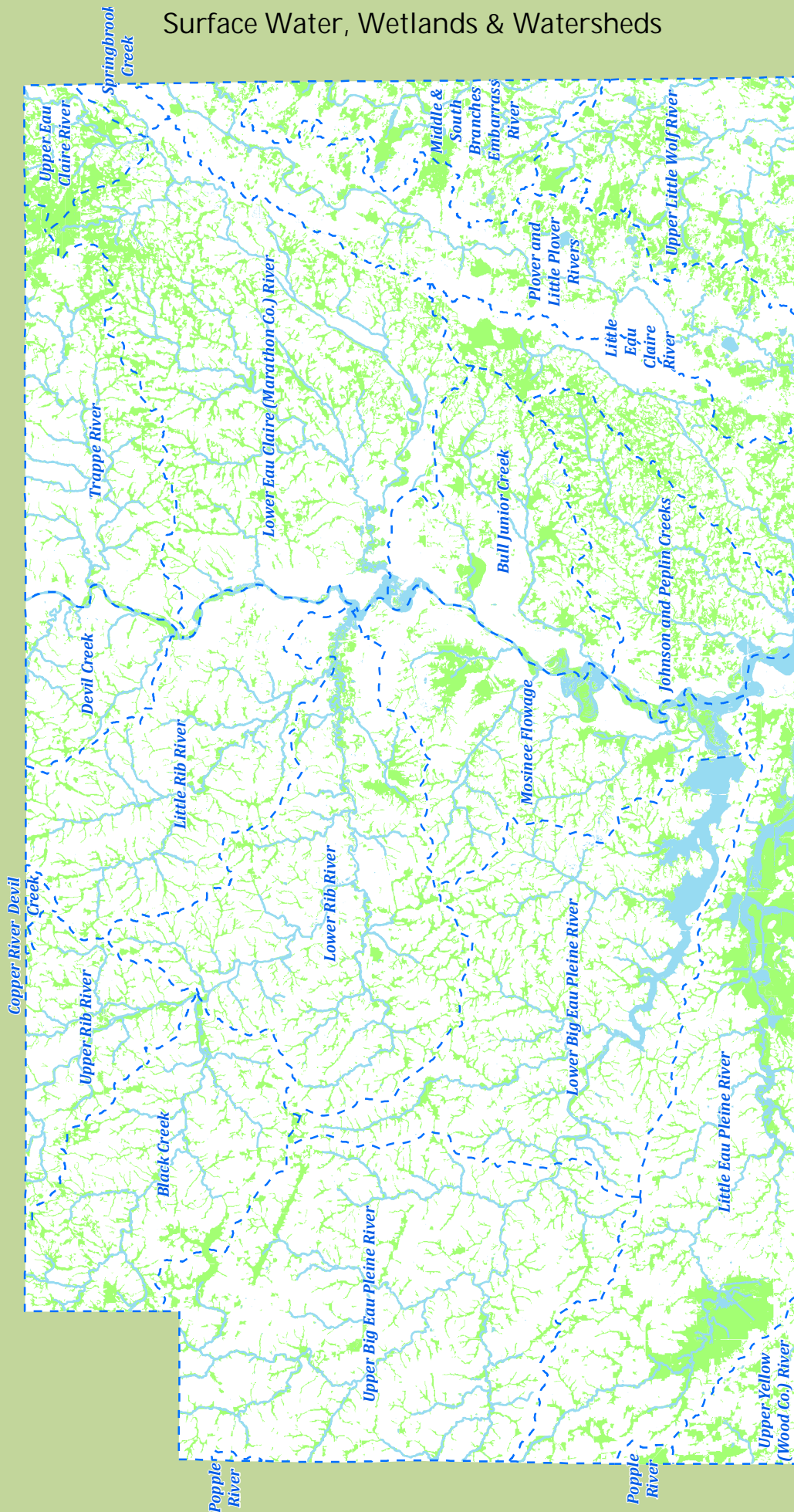
Marathon County has a total surface area of about 1,009,000 acres, however, only about 2.8% or 28,000 acres is comprised of surface water (see Map 3). The County has 202 Lakes. The largest lakes are all artificial impoundments (dammed), including the Big Eau Pleine Reservoir, Lake Wausau, Half Moon Lake, and Lake Du Bay.

The County has 356 rivers and streams. The interconnected network of rivers and streams that cross Marathon County is characteristic of a landscape influenced by glacial impacts. The Wisconsin River flows south through the County. The river is regulated by several dams on the mainstream and tributaries, which are controlled by the Wisconsin Valley Improvement Corporation (WVIC). Major tributaries flowing from the east to west include the Trappe, Eau Claire, Little Eau Claire, and Plover Rivers. The major tributaries flowing from west to east are the Little Rib, Big Rib, Big Eau Pleine, and the Little Eau Pleine Rivers.





Water drainage is divided into various levels of management, including: interstate river basins, river basins or water management units, and watersheds. The majority of Marathon County is within the Wisconsin River Basin, but the southeastern portion of the County is in the Wolf River Basin, and a very small portion of western Marathon County is in the Black River Basin. There are 22 watersheds located completely or partially within the County. Map 3 shows the watershed boundaries. The watersheds are as follows:

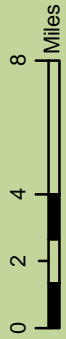
- > Upper Big Eau Pleine
- > Little Eau Pleine River
- > Upper Rib River
- > Springbrook Creek
- > Black Creek
- > Devil Creek
- > Plover and Little Plover Rivers
- > Lower Eau Claire River
- > Johnson and Peplin Creeks
- > Bull Junior Creek
- > Copper River
- > Lower Big Eau Pleine
- > Lower Rib River
- > Little Rib River
- > Upper Yellow River
- > Trappe River
- > Mosinee Flowage
- > Upper Eau Claire River
- > Little Eau Claire River
- > Middle & South Embarrass River
- > Popple River
- > Upper Little Wolf River

Surface Water, Wetlands & Watersheds



Legend

-  Watershed Boundaries
-  Water
-  Wetlands
-  Perennial Streams



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Source: NCWRPC, WI DNR, Marathon Co.

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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. Floodplains are 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 Map 4 as floodplains should be able to handle a severe (regional) flood, i.e. those that have a probability of occurring once every one hundred years.

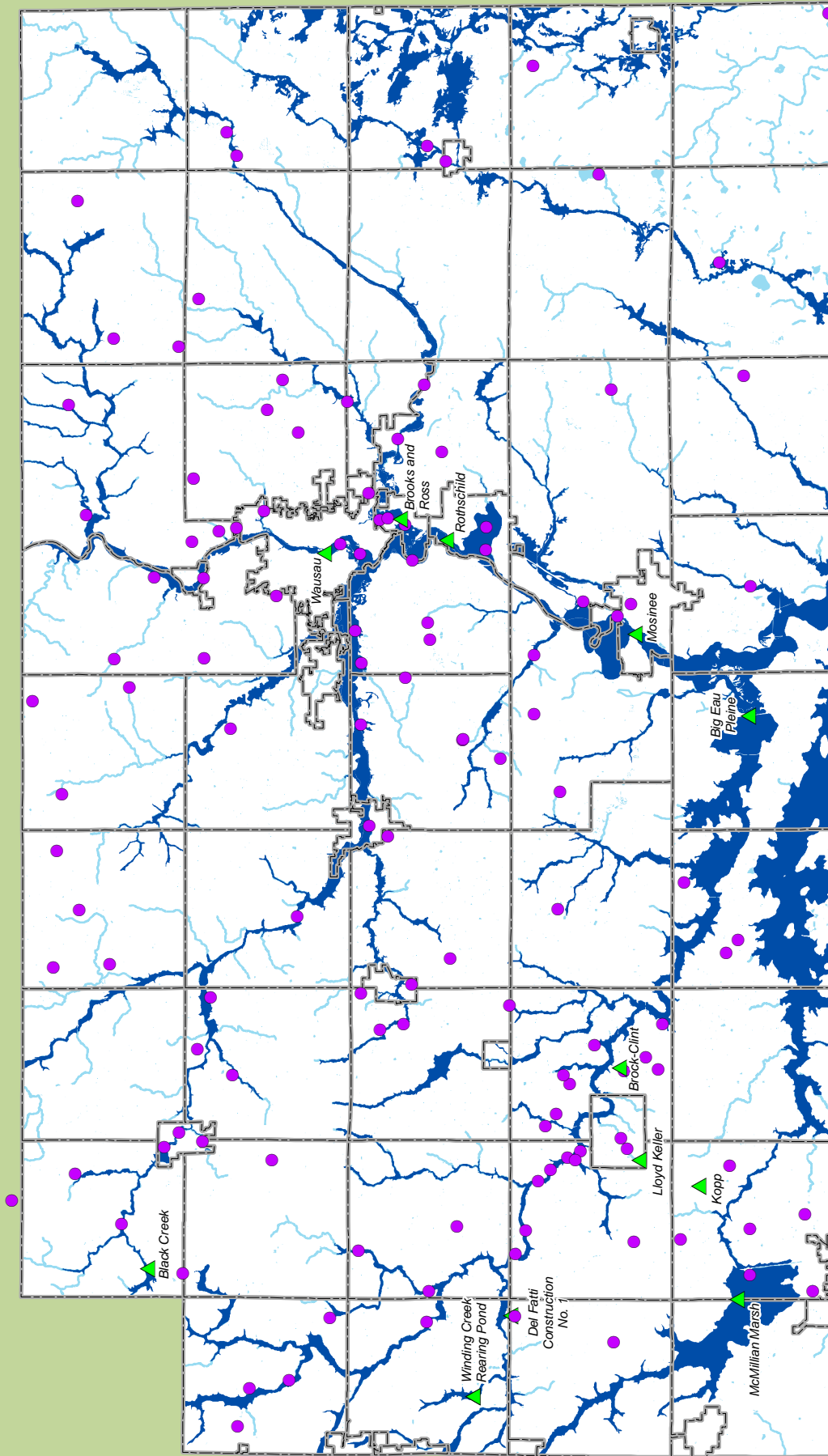
There is a value in preserving and protecting these natural flood control areas from encroachment. First, by preventing development in the floodplain, the cost of building dikes, levies, or other man-made flood control devices will be saved. Second, for each structure that is constructed in a flood-prone 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 floodplain 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).

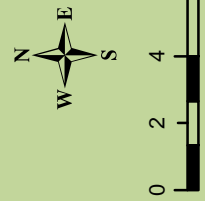
In order to participate in the Federal Emergency Management Agency's (FEMA) National Flood Insurance Program (NFIP), Marathon County and the cities and villages within have completed a Flood Insurance Study and a Flood Insurance Rate Map (FIRM) that encompasses the County, see Table 8 for summary of 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. In 2010, the study was updated with a new FIRM developed 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 95,917 acres floodplain in Marathon County, or 9.5 percent of the land area. Map 4 shows the approximate floodplains in Marathon County. Overall flooding in Marathon County is generally due to high stages on the Wisconsin River. Currently, there are three repetitive loss structures, those with multiple flood insurance claims, identified within Marathon County.

Floodplains & Dams



Legend

- Minor Civil Divisions
- Water
- Perennial Streams
- Dam Size
- Large (Green Triangle)
- Small (Purple Circle)



Source: NCWRPC, WI DNR, FEMA, Marathon County Geo Services

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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.

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 8 FEMA Community Status Book Report Communities Participating in the National Flood Insurance Program Wisconsin - Marathon County				
Community	Initial FHB	Initial FIRM	Current Map	Program Entry
<i>Marathon County</i>	02/01/79	02/01/79	09/28/18	02/01/79
City of Abbotsford*	n/a	07/06/10	07/22/10**	02/24/12
City of Colby*	05/31/74	09/18/85	07/22/10**	09/18/85
City of Marshfield*	n/a	02/17/93	NSFHA***	10/06/09
City of Mosinee	12/16/73	12/16/73	07/22/10	12/16/73
City of Schofield	07/13/73	07/13/73	09/28/18	07/13/73
City of Wausau	n/a	01/05/78	09/28/18	01/05/78
Village of Athens	05/31/74	08/15/80	07/22/10	08/15/80
V. Birnamwood*	05/31/74	08/19/85	07/22/10**	08/19/85
Village of Dorchester*	n/a	n/a	n/a	n/a
Village of Edgar	12/03/76	09/30/88	07/22/10**	09/30/88
Village of Elderon	07/19/74	07/30/76	07/22/10	****
Village of Fenwood	08/02/74	05/14/76	07/22/10	****
Village of Hatley	07/19/74	09/27/85	07/22/10**	09/27/85
Village of Kronenwetter	n/a	08/03/81	07/22/10	10/07/08
Village of Maine	n/a	08/03/81	7/22/10	11/08/18
V. Marathon City	11/30/73	08/15/80	07/22/10	08/15/80
Village of Rothschild	05/11/73	05/11/73	09/28/18	05/11/73
Village of Spencer	n/a	07/22/10	NSFHA***	08/30/10
Village of Stratford	12/17/73	05/01/87	07/22/10**	05/01/87
Village of Unity*	09/20/74	07/06/10	07/22/10	****
Village of Weston	n/a	07/22/10	NSFHA***	04/10/08

*Source: FEMA 2020. *Denotes split between two counties. **No elevation determined. ***No special flood hazard area - all zone C. ****Identified as not in the NFIP.*

WETLANDS

Marathon County has about 172,363 acres of wetlands, or 17.1 percent of its total area. Map 3 shows these wetland areas in Marathon County. 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 areas 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.

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. Within in Marathon County, wetlands were severely impacted or destroyed by agricultural activities from the late 1940s through the 1970s, many of them drained for cropland. Wetlands in the County are generally located adjacent to rivers, creeks and floodplains. Most are wooded, although other classifications of wetlands are found in Marathon County. Examples of significant wetlands complexes within the County include the Mead Wildlife Area and McMillan Marsh located in the southwestern corner.

OTHER LAND COVER/USES

Recreational lands including parks and outdoor sports facilities total about 2,313 acres or 0.2 percent of the County land area. Other lands may have recreational aspects, particularly woodlands. Governmental, public and institutional lands total about 2,438 acres or about 0.2 percent of the County area. The transportation category is primarily the roadway travel corridors for federal, state, county and local highways and roads, but also includes railroads and airports. Sometimes overlooked, transportation land use can be significant. In Marathon County, transportation facilities consume about 33,016 acres of land or about 3.3 percent of total area. Note that this is more than twice as much land area as is used for commercial, industrial, and institutional uses in the County.

FUTURE GROWTH AND DEVELOPMENT IN MARATHON COUNTY

Marathon County's population has increased 2.4% over the last decade for a net gain of 3,174 new residents. The County's rate of growth has declined from the high rates observed during previous decades. However, historically, the County's rate of growth has been on par with the state average. By 2040, Marathon County will have grown to a population of about 143,904, a gain of 6,667 residents if the growth rate continues at the current level. This equates to approximately 2,766 residential structures/units or about 138 per year.

The communities of the Wausau metro-area will continue to see the strongest growth as the urban center offers the attraction of amenities, services and jobs. The surrounding towns, within a 20-minute drive of the city center, including Stettin, Texas, Wausau, Ringle and Mosinee, will also see more growth. These communities have seen significant

numbers of new subdivisions laid out in last 15 years with homes being built at a steady pace. In addition, the southeastern towns of McMillan and Spencer will continue to grow in part as bedroom communities to the City of Marshfield.

New commercial and industrial development is expected to be gradual over time, paralleling population growth. The most significant concentrations of this development will, again, likely be in the Wausau metro-area, as well as the designated business/industrial parks that have developable land and municipal services readily available. The County is expected to remain a net importer of labor as a higher concentration of manufacturing and health care jobs draw workers from the surrounding area.

In the last five years, notwithstanding the Covid-19 Pandemic, there has been an uptick in new home construction in places like Maine Rothschild, Mosinee, Wausau and Weston. In addition, there has been an explosion of multifamily units being built in Wausau and Weston, which is now spreading to other parts of the Metro Area. Major apartment projects are being planned in Rothschild (325 units) and Schofield (86 units) on top of the 100's of new units anticipated in Wausau and Weston. Major subdivision development is also being planned in Mosinee, Rib Mountain and Weston.

On the commercial side, there has been notable growth of businesses in the Mosinee, Schofield and Weston industrial parks, including a \$6 million expansion of Greenheck Inc. with additional growth expected in these areas. Other business growth includes new convenience stores in Rothschild and Weston, a coffee house in Schofield, and a 4-story, 54 room hotel in downtown Mosinee. A new grocery store is being developed in Weston. Additional future business development is being planned as communities focus on revitalizing the following commercial corridors: Highway WW (Maine), Rib Mountain Drive (Rib Mountain), and Schofield Avenue (Weston).

In Wausau, major industrial expansions have occurred with Great Lakes Cheese and Wausau Chemicals. A number of warehousing projects are also planned. Other major projects being planned within the City of Wausau include: the \$20 million dollar riverfront redevelopment project encompassing 16 townhouses, 260 apartments, 70,000 square feet of mixed-use space, and various recreational amenities. Future phases will increase the total value to \$100 million. Another redevelopment project currently being planned is the Wausau Center Mall redevelopment which will yield both commercial and residential space.

Outside the Metro Area growth will be a little more sparse. Spencer has added one small subdivision with homes being built, with another subdivision planned for 2023. Athens also has a small new subdivision along with a new bank and a dollar store.

New public facilities will continue to be somewhat minimal, excepting limited replacement of existing facilities and maintenance activities. Despite federal stimulus and infrastructure spending, 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.

One area where communities are finding they can no longer put off is in water and sewer infrastructure. Aging facilities, new mandates for pollution loading and emerging public health concerns such as PFOS are requiring communities to invest in upgrades or replacement water, sewer and stormwater facilities. Recent projects include a new well in Spencer, new lift station in Rib Mountain, water and sewer upgrades in Maine and Schofield, water treatment plant in Rothschild, and wastewater treatment plant renovation and upgrade in Wausau. Projects currently being planned or under development include wastewater treatment plant upgrades in Edgar and Maine, replacing lift stations in Rib Mountain and Weston, new water towers in Rothschild and Weston, new wells in Weston, new water treatment plants in Rib Mountain, Schofield, Wausau, and Weston and water system expansions in Mosinee.

Other recent community projects include a new joint fire station for Rothschild and Schofield, a new fire station in Wausau, a new municipal center in Weston, infrastructure for new subdivision in Athens, a new storm shelter facility in Spencer, new town garage in Guenther, park upgrades in Franzen and new public works facilities in Rothschild and Schofield. Other projects currently being planned or under development include infrastructure for new subdivision in Spencer, new town garage in Green Valley, town hall upgrades in Guenther, infrastructure for development district in Rib Mountain, public works and fire station expansion and upgrades in Maine, remodeling of safety building in Weston, new street shop and yard waste site expansion in Wausau.

In Athens, the former US Bank building located in the downtown is currently for sale and vacant. A group of individuals is soliciting community donations with the intent that the Village would purchase it and move the Village offices and County Library into this building. This would allow for the current Municipal Building to be remodeled to allow for improvements to the connecting Community Hall (handicap bathrooms/kitchen). The large basement of the US Bank building could someday also be used for a variety of different purposes (including a potential hazard shelter or central workstation for Incident Command Center for a disaster).

Marathon County recently completed several facilities development projects including a new highway shop in Stratford, expansions at CWA airport, and the county landfill. Currently, the County is engaged in major remodeling and renovations at its North Central Health Care Campus.

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.

PUBLIC FACILITIES AND SERVICES

TRANSPORTATION

The transportation system of Marathon 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 Marathon County are (north-south) US Highways 51/Interstate 39, Business 51, State Highway 13, 97, 49, and 107 and (east-west) State Highways 29, 52 and 153. These highways link the County with neighboring communities and are vital to the County's businesses and economic activities.



The Crossroads

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

There are numerous bridges in Marathon County that carry traffic over or under bodies of water, transportation infrastructure or other barriers. These bridges can be critical to emergency response and can be especially vulnerable to hazards. The limited number of river crossings, especially over the Wisconsin River can create bottlenecks, potentially isolating sections of the county from emergency response and increasing hazard vulnerability. Since most of the existing river crossings are located in the Wausau metro area, traffic moving east or west across the County must funnel through a limited number of routes in the metro area.

Metro Ride in the City of Wausau coordinates transit services in the Wausau area primarily through a fixed route bus system. Metro Ride also operates a paratransit services for people with disabilities. Metro ride partners with the intercity bus lines Lamers and Jefferson Lines to connect these regional services to the Metro Ride system. This provides intercity service to Madison, Minneapolis, and Green Bay/Milwaukee.

North Central Health Care provides transit services for aging and disabled persons through on-demand services. There are also numerous private providers of transportation service for senior and disabled residents of Marathon County that can be contacted through the Aging and Disability Resource Center of Central Wisconsin.

WATCO and Canadian National operate the active rail lines in Marathon County. A central line runs along the north/south length of the County along the Wisconsin River and Interstate 39/US Highway 51 and serves the Wausau metro area. Another line runs through

the western edge of the county connecting Marshfield and Spencer. A line branches off near Spencer that connects Abbotsford, Unity, and Colby and terminates in Medford. The Mountain-Bay State Trail rail-trail is built on the Chicago and Northwestern right-of-way connecting Wausau to Green Bay, running roughly parallel to State Highway 29.

Currently there are two airports servicing Marathon County. The first airport is located in Wausau on the southeast side and serves private traffic only. The second airport is the Central Wisconsin Airport located in Mosinee, WI and provides multiple flights per day of passenger service through two main carriers, American and Delta Airlines. These carriers provide connections to Minneapolis, Chicago and Detroit. Concourse renovation and expansion was completed in 2020 which included new restrooms, the addition of privacy rooms, a kitchen build-out to allow for additional food options at the cafe, new gate area seating, and the installation of charging stanchions throughout the concourse area. In 2019, over 145,000 passengers traveled through CWA. March is the peak month for the CWA. Business travelers make up about 60 percent of passengers through the CWA. Recreational traffic is lower than most airports and discretionary travel is primarily outbound.

UTILITIES

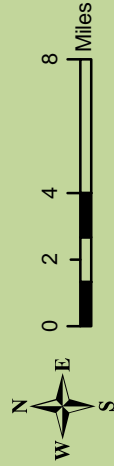
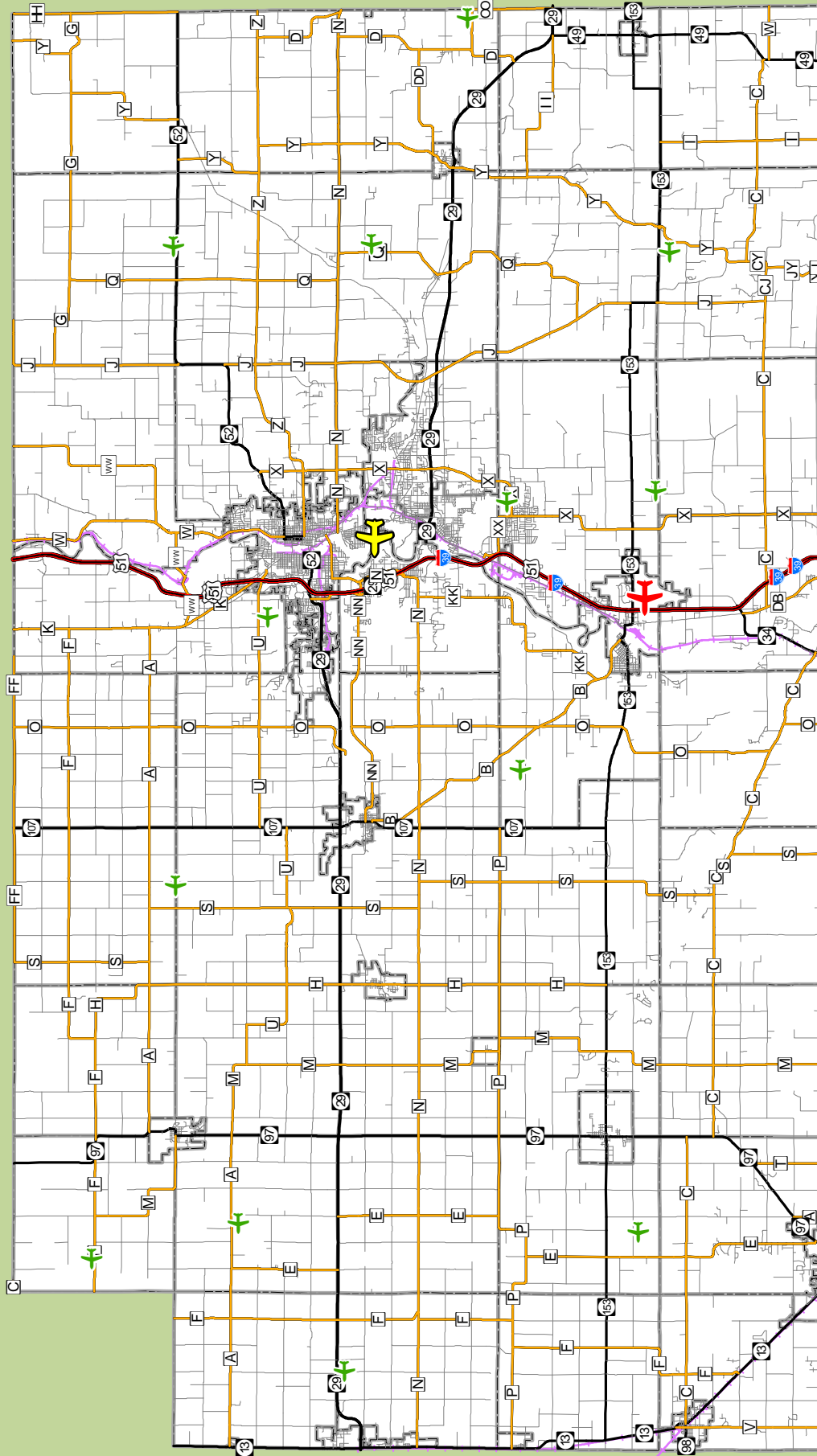
Utility systems are important in hazard mitigation planning because of the dependency on water, wastewater treatment, gas service, electricity, and communications. Because of this reliance and vulnerability to hazards, utility systems must be identified for this Plan, see Map 6.

The protection of the public water supply facilities from potential contamination during hazards such as flooding is a consideration for hazard mitigation planning. Most of the County's water is supplied through municipal or private wells. Soil type, depth of the wells and groundwater, and water table height all contribute to the potential for contamination of a water supply during a hazard event.

The protection of wastewater facilities is an important consideration for hazard mitigation planning because of the potential for contamination of 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 a number of sanitary sewer service facilities within Marathon County. Two main plants serve the Wausau metro sewer service area through the Wausau Water Works and the Rib Mountain Metropolitan Sewerage District. The other small cities and villages around the County have their own facilities.

The TransCanada - ANR manages a pipeline network for natural gas transmission throughout the state. Two lines run through Marathon County to supply natural gas for distribution: a north-south line through Wausau, with a spur from Wausau to the east and another line in the western part of the County. Wisconsin Public Service is the primary distributor of natural gas to Marathon County customers. In areas without natural gas, propane and heating oil are the primary fuel for heating. Enbridge has a crude oil pipeline clipping the far southwest corner of the County, and a Magellan pipeline runs east-west between Wausau and Minneapolis.

Transportation



- Legend**
- Minor Civil Divisions
 - US Highways
 - State Highways
 - County Highways
 - Local Roads
 - Railroad
 - Airports
 - Commercial Service
 - Large General Aviation
 - Grass Strip (Private)

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Source: NCWRPC, WI DNR, Marathon County Geo Services

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The infrastructure of electric and telephone lines should be considered in the events of high wind, ice storms, tornadoes, flooding, and fire. The primary electrical service providers in Marathon County include WE Energies / Wisconsin Public Service Corporation, but other providers serve parts of the County, including Taylor Electric Cooperative, Clark Electric Cooperative and Central Wisconsin Electric Cooperative. WPS operates the coal fired Weston Power Plant and We Energies has the Biomass Cogeneration Plant in Rothschild. The American Transmission Company (ATC) owns and maintains the major electric transmission facilities in the state; most notably the Arrowhead-Weston electric transmission line runs between the Weston Power Plant, through Marathon County, and Duluth, MN.



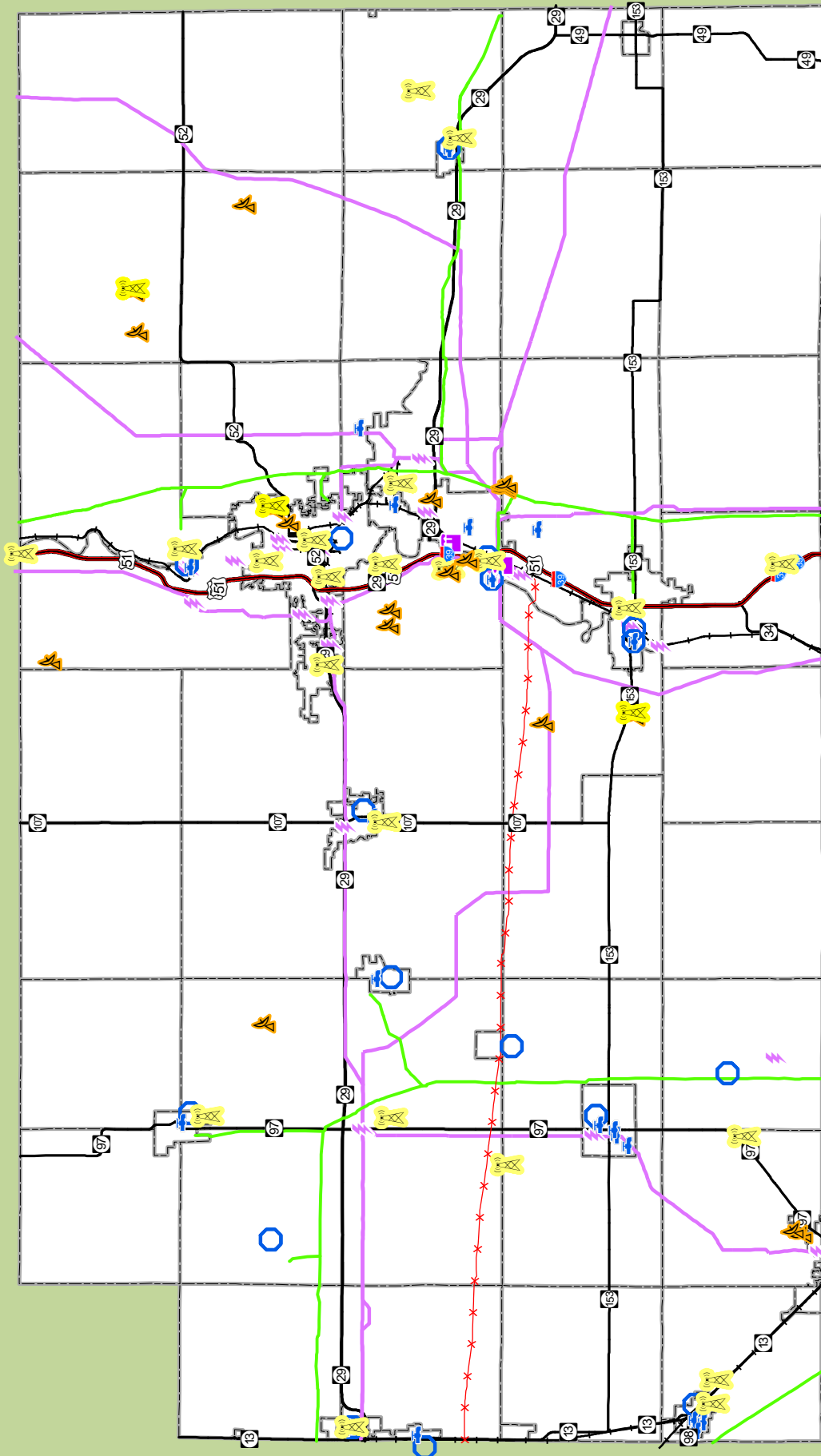
WPS Weston Power Plant

Frontier is the main company providing landline telephone service. Other companies serving the area include Telephone and Data Systems Inc. (TDS), Wittenberg Telephone, ATT, and Ameritech.

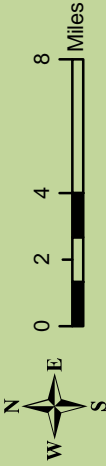
Spectrum Communications provides Internet based phone service along with its cable television and Internet services. The Internet has become vital to daily living and commerce. Frontier also provides Internet service (DSL type). Other DSL Internet providers include TDS Telecom, Amherst Communications, WittenbergNet (Wittenberg Telephone). There are a number of known Wireless Internet Service Providers: AirRunner Networks, Aris, Bertram, Bugtussel, Cellcom, Country Wireless, Network Professionals/Air-Net, Packerland, and Solarus. Satellite internet providers include Hughes Net and Viasat Internet (Wildblue).

Nationwide, wireless, cellular telephone systems account for more than 75 percent, and growing, 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. Cellular phones provide both advantages and disadvantages in emergency situations. Cellular phone locations are not always transmitted to 911 dispatchers and thus can create delays in emergency responses. On the other hand, emergency messages can be broadcast to cellular phones that are using towers within the emergency alert zone, increasing the potential reach of alerts.

Utilities



- Legend**
- Minor Civil Divisions
 - US Highways
 - State Highways
 - Railroad
 - Public Water Supply
 - Waste Water Treatment Plant
 - High Voltage Powerline
 - Substations
 - Power Plant
 - Gas Pipeline
 - Inactive Pipeline
 - Other Towers
 - Celltowers



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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. Police, fire and emergency medical services stations are shown on Map 7.

To coordinate these services, the County has created an *Emergency Operations Plan (EOP)*. This provides a general guide for County and municipal emergency personnel during response to a variety of disasters. The document serves to coordinate the County and local governments during response and recovery. It also provides a link between the County and municipal plans. The Marathon County 911 Center, located in the Courthouse, is the primary location for coordinating the emergency response. The County also maintains remote sites and mobile facilities to supplement emergency operations and communications (for specific events) or to act as backup (in case of primary site failure).

There are a number of fire departments with all or part of their service area within Marathon County. Many of the departments service only their specific municipality, while others cover parts of other communities through a variety of agreements. Most are volunteer, on-call services. The Wausau Fire Department provides full-time fire and rescue services to the city via three station locations. South Area Fire and Emergency Response (SAFER) also provides full time fire and rescue services to the Town of Rib Mountain, Village and Town of Weston, and parts of the towns of Marathon and Stettin. Schofield and Rothschild have merged their departments to improve service. Many of these departments participate in the Mutual Aid Box Alarm System (MABAS) which is a coordinated, pre-planned program to get the right equipment and personnel on scene in a timely fashion. Hazardous materials response is discussed in more detail later in this report.

Police service coverage of Marathon County is provided by a number of local police departments and the Marathon County Sheriff's Office. These departments also have mutual aid arrangements through a variety of agreements. The Marathon County Sheriff's Office supports the other departments through the operation of the Marathon County 911 Center, the Jail and the Juvenile Facility, as well as a variety of additional special services including a bomb squad and a SWAT team.

Various emergency medical service (EMS) / ambulance providers cover Marathon County. In addition, approximately half of the County also has coverage by a First Responder service. Typically, when an emergency medical call is received, members of the First Responder team are dispatched to that medical call to assist the patient until the regular EMS arrives on scene.

COMMUNITY FACILITIES

In addition to emergency service facilities, other community facilities are also important in hazard mitigation planning. Note that important community facilities may include, but are

not limited to, those identified here. For example, government administration buildings serve as the headquarters that link to resources in helping solve potential problems. Schools are another example of critically important facilities since thousands of the county’s children are there for much of the year. 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. Other healthcare and nursing facilities may have vulnerable populations under their care.



Marathon County Courthouse

There are two primary hospitals located in Marathon County including the Aspirus Wausau Hospital and Marshfield Medical Center - Weston. Wausau hospital contains approximately 248 beds. It is a multi-specialty facility with trauma center. The hospital staffs about 350 doctors with a range of specialties. Marshfield Medical Center - Weston is also a full service, multi-specialty hospital with trauma center and approximately 99 beds located in Weston. Marshfield Medical Center (hospital) in Marshfield also serves Marathon County. In addition, numerous clinics and medical offices exist in various locations around the County.

As of the time of this study, North Central Healthcare provides mental health care services under contract with Marathon County, providing for mental/emotional health, people with developmental disabilities and substance abuse problems. North Central Health Care operates the Mount View Care Center nursing home which offers skilled nursing services with a licensed capacity of about 200. There are a variety of other nursing home and residential care sites around the County. Nursing homes are vulnerable, because of the high level of assistance needed by the residents.

Map 7 shows the location of various types of community facilities within Marathon County, for purposes of illustrating this mitigation plan only.

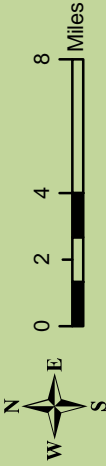
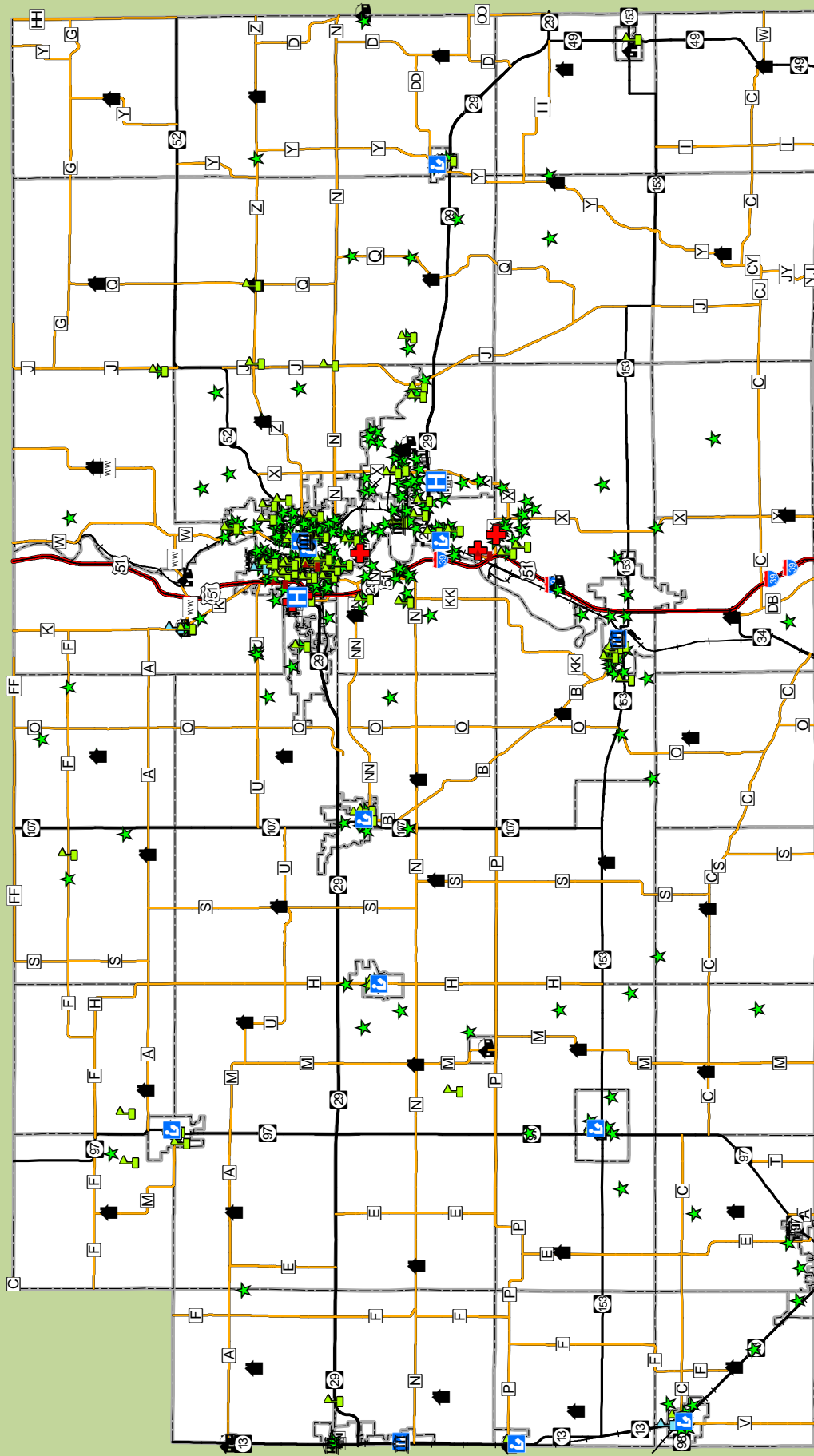


North Central Health Care Facility



NCHC Renovation Concept

Notable Community Facilities



- Legend**
- Minor Civil Divisions
 - US Highways
 - State Highways
 - County Highways
 - ★ Child Care Facilities
 - ☰ City Hall
 - ☒ College
 - ☒ Courthouse
 - ☒ Hospital
 - ☒ Health Services
 - 📖 Library
 - 🏠 Nursing Home
 - 🎓 School
 - 🎓 Tech School
 - 🏛️ Town Hall
 - 🏠 Village Hall

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Source: NCWRPC, WI DNR
 Marathon County Geo Services

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.

INVENTORY OF STRUCTURES / PROPERTY IN MARATHON COUNTY

The value of the real estate (improvement and land) in a community reflects the upper end of the potential for property damages in each community. The annual equalized value of each municipality represents the Department of Revenue estimate of market value (Agricultural land is included at Use Value) of all taxable property. Property tax levies of jurisdictions are apportioned to each municipality on the basis of equalized value. Table 9 lists each municipality's total equalized values for real estate and the percent each municipality represents of the county total.

Table 9a Equalized Value by Incorporated Areas (2020)				
Incorporated Areas	Improvements	Land	Total	% of Total
<i>Marathon County Total</i>	\$7,967,244,422	\$2,318,088,960	\$10,285,333,382	100%
City of Abbotsford*	\$50,151,500	\$5,872,400	\$56,023,900	0.5%
City of Colby*	\$24,497,100	\$5,264,700	\$29,761,800	0.3%
City of Marshfield*	\$84,206,000	\$28,023,800	\$112,229,800	1.1%
City of Mosinee	\$223,692,000	\$39,285,500	\$262,977,500	2.6%
City of Schofield	\$153,604,600	\$50,110,200	\$203,714,800	2.0%
City of Wausau	\$2,184,238,800	\$503,265,900	\$2,687,504,700	26.1%
Village of Athens	\$48,021,600	\$8,566,000	\$56,587,600	0.6%
Village of Birnamwood*	\$734,422	\$87,264	\$821,686	0.0%
Village of Dorchester*	\$614,300	\$76,000	\$690,300	0.0%
Village of Edgar	\$61,515,900	\$10,065,900	\$71,581,800	0.7%
Village of Elderon	\$5,793,200	\$1,169,600	\$6,962,800	0.1%
Village of Fenwood	\$5,786,300	\$846,300	\$6,632,600	0.1%
Village of Hatley	\$29,843,300	\$6,378,100	\$36,221,400	0.4%
Village of Kronenwetter	\$424,145,300	\$116,777,500	\$540,922,800	5.3%
Village of Maine	\$174,502,600	\$42,888,600	\$217,391,200	2.1%
Village of Marathon City	\$114,520,800	\$23,340,800	\$137,861,600	1.3%
Village of Rothschild	\$315,534,800	\$79,694,000	\$395,228,800	3.8%
Village of Spencer	\$77,133,300	\$12,387,100	\$89,520,400	0.9%
Village of Stratford	\$90,035,000	\$16,445,900	\$106,480,900	1.0%
Village of Unity*	\$6,621,400	\$1,039,800	\$7,661,200	0.1%
Village of Weston	\$837,083,200	\$279,423,300	\$1,116,506,500	10.9%
<i>Source: Marathon County Land Records 2021 and NCWRPC. *Denotes split between two counties.</i>				

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 Marathon County and its local units of government owning many important facilities that people depend on, especially in times of disaster, the potential for damages to these structures could be devastating for the county. In Table 10, the county and local government facilities are listed with the general location they are in and the value of the facilities.

Table 9b Equalized Value by Unincorporated Area (2020)				
Unincorporated Areas (Town of)	Improvements	Land	Total	% of Total
Bergen	\$50,545,000	\$16,971,100	\$67,516,100	0.7%
Berlin	\$55,788,000	\$17,491,400	\$73,279,400	0.7%
Bern	\$22,609,700	\$11,324,800	\$33,934,500	0.3%
Bevent	\$61,341,100	\$33,893,300	\$95,234,400	0.9%
Brighton	\$33,751,300	\$11,249,400	\$45,000,700	0.4%
Cassel	\$53,370,200	\$12,758,000	\$66,128,200	0.6%
Cleveland	\$92,260,700	\$25,309,800	\$117,570,500	1.1%
Day	\$65,496,400	\$14,934,600	\$80,431,000	0.8%
Easton	\$59,537,700	\$21,789,000	\$81,326,700	0.8%
Eau Pleine	\$48,781,500	\$16,261,100	\$65,042,600	0.6%
Elderon	\$36,473,200	\$19,154,800	\$55,628,000	0.5%
Emmet	\$51,570,400	\$21,678,600	\$73,249,000	0.7%
Frankfort	\$33,726,500	\$10,192,300	\$43,918,800	0.4%
Franzen	\$30,705,100	\$11,876,650	\$42,581,750	0.4%
Green Valley	\$37,293,100	\$18,638,400	\$55,931,500	0.5%
Guenther	\$21,462,900	\$12,440,350	\$33,903,250	0.3%
Halsey	\$26,732,300	\$10,437,500	\$37,169,800	0.4%
Hamburg	\$42,536,600	\$15,836,200	\$58,372,800	0.6%
Harrison	\$14,476,600	\$12,356,300	\$26,832,900	0.3%
Hewitt	\$32,684,300	\$17,418,600	\$50,102,900	0.5%
Holton	\$41,044,400	\$9,520,600	\$50,565,000	0.5%
Hull	\$44,353,200	\$11,546,700	\$55,899,900	0.5%
Johnson	\$32,977,200	\$12,952,300	\$45,929,500	0.4%
Knowlton	\$155,712,900	\$82,430,800	\$238,143,700	2.3%
Marathon	\$75,154,700	\$22,492,096	\$97,646,796	0.9%
McMillan	\$165,308,000	\$29,284,600	\$194,592,600	1.9%
Mosinee	\$117,500,300	\$43,926,100	\$161,426,400	1.6%
Norrie	\$52,544,500	\$22,437,700	\$74,982,200	0.7%
Plover	\$30,274,300	\$17,134,600	\$47,408,900	0.5%
Reid	\$73,228,200	\$26,658,500	\$99,886,700	1.0%
Rib Falls	\$58,777,600	\$17,476,200	\$76,253,800	0.7%
Rib Mountain	\$610,610,400	\$240,019,600	\$850,630,000	8.3%
Rietbrock	\$39,276,100	\$13,220,500	\$52,496,600	0.5%
Ringle	\$97,309,700	\$43,555,900	\$140,865,600	1.4%
Spencer	\$95,693,700	\$16,498,600	\$112,192,300	1.1%
Stettin	\$194,325,100	\$53,352,300	\$247,677,400	2.4%
Texas	\$83,273,900	\$32,544,700	\$115,818,600	1.1%
Wausau	\$127,659,800	\$32,013,800	\$159,673,600	1.6%
Weston	\$41,758,700	\$15,122,300	\$56,881,000	0.6%
Wien	\$47,043,700	\$12,880,200	\$59,923,900	0.6%

Source: Marathon County Land Records 2021 and NCWRPC.

Table 10 Inventory & Value of County Properties		
Facility	Value*	Location
Highway Department		
Headquarters/Shop	\$8,820,064	Wausau
Shop	\$2,802,630	Edgar
Shop	\$443,677	Mosinee
Shop	\$1,471,925	Hatley
Shop	\$1,286,747	Abbotsford
Other	\$1,309,983	Various
Parks, Rec. & Forestry Department		
Office/Shop	\$6,633,125	Wausau
Fairgrounds	\$24,346,445	Wausau
Shooting Range	\$248,590	T. Mosinee
Other Parks	\$7,891,660	Various
Forestry	\$1,278,416	Various
North Central Health Care Facilities		
North Central Health Care Center	\$58,157,797	Wausau
Mt. View Center	\$28,245,796	Wausau
Group Homes	\$1,192,922	Various
Juvenile Detention Site	\$9,658,485	Wausau
Library System		
Main	\$27,572,355	Wausau
Branches (8)	\$1,195,714	Various
UW - Marathon County Campus	\$62,230,008	Wausau
Central Wisconsin Airport	\$31,153,303	Mosinee
Social Services Department	\$5,960,922	Wausau
Solid Waste	\$1,835,693	Ringle
Sheriff's Training & Resource Center	\$1,739,213	Wausau
Medical Examiner/EM Building	\$1,969,333	Wausau
Communications	\$1,246,941	Various
Courthouse/Sheriff's Office	\$63,934,648	Wausau
River Drive Offices	\$5,986,347	Wausau
ADRC	\$447,533	Wausau
Misc. Properties	\$6,473,848	Various
County Total	\$365,534,120	
<i>Source: Marathon County 2021. *Includes insured buildings, contents and property in the open.</i>		



Marathon County Courthouse

Table 11a Inventory & Value of Town Properties		
Location	Facility	Value*
Bergen	Town Hall / Shop	\$774,400
Berlin	Town Hall	\$977,554
	Shop w/ Park (Pavilion)	\$575,120
Bern	Town Hall / Shop	\$774,400
Bevent	Town Hall / Shop	\$774,400
Brighton	Town Hall / Shop	\$660,007
Cassel	Town Hall / Shop	\$774,400
Cleveland	Town Hall / Shop	\$774,400
Day	Town Hall / Shop	\$774,400
Easton	Town Hall / Shop	\$774,400
	Fire Dept.	\$875,600
Eau Pleine	Town Hall / Shop	\$774,400
Elderon	Town Hall / Shop	\$774,400
Emmet	Town Hall	\$837,212
	Town Shop	\$359,142
Frankfort	Town Hall / Shop	\$774,400
Franzen	Town Hall / Park	\$1,433,708
	Town Garage	\$133,204
Green Valley	Town Hall / Shop	\$774,400
Guenther	Town Hall / Shop	\$774,400
Halsey	Town Hall / Shop	\$774,400
Hamburg	Town Hall / Shop	\$494,592
	Fire Dept	\$875,787
Harrison	Town Hall / Shop	\$774,400
Hewitt	Town Hall / Shop	\$774,400
	Fire Dept	\$875,600
Holton	Town Hall / Shop	\$774,400
Hull	Town Hall / Shop	\$774,400
Johnson	Town Hall / Shop	\$417,525
Knowlton	Town Hall / Shop	\$774,400
McMillan	Town Hall / Shop	\$774,400
	Fire Dept	\$875,600
Marathon	Town Hall / Shop	\$774,400
	Fire Dept	\$875,600
Mosinee	Town Hall / Garage	\$788,936
Norrie	Town Hall / Shop	\$774,400
Plover	Town Hall / Shop	\$774,400
Reid	Town Hall / Shop	\$774,400
Rib Falls	Town Hall / Shop	\$642,950
Rib Mountain	RMMSD Admin. Building	\$1,539,363
	Pump Houses/Booster Stations	\$1,542,379

<i>Table 11a Continued...</i>		
	Lift Stations	\$1,151,041
	Municipal Center	\$1,703,110
	Public Works Building	\$2,584,358
	Fire Station	\$3,280,425
	Parks	\$272,837
	Misc. Property	\$18,218
Rietbrock	Town Hall / Shop	\$774,400
Ringle town	Town Hall / Shop	\$1,588,703
	Fire Dept	\$875,600
Spencer town	Town Hall / Shop	\$774,400
Stettin town	Town Hall / Shop	\$927,889
Texas town	Town Hall/Shop/Fire Dept.	\$1,035,706
Wausau town	Town Hall / Shop	\$774,400
	Fire Dept	\$875,600
Weston town	Town Hall / Shop	\$774,400
Wien town	Town Hall / Shop	\$774,400
<i>Source: Local Government Insurance Policy Declarations and NCWRPC Estimates, 2021. *Includes insured buildings, contents and property in the open.</i>		



Berlin Town Hall



Spencer Town Hall

Table 11b Inventory & Value of City/Village Properties		
Location*	Facility	Value**
Mosinee	City Hall	\$1,097,956
	City Garage	\$1,306,538
	Police Department	\$523,355
	Library	\$1,737,178
	Lift Station	\$126,576
	Industrial Park Reservoir	\$738,143
	Pump Stations	\$1,632,764
	Rec Center	\$2,533,190
	Parks	\$1,683,985
	Water Treatment Plant	\$7,541,317
	Misc. Property	\$4,437,804
Schofield	City Hall	\$1,100,000
	Public Works	\$1,300,000
	Water Facilities	\$1,000,000
	Parks	\$1,000,000
	Firestation	\$2,000,000
Wausau	City Hall	\$22,525,423
	Public Safety Building	\$12,596,344
	Fire Station 2	\$5,100,546
	Fire Station 3	\$2,440,610
	Dept. Public Works	\$8,602,463
	Airport	\$13,961,052
	Community Dev. Authority	\$667,469
	Water Treatment Plant	\$23,923,882
	Wells, Pump/Booster Stations	\$5,961,656
	Wastewater Treatment Plant	\$41,207,363
	Lift Stations	\$1,885,775
	Water Towers	\$1,369,458
	Housing	\$7,809,554
	Assisted Living	\$6,392,566
	Transit	\$11,821,541
	Parking Ramps	\$80,066,202
	Parks	\$26,246,589
	River Life Facilities	\$3,812,369
Misc. Property	\$6,819,504	
Athens	Municipal Building	\$2,963,078
	Wastewater Treatment Plant	\$4,637,775
	Parks	\$1,651,030
	Water Tower	\$731,132
	Pump Houses & Reservoir	\$1,387,264
	Misc. Property	\$724,774

<i>Table 11b Continued...</i>		
Maine	Municipal Building	\$776,262
	Fire Station	\$1,487,605
	Water Tower	\$1,050,800
	Town Hall	\$551,721
	Village Garage	\$413,426
	Well Facilities	\$1,531,981
	Lift Station	\$89,535
	Wastewater Facilites	\$723,791
Edgar	Municipal Building	\$3,000,000
	Wastewater Treatment Plant	\$7,500,000
	Parks	\$2,000,000
	Water Facilities	\$2,000,000
	Village Garage/Shop	\$500,000
	Misc. Property	\$500,000
Elderon	Village Hall	\$232,657
	Village Garage I	\$68,431
	Village Garage II	\$143,701
	Pump House	\$13,686
	Parks	\$398,252
Fenwood	Village Hall	\$225,000
	Village Garage	\$140,000
	Parks	\$300,000
	Water Facilities	\$50,000
Hatley	Village Hall	\$500,000
	Village Garage	\$250,000
	Parks	\$600,000
	Water Facilities	\$150,000
Kronenwetter	Municipal Center	\$5,500,000
	Public Works Facility	\$2,000,000
	Water Facilities	\$2,000,000
	Parks	\$2,000,000
	Misc. Property	\$1,000,000
Marathon City	Municipal Building	\$3,000,000
	Wastewater Treatment Plant	\$7,500,000
	Parks	\$2,000,000
	Water Facilities	\$2,000,000
	Village Garage/Shop	\$500,000
	Misc. Property	\$500,000
Rothschild	Municipal Center	\$6,249,346
	Fire Station	\$6,000,000
	Public Works Facility	\$3,136,704
	Water Treatment Facility	\$7,164,888
	Wells	\$1,208,904

<i>Table 11b Continued...</i>		
	Water Park	\$2,698,206
	Pavilion	\$2,853,248
	Parks	\$753,678
	Water Tanks	\$2,770,626
	Misc. Property	\$1,095,378
Spencer	Municipal Building	\$2,009,988
	Village Hall	\$991,567
	Village Shop	\$708,144
	Village Garage	\$175,231
	Parks	\$1,198,212
	Wastewater Treatment Plant	\$10,985,605
	Wells	\$1,007,705
	Water Towers	\$2,009,713
	Water Treatment Plant	\$1,123,433
	Lift Stations	\$551,773
Misc. Property	\$15,659	
Stratford	Municipal Building	\$3,000,000
	Wastewater Treatment Plant	\$7,500,000
	Parks	\$2,000,000
	Water Facilities	\$2,000,000
	Village Garage/Shop	\$500,000
	Misc. Property	\$500,000
Unity	Village Hall	\$225,000
	Village Garage	\$140,000
	Parks	\$300,000
	Water Facilities	\$50,000
Weston	Municipal Center	\$4,462,207
	Water Treatment Plant	\$1,965,734
	Lift Stations	\$3,710,240
	Wells	\$3,276,964
	Parks	\$6,169,338
	Water Towers	\$3,543,165
	Aquatic Center	\$4,846,264
	Public Safety Building	\$7,917,033
	Misc. Property	\$6,652,001
<i>Source: Local Government Insurance Policy Declarations and NCWRPC Estimates, 2021. *Excludes locales covered in other county plans. **Includes insured buildings, contents and property in the open.</i>		



Wausau City Hall

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 the Marathon County All-Hazards Mitigation Plan Update will focus on the following:

- Identification of the types of natural hazards that can affect Marathon County; and
- An analysis of the hazards identified as pertinent to Marathon 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 Marathon 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.

There are various lists of hazards available, but the scope of work for this Plan was based on utilization of the Natural Hazard Identification and Risk Assessment Matrix from the Resource Guide to All-Hazards Mitigation Planning in Wisconsin. That worksheet was used by the Update Taskforce to evaluate and rank the listing of possible hazards in order to identify which hazards should be included in the Plan Update according to threat to human safety and possible damage to property.

The only real change from the last plan update was tornado and winter storms switching places at the top of the list. HazMat Incidents scores came in low, but the Committee corrected this by deciding to restore it to its previous ranking. Due to the global Corona Virus situation, pandemic debuts on the list, but the Committee determined it should be moved down in priority at least from a mitigation standpoint, noting that the extraordinary conditions of a global pandemic are beyond local control to ultimately mitigate against.

The resulting priority ranking of hazards accepted by the Committee is as follows:

1. Tornado
2. Winter Storm / Extreme Cold
3. Thunderstorm / High Wind / Hail / Lightning
4. Hazardous Materials Incidents / Groundwater Contamination
5. Flooding / Dam Failure
6. Drought / Extreme Heat
7. Forest Fire / Wildfire
8. Epidemic/Pandemic

There was some discussion of the "agricultural" hazard due to the significance of agriculture in the Marathon County economy. Many "agricultural" hazards are addressed through other hazard categories. Extreme cold, high winds or tornados, flooding, hail and drought can all decimate crops and threaten livestock.

Low magnitude earthquakes do occur occasionally in Wisconsin, such as the 2012 "mini-quake" near Clintonville (1.5 magnitude). However, 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. Marathon County does not have avalanche, coastal hazard, hurricane, tsunami or volcano issues and conditions for landslide, subsidence or expansive soil problems are not significant in the County.

This Plan Update focuses on natural hazards that have or could cause disasters that can be mitigated on a local level. Hazards that are considered "technological" or "manmade" include things like cyber-attack, transportation incidents, structure fire, civil disturbances, mass casualty events, war, criminal activity and terrorism (including active shooter, biological, chemical, explosive and nuclear attack). Current mitigation planning regulations do not require inclusion of technological or manmade hazards, so they are not dealt with directly in this Plan. This is in part to maintain the manageability of the mitigation planning activity and also to reduce redundancy. Due to Homeland Security requirements, counties already plan and prepare for many of these types of events, so they are not included in this planning process to avoid duplication. However, local mitigation plans do have the option to include technological or manmade hazards, and many counties in Wisconsin, including Marathon, choose to cover hazardous materials incidents in their mitigation plans.

Some events that may under certain conditions be considered technological or manmade hazards in and of themselves such as supply disruption (including fuel shortage), power outage, computer failure, communications disruption, and municipal water contamination or water system failure are more commonly consequences of a hazard event, at least in central Wisconsin. As such, they are dealt with indirectly in this Plan as they relate to an addressed hazard. For example, heavy snow, high wind or tornado often results in power outage.

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. The annual average temperature in Marathon County has increased between 0.5 and 2.5 degrees between 1950 and 2006. Between 1980 and 2055, annual average temperatures are projected to increase by about 6 degrees in the County. More extreme heat events are also projected. The number of days projected to be 90° F or greater will increase by 16-20 days in Marathon County between 1980 and 2055.
2. **MORE PRECIPITATION** - Marathon 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 in the County over the past fifty years overall.
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 is projected to experience between 2 and 2.5 two additional heavy precipitation events per decade by 2055.

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 Marathon County would be vulnerable. A review of past occurrences for each identified hazard in Marathon 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 9 natural disasters in Marathon County where Presidential Declaration was granted from 1971-2020. These include the following:

- 1973 - Flooding
- 1976 - Drought - Emergency Declaration
- 1977 - High Winds/Hail - Emergency Declaration
- 1993 – Flooding
- 2002 – Severe Storms/Flooding
- 2002 – Severe Storms/Flooding/Tornado
- 2004 – Severe Storms/Tornado
- 2010 - Severe Storms/Flooding
- 2020 - Covid-19 Pandemic

This does not reflect instances where local and state officials determined that the impacts of a particular storm event were severe enough to warrant an application for federal disaster declaration, but for whatever reason the request was not granted. One example of this, discussed in more detail below was a rash of tornadoes affecting multiple counties including Marathon in 2007. A declaration request was not granted despite extensive damages exceeding sixty-million dollars.

It should also be noted that this significantly underestimates the number of hazards that have occurred in Marathon 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) and National Climatic Data Center (NCDC) publish the National Weather Service (NWS) data describing recorded weather events and resulting deaths, injuries, and damages. From January 1, 1950 to December 31, 2020, NCDC reported 686 severe weather events for Marathon County.

Note that since the earlier NCDC data is somewhat incomplete, this report focuses on the 10-year period from 2011 to 2020 for hazard analysis purposes. Other sources of data are used to supplement the NCDC data. These sources included other plans and reports, documents from the Marathon 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.

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 except February.

Table 12 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

HISTORY OF TORNADOS IN MARATHON COUNTY:

Marathon County has had 6 verified tornados from 2011 to 2020. These tornados are documented along with 47 other historic tornados in Table 13. The most recent was on July 19, 2019 when a line of severe thunderstorms moved across much of Wisconsin causing widespread tree and power line damage from central Wisconsin into the Fox Valley and lake shore. WPS reported over 50,000 outages at the height of the storm. An EF1 tornado damaged the roof of an outbuilding, demolished an old barn, and produced damage to dozens of trees in the town of Knowlton. Peak winds were estimated near 90 mph.

Table 13 Reported Tornadoes in Marathon County since 1950						
Date	Time CST	Fujita Scale	Injury/Death	Prop. Damage	Crop Damage	
06/25/1950	2150	F2	0/0	25K		
06/20/1954	0230	F2	0/0	25K		
05/04/1959	1030	F0	0/0	0		
09/03/1961	0010	F2	0/0	3K		
09/03/1961	0100	F1	0/0	3K		
05/08/1964	1650	F2	0/0	250K		
08/19/1968	1730	F2	5/0	2.5M		
09/28/1971	1600	F3	0/0	250K		
09/28/1971	1605	F3	1/0	250K		
06/18/1973	1100	F1	0/0	25K		
04/12/1974	1405	F2	0/0	25K		
06/13/1976	2000	F1	0/0	3K		
08/31/1977	1815	F1	10/0	2.5M		
07/15/1982	1915	F1	0/0	3K		
07/03/1983	1735	F2	0/0	250K		
06/26/1984	1655	F1	0/0	25K		
09/24/1984	1650	F2	0/0	2.5M		
07/02/1987	1710	F1	0/0	250K		
05/08/1988	1710	F2	2/0	2.5K		
09/19/1988	1637	F0	0/0	0		
06/12/1990	1835	F1	0/0	25K		
07/19/1992	1554	F1	0/0	250K		
07/08/1994	1400	F1	0/0	50K	1K	
05/07/1996	0145	F2	0/0	200K	250K	
08/07/1996	0146	F1	0/0	100K	110K	
08/07/1996	0219	F1	0/0	90K	10K	
07/16/1997	1440	F2	0/0	1M	3M	
07/16/1997	1500	F0	0/0	200K		
07/16/1997	1500	F0	0/0	5K		
07/16/1997	1509	F1	0/0	100K		
07/16/1997	1520	F0	0/0	1K	1K	
05/31/1998	0020	F0	0/0	15K	0	
04/18/2002	1813	F1	0/0	1.4M	32K	
04/18/2002	1832	F0	0/0	0	0	
07/30/2002	1822	F0	0/0	0	0	
09/02/2002	1704	F0	1/0	0	0	
09/02/2002	1735	F1	0/0	1.3M	0	
06/04/2005	1527	F0	0/0	0	0	
06/04/2005	1539	F0	0/0	0	0	
06/04/2005	1706	F0	0/0	0	0	
06/04/2005	1720	F0	0/0	0	0	
06/04/2005	1918	F0	0/0	0	0	
06/10/2005	1303	F0	0/0	0	0	
06/07/2007	1501	F2	0/0	343K	0K	
05/25/2008	2000	F0	0/0	0K	0K	
07/29/2008	1527	F0	0/0	0K	0K	
07/29/2008	1559	F0	0/0	0K	0K	
04/10/2011	1708	F0	0/0	258K	0K	
05/24/2012	1801	F0	0/0	0K	0K	
06/30/2016	1816	F0	0/0	5K	0K	
08/04/2016	1020	F1	0/0	100K	5K	
04/09/2017	2354	F1	0/0	0K	0K	
07/10/2019	1920	F1	0/0	25K	0K	
<i>Source: NCDC and Marathon County</i>			Totals	19/0	16.9M	3.4M

Most of the recent tornados reported in Marathon County damage to trees while on the ground but only isolated property damage. Two notable exceptions include the 2011 and 2007 tornado events.

On April 10, 2011, a major storm moved across Wisconsin and produced 10 tornados during its transit. One tornado developed in the Town of Hamburg at 6:08 pm where it registered EF0, before moving northeast into Lincoln County and escalating to an EF3. Property damage in Hamburg totaled \$258,000 due to damaged siding on a house and several barns which were blown down or lost their roofs. Major damages occurred in Lincoln County amounting to over 10 million dollars.

The most damaging recent tornado in Marathon County occurred on July 7, 2007 just after 4 pm in the Village of Kronenwetter near the Central Wisconsin Airport. The tornado was rated EF2 with estimated winds of 115 to 125 mph. This tornado did over \$343,000 in property damage as it moved across eastern Marathon County. Ten residences, ten barns, and one business were damaged, and many trees were snapped or uprooted during the tornado's 13-minute life. The same storm which generated this tornado produced four others, including a long-track tornado which passed through Shawano, Menominee, Langlade, and Oconto counties, reaching an intensity of EF3. Total damage from this severe thunderstorm which included five tornados, near record-size hail, and damaging winds was over \$60 million.

The most recent tornado in which a person was injured took place in the City of Wausau on September 2, 2002. This F1 tornado did over \$1.3 million in property damage. This tornado passed north of Wausau, staying on the ground for about 5 miles and destroying two barns, a garage, and a shed. It snapped hundreds of trees, heavily damaged 6 homes, and caused minor damage to 25 others. At least two vehicles traveling on Highway 51 were blown off the road and one driver was injured.

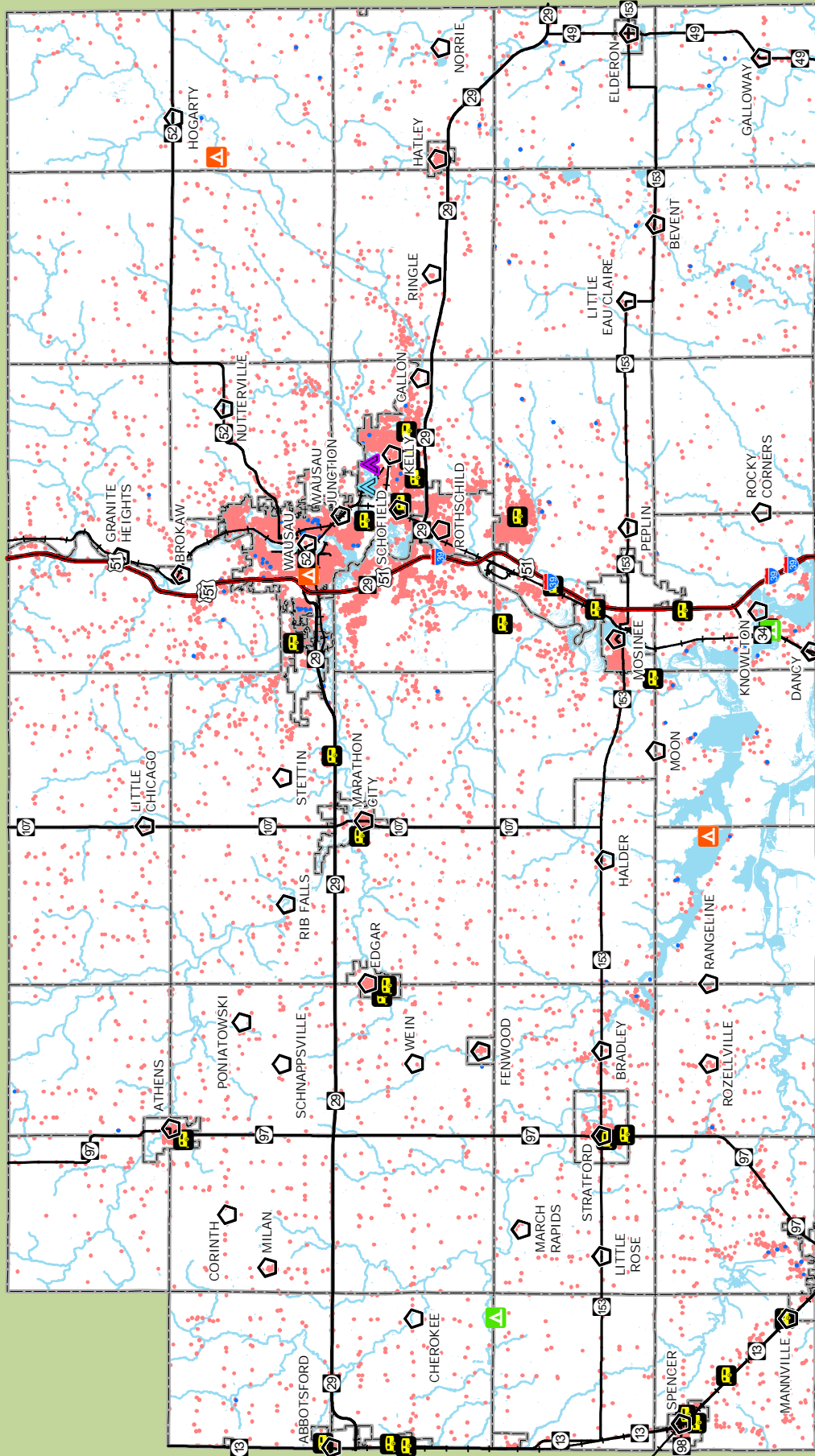
The most damaging tornado since 1950 occurred on August 31, 1977. This F1 tornado cut a 31-mile swath of destruction across Marathon County. First sighted near Fenwood, the tornado first touched down in the Town of Rib Mountain and skipped across the City of Wausau, periodically touching down then lifting up again. Total damage was estimated at \$3.5 million including over a million dollars in damage to farms and over \$1.5 million to residences. Ten people were injured during the event.

Since 1950, tornados in Marathon County have injured 19 people, but caused no fatalities. Damage caused by the 53 tornado events have amounted to an estimated \$16.9 million in property damage and \$3.4 million in damage to crops.

TORNADO VULNERABILITY ASSESSMENT:

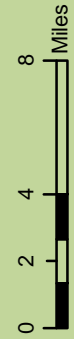
Marathon County is a mix of urban, suburban, and rural communities. All of Marathon County is vulnerable to tornados; however centers of higher population are particularly vulnerable due to population density resulting in a greater threat to human safety and property damage. Map 8 illustrates these areas within the County.

Tornado Vulnerability



Legend

- Minor Civil Divisions
- Water
- County
- Private
- Boy/Girl Scout Camp
- Youth Camp
- Mobile Home Park
- Seasonal Housing Unit Pattern
- 1 Dot = 10
- Residential Population Unit Pattern
- 1 Dot = 10



Source: NCRWPC, WI DNR
Marathon County Geo Services

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. NCRWPC is not responsible for any inaccuracies herein contained.



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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 2.7 percent of Marathon County's housing units are mobile homes, vulnerability to health and safety along with property damage is much greater. Research by the National Weather Service shows that about 40 percent of all deaths in the nation from tornados were in mobile homes, compared to 29 percent in stick-built homes, and 11 percent in vehicles.

While mobile homes are scattered throughout the County, many are concentrated in mobile home parks. Marathon County has approximately 27 mobile home parks, see Map 8 for locations. The Village of Weston has the highest number of mobile homes with 255 and the most parks with 4. The City of Wausau has about 63 mobile homes but only 1 park site identified. The total number of mobile homes in Marathon County is 1,621 according to 2019 American Community Survey figures.

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 people may be caught in severe conditions with little shelter available. The warmer months of the year have the highest occupancy in campgrounds, coinciding with the usual period of peak tornado activity. 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, jails
- Public Service - police and fire departments
- Utilities - power lines, telephone lines, radio communication
- Transportation – debris clean-up, sign damage
- Residential – nursing homes, mobile homes/parks, garages, trees and limbs, roofs, siding, windows
- Businesses – signs, windows, siding, billboards
- Agricultural - buildings, crops, livestock

Based on review of the historic events of tornados, there are no specific areas in the county that have unusual risks. The events are relatively uniform and a countywide concern. However, in their mitigation survey results, the Towns of Berlin, Guenther, Green Valley, Halsey and Marathon identified tornados as a major vulnerability concern. Tornado was also a significant threat to many of the cities and villages in the local planning meetings, including: Edgar, Elderon, Hatley, Kronenwetter, Maine, Mosinee, Schofield, Spencer, Wausau and Weston. Discussion included vulnerable mobile homes, trees/power lines down, and potential to overwhelm available resources and impact operations.

FUTURE PROBABILITY AND POTENTIAL DOLLAR LOSSES – TORNADOS:

With 53 historical occurrences over 70 years, the likelihood of a tornado hitting somewhere in Marathon County is 0.76 (76%) in any given year. However, yearly frequency is unpredictable, as historical data shows that three tornados occurred in 2008 and six in 2005,

but many years have passed without a single tornado event. Marathon County has not gone more than five years without a tornado event, and often has multiple events in a single year. Table 14 indicates the probability of tornados of a specific magnitude.

Table 14 Probability of Intensity for any given Tornado in Marathon County						
Tornado Scale	F/EF0	F/EF1	F/EF2	F/EF3	F/EF4	F/EF5
Number of Reported Tornados*	21	18	12	2	0	0
Probability of Occurrence	40%	34%	23%	4%	<1.0%	<1.0%

*Source: NCDC & NCWRPC – *Based on historical data from 1950 to 2020.*

Historic data is used to estimate potential future dollar losses due to tornado. Estimated damages resulting from various tornados in Marathon County range from \$0 to \$4 million. On average, Marathon County might expect damages of \$65 thousand per tornado, based on the study period of 2011 to 2020. However, of all tornados in Marathon County since 1950, seven have had damages exceeding \$1 million and fifteen did no property damage. Based on the most recent ten-year period, over the next ten-year period, tornado losses in Marathon County could be around \$390 thousand.

HAZARD ANALYSIS: WINTER STORMS / EXTREME COLD

BACKGROUND ON WINTER STORMS/EXTREME COLD HAZARD:

A variety of weather phenomena and conditions can occur during winter storms. For clarification, the following are National Weather Service approved descriptions of winter storm elements:

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

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

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

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

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

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

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

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

The NCDC has reported 36 major winter storm or extreme cold events for Marathon County between 2011 and 2020. These events included six cold or wind chill events, seven heavy snow events, one ice storm, 19 winter storms, one account of severe winter weather, and one blizzard. All winter storm events contained some form of snow, sleet, freezing rain, or ice conditions.

The most recent storm during this period was on April 12, 2020. A strong late season storm system brought significant snow, sleet and gusty winds to central and northeast Wisconsin from the late morning of April 12 through the early morning hours of April 13. The wet, heavy snow and strong winds produced some isolated power outages across north-central Wisconsin. A heavy band of snow from 6 to 15 inches fell from north of a Marshfield to the Wausaukee line with lighter amounts to the south. The highest snowfall total across Marathon County was 6.0 inches in Stratford.

The NCDC data has one event classified as a full blizzard during this period. An intense, late-winter storm produced heavy snow, freezing rain, and high winds across much of central and northern Wisconsin on February 23 and 24 of 2019 as an area of low pressure rapidly deepened across the Great Lakes. At the height of the storm on the 24th, travel was not recommended across parts of central and northern Wisconsin as blizzard conditions made travel nearly impossible. The combination of ice, snow, and strong winds caused

power outages and tree damage in many locations. This is the storm that resulted in the largest traffic accident in Wisconsin history on I-41 near Neenah.

New daily snowfall records were set for February 24 including in Wausau where the resulting 7.6 inches broke the previous record of 7.3 inches that was set in 2017. Parts of central Wisconsin received up to one-half inch of ice accumulation in addition to the snow. Wind gusts in the 50 to 60 mph range were measured at many locations, including 58 mph recorded at Wausau Municipal Airport. Blowing snow caused whiteout conditions in Marathon County for most of the afternoon. Some power lines were downed by the strong winds around Weston and Schofield.

One of the most significant winter storms on record for this area occurred during this period. On April 13, 2018, a low-pressure system that moved from the Plains, across Illinois, to the Ohio Valley brought two periods of heavy precipitation and strong northeast winds to the area. The historic late season winter storm pummeled northeast and north-central Wisconsin from the evening of April 13th through the afternoon of April 15th. The storm brought near-blizzard conditions to much of the area and made roads impassable from time-to-time. Winds of 35 to 50 mph caused sporadic power outages. New snowfall records were set at many locations as a large area of 15 to 30 inches of snow fell and winds gusted over 45 mph. The heavy weight of the snow caused several structures to collapse or partially collapse, mainly across east-central Wisconsin. Snowfall totals were the highest ever recorded for an April storm in Wausau at 20.7 inches. This was the second largest snowstorm on record in Wausau.

Winter storm events in Marathon County often come with some form of ice accumulation that causes issues. True ice storms are less common, but one example of the problems icing can bring occurred on December 3, 2013. Heavy snowfall, along with a period of freezing rain, caused hazardous conditions on roads in central Wisconsin. There were multiple traffic accidents, indirectly resulting in 1 fatality and at least 2 injuries (indirect). Three roads were closed in Wausau due to accidents and hazardous driving conditions.

A major winter storm affected most of northern Wisconsin on March 22 and 23, 2011. This late season storm produced plenty of heavy, wet snow and occasional thundersnow across central Wisconsin. During the two-day period, Marathon County received about 12 inches of snow. Lightning from the storm destroyed a house in the Town of Knowlton causing \$296,700 in property damage. The high water content of the snow caused many problems including a police squad car stuck in the snow for several hours. The two plow trucks that tried to push it free also became stuck.

One of the most damaging winter weather events in recent Marathon County history occurred on May 7, 2010. This very late snowfall affected much of northern Wisconsin and the eastern and central parts of Marathon County received three to five inches of snow. The heavy, wet snow damaged nearly all of the ginseng gardens in the county as mesh shade structures, designed to protect the plants from sunlight, crushed the plants under the weight of the heavy wet snow. Damage to crops was estimated to be at least \$15 million.

The most recent extreme cold event took place on January 29, 2019 when cold air moved into northern Wisconsin as a strong low pressure system departed and high pressure over the Plains moved toward the region. Low temperatures on the morning of January 30th were mainly in the -15 to -30 degree range with wind chills -35 to -55. Temperatures across the area remained below zero throughout the day on the 30th. Schools and many businesses closed, public transportation suspended or curtailed service, and the U.S. Postal Service even suspended deliveries due to the bitter cold. Several locations set or tied their records for the coldest daytime high temperatures on January 30th including Wausau where -14 degrees broke the previous record of -12, set in 1899. The low temperature in Kronenwetter was -34 on the morning of January 31st.

In 2015, a 95-year-old woman wandered away from her home on the evening of February 3rd and was found dead near railroad tracks on the morning of February 4th. Temperatures during the period in which she was missing generally ranged from 6 to 13 degrees with wind chills as low as 5 below zero.

WINTER STORMS / EXTREME COLD VULNERABILITY ASSESSMENT:

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

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

- Infrastructure – operation of emergency services, operation of public facilities and schools
- Utilities – down power and telephone lines
- LP Gas at residences freezing in temps below -40 degrees
- Septic systems - freezing
- Transportation – automobile accidents, roadway plowing, salting/sanding
- Residential – roofs
- Businesses – commerce
- Agricultural - livestock, frost of snow damage to crops

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. The risk for winter storms and extreme cold is relatively uniform and a county-wide concern. However, in their mitigation survey results Berlin, Green Valley, Halsey, Johnson, and Wien identified winter storms as a significant vulnerability concern. During the local planning meetings, the Village of Hatley also identified winter storms as a major concern citing ice for hazardous driving conditions and potential power outages.

FUTURE PROBABILITY & POTENTIAL DOLLAR LOSSES – WINTER STORMS/EXTREME COLD:

Based on historical frequency, Marathon County can expect 3 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, Marathon County can expect an occurrence every other year with the probability at about 0.6 or a 60 % 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.

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 Fahrenheit. 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 MARATHON COUNTY:

The NCDC has reported 64 thunderstorm events for Marathon County between 2011 and 2020. These storms typically contain some form of heavy rain, strong winds, and lightning. About 20 recorded hail events, typically related to a severe thunderstorm, were listed during this time period. There were 4 lightning events and 7 high wind events recorded during this time period.

The most recent severe thunderstorm in Marathon County took place on July 18, 2020. During this event, a line of severe thunderstorms produced gusty winds as they tracked through northern Wisconsin during the morning hours along a warm front. Thunderstorm winds downed trees and powerlines in Wausau and Mosinee. Traffic lights and a bank sign were downed in Weston.

The most significant storm event during this period occurred on June 5, 2016. Thunderstorms approaching from the northwest began to produce damaging winds in central Wisconsin as they encountered a more unstable air mass. There was also some nickel size hail with the storms. Thunderstorm winds downed or snapped numerous trees, large branches, and power lines; and wrapped a trampoline around a power pole. The winds and/or fallen trees caused roof damage to a middle school, two houses, and a garage, as well as severe damage to 3 vehicles. Measured gusts from the storms included 64 mph at Wausau Airport as the storms moved through Marathon County. NCDC indicated damage reports exceeding \$320,000.

On October 25, 2012, an upper level storm system and a surface cold front combined with unstable air and strong winds just above the surface to produce wind damage and large hail. The storm knocked out power to more than 6,000 customers in central and north-central Wisconsin. Hail to 1.25 inches in diameter damaged an automobile in Weston. Thunderstorm winds downed two barns, heavily damaged a metal pole barn, toppled trees and power lines, and damaged two silos in the Town of Hull, east of Colby. A tree was knocked over onto a house and blew an empty tractor trailer on to its side in the Village of Athens. NCDC indicated damage reports exceeding \$100,000.

A storm on June 19, 2012 produced damaging winds that downed numerous trees, knocked out power to more than 15,000 customers in northern and central Wisconsin, downed a barn on the east side of Wausau and picked up a pole shed and threw it against a house near Marathon severely damaging four nearby cars. NCDC indicated damage reports exceeding \$100,000.

Hail events usually coincide with thunderstorms as illustrated by the other severe storm accounts reported. The most recent hail event reported by the NCDC for Marathon County was on August 25, 2020. Thunderstorms developed across central Wisconsin during the late evening and early morning hours as a cold front moved south. The strongest storms produced large hail with reports of quarter-sized near Stratford.

The most recent lightning event took place during a storm on August 21, 2013. This storm produced large hail and damaging wind gusts around 70 mph. A lightning strike sparked a fire which destroyed a duplex on Wausau's east side at approximately 6:30 pm. No one was injured in the blaze. Property damage was estimated at \$99,000.

On June 26, 2013, an 8 year-old boy was struck by lightning while riding a mini-bike at his uncle's farm in the Town of Rib Falls. No rain was falling at the time the boy was struck. He was initially unresponsive and had no pulse, but his father used CPR to revive

him, and the boy was rushed to the hospital. The boy suffered ruptured eardrums, scratches on the lenses of his eyes, and second degree burns over more than a quarter of his body.

On March 22, 2011, lightning resulted in a fire that destroyed a house in the Town of Knowlton. A woman and her dog were home at the time of the fire but were able to escape without injury. Damage was estimated at nearly \$300,000.

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 Marathon County area to thunderstorms and related storm hazards, a review of past events indicates significant impacts to:

- Infrastructure – hospitals, schools, street signs, police and fire departments
- Utilities - electric lines/poles/transformers, telephone lines, radio communication, natural gas infrastructure
- 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 areas in the County that have unusual risks. The events are relatively uniform and a countywide concern. However, in their mitigation survey results Berlin, Halsey, Mosinee, Johnson, and Wein identified severe thunderstorms as a significant vulnerability concern indicating that their extensive wooded areas are vulnerable to high winds.. In the local planning meetings Edgar, Elderon, Hatley, Kronenwetter, Maine, Marathon City, Mosinee, Rothschild, Stratford and Weston cited concern regarding high winds downing trees and causing power outages.

FUTURE PROBABILITY AND POTENTIAL DOLLAR LOSSES - SEVERE THUNDERSTORMS:

Based on historical frequency, Marathon County can expect about 6 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 Marathon County is also at 1.0 or 100% chance with about 2 incidents in a given year. The probability of a lightning event is at 0.4 or 40%, with a significant event every 2.5 years on average.

According to the NCDC, historic thunderstorm events with associated high wind and reported damages averaged \$49,764 in property damage per incident. Historic thunderstorm events with associated hail that reported property damage averaged about \$1,000. Historic thunderstorm events with associated lightning that reported property damage averaged \$132,222. Losses in Marathon County associated with severe thunderstorms could approach \$4 million over the next ten-year period.

HAZARD ANALYSIS: HAZARDOUS MATERIALS INCIDENTS / GROUNDWATER CONTAMINATION

BACKGROUND ON HAZARDOUS MATERIALS INCIDENTS / GROUNDWATER CONTAMINATION 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. Groundwater contamination occurs when contaminants reach levels that are considered unsafe for human and/or animal to be exposed to or drink. There are a variety of sources for such contaminants, including hazardous materials incidents. Preventing groundwater contamination is a principal concern of hazardous materials incident response and mitigation efforts.

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 (includes Marathon), Northwest Task Force, Southeast Task Force, and the Southwest Task Force. These Task Forces are then divided into Type I, Type II, and Type III teams, all with complimentary capabilities and training requirements. In Marathon County there is a Wausau based Type II team that operates in partnership with Oneida

County (Rhineland). 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.



Regional HAZMAT Exercise

HISTORY OF HAZARDOUS MATERIALS INCIDENTS IN MARATHON COUNTY:

The last major reported hazardous material problems involving Marathon County occurred on April 23, 2018 in Abbotsford. The Marathon County Hazardous Materials Response Team was requested by the local fire department to assist with an ammonia release from a refrigerated warehouse. The Regional team also responded to the scene along with other fire departments. The event consisted of a mass casualty incident, evacuation, activation of mutual aid, resource management, interoperability communications, and interviews with the media.

Another example of a major incident occurred on June 12, 2008, when 23 people were injured at Brokaw Paper Mill after a trucking company from out of the area poured Phosphoric Acid into a tank containing Sodium-Hypochlorite creating Chlorine gas. Most of those injured reported irritation to their eyes and respiratory systems. The paper mill was re-opened the next day. The Marathon County Hazardous Materials Team responded to the incident along with local fire departments and law enforcement.

Many other hazardous materials incidents have occurred but on a relatively small scale. See Table 15 for a summary of hazardous materials incidents between 2011 and 2020.

Each represents a threat to area groundwater, the potential for considerable property damage and a high risk in terms of loss of human life or injury.

Table 15: HAZMAT INCIDENTS / MARATHON COUNTY: 1/1/11 thru 12/31/20										
SUBSTANCE	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Petroleum Products	7	7	11	30	13	13	16	21	13	3
Solid Waste	0	0	0	0	0	1	0	3	0	0
Agricultural (Animal)	0	0	0	0	0	3	6	4	9	1
Agricultural Chemicals	1	0	0	0	0	0	0	1	0	0
Acid	1	0	0	0	0	1	0	0	0	0
Chlorine	0	0	1	0	0	0	0	0	0	0
Ammonia	0	0	0	0	0	0	0	1	0	0
Unk. White Substance	0	0	0	0	1	0	0	0	0	0
Other	5	2	6	2	2	2	1	5	5	2
FIXED SITE RELEASE	7	1	10	13	3	8	8	6	0	1
TRANSPORTATION	7	7	8	17	13	11	13	10	9	1
ILLEGAL DUMPING	0	1	0	2	0	1	2	2	1	1
OTHER								17	17	3
Yearly Totals	14	9	18	32	16	20	23	35	27	6

Source: Marathon County EM and NCWRPC, 2021.

HAZARDOUS MATERIALS INCIDENT VULNERABILITY ASSESSMENT:

In 2014, the Marathon County LEPC participated in a detailed Hazardous Materials Commodity Flow Study with Langlade, Lincoln and Oneida counties. This Study inventoried the risk factors that make hazardous materials incidents a keen concern in Marathon County, which are reviewed below:

Fixed Facilities

The Commodity Flow Study identified that facilities within Marathon County utilize 43 substances meeting EPCRA (Tier II) reporting requirements and are considered a controlled material by US DOT. These are sites that have hazardous materials present at any one time in amount equal to or exceeding the chemical-specific threshold planning quantity (TPQ).

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 39/USH 51, STH 13, STH 29, STH 52, STH 97, and STH 153 (see Map 5).

The Commodity Flow Study monitored traffic at key locations and counted trucks with Hazardous Warning Placards. The locations of the intersections and the total number of trucks with hazardous materials are seen in Table 16.

Table 16 – Number of Trucks Carrying Hazardous Materials at Intersections in County	
Intersection	# of Trucks
Hwy 51 N. of Hwy 29	8
I39 S. of Hwy 29	16
Hwy 29 at Cty X	11
Hwy 52 at Cty 52	2
Hwy 29 at Hwy 13 (N.)	5
Hwy 29 at Hwy 13 (S.)	6
Hwy 97 at Hwy 153	7
Total Observations	55
<i>Source: Marathon Co. LEPC, 2014.</i>	

Railroad

Rail – another mode for the transportation of hazardous material, consists of about 99 miles of track in Marathon County (see Map 5) with a rail yard located on the south side of the City of Wausau. Although trucks transport most of the hazardous materials in the state and the U.S., rail can carry significantly larger loads of hazardous materials. The Commodity Flow Study identified the hazardous materials being transported by rail through Marathon County, including: gases; flammable and combustible liquids; flammable solids, spontaneously combustible materials, dangerous when wet/water reactive materials; and miscellaneous hazardous materials/products, substances or organisms.

Pipeline

There are several pipelines traversing Marathon County: the TransCanada carries natural gas through the central and eastern parts of the County, Enbridge carries crude oil through the southwest corner, and the former Magellan petroleum line runs through the western side to a storage terminal in Kronenwetter, however, the pipe and terminal are currently dormant pending re-opening or sale by the company (see Map 6).

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. In particular, Rib Mountain identified hazmat incidents as a major

vulnerability concern regarding spills resulting from accidents with their drinking water wells adjacent to Highway 51. Weston referenced groundwater concerns with Highway 29 as well as the high pressure gas main through the village. Maine was also concerned about potential groundwater contamination. Spencer, Rothschild and Marathon City cited the transport and use of dangerous industrial chemicals such as ammonia in their areas. Hatley has a propane storage and distribution center located in town.

Current Issues in Hazardous Materials/Groundwater Contamination

Hazardous materials are a diverse and complex problem that is constantly evolving. Known threats can slowly grow over time and previously unknown threats can suddenly emerge without warning. Two prominent issues that Marathon County is currently dealing with include animal waste management and polyfluoroalkyl substances (more commonly known as PFAS).

Manure Pond Failure - Marathon County has always been a major agricultural area, but the nature of livestock facilities and confined animal feeding operations has grown in size and scope over time. The management and storage of large volumes of animal waste is a major focus of water quality protection efforts at the state and county level. A manure pond failure can have a major impact on surface and groundwater quality.

PFAS - PFAS is a broad family of man-made chemicals that has been largely unregulated and is now become a growing concern for drinking water safety. Research has linked PFAS to liver damage, high cholesterol, weakened immune systems and cancer. PFAS is commonly used in hundreds of consumer products and in firefighting foams which has been identified as a top source of PFAS contamination. PFAS is heat resistance and hard to contain or destroy. The Marathon County landfill has significant volumes of PFAS and leachate disposal has been a growing concern. Fire departments have generally switched to new non-PFAS fire foams, but a question of concern is what does the County do if PFAS is used somewhere.

FUTURE PROBABILITY & POTENTIAL DOLLAR LOSS – HAZARDOUS MATERIALS INCIDENTS:

Based on the historic data presented here (frequency of past events), Marathon County can expect about 19.7 minor hazardous material releases each year on average, which is a probability of 1.0 or a 100 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, a major industrial railway and a natural gas pipeline moving through the County, the chances appear to be significant for a catastrophic hazardous materials incident occurring at some point in Marathon 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 Marathon County.

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. Marathon County has the potential for all these types except coastal. The following descriptions of the types of flooding are compiled from various FEMA and other notable hazard planning sources:

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

Dam 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 Marathon County tend to occur in the spring when melting snow adds to normal runoff and in summer or early fall after intense rainfalls. Flooding occurs in the spring due to snowmelt and frozen soil that can't absorb the water and can be compounded when coinciding with excessive rainfall. This build up continues until the river or stream overflows its banks, for as long as a week or two and then slowly recedes inch by inch. The timing and location of this type of flooding is fairly predictable and allows ample time for evacuation of people and protection of property.

Flooding is a significant hazard in Marathon County, particularly because the Wisconsin River flows through it. As described in Part II, there are 356 rivers and streams in Marathon County within 22 watersheds.

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 Update. 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 118 dams in Marathon County, according to the WDNR which tracks information for all dams in the State of Wisconsin. These dams serve many useful purposes including agricultural uses, providing recreational areas, electrical power generation, erosion control, water level control and flood control. Of those 118, 14 are classified as large dams (see Table 17). DNR defines large dams as those which either have a structural height of 6+ feet and an impound volume of at least 50 acre-feet or have a structural height of 25+ feet and an impound volume of at least 15 acre-feet. 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.

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.

Table 17 Large Dams in Marathon County			
Name	Next City Down from Dam	Miles Next City is Down from Dam	Hazard Rating
Wausau	Wausau	0	High
Winding Creek Rearing Pond	None	0	Significant
Rothschild	Rothschild	0	Significant
Big Eau Pleine	Knowlton	5	Low
Black Creek	Athens	No data	Low
Brock-Clint	None	-	High
Brooks and Ross	Schofield	0	Low
Del Fatti Construction	None	-	N/A
Kopp	None	-	Low
Lloyd Keller	Stratford	1	Low
McMillan Marsh	None	-	Low
Mosinee	Mosinee	0	Low
Winding Creek Diversion	None	-	Low
Spring Lake Campground	None	-	Low

Source: WisDNR Dam Database 2019 and NCWRPC.

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. A high hazard indicates that a failure would probably result in the loss of life. A significant hazard indicates a failure could result in significant property damage. A low hazard exists where failure would result in only minimal property damage and loss of life is unlikely. Marathon County has 14 large dams, of which two have a high hazard rating and two have a significant hazard rating.

HISTORY OF FLOODING IN MARATHON COUNTY:

The NCDC has reported 3 flooding events for Marathon County between 2011 and 2020. The most recent event occurred on July 27, 2016 when a slow moving thunderstorms, in a moist and very unstable air mass in the vicinity of a nearly stationary front, produced isolated wind damage and minor flooding in central Wisconsin. Rainfall from the storms was heavy enough to cause street flooding near and west of Edgar.

On March 15, 2016, a strong spring storm system produced a swath of 1.5 to 3 inches of rain over much of central Wisconsin from the evening of March 15th into the morning of

the 16th. Runoff from the heavy rain caused flooding of areas along most of the main rivers across central Wisconsin and resulted in widespread lowland flooding between Rib Falls and western Wausau. In Marathon City, several feet of water covered Lion's Riverside Park and surrounded homes near River Road. Some of the homes had to be evacuated due to rising water. An intersection was washed out in the Town of Hamburg. Some of the heaviest rainfall totals included 2.86 inches near Kronenwetter.

On July 19, 2011, thunderstorms moving along a warm front encountered very unstable air across central Wisconsin where they produced damaging winds, hail and flash flooding. Torrential rainfall in western Marathon County resulted in flash flooding with water 8 to 10 inches deep flowing over State Highway 13.

Prior to 2010, flooding was the principal cause of damage in five Presidential Disaster Declarations in Marathon County since 1971. The last declaration as of this Plan occurred in 2010, when an excessive rainfall event took place across north central Wisconsin on September 22 and 23. Flash flooding was common as most areas of central Wisconsin received between three and five inches of rainfall. In Marathon County, moderate flooding occurred on the Wisconsin River, Big Eau Pleine River, and Big Rib River, but the rivers fell below flood state by late evening on the 25th. Roads were washed out all across Marathon County, accounting for over \$330,000 damage to roads. Twenty-seven residents were evacuated from nine homes, mainly along River Road in Marathon City, due to flooding on the Big Rib River, and basements of all homes along River Road were flooded. The flooding caused minor damage to four homes, major damage to one, and destroyed three others. Property damage to these homes totaled approximately \$400,000.

Extreme flooding can also result in dam failures. There are no recent incidences of dam failure. Historic dam failures in Marathon County took place in 1911, 1912 and 1941. In 1911, the dam at the Marathon Paper Mill in Rothschild had just been completed, creating Lake Wausau. Shortly after completion, a hole was blown in the dam in an attempt to save the mill from flooding. After a period of heavy rains in 1912, the Brokaw Dam broke, causing flooding and bridge damage in the City of Wausau. The newly reconstructed Rothschild Dam was again blown to relieve pressure behind it. In 1941, heavy rains also fell causing a similar situation at Brokaw and Rothschild dams. The Brokaw dam was never rebuilt after this event. No other reports of dam failure have been reported since 1941.

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, forced shut down of natural gas service
- 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 Marathon 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 Wisconsin Repetitive Loss Report. The Repetitive Loss Report provides information to the status of repetitive loss properties by community. FEMA classifies a repetitive loss structure “when more than one flood insurance claim of at least \$1,000 is made within a ten-year period”. The information is used as a floodplain management tool and to supplement information provided by communities for flood mitigation grants administered by WEM. According to the report, there are just three repetitive loss structures currently listed within Marathon County, one is in the Village of Marathon City and two are in the Town of Stettin. Two of the structures are residential and the other is commercial. Data is limited to protect the privacy of owners.

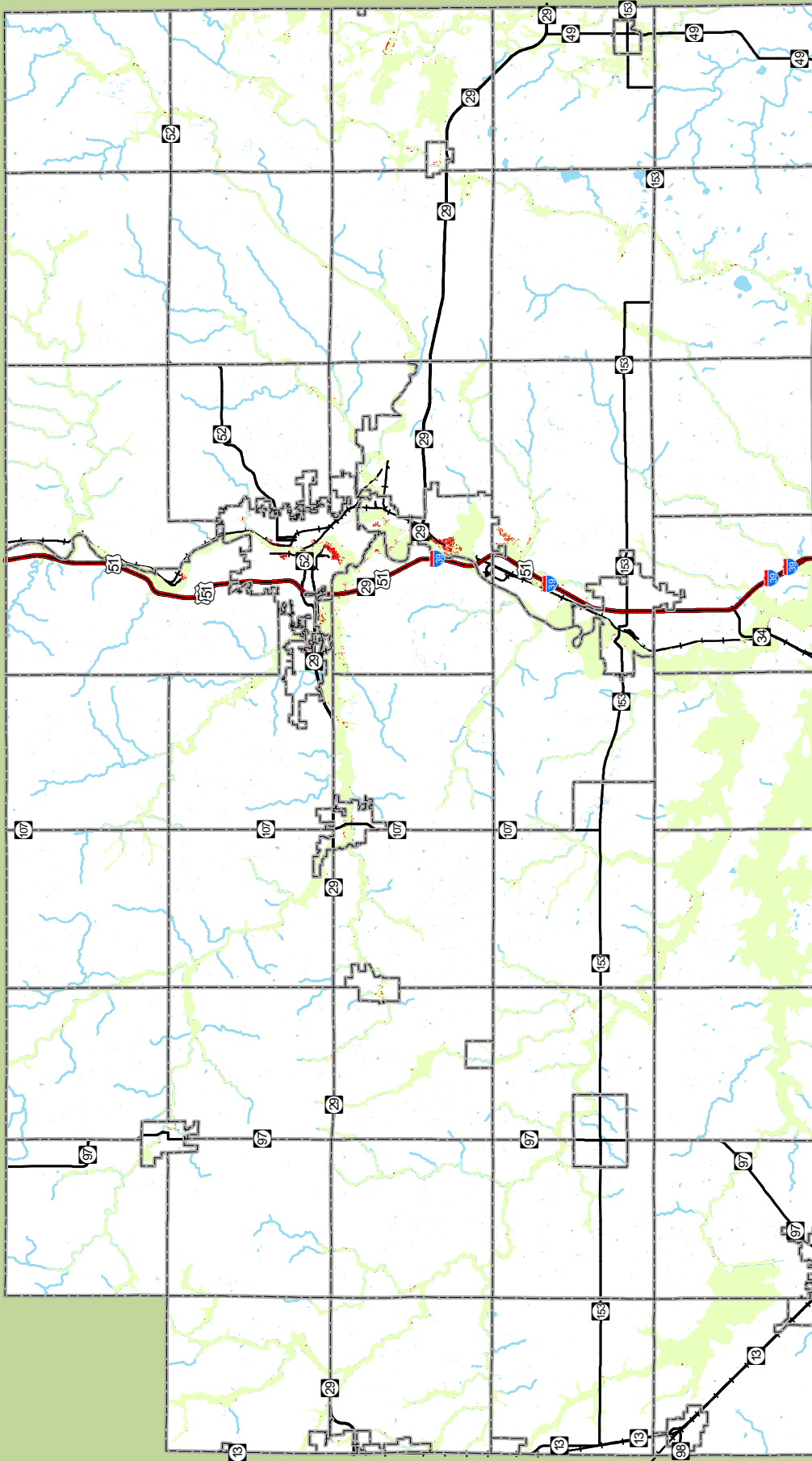
Since there are limited repetitive loss structures, structures within floodplains were analyzed to get a more accurate picture of the potential flood vulnerability in the County, see methodology outlined below. The floodplain boundaries within Marathon County are shown on Map 4. Table 18 shows the number of structures in each municipality identified as "vulnerable to flooding" according to proximity to floodplains. There were a total of 3,188 structures identified in the designated floodplain boundaries, see Map 9. Estimated value of structures located with the floodplain in Marathon County is over \$330 million.

Methodology – Structures within Floodplains:

1. *NCWRPC downloaded the individual DFIRM floodplain maps from the FEMA website into a GIS coverage for the County.*
2. *A building point cover was created from NCWRPC and County GIS data.*
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. *Median value data from the US Census was used to estimate total value for the identified vulnerable structures by municipality.*

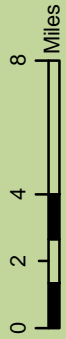
Flooding in Marathon County is often felt beyond the floodplain boundaries due to factors such as topography and high groundwater. The drainage (surface runoff) network in the County is poorly defined. During periods of extended rainfall and/or snowmelt, a general condition of flooding exists throughout the communities. During this time, basements and roadways (including surfaces, culverts and bridges) can suffer considerable damage. Flooding has inundated or washed-out roads for varying periods of time. Such interruptions in the County transportation network cause travel delays through detours, and businesses are often impacted by restriction in access.

Flood Vulnerability



Legend

- Minor Civil Divisions
- US Highways
- State Highways
- Railroad
- █ Structures in Floodplain
- █ Floodplain
- █ Floodplain
- █ Water
- █ Perennial Streams



Source: NCWRPC, WI DNR, FEMA, Marathon County Geo Services

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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Table 18a Improvement Values for Structures In Floodplains - Incorporated Areas		
Municipality**	Structures in Floodplains	Total Fair Market Value
<i>Marathon County Total</i>	3,188	\$332,185,400
Abbotsford city*	13	\$1,678,900
Colby city*	4	\$123,700
Marshfield city*	0	-
Mosinee city	39	\$9,796,200
Schofield city	116	\$32,275,600
Wausau city	509	\$50,124,300
Athens village	15	\$604,000
Biramwood village*	0	-
Dorchester village*	0	-
Edgar village	47	\$2,546,600
Elderon village	10	n/a
Fenwood village	0	-
Hatley village	15	\$1,554,000
Kronenwetter village	351	\$47,842,200
Maine village	29	\$8,231,500
Marathon City village	49	\$6,440,500
Rothschild village	457	\$55,130,600
Spencer village	0	-
Stratford village	2	\$333,900
Unity village*	0	-
Weston village	34	\$3,244,500
<i>Source: FEMA, NCWRPC GIS, Marathon Co. Land Records, 2021.</i>		
<i>*Denotes split between two counties, Marathon portion only.</i>		

Businesses can be forced to close due to septic system problems and other issues from flooding and the high water table. Tourism is an important industry in the County and several campgrounds, recreational facilities, 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.

Table 18b Improvement Values for Structures In Floodplains - Unincorporated Areas		
Municipality	Structures in Floodplains	Total Fair Market Value
Bergen town	31	\$3,223,900
Berlin town	2	\$213,400
Bern town	3	\$0
Bevent town	81	\$3,019,700
Brighton town	29	\$828,000
Cassel town	32	\$692,000
Cleveland town	55	\$4,737,200
Day town	2	\$0
Easton town	17	\$1,122,600
Eau Pleine town	10	\$0
Elderon town	50	\$643,400
Emmet town	9	\$1,021,500
Frankfort town	24	\$484,400
Franzen town	5	\$53,200
Green Valley Town	70	\$8,844,100
Guenther Town	16	\$240,300
Halsey town	5	\$0
Hamburg town	5	\$198,800
Harrison town	57	\$676,800
Hewitt town	10	\$136,000
Holton town	36	\$924,600
Hull town	34	\$780,300
Johnson town	4	\$0
Knowlton town	101	\$27,626,300
Marathon town	47	\$2,553,300
McMillan town	47	\$5,352,900
Mosinee town	19	\$1,789,300
Norrie town	140	\$5,985,900
Plover town	43	\$1,537,500
Reid town	66	\$981,400
Rib Falls town	21	\$1,803,400
Rib Mountain town	107	\$12,099,300
Rietbrock town	11	\$0
Ringle town	73	\$5,011,900
Spencer town	15	\$483,500
Stettin town	131	\$12,423,300
Texas town	42	\$1,901,900
Wausau town	15	\$1,379,700
Weston town	15	\$2,875,200
Wien town	18	\$574,300
<i>Source: FEMA, NCWRPC GIS, Marathon Co. Land Records, 2021.</i>		

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 may need to be added even in purchased feed.

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.

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

The areas considered to have a higher risk for impact from flooding include those communities with structures in floodplains as shown in Map 9. Flooding was the most commonly cited concern for the rural areas of the County. In their mitigation survey results, the Towns of Franzen, Green Valley, Guenther, Halsey, Hamburg, Mosinee, Rib Mountain and Wein identified flooding as a major vulnerability concern. Some towns referred to areas along the Eau Pleine, Rib and Wisconsin Rivers as being prone to flooding and culvert/road washouts. Flooding was also a common concern in the local planning meetings with the urban areas of the County. Edgar, Hatley, Kronenwetter, Marathon City, Mosinee, Rothschild, Schofield, Wausau and Weston all cited flooding as a significant hazard concern. A wide-range of flood related issues were identified. Rib Mountain, Rothschild and Schofield cited major dams in or near their jurisdictions as a concern.

FUTURE PROBABILITY AND POTENTIAL DOLLAR LOSSES – FLOOD:

Based on the historic data presented here (frequency of past events - 2011 to 2020), Marathon County can expect a notable flood event about every 3.34 years on average. This equates to a probability of 0.33 or about a 33 percent chance in a given year.

Due to the significant number of dams, dam failure is an important hazard event to plan for in Marathon County. However, based on past experience, the actual probability of a major dam failure is very low. In addition regular inspection and maintenance ensures the integrity of area bridges such as the Wausau Hydro dam which has undergone extensive updating in 2019 and 2020 including replacement of 4 of 7 gates, electrical systems and underwater concrete. Based on historic flood frequency data, probability of dam failure might be estimated at (less than) 0.02 or 2 percent chance in a given year.

Historic data is again used to estimate potential future dollar losses due to flood. On average, Marathon County might expect flood damages of \$4,166 on average, per flood

occurrence based on the study period of 2011 to 2020. Over the next ten-year period, flood losses in Marathon County could approach \$12,500. However, there is always the chance that a more significant flood will occur like in 2002 or 2010 with much greater potential for damage.

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 MARATHON COUNTY:

The period of analysis for this plan began with historic drought across much of the U.S. Nationally, what is now known as the 2012-2013 North American Drought was affecting over 80% of the U.S. as well as parts of Canada and Mexico. This drought exceeded the 1988-89 drought, which also affected Wisconsin/Marathon County, as one of the costliest natural disasters in U.S. history.

Previously, NCDC reports indicate that much of Wisconsin including Marathon County was under droughty conditions between 2004 and 2013. At one point, the Governor had

declared a state of emergency to get assistance to the state's agricultural sectors. The extended dry conditions posed serious challenges for farmers from drought stressed crops to issues providing feed for livestock. Beginning in 2013, improved rainfall across the Midwest gradually relieved the drought in Wisconsin.

While droughts come and go, there is increasing evidence that parts of the U.S., namely the Southwest, are enduring long-term “megadrought” conditions. This is partly related to climate change, which worsens droughts by increasing temperatures, thereby turbocharging the loss of moisture from plants and soils. Climate change is also shifting weather patterns in ways that favor drier conditions in the Southwest U.S., pushing storm tracks northward which explains why a significant portion of the state has remained "water-logged" and struggling with on-going/recurring flood conditions over the last several years. It is interesting to note however that some parts of the state, particularly in northern Wisconsin, continue to trend towards drought.

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

Despite all this drought, there is only one incidence of excessive heat listed by the NCDC for Marathon County between 2011 and 2020. The last excessive heat event reported by the NCDC was in 2012 when a hot air mass settled over Wisconsin in early July, bringing highs of 100 degrees or hotter to central Wisconsin from July 3rd through July 6th. Relative humidities were low, but heat indices still managed to reach the 100 to 110 range.

DROUGHT / EXTREME HEAT VULNERABILITY ASSESSMENT:

Droughts can have a dramatic effect on the farms and other agricultural activities as well as forestry enterprises located throughout Marathon County. With forestry and agriculture being important sectors of the County’s economy, droughts can have disastrous effects. Even small droughts of limited duration can significantly reduce crop growth and yields, adversely affecting farm income. More substantial events can decimate croplands and result in total loss, hurting the local economy.

Irrigation can negatively impact the environment by drawing water that naturally goes to aquifers and surface water. Drought can exacerbate the problem when high withdrawal rates versus little precipitation deplete 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. As water levels go down, there is less tourism seen in the County. The past drought conditions reduced water levels on many lakes and streams across the County.

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

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

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

The areas most susceptible to drought conditions would be agricultural towns. Agricultural land is scattered throughout the County but is heavily concentrated in the western half of the County, see Map 2. In their mitigation survey results the Towns of Green Valley, Marathon, and Weston identified drought as a significant vulnerability. Towns of Marthon and Weston cited farming in sandy soils.

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 Marathon County affecting everyone, however the elderly and young are the ones with the highest risk of getting heat related injuries, which can lead to death. Ways to prevent injuries include wearing light-colored clothing, drink plenty of water, slow down, and do not stay in the sun for too long.

FUTURE PROBABILITY AND POTENTIAL DOLLAR LOSSES – DROUGHT/EXTREME HEAT:

Based on the historic data presented here (frequency of past events), Marathon 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 from two previous major droughts for which figures are available can give some indication of potential impact. Those droughts resulted in losses of \$9.6 million (1976-77) to \$18 million (1987-88) per county in Wisconsin on average.

Normally, central Wisconsin is known for its cold winters, however, extreme heat waves will affect Marathon County in the future. Marathon County can expect a heat wave once about every 10 years for about a 10 percent chance in a given year based on the historic data presented.

HAZARD ANALYSIS: FOREST FIRE / WILDFIRE

BACKGROUND ON FOREST FIRE / WILDFIRE HAZARD:

A Forest Fire or Wildfire is an uncontrolled, wild, or running fire 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 fire occurring on forest, marsh, field, cutover, or other lands.

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

HISTORY OF FOREST FIRE / WILDFIRE IN MARATHON 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 Marathon County. WisDNR is currently updating access to this data with a new online database, so at the time of this report only five years of data was available from 2016 through 2020. During that time, there was an average of 17 fires that have burned 24 acres, annually. The typical fire in Marathon County burns about 1.4 acres. These are wildland fires covered by DNR response.

National Fire Incident Reporting System or NFIRS data covers all wildland fires within the County. NFIRS data for the period 2010 to 2020 was analyzed. During this period NFIRS reporting includes 393 wildland fires, see Table 19. This corresponds to an average of 36 fires per year on average across Marathon County. NFIRS indicates that 48 of the fires were significant enough to warrant mutual aid assistance.

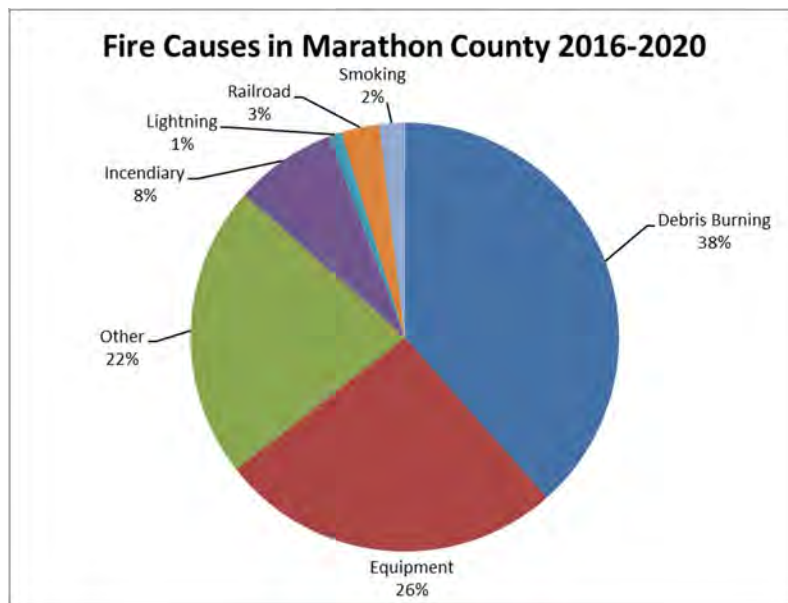
Table 19 NFIRS Reported Fires in Marathon County 2010 - 2020			
Incident Code	Incident Description	Frequency #	Frequency %
140	Natural vegetation fire, other	40	10.18%
141	Forest, woods, or wildland fire	41	10.43%
142	Brush, or brush & grass mix fire	143	36.39%
143	Grass fire	169	43.00%
Total		393	100%
<i>National Fire Incident Reporting System and WisDPS, 2021.</i>			

April is the leading month for fire in Marathon with 37% of the total number of fires between 2016 and 2020. No fires have occurred in the months of February or July in Marathon County over this time period.

The largest wildfire that has occurred during this period was on May 3, 2019 in the Town of Weston when some debris burning spread to 22 acres. This is still relatively minor

compared to the 2005 Cottonville fire, 2 counties south of Marathon which burned over 3,400 acres and 90 structures or the 2012 Duck Lake Fire just across the WI/MI-border in the Upper Peninsula which consumed 21,000 acres and 136 structures.

The chart below breaks down the causes of wildfire within Marathon County between 2016 and 2020 as classified by the WisDNR. The principal cause of wildfire in the Marathon County and Wisconsin as a whole is debris burning which resulted in 40 or 38% of wildfires within the County. Equipment is the next leading category at 26% and includes vehicle, motor and other machinery related causes except railroad. The "Other" category includes a variety of factors such as arson, campfires, power lines, and structure fires. Lightning, the only natural cause of fire, was responsible for only 1% of fires.



Source: WisDNR

FOREST FIRE / WILDFIRE VULNERABILITY ASSESSMENT:

Marathon County has approximately 387,000 acres of woodlands, or about 38 percent of the total land area, scattered throughout the County. In addition, the County has significant area of "open lands", typically grasslands or brushy areas. The potential for property damage from fire increases each year as more development occurs in and around these areas.

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

The WDNR has completed a statewide evaluation of fire risk, referred to as the CAR or Communities At Risk assessment. This assessment uses extensive DNR geo-databases to

analyze and map hazardous woodland fuel types and the degree of the intermixing of development with wildlands. The maps identify the level of risk for each community on a scale of very high, high, moderate, or low, and also have a community of concern designation, see Map 10. There are scattered areas of very high risk around the County. However, the WisDNR has identified The Towns of Bevent, Knowlton, Mosinee, Rib Mountain, Weston, and the Village of Kronenwetter as having high risk for wildfire. Maine and the Towns of Marathon, Reid, Ringle, Texas, and the Village of Weston are communities of concern, according to the WisDNR assessment.

In addition, the Towns of Green Valley (Mead schedule burns), Rib Mountain (state park), and Marathon (large areas of woodland) identified wildfire as a significant vulnerability concern in their mitigation survey results. Knowlton previously cited a lot of "plantation pines" as a concern. Similarly, Ringle has noted that the town has a lot of woodland, but also a large fire having occurred in the past. Plover has indicated, "A good portion of the Town is in DNR land and forest crop which means a lot of public use. These are wooded and meadow lands vulnerable to fire." During the local planning meetings, it was noted that wildfire can also impact incorporated areas. The City of Wausau's Fire Department has responded to a number of wildfires within the city limits. Wildfire is one of the Village of Spencer's major hazard concerns. Fires can occur in the swamp north of Spencer, and prevailing winds drive the fires toward the Village. There is no fire break between the Village and the marsh. The situation is exacerbated by extensive marsh blight.

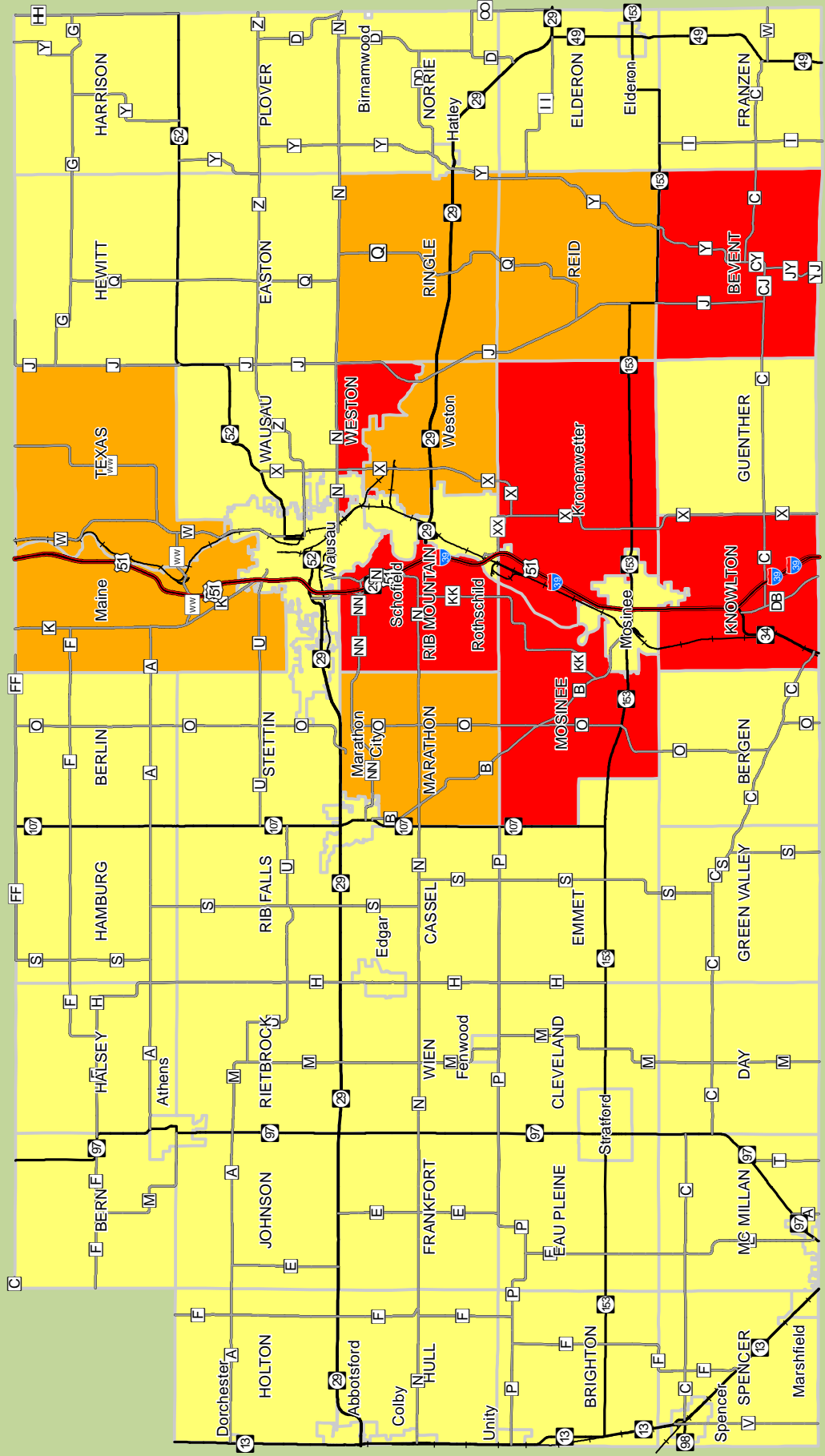


Cottonville Fire, Adams Co., 2005

WisDNR reports indicate that the loss of buildings in a wildfire is often 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. The WisDNR has identified nine campgrounds with 646 campsites in various campgrounds across the County as well as seven educational/recreational camps with capacity for 134 individuals. Locations of the campgrounds and camps are shown on Map 8.

Wildfire Risk

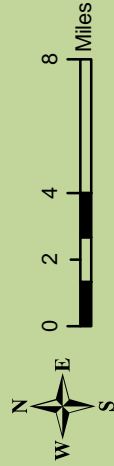


Legend

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

Wildfire Risk

- High
- Concern
- Low



Source: NCRWPC, WI DNR, Marathon Co.

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. NCRWPC is not responsible for any inaccuracies herein contained.

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FUTURE PROBABILITY AND POTENTIAL DOLLAR LOSSES – FOREST FIRE / WILDFIRE:

Forest and wild- fires are relatively common occurrences in Marathon County. Over the period of analysis, there has been an average of 36 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 or Duck Lake, might be estimated at (less than) 1% per year or 0.01.

Because of the relatively small impact of typical individual fires in the County, loss data is not tracked. This makes it difficult to develop an estimate of potential future dollar losses. However, with 36 fires per year, the County can anticipate loss potential to approach or exceed the \$1.4 million in damages of the Cottonville Fire.

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 Marathon 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. As of September 8, 2021 a fourth wave of the virus was surging, and the U.S. Center for Disease Control reported that there have been approximately 40,345,484 cases of COVID-19 in the United States alone with a death toll of 649,299. (Projected to exceed 1 million deaths in 2022.)

Influenza 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 Marathon 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 Marathon County, there have been 15,715 total cases of COVID -19 resulting in 196 deaths so far as of 8/27/21. For Wisconsin, cases are up to 655,667 with 7,577 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. In Marathon County, the Health Department reported 221 cases of H1N1.

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.

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.

A 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%.

INTRODUCTION

Hazard mitigation is any sustained 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 Marathon 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 Marathon County All Hazards Mitigation Plan Update will discuss the following factors in establishing the multi-jurisdictional mitigation strategies:

- Benchmark Progress of Previous Plan 2017-2021
- Review of Mitigation Goals
- Prioritize Identified Mitigation Strategies
- Establish Mitigation Action Plan

PROGRESS REPORT 2017 - 2021

Table 20 identifies the completed, deleted or deferred mitigation actions from the previous update in 2017. 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. The new recommendation numbers are shown alongside the original recommendation numbers to help locate specific recommendations within the documents. 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 "deleted" 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. 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 Marathon County and the local jurisdictions that participated in the Plan Update.

TABLE 20 BENCHMARK FOR PROGRESS 2017 - 2021 PLAN			
2017-2021 Plan Measure	Progress Report	Original Status	New Status
Ensure backup power systems are operational & implement backup power systems if do not exist.	Significant progress across communities but many facilities are still lacking back-up power.	On-going (1)	On-going (1)
Reduce number of neighborhoods served by only one road.	Limited progress - budget constraints.	On-going (2)	On-going (2)
Identify and inform the public of shelters; id areas with deficient shelter and pursue construction of shelters were appropriate.	Some progress. New facility in Spencer. Working with Red Cross. Still a need.	On-going (3)	On-going (3)
Provide on-going training and continue to work toward MABAS implementation.	MABAS system in place and working. Regular training and exercises are on-going.	On-going (4)	Completed
Incident command training and practice.	Work in progress. On-going.	On-going (5)	On-going (5)
Establish local networks of...monitors for the elderly and disabled...living alone.	Reported as not a priority at this time.	On-going (6)	Deleted
Translate emergency preparedness...materials into Hmong and Spanish.	Reported as "done". County has translated materials as well as translation services available.	On-going (7)	Completed
Develop debris management plans.	County has plan, but locals still need work / coordination.	2018 (8)	On-going (8)
Continue training related to long-term power failure.	On-going training on this and other topics. Combined with training recommendations above.	On-going (9)	Combined
Routine trimming of branches / vegetation near power lines...	On-going effort.	On-going (10)	On-going (10)
Promote winter hazards awareness including home and travel safety measures.	Regular programing of EM department.	Annual (11)	Annual (14)
Promote planting of windbreaks/living snow fences	Limited progress. Still a need.	On-going (12)	On-going (15)
Review / Revise local building codes...high winds / snow load.	Building codes preempted by the state. Limited or no role for local officials.	2020 (13)	Deleted
Work with utility companies to implement buried power lines...	Limited progress. Still a need.	On-going (14)	On-going (16)
Work with WisDOT to manage ice on bridges...	Work in progress. Remains advisory recommendation.	Annual (15)	Annual (17)
Promote lightning safety awareness to reduce risk.	Regular programing of EM department.	Annual (16)	Annual (18)
Promote the planting of windbreaks to protect farmlands from high winds.	Progress varies by community. Still a need.	On-going (17)	On-going (19)
Develop/review mobile home guidelines and ordinances...	Progress varies by community. Still a need.	2020 (18)	2024 (20)
Require restroom or other community buildings in mobile home parks or campgrounds be designed/constructed...shelter.	The County is currently working to develop guidelines for sheltering in mobile home parks and campgrounds.	2021 (19)	2023 (21)
Promote Firewise program and related educational materials to increase community awareness of wildfire risk within the County.	Identified as something not being pursued at county or local level in Marathon. DNR activity.	Annual (20)	Deleted

TABLE 20 Continued			
2017 - 2021 Plan Measure	Progress Report	Original Status	New Status
Develop Community Wildfire Protection Plans (CWPP) for higher risk towns.	Limited progress. Still a need.	On-going (21)	On-going (22)
Work w/ Towns, rural fire depts & DNR to ensure adequacy of water fill sites for rural firefighting.	On-going effort. Being addressed through training exercises. NCWRPC worked with Town of Hamburg to identify and map sites.	On-going (22)	On-going (23)
Investigate gating of critical railroad crossings...	Reported as “done”. New gates at critical crossings in Wausau and Stratford.	On-going (23)	<i>Completed</i>
Continue support for the County’s Local and Regional hazmat teams.	On-going effort in Marathon County.	On-going (24)	On-going (24)
Conduct & coordinate training exercises for county/municipal emergency response services.	Regular, on-going training programmed by County EM.	On-going (25)	On-going (25)
Work w/ DATCP & DNR during clean-up of hazmat & groundwater contamination incidents.	State agencies have oversight but do not participate in clean-up.	As needed (26)	<i>Deleted</i>
Update & Maintain the County Groundwater Protection Guide and educate residents on private well testing.	County Conservation, Planning & Zoning Department has completed preliminary data collection and will be kicking off a groundwater study.	2019 (27)	2025 (26)
Implement recommendations within the Multi-County Commodity Flow Study and Responder Hazardous Materials Training Assessment Report.	Reported as completed by County EM.	On-going (28)	<i>Completed</i>
Assist population with reducing heat disorders through awareness program as needed.	Regular programming of EM department. EM works with County Health & Red Cross to set up cooling centers as necessary.	As needed (29)	As needed (28)
Develop countywide drought mitigation plans.	No progress – low priority. Climate change may increase priority.	As needed (30)	As needed (29)
County / City / Village continued compliance in the National Flood Insurance Program (NFIP).	NFIP compliance item. Maintain in Plan.	On-going (31)	On-going (30)
Continue to work w/ dam owners to review Emergency Action Plan (EAP) for each significant and high hazard dam.	County EM is in process of reaching out and talking with various dam owners/operators.	On-going (32)	On-going (31)
...voluntary acquisition / removal of buildings in a floodplain with flood damage...	NFIP compliance item. Maintain in Plan.	As needed (33)	As needed (32)
Replacement/upgrade of bridges at risk for overtopping or washout.	On-going life cycle replacement.	Ongoing (34)	On-going (33)
Routine checking and clearing of culverts/ditches...	Progress varies by community. Remains a need.	Annual (35)	Annual (34)
Improve key roads by paving, installing riprap or other appropriate countermeasures...	Limited progress – budget constraints. Needs remain.	On-going (36)	On-going (35)

TABLE 20 Continued			
2017 - 2021 Plan Measure	Progress Report	Original Status	New Status
Implement stormwater improvements in urban areas...	On-going upgrade and maintenance needs.	On-going (37)	On-going (36)
Establish local emergency management contact...	Reported as completed by County EM..	On-going (S1)	Completed
Dredge Scotch Creek...	Limited progress. Budget constraints. Village has explored project. Remains a need.	2021 (S2)	2026 (37)
Install warning sirens...	Limited progress – budget constraints. Reported as still a need in some communities.	On-going (S3)	On-going (6)
Work with WisDNR and FEMA to engineer solution to better handle flood water flow through village park/Park Road	Reported as completed by Village. Improvements were made to Park Road which has helped to alleviate previous flooding issues.	2020 (S4)	Completed
Study fire and EMS service needs for joint Maine/Brokaw area...	Village has studied fire and EMS needs and is looking to implement improvements.	2019 (S5)	2027 (4)
Request FEMA to reevaluate the floodplain from the Rothschild dam, south...	Limited progress. Remains a need.	On-going (S6)	On-going (38)
Study vehicular and pedestrian traffic circulation and access...	Sidewalk and trail improvements have been completed by the Village.	On-going (S7)	Completed
Develop continuity of government and continuation of operations plans...	Limited progress. Still a need.	2018 (S8)	2027 (7)

LOCAL HAZARD MITIGATION GOALS

The mitigation strategy is based on a set of goals to reduce or avoid long-term vulnerabilities to the hazards identified in the Risk Assessment. The goals were established by the previous Plan Taskforce during the development of the last update. The Plan Update Taskforce reviewed the goals and concurred that these goals continue to represent the desired conditions to strive for through the mitigation efforts of the County and municipalities while adding a new goal to address high hazard potential dams and pandemics.

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

- *Be as prepared as possible to protect residents and visitors from all hazards.*
- *Maintain minimum disruption to power systems and transportation systems.*
- *Protect health and safety of county residents and visitors during and after winter storm events or periods of extreme cold.*
- *Limit property damage resulting from high winds and heavy snow.*
- *Protect the health and safety of county residents and visitors during and after tornadic events.*
- *Reduce the threat to human life and property damage caused by associated heavy rain, high wind, hail and lightning.*

- *Protect the health and safety of county residents and visitors during wildfire events.*
- *Reduce the number of human-caused wildfires in the County.*
- *Protect the health and safety of county residents and visitors by limiting exposure to hazardous materials.*
- *Protect the County’s water supply from contamination; to preserve the quality of the drinking water for residents.*
- *Protect health and safety of county residents and visitors during periods of extreme heat.*
- *Minimize crop loss while maintaining water supplies during times of drought.*
- *Lessen the impact that floods have on people, property (loss resulting from water damage), and the environment; to protect the health and safety of county residents and visitors during and after flood events.*
- *Eliminate the loss of life and reduce the risk of property damage in downstream areas that result from a dam failure.*
- *Reduce long-term vulnerabilities from high hazard potential dams that pose a significant risk to the public.*
- *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 21.

Prioritization Factors for Marathon 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 Plan 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 21.

MITIGATION ACTION PLAN

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

Each section of this part is broken down as follows:

Goal:

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

Action:

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

Participating Jurisdictions:

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

The chapter concludes with a summary of the recommended mitigation strategies shown in Table 21.

HAZARD: ALL HAZARDS

GOALS

- Be as prepared as possible to protect residents and visitors and from all hazards.

- Maintain minimum disruption to power systems and transportation systems.

ACTION 1

Ensure backup power systems are operational and implement backup power systems if they do not exist. There should be a countywide effort to itemize and test back-up power 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. Existing back-up power systems need to be maintained to ensure operation in time of need.

Identified needs to acquire new back-up power generators include the Town of Berlin for its town hall to facilitate use as a shelter. The Village of Maine has identified the need for generators at its village hall, public works building and fire station. The City of Mosinee has identified city hall and the police department as facilities in need of emergency back-up generators. Mosinee also indicated that the city recreation center could be used as a shelter if equipped with a generator. In Schofield, two of the cities lift stations need back up power, as well as city hall, police department and public works facility. When the Village of Weston replaces its older lift stations, generators will be incorporated into the new facilities. The City of Wausau has identified the need for back-up power generators at city hall, police station and fire department.

Participating Jurisdictions for Action 1

Lead agency will be Marathon County Emergency Management, i.e. to spearhead the County's effort as appropriate and to encourage action by the local units, and the various cities, villages and towns with needs/projects identified. Jurisdictions participating in this action will include: Marathon County, the Cities of Abbotsford, Colby, Marshfield, Mosinee, Schofield and Wausau, the Villages of Athens, Birnamwood, Dorchester, Edgar, Elderon, Fenwood, Hatley, Kronenwetter, Marathon City, Maine, Rothschild, Spencer, Stratford, Unity and Weston, and all Towns.

ACTION 2

Reduce areas within communities with only one access (road) in and out. The development pattern of a community is influenced by a number of factors including land ownership, construction costs, water bodies, wetlands and other natural features. Sometimes a development is never fully realized as originally envisioned. One result is many neighborhoods and residential areas with only one access point in and out. Communities realize that these are not ideal situations for emergency access or evacuation, but options to address and available funding are often limited.

For example, Happy Hallow Road in the Village of Kronenwetter extends into an area surrounded, in part, by the Wisconsin River and wetlands which limit the ability to fully develop a road network. Currently, there is only one way in or out of the area with a significant number of residences and some businesses. Another example discussed in the community planning meetings for this plan comes from the City of Schofield where the city's industrial park, and main economic center has only one way in or out. Weston also cited such areas indicating that a bridge of culvert washout could render some of the areas inaccessible. Even though these were the only communities where this concern was discussed, any given community is likely to have one or more areas like this.

Participating Jurisdictions for Action 2

Lead agencies will be City of Schofield and Villages of Kronenwetter and Weston. The only directly participating jurisdiction will be the City of Schofield and Villages of Kronenwetter and

Weston. However, this recommendation may apply anywhere identified as having a single point of access.

ACTION 3

Identify areas needing storm/safety shelters and construct new shelter facilities or upgrade existing facilities for shelter purposes including emergency power where appropriate. Inform the public on the location, intended function, and operation of shelters.

Shelter and evacuation related 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 is a potential partner 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. Recently, the Village of Spencer and the School District were able to supplement a school construction project with FEMA hazard mitigation grant funds to build 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.

The Town Mitigation Planning Survey for this plan explored sheltering needs. Some towns have directly addressed emergency shelters for their area. For example, the town hall in Rib Falls is

centrally located and designed for shelter purposes with a generator on site. A number of other Towns indicated needs for emergency shelters and potential host locations. The Town of Hamburg noted the need for an emergency shelter possibly in the town municipal building. Town of Guenther sees the need for an emergency shelter, possibly at the town garage. The Town is also considering a new town hall with a tornado shelter. The Town of Halsey has identified the need for a shelter potentially at the town hall. The Town of Berlin indicates that they can use the town hall as a shelter but would like to add a back-up power generator to facilitate that use. The Town of Johnson has indicated the possible need of shelter which could be at the town hall.

Sheltering needs were also discussed at the city/village planning meetings, and these recommendations apply to many if not all of the County's incorporated area as well. The City of Mosinee recreation center would not serve as a hardened storm shelter, but the City would like to utilize it as a post-event shelter, but a generator is needed. In Edgar, the municipal center is designated as a shelter, but they would like to have back-up power. The Village of Hatley would like to outfit the village hall and fire department basement for shelter purposes. The Village of Maine would like to address sheltering needs with improvements to the village hall, fire station and public works building including addition of back-up power generators. For Wausau, the main shelter concerns are primarily related to the parks and in particular Marathon Park with the fairgrounds (events) and regular camping during the summer months. Weston discussed the need for shelters at three mobile home parks in the Village. There was also discussion about how to provide for sheltering needs of higher occupancy facilities like hospitals, nursing homes or major employment centers.

In Athens, the former US Bank building located in the downtown is currently for sale and vacant. A group of individuals is soliciting community donations with the intent that the Village would purchase it and move the Village offices and County Library into this building. The large basement of the US Bank building could someday also be used for a variety of different purposes (including a potential hazard shelter or central workstation for Incident Command Center for a disaster).

Participating Jurisdictions for Action 3

Lead agencies will be Marathon County Emergency Management (promoting/coordinating as well as working with the Red Cross) and the various cities, villages and towns with needs/projects identified. Jurisdictions participating in this action will include Marathon County, the Cities of Abbotsford, Colby, Marshfield, Mosinee, Schofield and Wausau, the Villages of Athens, Birnamwood, Dorchester, Edgar, Elderon, Fenwood, Hatley, Kronenwetter, Maine, Marathon City, Rothschild, Spencer, Stratford, Unity and Weston, and all Towns.

ACTION 4

Upgrade/remodel Village of Maine fire station to include shelter facilities with emergency back-up power. The newly formed village has studied its emergency services needs and determined that to better serve the growing emergency response needs of the community, the village fire station should be reorganized, updated and expanded.

The newly formed Village of Maine has been busy working out issues with its infrastructure, emergency response plans, National Flood Insurance participation etc. It is aware of potential shelter needs within the community. One example discussed relates to the close proximity of the elementary school to village facilities. In the event of a situation at the school, children could be readily evacuated to a village facility like the fire station. Back-up generators are needed to keep the facility in operation and maintain heating or cooling for evacuees depending on seasonal conditions.

Participating Jurisdictions for Action 4

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

ACTION 5

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

The community mitigation planning meetings highlighted 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 were cited as 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. There was discussion of incident command and contingency planning across agencies which 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 discussed in the mitigation meetings include:

- Providing care for populations with functional needs, including maintaining oxygen supply to those dependent, when an incident impairs operations or forces evacuation.
- Maintaining operation of NCHC (and other) Crisis Center(s) to provide crisis intervention services when facilities and/or staff are compromised or must be evacuated.
- 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.

Individual training needs identified by specific local units include:

- Tabletop on hazardous materials / incident response w/ railroad and Land O'Lakes – Village of Spencer

- Hazardous materials response regarding Marathon Cheese – Village of Marathon City
- General emergency management – Village of Maine
- ICS and intergovernmental communication, coordination and cooperation – Village of Weston

The area would benefit from regular, coordinated incident command training and practice (exercises).

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 5

Lead agencies will be Marathon County Emergency Management to promote and coordinate training and the various cities, villages and towns. Jurisdictions participating in this action will include Marathon County, the Cities of Abbotsford, Colby, Marshfield, Mosinee, Schofield and Wausau, the Villages of Athens, Birnamwood, Dorchester, Edgar, Elderon, Fenwood, Hatley, Kronenwetter, Maine, Marathon City, Rothschild, Spencer, Stratford, Unity and Weston, and all Towns.

ACTION 6

Install warning sirens to fill in coverage gaps or expand coverage area or replace aging equipment as necessary

Communities discussed early warning at the mitigation planning meetings. Many communities continue to maintain support for warning sirens. However, in some cases lack of funding or growth beyond their existing effective coverage area have created needs for new or replacement sirens. The villages of Marathon City and Weston identified warning siren needs.

Participating Jurisdictions for Action 6

Lead agencies will be Village of Marathon City and Village of Weston. The only directly participating jurisdiction will be the Villages of Marathon City and Weston.

ACTION 7

Local units of government within Marathon 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, such as NCHC, that provide critical services should also engage in COOP development. This concept came out of the Agency and Interest Group Meeting for this plan update.

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 7

Lead agencies will be Marathon County and the various cities and villages. Jurisdictions participating in this action will include: Marathon County, the Cities of Abbotsford, Colby, Marshfield, Mosinee, Schofield and Wausau, the Villages of Athens, Birnamwood, Dorchester, Edgar, Elderon, Fenwood, Hatley, Kronenwetter, Maine, Marathon City, Rothschild, Spencer, Stratford, Unity and Weston.

ACTION 8

Local units should coordinate debris management plans with the county plan and identify appropriate sites for debris disposal, expanding their debris disposal sites as necessary. The County has developed a debris management plan that can serve as a model for other units. Emergency response plans should reference debris management plans.

Debris management plans should include identification of sites for temporary storage of storm debris for later separation and transport to permanent disposal sites. A little advance preparation can avoid conflicts between residents and local officials, reduce development of nuisance situations such as breeding sites for insects and rodents, and minimize the accumulation of debris in the road right-of-way.

At its mitigation planning meeting, the City of Wausau indicated that its existing yard waste facility can fill up after major events, and they are looking at expanding the site to address this issue.

Participating Jurisdictions for Action 8

Lead agency will be the City of Wausau for its yard waste expansion project. Jurisdictions participating in this action will include: Marathon County, the Cities of Abbotsford, Colby,

Marshfield, Mosinee, Schofield and Wausau, the Villages of Athens, Birnamwood, Dorchester, Edgar, Elderon, Fenwood, Hatley, Kronenwetter, Maine, Marathon City, Rothschild, Spencer, Stratford, Unity and Weston, and all Towns.

ACTION 9

The Village of Hatley should construct a second water tower to provide back-up for drinking water supply, sanitation and firefighting. The village's current water tower is its only source of water, so its loss in a tornado or other incident could be a significant problem. Addition of a second water tower has been recommended by the Wisconsin Department of Natural Resources to provide a back-up water supply.

Participating Jurisdictions for Action 9

Lead agency will be Village of Hatley. The Village is the only directly participating jurisdiction in this action.

ACTION 10

Routine trimming of branches/vegetation near power lines and structures. Tree pruning near powerlines can reduce the potential for trees or branches falling on and breaking powerlines or damaging/destroying nearby buildings. Tree trimming and maintenance is important for preventing limb breakage and for safeguarding nearby utility lines. Typically, power companies work to protect their powerline facilities, but local officials could seek to coordinate with these companies to ensure measures are adequate. Areas outside those effecting powerlines could be specifically by the local units to protect structures or public facilities.

Participating Jurisdictions for Action 10

Lead agencies will be the various cities, villages and towns. Jurisdictions participating in this action will include: the Cities of Abbotsford, Colby, Marshfield, Mosinee, Schofield and Wausau, the Villages of Athens, Birnamwood, Dorchester, Edgar, Elderon, Fenwood, Hatley, Kronenwetter, Maine, Marathon City, Rothschild, Spencer, Stratford, Unity and Weston, and all Towns.

ACTION 11

Replace aging radio communications equipment to maintain effective emergency communications between responding agencies/departments.

Due to on-going changes in regulations and technology (narrow banding, etc.), emergency communications continues to be an issue for local units of government. Different systems can have compatibility issues sometimes making it difficult for responding jurisdictions to communicate with one another. There can also be issues within a community where different departments have systems that don't work together, for example where police and fire can not talk to public works. This makes it difficult to properly coordinate effective response.

At its mitigation planning meeting, the Village of Weston discussed these issues. They identified that the Village Public Works Department operates old radios that are not compatible with those used by their police and fire departments and need to be replaced. The Village of Rothschild

indicated the need for a communications repeater station to maintain communications across the extent of the village.

Radio compatibility across various agencies and departments needs to be addressed. New, compatible radios need to be acquired for these departments, and cross department interoperability needs to be maintained as system updates and technology changes continue such as "Next-Gen 911".

Participating Jurisdictions for Action 11

Lead agencies will be the Village of Weston for replacement of its aging radios, and Village of Rothschild for its repeater. However, as indicated emergency communications remains an on-going concern for all jurisdictions. Jurisdictions participating in this action will include: Marathon County, the Cities of Abbotsford, Colby, Marshfield, Mosinee, Schofield and Wausau, the Villages of Athens, Birnamwood, Dorchester, Edgar, Elderon, Fenwood, Hatley, Kronenwetter, Maine, Marathon City, Rothschild, Spencer, Stratford, Unity and Weston, and all Towns.

ACTION 12

Install second municipal water supply pipe to eastern side of the City of Mosinee (airport / industrial park) to provide back-up for drinking water supply and firefighting. Currently, there is only one water main line serving this critical area of the City. The City has identified the need to construct a second water line to provide redundancy for drinking water supply, sanitation and firefighting.

Participating Jurisdictions for Action 12

Lead agency will be City of Mosinee. The only directly participating jurisdiction in this action will be City of Mosinee.

ACTION 13

Install second utility crossing of river to reinforce and provide redundancy for metro-area water and sewer services. Several significant streams divide the Wausau metro-area. At the same time, most of the metro communities, except Wausau and Maine send the wastewater to Rib Mountain Metro Sanitary District (RMMSD). There is also interconnection of water systems in some areas.

While these utility interrelationships provide benefits including increased efficiency, the geographics setting of the area has limited the system. For example, if the sewer connection between Weston and RMMSD goes down, a village wide sanitation issue would soon result. Installation of a second line is recommended to provide a back-up if the main line is compromised. Similarly, a water interconnection between Rib Mountain is recommended to reinforce and provide redundancy for drinking water and firefighting. Schofield identified the need for a sewage bypass line.

Participating Jurisdictions for Action 13

Lead agencies will be the Village of Weston, City of Schofield and RMMSD. However, it is recommended that all Wausau Metro-Area communities coordinate on this issue. Jurisdictions

participating in this action will include: the Cities of Mosinee, Schofield and Wausau, the Villages of Kronenwetter, Maine, Rothschild and Weston, Town of Rib Mountain and Rib Mountain Metro Sanitary District.

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

- Protect health and safety of county residents and visitors during and after winter storm events or periods of extreme cold.
- Limit property damage resulting from high winds and heavy snow.

ACTION 14

The County, Cities and Villages and Towns should promote winter hazards awareness, including home and travel safety measures, such as avoiding travel during winter storms. If travel cannot be avoided, having a shovel, sand, warm clothing, food, water, etc. should be encouraged to have in vehicles.

Participating Jurisdictions for Action 14

Lead agency will be Marathon County Emergency Management; i.e. to spearhead the County's effort as appropriate and to encourage action by the local units. Jurisdictions participating in this action will include: Marathon County, the Cities of Abbotsford, Colby, Marshfield, Mosinee, Schofield and Wausau, the Villages of Athens, Birnamwood, Dorchester, Edgar, Elderon, Fenwood, Hatley, Kronenwetter, Maine, Marathon City, Rothschild, Spencer, Stratford, Unity and Weston, and all Towns.

ACTION 15

The County should encourage the development of snow fences for public safety. Using snow fences or “living snow fences” (rows of trees or other vegetation) can limit blowing and drifting of snow over critical roadway segments. Assistance can be provided by the County Land and Water Conservation Department and USDA Natural Resource Conservation Service (NRCS) to develop windbreaks. Windbreaks would be advantageous to the County Highway Department and towns to prevent blowing and drifting on roadways.

Participating Jurisdictions for Action 15

Lead agencies will be Marathon County Conservation, Planning & Zoning and Highway Departments. Jurisdictions participating in this action will include: Marathon County, the Cities of Abbotsford, Colby, Marshfield, Mosinee, Schofield and Wausau, the Villages of Athens, Birnamwood, Dorchester, Edgar, Elderon, Fenwood, Hatley, Kronenwetter, Maine, Marathon City, Rothschild, Spencer, Stratford, Unity and Weston, and all Towns.

ACTION 16

Work with utility companies to implement buried power lines when and where feasible. Local units of government should work with area power companies to identify critical sections of aerial

power line within their areas which are vulnerable to downing for conversion to underground lines. Burying overhead power lines reduces the risk of power outage.

The primary programs that might fund such projects include mitigation grants under the Hazard Mitigation Grant Program (HMGP). The local unit would likely need to sponsor the application unless the utility was qualified participant in the State Hazard Mitigation Plan Rural Electric Cooperative Annex. Private utilities like WPS would not be eligible to apply directly, but the local unit could work with one of these utilities to sponsor a project.

The HMGP funding becomes available when there is a disaster declaration in the state. A benefit-cost analysis is required for these applications and is completed by WEM using data provided by the applicant. Documentation of significant previous damages, ie costly power outage and damage to power lines in this case. However, 5% of HMGP funding for each disaster is made available for projects for which it is difficult to perform a benefit-cost analysis.

Participating Jurisdictions for Action 16

Lead agencies will be the various cities, villages and towns. Jurisdictions participating in this action will include: the Cities of Abbotsford, Colby, Marshfield, Mosinee, Schofield and Wausau, the Villages of Athens, Birnamwood, Dorchester, Edgar, Elderon, Fenwood, Hatley, Kronenewetter, Maine, Marathon City, Rothschild, Spencer, Stratford, Unity and Weston, and all Towns.

ACTION 17

Work with WisDOT to manage ice on bridges and overpasses. In previous plans this was focusing on Hwy 51/29, however, it seems equally applicable across the entire highway and local road system. Changing procedures and evolving de-icing technology need ongoing attention.

Participating Jurisdictions for Action 17

Lead agencies will be the Marathon County Highway Department and each City and Village street department and all towns. Jurisdictions participating in this action will include: Marathon County and the Cities of Abbotsford, Colby, Marshfield, Mosinee, Schofield and Wausau, the Villages of Athens, Birnamwood, Dorchester, Edgar, Elderon, Fenwood, Hatley, Kronenewetter, Maine, Marathon City, Rothschild, Spencer, Stratford, Unity and Weston, and all Towns.

HAZARD: SEVERE THUNDERSTORMS / HIGH WIND / HAIL / LIGHTNING

GOAL

- Reduce the threat to human life and property damage caused by associated heavy rain, high wind, hail and lightning.

ACTION 18

Because the County provides a variety of outdoor recreation activities, public awareness of proven lightning safety guidelines to reduce risk should be promoted. Such measures as constructing signs to inform people when to get out of the water or off a golf course when there is lightning can be taken.

Participating Jurisdictions for Action 18

Lead agency will be Marathon County Emergency Management; i.e. to spearhead the County's effort as appropriate and to encourage action by the local units. Jurisdictions participating in this action will include: Marathon County, the Cities of Abbotsford, Colby, Marshfield, Mosinee, Schofield and Wausau, the Villages of Athens, Birnamwood, Dorchester, Edgar, Elderon, Fenwood, Hatley, Kronenwetter, Maine, Marathon City, Rothschild, Spencer, Stratford, Unity and Weston, and all Towns.

ACTION 19

The County should promote the planting of windbreaks to protect farmsteads, buildings, and open fields from high winds. Established trees and shrubs can slow wind on the downwind side of a windbreak for a distance of 10 times the height of the trees. The windbreaks can also reduce soil erosion, act as snow fences, provide wildlife food and cover, and offer a number of other benefits. This recommendation was also identified as a need during the Village of Elderon mitigation planning meeting.

There are a number of resources area landowners use to help install and pay for windbreaks. Both the Central Wisconsin Windshed Partnership and the County Land and Water Conservation Department provide assistance to help establish windbreaks. Windbreaks can also be established through the Conservation Reserve Program (CRP), Conservation Enhancement Reserve Program (CREP), Conservation Security Program (CSP), and Environmental Quality Incentive Program (EQIP) from the USDA Natural Resource Conservation Service (NRCS).

Participating Jurisdictions for Action 19

Lead agency will be Marathon County Conservation, Planning & Zoning and Village of Elderon. Marathon County works cooperatively with NRCS on this activity. Participating jurisdictions in this action will include Marathon County, Village of Elderon and all Towns.

HAZARD: TORNADOS**GOAL**

- Protect the health and safety of county residents and visitors during and after tornadic events.

ACTION 20

Develop/review mobile home guidelines and ordinances to implement measures to help reduce risk of damage - tie-downs, ground anchors, etc. Entities with building code inspection / enforcement responsibilities should ensure that new manufactured homes follow Uniform Dwelling Code specifications regarding tie downs to resist high winds.

Participating Jurisdictions for Action 20

Lead agencies will be Marathon County Conservation, Planning & Zoning and each City, Village and Town. Jurisdictions participating in this action will include: Marathon County, the Cities of Abbotsford, Colby, Marshfield, Mosinee, Schofield and Wausau, the Villages of

Athens, Birnamwood, Dorchester, Edgar, Elderon, Fenwood, Hatley, Kronenwetter, Maine, Marathon City, Rothschild, Spencer, Stratford, Unity and Weston, and all Towns.

ACTION 21

Develop storm shelter guidelines for campgrounds, mobile home parks, and other at risk facilities. Marathon County is currently working on a guide for this purpose. Following the County’s lead local communities should explore options to require restrooms or other community buildings in mobile home parks or campgrounds be designed /constructed to be suitable as tornado shelters in an effort to address the lack of shelter in these vulnerable areas.

Participating Jurisdictions for Action 21

Lead agencies will be Marathon County Conservation, Planning & Zoning and each City, Village and Town. Jurisdictions participating in this action will include: Marathon County, the Cities of Abbotsford, Colby, Marshfield, Mosinee, Schofield and Wausau, the Villages of Athens, Birnamwood, Dorchester, Edgar, Elderon, Fenwood, Hatley, Kronenwetter, Maine, Marathon City, Rothschild, Spencer, Stratford, Unity and Weston, and all Towns.

HAZARD: FOREST FIRE / WILD FIRE

GOAL

- Protect the health and safety of county residents and visitors during wildfire events.
- Reduce the number of human-caused wildfires in the County.

ACTION 22

Towns with high risk of wildfire should develop Community Wildfire Protection Plans (CWPPs). In Marathon County, the Towns of Bevent, Knowlton, Mosinee, Rib Mountain, Weston, and the Village of Kronenwetter have been identified by WDNR as high risk for wildfire. A CWPP identifies and prioritizes areas for hazardous fuels reduction treatments and recommends types and methods of treatment that will protect at-risk areas and critical infrastructure. WisDNR has grant funding available for community wildfire protection planning.

Participating Jurisdictions for Action 22

Lead agency will be the respective jurisdictions with high risk of wildfire. Jurisdictions participating in this action will include: the Towns of Bevent, Knowlton, Mosinee, Rib Mountain, Weston, and the Village of Kronenwetter.

ACTION 23

County Emergency Management should work with towns, rural fire departments and the Department of Natural Resources to ensure adequacy of water fill sites for rural firefighting. Water pickup sites are designated locations where a fire suppression truck or pumper can access a water source. Water pickup sites may not provide all-season access. Dry hydrants are designated locations where a fire suppression truck or pumper can draw water. Dry hydrants provide all-season access.

Participating Jurisdictions for Action 23

Lead agency will be Marathon County Emergency Management; i.e. to encourage action and assist the local units. Jurisdictions participating in this action will include: Marathon County and all Towns.

HAZARDOUS MATERIAL INCIDENT / GROUND WATER CONTAMINATION

GOALS

- Protect the health and safety of county residents and visitors by limiting exposure to hazardous materials.
- Protect the County’s drinking water supply from contamination; to preserve the quality of the drinking water for residents.

ACTION 24

The County should continue to support the Regional Hazardous Materials Response Team based in Wausau to respond to hazardous spill situations. The County regularly coordinates training exercises for the team. Several factors support this, such as the concentration of fixed-facilities in the Wausau Metro Area and around the County (such as the various agricultural operations, power plant, mills and other industrial operations), the level of traffic carrying hazardous materials over the major transportation routes, the rail line and the pipelines. Maintaining this team provides more immediate response to incidents that require a Hazardous Material Team response.

Participating Jurisdictions for Action 24

Lead agencies will be Marathon County Emergency Management, City of Wausau and the Local Emergency Planning Committee (LEPC). Participating jurisdictions include Marathon County, the Cities of Abbotsford, Colby, Marshfield, Mosinee, Schofield and Wausau, the Villages of Athens, Birnamwood, Dorchester, Edgar, Elderon, Fenwood, Hatley, Kronenewetter, Maine, Marathon City, Rothschild, Spencer, Stratford, Unity and Weston, and all Towns.

ACTION 25

Marathon County Emergency Management conducts and coordinates hazmat training exercises for County/Municipal emergency response services. These activities should be continued to support the LEPC and Regional Hazardous Materials Response team as well as local government and local fire department/emergency services training needs. Local training needs identified during the community planning meetings for this plan include: “tabletop with railroad and Land O’ Lands” in Spencer and “first responder hazmat training regarding Marathon Cheese” in Marathon City.

Participating Jurisdictions for Action 25

Lead agencies will be Marathon County Emergency Management and the Local Emergency Planning Committee (LEPC). Participating jurisdictions include Marathon County, the Cities of Abbotsford, Colby, Marshfield, Mosinee, Schofield and Wausau, the Villages of Athens,

Birnamwood, Dorchester, Edgar, Elderon, Fenwood, Hatley, Kronenewetter, Maine, Marathon City, Rothschild, Spencer, Stratford, Unity and Weston, and all Towns.

ACTION 26

Update the County Groundwater Protection Plan and Guide to address emerging issues such as PFAS and Chlorides and Nitrates. The groundwater guide is somewhat dated (circa 2001) and out of use. Development of a County Groundwater Plan a good first step in reinvigorating the County's groundwater protection program. Working with the University of Wisconsin, Marathon County has undertaken a number of research projects which will inform the groundwater planning. These include the following studies: “Exploring data for the Marathon County Groundwater Protection Plan”, “Analyzing groundwater contamination and protection in Marathon County” and “Mapping Nitrate-N contamination of groundwater in Marathon County”.

PFAS is a family of chemicals that, until recently, was largely unregulated. Linked to a range of cancers and other serious health problems, it is now a growing concern for drinking water safety across the country. PFAS is used in hundreds of consumer products like food packaging and firefighting foams. They are referred to as “forever” chemicals because they don’t break down in the environment. Because of these factors it is widespread and very difficult to deal with. As awareness and testing for PFAS has increased, it has been detected in a number of drinking water supplies across Marathon County. The US Environmental Protection Agency and Wisconsin Department of Natural Resources are currently researching PFAS to develop standards and regulations for PFAS, but that will take some time. Marathon County’s approach to PFAS for groundwater protection will likely have to evolve as the science progresses.

PFAS issues and questions the County has identified include:

- What should be done about future use / release of PFAS?
- How to address past (existing) and future PFOS in the county landfill (leachate)?
- Disposal and management of used water filter cartridges?
- Field spreading of PFAS contaminated sludge water?
- Provision of information to educate the public on PFAS and home test kits?

The Village of Rothschild indicated that they were seeing higher chloride in its wells.

Participating Jurisdictions for Action 26

Lead agency will be Marathon County Conservation, Planning & Zoning. Marathon County will be the only directly participating Jurisdictions in this action.

ACTION 27

Support the efforts of the metro-area Public Water Work Group in addressing the PFAS issue. The Marathon County Metropolitan Planning Commission has formed a working group to address common water related issues including PFAS. This Commission represents the communities of the Wausau Metro-Area – the primary population center of the County. The water working group can help to inform and support the development of the County Groundwater Protection Plan.

Participating Jurisdictions for Action 27

Lead agencies will be Marathon County Conservation, Planning and Zoning in conjunction with the metro-area communities. Participating jurisdictions include Marathon County, the Cities of Mosinee, Schofield and Wausau, the Villages of Kronenwetter, Maine, Rothschild and Weston, and the Town of Rib Mountain.

HAZARD: DROUGHT / EXTREME HEAT**GOALS**

- Protect health and safety of county residents and visitors during periods of extreme heat.
- Minimize crop loss while maintaining water supplies during times of drought.

ACTION 28

The County should promote heat hazards awareness to assist the population with reducing heat disorders, as needed, including home and travel safety measures. Include suggestions regarding checking on neighbors or other known that live alone or that may be at a disadvantage in fending for themselves. The County sets up cooling centers as needed.

Participating Jurisdictions for Action 28

Lead agency will be Marathon County Health Department with Emergency Management to spearhead the County's effort and to encourage action by the local units. Jurisdictions participating in this action will include: Marathon County, the Cities of Abbotsford, Colby, Marshfield, Mosinee, Schofield and Wausau, the Villages of Athens, Birnamwood, Dorchester, Edgar, Elderon, Fenwood, Hatley, Kronenwetter, Maine Marathon City, Rothschild, Spencer, Stratford, Unity and Weston, and all Towns.

ACTION 29

Develop countywide drought mitigation plan to encourage multi-agency approaches to water conservation, drought prediction, and stream and groundwater monitoring, as well as development and application of water use ordinances. Drought can have a significant impact on tourism, agriculture and forest products; all major sectors of the County's economy. The on-going effects of climate change may increase the importance of drought as a hazard to prepare for.

Drought probably has the greatest impact on agricultural areas. Even droughts of limited duration can reduce crop growth and yields, adversely affecting farm income. More substantial events can decimate croplands and result in total loss, negatively impacting both the individual producer and the local economy. Similarly, drought can stress and damage forest crops. Drought impact on lake levels, for example, can curtail tourism. Continuous monitoring of hydrologic conditions is important to identify and assess drought conditions.

Participating Jurisdictions for Action 29

Lead agency will be Marathon County Conservation, Planning & Zoning in conjunction with Emergency Management and UWEX. Jurisdictions participating in this action will include:

Marathon County, the Cities of Abbotsford, Colby, Marshfield, Mosinee, Schofield and Wausau, the Villages of Athens, Birnamwood, Dorchester, Edgar, Elderon, Fenwood, Hatley, Kronenwetter, Maine, Marathon City, Rothschild, Spencer, Stratford, Unity and Weston, and all Towns.

HAZARD: FLOODING / DAM FAILURE

GOALS

- Lessen the impact that floods have on people, property (loss resulting from water damage), and the environment; to protect the health and safety of county residents and visitors during and after flood events.

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

- Reduce long-term vulnerabilities from high hazard potential dams that pose a significant risk to the public.

Please note: actions denoted with an asterisk () relate to compliance with the NFIP.*

ACTION 30*:

Communities within Marathon County currently participating in the National Flood Insurance Program (NFIP) should work to ensure continued compliance. Compliance primarily entails adopting and enforcing floodplain management regulations that meet minimum criteria. Marathon County and all the currently incorporated cities and villages except Elderon, Fenwood and Unity are in the program. All towns are included under the umbrella of the County through the state mandated county shoreland zoning.

The Villages of Elderon, Fenwood and Unity have chosen not to participate in the NFIP. This Plan recommends these villages take the necessary steps to come into compliance for participation in the NFIP. By not participating in the program, residents of these villages are not eligible for flood insurance and certain types of disaster aid in the event of a flood event. To enter the program, each 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 30

Lead agencies will be Marathon County Conservation, Planning & Zoning and each city and village. Jurisdictions participating in this action will include: Marathon County, the Cities of Abbotsford, Colby, Marshfield, Mosinee, Schofield and Wausau, the Villages of Athens, Birnamwood, Dorchester, Edgar, Elderon, Fenwood, Hatley, Maine, Kronenwetter, Marathon City, Rothschild, Spencer, Stratford, Unity and Weston.

ACTION 31

Review and test dam failure Emergency Action Plan (EAP) for each significant and high hazard dam within Marathon County. FEMA guidelines for dam safety indicate that training and exercises are necessary to maintain operational readiness, timeliness and responsiveness. The status of training and levels of readiness should be evaluated in periodic simulated emergency exercises for response personnel and the dam owner. The FEMA High Hazard Potential Dam (HHPD) grant program provides funding for rehabilitation of high hazard dams.

Emergency situations and/or dam failures are not common events. The EAP can become outdated, lose its effectiveness and no longer be workable if the plan is not practiced. Those involved may become unfamiliar with their roles and responsibilities, especially with the turnover of local officials. If the plan is not updated, the information contained in it may become outdated and useless.

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

Participating Jurisdictions for Action 31

Lead agency will be Marathon County Emergency Management and Conservation, Planning and Zoning Departments. Participating jurisdictions will include those local units with affected dams. Federal and state officials should also be invited including DNR and State Patrol, as well as dam owners/operators.

ACTION 32*

If evidence of recurring flooding (repetitive loss structure or otherwise) is an issue with specific properties after a significant flood event, investigate, as a possible solution, the voluntary acquisition / removal of buildings in a floodplain with flood damage. May involve surveying of property owners. *(FEMA NFIP requirement)

Participating Jurisdictions for Action 32

Lead agency will be Marathon County Conservation, Planning and Zoning with Emergency Management; i.e. to spearhead the County's effort and to encourage action by the local units. Jurisdictions participating in this action will include: Marathon County, the Cities of Abbotsford, Colby, Marshfield, Mosinee, Schofield and Wausau, the Villages of Athens, Birnamwood, Dorchester, Edgar, Elderon, Fenwood, Hatley, Kronenwetter, Maine, Marathon City, Rothschild, Spencer, Stratford, Unity and Weston, and all Towns.

ACTION 33

Replacement/upgrade of bridges at risk for overtopping or washout is recommended to maintain the integrity of the transportation system and protect the investment in public infrastructure.

Participating Jurisdictions for Action 33

Lead agencies will be Marathon County Highway Department; i.e. to spearhead the County's effort and to encourage action by the local units. Jurisdictions participating in this action will include: Marathon County, the Cities of Abbotsford, Colby, Marshfield, Mosinee, Schofield and

Wausau, the Villages of Athens, Birnamwood, Dorchester, Edgar, Elderon, Fenwood, Hatley, Kronenwetter, Maine, Marathon City, Rothschild, Spencer, Stratford, Unity and Weston, and all Towns.

ACTION 34

Routine checking and clearing of culverts/ditches is recommended to ensure the drainage system can flow properly. This recommendation includes ditching and replacement of culverts as needed or installation of larger culverts as appropriate. In the mitigation issues survey, the need to replace, upgrade, enlarge, and add additional culverts to better handle heavy rainfalls and snowmelt was identified by the Towns of Franzen, Guenther, Halsey, Hamburg and Johnson.

Participating Jurisdictions for Action 34

Lead agencies will be Marathon County Highway Department with Emergency Management; i.e. to spearhead the County's effort and to encourage action by the local units. Jurisdictions participating in this action will include: Marathon County and all Towns including Franzen, Guenther, Halsey, Hamburg and Johnson.

ACTION 35

Improve key roads by paving, installing riprap or other appropriate countermeasures and/or elevating; especially those subject to frequent flooding to prevent future damages or to maintain access to areas subject to flooding or isolation.

Road maintenance is a principal function of local government, and many cite road improvements made to protect roadways or maintain access across the County, including the Towns of Halsey, Hamburg and Guenther.

Participating Jurisdictions for Action 35

Lead agencies will be the respective towns. Jurisdictions participating in this action will include Halsey, Hamburg, Guenther and all Towns.

ACTION 36

Implement stormwater improvements in urban areas such as upgrading storm sewer capacity, installation of sewage bypass line, or rehabilitating storm water ponds. Stormwater improvement projects were identified by Mosinee, Schofield and Wausau.

In Mosinee, west side residential areas high rainfall can exceed existing sewer capacity and result in flooding. The City is interested in mitigating this situation with storm sewer upgrades. Schofield discussed a possible sewer bypass line to better handle storm water overflow. City of Wausau has some persistent problems on its west side as well in the area of 42nd & 44th Avenues. The City would like to rehabilitate some of its stormwater ponds to help with this situation.

Participating Jurisdictions for Action 36

Lead agencies will be the respective communities. Jurisdictions participating in this action will include: the Cities of Mosinee, Schofield and Wausau.

ACTION 37

The Village of Edgar should dredge Scotch Creek to increase carrying capacity and protect the Village from flooding. The Village has been in contact with the Department of Natural Resources and US Army Corps of Engineers about this project. A few years ago the Village of Hatley completed a similar stream dredging project and may make a good resource for Edgar.

Participating Jurisdictions for Action 37

Lead agency will be the Village of Edgar. The Village of Edgar will be the only directly participating jurisdiction in this action.

ACTION 38

The Village of Rothschild should request FEMA to reevaluate the floodplain from the Rothschild Dam, south to the Mosinee Dam.

In Rothschild, floodplains make up a significant land area along Cedar Creek and along the Wisconsin River. The Village is concerned that recent floodplain insurance rate increases will lead to blight and vacant lots among the 285 parcels in the floodplain should rates continue to climb. The Village could be faced with a significant loss of tax revenue that would have a severe impact on Village operations. As a result, the Village would like FEMA to reevaluate and remodel the floodplain from the Rothschild Dam, south to the Mosinee Dam using the new LIDAR data as was done with Lake Wausau. The current mapping is based on 10-foot contours for the area south of the Rothschild Dam. The more accurate LIDAR data can ascertain the actual floodplain boundary at (+/-) 2-feet and is expected to eliminate a large portion of the parcels from the floodplain.

There is also some thought that an engineered solution involving the construction of a new dyke that would connect several existing elements to create a flood barrier between the river and a large part of the Village, effectively removing it from the floodplain. The existing elements include the mill dyke, rail grade and the new bridge built above the 100-year flood stage. A preliminary feasibility study followed by a full engineering study would be needed. Buy-in and cooperation from the WDNR and FEMA would also be required.

Participating Jurisdictions for Action 38

Lead agency will be the Village of Rothschild. The only directly participating jurisdiction in this action will be the Village of Rothschild.

ACTION 39

Raise lift stations and manhole covers in areas of the Town of Rib Mountain to prevent inundation. In their mitigation issues survey, the Town of Rib Mountain identified a number of projects to prevent flooding of sewer facilities in order to maintain operations and prevent spilling of raw sewage. These projects include the following: A) Raise Rib Mountain Drive and Lakeshore lift stations to prevent flooding. B) Raise sewer crossing manholes at river crossing for flood protection.

Participating Jurisdictions for Action 39

Lead agency will be the Town of Rib Mountain. The only directly participating jurisdiction in this action will be the Town of Rib Mountain.

ACTION 40

Develop flood control and storage for areas around Bull Junior Creek in the Village of Kronenwetter.

The Village of Kronenwetter recently completed a floodplain study along Bull Junior Creek. The floodplain affects a large number of homes, businesses, and vacant properties in the area. The main objective of the study was to more accurately assess the risks of flooding from Bull Junior Creek within the area. This information allowed for the design of controls to manage the flood risk and protect prime development land adjacent to the stream for future village development.

Participating Jurisdictions for Action 40

Lead agency will be the Village of Kronenwetter. The only directly participating jurisdiction in this action will be the Village of Kronenwetter.

HAZARD: EPIDEMIC / PANDEMIC

GOALS

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

ACTION 41

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.

Participating Jurisdictions for Action 41

Lead agency will be the Marathon County Health Department with Marathon County Emergency Management. Jurisdictions participating in this action will include: Marathon County, the Cities of Abbotsford, Colby, Marshfield, Mosinee, Schofield and Wausau, the Villages of Athens, Birnamwood, Dorchester, Edgar, Elderon, Fenwood, Hatley, Kronenwetter, Maine, Marathon City, Rothschild, Spencer, Stratford, Unity and Weston, and all Towns.

ACTION 42

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 42

Lead agency will be each respective jurisdiction. Jurisdictions participating in this action will include: Marathon County, the Cities of Abbotsford, Colby, Marshfield, Mosinee, Schofield and Wausau, the Villages of Athens, Birnamwood, Dorchester, Edgar, Elderon, Fenwood, Hatley, Kronenwetter, Maine, Marathon City, Rothschild, Spencer, Stratford, Unity and Weston, and all Towns.

**TABLE 21 SUMMARY OF MITIGATION STRATEGIES
MARATHON COUNTY ALL HAZARDS MITIGATION PLAN UPDATE**

MITIGATION MEASURES (See Expanded Description in Plan Text)	RESPONSIBLE UNITS	COST ESTIMATE	EXISTING & POTENTIAL RESOURCES TO IMPLEMENT	PROJECT * TIMEFRAME	PRIORITY LEVEL
ALL HAZARDS					
1. Ensure backup power systems are operational and implement backup power systems if they do not exist for all critical facilities.	County / All Cities, Villages and Towns	Costs to be determined	Dept Budgets/General Funds / Mitigation Grants	On-going	High
2. Reduce areas within the community with only one access in and out.	City of Schofield, Villages of Weston & Kronenwetter	Costs to be determined	General Fund / Local Road Aids	On-going	Medium
3. Identify areas needing storm/safety shelters and construct new shelter facilities or upgrade existing facilities for shelter purposes including emergency power where appropriate.	County / All Cities, Villages, and Towns	Costs to be determined	CDBG Program / Mitigation grants / General Funds	On-going	Medium
4. Upgrade/remodel fire station to include shelter facilities with emergency back-up power.	Village of Maine	Costs to be determined	CDBG Program / Mitigation grants / General Fund	2027	Medium
5. Expand training/exercise programs to inform long-term planning for ICS, interagency coordination & communication and specialized needs/issues.	County EM Dept. / All Cities, Villages, and Towns	Staff Time	Dept. Budgets / WEM training funds	On-going	Medium
6. Install warning sirens to fill in coverage gaps or expand coverage area or replace aging equipment as necessary.	Villages of Weston & Marathon City	\$25,000 ea.	General Funds	On-going	Medium Low
7. Develop continuity of government and continuation of operations plans to ensure essential services in case of a catastrophic event.	County / All Cities and Villages	Staff Time	Dept. Budgets / General Funds	2027	Medium High
8. Local units should coordinate debris management plans with county plan and identify appropriate sites for debris disposal. Expand debris disposal sites where needed.	City of Wausau / County / All Cities, Villages and Towns	Costs to be determined	General Funds	On-going	Medium Low
9. Construct second water tower to provide back-up for drinking water supply and firefighting.	Village of Hatley	Costs to be determined	General Fund / CDBG / USDA RD	2027	Medium
10. Routine trimming of branches/vegetation near power lines and structures.	All Cities, Villages and Towns	Costs to be determined	General Funds / Power Company Resources	On-going	Medium Low

MITIGATION MEASURES (See Expanded Description in Plan Text)	RESPONSIBLE UNITS	COST ESTIMATE	EXISTING & POTENTIAL RESOURCES TO IMPLEMENT	PROJECT * TIMEFRAME	PRIORITY LEVEL
11. Replace aging radio communications equipment to maintain effective emergency communications between responding agencies/departments.	Villages of Weston & Rothchild / County / All City/Village/Town	Costs to be determined	Dept. Budgets / General Funds	2026	Medium High
12. Install second municipal water supply pipe to eastern side of city (airport / industrial park) to provide back-up for drinking water supply and firefighting.	City of Mosinee	Costs to be determined	General Fund / CDBG / USDA RD	2027	Medium
13. Install second utility crossing of river to reinforce and provide redundancy for metro-area water and sewer services.	Weston, Schofield, RMMSD / All Metro Communities	Costs to be determined	General Fund / CDBG / USDA RD	2027	Medium
WINTER STORM / EXTREME COLD					
14. Promote winter hazards awareness including home and travel safety measures.	County EM Dept.	Staff Time	Dept. Budget	Annual	Medium Low
15. Promote planting of windbreaks/living snow fences	County Hwy Dept. / County CPZ Dept.	Costs to be determined	Dept. Budgets / NRCS Funding Programs	On-going	Low
16. Work with utility companies to implement buried power lines when and where feasible.	All Cities, Villages & Towns	Costs to be determined	General Funds / Power Company Resources / Hazard Mitigation Grants	On-going	Medium
17. Work with WisDOT to manage ice on bridges and overpasses.	County Hwy Dept. / All Cities, Villages & Towns	Costs to be determined	State Maintenance Budget / Local Road Aids	Annual	Medium
SEVERE THUNDERSTORM / HIGH WIND / HAIL / LIGHTNING					
18. Promote lightning safety awareness to reduce risk.	County EM Dept.	Staff Time	Dept. Budget	Annual	Medium Low
19. Promote the planting of windbreaks to protect communities and farmlands from high winds.	Co. CPZ Dept. / Co. Hwy Dept. / Village of Elderon	Costs to be determined	Dept. Budgets / NRCS Funding / General Fund	On-going	Low
TORNADO					
20. Develop/review mobile home guidelines and ordinances to implement measures to help reduce risk of damage - tie-downs, ground anchors, etc.	County CPZ Dept. / All Cities, Villages & Towns	Staff Time	Dept. Budget / General Funds	2024	Medium
21. Develop storm shelter guidelines for campgrounds, mobile home parks, and other at risk facilities.	County CPZ Dept. / All Cities, Villages & Towns	Staff Time	Dept. Budget / General Funds	2023	Medium

MITIGATION MEASURES (See Expanded Description in Plan Text)	RESPONSIBLE UNITS	COST ESTIMATE	EXISTING & POTENTIAL RESOURCES TO IMPLEMENT	PROJECT * TIMEFRAME	PRIORITY LEVEL
FOREST FIRE / WILDFIRE					
22. Develop Community Wildfire Protection Plans (CWPP) for higher risk communities.	High risk communities / WDNR	\$20,000 ea.	WisDNR National Fire Plan Funding	On-going	Medium
23. Work w/ Towns, rural Fire Depts & DNR to ensure adequacy of water fill sites for rural firefighting.	County EM Dept. / All Towns	Staff Time	Dept. Budget / General Funds	On-going	Medium High
HAZARDOUS MATERIALS INCIDENTS / GROUND WATER CONTAMINATION					
24. Continue support for the regional hazardous materials response team.	County EM Dept. / City of Wausau	\$20,000/yr	EPCRA / HazMat Grant	On-going	Medium High
25. Conduct and coordinate training exercises for County/Municipal emergency response services.	County EM Dept. / All Cities, Villages & Towns	Costs to be determined	WEM Training Funds / HMEP Grants	On-going	Medium High
26. Update the County Groundwater Management Plan and Protection Guide to address emerging issues such as PFOS and chlorides.	County CPZ Dept.	Staff Time	Dept. Budget	2025	Medium High
27. Support the efforts of the metro-area Public Water Work Group in addressing the PFAS issue.	County CPZ Dept., Cities of Mosinee, Schofield, & Wausau / Villages of Maine, Weston, Kronenwetter, & Rothschild / Town of Rib Mountain	Staff Time	Dept. Budgets	2023	Medium High
DROUGHT / EXTREME HEAT					
28. Assist population with reducing heat disorders through awareness program as needed.	Co. Health Dept. / All Cities/Villages & Towns	Staff Time	Dept. Budgets	As needed	Medium Low
29. Develop countywide drought mitigation plans.	Co. CPZ Dept / Co. UWEX / All Cities, Villages & Towns	Staff Time	Dept. Budgets	As needed	Medium Low

MITIGATION MEASURES (See Expanded Description in Plan Text)	RESPONSIBLE UNITS	COST ESTIMATE	EXISTING & POTENTIAL RESOURCES TO IMPLEMENT	PROJECT * TIMEFRAME	PRIORITY LEVEL
FLOODING / DAM FAILURE					
30. County / City / Village continued compliance in the National Flood Insurance Program (NFIP).	County CPZ Dept. / All Cities and Villages	Staff Time	Dept. Budgets / General Funds	On-going	Medium
31. Continue to work with dam owners/operators to review Emergency Action Plan (EAP) for each significant and high hazard dam and identify potential rehabilitation projects for FEMA's High Hazard Dam Grant Program.	County EM & CPZ Depts.	Staff Time	Dept. Budgets / Dam Owners	On-going	Medium
32. If evidence of recurring flooding (repetitive loss structure or otherwise) is an issue with specific properties after a significant flood event, investigate, as a possible solution, the voluntary acquisition / removal of buildings in a floodplain with flood damage. (FEMA NFIP requirement)	County CPZ Dept. / All Cities and Villages	Costs to be determined	Dept. Budget / General Funds / Mitigation Grants	As needed	Medium
33. Replacement/upgrade of bridges at risk for overtopping or washout.	County Hwy Dept. / All Cities, Villages & Towns	Costs to be determined	General Fund / Local Road Aids / Local Bridge Assistance Program	On-going	Medium High
34. Routine checking and clearing of culverts/ditches. Ditching and replacement of culverts as needed including installation of larger culverts as appropriate.	County Hwy Dept. / All Towns	Costs to be determined	General Funds / Local Road Aids / Local Road Improvement Program	Annual	Medium High
35. Improve key roads by paving, installing riprap or other appropriate countermeasures and/or elevating; especially those subject to frequent flooding to prevent future damages or to maintain access to areas subject to flooding or isolation.	All Towns	Costs to be determined	General Funds / Local Road Aids / Town Road Improvement Program / Disaster Damage Assistance Program	On-going	Medium High
36. Implement stormwater improvements in urban areas such as upgrading storm sewer capacity, installation of sewage bypass line, or rehabilitating storm water ponds.	Cities of Mosinee, Schofield and Wausau	Costs to be determined	General Funds / TIF / CDBG Program	On-going	Medium
37. Dredge Scotch Creek to increase carrying capacity and protect Village from flooding.	Village of Edgar	Costs to be determined	General Fund / FMA	2026	Medium

MITIGATION MEASURES (See Expanded Description in Plan Text)	RESPONSIBLE UNITS	COST ESTIMATE	EXISTING & POTENTIAL RESOURCES TO IMPLEMENT	PROJECT * TIMEFRAME	PRIORITY LEVEL
38. Request FEMA to reevaluate the floodplain from the Rothschild Dam, south to the Mosinee Dam using new LIDAR data as was done with Lake Wausau. Current mapping is based on 10-foot. The more accurate LIDAR data can ascertain actual floodplain boundary at (+/-) 2-feet and is expected to eliminate a large number of parcels from floodplain.	Village of Rothschild	Costs to be determined	General Fund	On-going	Medium
39. Raise lift stations and manhole covers in areas adjacent to river to prevent inundation.	Town of Rib Mountain	Costs to be determined	General Fund / FMA	2027	Medium Low
40. Develop flood control and storage for areas around Bull Junior Creek.	Village of Kronenwetter	Costs to be determined	General Fund / FMA	2027	Medium Low
EPIDEMIC/PANDEMIC					
41. Develop a pandemic preparedness plan based on lessons from the Covid-19 Pandemic.	County Health and EM Depts. / All Cities & Villages / Regional Health Coalition	Staff Time	Dept. Budgets	2024	Medium
42. 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.	County / All Cities, Villages & Towns	Costs to be determined	General Funds / EDA, USDA, CDBG, Mitigation and other programs	On-going	Medium
*Actual project implementation dependent on funding and staff availability.					

INTRODUCTION

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

PLAN UPDATE ADOPTION

The adoption of the Marathon 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 planning 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 Marathon 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 incorporated units of government (i.e. cities, villages) within Marathon 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 Marathon 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 copies to stakeholders. The County will make the Plan Update available to the public by linking the report on the Internet.

Along with monitoring the progress of the action projects, Marathon County's Emergency Management Director and Public Safety 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, innovative ways should be considered 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 public's 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 previous countywide mitigation plan for Marathon County was adopted in 2017. The County's current comprehensive plan was completed prior to this in 2016. However, that plan does incorporate the 2011 mitigation plan, refer to initial linking reference on page 83 of the 2016 county comprehensive plan.

The following local comprehensive plans do incorporate the previous, 2017, mitigation plan as follows: City of Wausau (2017), Village of Marathon City (2017), Village of Spencer (2017), Village of Stratford (2017), Village of Hatley (2018), Village of Maine (2019), Village of Kronenwetter (2019), and City of Schofield (in progress).

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 upcoming County Comprehensive Plan Update scheduled for 2023-2024 has 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.

PLAN UPDATE MONITORING, 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 require that local plans be evaluated and updated at least every five years to remain eligible for assistance.

The Plan will be monitored and evaluated on an annual basis as needed by Emergency Management. The Marathon 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 Public Safety 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.

Plan monitoring also includes evaluating and revising 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 Marathon County Public Safety Committee and County Board must approve all changes and updates to the Plan.

Appendix A – Meeting Notices



**OFFICE OF KIM TRUEBLOOD
COUNTY CLERK MARATHON COUNTY**



Marathon County Mission Statement: Marathon County Government serves people by leading, coordinating, and providing county, regional, and statewide initiatives.

It directly or in cooperation with other public and private partners provides services and creates opportunities that make Marathon County and the surrounding area a preferred place to live, work, visit, and do business.

ADJOURNED ORGANIZATIONAL MEETING – AGENDA

THE ADJOURNED ORGANIZATIONAL MEETING of the Marathon County Board of Supervisors, composed of thirty-eight (38) members, will convene at the Marathon County Courthouse, Assembly Room, 500 Forest Street, Wausau, on Tuesday, October 25, 2022, at 7:00 p.m. to consider the following matters:

The meeting will also be broadcast on Public Access or at <https://tinyurl.com/MarathonCountyBoard>

A. OPENING OF SESSION:

1. Meeting called to order by County Board Chair at 7:00 p.m., the agenda being duly signed and posted
2. Pledge of Allegiance to the Flag; Followed by a Moment of Silence/Reflection
3. Reading of Notice
4. Request for silencing cell phones and other electronic devices
5. Roll Call
6. Acknowledgment of visitors

B. EDUCATIONAL PRESENTATIONS/REPORTS

7. 2023 Budget Message and Process
8. Standing Committee Chairs or Designees

C. CONSENT AGENDA:

9. Approval of minutes from the September 22 & 27, 2022 meetings
10. Referral of bills and communications to respective committees
11. Authorizing the Clerk to issue orders, bills, and claims form the last session through this session.
12. Ordinances:
 - a. Town of Spencer Rezone – Larry and Patricia Lang #O-26-22
 - b. Town of McMillan Rezone – Tim Vreeland for Don Sebastian #O-27-22
 - c. Town of Holton Rezone – Jason Pflieger for Daniel & Jennifer Schreiber #O-28-22
13. Resolutions
 - a. Adopting the Marathon County All Hazards Mitigation Plan Update #R-61-22
 - b. To Adopt an Emergency Management Plan for Marathon County – 2022 #R-63-22

D. ORDINANCES

14. Revisions to Marathon County General Code Chapter 6 #O-29-22

RESOLUTIONS

- E. HUMAN RESOURCES, FINANCE, AND PROPERTY COMMITTEE:
 - 15. Approve 2022 Budget Transfers Budget Transfers for Marathon County Department Appropriations #R-58-22
 - 16. Approve and Authorize the Implementation of the Class Compensation Plan Created by McGrath Consulting Group, Inc. #R-59-22
- F. INFRASTRUCTURE COMMITTEE:
 - 17. Approval of Jurisdictional Transfer of Portion of County Highway B #R-60-22
- G. PUBLIC SAFETY COMMITTEE
 - 18. Resolution Requesting the State of Wisconsin to Review and Revise the Entry-Level Compensation Rate for Assistant District Attorneys #R-62-22
- H. MISCELLANEOUS BUSINESS:
 - 19. Announcements and/or requests
 - 20. Move to adjourn

WITNESS: My signature this 25th day of October, 2022

Kim Trueblood
Marathon County Clerk

NOTE: The next meeting of the County Board will be the Educational Meeting and Budget Hearing on **Thursday, November 3, 2022** at 7:00 p.m. The regular business meeting will be held **Thursday, November 10, 2022** at 7:00 p.m. Both meetings will be held in the Assembly Room of the Courthouse and via WebEx.

Any person planning to attend this meeting who needs some type of special accommodation in order to participate should call the County Clerk's Office at 715-261-1500 or e-mail countyclerk@co.marathon.wi.us one business day before the meeting.

NOTICE PROVIDED TO: County Board Members, Marathon County Departments
News Media, Posted on County Website: www.co.marathon.wi.us



**OFFICE OF KIM TRUEBLOOD
COUNTY CLERK
MARATHON COUNTY**



Marathon County Mission Statement: Marathon County Government serves people by leading, coordinating, and providing county, regional, and statewide initiatives. It directly or in cooperation with other public and private partners provides services and creates opportunities that make Marathon County and the surrounding area a preferred place to live, work, visit, and do business.

An educational meeting of the **MARATHON COUNTY BOARD OF SUPERVISORS** will be held at the Marathon County Courthouse, Assembly Room, 500 Forest Street, in the City of Wausau, at 7:00 p.m. on October 20, 2022.

Persons wishing to attend the meeting by phone may call into the telephone conference beginning ten minutes prior to the start time indicated above using the following number:

1-408-418-9388 Access code: 146 235 4571

The meeting will also be broadcast on Public Access or at <https://tinyurl.com/MarathonCountyBoard>

AMENDED AGENDA

1. Meeting called to order at 7:00 p.m. by Chairperson Gibbs, the agenda being duly signed and posted
2. Pledge of Allegiance to the Flag; Followed by a Moment of Silence/Reflection
3. Reading of Notice
4. Request to Silence Cell Phones and Other Electronic Devices
5. Roll Call
6. Acknowledgement of Visitors
7. 15 Minute Public Comment (*Any person who wishes to address the County Board, or one of its committees, during the "Public Comment" portion of meetings, must provide his or her name, address, and the topic he or she wishes to present to the Marathon County Clerk, or chair of the committee, no later than five minutes before the start of the meeting.*)
8. Educational Presentations/Reports:
 - a) 2023 Budget Message and Process
 - b) Standing Committee Chairs or Designees
9. Review and discussion of Tuesday meeting agenda items:
 - a) Ordinances
 1. Town of Spencer Rezone – Larry and Patricia Lang #O-23-22
 2. Town of McMillan Rezone – Tim Vreeland for Don Sebastian #O-24-22
 3. Town of Holton Rezone – Jason Pflieger for Daniel & Jennifer Schreiber #O-25-22
 4. Revisions to Marathon County General Code Chapter 6 #O-26-22

**SIGNED: Chair Kurt Gibbs
Presiding Officer or Designee**

EMAILED TO: Wausau Daily Herald, City Pages, and other Media Groups
 EMAILED BY: _____
 DATE & TIME: _____

NOTICE POSTED AT COURTHOUSE _____
 BY: _____
 DATE & TIME: _____

b) Resolutions

1. Human Resources, Finance, and Property Committee

- A. Approve 2022 Budget Transfers for Marathon County Department Appropriations #R-56-22
- B. Approve and Authorize the Implementation of the Class Compensation Plan Created by McGrath Consulting Group, Inc. #R-57-22

2. Infrastructure Committee:

- A. Approval of Jurisdictional Transfer of Portion of County Highway B #R-58-22

3. Public Safety Committee:

- A. Adopting the Marathon County All Hazards Mitigation Plan Update #R-59-22
- B. Resolution requesting the State of Wisconsin to review and revise the Entry-Level Compensation Rate for Assistant District Attorneys #R-60-22

10. Announcements and/or Requests

11. Adjourn

Any person planning to attend this meeting who needs some type of special accommodation in order to participate should call the County Clerk's Office at 261-1500 or e-mail countyclerk@co.marathon.wi.us one business day before the meeting.



MARATHON COUNTY PUBLIC SAFETY COMMITTEE AGENDA

Date & Time of Meeting: **Tuesday, October 11, 2022, at 1:30pm**

Meeting Location: **Courthouse Assembly Room, Courthouse, 500 Forest Street, Wausau WI**

Committee Members: Matt Bootz, Chair; Jean Maszk, Vice-Chair; Bruce Lamont, Stacey Morache, Allen Opall, Tim Sondelski, Jason Wilhelm

Marathon County Mission Statement: Marathon County Government serves people by leading, coordinating, and providing county, regional, and statewide initiatives. It directly or in cooperation with other public and private partners provides services and creates opportunities that make Marathon County and the surrounding area a preferred place to live, work, visit, and do business. (Last updated: 12-20-05)

Committee Mission Statement: Provide leadership for the implementation of the Strategic Plan, monitoring outcomes, reviewing, and recommending to the County Board policies related to public safety initiatives of Marathon County.

Persons wishing to attend the meeting by phone may call into the **telephone conference beginning five (5) minutes prior to the start time indicated above using the following number:**

Phone #: 1-408-418-9388 Access Code: 146 235 4571

When you enter the telephone conference, **PLEASE PUT YOUR PHONE ON MUTE!**

The meeting will also be broadcast on Public Access or at <https://tinyurl.com/MarathonCountyBoard>

1. **Call Meeting to Order**
2. **Pledge of Allegiance**
3. **Public Comment (15 Minutes)** (Any person who wishes to address the committee during the "Public Comment" portion of meetings, must provide his or her name, address, and the topic he or she wishes to present to the Marathon County Clerk, or chair of the committee, no later than five minutes before the start of the meeting. All comments must be germane to the jurisdiction of the committee)
4. **Approval of the September 6, 2022, Public Safety Committee Meeting minutes.**
5. **Policy Issues Discussion and Potential Committee Determination:**
6. **Operational Functions Required by Statute, Ordinance, Resolution, or Policy:**
 - A. Resolution requesting the State of Wisconsin to review and revise the Entry-Level Compensation Rate for Assistant District Attorneys
 - B. Marathon Mitigation Plan Resolution ([Full Draft Marathon Mitigation Plan](#))
 - C. Proposed Revisions to Chapter 6 of the Marathon County Code of Ordinances
 - D. Rate Approval for the Juvenile Facility
7. **Educational Presentations and Committee Discussion:**
 - A. Lifesaving Medal Award
8. **Next Meeting Date & Time, Location, Announcements and Future Agenda Items:**
 - A. Committee members are asked to bring ideas for future discussion.
 - B. Next meeting: November 8, 2022 at 1:30pm
9. **Adjournment**

*Any person planning to attend this meeting who needs some type of special accommodation in order to participate should call the County Clerk's Office at 261-1500 or e-mail countyclerk@co.marathon.wi.us one business day before the meeting.

SIGNED s/s Matt Bootz
Presiding Officer or Designee

EMAILED TO: _____
EMAILED BY: _____
DATE & TIME: _____

NOTICE POSTED AT COURTHOUSE _____
BY: _____
DATE & TIME _____

AGENDA

OFFICIAL MEETING NOTICE AND AGENDA

A meeting of the MARATHON COUNTY LOCAL EMERGENCY PLANNING COMMITTEE will be held at Marathon County Emergency Management, 1308 West St., Wausau, at 2:00 p.m., on Thursday, September 8th, 2022, and virtually at:

<https://ccitc.webex.com/ccitc/j.php?MTID=mefaf22bcf310c405b16c56dae83cf921>

1. Meeting Called to Order
2. Roll Call
3. Approval of June Meeting Minutes
4. Review and Possible Approval of Off-Site Plans *
5. EM Office: Review Spill Notification Reports and other updates
6. Potential Edits to Bylaws Based on April Tabletop Exercise
7. Discuss [Draft Mitigation](#) Recommendations for AHMP Update
8. Public Comments
9. Schedule Next Meeting Date / Time
10. Adjourn

* Copies of Off-Site Plans are available at the Marathon County Emergency Management Office.

Any person planning to attend this meeting that may need special accommodation to participate should call the County Clerk's office at 715-261-1500 or e-mail infomarathon@co.marathon.wi.us one business day before the meeting.

John Peralta

John Peralta, Chair
Marathon County Local Emergency Planning Committee

SENT TO LOCAL MEDIA
Date: _____
By: _____

POSTED AT THE MARATHON COUNTY COURTHOUSE:
Date: _____
By: _____

(hums) 9-1 { 3 calls + many more no answer -msg 1msg. 2nd msg } 7-21

Community: Unity Date: 7-21-22
form completion: Heidi Maldonis, Village Clerk List those who participated in

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

Thin
human
ice

 No change from last plan


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

— Limited —

- mobile home court
- public works
- hall

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.

gen. seiber
accuse

 One or few that returned comments on reviews. Very small village - no growth - limited capacity. No change from previous plan

req or needs being discussed

BL Power storm shelter (on hp?)

AGENDA

OFFICIAL MEETING NOTICE AND AGENDA

A meeting of the MARATHON COUNTY LOCAL EMERGENCY PLANNING COMMITTEE will be held at Marathon County Emergency Management, 1308 West St., Wausau, at 2:00 p.m., on Thursday, June 30th, 2022, and virtually at:

<https://ccitc.webex.com/ccitc/j.php?MTID=m37d3e5dd2958760af851f9bf3dabb39a>

Meeting Called to Order

1. Roll Call
2. Approval of March Meeting Minutes
3. Review and Possible Approval of Off-Site Plans *
4. EM Office: Review Spill Notification Reports and other updates
5. Discussion of April Tabletop Exercise and Potential Edits to Bylaws
6. Discuss Draft Mitigation Recommendations for AHMP Update
7. Public Comments
8. Schedule Next Meeting Date / Time
9. Adjourn

* Copies of Off-Site Plans are available at the Marathon County Emergency Management Office.

Any person planning to attend this meeting and may need special accommodation to participate should call the County Clerk's office at 715-261-1500 or e-mail infomarathon@co.marathon.wi.us one business day before the meeting.

John Peralta

John Peralta, Chair
Marathon County Local Emergency Planning Committee

SENT TO LOCAL MEDIA

Date: 6/13/2022 AT 12PM

By: T. Ranallo

**POSTED AT THE MARATHON
COUNTY COURTHOUSE:**

Date: 6/13/2022 AT 12PM

By: T. Ranallo

ASL

Community: Stafford
form completion: Janice Handt, Vil. Clerk

Date: 5-25-22 Teleconference
List those who participated in

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

T/HW
ICE
Flooding
~~Storm~~

Hwy Wind - trees
no real flooding issue - occurred but in
Stream

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

nothing really
power outages

- main bldg
- Park house
- UTILITIES
- water tower
- Police Station

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.~~



Power - under ground - no outages
have to power



MD

Community: Hatley
form completion: _____

Date: 5-29-22 Teleconference
List those who participated in

Dave Natun, Vil. Pres.

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

Tornado = H.W

ice -

Flooding 2018 - did some engineering / work

2019
put in
alarm tiles

anyone no hazard

Big Truck
Thanks

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

wind -

mystery line along with willow subdivision

basement

"matchee" - hill snow ice + rain - fast melt

- (vulnerable)
- water tower
- utility
- water tower
- well
- Fire & Amb
- 3 poles
- propane

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.



? Shelt. Village Hall & FD Basement nearby

▷ A water tower - ie tornado - only 1
has been recommended by OMR

handup
water
supply

longer
under
PP

Stream was dredged 2 yrs ago
put in
Y culvert - larger culverts

Community: Marathon City
form completion: Andy Kuntz, Village Admin.

Date: 5-23-22 Teleconference
List those who participated in

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

(Most) Flooding - Shredelle Rib - Flooding Hasty/Pool
2) T-Storm = wind - "Trees" in town
(40 yrs and Thunder)

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

L River Park Flooding damage → weirs, but elevated
- Property - "brick" ... (water - higher) /oz
/Bus. out of flood plain
Amanizee (cooling at Marathon Cheese)

(5) Some residences in FP by Park Evac. 3x 12 yrs - ^{Engineering} Park of has allocated some

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.)

2. ★

REFER TO ATTACHED TABLE FROM PREVIOUS PLAN FOR IDEAS.

- Res. Reloc. of F.P. properties / remove risk
- M. Cheese ...
Hazmat training / initial site response / warehouse - what is hazard. what to do/not

(53)

- Sirens = not done would be great but have not to remain

F | Surv. | (54) = done



Community: Fenwood
form completion: Ed Danielle Vil. Pres.

Date: 5-23-22 Teleconference
List those who participated in

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

Not really - what are going to do about it.

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

Not really - kinda small

- "fire truck"

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. Have what we need. Can get help from
Edgar & Stafford.

Note: Said were "working on some things" but did
not want to elaborate.

Marathon County All Hazard Mitigation Plan Update
Village Plan Inclusion Form

1. Village of Elderon
2. List those who participated in form completion: Scott Dombek - President
Rob Wigman - Clerk
3. Date of completion: 5/16/22
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
- Tornados
- 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.

Historically these 2 have affected the Village the most. Our sandy soil has led to tree blowovers quite frequently

5. Please identify any public or private facilities or specific areas of the community that may be more vulnerable to a natural hazard.
Our Parks with mature trees

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.)

Planted trees in the parks and along main street. Adds to windbreak effect + replaced damaged + aged trees

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.

Continued tree plantings

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.

No new development

9. Please describe any public infrastructure / community facilities currently being considered or planned for the future.

None

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?

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



APPROVED MINUTES

OFFICIAL NOTICE AND AGENDA

Community Life, Infrastructure and Public Property (CLIPP) Committee
Regular Meeting
Monday, April 4, 2022 – 6:00 P.M.

1. **Call meeting to order** – Chairman Ken Charneski called the April 4, 2022 CLIPP Committee Meeting to order at 6:02 p.m.

Roll Call –

Board Members: Trustee Ken Charneski

Citizen Members: Trenton Karch, Heather Roth (via Zoom)

Staff: Richard Downey, Village Administrator; Jared Grande, Community Development Director; Theresa O'Brien, Deputy Fire Chief; Duane Gau, Interim Director of Public Work; Jennifer Poyer, Communications Specialist; Terry McHugh, Police Chief

Guests: Richard Chmiel, Mel Konkol, Darryl Landeau (NCWRPC)

2. **Committee member comments**

Ken Charneski thanked the CLIPP Committee members for their good input during his time with the committee.

3. **Approval of Previous Community Life, Infrastructure and Public Property Committee (CLIPP) Minutes: March 7, 2022**

Motion by Karch/Roth to approve the previous CLIPP Committee minutes from the March 7, 2022 meeting. Motion carried by voice vote 3:0.

4. **Public Input (15 minutes) (3 minute per) Name and Address**

- **Richard Chmiel/ 790 Mile Road, Kronenwetter, WI 54455** – spoke regarding shooting near his property resulting in lack of safety and loud noises. He requested updates from Police Chief Terry McHugh.
- **Mel Konkol/1747 Kowalski Road, Kronenwetter, WI 54455** – spoke regarding the future plans of Kowalski Road and the need for a 4-way stop on Kowalski and Terrebonne, or another designated spot. He said there is a lot of semi-truck traffic and speeding traffic in general.

5. **Reports and Discussions**

- a. **Public Works Director Report**

- Working on Capital Improvement Program – reviewing previous programs, researching current need
- Worked with auditors
- Wrote a water report for the community
- Interviewed park candidates
- Worked on article for newsletter regarding lift stations

- b. **Police Chief Report**

- Waiting to hear back on how money given by Governor Evers to law enforcement can be spent.
- KPD received \$18,400 – based on population and crime rate

- c. **Fire Chief Report**
 - Commented on response time from Riverside Ambulance Service – “We’ve been very pleased.”
 - January was a busy month for calls, but in February the numbers slowed.
- d. **Financial Report**
 - No Comments
- e. **Project Update Report**
 - No Comments
- f. **Complaint Log**
 - Review of complaints during the month of March and part of February.
 - Discussed the results/actions taken after complaints are submitted to Village staff.

6. Old Business

- a. **Chapter 298-2 Prohibited Discharge of Firearms**
 - Committee received an update from Police Chief Terry McHugh regarding resident's compliance/non-compliance with the recommendations.
 - Police Chief Terry McHugh to research and provide a list of questions to attorney regarding statute and what can be done to suppress the problem.
- b. **Chapter 218 Building Code Review and Revision**

Motion by Karch/Charneski to approve the Chapter 218 Building Code and recommend the Village Board approve Chapter 218 Building Code as presented with minor changes in yellow. Motion carried by voice vote 3:0.

 - Reviewed the document with all proposed changes
 - Discussed the history of this revision project
 - Discussed revising 218-43 – verbiage of option would be replaced with choice
- c. **Marathon County Addressing Agreement**

Motion by Charneski/Karch to recommend the Village Board take no action on the Marathon County Addressing contract. Motion carried by voice vote 3:0.

 - Discussed what the county will do if the agreement is not signed.
 - Discussed any delay if the Village had to take over addressing duties.
- d. **Discussion for a recognition plaque for the Buska Family and their contribution to the community with Sunset Park**

Motion by Charneski/Karch to delay action on this item until the next meeting. Motion carried by voice vote 3:0.
- e. **Website revision update**

Motion by Karch/Charneski to delay action on this item until the next meeting. Motion carried by voice vote 3:0.
- f. **GEN-00x Policy regarding citizen complain procedure**

Motion by Charneski/Karch to delay action until next meeting while we continue to keep the complaint log on the CLIPP Committee meeting agenda. Motion carried by voice vote 3:0.

 - Discussed the types of complaints that should be included on the complaint log

- g. **Revisions of Village Oak Wilt Ordinance – Chapter 389-From October 2021**
Motion by Karch/Charneski to delay action on this item until the next meeting. Motion carried by voice vote 3:0.

7. New Business

- a. **County-wide Hazard Mitigation Plan Update presentation and discussion**
- Darryl Landeau with the North Central Wisconsin Regional Planning Commission presented the process of making a mitigation plan for the Village of Kronenwetter.
 - Discussion regarding the three biggest risks to the area ensued – flooding, thunderstorms, tornadoes
- b. **Review Capital Improvement Program for Village Roads**
Motion by Karch/Roth to recommend the Village Board approve the 2022 CIP-Road improvement list. Motion carried by voice vote 3:0.
- Discussed the lack of updated road system analysis for the Village and the fact that an annual report allows you to apply for Federal/State funding
- c. **Recommend to Village Board to apply for 23-26 Local Program Application**
Motion by Karch/Roth to recommend to the Village Board to approve an application for the Martin Road project to the 23-26 Local Program. Motion carried by voice vote 3:0.
- Discussed whether Martin Road project would have to move forward if the application for funds is not approved
- d. **Contract for Service-Crack filling**
Motion by Charkneski/Roth to recommend the Village Board approve the contract for service-crack filling. Motion carried by voice vote 3:0.
- No discussion
- e. **Contract for Service-Chip Seal project 2022**
Motion by Karch/Charneski to recommend the Village Board approve the contract for chip sealing. Motion carried by voice vote 3:0.
- No discussion
- f. **5 Year Facilities Preventive Maintenance Service Agreements – Malbrit Mechanical, Inc**
Motion by Charneski/Karch to recommend the Village Board approve the two contract with Malbrit Mechanical, Inc not to exceed the agreed upon cost. Motion carried by voice vote 3:0.
- Discussed the cost effectiveness of contracts
- g. **Request for a stop sign at Terrabonne and Kowalski or Tower and Kowalski-request at the Village Board meeting**
Motion by Karch/Roth to delay action with this item and have Police Chief Terry McHugh initiate necessary studies and research. Motion carried by voice vote 3:0.
- Discussed monitoring the traffic and accident count on Kowalski Road until the May CLIPP meeting
 - Discussed the future of Kowalski Road and possible increase in traffic
- h. **Request for a "children at play sign" on Manatee Dr.**
Motion by Karch/Charneski to request KPD to place on the the speed radar signs on Manatee Drive at their discretion. Motion carried by voice vote 3:0.
- Motion by Roth/Karch to delay action on the request for a "children at play" sign and bring it up at a future meeting. Motion carried by voice vote 3:0.*
- Discussion regarding legal authority of sign
 - Discussion regarding its effectiveness

i. **Contract for Service-Canva newsletter publication service.**

Motion by Charneski/Karch to recommend the Village Board approve the contract for service for Canva newsletter publication service. Motion carried by voice vote 3:0.

j. **Contract for Service-Revize Website Service-referral from APC and Village Board**

Motion by Karch/Charneski to recommend the Village Board approve the contract for Revize. Motion carried by voice vote 3:0.

8. **Suggested Items for Future Agenda**

No suggestions

9. **Adjournment**

Motion by Karch/Charneski to adjourn the April 4, 2022 CLIPP Committee Meeting. Motion carried by voice vote 3:0.

Meeting adjourned at 8:07 p.m.

Community: Edgemoor
form completion: Jennifer Lopez, Vil. Admin

Date: 5-23-22 Teleconference
List those who participated in

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

Tornado / T Storm
Some flooding / contained

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

entire -
flood area - 1 park flood (drains) - ~~what~~ in ^{??}
wells along upgrading ???
at garden
wells here eye

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.

X - re ^{Sealed} creek re Co. Bridge - Salinity / bank detention
sediment & weeds
none per plan
B2 → have contacted DRIP
→ Corps
X - B4 plan for shelter - Managed later

ESOV

**Marathon County All Hazard Mitigation Plan Update
Village Plan Inclusion Form**

1. Village of Athens
2. List those who participated in form completion: Lisa Czech, Clerk/Treasurer and Tracy Westfall, Fire and Police Committee Chairman
3. Date of completion: 3/10/2022_
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.

***We feel that most of these are hazards that we are susceptible to, but not any more vulnerable than any other Marathon County community.

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

We have 4 residential homes near the Black Creek that in the Floodplain that are exposed annually to flooding hazards

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.)

Years ago, a home in the floodplain was purchased. No projects/actions since.

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.

Residential: A residential development on the north end of the Village has been started. The roadway was extended to allow for this development.

Commercial: A new financial institution was built in the center of town as well as a Dollar General on south end of town.

9. Please describe any public infrastructure / community facilities currently being considered or planned for the future.

The former US Bank building located in the downtown is currently for sale and vacant. A group of individuals is soliciting community donations with the intent that the Village would purchase it and move the Village offices and County Library into this building. This would allow for the current Municipal Building to be remodeled to allow for improvements to the connecting Community Hall (handicap bathrooms/kitchen). The large basement of the US Bank building could someday also be used for a variety of different purposes (including a potential hazard shelter or central workstation for Incident Command Center for a disaster)

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?

A local church currently has a place in their basement that residents could go to in the event of a disaster. If the purchase of the US Bank building happens, there would be room in the basement to construct a true emergency shelter.

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

Marathon County All Hazards Mitigation Plan Update

Public Informational Meeting SIGN-IN

February 23, 2022 - 5:30 PM

	Name	Community of Residence	Email (Optional)
1	Darryl Landeau	Wausau	
2	Philip Reintmeester	Wausau	
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**Marathon County All Hazard Mitigation Plan Update
Village Plan Inclusion Form**

1. Village of Spencer
2. List those who participated in form completion: Shawn Bauer, Spencer Police Chief, Paul Hensch, Spencer Administrator
3. Date of completion: 2/23/2022
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
- Tornados
- 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.

Canadian National and Watco has rail lines running through the Village. They run hazardous materials on that line.

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

211 E Willow Dr and 300 S Haslow are Mobile Home Parks.

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.)

The Village and Spencer School District recently completed a tornado dome to provide shelter to residents.

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.

The Village would be interested in doing more tabletop exercises with both the railroad and Land O Lakes to prepare for possible hazardous situations.

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.

The Graupner Subdivision was created and homes are currently being built. Well #7 is in the design process.

9. Please describe any public infrastructure / community facilities currently being considered or planned for the future.

The Second Phase of Eagles Landing Subdivision is being built in 2023.

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?

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

DAILY HERALD media

A GANNETT COMPANY

STATE OF WISCONSIN
BROWN COUNTY

MARATHON COUNTY
HAZARD MITIGATION PLAN
PUBLIC INFORMATIONAL MEETING

Notice is hereby given by the Marathon County Emergency Management Department that there will be a public informational meeting at the Emergency Management Office - Conference Room, 1308 West St., Wausau on Wednesday, February 23, 2022 from 5:30 to 6:30 pm to discuss the County's draft All Hazards Mitigation Plan, which includes each city and village.

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

All interested parties are encouraged to attend. Contact Marathon County Emergency Management Director Philip Rentmeester at 715-261-1229 for more information.
Run: February 02/05, 02/12/2022
WNAXLP

NORTH CENTRAL WI REGIONAL PLAN

210 MCCLELLAN ST STE 210

WAUSAU WI 544034820

I, being duly sworn, doth depose and say I am an authorized representative of The Wausau Daily Herald, a newspaper at Wausau Wisconsin and that an advertisement of which the annexed is a true copy, taken from said paper, which published therein on:

Account Number:GWM-ZZZ181
Order Number: 0005116921
Total Ad Cost: \$39.70
Published Dates: 02/05/2022, 02/12/2022

Nicole Jacobs

Legal Clerk

State of Wisconsin
County of Brown
Subscribed and sworn to before on February 12, 2022

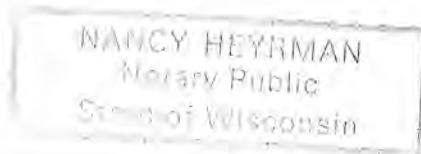
Danny Seymour

Notary Public State of Wisconsin, County of Brown

5.15.23

My Commission Expires

of Affidavits 1
This is not an invoice



TH CENTRAL WI REGIONAL PLAN

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**MARATHON CO ALL HAZARD MITIGATION PLAN UPDATE
AGENCY & INTEREST GROUPS MEETING 2/16/2022**

PARTICIPANTS:

AGENCY:

DARRYL LANDEAU

NCWRPC

JAMES WILLIAMS

MC EMERGENCY MGMT

PHILIP RENTMEESTER

MC EMERGENCY MGMT

JAMIE POLLEY

CITY/COUNTY PARKS

NELSON PASHA

MC DEPT OF SOCIAL SERVICES

SCOTT PARKS

MC SHERIFF

SARAH ROTHMEYER

NC HEALTHCARE

BECKY MROZCZENSKI (MCHD)

MC HEALTH DEPARTMENT

JEFF PRITCHARD

MC CONSERVATION PLANNING & ZONING

LAUREN MISKIMINS

MC CONSERVATION PLANNING & ZONING

HANNA JOHNSON

WI DNR

MARK CIHLAR

CENTRAL WI AIRPORT

MAIZIE REIF

WI DNR

KELLY ZAGRZEBSKI

WPS

ANDY SIMS

CITY/COUNTY PARKS

TERRY KAISER

MC FACILITIES

STEVEN JOHNSON

WAUSAU MANOR

Name	Attendee Email	Join Time
Philip Rentmeester	phil.rentmeester@co.marathon.wi.us	2022-02-16 13:47:42
Darryl Landeau	dlandeau@ncwrpc.org	2022-02-16 13:51:30
James Williams	james.williams@co.marathon.wi.us	2022-02-16 13:56:50
Scott Parks	scott.parks@co.marathon.wi.us	2022-02-16 13:56:19
Becky MCHD	rebecca.mroczeni@co.marathon.co.w	2022-02-16 13:59:14
CPZ-Conf01		2022-02-16 13:59:08
Hanna Johnson, WDNR	hanna.johnson@wisconsin.gov	2022-02-16 14:00:53
Mark Cihlar	mcihlar@fly-cwa.org	2022-02-16 14:00:59
Kelly Zagrzebski	kelly.zagrzebski@wecenergygroup.com	2022-02-16 14:02:55
Andy Sims	andrew.sims@co.marathon.wi.us	2022-02-16 14:03:10
Terry Kaiser	terry.kaiser@co.marathon.wi.us	2022-02-16 14:05:47
Jamie Polley WMCPRF	jamie.polley@co.marathon.wi.us	2022-02-16 13:58:45
Nelson Pasha	nelson.pasha@co.marathon.wi.us	2022-02-16 13:57:12
Sarah Rothmeyer	srothmeyer@norcen.org	2022-02-16 13:59:13
Sarah Rothmeyer	srothmeyer@norcen.org	2022-02-16 13:59:13
Steve Johnson	sjohnson1@nshorehc.com	2022-02-16 14:12:38
Maizie Reif	maizie.reif@wisconsin.gov	2022-02-16 14:02:35
7158***75		2022-02-16 14:05:16

Marathon County All Hazards Mitigation Plan Update

Village of Maine Planning Meeting SIGN-IN

January 24, 2022 - 1:30 PM

	Name	Department/Agency	Email (Optional)
1	James Williams	Marathon Co. Emerg. Mgmt.	james.williams@co.marathon.wi.us
2	Betty Hoenisch	Village of Maine	bhoenisch@villageofmaine.org
3	KEITH RUSCH	VILLAGE OF MAINE	administrator@villageofmaine.org
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Marathon County All Hazards Mitigation Plan Update

Village of Weston Planning Meeting SIGN-IN

January 18, 2022 - 1:30 PM

	Name	Department/Agency	Email (Optional)
1	James Williams	Marathon Co. Emergency Mgmt	james.williams@co.marathon.wi.us
2	Jock Finke	SAFER	jfinke@safe.district.org
3	JOSEPH SWENSON	WESTON	jsvenson@westonwi.gov
4	DAN RACZKOWSKI	WESTON DPW	draczkowski@westonwi.gov
5	Michael Wadalstki	Weston	mwalastki@westonwi.gov
6	Clay Schulz	Everest Metro P.D.	clayton.schulz@co.marathon.wi.us
7	John Rusinek	Everest Metro P.D.	john.rusinek@co.marathon.wi.us
8	Shawn Osterbrink	V. of Weston	sosterbrink@westonwi.gov
9	MARK F. MALONEY	Village of Weston	MMALONEY@WESTONWI.GOV.
10	Keith E. Donner	Village of Weston	kdonner@westonwi.gov
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Marathon County All Hazards Mitigation Plan Update

City of Wausau Planning Meeting SIGN-IN

VIRTUAL

January 10, 2022 - 3:00 PM

	Name	Department/Agency	Email (Optional)
1	Katie Rosenberg	Mayor	
2	Eric Lindman	Director of Public Works	
3	Ben Bliven	Chief of Police	
4	Jeremy Kopp	Deputy Fire Chief	
5	Dustin Kraege	Public Works Superintendent	
6	Phil Rantawest	County EM	
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Marathon County All Hazards Mitigation Plan Update

Village of Rothschild Planning Meeting SIGN-IN

VIRTUAL

January 10, 2022 - 10:00 AM

	Name	Department/Agency	Email (Optional)
1	Tim Vergara	Public Works Director	
2	Gary Olsen	Village Administrator	
3	Rob Bowen	Fire Chief	
4	Jeremy Hunt	Police Chief	
5	Gary Pelterson	Village President	
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Marathon County All Hazards Mitigation Plan Update

City of Schofield Planning Meeting SIGN-IN

January 7, 2022 - 2:00 PM

	Name	Department/Agency	Email (Optional)
1	Mark Thuot	Public Works	MThuot@CityofSchofield.org
2		City Schofield	
3			
4	Kregg Hoehn	Mayor	
5		City of Schofield	
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7	Phil Rantaweston	County EM	
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Marathon County All Hazards Mitigation Plan Update

City of Mosinee Planning Meeting SIGN-IN

VIRTUAL

January 6, 2022 - 2:00 PM

	Name	Department/Agency	Email (Optional)
1	Ken Grams	Police Chief	
2	Kevin Brent	Director of Public Works	
3	Jeff Gates	City Administrator	
4	Phil Pentmeester	County EMA	
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AGENDA

OFFICIAL MEETING NOTICE AND AGENDA

A meeting of the MARATHON COUNTY LOCAL EMERGENCY PLANNING COMMITTEE will be held at Marathon County Emergency Management, 1308 West St., Wausau, at 2:00 p.m., on Thursday, September 9th, 2021 and virtually at:

<https://ccitc.webex.com/ccitc/j.php?MTID=m4fdf63b25876b7c113d0e6ffb0655f21>

Password: MaraCoLEPCSept

+1-408-418-9388 United States Toll
Access code: 2485 985 2133

1. Meeting Called To Order
2. Roll Call
3. Approval of June Meeting Minutes
4. Review and Possible Approval of Off-Site Plans *
5. Review and Possible Adoption of LEPC Bylaws
 - a. Compliance Inspector designation is noted in bylaws
6. EM Office – Review Spill Notification Reports
7. Darryl L. Landeau; NCWRPC Hazard Mitigation Plan Update
8. Public Comments
9. Schedule Next Meeting Date / Time
10. Adjourn

* Copies of Off-Site Plans are available prior to meeting for members to review.

Any person planning to attend this meeting and may need special accommodation in order to participate should call the County Clerk's office at 715-261-1500 or e-mail infomarathon@co.marathon.wi.us one business day before the meeting.

John Peralta

Chair,
Marathon County Local Emergency Planning Committee

EMAILED/FAXED TO: CITY PAGES,
WAUSAU DAILY HERALD
Date: 8/31/2021 4:25 PM
By: T. Ranallo

POSTED AT THE MARATHON
COUNTY COURTHOUSE:
Date: 8/31/2021 4:25 PM
By: T. Ranallo

AGENDA

OFFICIAL MEETING NOTICE AND AGENDA

A meeting of the MARATHON COUNTY LOCAL EMERGENCY PLANNING COMMITTEE will be held at Marathon County Emergency Management, 1308 West St., Wausau, at 10:00 a.m., on Thursday, June 24th, 2021.

1. Meeting Called To Order
2. Roll Call
3. Approval of March Minutes
4. Update from EM Office
5. Review and Possible Approval of Off-Site Plans
6. Review and Possible Adoption of LEPC Bylaws
 - a. Compliance Inspector designation is noted in bylaws
7. Discussion on PFAS
8. Darryl L. Landeau; NCWRPC Hazard Mitigation Plan Update
9. Public Comments
10. Schedule Next Meeting Date / Time – September 24th 10:00 A.M.
11. Adjourn

* Copies of Off-Site Plans are available prior to meeting for members to review.

Any person planning to attend this meeting and may need special accommodation in order to participate should call the County Clerk's office at 715-261-1500 or e-mail informatathon@co.marathon.wi.us one business day before the meeting.

WebEx information: <https://ccitc.webex.com/ccitc/j.php?MTID=m0f5edfe51093e3dd98dd0a93ededcd8d>
Password: MaraCoLEPC621

Or join by video system

Dial 1467888820@ccitc.webex.com

You can also dial 173.243.2.68 and enter the meeting number- 146 788 8820

Or join by phone

+1-408-418-9388 United States Toll

Access code: 146 788 8820

John Peralta

Chair,

Marathon County Local Emergency Planning Committee

AGENDA

OFFICIAL MEETING NOTICE AND AGENDA

A meeting of the MARATHON COUNTY LOCAL EMERGENCY PLANNING COMMITTEE will be held at Marathon County Emergency Management, 1308 West St., Wausau, at 2:00 p.m., on Thursday, March 11, 2021 and virtually at:

<https://ccitc.webex.com/ccitc/j.php?MTID=m3d0015372d0a5d08981ba9e16c266059>

or +1-408-418-9388 United States Toll Access code: 146 920 8618

1. Meeting Called To Order
2. Roll Call
3. Approval of Minutes
4. Hazard Mitigation Process
 - a. Welcome
 - b. Introductions
 - c. Review the plan and planning process
 - d. Discuss local government mitigation issues survey
 - e. Discuss hazard ranking exercise
 - f. Next Steps
5. Off-Site Plans
6. Elections
 - a. Chair
 - b. Vice-Chair
7. Public Comments
8. Schedule Next Meeting Date / Time
9. Adjourn

* Copies of Off-Site Plans are available prior to meeting for members to review.

Any person planning to attend this meeting that may need special accommodation in order to participate, should call the County Clerk's office at 715-261-1500 or e-mail infomarathon@co.marathon.wi.us one business day before the meeting.

Tracey Kujawa

Marathon County Local Emergency Planning Committee Chair

**FAXED TO: CITY PAGES,
WAUSAU DAILY HERALD**

Date: _____
Time: _____
By: _____

**POSTED AT THE MARATHON
COUNTY COURTHOUSE:**

Date: _____
Time: _____
By: _____

Appendix B – Resolutions of Plan Update Adoption

RESOLUTION #R-61-22

ADOPTING THE MARATHON COUNTY ALL HAZARDS MITIGATION PLAN UPDATE

WHEREAS, Marathon 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, pursuant to 44 CFR Part 201, all hazard mitigation plans are required to be updated every five years; and

WHEREAS, Marathon County adopted its last 5-year All Hazards Mitigation Plan update on March 28, 2017; and

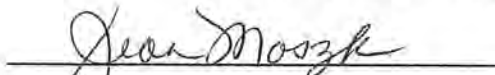
WHEREAS, Marathon County participated jointly in the planning process with the other local units of government within the County to prepare an update to its All Hazards Mitigation Plan;

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

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

Dated this 25th day of October, 2022

PUBLIC SAFETY COMMITTEE











Fiscal Impact: No fiscal impact.

STATE OF WISCONSIN)
)SS.
COUNTY OF MARATHON)

I, Kim Trueblood, County Clerk in and for Marathon County, Wisconsin, hereby certify that the attached Resolution #R-61-22 was adopted by the Marathon County Board of Supervisors at the Adjourned Organizational Meeting which was held on October 25, 2022.



Kim Trueblood
Kim Trueblood
Marathon County Clerk

RESOLUTION # _____

**ADOPTING THE MARATHON COUNTY ALL HAZARDS MITIGATION PLAN
UPDATE**

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

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

WHEREAS, an adopted all hazards mitigation plan is required as a condition of future grant funding for mitigation projects; and

WHEREAS, all hazard mitigation plans are required to be updated every 5-years; and

WHEREAS, the City/Village of _____ adopted the last 5-year All Hazards Mitigation Plan Update on _____, _____; and

WHEREAS, the City/Village of _____ participated jointly in the planning process with Marathon County and the other local units of government within the County to prepare an update to the All Hazards Mitigation Plan;

NOW, THEREFORE, BE IT RESOLVED, that the City/Village Council/Board of the City/Village of _____, hereby adopts the Marathon County All Hazards Mitigation Plan Update as an official plan; and

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

PASSED: _____.

Certifying Official

Appendix C – EMSI Job Loss Analysis

Marathon County All Hazard I/O

EMSI Q3 2015 Data Set

December 2015

North Central Wisconsin Regional Planning Commission



210 McClellan Street, Suite 210
Wausau, Wisconsin 54403

















Changes to Industrial and Commercial Fan and Blower and Air Purification Equipment Manufacturing

\$-109,706,179 Change in Earnings 1.29 Multiplier	-1,872 Change in Jobs 1.50 Multiplier	\$58,593 Average Earnings Per Job (2012)
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Scenario Results - Occupation

SOC	Occupation	Change in Jobs
11-0000	Management Occupations	-101 
13-0000	Business and Financial Operations Occupations	-75 
15-0000	Computer and Mathematical Occupations	-37 
17-0000	Architecture and Engineering Occupations	-123 
19-0000	Life, Physical, and Social Science Occupations	-3
21-0000	Community and Social Service Occupations	-10
23-0000	Legal Occupations	-4
25-0000	Education, Training, and Library Occupations	-21 
27-0000	Arts, Design, Entertainment, Sports, and Media Occupations	-22 
29-0000	Healthcare Practitioners and Technical Occupations	-42 
31-0000	Healthcare Support Occupations	-28 
33-0000	Protective Service Occupations	-7
35-0000	Food Preparation and Serving Related Occupations	-60 
37-0000	Building and Grounds Cleaning and Maintenance Occupations	-31 
39-0000	Personal Care and Service Occupations	-38 
41-0000	Sales and Related Occupations	-130 
43-0000	Office and Administrative Support Occupations	-211 
45-0000	Farming, Fishing, and Forestry Occupations	-1
47-0000	Construction and Extraction Occupations	-66 
49-0000	Installation, Maintenance, and Repair Occupations	-72 
51-0000	Production Occupations	-685 
53-0000	Transportation and Material Moving Occupations	-102 
55-0000	Military occupations	0
99-0000	Unclassified Occupation	-3


Scenario Results - Demographics

Demographics	Change in Jobs
Female 14-18	-16 
Male 14-18	-12 
Female 19-21	-30 
Male 19-21	-30 
Female 22-24	-26 
Male 22-24	-44 
Female 25-34	-107 
Male 25-34	-213 
Female 35-44	-139 
Male 35-44	-309 
Female 45-54	-157 
Male 45-54	-354 
Female 55-64	-94 
Male 55-64	-259 
Female 65-99	-26 
Male 65-99	-56 

Changes to Wood Window and Door Manufacturing

<p>-\$68,672,580</p> <p>Change in Earnings 1.37 Multiplier</p>	<p>-1,670</p> <p>Change in Jobs 1.42 Multiplier</p>	<p>\$41,125</p> <p>Average Earnings Per Job (2012)</p>
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Scenario Results - Industry

NAICS	Industry	Change in Jobs
11	Crop and Animal Production	-14
21	Mining, Quarrying, and Oil and Gas Extraction	0
22	Utilities	-1
23	Construction	-13
31	Manufacturing	-1,254 
42	Wholesale Trade	-19
44	Retail Trade	-62 ■
48	Transportation and Warehousing	-18
51	Information	-5
52	Finance and Insurance	-16
53	Real Estate and Rental and Leasing	-10
54	Professional, Scientific, and Technical Services	-26 ■
55	Management of Companies and Enterprises	-8
56	Administrative and Support and Waste Management and Remediation Services	-30 ■
61	Educational Services	-7
62	Health Care and Social Assistance	-72 ■
71	Arts, Entertainment, and Recreation	-10
72	Accommodation and Food Services	-46 ■
81	Other Services (except Public Administration)	-34 ■
90	Government	-23

Scenario Results - Occupation

SOC	Occupation	Change in Jobs
11-0000	Management Occupations	-73 ■
13-0000	Business and Financial Operations Occupations	-43 ■
15-0000	Computer and Mathematical Occupations	-15
17-0000	Architecture and Engineering Occupations	-26 ■
19-0000	Life, Physical, and Social Science Occupations	-2
21-0000	Community and Social Service Occupations	-6
23-0000	Legal Occupations	-2
25-0000	Education, Training, and Library Occupations	-14
27-0000	Arts, Design, Entertainment, Sports, and Media Occupations	-16
29-0000	Healthcare Practitioners and Technical Occupations	-25 ■
31-0000	Healthcare Support Occupations	-16
33-0000	Protective Service Occupations	-6
35-0000	Food Preparation and Serving Related Occupations	-45 ■
37-0000	Building and Grounds Cleaning and Maintenance Occupations	-28 ■
39-0000	Personal Care and Service Occupations	-24 ■
41-0000	Sales and Related Occupations	-99 ■■
43-0000	Office and Administrative Support Occupations	-166 ■■■
45-0000	Farming, Fishing, and Forestry Occupations	-21 ■
47-0000	Construction and Extraction Occupations	-161 ■■■
49-0000	Installation, Maintenance, and Repair Occupations	-53 ■
51-0000	Production Occupations	-623 ■■■■■
53-0000	Transportation and Material Moving Occupations	-200 ■■■
55-0000	Military occupations	0
99-0000	Unclassified Occupation	-4

Scenario Results - Demographics

Demographics	Change in Jobs
Female 14-18	-15 
Male 14-18	-15 
Female 19-21	-22 
Male 19-21	-37 
Female 22-24	-20 
Male 22-24	-48 
Female 25-34	-105 
Male 25-34	-185 
Female 35-44	-142 
Male 35-44	-219 
Female 45-54	-172 
Male 45-54	-304 
Female 55-64	-101 
Male 55-64	-207 
Female 65-99	-38 
Male 65-99	-40 




Changes to General Medical and Surgical Hospitals

<p>-\$-173,481,000</p> <p>Change in Earnings 1.29 Multiplier</p>	<p>-3,713</p> <p>Change in Jobs 1.41 Multiplier</p>	<p>\$46,723</p> <p>Average Earnings Per Job (2012)</p>
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Scenario Results - Industry

NAICS	Industry	Change in Jobs
11	Crop and Animal Production	-3
21	Mining, Quarrying, and Oil and Gas Extraction	0
22	Utilities	-2
23	Construction	-29
31	Manufacturing	-12
42	Wholesale Trade	-18
44	Retail Trade	-154 ■
48	Transportation and Warehousing	-18
51	Information	-11
52	Finance and Insurance	-90 ■
53	Real Estate and Rental and Leasing	-63 ■
54	Professional, Scientific, and Technical Services	-68 ■
55	Management of Companies and Enterprises	-5
56	Administrative and Support and Waste Management and Remediation Services	-96 ■
61	Educational Services	-16
62	Health Care and Social Assistance	-2,830 ■
71	Arts, Entertainment, and Recreation	-23
72	Accommodation and Food Services	-115 ■
81	Other Services (except Public Administration)	-110 ■
90	Government	-49

Scenario Results - Occupation

SOC	Occupation	Change in Jobs
11-0000	Management Occupations	-154 
13-0000	Business and Financial Operations Occupations	-118 
15-0000	Computer and Mathematical Occupations	-61 
17-0000	Architecture and Engineering Occupations	-7 
19-0000	Life, Physical, and Social Science Occupations	-15
21-0000	Community and Social Service Occupations	-86
23-0000	Legal Occupations	-12
25-0000	Education, Training, and Library Occupations	-39
27-0000	Arts, Design, Entertainment, Sports, and Media Occupations	-36
29-0000	Healthcare Practitioners and Technical Occupations	-1,324
31-0000	Healthcare Support Occupations	-443
33-0000	Protective Service Occupations	-21
35-0000	Food Preparation and Serving Related Occupations	-194
37-0000	Building and Grounds Cleaning and Maintenance Occupations	-242
39-0000	Personal Care and Service Occupations	-87
41-0000	Sales and Related Occupations	-183
43-0000	Office and Administrative Support Occupations	-448
45-0000	Farming, Fishing, and Forestry Occupations	-2
47-0000	Construction and Extraction Occupations	-37
49-0000	Installation, Maintenance, and Repair Occupations	-72
51-0000	Production Occupations	-41
53-0000	Transportation and Material Moving Occupations	-69
55-0000	Military occupations	0
99-0000	Unclassified Occupation	-22

Scenario Results - Demographics

Demographics	Change in Jobs
Female 14-18	-47 
Male 14-18	-23 
Female 19-21	-96 
Male 19-21	-30 
Female 22-24	-150 
Male 22-24	-36 
Female 25-34	-642 
Male 25-34	-168 
Female 35-44	-562 
Male 35-44	-203 
Female 45-54	-676 
Male 45-54	-219 
Female 55-64	-494 
Male 55-64	-163 
Female 65-99	-126 
Male 65-99	-78 

















Changes to Offices of Physicians (except Mental Health Specialists)

<p>-\$-200,951,789</p> <p>Change in Earnings 1.23 Multiplier</p>	<p>-2,428</p> <p>Change in Jobs 1.76 Multiplier</p>	<p>\$82,781</p> <p>Average Earnings Per Job (2012)</p>
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Scenario Results - Industry

NAICS	Industry	Change in Jobs
11	Crop and Animal Production	-2
21	Mining, Quarrying, and Oil and Gas Extraction	0
22	Utilities	-1
23	Construction	-25
31	Manufacturing	-10
42	Wholesale Trade	-16
44	Retail Trade	-172 ■
48	Transportation and Warehousing	-15
51	Information	-11
52	Finance and Insurance	-68 ■
53	Real Estate and Rental and Leasing	-69 ■
54	Professional, Scientific, and Technical Services	-52 ■
55	Management of Companies and Enterprises	-9
56	Administrative and Support and Waste Management and Remediation Services	-75 ■
61	Educational Services	-19
62	Health Care and Social Assistance	-1,592 ■
71	Arts, Entertainment, and Recreation	-26
72	Accommodation and Food Services	-130 ■
81	Other Services (except Public Administration)	-90 ■
90	Government	-44

Scenario Results - Occupation

SOC	Occupation	Change in Jobs
11-0000	Management Occupations	-98 
13-0000	Business and Financial Operations Occupations	-78 
15-0000	Computer and Mathematical Occupations	-30 
17-0000	Architecture and Engineering Occupations	-5 
19-0000	Life, Physical, and Social Science Occupations	-11 
21-0000	Community and Social Service Occupations	-42 
23-0000	Legal Occupations	-7 
25-0000	Education, Training, and Library Occupations	-31 
27-0000	Arts, Design, Entertainment, Sports, and Media Occupations	-30 
29-0000	Healthcare Practitioners and Technical Occupations	-580 
31-0000	Healthcare Support Occupations	-246 
33-0000	Protective Service Occupations	-14 
35-0000	Food Preparation and Serving Related Occupations	-131 
37-0000	Building and Grounds Cleaning and Maintenance Occupations	-64 
39-0000	Personal Care and Service Occupations	-75 
41-0000	Sales and Related Occupations	-183 
43-0000	Office and Administrative Support Occupations	-664 
45-0000	Farming, Fishing, and Forestry Occupations	-1 
47-0000	Construction and Extraction Occupations	-25 
49-0000	Installation, Maintenance, and Repair Occupations	-35 
51-0000	Production Occupations	-22 
53-0000	Transportation and Material Moving Occupations	-47 
55-0000	Military occupations	0 
99-0000	Unclassified Occupation	-6 


Scenario Results - Demographics

Demographics	Change in Jobs
Female 14-18	-31 
Male 14-18	-20 
Female 19-21	-48 
Male 19-21	-24 
Female 22-24	-65 
Male 22-24	-24 
Female 25-34	-295 
Male 25-34	-121 
Female 35-44	-317 
Male 35-44	-239 
Female 45-54	-370 
Male 45-54	-322 
Female 55-64	-212 
Male 55-64	-239 
Female 65-99	-41 
Male 65-99	-59 






Changes to Animal Production and Aquaculture

<p>\$-100,943,433</p> <p>Change in Earnings 1.46 Multiplier</p>	<p>-3,194</p> <p>Change in Jobs 1.36 Multiplier</p>	<p>\$31,607</p> <p>Average Earnings Per Job (2012)</p>
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Scenario Results - Industry

NAICS	Industry	Change in Jobs
11	Crop and Animal Production	-2,484 
21	Mining, Quarrying, and Oil and Gas Extraction	-2
22	Utilities	-2
23	Construction	-57 ■
31	Manufacturing	-18
42	Wholesale Trade	-45 ■
44	Retail Trade	-107 ■
48	Transportation and Warehousing	-32
51	Information	-6
52	Finance and Insurance	-38 ■
53	Real Estate and Rental and Leasing	-19
54	Professional, Scientific, and Technical Services	-36 ■
55	Management of Companies and Enterprises	-1
56	Administrative and Support and Waste Management and Remediation Services	-19
61	Educational Services	-10
62	Health Care and Social Assistance	-120 ■
71	Arts, Entertainment, and Recreation	-13
72	Accommodation and Food Services	-56 ■
81	Other Services (except Public Administration)	-50 ■
90	Government	-78 ■

Scenario Results - Occupation

SOC	Occupation	Change in Jobs	
11-0000	Management Occupations	-1,802	
13-0000	Business and Financial Operations Occupations	-37	
15-0000	Computer and Mathematical Occupations	-10	
17-0000	Architecture and Engineering Occupations	-6	
19-0000	Life, Physical, and Social Science Occupations	-5	
21-0000	Community and Social Service Occupations	-12	
23-0000	Legal Occupations	-4	
25-0000	Education, Training, and Library Occupations	-41	
27-0000	Arts, Design, Entertainment, Sports, and Media Occupations	-18	
29-0000	Healthcare Practitioners and Technical Occupations	-53	
31-0000	Healthcare Support Occupations	-30	
33-0000	Protective Service Occupations	-15	
35-0000	Food Preparation and Serving Related Occupations	-65	
37-0000	Building and Grounds Cleaning and Maintenance Occupations	-47	
39-0000	Personal Care and Service Occupations	-126	
41-0000	Sales and Related Occupations	-110	
43-0000	Office and Administrative Support Occupations	-136	
45-0000	Farming, Fishing, and Forestry Occupations	-455	
47-0000	Construction and Extraction Occupations	-58	
49-0000	Installation, Maintenance, and Repair Occupations	-39	
51-0000	Production Occupations	-34	
53-0000	Transportation and Material Moving Occupations	-89	
55-0000	Military occupations	0	
99-0000	Unclassified Occupation	-3	


Scenario Results - Demographics

Demographics	Change in Jobs
Female 14-18	-49 
Male 14-18	-108 
Female 19-21	-61 
Male 19-21	-109 
Female 22-24	-47 
Male 22-24	-142 
Female 25-34	-148 
Male 25-34	-348 
Female 35-44	-169 
Male 35-44	-398 
Female 45-54	-208 
Male 45-54	-496 
Female 55-64	-170 
Male 55-64	-312 
Female 65-99	-135 
Male 65-99	-295 

Changes to Supermarkets and Other Grocery (except Convenience) Stores

<p>\$-29,941,268</p> <p>Change in Earnings 1.34 Multiplier</p>	<p>-1,256</p> <p>Change in Jobs 1.19 Multiplier</p>	<p>\$23,834</p> <p>Average Earnings Per Job (2012)</p>
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Scenario Results - Industry

NAICS	Industry	Change in Jobs
11	Crop and Animal Production	-1
21	Mining, Quarrying, and Oil and Gas Extraction	0
22	Utilities	0
23	Construction	-10
31	Manufacturing	-3
42	Wholesale Trade	-3
44	Retail Trade	-1,086 
48	Transportation and Warehousing	-7
51	Information	-2
52	Finance and Insurance	-8
53	Real Estate and Rental and Leasing	-16
54	Professional, Scientific, and Technical Services	-10
55	Management of Companies and Enterprises	-1
56	Administrative and Support and Waste Management and Remediation Services	-10
61	Educational Services	-4
62	Health Care and Social Assistance	-28
71	Arts, Entertainment, and Recreation	-4
72	Accommodation and Food Services	-15
81	Other Services (except Public Administration)	-14
90	Government	-34

Scenario Results - Occupation

SOC	Occupation	Change in Jobs
11-0000	Management Occupations	-23 ■
13-0000	Business and Financial Operations Occupations	-12 ■
15-0000	Computer and Mathematical Occupations	-3
17-0000	Architecture and Engineering Occupations	-1
19-0000	Life, Physical, and Social Science Occupations	-1
21-0000	Community and Social Service Occupations	-3
23-0000	Legal Occupations	-1
25-0000	Education, Training, and Library Occupations	-15 ■
27-0000	Arts, Design, Entertainment, Sports, and Media Occupations	-12 ■
29-0000	Healthcare Practitioners and Technical Occupations	-30 ■
31-0000	Healthcare Support Occupations	-9 ■
33-0000	Protective Service Occupations	-6
35-0000	Food Preparation and Serving Related Occupations	-184 ■
37-0000	Building and Grounds Cleaning and Maintenance Occupations	-21 ■
39-0000	Personal Care and Service Occupations	-10
41-0000	Sales and Related Occupations	-446 ■
43-0000	Office and Administrative Support Occupations	-256 ■
45-0000	Farming, Fishing, and Forestry Occupations	-1
47-0000	Construction and Extraction Occupations	-10
49-0000	Installation, Maintenance, and Repair Occupations	-9
51-0000	Production Occupations	-90 ■
53-0000	Transportation and Material Moving Occupations	-112 ■
55-0000	Military occupations	0
99-0000	Unclassified Occupation	-1


Scenario Results - Demographics

Demographics	Change in Jobs
Female 14-18	-136
Male 14-18	-127
Female 19-21	-81
Male 19-21	-69
Female 22-24	-47
Male 22-24	-44
Female 25-34	-69
Male 25-34	-88
Female 35-44	-82
Male 35-44	-54
Female 45-54	-134
Male 45-54	-75
Female 55-64	-111
Male 55-64	-58
Female 65-99	-51
Male 65-99	-31









Changes to Mail-Order Houses

<p>\$-66,599,862</p> <p>Change in Earnings 1.38 Multiplier</p>	<p>-1,884</p> <p>Change in Jobs 1.34 Multiplier</p>	<p>\$35,356</p> <p>Average Earnings Per Job (2012)</p>
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Scenario Results - Industry

NAICS	Industry	Change in Jobs
11	Crop and Animal Production	-1
21	Mining, Quarrying, and Oil and Gas Extraction	0
22	Utilities	-1
23	Construction	-16
31	Manufacturing	-5
42	Wholesale Trade	-8
44	Retail Trade	-1,465 
48	Transportation and Warehousing	-16
51	Information	-7
52	Finance and Insurance	-20
53	Real Estate and Rental and Leasing	-43 ■
54	Professional, Scientific, and Technical Services	-28
55	Management of Companies and Enterprises	-3
56	Administrative and Support and Waste Management and Remediation Services	-27
61	Educational Services	-11
62	Health Care and Social Assistance	-66 ■
71	Arts, Entertainment, and Recreation	-9
72	Accommodation and Food Services	-34 ■
81	Other Services (except Public Administration)	-33
90	Government	-91 ■

Scenario Results - Occupation

SOC	Occupation	Change in Jobs
11-0000	Management Occupations	-100 
13-0000	Business and Financial Operations Occupations	-102 
15-0000	Computer and Mathematical Occupations	-114 
17-0000	Architecture and Engineering Occupations	-6 
19-0000	Life, Physical, and Social Science Occupations	-2 
21-0000	Community and Social Service Occupations	-9 
23-0000	Legal Occupations	-4 
25-0000	Education, Training, and Library Occupations	-41 
27-0000	Arts, Design, Entertainment, Sports, and Media Occupations	-81 
29-0000	Healthcare Practitioners and Technical Occupations	-70 
31-0000	Healthcare Support Occupations	-16 
33-0000	Protective Service Occupations	-16 
35-0000	Food Preparation and Serving Related Occupations	-39 
37-0000	Building and Grounds Cleaning and Maintenance Occupations	-31 
39-0000	Personal Care and Service Occupations	-26 
41-0000	Sales and Related Occupations	-262 
43-0000	Office and Administrative Support Occupations	-659 
45-0000	Farming, Fishing, and Forestry Occupations	-3 
47-0000	Construction and Extraction Occupations	-19 
49-0000	Installation, Maintenance, and Repair Occupations	-29 
51-0000	Production Occupations	-58 
53-0000	Transportation and Material Moving Occupations	-195 
55-0000	Military occupations	0 
99-0000	Unclassified Occupation	-2 

Scenario Results - Demographics

Demographics	Change in Jobs
Female 14-18	-71 
Male 14-18	-63 
Female 19-21	-87 
Male 19-21	-92 
Female 22-24	-94 
Male 22-24	-84 
Female 25-34	-213 
Male 25-34	-216 
Female 35-44	-182 
Male 35-44	-181 
Female 45-54	-172 
Male 45-54	-143 
Female 55-64	-124 
Male 55-64	-93 
Female 65-99	-40 
Male 65-99	-29 

Appendix A - Data Sources and Calculations

Input-Output Data

The input-output model in this report is EMSI's gravitational flows multi-regional social account matrix model (MR-SAM). It is based on data from the Census Bureau's Current Population Survey and American Community Survey; as well as the Bureau of Economic Analysis' National Income and Product Accounts, Input-Output Make and Use Tables, and Gross State Product data. In addition, several EMSI in-house data sets are used, as well as data from Oak Ridge National Labs on the cost of transportation between counties.

State Data Sources

This report uses state data from the following agencies: Wisconsin Department of Workforce Development, Bureau of Workforce Information