

Marinette County Natural Hazards Mitigation Plan 2025 - 2030

**DRAFT FOR REVIEW
ONLY
JULY 15, 2024**



MARINETTE COUNTY WISCONSIN NATURAL HAZARDS MITIGATION PLAN

ADOPTED: _____

Prepared by:
Bay-Lake Regional Planning Commission
1861 Nimitz Drive
De Pere, WI 54115
(920) 448-2820
www.baylakerpc.org



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COUNTY ADOPTION RESOLUTION



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CITY & VILLAGE ADOPTION RESOLUTIONS



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WEM APPROVAL LETTER



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FEMA APPROVAL LETTER



Executive Summary

► Plan Update Summary

To aid in the identification of the changes that have been made to the Marinette County, Wisconsin Natural Hazard Mitigation Plan in this current update to the 2020 plan, Table ES.1 below lists the plan changes and the updates made to the identified mitigation actions. Table ES.2 lists the updates made to the previously identified mitigation strategies.

Table ES.1: Plan Update Summary

Plan Chapter	Overview of Plan Update
Chapter 1: Introduction	Updated plan update funding and resilience overview and impact on the plan. Updated steering committee information to reflect current membership and public involvement to describe outreach and input methods. The steering committee updated the prioritized order of the hazards to be addressed.
Chapter 2: Planning Area	Updated demographic, housing, and economic profile information using 2020 Decennial Census and 2021 American Community Survey 5-Year Estimates. Updated land use information.
Chapter 3: Risk Assessment	Disaster declaration history was updated with DR disaster declarations. Climate impacts were updated using 2021 WICCI data. Updated all elements of each hazard profile to reflect updated storm data (frequency, probability, impacts, etc.). Updated critical facilities inventory.
Chapter 4: Mitigation Strategy	Updated the mitigation action plan to account for completed projects, updated timetables and new project additions.
Chapter 5: Plan Adoption and Maintenance	Updated plan maintenance process and plan update schedule.



Table ES.2: Mitigation Strategy Updates

Strategy	Changes
All Hazards (No changes)	
Flooding	
Incorporation of floodplain management in comprehensive planning	Changed project timetable from “ongoing every 10 years” to “3-5 years”.
Update floodplain mapping	Changed project timetable from “2019-2030” to “2025-2030”.
Preservation of natural resources in floodplains	Changed project timetable from “1-5 years” to “ongoing”.
Stormwater management	Added “Marinette County Public Health” to Responsible Parties.
Individual Property Measures for Basements	Removed “review of building and other local codes. Federal or state grant funding through block grants” and added “costs to be determined with assistance from grant funding”. Changed “2010” in note to “2020”.
Stormwater Management	Removed “state and federal block” from costs of project. Changed project timetable from “1-5 years” to “ongoing”.
Maintain County orthophotography	Changed costs of project “covered by property owners” to “covered by “existing budgets”. Also, removed “2020” from project timetable. Changed priority from “low” to “medium”.
Tornadoes and Strong Wind	
Add shelters to manufactured housing communities	Changed project timetable from “7-10 years” to “as funds are available”.
Maintain list of logging contractors’ locations for assistance with clearing roads	Addition
Lightning Storms and Thunderstorms (No changes)	
Wildland Fires	
Maintain fire breaks	Removed
Provide the state with a list of fire equipment for wildfire suppression as needed	Addition
Clean up fuel/debris after wind storms	Addition
Extreme Heat (No changes)	
Winter Storms (No changes)	
Extreme Cold (No changes)	
Fog (No changes)	
Dam Failure (No changes)	
Coastal Hazards (No changes)	
Drought (No changes)	



1: Introduction

► Purpose of the Plan

Hazard Mitigation is defined as any action taken before, during, or after a disaster to permanently eliminate or reduce the long-term risk to human life and property from natural and man-made hazards. Hazard mitigation planning is a process that assesses risks and evaluates the community vulnerability from potential hazards. Deficiencies are identified and strategies are developed that help mitigate problem areas. By developing an effective hazard mitigation plan a community can potentially reduce the impacts of a future disaster. Potential impacts of a disaster include loss of lives and property, environmental and economic concerns, and reduced essential services and quality of life. The result of this planning process is an Action Plan that identifies the appropriate steps to help mitigate present and future hazards. The *Marinette County Hazard Mitigation Plan* aims to identify risks and highlight areas where the community may be more vulnerable to potential hazards. Deficiencies are identified and strategies are developed to mitigate problems.

Consistent with the Code of Federal Regulations (44 CFR Part 201.6), the county decided to focus the scope of this planning effort to natural hazards at this time, though this plan conforms to Federal Emergency Management Agency (FEMA) requirements for local hazards mitigation planning. This plan provides county-level information on areas of risk, magnitude of risk, and strategies for reducing this risk. Appendix E includes general mitigation strategies for non-natural hazards including cyberattacks, infectious diseases, domestic terrorism, and hazardous materials. Through the process of developing this plan, the county addressed issues related to the protection of lives and property from natural hazards, the protection of critical facilities, and the reduction of community and taxpayer costs associated with disaster relief and rescue efforts. Completion and approval of the plan makes Marinette County eligible to apply for future FEMA disaster relief and mitigation project funds, helping the county to implement their recommended mitigation strategies.

► Disaster Mitigation Act of 2000

The Disaster Mitigation Act of 2000 (DMA 2000) (Public Law 106-390) provides the legal basis for the FEMA mitigation planning requirements for state, local, and Tribal governments as a condition of mitigation grant assistance. DMA 2000 amended the Robert T. Stafford Disaster Relief and Emergency Assistance Act by repeating the previous mitigation planning provisions and replacing them with a new set of requirements that emphasize the need for state, local, and Tribal entities to closely coordinate mitigation planning and implementation efforts. The requirement for a state mitigation plan is continued as a condition of disaster assistance, adding incentives for increased coordination and integration of mitigation activities at the state level through the establishment of requirements for two different levels of state plans. DMA 2000 also established a requirement for local mitigation plans and authorized HMGP funds available to a state for development of state, local, and Tribal mitigation plans.

► Funding of the Hazard Mitigation Plan

In October 2023, Marinette County received a planning grant to develop an update to their Hazard Mitigation Plan from FEMA/WEM through the FFY22 Building Resilient Infrastructure and Communities (BRIC) Program. Under the awarded grant (Project #: EMC-2022; Disaster # (HMGP): BR-008-0008), the funds served as the contract between WEM and Marinette County for the purpose of updating the county's all-hazards mitigation plan. Seventy-five (75) percent was the federal share funded through FEMA. The remaining 25% was the required local program match that was met by Marinette County through in-kind work.

Marinette County entered into a contract with the Bay-Lake Regional Planning Commission (Bay-Lake RPC) to prepare the update to the hazard mitigation plan. Development of the plan began in November 2023.



► Resilience

Human activities have major impacts on both local environments and major global systems. Since the industrial revolution, humans have drastically increased the level of greenhouse gases emitted into Earth's atmosphere. While there have been natural fluctuations of these gases in Earth's atmosphere over long historical cycles, their levels have seen dramatic increases due to diverse human activities, including burning fossil fuels for transportation and energy, an increasingly industrialized food system and the associated land use change, and operation and maintenance of buildings.

These changes to the climate have significant negative impacts on the world's human population and ecosystems. Over the past several decades, there have been changes to temperature and precipitation patterns, as well as frequently unpredictable extreme weather events that affect people all over the state, country, and world. These changes are important to incorporate into hazard mitigation planning as they are increasingly affecting hazard frequency and severity.

In order to address the negative impacts of changes in greenhouse gas concentrations in the atmosphere due to human activities, humans can undertake a combination of two approaches: mitigation and adaptation.

Mitigation

Mitigation involves reducing greenhouse gas emissions. This can include reducing or eliminating polluting practices or industries, or changing practices to reduce pollution in a certain industry. Governments can enact laws that limit the level of emissions allowed to be released by industries or nations, similar to how the Clean Water Act began regulating pollutant discharge into water and has led to restoration and recovery of healthy and safe waters.

Mitigation of greenhouse gases can occur at all levels of government, industry, and society. Governments and industry have the greatest potential to make changes that have rapid and widespread effects, but individuals and communities can reduce emissions in small ways through decreasing energy use, changing diets and reducing food waste, and utilizing active transportation.

Mitigation actions also include carbon sequestration in the environment to prevent its release into the atmosphere, such as by preventing deforestation, protecting wetlands and peatlands, and building health soil, all of which capture and store greenhouse gases.

Adaptation

Adaptation addresses changes in the climate by identifying and preparing for the impacts of those changes. Impacts include increased flooding, heat waves, lengthened growing seasons, warmer winters, and more extreme weather events. These put human populations and ecosystems at risk, but in this plan and through other approaches, Marinette County can identify and implement initiatives that reduce vulnerability to these changes.

Adaptation measures communities can implement include updating stormwater infrastructure to handle bigger floods, including incorporating nature-based solutions; reassessing floodplain zoning to avoid property damage; and identifying vulnerable populations and developing emergency action plans in the event of extreme heat events. Adaptation can simultaneously benefit human communities and their local environment.

Future Changes and Resilience

Even with aggressive mitigation efforts, the climate will continue to change over the next 50 to 100 years. It is important to pursue both mitigation and adaptation measures in order to remain resilient and reduce hazard risk in the face of climate change.



1: Introduction

► Hazard Mitigation Plan Steering Committee

Marinette County established a steering committee for the plan development (Table 1.1). The steering committee was responsible for providing input, helping to guide the planning process, and reviewing draft chapters of the plan.

Table 1.1: Steering Committee

Name	Title
Tina Barnes	Marinette County Land Information Property Lister
Molly Bonjean	Marinette County Public Health Officer
Eric Burmeister	Marinette County Highway Commissioner/Emergency Management
Brenda Powell	Marinette County Communication Director
Jessica Demler	Marinette County Emergency Management Coordinator
Jay Heckel	City of Marinette Fire Chief
Tim Oestreich	Marinette County Land Information Director/GIS Coordinator
Ryan Bourassa	Marinette County Forestry Director
Jessica Olson	Marinette County Emergency Management Administrative Assistant
Martin Keyport	Marinette County Facilities & Parks Director

The steering committee reviewed and analyzed each section of the plan, and evaluated which sections needed revisions as part of the update process.

The steering committee held _____ meetings to develop the plan update: November 16, 2023; January 16, 2024; February 20, 2024; April 24, 2024; and June 26, 2024. (list other dates if necessary). Copies of the agendas and minutes are included in Appendices A and B.

► Planning Process

Development of the Marinette County Hazard Mitigation Plan was based on the planning requirements and guidance provided by FEMA and WEM. The planning area for this plan includes all of Marinette County with its three cities, (Marinette, Niagara, and Peshtigo), four villages (Coleman, Crivitz, Pound, and Wausaukee), and eighteen towns (Amberg, Athelstane, Beaver, Beecher, Dunbar, Goodman, Grover, Lake, Middle Inlet, Niagara, Pembine, Peshtigo, Porterfield, Pound, Silver Cliff, Stephenson, Wagner, and Wausaukee).

Input into the plan was gained through regular collaborative meetings and discussions with the county and state officials, emergency coordinator, local officials, various organizations, and citizens. Public participation takes place throughout the entire planning process and is described in more detail in the plan. The process spanned over a ____-month timeframe beginning in November 2023. Professional planning support was provided by Bay-Lake RPC. Public review and input was encouraged at all meetings and through an Open House to present the plan goals, mitigation actions plan, and mapped hazard areas.

Development of the plan was structured in a five-phase planning process:

- » Phase 1: Pre-planning and review of steering committee appointments
- » Phase 2: Reassessing risks and critical factors
- » Phase 3: Updating the mitigation action plan
- » Phase 4: Reviewing the policies and procedures for plan implementation
- » Phase 5: Documenting the planning process and plan action



Phase 1 involved initial conversations and meetings to review previous steering committee appointments and representation, invitations to new and returning committee members, reconvening the committee, and outlining the planning process and division of responsibilities.

Phase 2 included meetings with the steering committee to reassess identified critical facilities, natural hazards, and associated potential risks to the county.

Phase 3 involved updating the mitigation strategy to address identified risks including removing completed tasks and adding new mitigation actions to address risks.

Phase 4 involved reviewing the policies that affect plan implementation and the procedures to implement the plan.

Phase 5 involved documenting the planning process, developing a complete plan draft, plan review, and final plan adoption.

Plan development was completed with the adoption of the plan by resolution at the Marinette County Board. The maps in the Planning Area and Risk Assessment chapters of the plan were completed using the Bay-Lake Regional Planning Commission's Geographic Information System (GIS). Maps included in this plan are for general planning purposes only and are not for legal or formal survey purposes.

► Public Involvement

Steering Committee Meetings

All steering committee meetings were open to the public. All meetings provided opportunities for public comment during the drafting of the plan.

During the assessment of natural hazard conditions, the plan steering committee reviewed the prioritization of the various potential natural hazards facing the planning area. The hazards addressed in this plan are listed below in order of priority.

1. Tornado and Strong Wind
2. Lightning and Thunderstorms
3. Winter Storm
4. Wildland Fires
5. Flooding
6. Hail
7. Extreme Cold
8. Excessive Heat
9. Drought
10. Dense Fog
11. Coastal Hazards
12. Dam Failure

The steering committee also emphasized including non-natural hazards that pose a significant threat to the county. **Cyberattack, infectious diseases, domestic terrorism, and hazardous materials** have been detailed in Appendix E of this plan. The county is encouraged to implement measures to mitigate these hazards, just as it would with the natural hazards listed in this plan.

The steering committee reviewed and analyzed each section of the plan, and subsequently Table ES.1 was developed to document the sections of the plan that were revised as part of the update process. The steering committee held _____ meetings to update the plan:

- November 16, 2023
- January 16, 2024
- February 20, 2024
- April 24, 2024
- June 26, 2024
- (list other dates if necessary).



1: Introduction

Public Informational Meetings

Several informational meetings were held for the public throughout Marinette County **including** _____
_____. These meetings were held to provide additional opportunity for the public to review and comment on the draft plan and maps. **No comments were provided by the public at these meetings.** Both the steering committee meetings and the public informational meetings were open to the public and notices were posted by the county.

County Board Meeting

On _____, the Marinette County Board adopted the hazard mitigation plan at a public meeting. A copy of the resolution of adoption can be found at the beginning of this plan.

Neighboring Jurisdictions

The Marinette County, Wisconsin Hazard Mitigation Plan was sent to the Emergency Management Directors in Florence, Oconto, Forest, and Menominee (MI) counties for their review and comment. **No comments were received.**

Underserved Communities and Vulnerable Populations

During this plan update process, an emphasis was placed on underserved communities and socially vulnerable populations. These concepts present an opportunity to expand local hazard mitigation plans to help increase the community benefits of hazard mitigation

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

Within Marinette County and its communities, a number of general population groups that are often identified as underserved or vulnerable were identified. These include school aged children, disabled persons, the elderly, minorities, persons who speak with limited English proficiency, and low income individuals or

families. Geographic analysis of several of these populations was conducted (Appendix F) to assist with the analysis and discussion of the underserved and/or socially vulnerable populations within Marinette County.

Outreach and involvement to address underserved or vulnerable populations included identifying and contacting agencies and organizations that advocate or serve those individuals including the Aging and Disability Resource Center of Marinette County and Marinette County Public Health Department.





2. Planning Area

► General Geography

The planning area for the Marinette County, Wisconsin Hazard Mitigation Plan completely covers Marinette County and includes all of the municipalities within the county. The county has seven incorporated communities (three cities and four villages). Map 2.1 illustrates the location of Marinette County and its municipalities. Table 2.1 indicates the geographical size of the county as well as the size of each municipality within the county.

Table 2.1: Marinette County Planning Area

Municipality	Square Miles
City of Marinette	7.55
City of Niagara	3.00
City of Peshtigo	3.08
Village of Coleman	1.36
Village of Crivitz	1.63
Village of Pound	0.86
Village of Wausaukee	1.39
Town of Amberg	72.30
Town of Athelstane	107.09
Town of Beaver	69.45
Town of Beecher	49.45
Town of Dunbar	105.17
Town of Goodman	107.59
Town of Grover	73.30
Town of Lake	59.53
Town of Middle Inlet	51.23
Town of Niagara	68.36
Town of Pembine	67.31
Town of Peshtigo	60.23
Town of Porterfield	53.34
Town of Pound	49.87
Town of Silver Cliff	106.88
Town of Stephenson	176.67
Town of Wagner	54.62
Town of Wausaukee	77.55
County Total	1,428.8

Source:

► Historical Setting

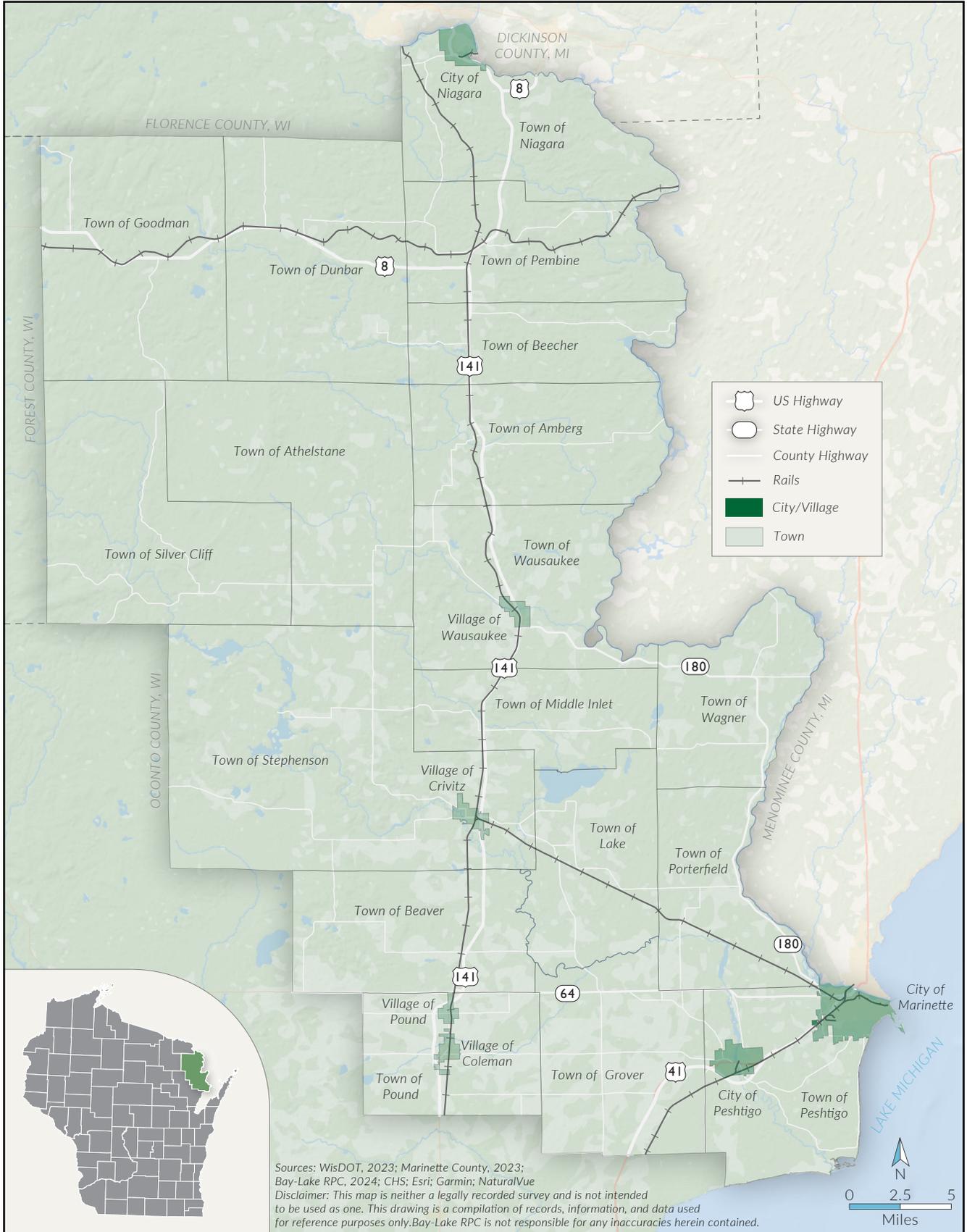
The Algonquin tribe, “the wild rice people,” are the earliest recorded residents. By the early 1820s, the Menominee numbered about 500 men, and were scattered throughout a dozen villages in Wisconsin. From 1670 to the early 1800s, numerous explorers, fur traders and missionaries, visited the area as they traveled the water routes of Green Bay and the Menominee River.

Stanislaus Chappu was the first documented settler on the Menominee River, a French-Canadian fur trader who organized a trading post. Similarly, William Farnsworth arrived as another fur trader on the River Basin in 1822. Trading with the Anishinaabe Tribe (also known as “Chippewa” or “Ojibwe”) increased relations with other settlers. Farnsworth invested in the business venture of lumber, which commenced a new industry that would control the Menominee River Basin for close to 50 years. In 1832, the business partners constructed a water-powered sawmill.

The success of lumbering correlated to the success of Marinette. In 1853, the population was 478, in less than 10 years the growth reached 3,059 persons. Marinette’s lumber boom reached its peak about 1895. Approximately 24 sawmills lined the Menominee River and other lumber-related businesses prospered in Marinette, including sash, door and blind factories, planting mills, and box factories.



Map 2.1- Location Map



2. Planning Area

► Population Trends

From 1970 to 2020, Marinette County has grown by 5,163 persons (14.1%). The county's growth has fluctuated over time, but has maintained an upward trend from 1970 to 2000 then decreased by 3.8% in 2010. The 2020 Census shows the county back in the upward trend by adding an additional 123 persons. Table 2.2 shows the historic US Census population counts by municipality in Marinette County.

Table 2.2: Marinette County Historical Population

Municipality	1970	1980	1990	2000	2010	2020	# Change 1970-2020	% Change 1970-2020
City of Marinette	12,696	11,965	11,843	11,749	10,968	11,119	-1,577	-12.4%
City of Niagara	2,347	2,079	1,999	1,880	1,624	1,602	-745	-31.7%
City of Peshtigo	2,836	2,807	3,154	3,357	3,502	3,420	584	20.6%
Village of Coleman	683	852	839	716	724	726	43	6.3%
Village of Crivitz	899	1,041	996	998	984	1,093	194	21.6%
Village of Pound	284	407	434	355	377	357	73	25.7%
Village of Wausaukee	557	648	656	572	575	596	39	7.0%
Town of Amberg	665	852	917	854	726	963	28	4.2%
Town of Athelstane	330	364	437	601	504	554	224	67.9%
Town of Beaver	995	1,042	1,041	1,123	1,146	1,153	158	15.9%
Town of Beecher	279	521	626	783	724	786	507	181.7%
Town of Dunbar	359	522	838	1,303	1,094	605	246	68.5%
Town of Goodman	750	803	759	820	619	607	-143	-19.1%
Town of Grover	1,575	1,709	1,670	1,729	1,768	1,731	156	9.9%
Town of Lake	741	915	989	1,064	1,135	1,186	445	60.1%
Town of Middle Inlet	457	681	744	831	840	851	394	86.2%
Town of Niagara	561	717	891	924	853	852	291	51.9%
Town of Pembine	654	773	817	1,036	889	877	223	34.1%
Town of Peshtigo	2,951	3,566	3,564	3,819	4,057	4,006	1,055	35.8%
Town of Porterfield	1,405	1,857	1,805	1,991	1,971	1,888	483	34.4%
Town of Pound	1,297	1,412	1,386	1,367	1,425	1,412	115	8.9%
Town of Silver Cliff	189	267	259	529	491	514	325	172.0%
Town of Stephenson	2,202	2,137	2,288	3,065	3,006	3,494	1,292	58.7%
Town of Wagner	500	624	660	722	681	653	153	30.6%
Town of Wausaukee	497	753	937	1,196	1,066	1,097	600	120.7%
County Total	36,709	39,314	40,548	43,384	41,749	41,872	5,163	14.1%

Source: U.S. Decennial Census, 1970 - 2020.

Age Distribution



Daycare Age (<5): **1,902**



School Age (5 - 19): **6,865**



Working Age (16+): **34,859**



Voting Age (18+): **33,918**



Retirement Age (65+): **10,537**

Source: U.S. Decennial Census, 2020

► Population Projections

Population Projections are merely calculations as to what would happen to the current population under specified assumptions of fertility, mortality, and migration in future years. Hazard mitigation planning requires future populations to help address hazard impacts and draw conclusions.

According to the Wisconsin Department of Administration 's (WDOA) 2013 Population Projections, Marinette County's population is anticipated to vary over the next several decades (Table 2.3). The county is projected to increase by nearly 1,500 additional people from 2020 to 2030 and then experience a decline of over 1,900 individuals between 2030 and 2040.

The WDOA population projections though the year 2050 are expected to be released sometime in 2024. The county should review the new projections for any significant changes that could impact future hazard mitigation planning efforts..

Table 2.3 Marinette County Population Projections

Municipality	2025	2030	2035	2040	# Change 2025-2040	% Change 2025-2040
City of Marinette	10,810	10,770	10,470	9,935	- 875	-8%
City of Niagara	1,510	1,470	1,395	1,290	- 220	-15%
City of Peshtigo	3,595	3,655	3,635	3,515	- 80	-2%
Village of Coleman	725	725	710	680	- 45	-6%
Village of Crivitz	965	965	940	895	- 70	-7%
Village of Pound	385	390	385	375	- 10	-3%
Village of Wausaukee	575	575	560	535	- 40	-7%
Town of Amberg	685	665	630	585	- 100	-15%
Town of Athelstane	515	515	505	485	- 30	-6%
Town of Beaver	1,215	1,250	1,250	1,220	5	0%
Town of Beecher	755	770	765	740	- 15	-2%
Town of Dunbar	980	980	960	920	- 60	-6%
Town of Goodman	575	560	530	490	- 85	-15%
Town of Grover	1,940	2,005	2,025	1,990	50	3%
Town of Lake	1,270	1,325	1,350	1,335	65	5%
Town of Middle Inlet	875	890	890	865	- 10	-1%
Town of Niagara	870	870	855	820	- 50	-6%
Town of Pembine	870	865	840	795	- 75	-9%
Town of Peshtigo	4,415	4,560	4,605	4,530	115	3%
Town of Porterfield	2,115	2,160	2,170	2,115	0	0%
Town of Pound	1,525	1,565	1,575	1,535	10	1%
Town of Silver Cliff	555	575	590	585	30	5%
Town of Stephenson	3,320	3,445	3,485	3,435	115	3%
Town of Wagner	705	715	710	685	- 20	-3%
Town of Wausaukee	1,115	1,135	1,125	1,090	- 25	0.0
County Total	42,865	43,400	42,955	41,445	- 57	-4%

Source: WDOA Population Projections, 2013.

2. Planning Area

► Housing Trends

The housing in Marinette County was primarily built between 1970 - 1999 (41.6%). The next largest group of housing age is from 1940 - 1969 (26.0%), followed by the units built since 2000 (17.0%). Houses built in 1939 or earlier are the smallest grouping (15.5%).

*Older structures are also more commonly linked to lead paint and pipes and asbestos hazards.

The county and the municipalities have seen a lot of fluctuation in the number of housing units from decade to decade (Table 2.4).

Table 2.4: Marinette County Housing Unit Trends, 2000-2020

Municipality	2000	2010	2020	# Change 2000-2020	% Change 2000-2020
City of Marinette	5,553	5,464	5,415	-138	-2.5%
City of Niagara	812	797	784	-28	-3.5%
City of Peshtigo	1,416	1,621	1,614	198	12.2%
Village of Coleman	352	343	338	-14	-4.1%
Village of Crivitz	457	533	528	71	13.3%
Village of Pound	174	164	170	-4	-2.4%
Village of Wausaukee	294	325	309	15	4.6%
Town of Amberg	942	1,051	1,004	62	5.9%
Town of Athelstane	995	1,202	1,065	70	5.8%
Town of Beaver	542	797	742	200	25.1%
Town of Beecher	971	1,097	1,034	63	5.7%
Town of Dunbar	793	883	838	45	5.1%
Town of Goodman	680	840	785	105	12.5%
Town of Grover	676	763	774	98	12.8%
Town of Lake	524	875	807	283	32.3%
Town of Middle Inlet	643	899	795	152	16.9%
Town of Niagara	453	549	542	89	16.2%
Town of Pembine	871	1016	936	65	6.4%
Town of Peshtigo	1,567	1,854	1,896	329	17.7%
Town of Porterfield	848	993	998	150	15.1%
Town of Pound	537	628	620	83	13.2%
Town of Silver Cliff	963	1,162	1,084	121	10.4%
Town of Stephenson	3,777	4,708	4,300	523	11.1%
Town of Wagner	384	591	600	216	36.5%
Town of Wausaukee	1,036	1,224	1,211	175	14.3%
County Total	26,260	30,379	29,189	2,929	9.6%

Source: U.S. Decennial Census, 2000 - 2020.



► Employment Characteristics

Marinette County has numerous large companies that employ thousands of people. In 2018, the State of Wisconsin created 120 economic opportunity zones, a designation under a new federal tax law created to increase development. The program creates a tax incentive for businesses and individuals to invest in these zones. In Marinette County, both Crivitz and Marinette were designated economic opportunity zones.

The economy of Marinette County employs 19,123 people, primarily in manufacturing; trade, transportation, utilities; and education and health services industries. These three industries make up 69.8% of total employment in the county. Shipbuilding is a major industry in the Marinette area, while other prominent companies in the county specialize in advanced manufacturing industries such as custom chemical manufacturing, pulp and paper, transportation, and energy. Education and training and health and medical care are major other major employers.

Civilian Labor Force

Civilian Labor Force is the sum of civilian employment and civilian unemployment. These individuals are civilians (not members of the Armed Services) who are age 16 years or older, and are not in institutions such as prisons, hospitals, or nursing homes. Changes in the age and sex characteristics of the population, changes in the number of residents aged 16 and over, and the proportion of this group working or seeking employment are all factors affecting the size of the labor force. Table 2.4 illustrates the trends of the county’s civilian labor force from 2000 - 2022.

Employment in Marinette County increased by 1.4% or 246 jobs across all industries from 2020 to 2021. In comparison, Wisconsin’s total employment grew by 2.4% over the year. As of 2021, employment in the county was still 2.6% below the 2019 level while Wisconsin’s total employment was 3.1% below 2019. The jobs outlook remains uncertain amid concerns over inflation, international supply chain disruptions, pandemic-induced behavioral changes, and subsequent monetary policy changes.

Unemployment Rate

As a result of the COVID-19 Pandemic, the unemployment rate in Marinette County peaked at 18.7%. The economy recovered rapidly after the most stringent lockdowns were lifted; however, throughout 2021 and 2022, the local unemployment rate has continued to trend toward pre-pandemic levels. The 2022 unemployment rate for the county was 3.81%.

Table 2.4: Marinette County Civilian Labor Force Trends, 2000-2022

Year	2000	2010	2015	2020	2022
Unemployed	1,166	1,668	1,528	862	757
Employed	20,336	19,783	18,969	18,573	19,123
Total	21,502	21,451	20,497	19,435	19,880
Unemployment Rate	5.42%	7.78%	7.45%	4.44%	3.81%

Source: U.S. Census, ACS 2000, 2010, 2015, 2020, 2022.

2. Planning Area

► Land Use and Natural Resources

Land and water resources are essential for farming, grazing, forestry, wildlife, tourism, development, transport, infrastructure, and other environmental functions. The increasing demand for land, partnered with a limitation in its supplies, is a major cause for conflicts over land use throughout the region,

Land use planning is becoming complex and multidisciplinary as counties face multiple obstacles that need to be addressed within a single planning framework. Such problems include nonpoint-source pollution, water allocation, urbanization, ecosystem deterioration, climate change, deforestation, desertification, farmland deterioration, and low economic growth.

Land use management can be aided through GIS (geographic information systems), computer simulation, and spatial-temporal data modeling on present land use, alternative scenarios, and assessment of consequences. Using GIS, land use types were tabulated to calculate the total area of Marinette County at 914,432 acres, or just under 1,430 square miles. Table 2.5 details that the vast majority of the county is comprised of natural areas (specifically woodlands) with 740,000 acres, or 81% of the land. Agricultural land (crops and pasture) comprise 109,714 acres, or 12%. Approximately 45,600 acres, or about five percent of Marinette County is developed.

Table 2.5: Marinette County Land Use

Land Use Category	Acres	% of Total Land Use
Woodlands/Natural Areas	738,979	81
Agricultural	109,714	12
Water Features	20,114	2.2
Roads	19,200	2.1
Residential	12,800	1.4
Parks and Recreation	4,571	0.5
Open Space	2,242	0.3
Transportation	1,828	0.2
Mobile Homes	1,800	0.2
Industrial	954	0.1
Commercial	950	0.1
Communication/Utilities	915	0.1
Government/Institutional	365	0.04
TOTAL ACRES	914,432	100

Source: Bay-Lake Regional Planning Commission, 2023.

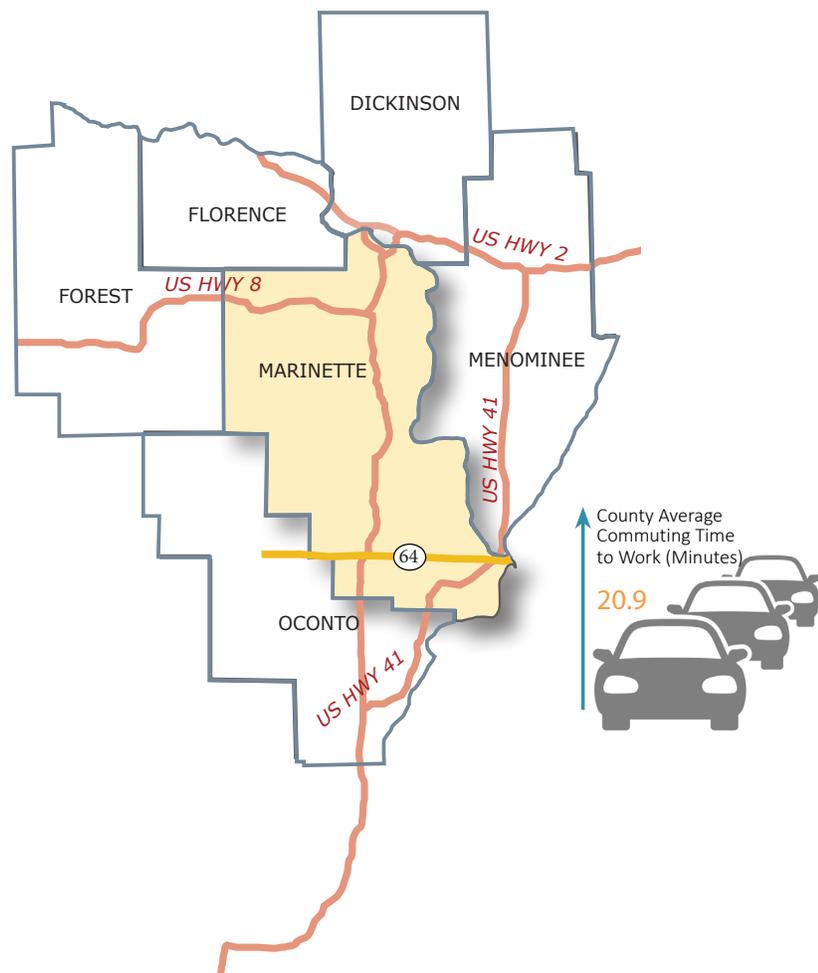


► Commuting Patterns

Census data reveals commuting patterns and flows to uncover the shape and contours of Marinette County's transportation. The information illustrates the residence/workplace relationship or an origin-destination combination. Commuting flows are created from home (place of residence) to work (primary place of employment). It is important to know where people work by residence-based and workplace-based as this can aid future decisions regarding public health and infrastructure. As well as understanding potential risks involved with infrastructure maintenance and more suitable options long-term. According to the Wisconsin Department of Workforce Development's 2023 Workforce Profile of Marinette County, the average commute time for county residents is 20.9 minutes. Most working residents work within Marinette County versus those residents commuting out of the county for work (27.7%). Those workers who live in a different county and commute to Marinette County makeup roughly 12.4% of those workers employed by county businesses and industries.

Health-wise, non-vehicle networks improve local air and water quality for the entire region and local communities. As individuals choose to bike or walk to destinations such as work, school, shopping, or other purposes, greenhouse gas emissions will decrease and air quality will improve. Motor vehicles add to more than 50% of asthma triggers in urban areas, according to the U.S. Centers for Disease Control and Prevention (CDC).

The transportation network of highways, rail, and water provide a basis of moving people, goods, and services. The challenge is maintaining the infrastructure to efficiently and safely provide those functions. To the north, I-41 provides a route to Marinette and Florence counties. The majority of people who work in Marinette County live in the county; however, there are also a large number of people who live in Menominee County, MI, Oconto County, and Dickinson County, MI.



3. Risk Assessment

A risk assessment has been prepared for Marinette County in order to provide an effective evaluation of potential hazard mitigation measures and develop useful strategies to address the risks associated with the identified natural hazards. The risk assessment identifies the hazards determined to pose the greatest risk to residents of the county, to profile the extent and severity of past natural hazard events that have affected the county, and to assess the vulnerability of the county to the risk of future natural hazard events.

► Natural Hazard Identification

Although the county could potentially be at risk from several distinct hazards, this plan focuses on addressing the hazards that pose the greatest risk to people and property in the county. Identification of the natural hazards to be addressed was based on a query of the natural hazards that have impacted the county in the past, as determined from historical hazard occurrences data from the National Oceanic and Atmospheric Administration (NOAA) National Climatic Data Center (NCDC) and wildland fire data from the Wisconsin Department of Natural Resources (WDNR).

Hazard Risk Assessment Prioritization

To develop a hazard risk assessment prioritization for natural hazards, the steering committee participated in a consensus-based prioritization exercise. The steering committee used the number and frequency of occurrences, the number of injuries and deaths, the estimated costs of damages from the NCDC data, and professional knowledge and experience to guide the ranking of the natural hazards.

Ranking the potential risks associated with each natural hazard helped the steering committee prioritize the mitigation strategies that were addressed later in the process. The following natural hazards combined more than one listing from the NCDC data for consistency (the additional listings are provided in parenthesis). The committee ranking is detailed in Table 3.1.

- Tornado/Strong wind (includes thunderstorm wind, high wind, and funnel cloud);
- Lightning/Thunderstorm (includes heavy rain)
- Flooding (includes flash, riverine, lake, and stormwater flooding);
- Winter storm (includes heavy snow, ice storm, winter weather, and blizzard);
- Extreme cold (includes frost/freeze and cold/wind chill)

Table 3.1: Risk Assessment Ranking

Rank	Hazard	# of Events
1	Tornado/Strong Wind	104
2	Lightning/Thunderstorm	4
3	Winter Storm	132
4	Wildland Fire	1,433
5	Flooding	18
6	Hail	79
7	Extreme Cold	19
8	Excessive Heat	ND
9	Drought	41
10	Dense Fog	3
11	Coastal Hazards	ND
12	Dam Failure Flooding	ND

Source: Marinette County Hazard Mitigation Plan Steering Committee, 2024.



► Natural Hazard Events Historical Summary

A query of historical hazard events from January 1, 2000 through October 10, 2023 resulted in 1,833 events (Table 3.1). The data was compiled from NCDC and WDNR. NCDC publishes National Weather Service (NWS) data describing past weather events and the resulting deaths, injuries, and damages associated with each of these events. Event occurrence information is available at a local, county, or regional level - depending on the area covered by the hazard event. WDNR compile data annually on wildland fire occurrences.

The hazard occurrence data shows that of the 1,833 events, the hazards occurring most frequently in Marinette County from January 1, 2000 to October 10, 2023 include: wildland fire (1,433 events), winter storm (132 events), tornado/strong wind (104 events), and hail (79 events). Other hazard events in the county since 2000 include drought (41 events), extreme cold (19 events), flooding (18 events), lightning/thunderstorm (4 events), and dense fog (3 events).

Some of the recorded hazard events may not have been specific to Marinette County, as they may have been recorded for a larger regional area, or statewide. Additionally, some of the common hazard events, such as lightning, may only get reported to the NCDC if it was an extreme event that caused property damage, injury, or death.

There has been two deaths and two injuries from natural hazards in Marinette County in the last 23 years. One death and one injury caused by tornadoes, and the other death and other injury caused by flooding. There have been eight indirect injuries and two indirect deaths from winter storms, and one indirect death due to dense fog. "Indirect" meaning that the hazard event did not directly cause the injury/death, but heavily influenced it (e.g. low visibility in fog leading to a fatal vehicle collision).

By far, the costliest hazard event in terms of property damage (including crop damage) since 2000 has resulted from tornadoes/strong wind. Tornadoes/strong wind has cost Marinette County a reported \$4,381,000 since 2000. According to the NWS, damage results from the strong winds within a tornado. The Enhanced Fujita Scale is designed to assess damage produced by tornadoes and uses a scale ranging from EF0 (weak tornado with winds ranging from 65-85 mph) to EF5 (very violent tornado with winds over 200 mph). Even the weakest tornadoes can still be costly to clean up after.



3. Risk Assessment

Table 3.2: Natural Hazard Occurrences Data, 2000 - 2023, Marinette County

Natural Hazard	# of Events ¹	Average #/Year	Risk ²	Deaths	Injuries	Reported Crop Damage	Reported Property Damage ³
Tornado/Strong Wind	104	4	Very High	1	1	\$0	\$4,381,000
Lightning Storm/Thunderstorm	4	0	Low	0	0	\$0	\$100,000
Flooding	18	1	Low	1	1	\$200,000	\$807,300
Winter Storm	132	6	Very High	0	0	\$0	\$0
Drought	41	2	High	0	0	\$0	\$0
Hail	79	3	Very High	0	0	\$0	\$0
Extreme Cold	19	1	Low	0	0	\$0	\$0
Excessive Heat	ND	0	ND	0	0	\$0	\$0
Coastal Hazards	ND	ND	Moderate ⁴	0	0	ND	ND
Dense Fog	3	0	Low	0	0	\$0	\$10,000
Wildland Fire	1,433	60	Very High	ND	ND	ND	ND
Dam Failure Flooding	ND	ND	Low	ND	ND	ND	ND
Total Events	1,833	77	--	2	2	\$200,000	\$5,298,300

ND = No data

1. January 1, 2000 to October 10, 2023 (23.78 years)

2. Risk based on occurrences per year: High >3; Moderate 1-3; Low <1

3. Does not factor in private losses for most occurrences.

4. Based on information provided by Resource Guide for Great Lakes Coastal Hazards in Wisconsin

Source: NOAA NCDC Storms Database, 2000-2023.

► Disaster Declaration History

There have been 20 major (federal) disaster declarations issued for Wisconsin since 2000. The most recent major natural hazard disaster declaration to affect Marinette County was on July 19, 2019. The President of the US declared that a major disaster existed in the State of Wisconsin, to include Marinette County. FEMA Disaster-4459 was a severe storm that impacted the southern portion of the county.

► Other Natural Hazards Determined Not to Pose a Significant Risk

Earthquakes, landslides, and land subsidence have impacted Wisconsin in the past, but have been determined to have minimal likelihood of occurring in Marinette County. Therefore, a full risk assessment for these hazards has not been included, but are briefly described here:

Earthquakes

According to the U.S. Geological Survey (USGS), there have been 20 earthquake events in Wisconsin. The closest of these to Marinette County was a 2.5 magnitude earthquake which occurred in southwestern Forest County (Crandon) on January 7, 2024. Where readings were available, these events were relatively small, most being 3.0 to 4.2 on the Richter Scale in intensity, and the largest measuring at 5.3 (Beloit, 1909), which may be strong enough to crack some plaster, but typically does not cause serious damage. Due to the infrequency of events, some geologists question whether many of these events were true earthquakes, but rather were quarry collapses, blasts, etc. The nearest active earthquake fault outside of Wisconsin is the New Madrid Fault, which stretches from northeast Arkansas to southern Illinois.



Marinette County falls within the lowest earthquake hazard shaking area, which represents the levels of horizontal shaking which have a 1-in-50 chance of being exceeded in a 50-year period. Similarly, Marinette County falls within a 0%g to 1%g peak ground acceleration (PGA) zone, as shown on the USGS PGA values map with a 10% chance of being exceeded over 50 years. Therefore, the county is considered unlikely to be substantially affected by earthquakes in the long-term future. The earthquake threat to the county is very minimal.

Landslides

The term “landslide” includes a wide range of ground movement, including rock falls, deep failure of slopes, and shallow debris flows. Although gravity acting on an overly steep slope is the primary reason for a landslide, there can be other contributing factors, such as erosion by rivers, excess weight from the accumulation of rain or snow, or man-made and other structures stressing weak slopes to the point of failure. In addition, slope material that becomes saturated with water may develop a debris flow or mudflow.

The USGS Landslide Overview Map of the Conterminous United States identifies no large-scale landslide risks for most of the county. The majority of the land within the county does not involve steep slopes and does not pose a landslide risk. While there are steeper portions of the county, the soils involved pose more of a gradual erosion risk, as opposed to the sudden, large-scale movement of ground associated with landslide hazards. Hillside erosion (minor landslides) within the county is very uncommon, and is the result of man-made impacts, such as the removal of vegetation. Hillside erosion has not posed substantial risk to life or property, and has been largely mitigated through subdivision law, site plan review, and erosion control plans for construction sites.

There are no records of substantial landslides occurring in Marinette County, and the threat from landslides is very low.

Land Subsidence

Land subsidence is an event in which a portion of the land surface collapses or settles. Common causes of subsidence are location in an area with karst topography or location in an area where large amounts of groundwater have been withdrawn. There are no records of substantial damage or injury from land subsidence within the county, therefore they pose minimal threat to the county.

► Risk and Vulnerability Assessment

The risk and vulnerability assessment is intended for describing the frequency, severity, and probability of future occurrence of natural hazards that could impact the planning area. The following hazard profiles describe the characteristics of each natural hazard and how they have historically affected the population, infrastructure, and environment of the planning area, and the potential risk to the population and property.

► Critical Facilities/Utilities

Although the risk assessment focuses on the risk potential to the overall planning area, critical facilities are of particular concern. The function of critical facilities and utilities is to either preserve the health, welfare, and quality of life for residents in the county; or fulfill important public safety, emergency response, and/or disaster recovery functions; or to house vulnerable populations (such as those located in schools, childcare, and manufactured housing communities).

Critical facilities and utilities in the planning area have been identified and mapped, and are illustrated in Maps 3.1 and 3.2. Table 3.3 lists the types and number of critical facilities and utilities within Marinette County. Table 3.4 lists the number of critical facilities and utilities by municipality.

The ANR Pipeline is also a critical facility in Marinette County, but has not been mapped due to the sensitivity of its specific location, as determined by the ANR Pipeline Company.



3. Risk Assessment

Table 3.3: Number of Critical Facilities and Utilities by Type, Marinette County

Type	Number of Critical Facilities/Utilities
Bridge	186
Communication Tower/Facility	78
Dry Hydrant/Fire Pond	49
Parks and Campground	45
Institutional/Government Facility	44
Police/Fire/Rescue	34
Healthcare Facility	31
Hazmat	28
Utility	26
Water Supply Facility	24
Municipal Garage	23
School (Primary & Secondary)	24
Manufactured Housing Community	21
Dam	19
Daycare	19
Fuel Substation	16
Post Office	11
Resident Health Care Facility	8
Wastewater Treatment Facility	8
Temporary Emergency Gathering Center	6
Gravel Pit	5
Post Disaster Recovery Site	5
Licensed Childcare Facility	4
Port Facility	2
Post-Secondary School	2
Airport Facility	1
Military Installation	1
Private School	1
Sewage Lift Station	1
Total	722

Source: Bay-Lake Regional Planning Commission, 2024

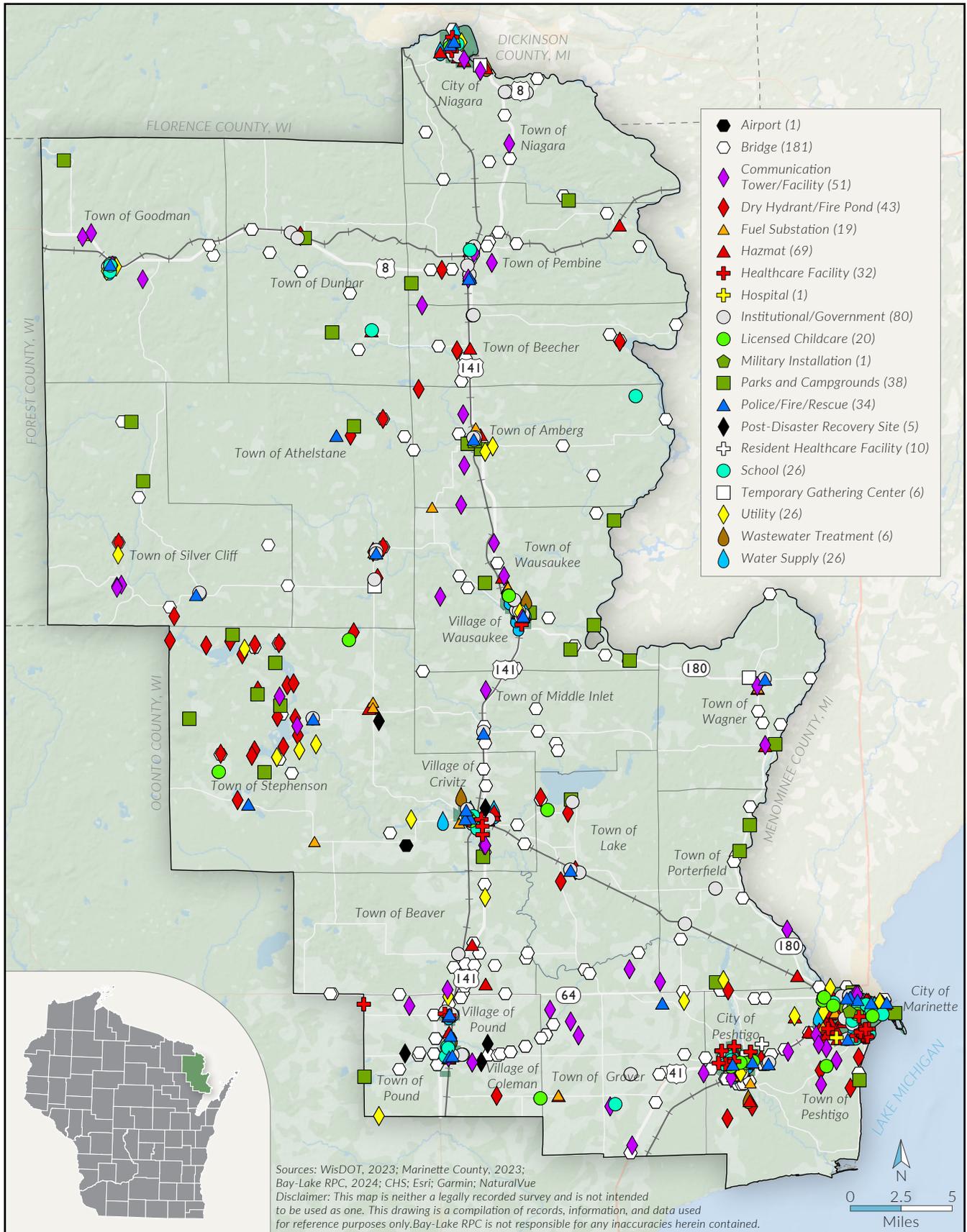
Table 3.4: Number of Critical Facilities and Utilities by Municipality, Marinette County

Municipality	Number of Critical Facilities/Utilities
City of Marinette	104
City of Niagara	21
City of Peshtigo	45
Town of Amberg	29
Town of Athelstane	15
Town of Beaver	15
Town of Beecher	11
Town of Dunbar	24
Town of Goodman	19
Town of Grover	21
Town of Lake	20
Town of Middle Inlet	11
Town of Niagara	19
Town of Pembine	35
Town of Peshtigo	42
Town of Porterfield	15
Town of Pound	30
Town of Silver Cliff	17
Town of Stephenson	117
Town of Wagner	17
Town of Wausaukee	23
Total	722

Source: Bay-Lake Regional Planning Commission, 2024

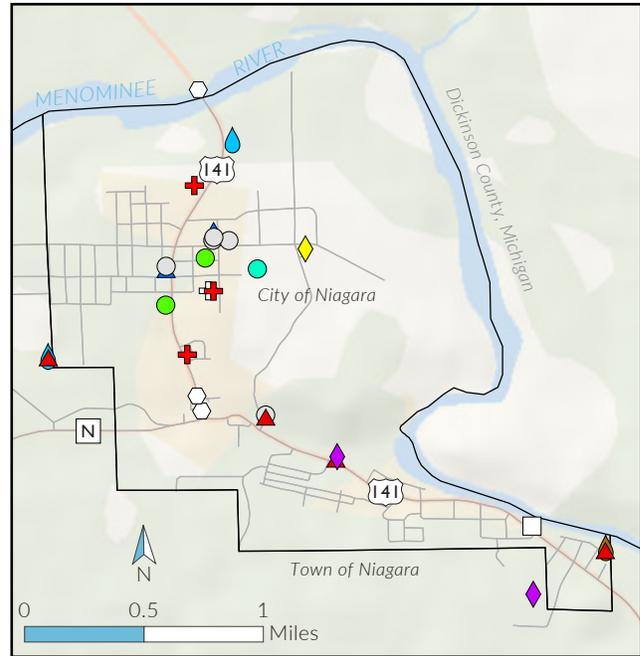
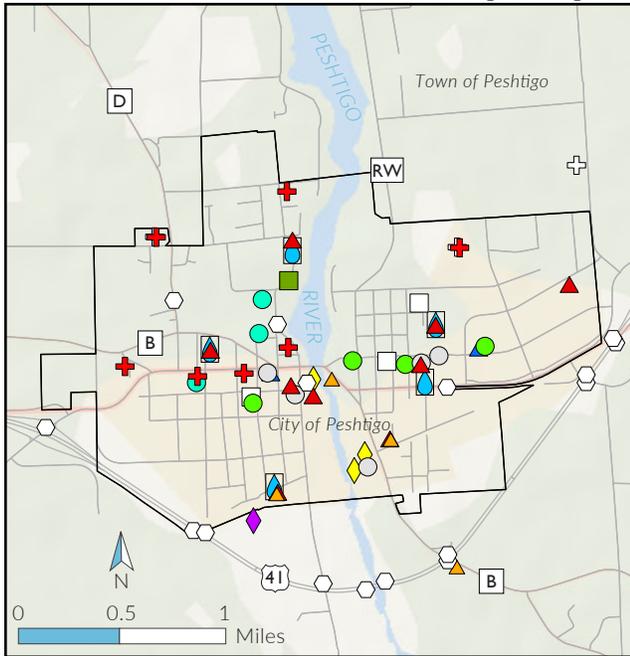


Map 3.1- Critical Facilities, Marinette County

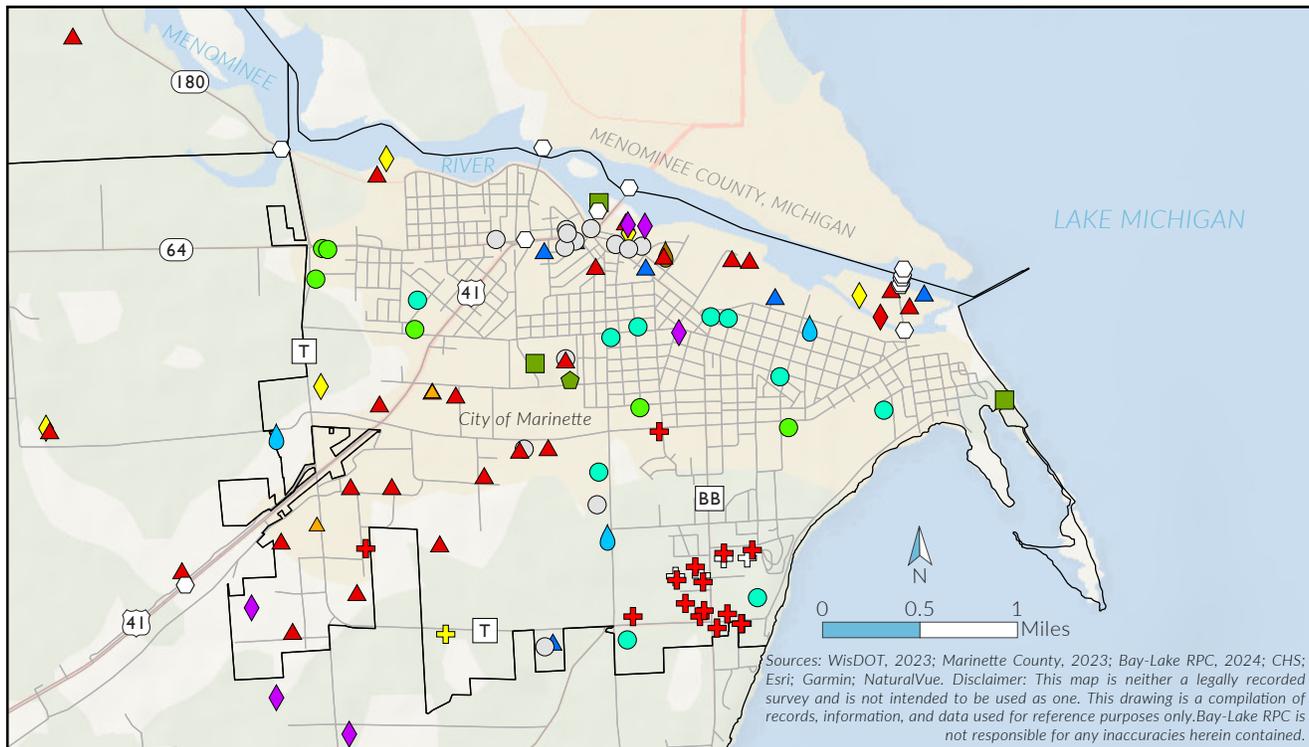


3. Risk Assessment

Map 3.2 - Critical Facilities, Cities of Peshtigo, Niagara, and Marinette



● Airport	▲ Hazmat	◆ Military Installation	● School
○ Bridge	⊕ Healthcare Facility	■ Parks and Campgrounds	□ Temporary Gathering Center
◆ Communication Tower/Facility	⊕ Hospital	▲ Police/Fire/Rescue	◆ Utility
◆ Dry Hydrant/Fire Pond	○ Institutional/Government	◆ Post-Disaster Recovery Site	● Wastewater Treatment
▲ Fuel Substation	● Licensed Childcare	⊕ Resident Healthcare Facility	● Water Supply



► Hazard Profiles

The following pages contain hazard profiles describe the frequency, severity, and probability of future natural hazards that may have an impact on Marinette County. These hazard profiles attempt to historically describe the cause and characteristics of each natural hazard and how they have impacted the population, infrastructure, and environment of the county.

Potential risks are evaluated to determine their likelihood of re occurrence and to gauge the impacts to the existing population and property that could occur as a result of these hazards.

Hazard probabilities are represented as very high, high, moderate, and low risk. Very high probability hazards are defined as hazards that occur an average of more than three incidents per year; high risk probability hazards are those that occur an average of two to three incidents per year; moderate risk probability hazards are those that occur an average of once per year; and low risk probability hazards occur less frequently than once per year.

Effects of Climate Change on Natural Hazards

Climate change has already begun to impact Wisconsin, the U.S., and the world. These impacts include increases in heat waves, extreme weather events, flooding, droughts, and other climatic events.

The Wisconsin Initiative on Climate Change Impact's (WICCI) 2021 Assessment Report outlines the climate change trends in Wisconsin. Overall, the report outlines Wisconsin's climate as becoming warmer and wetter. Springs and summers are seeing warmer temperatures and an increase in the intensity of rain and storm events, while seeing a decline in the number of precipitation events. Fall and winter are seeing warmer temperatures and an increase in precipitation. The winter months are seeing the largest changes in temperature and precipitation.

Marinette County Climate Change Impacts

Marinette County could expect to see an increase in extreme storms, wildland fires, droughts, outbreaks of new pests that can survive in a warmer climate, flooding, heat, and other climatic stressors and events.

1. Tornado and Strong Wind 
2. Lightning and Thunderstorm 
3. Winter Storm 
4. Wildland Fire 
5. Flooding 
6. Hail 
7. Extreme Cold 
8. Excessive Heat 
9. Drought 
10. Dense Fog 
11. Coastal Hazards 
12. Dam Failure Flooding 



3. Risk Assessment



Tornado and Strong Wind

Description

A tornado is a relatively short-lived storm comprised 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 tornadoes may have winds in excess of 300 miles per hour. Hazards are those that occur an average of two to three incidents per year; moderate risk probability hazards are those that occur an average of once per year; and low risk probability hazards occur less frequently than once per year.

A tornado path averages four miles, but may reach up to 300 miles in length. Widths average 300 to 400 yards, but severe tornadoes have cut swaths a mile or more in width, or have formed groups of two or three funnels traveling together. On average, tornadoes move between 25 and 45 miles per hour, but speeds over land of up to 70 miles per hour have been recorded. Tornadoes rarely last more than a couple of minutes in a single location or more than 15 to 20 minutes in a ten mile area, but their short periods of existence do not limit their devastation of an area.

The destructive power of the tornado results primarily from its high wind velocities and sudden changes in pressure. Wind and pressure differentials probably account for 90 percent of the damage caused by tornadoes. Since tornadoes are generally associated with severe storm systems, they are usually accompanied by hail, torrential rain, and intense lightning. Depending on their intensity, tornadoes can uproot trees, down power lines and destroy buildings. Flying debris can cause serious injury and death. On the basis of 40 years of tornado history and more than 100 years of hurricane history, the United States has been divided into four zones that geographically reflect the number and strength of extreme wind storms. The zone which includes most of the southern two-thirds of Wisconsin (known as Zone IV) has experienced the most and the strongest tornado activity that has affected the entire U.S., with wind speeds of up to 250 miles per hour being recorded at some point. This zone includes the entire county for this Natural Hazards Mitigation Plan.

Wisconsin lies along the northern edge of the nation’s maximum frequency belt for tornadoes (commonly known as “tornado alley”), which extends northeastward from Oklahoma into Iowa and then across to Michigan and Ohio. Generally, the southern and western portions of Wisconsin have a higher frequency of tornadoes; however, every county in Wisconsin has had tornadoes and is considered to be susceptible to a tornado disaster. Wisconsin’s tornado season runs from the beginning of April through September, but have occurred during every month of the year. The most severe tornadoes statewide typically occur during the months of April, May, and June. Many tornadoes strike in late afternoon or early evening. However, tornadoes have occurred during other times of the day. Personal property damage, deaths, and injuries have and will continue to occur due to tornado events in Wisconsin.

Table 3.5 shows the Enhanced Fujita (EF Scale), which is recognized as the acceptable tornado magnitude measurement rating.

Table 3.5: Enhanced Fujita Scale (EF Scale)

EF Rating	Wind Speeds	Expected Damage
EF-0	65-85 mph	'Minor' damage: shingles blown off or parts of a roof peeled off, damage to gutters/siding, branches broken off trees, shallow rooted trees toppled. 
EF-1	86-110 mph	'Moderate' damage: more significant roof damage, windows broken, exterior doors damaged or lost, mobile homes overturned or badly damaged. 
EF-2	111-135 mph	'Considerable' damage: roofs torn off well constructed homes, homes shifted off their foundation, mobile homes completely destroyed, large trees snapped or uprooted, cars can be tossed. 
EF-3	136-165 mph	'Severe' damage: entire stories of well constructed homes destroyed, significant damage done to large buildings, homes with weak foundations can be blown away, trees begin to lose their bark. 
EF-4	166-200 mph	'Extreme' damage: Well constructed homes are leveled, cars are thrown significant distances, top story exterior walls of masonry buildings would likely collapse. 
EF-5	> 200 mph	'Massive/incredible' damage: Well constructed homes are swept away, steel-reinforced concrete structures are critically damaged, high-rise buildings sustain severe structural damage, trees are usually completely debarked, stripped of branches and snapped. 

Source: NOAA National Weather Service, 2023.





Tornado and Strong Wind

Previous Significant Hazard Occurrences

According to the NCDC, Marinette County has experienced 104 significant tornado/strong wind events (including thunderstorm wind, high wind, and funnel clouds) in the past 23 years from January 1, 2000 to October 10, 2023. Map 3.3 shows the tracks of these tornadoes that occurred during this time.

Recent tornado occurrences of note include four separate events on June 15, 2022 that impacted the areas of Silver Cliff, Middle Inlet, Amberg, and Pembine. The Silver Cliff tornado was an EF-2, while the three others were EF-1. The Silver Cliff tornado caused \$4 million in property damage.

Hazard Frequency

Based on previous hazard occurrences as reported by the NCDC, Marinette County experiences approximately four significant tornado/strong wind events per year.

Probability of Hazard Occurring in the Future

Probability of Hazard Occurring in the future based on the hazard frequency, Marinette County is considered to have a very high probability of experiencing a tornado/strong wind event in any given year.

Areas of Greatest Risk

Tornadoes and strong wind events have no defined hazard area within the county. Past events have been relatively uniform across the planning area making the events a countywide concern. However, mobile/manufactured home residents are often most vulnerable to death, injury, and property damage from tornadoes and strong winds due to the high concentration of individual homes that are more apt to be damaged than standard site-built homes. Therefore, mobile/manufactured home parks in the planning area are the areas of greatest risk from this hazard. Besides mobile/manufactured homes, campground patrons are vulnerable to tornadoes because there usually is little shelter provided. The following is a list of things that may be affected by a tornado in Marinette County.

- 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/manufactured homes/parks, garages, trees and limbs,

Facilities considered most vulnerable to tornadoes are identified on Map 3.3

Impacts from Hazard

Death and Injury

One death and one injury have been reported from significant tornado/strong wind events for Marinette County over the past 23 years from January 1, 2000 to October 10, 2023, according to the NCDC data. The death occurred during an EF0 tornado event in Wausaukee on August 19, 2011. It also caused \$110,000 in property damages. The injury occurred during an EF1 tornado event in the unincorporated community of Harmony on June 7, 2007.

Structures at Risk

Although tornadoes strike at random, making all buildings vulnerable, there are three types of structures that are most likely to suffer damage. These structure types include manufactured homes, homes on crawlspaces (because they are more susceptible to lift), and buildings with large spans (such as airplane hangars, gymnasiums, warehouses, and factories).

Structures within the direct path of a tornado vortex are often reduced to rubble. However, structures adjacent to the path of the tornado are often severely damaged by high winds flowing into the tornado vortex (these winds are known as inflow winds). It is here, adjacent to the tornado's path, where the building type and construction techniques are critical to the structure's survival.

Similar to severe thunderstorms, street signs often face disrepair after tornadoes, and debris often litter streets and highways following a tornado, requiring cleanup. Downed trees caused by tornadoes can be problematic in terms of impacting infrastructure (transportation, sewer, water, etc.) as well as critical facilities.



3. Risk Assessment



Tornado and Strong Wind

Impacts from Hazard (Cont.)

Critical Facilities

All critical facilities in Marinette County are vulnerable to tornadoes and strong winds. Hospitals can see increases in patient load following tornadoes. Schools can sustain damage, and if they do not sustain damage, they often function as temporary shelters in the aftermath of tornadoes. Law enforcement and fire departments often see an increased workload during and after tornadoes. Powerlines and communication towers are at risk of being blown down.

Any critical facility in the planning area is capable of being hit. However, schools are a main concern for two reasons: (1) they have large numbers of people present, either during school or as a storm shelter; and (2) they have large span areas, such as gyms and theaters.

Tornado safe rooms and shelters should be constructed using FEMA regulations and guidelines.

Economic Impacts

A tornado can have a significant economic impact to a local economy due to irrecoverable businesses and infrastructure damages. A heavily damaged business, especially one that was struggling to make a profit, often never reopens after the hazard event.

Infrastructure damage is usually limited to above ground utilities, such as power lines. Damage to utility lines can usually be repaired or replaced relatively quickly. Damage to roads and to railroads is also localized; if these facilities cannot be repaired promptly, alternate transportation routes are usually available.

Public expenditures include search and rescue, shelters, and emergency protection measures. The greatest public expenditures for a community result from repairs to public facilities, and clean up and disposal of debris. Most public facilities are insured, so the economic impact on the local treasury is likely to be small. Clean up and disposal can be a larger problem, especially if there is limited landfill capacity near the damage site.

Property Damage

Reported significant property damage from tornadoes for Marinette County has totaled approximately \$4,381,000 in property damages over the past 23 years from January 1, 2000 to October 10, 2023 according to the NCDRC data.

Estimate of Potential Dollar Issues

Historic data is used to estimate potential future dollar losses due to tornado/strong wind events. Estimated damages resulting from various tornadoes in Marinette County range from \$1 million up to \$16 million depending on the number of events in a given year.

Climate Change Impacts

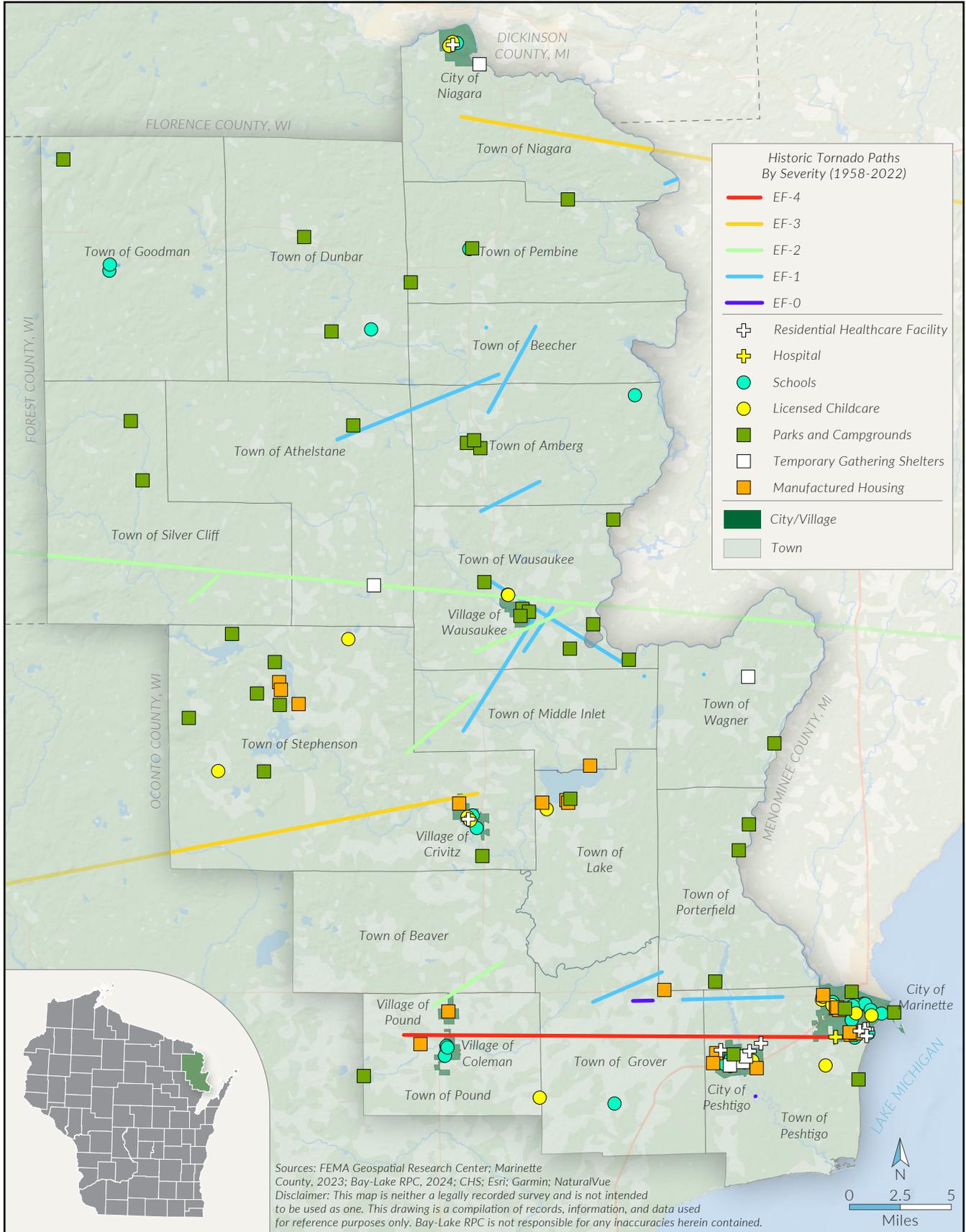
Climate change is causing an increase in the frequency and severity of extreme weather events. Tornadoes and wind events tend to be associated with other extreme weather events, such as thunderstorms. Because of the increasing frequency of extreme weather events as a result of climate change and the associated potential of increased tornado events, future impacts of tornado hazards can be expected to be higher than historic risk.



Photo provided by Marinette County



Map 3.3- Historic Track of Tornadoes and Facilities Vulnerable to Tornadoes, Marinette County



3. Risk Assessment



Lightning and Thunderstorm

Description

Lightning and thunderstorms are most likely to happen in the spring and summer months and during the afternoon and evening hours, but can occur throughout the year and at all hours. The biggest threats from thunderstorms are lightning, high winds, and hail.

Lightning, which occurs during all thunderstorms, can strike anywhere. Generated by the buildup of charged ions in a thundercloud, the discharge of a lightning bolt interacts with the best conducting object or surface on the ground. The air in the channel of a lightning strike reaches temperatures higher than 50,000 degrees Fahrenheit. The rapid heating and cooling of the air near the channel causes a shock wave which produces thunder.

Thunderstorms winds include downburst winds and high winds. Downburst winds are strong, concentrated, straight-line winds created by falling rain and sinking air that can reach speeds of 125 miles per hour. High winds are high speeds winds that can be as damaging as a tornado, but remaining nearly straight line and are not the rotating column of air that is characteristic of a tornado.

Hailstones are ice crystals that form within a low pressure front due to warm air rising rapidly into the upper atmosphere and the subsequent cooling of the air mass. Frozen droplets gradually accumulate on the ice crystals until, having developed sufficient weight, they fall as precipitation. The size of hailstones is a direct function of the severity and size of the storm. Significant damage does not result until the hailstones reach 1.5 inches in diameter, which occurs in less than half of all hailstorms.

The National Weather Service classifies a thunderstorm as severe if its winds reach or exceed 58 miles per hour, produces a tornado, or drops surface hail at least 0.75 inch in diameter. Compared with other atmospheric hazards (such as tropical cyclones and winter low pressure systems), individual thunderstorms affect relatively small geographic areas. The average thunderstorm system is approximately 15 miles in diameter, covers 75 square miles, and lasts less than 30 minutes at a single location. However,

weather monitoring reports indicate that coherent thunderstorm systems can travel intact for distances in excess of 600 miles.

Previous Significant Hazard Occurrences

According to the NCDC, Marinette County has experienced four significant lightning/thunderstorm events (including heavy rain) in the past 23 years from January 1, 2000 to October 10, 2023.

Hazard Frequency

Based on previous hazard occurrences as reported by the NCDC, Marinette County experiences approximately one significant lightning/thunderstorm event every six years. There are, of course, many other unrecorded events of lightning/thunderstorms that may not cause any damage or injuries.

Probability of Hazard Occurring in the Future

Based on the hazard frequency, Marinette County is considered to have a low probability of experiencing a lightning/thunderstorm event in any given year.

Areas of Greatest Risk

Based on review of the historic patterns of lightning and thunderstorms, there are no specific areas that are a higher than average risk. The events are relatively uniform throughout Marinette County. However, manufactured home residents are often most vulnerable to death, injury, and property damage from lightning and thunderstorms. Therefore, manufactured housing communities in the planning area are the areas of greatest risk from this hazard.





Lightning and Thunderstorm

Impacts from Hazard

Death and Injury

No deaths or injuries from severe lightning/thunderstorms have been reported for Marinette County over the past 23 years from January 1, 2000 to October 10, 2023, according to the NCDC data.

Structures at Risk

Mobile homes are at a high risk to damage from thunderstorms. Garages are also frequently damaged by thunderstorms. Wind and water damage can result when windows are broken by flying debris or hail. Lightning can cause direct damage to structures (especially those without lightning protection systems), and can cause fires that damage trees and structures. In addition, hail can inflict severe damage to roofs, windows, and siding, depending on hailstone size and winds. Downed trees and limbs cause frequent damage to structures during lightning and thunderstorms.

Critical Facilities

Hospitals can see increases in patient load with sufficiently severe lightning and thunderstorms. Schools can sustain damage, and if they do not sustain damage, they often function as temporary shelters in the aftermath of severe thunderstorms. Law Enforcement and fire departments often see an increased workload during and after lightning/severe thunderstorms. Emergency operations can be disrupted as lightning and thunderstorms affect radio and cellular communications, as antennas are a prime target for lightning.

Property Damage

Reported property damage from significant lightning/thunderstorm (including heavy rain) for Marinette County has totaled approximately \$100,000 over the past 23 years from January 1, 2000 to October 10, 2023 according to the NCDC data.

Estimate of Potential Dollar Losses

An estimate of potential dollar losses cannot be calculated for lightning/thunderstorms, since no vulnerable structures have been identified. Based on previous damages reported by the NCDC, property damages from lightning/thunderstorms has been minimal over the past 23 years.

Climate Change Impacts

There is no concrete assessment on whether lightning will increase with climate change, so the potential risk of impacts due to climate change cannot be predicted accurately.



3. Risk Assessment



Winter Storm

Description

Winter storms can vary in size and strength, and can include heavy snow storms, blizzards, freezing rain, sleet, ice storms 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. Winter storms can occur as a single event or they can occur in combination, which can make an event more severe. For example, a moderate snowfall could create severe conditions if it were followed by a freezing rain and subsequent extremely cold temperatures. The aftermath of a winter storm can impact a community or region for weeks, and even months.

A variety of weather phenomena and conditions can occur during winter storms. For purposes of classification, 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.
- **Winter Storm** - the occurrence of heavy snowfall accompanied by significant blowing snow, low wind chills, sleet or freezing rain.
- **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.

Much of the snowfall in Wisconsin occurs in small amounts of between one and three inches per occurrence. Heavy snowfalls (producing at least eight to ten inches of accumulation) happen on the average only five times per season.

True blizzards are rare in Wisconsin, and are more likely to occur in northwestern Wisconsin than in southern portions of the state, even though heavy snowfalls are more frequent in southeastern Wisconsin. However, blizzard-like conditions often exist during heavy snow storms when gusty winds cause the severe blowing and drifting of snow.

Both ice and sleet storms can occur at any time throughout the winter season from October into April. Early- and late- season ice and sleet storms are generally restricted to northern Wisconsin. Otherwise, the majority of these storms occur in southern Wisconsin.

In a typical winter season, there are three to five freezing rain events, and a major ice storm occurs on a frequency of about once every other year. If a half inch of rain freezes on trees and utility wires, extensive damage can occur, especially if accompanied by high winds that compound the effects of the added weight of the ice. There are also between three and five instances of glazing (less than one quarter inch of ice) throughout Wisconsin during a normal winter.

Winter storms present a serious threat to the health and safety of affected citizens, and can result in significant damage to property. This can occur when the heavy snow or accumulated ice causes structural collapse of buildings, downs power lines, severely affects electrical power distribution, or cuts off people from assistance or services. Winter storms in Wisconsin are caused by Canadian and Arctic cold fronts that push snow and ice deep into the interior of the United States.





Winter Storm

Previous Significant Hazard Occurrences

According to the NCDC, Marinette County has experienced 132 significant winter storm events (including heavy snow, ice storm, winter weather, and blizzard) in the past 23 years from January 1, 2000 to October 10, 2023.

Hazard Frequency

Based on previous hazard occurrences as reported by the NCDC, Marinette County experiences approximately six significant winter storm events per year.

Probability of Hazard Occurring in the Future

Based on the hazard frequency, Marinette County is considered to have a very high probability of experiencing a winter storm event in any given year. Winter storms tend to be a regional phenomenon in that they affect much of northeastern Wisconsin on nearly all of the occasions in which they affect Marinette County.

Areas of Greatest Risk

Winter storms have no defined hazard area within the planning area. Past events have been relatively uniform across the planning area or the larger regional area.



Photo provided by Marinette County

Impacts from Hazard

Death and Injury

No direct deaths or injuries have been reported from significant winter storm events for Marinette County over the past 23 years from January 1, 2000 to October 10, 2023 according to the NCDC data. In 2010, two indirect deaths and eight indirect injuries occurred in a three vehicle crash during winter weather.

Structures at Risk

Occasionally, heavy snow or accumulated ice will cause structural collapse of buildings (particularly roofs), but most buildings are now constructed with low temperatures, snow loads and ice storms in mind. In addition, with the modern focus on energy conservation, buildings are much better insulated than they were in the past. Therefore, for the most part, winter storms do not have a major impact on buildings in the planning area.

The major impacts of winter storms on infrastructure are to utilities and roads. Power lines and tree limbs can be coated with heavy ice in some winter storms, resulting in disrupted power and telephone service, often for days. Cable and satellite television services can also be negatively impacted in certain winter storm events. In the case of transportation, even small accumulations of ice can be extremely dangerous to motorists and pedestrians. Bridges and overpasses are particularly dangerous because they freeze before other surfaces.



3. Risk Assessment



Winter Storm

Impacts from Hazard (Cont.)

Critical Facilities

Street and road crews have an increased burden of snow removal (and salting in the case of ice storms) during and after winter storms. In some cases, winter storms can be so severe that these crews have to be called off the road for a period of time.

Hospitals and clinics can treat additional patients for frostbite, pedestrian and vehicular accident injuries, and conditions resulting from the shoveling of heavy snow during and following winter storms. Sometimes, these very hospitals and clinics have difficulty getting their own staff to report to work because of the storm, which increases the work load for the staff who is already there (double shifts, etc.).

Law enforcement department staff needs to respond to more accidents. Utility and telephone companies need to respond to downed electrical and telephone lines, especially in the case of ice storms. Rescue services can receive more calls because of accidents or health related circumstances. Schools may need to have early dismissal or cancel classes altogether. Shelters may take in additional homeless persons during winter storm events as well, although this has been less of an issue in Marinette than it has been in larger cities.

Economic Impacts

Loss of power often means that businesses and manufacturing concerns must close down. Loss of access due to snow or ice covered roads can have a similar effect, especially when trucks cannot travel on major thoroughfares to make “just in time” deliveries to business and industry in the planning area. The effects are particularly difficult when the storm is widespread.

Property Damage

No significant property damages have been reported from winter storm events for Marinette County over the past 23 years from January 1, 2000 to October 10, 2023 according to the NCDC data.

Estimate of Potential Dollar Issues

An estimate of potential dollar losses cannot be calculated for winter storm events, since no vulnerable structures have been identified. Based on previous damages reported by the NCDC, property damages from winter storms has been minimal over the past 23 years.

Climate Change Impacts

Because of the increasing probability of more winter and spring precipitation, along with more extreme weather, climate change has the potential to increase the negative impacts on Marinette County as a result of winter storms.

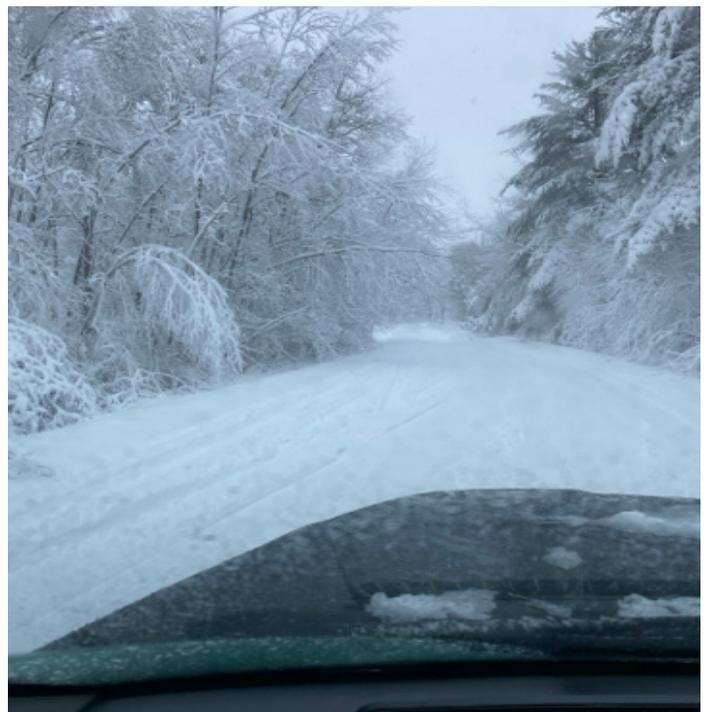


Photo provided by Marinette County





Wildland Fire

Description

A wildland fire is any instance of unplanned burning in forests, woodlands, brush, marshes, grasslands, or field lands. Typical causes of these fires are lightning, human carelessness, or arson.

In Marinette County, and Wisconsin as a whole, debris burning results in over 2/3's of wildland fires. Peak "fire season" occurs immediately after the snow melts and lasts through green up, typically March through May. However, forest fires can and do occur all months of the year that there is not complete snow cover. The county has large expanses of forested areas that could be susceptible to wildland fires. Wildland fires can occur at any time of the year and during any time of the day.

The primary factors that can contribute to the start of a wildland fire are land use, vegetation, amount of combustible materials present, and weather conditions such as wind, low humidity, and lack of precipitation. Generally, fires are more likely when vegetation is dry from a winter with little snow or a spring and summer with sparse rainfall.

As fires remain a possibility, fire stations in Marinette County are prepared to respond in accordance with established response procedures, while local zoning setback controls and building codes provide additional mitigation measures.

Previous Significant Hazard Occurrences

The annual fire occurrence in Marinette County is one of the highest in the state. From 2000- 2023, an average of 63 fires were reported and suppressed annually in Marinette County. Annual occurrence during the past 11 years has ranged from a low of 28 fires to a high of 91. Several of those fires were over 100 acres in size (112-acre peat fire in 2011 and a 275-acre fire in 2007). An additional fire that occurred was the 103 acre Blue Bird Fire that burned a Marinette County jack pine plantation in August of 2015. According to the WDNR, Marinette County has experienced a total of 1,433 wildland fire events of various sizes (with the average being 1.68 acres) in the past 23 years from January 1, 2000 to October 10, 2023.

Historically, Marinette County was impacted by the 1,912 acre Huigen Lake Fire on May 11, 1953. This fire burned west of High Falls Flowage in the Town of Stephenson and consumed six cabins plus one garage. The fire was the result of a landowner burning off his dump site. Several days later, Marinette County experienced an 806 acre fire in Athelstane and a 382 acre fire in Dunbar. These fires burned in more remote areas and less information on them has been documented.

The Great Peshtigo Fire of 1871

On the evening of October 8, 1871, Peshtigo, then a booming town of 1,700 people, was destroyed in the worst recorded forest fire in North American history. The fire raged through Northeastern Wisconsin and Upper Michigan, taking between 1,200 and 2,400 lives, and destroying millions of dollars' worth of property and forestland. (Source: Hipke, DC. [http://www.peshtigofire.info/.](http://www.peshtigofire.info/))

Although the perfect storm of drought, land clearing activities, and inefficient suppression technology that resulted in the Great Peshtigo Fire over 150 years ago is unlikely to occur again, wildland fire continues to be a very high risk in Marinette County.



Hazard Frequency

Based on previous hazard occurrences as reported by the WDNR, Marinette County experiences approximately 60 wildland fire events per year.



3. Risk Assessment



Wildland Fire

Probability of Hazard Occurring in the Future

According to the WDNR, Marinette County lies within an “intensive protection area.” Intensive protection areas are the most heavily forested and contain the most fire hazards and risk in the state. They have more DNR fire suppression resources and ranger stations.

Fire detection is no longer accomplished with fire towers, but instead the DNR relies on an increased presence of aerial detection and citizen reporting. The most restrictive debris burning laws are in effect, which are regulated by the DNR and require a burning permit for debris burning whenever the ground is not snow covered throughout the year. Overall, the probability of a wildland fire occurring is very high for the county.

Areas of Greatest Risk

Wisconsin DNR has classified “communities at risk” and “communities of concern” for wildland fires throughout the state. The risk classifications include low risk, community of concern, high risk, and very high risk. Table 3.6 lists the communities within Marinette County with wildfire risks, their size, and the acres of woodland. Areas of greatest risk from wildland fire include the Very High, High, and Concern communities (Map 3.4).

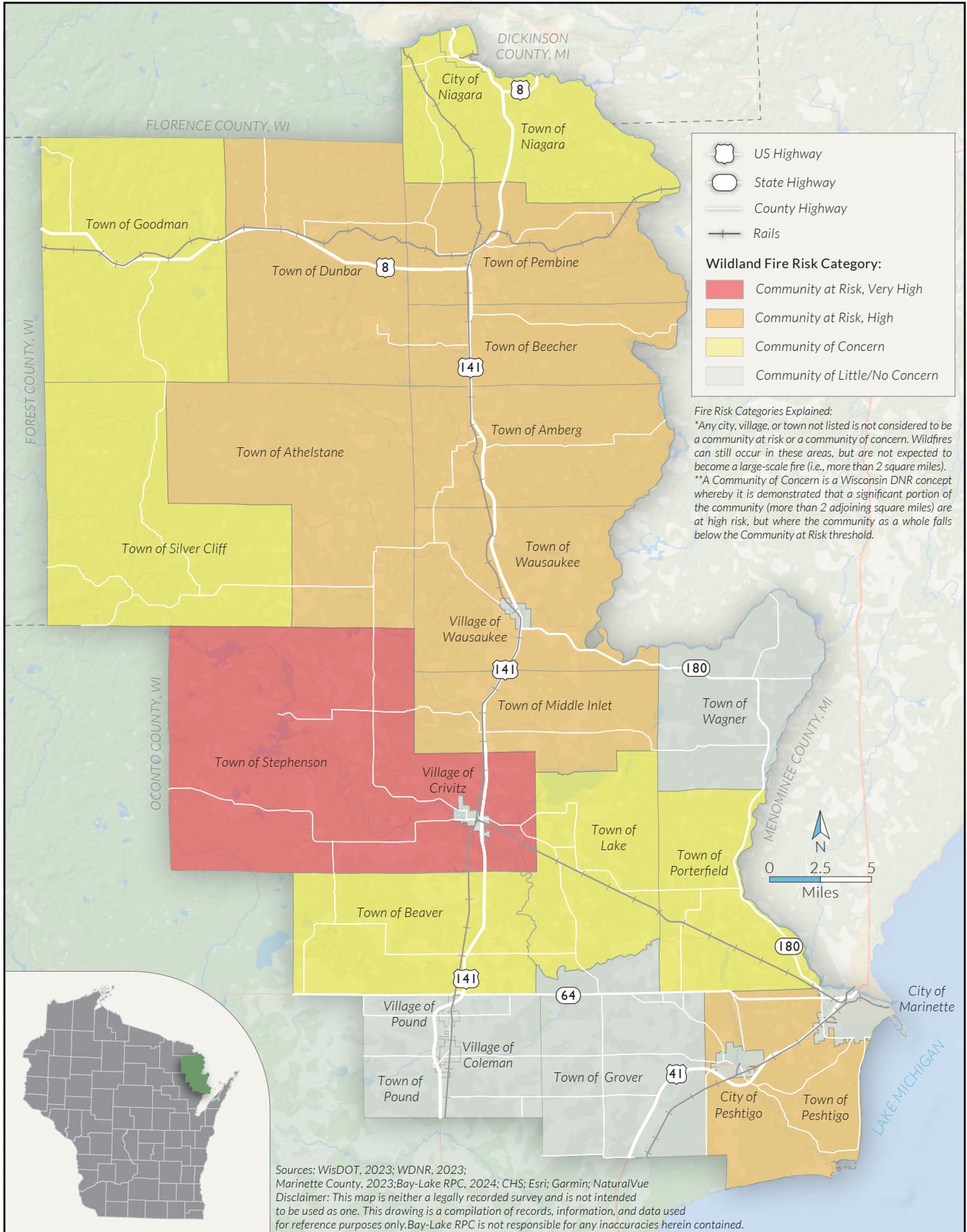
Table 3.6: Wildland Fire Risk, Marinette County

Community	Risk Classification	Total Acres	Woodland Acres	% Woodland Acres of Total
Town of Stephenson	Very High	113,067.73	82,666.75	73.11%
Town of Amberg	High	46,272.57	39,833.24	86.10%
Town of Athelstane	High	68,536.79	60,411.30	88.14%
Town of Beecher	High	31,646.45	26,717.57	84.43%
Town of Dunbar	High	67,311.33	59,511.59	88.41%
Town of Middle Inlet	High	32,784.01	23,267.27	70.97%
Town of Pembine	High	43,076.31	37,619.31	87.33%
Town of Peshtigo	High	38,546.92	25,369.74	65.82%
Town of Wausaukee	High	49,630.22	35,575.60	71.68%
Town of Beaver	Concern	44,449.65	25,291.10	56.90%
Town of Goodman	Concern	68,856.16	60,667.98	88.11%
Town of Lake	Concern	38,098.08	25,093.10	65.86%
Town of Niagara	Concern	43,747.94	37,496.72	85.71%
Town of Porterfield	Concern	34,140.23	20,311.38	59.49%
Town of Silver Cliff	Concern	68,405.48	63,925.42	93.45%
Total		788,569.87	551,939.95	

Source: WDNR, 2021; Marinette County; Bay-Lake RPC, 2024.



Map 3.4 - Greatest Wildland Fire Risk, Marinette County



3. Risk Assessment



Wildland Fire

Areas of Greatest Risk (Cont.)

Nearly all of the towns in Marinette County have been classified as a community at risk or community of concern, with the exception of just three towns (Grover, Pound, and Wagner). Wildland fires can still occur in the other areas, but are not expected to become a large-scale fire (i.e., more than 2 square miles in size). One community, the Town of Stephenson, has been classified as a very high risk community.

Marinette County contains 551,939.95 acres of woodlands within these wildfire risk areas. The Town of Stephenson has recognized that they are a very high risk community and have taken steps to alleviate that risk. The Town of Stephenson has been enrolled in a Community Wildfire Protection Plan since 2010. As part of this plan the Town and Wisconsin DNR work together to identify and mitigate fire risk within the Town. The plan is reviewed every 5 years, and received a complete re-write and update to enter into the 2020's. This document is available to the public and located on the Town website.

Impacts from Hazard

Death and Injury

No data on deaths or injuries is available for significant wildland fire events for Marinette County over the past 23 years from January 1, 2000 to December 31, 2023.

Structures at Risk

Homes and other structures located within the Wildland Urban Interface (WUI) are at high risk to damage from wildland fires. The WUI refers to the zone of transition between forestland/wildland and human development. The wildland fire risk increases in the WUI because buildings are typically surrounded by fuel sources such as unmowed grass, unraked leaves, flammable vegetation, and dead branches. Structures constructed from materials that may melt or ignite when exposed to a fire present a high risk. In general, the potential for property damage from wildland fires increases as more development occurs on wooded lands.

Residential housing is typically the most dominant type of structure found within the WUI. Though many parts of a home can be affected by wildland fire damage, the roof is the most exposed portion of the building and is more at risk from flying embers. Attics may also be affected by airborne embers that enter through open eaves and vents. Structures attached to homes, such as decks, garages, and fences, can also carry a fire into a home.

Critical Facilities

Law enforcement, fire, and emergency response personnel are greatly affected by wildland fires – suffering increased workloads during and after events. Hospitals can see increases in patient load resulting from burn related injuries and individuals suffering from the effects of smoke inhalation. Schools, if not affected by a fire, could potentially be used as temporary shelter for individuals that cannot return to their homes. All critical facilities located in the path of a wildland fire can be affected structurally and functionally if evacuation is deemed necessary.

Economic Impacts

Fires can have an extensive impact on the economy of an affected area by causing thousands of dollars in damages to citizens through loss of private property. Major direct costs associated with wildland fires are incurred by the salvage and removal of downed timber and debris; restoration of the burned area; and reconstruction. Wildland fires can also have a significant impact on local agriculture. Fires will strip the land of vegetation as well as harm the soil, waterways, and the land itself. Soil exposed to intense heat may lose its capability to absorb moisture and support life.

Property Damage

No property damage data is available for wildland fire events for Marinette County according to NCDC data.





Wildland Fire

Impacts from Hazard (Cont.)

Estimate of Potential Dollar Losses

As mentioned earlier in this section, Marinette County has one of the highest annual wildland fire occurrences in the State of Wisconsin. An average of 63 fires were reported and suppressed annually from 2000-2023. Loss data is difficult to gauge since many of the individual wildland fires had minimal impact overall. As a result, the estimate of potential future dollar losses is difficult to project. With the number of fires that occur every year, along with changing climate conditions, Marinette County should anticipate that some wildland fires could spread, affecting numerous properties, thereby increasing potential dollar losses.

Climate Change Impacts

Climate change can be expected to lead to an increase in wildfire occurrences. With the average annual temperatures continuing to rise, the possibility of drought may increase, thereby contributing to the risk of more wildfires in the county.



3. Risk Assessment



Flooding

Description

Floods happen when the water draining from a watershed, whether from rainfall or melting snow, exceeds the capacity of the river or stream channel to hold it. Water overflows onto the nearby low-lying lands (floodplains). In hilly and mountainous areas flooding is likely to be rapid, deep, and dangerous. In relatively flat floodplains, land may stay covered with shallow, slow moving water for days or even weeks.

Stormwater Flooding

The waterways and stormwater drainage systems provides essential flood protection. Stormwater drainage systems cope well with most storms. However, occasionally storms, such as flash floods can occur of such intensity that not all the stormwater can get into the drains at once and flooding occurs. Flash floods happen when a large amount of rain falls in a localized area over a very short period. These localized storms are generally beyond the capacity of any drain, and it would not be economically feasible to design drains to cater for these very large, but infrequent storms. In addition, localized stormwater flooding can occur if drains in the area are blocked. It is important to keep the drainage system clear of litter and debris to avoid blocked drains. This is also necessary to protect and improve the health of Marinette County's waterways.

Today, new developments and redevelopments incorporate stormwater management measures such as stormwater detention and retention basins that provide greater flood protection. Detention basins slow the flow of stormwater being carried in the drainage system by storing it for a time, while retention basins (i.e. ponds) hold water during most of the year. Detention basins often double as parks and playing fields.

Previous Significant Hazard Occurrences

According to the NCDC, Marinette County has experienced 18 significant flooding events (including flash flood) in the past 23 years from January 1, 2000 to October 10, 2023.

Hazard Frequency

Based on previous hazard occurrences as reported by the NCDC, Marinette County experiences fewer than one significant flooding event per year.

Probability of Hazard Occurring in the Future

FEMA uses the "base" flood as the basis for its regulatory requirements and flood insurance ratings. The hazards mitigation plan also uses the base flood for planning purposes. The base flood is the one percent chance flood, or the flood that has a one percent (one out of 100) chance of occurring in any given year. The one percent chance flood is commonly referred to as the "100-year flood."

Based on the hazard frequency, Marinette County is considered to have a moderate probability of sustaining a 100-year flood in any given year.

Areas of Greatest Risk

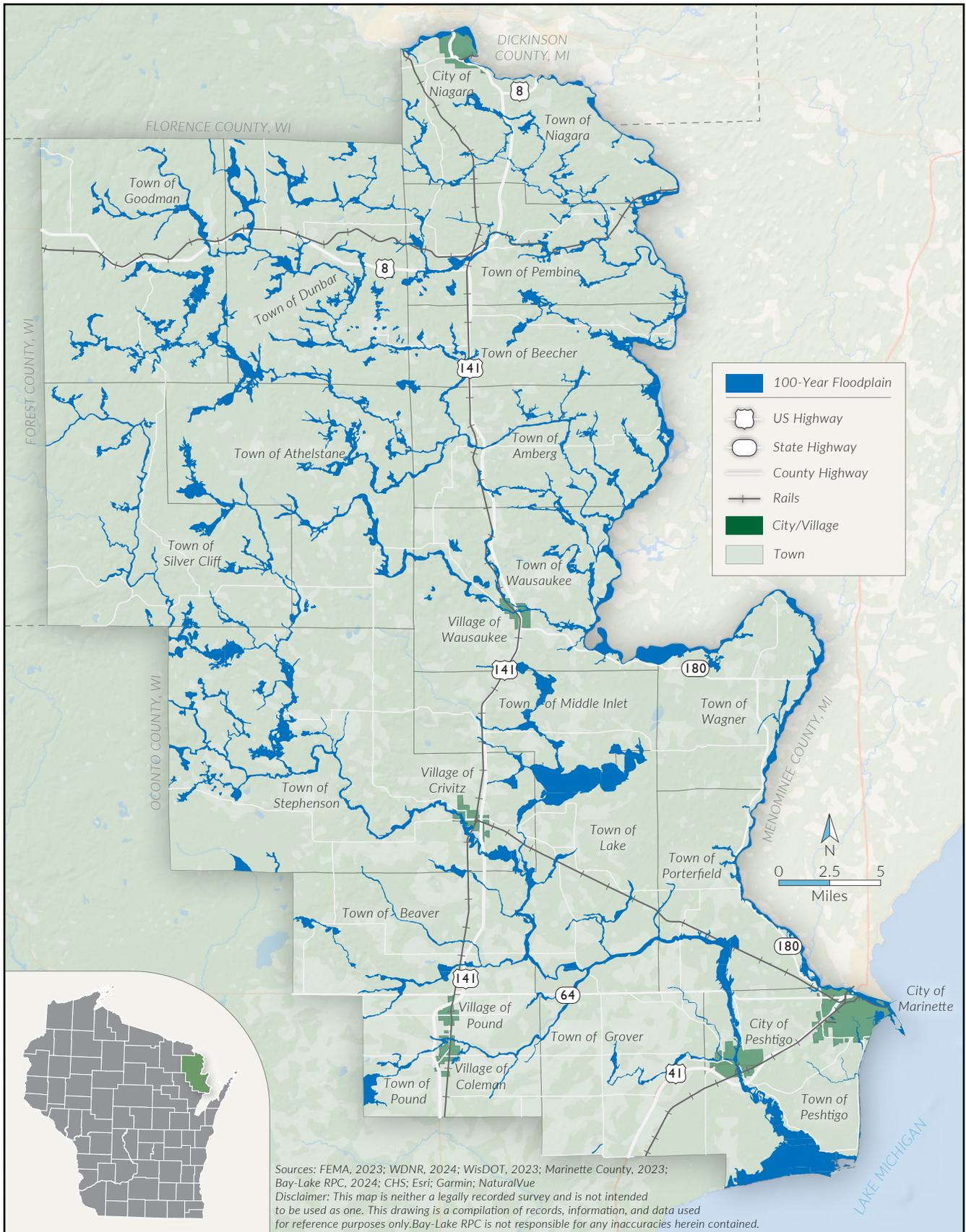
The areas at greatest risk from flooding include the "100- year floodplain" areas of Marinette County. FEMA Flood Insurance Rate Maps also call this the Special Flood Hazard Area, or "A Zone." The base floodplains for the planning area are shown in Map 3.5. Properties that potentially lie within the floodplain and would be affected by the 100-year flood are shown in Map 3.6.



Photo provided by Marinette County

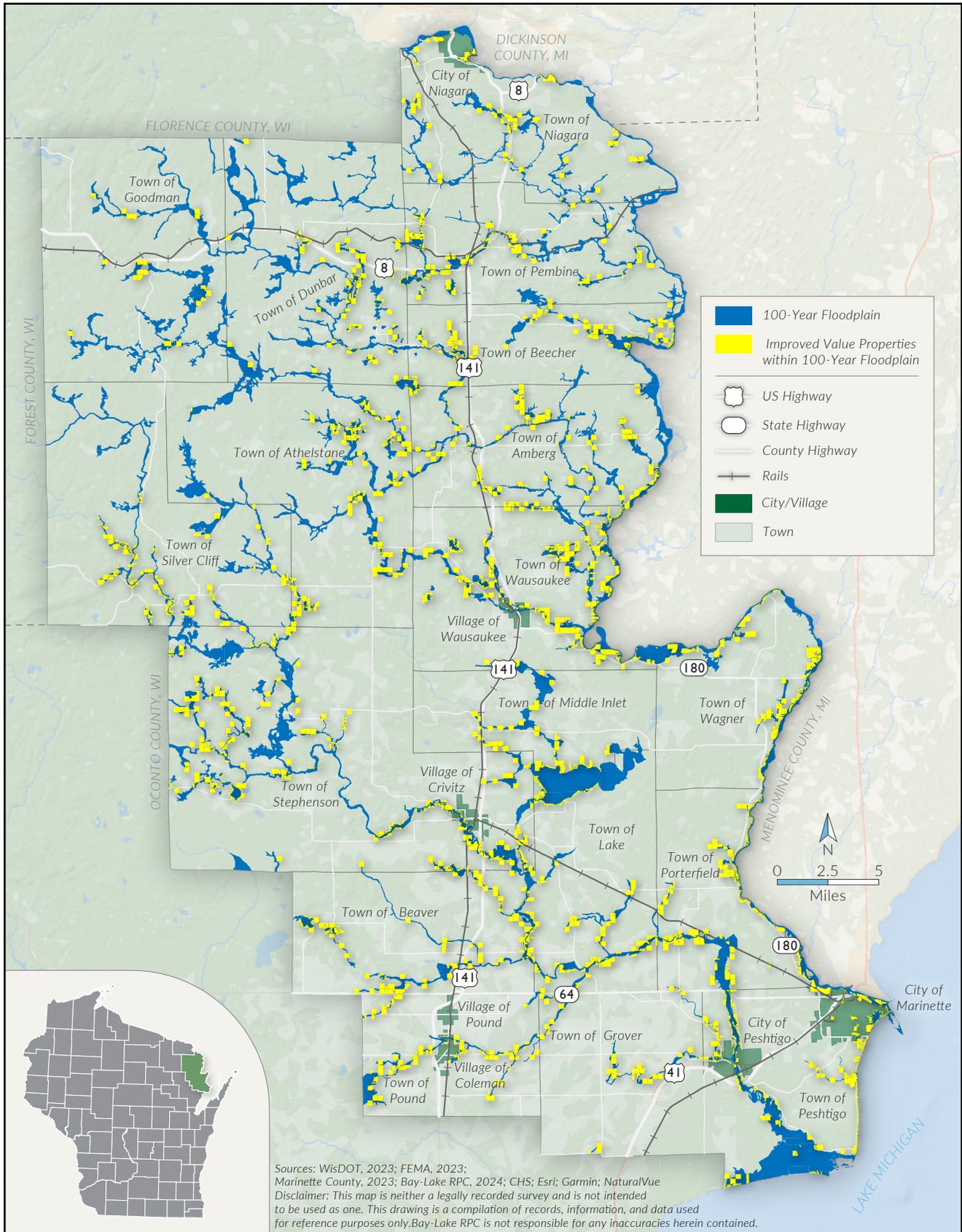


Map 3.5- 100-Year Floodplain, Marinette County



3. Risk Assessment

Map 3.6- Properties within the 100-Year Floodplain





Flooding

Impacts from Hazard

Death and Injury

One death and one injury from flooding has been reported for Marinette County over the past 23 years from January 1, 2000 to October 10, 2023, according to the NCDC data. Both occurred in April 2019 due to a combination of heavy rains and snow melt that caused a fishing boat to capsize in minor flooding and rapid flows on the Menominee River.

Structures at Risk

Analysis of the data used to produce Map 3.5 indicates that 4,948 structures could potentially be impacted by the base flood in the planning area.

Repetitive Loss Properties

According to FEMA, there are no repetitive loss properties in Marinette County. Repetitive loss structure is a term that is usually associated with the National Flood Insurance Program (NFIP) to describe a structure, covered by a contract of flood insurance under the NFIP, that has suffered flood damage on two or more occasions over a 10-year period ending on the date when a second claim is made, in which the cost to repair the flood damage, on average, equals or exceeds 25 percent of the market-value of the structure at the time of each flood loss event. For the Community Rating System (CRS) of the NFIP, a repetitive loss property is any property, which the NFIP has paid two or more flood claims of \$1,000 or more in any, given 10-year period since 1978. A repetitive loss structure is important to the NFIP, since structures that flood frequently put a strain on the flood insurance fund. It should also be important to a community because residents' lives are disrupted and may be threatened by the continual flooding.

Critical Facilities

Analysis of the GIS data used to produce Map 3.5, indicates that there are 194 critical facilities located within 100-year floodplains in Marinette County. Table 3.7 lists the critical facility types of those facilities potentially within the 100-year floodplains.

Table 3.7: Critical Facilities within the 100-Year Floodplain, Marinette County

Hazard	Count
Bridge	128
Dry Hydrant/Fire Pond	28
Dam	13
Parks and Campground	8
Utility	7
Hazmat	4
Communication Tower/Facility	2
Port Facility	2
School (Primary & Secondary)	1
Institutional Government Facility	1
Total	194

Source: Bay-Lake Regional Planning Commission, 2024.

Economic Impacts

Property Damage

Reported significant property damage from flooding in Marinette County has totaled approximately \$807,300 over the past 23 years from January 1, 2000 to October 10, 2023 according to the NCDC data. Flooding has caused \$200,000 in crop damage over the same time.

Value of Structure at Risk

The value of all at-risk structures is estimated at \$516 million. This information was obtained from Marinette County database on improved values of real property. The parcel map and the 100-year floodplains were merged to determine at-risk structures in the planning area.



3. Risk Assessment



Flooding

Impacts from Hazard (Cont.)

Estimated of Potential Dollar Losses

“Vulnerable structures” are those structures located in the 100-year flood hazard area identified in Map 3.1. Since there is no reliable building height data for buildings in these flood hazard areas, a “worst case scenario” of total structural damage for buildings in all of the flood zones of the planning area was assumed in estimating potential dollar losses to vulnerable structures. Building height/elevation data should be collected in the future in order to better assess the risks of damage to structures because of the flood hazard. It is estimated that over \$516 million in losses would occur in a “worst case scenario” of total structural damage for buildings in all of the 100-year flood zones in the county. This information was obtained from a Marinette County database on assessed values of real property. This only involves damage to structures themselves, and may not account for damage to personal property inside or adjacent to vulnerable structures. In addition, there may be areas outside the 100-year flood zones that will flood during an event of that magnitude (or even of lesser magnitude); this planning process has no way of knowing the susceptibility of flooding outside of flood events that have been previously mapped by other governmental agencies.

Transportation Route Interruptions

Loss of road access is a major flood impact that affects all residents and businesses, not just those who own property in the floodplain. Sometimes, the loss is temporary, such as during a flood. However, on some occasions, the loss of transportation lasts well after the disaster. When a flood washes out roads, bridges, or railroads, it can be weeks or months before they are repaired. A key evacuation and safety concern is when roads and bridges submerge under water.

Analysis of the GIS data indicates that there are **128 bridges that could potentially be underwater during a base flood**. There may be a number of additional bridges in areas that are not included in the mapped 100-year flood zones, such as areas located along small tributary streams.

Development in Areas Subject to Flooding

Development in floodplains, watersheds, and natural resource areas has been kept to a minimum in recent years through zoning. Marinette County has a Shoreland and Wetland Ordinance, and a Floodplain Ordinance. These ordinances can be useful tools in keeping inappropriate development out of many flood hazard zones in the county.

Climate Change Impacts

Climate change can be expected to lead to more annual precipitation with more frequent and heavier high precipitation events. This will lead to more flooding due to soils not able to absorb rainfall fast enough or being waterlogged. Flood damages will affect more people over a wider area of the county, and resulting damages will be higher. .

NFIP Participation

Marinette County has participated in the FEMA National Floodplain Insurance Program (NFIP) since August 1974 by adopting and enforcing floodplain management ordinances to reduce future flood damage. In exchange, the NFIP makes federally backed flood insurance available to homeowners, renters, and business owners in the county.

Additionally, the following incorporated communities are also participating in the NFIP:

- City of Marinette since July 1973
- City of Niagara since February 1974
- City of Peshtigo since December 1973
- Village of Coleman since May 1974
- Village of Wausaukee since May 1974

The villages of Crivitz and Pound are not participating in NFIP. Since there are no special flood hazard areas (SFHAs) within their municipal boundaries, these communities were not provided a floodplain map, and have not been asked to participate in the NFIP.





Hail

Description

A severe thunderstorm can produce frozen precipitation, or hail. Hailstones are ice crystals that form within a low-pressure front due to warm air rising rapidly into the upper atmosphere and the subsequent cooling of the air mass. Frozen droplets gradually accumulate on the ice crystals until they develop sufficient weight and fall as precipitation. The size of hailstones is a direct function of the severity and size of the storm. Significant damage does not result until the hailstones reach 1.5 inches in diameter, which occurs in less than half of all hailstorms. Hail in Wisconsin ranges from pea-sized to golf ball-sized. Area coverage of individual hailstorms is highly variable and spotty because of the unstable nature of cumulonimbus clouds.

Previous Significant Hazard Occurrences

According to the NCDC, Marinette County has experienced 79 significant hail storm events in the past 23 years from January 1, 2000 to October 10, 2023.

Hazard Frequency

Based on previous hazard occurrences as reported by the NCDC, Marinette County experiences approximately three significant hail storm events per year.

Probability of Hazard Occurring in the Future

Based on the hazard frequency, Marinette County is considered to have a very high probability of experiencing a significant hail storm event in any given year.

Areas of Greatest Risk

Hail storms have no defined hazard area within the planning area. Past events have been relatively uniform across the planning area or the larger regional area.

Impacts from Hazard

Death and Injury

No death or injuries from hail storms has been reported for Marinette County over the past 23 years from January 1, 2000 to October 10, 2023, according to the NCDC data.

Structures at Risk

Hail can inflict severe damage to roofs, windows, and siding, depending on hailstone size and winds.

Critical Facilities

Hail can inflict severe damage to roofs, windows, and siding of critical facilities, depending on hailstone size and winds.

Economic Impacts

Hail can damage or destroy crops. Taller crops, such as corn are particularly vulnerable to hail. Costly damage can occur to roofs, windows, and siding, as well as automobiles, RVs, and boats (including the body, paint and windshields and other windows).

Property Damage

No significant public property damages have been reported from hail events for Marinette County over the past 23 years from January 1, 2000 to October 10, 2023 according to the NCDC data.

Estimate of Potential Dollar Losses

An estimate of potential dollar losses cannot be calculated for hail storm events, since no vulnerable structures have been identified. Based on previous damages reported by the NCDC, property damages from hail storms has been minimal over the past 23 years.



3. Risk Assessment



Hail

Climate Change Impacts

Climate change is causing an increase in the frequency and severity of extreme weather events. Hail is frequently associated with extreme weather events, particularly thunderstorms. Because of the increasing frequency of extreme weather events as a result of climate change and the associated potential of increased hail events, future impacts of tornado hazards can expect a potential increase in risk.





Extreme Cold

Description

Dangerously cold conditions can be the result of extremely cold temperatures, or the combination of cold temperatures and high winds. The combination of cold temperatures and wind creates a perceived temperature known as “wind chill.” Whenever temperatures drop well below normal and as wind speed increases, heat can leave your body more rapidly. 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. This weather related condition may lead to serious health problems.

Extreme cold is a dangerous situation that can cause health emergencies for susceptible people, such as those without shelter, those stranded outdoors or in a disabled vehicle, or those living in a home that is poorly insulated or without heat.

Previous Significant Hazard Occurrences

According to the NCDC, Marinette County has experienced 19 significant extreme cold events in the past 23 years from January 1, 2000 to October 10, 2023.

Hazard Frequency

Based on previous hazard occurrences as reported by the NCDC, Marinette County experiences approximately one significant extreme cold event per year.

Probability of Hazard Occurring in the Future

Based on the hazard frequency, Marinette County is considered to have a low probability of experiencing an extreme cold event in any given year.

Areas of Greatest Risk

Extreme cold events have no defined hazard area within the planning area. Past events have been relatively uniform across the planning area.

Impacts from Hazard

Death and Injury

No deaths or injuries have been reported from significant extreme cold events for Marinette County over the past 23 years from January 1, 2000 to October 10, 2023 according to the NCDC data.

Structures at Risk

Extreme cold conditions can result in burst water pipes. In addition, it is more expensive to heat homes and other buildings during extreme cold events. Sometimes, residents of the planning area might consider use of space heaters during an extreme cold event. However, use of space heaters comes with its own risks, including a higher probability of fire to a structure if used improperly.

Public domain water pipes can burst in extreme cold conditions, which can also ruin the street above the water pipes. In addition, damage to fiber optic cables can occur during extreme cold episodes, which can negatively affect commerce and hospitals in the planning area.

Critical Facilities

All buildings involving critical facilities will have greater heating expenses during an extreme cold event. Increased demand will also affect electric and natural gas utilities. Hospitals and clinics may be asked to treat patients exposed to the extreme cold conditions. Emergency shelters may take in additional individuals during the extreme cold event. Area schools may cancel classes or call for early dismissal in extreme cold events. Water utilities may need to repair damaged water mains caused by the extreme cold. Local fire departments and rescue services may also deal with direct or indirect consequences of the extreme cold event.



3. Risk Assessment



Extreme Cold

Impacts from Hazard (Cont.)

Economic Impacts

Economic impacts of extreme cold events can include lack of motivation to participate in the local economy unless absolutely necessary during the event. Utility bills following the event will also be higher, which will give the consumer less ability to purchase discretionary goods about a month after the event (unless that consumer is on a monthly even payment plan with the local utility).

If area school districts need to call off school early on extremely cold days, there may be expenses involved with early busing and with paying staff for a full day while only having the benefit of a partial day of instruction.

Non-profit organizations will incur expenses in the provision of emergency shelters. The private sector incurs economic losses and production decreases during an extreme cold event.

Property Damage

No significant public property damages have been reported from extreme cold events for Marinette County over the past 23 years from January 1, 2000 to October 10, 2023 according to the NCDC data.

Estimate of Potential Dollar Losses

An estimate of potential dollar losses cannot be calculated for extreme cold events, since no vulnerable structures have been identified. Based on previous damages reported by the NCDC, property damages from extreme cold has been minimal over the past 23 years.

Climate Change Impacts

Because extreme cold events are trending downward as a result of a warming climate, there is a lower potential risk of impacts from extreme cold events in Marinette County.



Photo provided by Marinette County





Excessive Heat

Description

Excessive heat (often referred to as a heat wave) is primarily a public health concern. During extended periods of very high temperatures or high temperatures with high humidity, individuals can suffer from several ailments, including heat exhaustion and heat stroke. Heat stroke is a particularly life-threatening condition that requires immediate medical attention. In addition to posing a public health hazard, periods of excessive heat usually result in high electrical consumption, which can cause power outages and brown outs.

A by-product of this hazard in Marinette County often involves periods of high heat with loss of power. The elderly, disabled, and other vulnerable populations are especially susceptible to extreme heat.

Previous Significant Hazard Occurrences

According to the NCDRC, Marinette County has not experienced any significant excessive heat events in the past 23 years from January 1, 2000 to October 10, 2023.

Hazard Frequency

Since there are no NCDRC records of a significant excessive heat event in Marinette County in the last 23 years, no hazard frequency can be determined.

Probability of Hazard Occurring in the Future

Based on the hazard frequency, Marinette County is considered to have a low probability of experiencing an excessive heat event in any given year.

Areas of Greatest Risk

Excessive heat events have no defined hazard area within the planning area. Past events have been relatively uniform across the planning area.

Impacts from Hazard

Death and Injury

No deaths or injuries have been reported from significant excessive heat events for Marinette County over the past 23 years from January 1, 2000 to October 10, 2023 according to NCDRC data.

Structures at Risk

While there are no direct impacts on buildings, periods of excessive heat can impact the ability of buildings to be comfortable and safe for human habitation. Periods of excessive heat usually result in high electrical consumption for air conditioning, which can cause power outages and brown outs.

There are few impacts of excessive heat on publicly owned infrastructure. One impact that extreme heat can have on publicly owned infrastructure involves the buckling of certain streets and highways, which need to be repaired immediately.

Critical Facilities

Utilities may see peak demand for electricity during excessive heat episodes. There have been fears that an excessive heat episode could cause the power grid to. Hospitals and clinics will like experience an increased demand due to heat related illnesses during an excessive heat episode. In some cases, rescue services will experience an increased demand due to these same heat related illnesses.

If school is in session during the excessive heat episode, area school districts may dismiss classes early in the day, at least in older schools without air conditioning. Emergency shelters will experience higher demand during the excessive heat episode, with some emergency shelters being set up specifically in response to the episode.

Finally, there is likely to be increased water demand during the episode, both for human consumption as well as for lawn watering in the event that the extreme heat episode includes a drought.



3. Risk Assessment



Excessive Heat

Impacts from Hazard (Cont.)

Economic Impacts

Economic impacts of an excessive heat episode which can affect private businesses and consumers include higher electrical consumption and increased demands for medical treatment. Local governments may need to incur expenses when repairing streets and highways in the planning area that have been damaged due to buckling.

If area school districts need to call off school early on extreme heat days, there may be expenses involved with early busing and with paying staff for a full day while only having the benefit of a partial day of instruction.

Non-profit organizations will incur expenses in the provision of emergency shelters. Water utilities will incur the expenses involved with additional demand for water during excessive heat episodes, and these expenses will be passed on to area consumers. One less tangible economic impact of extreme heat involves lower productivity from persons who must work outside or in less than ideal conditions.

In addition, people will be less motivated to shop at local businesses and may defer non-essential activities until the heat episode is over, negatively impacting the local economy. Excessive heat can negatively impact agriculture in the surrounding area when combined with drought.

Property Damage

No significant public property damages have been reported from excessive heat events for Marinette County over the past 23 years from January 1, 2000 to October 10, 2023 according to the NCDC data.

Estimate of Potential Dollar Losses

An estimate of potential dollar losses cannot be calculated for excessive heat events, since no vulnerable structures have been identified. Based on previous damages reported by the NCDC, there have been no property damages in Marinette County from extreme heat over the past 23 years.

Climate Change Impacts

According to research conducted by the Wisconsin Initiative on Climate Change Impacts, extreme heat events are projected to become more frequent, longer lasting, and geographically widespread. By the middle of the century, Wisconsin residents are projected to experience 1.5 to 4 more weeks of daytime temperatures exceeding 90oF. Climate change can be expected to lead to an increase in wildfire occurrences and the conditions for any given fire to get out of control. Rising average annual temperatures will exacerbate drought conditions contributing to wildfire risk

Public health officials and concerned citizens will be charged with the task of protecting the most vulnerable populations in the face of these changes.





Drought

Description

A drought is an extended period of unusually dry weather, which may be accompanied by extreme heat. There are basically two types of drought in Wisconsin: agricultural drought and hydrologic drought.

- 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 as well as the height of the groundwater table.

These two types of drought may, but do not necessarily, occur at the same time. The severity of a drought depends on a number of factors including duration, intensity, geographic extent, and regional water supply demands by humans and vegetation. In general, droughts have the greatest impact on agriculture. Small droughts of limited duration can significantly reduce crop growth and yields. More substantial drought events can decimate croplands and can result in a total loss.

Droughts can also greatly increase the risk of wildland fires 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.

Previous Significant Hazard Occurrences

According to the NCDC, Marinette County has experienced 41 significant drought events in the past 23 years from January 1, 2000 to October 10, 2023.

Hazard Frequency

Based on previous hazard occurrences as reported by the NCDC, Marinette County experiences approximately two significant drought events per year. Probability of Hazard Occurring in the Future.

Probability of Hazard Occurring in the Future

The future incidence of drought is highly unpredictable, as its occurrence is based on weather patterns, making it difficult to determine probability with any accuracy. Droughts tend to be a regional phenomenon in that it affects much of northeastern Wisconsin on nearly all of the occasions in which it affects Marinette County. However, based strictly on the hazard frequency, Marinette County is considered to have a high probability of experiencing a drought event in any given year.

Areas of Greatest Risk

Droughts have no defined hazard area within the planning area. Past events have been relatively uniform across the planning area. However, agricultural croplands are most vulnerable to losses from drought events; Marinette County contains 132,155 acres of agricultural lands.

Impacts from Hazard

Death and Injury

No deaths or injuries have been reported from significant drought events for Marinette County over the past 23 years from January 1, 2000 to October 10, 2023, according to the NCDC data.

Structures at Risk

There are no direct impacts to structures from a drought event. In terms of infrastructure, droughts have the most impact on municipal water supplies. Droughts will likely cause a shortage of water for human, industrial, and agricultural consumption, as wells and other water reserves may dry up. Also, water quality is often an issue before and after a drought event, which may place an additional burden on wastewater treatment facilities.



3. Risk Assessment



Drought

Critical Facilities

In drought conditions, water shortages may occur and affect the amount of water available for human consumption. Hospitals may be called upon to treat individuals suffering from dehydration as a result. Parks that provide recreational water facilities are likely to experience increased usage during times of drought as well. There are few other direct impacts on critical facilities as a result of drought conditions. However, droughts can trigger other natural and man-made hazards, such as wildland fires and post-drought flooding, which can have an impact on these facilities.

Economic Impacts

Wisconsin is most susceptible to agricultural drought. Even small droughts of limited duration can significantly reduce crop growth and yields, which adversely affects farm income. Substantial drought events can lead to complete crop decimation, resulting in total loss. During severe drought periods farmers are often forced to seek financial assistance from the government to supplement lost income.

Livestock can also be adversely affected by droughts. Lack of water can lead to animal deaths. In addition, as drought conditions are often accompanied by periods of prolonged sunshine and high temperatures, animals are at risk to overexposure and heatstroke. Death of livestock can also lead to substantial loss of income for farmers. Drought can also affect local commercial and industrial businesses. During times of severe drought, limitations are often placed on water usage. These limitations could have a negative impact on businesses such as car washes and landscapers as they will likely be unable to provide services to their customers. It is also likely that areas depending on tourism will see fewer people traveling to their area in times of drought. Industries which utilize large amounts of water in processing materials may also be subject to these limitations, which could potentially reduce their production capabilities.

Property Damage

No significant public property damages have been reported from drought events for Marinette County

over the past 23 years from January 1, 2000 to October 10, 2023 according to the NCDC data.

Estimate of Potential Dollar Losses

Drought is a hazard lacking good loss figures at the county level. However, a look at aggregate data from 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 affected county in Wisconsin on average.

Agricultural croplands tend to be the most vulnerable to losses from drought events. A “worst case scenario” would involve the total destruction of all 132,155 acres of agricultural lands in Marinette County.

The USDA conducts a Census of Agriculture every five years based on a sample of farms to estimate the market value of agricultural land and buildings. Based on the 2022 Census of Agriculture, the average value per acre of agricultural land in Marinette County was \$5,176. Therefore, it is estimated if this “worst case scenario” were to occur, the total destruction of all agricultural land in Marinette County would cause a loss of \$684 million.

Climate Change Impacts

Climate change can be expected to lead to rising average annual temperatures. The increased heat will fuel more extreme weather of all types, including excessive heat and possible resultant drought conditions that may become more frequent and persistent.

Snow droughts may become more frequent with climate change which would reduce both summer and winter water availability, as many streams, rivers, and reservoirs depend on snow melt to replenish or maintain their water levels. Snow droughts reduce the amount of soil moisture that is necessary for proper seed germination come springtime planting of crops, significantly impacting farm incomes.

Increased drought events would have significant adverse affects on Marinette County’s tourism industry throughout the year.





Dense Fog

Description

Fog is a collection of liquid water droplets or ice crystals suspended in the air at or near the ground. While fog is a type of stratus cloud, the term “fog” is typically distinguished from the more generic term “cloud” in that fog is low-lying, and the moisture in the fog is often generated locally (such as from a nearby body of water, like a lake or stream, or from nearby moist ground or marshes). Fog is distinguished from mist because it has greater density and lower visibility than mist.

Fog is a hazard mainly because of reduced visibility. Airport delays, automobile accidents, ship wrecks, plane crashes, and many other problems are frequently caused by fog. The National Weather Service forecasts fog and issues dense fog advisories when visibility is decreased to less than one quarter of a mile. These advisories alert travelers to potentially dangerous conditions. Traveling in fog requires reduced speed and careful navigation. At night, traveling in fog is especially dangerous because darkness combines with fog to reduce visibility even more. In addition, light from automobile headlights and other navigational lights is scattered off the water droplets of the fog, limiting sight to only a short distance. In response to this problem, automobiles are often equipped with specially designed lights that illuminate a usually dry (and therefore clear) area just above the roadway surface. Ice fog, or freezing fog, presents additional challenges as this is a fog in which the droplets of moisture freeze instantly upon contact with exposed objects and form a coating of rime and/or glaze. Not only does ice fog reduce visibility, but it creates icy conditions on roadways for vehicles and can make flying very dangerous if the aircraft is not treated or does not contain effective de-icing equipment

Previous Significant Hazard Occurrences

According to the NCDC, Marinette County has experienced three significant dense fog events in the past 23 years from January 1, 2000 to October 10, 2023.

Hazard Frequency

Based on previous hazard occurrences as reported by the NCDC, Marinette County experiences approximately one significant dense fog event every eight years.

Probability of Hazard Occurring in the Future

Based on the hazard frequency, Marinette County is considered to have a low probability of experiencing a significant dense fog event in any given year.

Areas of Greatest Risk

Portions of the planning area along waterways, wetlands, and low lying areas can be at greater risk for dense fog under certain meteorological conditions. However, no portion of the planning area is free of the possibility of experiencing dense fog events. Fog events can often be a regional phenomenon in that they affect much of the northeastern Wisconsin on many of the occasions in which they affect Marinette County.

Impacts from Hazard

Death and Injury

No direct deaths or injuries have been reported from significant dense fog events for Marinette County over the past 23 years from January 1, 2000 to October 10, 2023, according to the NCDC data. One indirect death resulted from a multiple vehicle crash and train derailment during dense fog in December 2021.

Structures at Risk

There are no direct impacts to buildings from a fog event. The main structures impacted are those associated with infrastructure during a fog event from vehicle accidents. This can result in rescue services helping injured drivers and passengers, clean-up of the affected portions of the street and highway network, and temporary rerouting of motorists after some incidents. In addition, motorists often must travel at slower speeds when fog is in the area, which adds travel time and can lead to vehicular congestion in cases where it would normally not occur. In fog events during the winter, icing can sometimes be a problem. Power lines and tree limbs can be coated with heavy ice in some winter fog events, resulting in disrupted power and telephone service. In addition, in fog events during the winter, even small accumulations of ice can be extremely dangerous to motorists and pedestrians. Bridges and overpasses are particularly dangerous because they freeze before other surfaces.



3. Risk Assessment



Dense Fog

Impacts from Hazard (Cont.)

Critical Facilities

Law enforcement will be asked to respond to an increased number of accidents during many fog events. Hospitals and clinics may be asked to treat individuals injured in accidents that likely would have not occurred in the absence of the fog event. Rescue services may be called to respond to accidents that resulted from the fog event. The starting time for schools may be delayed by the fog event for the safety of students and all involved. Courtrooms may see increased adjudication of traffic law violations resulting from accidents occurring during the fog event. Municipal public works and county highway departments may need to perform emergency repairs to streets and highways in worst-case scenario accidents resulting from the fog event. Airports can experience flight delays and cancellations during certain fog events.

Economic Impacts

There are economic costs in the accidents caused by dense fog events. Vehicular accidents almost always involve property damage, and some vehicular accidents during fog events involve injuries and/or fatalities. All of these consequences to vehicular accidents have costs both to the individual involved and to society. Fog events can also cost businesses in lost time involving late workers and/or late shipments. If area school districts need to delay school during a fog event, there may be expenses involved with delayed busing and with paying staff for a full day while only having the benefit of a partial day of instruction. Airline delays due to fog have economic impacts for travelers as well as for commerce. There are additional economic impacts if the fog event occurs in conjunction with the icing of power lines in cases where the power lines are damaged and residents lose power.

Property Damage

Approximately \$10,000 in property damage has been reported from dense fog events for Marinette County over the past 23 years from January 1, 2000 to October 10, 2023 according to the NCDC data.

Estimate of Potential Dollar Losses

An estimate of potential dollar losses cannot be calculated for fog events, since no vulnerable structures have been identified. Based on previous damages reported by the NCDC, there has been \$10,000 in reported infrastructure damage resulting from a dense fog event over the past 23 years.

Climate Change Impacts

As warm moist air becomes more common in the winter months as a result of climate change, it may increase the frequency of fog events with nearby cooler bodies of water. This is especially true in the southeastern portion of Marinette County adjacent to the bay of Green Bay.



Photo provided by Marinette County





Coastal Hazards

Description

In northeastern Wisconsin, coastal hazards can be described as natural hazards occurring along the shores of Green Bay/Lake Michigan. The coastal hazards of concern in Wisconsin and Marinette County include:

- Erosion of coastal bluffs, banks, beaches and near shore lake beds (including erosion from freezing and thawing of lake ice);
- Flooding from upland runoff, high lake levels and storm-induced surge (temporary water level changes); and
- Damage to shorelines and shoreline structures from storm waves and ice shoves and dams.

Previous Significant Hazard Occurrences

There is no record of significant coastal hazards for Marinette County and sources for past coastal hazard occurrences could not be found. However, Marinette County has experienced occurrences of ice shoves along the Green Bay/Lake Michigan shoreline.

Hazard Frequency

There is no record of significant coastal hazards for Marinette County in order to develop a hazard frequency.

Probability of Hazard Occurring in the Future

According to the Resource Guide for Great Lakes Coastal Hazards in Wisconsin, Marinette County is at greatest risk for coastal flooding. Overall, the probability of coastal hazards occurring in the future is moderate for Marinette County.

Areas of Greatest Risk

Portions of the county situated along Green Bay/Lake Michigan are at risk for coastal hazards. Marinette County has seen cases of shoreline instability along the bay/lake, especially with fluctuating water levels. Living along the coastline requires an understanding of how erosion works to avoid putting people and buildings in dangerous locations by better determining safe building setbacks.

Impacts from Hazard

Death and Injury

No data on deaths or injuries is available for significant coastal hazard events for Marinette County over the past 23 years from January 1, 2000 to October 10, 2023.

Structures at Risk

Homes and other structures situated along the Green Bay/Lake Michigan shoreline are at risk for coastal hazards.

Critical Facilities

There are several critical facilities located along Green Bay/Lake Michigan at risk of damage from coastal hazards. Most of these facilities are intentionally located adjacent to the water; however, there are also critical facilities that are not dependent on a location with proximity to the bay/lake.

Economic Impacts

Coastal hazards can have an extensive impact on the economy of an affected area by causing thousands of dollars in damages to public property and structures, as well a private property and houses.

Property Damage

No public property damage data is available for coastal hazard events for Marinette County over the past 23 years dating from January 1, 2000 to October 10, 2023.



3. Risk Assessment



Impacts from Hazard (Cont.)

Estimate of Potential Dollar Losses

An estimate of potential dollar losses cannot be calculated for coastal events, since no vulnerable structures have been identified.

Climate Change Impacts

Climate change can be expected to lead to both high and low water level extremes, increased coastal flooding, and reduced shoreline stability resulting in the likelihood of increased damage to infrastructure and property in Marinette County and its coastal communities.



Photo provided by Marinette County





Dam Failure Flooding

Description

A “dam” is an artificial barrier constructed in or across a waterway for the primary purpose of impounding or diverting water. Dam failure can occur for a number of reasons, including overtopping caused by floods that exceed the capacity of the dam, deliberate acts of sabotage, structural failure of materials used in dam construction, movement and/or failure of the foundation supporting the dam, settlement and cracking of concrete or embankment dams, piping and internal erosion of soil in embankment dams, or inadequate maintenance and upkeep. In extreme cases, dam failure can occur with little warning and can result in the loss of life and significant property damage in areas downstream of the dam. Other failures and breaches can take much longer to occur. Almost 60% of the dams in Wisconsin are owned by a former company or private individual, 9% by the State of Wisconsin, 17% by a municipality such as a town or county government, and 14% by other ownership types. The federal government has jurisdiction over dams in Wisconsin that produce hydroelectricity - approximately 5% or nearly 200 dams. The Wisconsin Department of Natural Resources regulates the rest of the dams.

A dam with a structural height of over 6 feet and impounding 50 acre-feet or more, or having a structural height of 25 feet or more and impounding more than 15 acre-feet is classified as a large dam. There are approximately 1,160 large dams in the State of Wisconsin. (Source: WDNR; <http://dnr.wi.gov/topic/dams/damfacts.html>).

Dams are classified as Low, Significant, or High Hazard. The hazard rating is not based on the physical attributes, quality, or strength of the dam itself, but rather the potential for loss of life or property damage should the dam fail.

The WDNR regulates the permitting of new dam construction, repairs, reconstruction, ownership transfers, water levels, and abandonment. Many dams in the state have been in place since the late 1800s, and a great deal of time must be invested in inspecting aging dams and making sure they comply with public safety requirements, and environmental regulations.

Previous Significant Hazard Occurrences

No record has been found of any significant dam failures in Marinette County in the past 23 years from January 1, 2000 to October 10, 2023.

Hazard Frequency

No record has been found of any significant dam failures in Marinette County in the past 23 years from January 1, 2000 to October 10, 2023 on which to base a hazard frequency.

Probability of Hazard Occurring in the Future

Based on the hazard frequency information available, Marinette County is considered to have a low probability of experiencing a dam failure event in any given year.

Areas of Greatest Risk

As identified by the WDNR Open Data Portal, there are a total of 56 dams in Marinette County that are classified as “on landscape.” Of these, 26 are classified by the WDNR as large dams, meaning they have a structural height of over six feet and impound 50 acre-feet or more. The rest of the dams located in the county are regarded as small dams. Map 3.7 displays the dams in the county with a high, significant, or low risk rating.

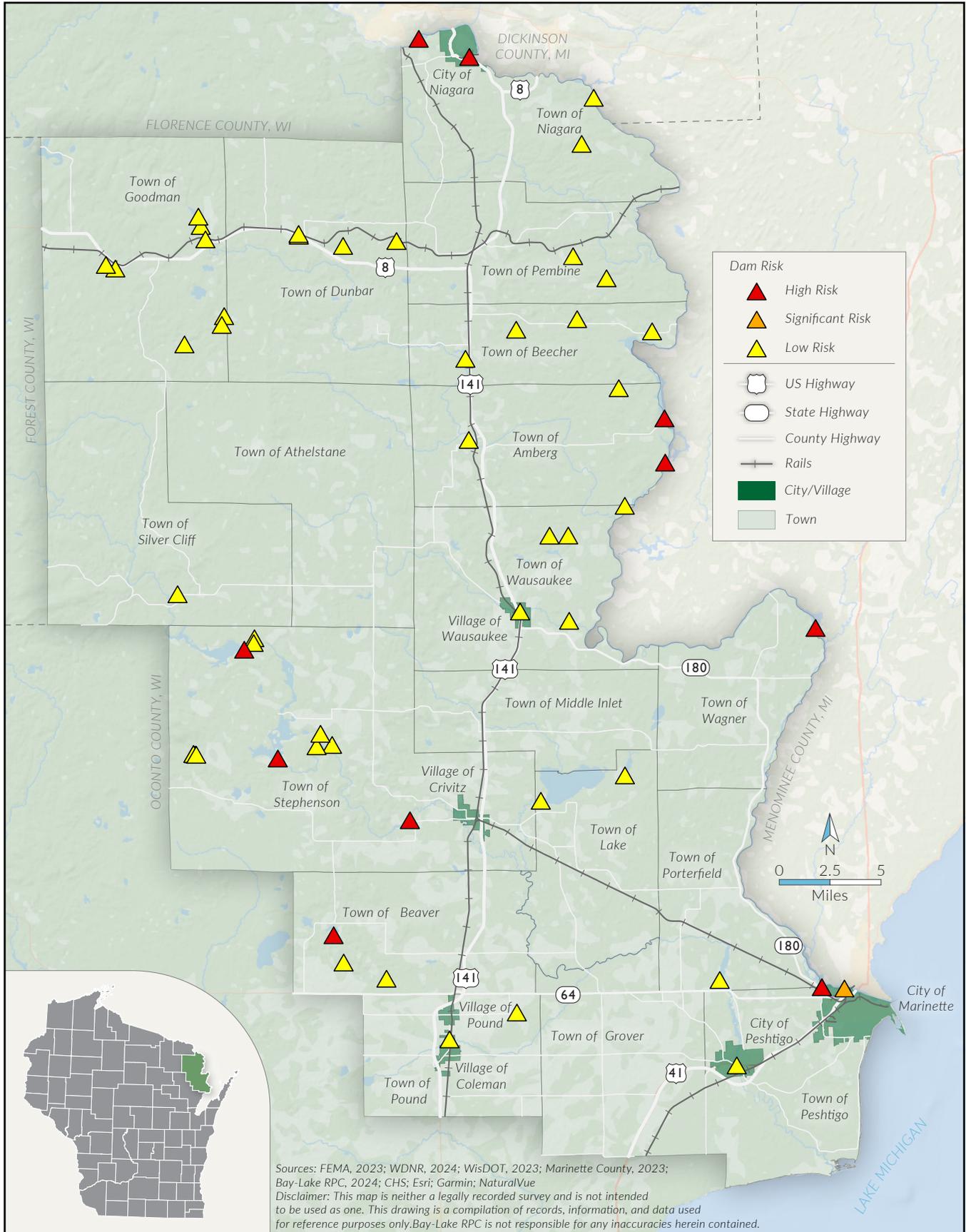
The WDNR assigns hazard ratings to large dams within the state based on existing land use and land use controls (zoning) downstream of the dam. A high hazard rating indicates that a failure would likely result in loss of life. A significant hazard rating indicates that a failure could result in significant property damage. A low hazard rating is given when a failure would result in only minimal property damage and loss of life is unlikely. In Marinette County, there are 13 large dams that have a high hazard rating and one large dam with a significant hazard rating.

The areas of greatest risk from dam failure are those areas within the hydraulic shadow of dam of these three dams. The hydraulic shadow of the dam is the area of land downstream from a dam that would be inundated by water upon failure of the dam during the regional flood (100-year flood).



3. Risk Assessment

Map 3.7 - Large Dams, Marinette County





Dam Failure Flooding

Impacts from Hazard

Death and Injury

There have been no deaths or injuries reported from dam failure flooding events in Marinette County over the last 23 years from January 1, 2000 to October 10, 2023.

Structures at Risk

Marinette County would be affected if one or more of the electric power generating dams in the county was to fail. Though electric power generating dams within the area are the greatest concern, consistent maintenance keeps them in good shape; therefore, the probability of dam failure is low. There has never been a problem at any of the major electric power generating dams and there is no history of dam failure for the twelve dams that are rated as “High” or “Significant” within the county.

The risk of loss of life or significant property damaged is considered to be very low. However, in the event of dam failure, structures within the hydraulic shadow of the dam could sustain flooding damage.

Critical Facilities

Critical facilities that could be impacted by dam failure flooding are those located within the hydraulic shadow of the dam area.

Economic Impacts

Floods cause problems for businesses and industry. Businesses disrupted by floods may have to be closed. Public expenditures on flood fighting, sandbags, fire department calls, clean up, and on repairs to damaged public property affect all residents of the planning area, not just those in the shadow of the dam.

Property Damage

No significant property damages have been reported from dam failure events for Marinette County over the past 23 years from January 1, 2000 to October 10, 2023.

Estimated Property Loss

Vulnerable structures for losses are those within the hydraulic shadow of the dam. Since there is no reliable public data for all the hydraulic shadow of the dam areas in Marinette County, an estimate of potential dollar losses cannot be determined.

Climate Change Impacts

The impacts of increased precipitation and severity of precipitation events as a result of climate change have the potential to produce higher risks of dam failure and associated impacts.



4. Mitigation Strategy

► Introduction

As defined by the Disaster Mitigation Act of 2000, mitigation is a “sustained action that reduces or eliminates long-term risk to people and property from natural hazards and their effects.” Mitigation planning is the systematic process of learning about the hazards that can affect the planning area, setting clear goals, identifying appropriate actions, and following through with an effective mitigation strategy. Mitigation encourages long-term reduction of hazard vulnerability and can reduce the enormous cost of disasters to the government and property owners. Mitigation can also protect critical community facilities and infrastructure; reduce exposure to liability; as well as minimize community disruption.

The mitigation strategy outlines the general goals to be achieved through the implementation of the Marinette County hazard mitigation plan. From the identified hazard mitigation goals, a mitigation strategy was developed to identify specific projects and activities that could help achieve the County’s hazard mitigation goals to make them safer and better prepared for disasters.

This chapter includes a discussion of the mitigation efforts that are currently underway, the County’s plan to implement the mitigation actions, an assessment of the County’s pre- and post-disaster hazard management policies, programs, and capability to mitigate hazards, and an evaluation of the current and potential sources of federal, state, or private funding to implement mitigation activities.

► Mitigation Goals

The following mitigation goals are intended to be used by public officials and emergency response personnel as general guidelines to mitigate the hazards identified in Chapter 3 of this document. These goals are broad in order to apply to all of the hazards addressed in the plan.

Goal 1: Implement policies, procedures and projects designed to reduce or eliminate the impacts of natural hazards on people and property.

Goal 2: Collect and utilize data, and conduct necessary studies, in order to provide the information needed to improve policymaking and to identify appropriate mitigation projects.

Goal 3: Improve planning processes in order to reduce the impact of natural hazards on people and property.

Goal 4: Enhance enforcement capabilities in order to reduce the impacts of natural hazards on people and property.

Goal 5: Enhance the use of natural resource protection measures as a means to reduce the impacts of natural hazards on people and property.

Goal 6: Obtain additional resources necessary to reduce the impact of natural hazards on people and property.

Goal 7: Provide training, and enhance education and outreach efforts describing the potential effects of natural hazards and the means to reduce their impact.



► Mitigation Action Plan

Mitigation actions form the core of the mitigation plan. Table 4.1 lists the mitigation action plan developed for Marinette County. The table lists the hazard type, associated mitigation actions, the estimated costs of each project, responsible agencies, the project timetable, and potential funding sources available for each mitigation action identified. The identified actions and projects address reducing the effects of hazards on the population, services, and existing and new buildings and infrastructure.

The Marinette County Emergency Management Department will track the implementation of mitigation actions over time. Information on completed or revised actions will be documented in future five-year updates of the county hazard mitigation plan.

Prioritization Process

In developing this action plan, members of the plan steering committee considered, from their perspective, the various proposed action items and came to consensus on how each would be ranked, “high,” “medium,” or “low,” based on need, funding, cost-benefit, and anticipated political support.

Cost-Benefit Review

In developing this mitigation action plan, members of the plan steering committee considered, from their perspective, the costs and benefits of the various proposed action items. The cost-benefit review was a factor of the prioritization process. Full-blown cost-benefit calculations were not prepared for each action item included in the plan. The cost effectiveness of each action item will be addressed and completed through the project development process.

► Completed Mitigation Actions

Since the preparation of Marinette County’s 2020 hazard mitigation plan, several mitigation actions identified in the action plan have been completed. The following lists those actions that have been completed in Marinette County:

- Hydrology Study of Marinette County has been completed with FEMA floodplain updates.
- Flood Insurance Rate Map (FIRM) Amendments and Revisions have been completed with FEMA floodplain updates.



4. Mitigation Strategy

Table 4.1: Action Plan

Mitigation Measures	Costs of Project	Responsible Parties	Project Timetable	Priority	Comments
Multi-Hazard					
Disaster preparedness	Covered by existing budgets with assistance from grants	County Emergency Management Coordinator, County Land Information, and County Health & Human Services	Ongoing	High	
Acquisition of emergency power generators for critical facilities	Covered by existing budgets with assistance from grants	Marinette County and municipalities	Ongoing	Low	For use when the power supply may be interrupted. Educate personnel in critical facilities as to proper use of the generators. Priority should be given to the critical facilities that impact public health and safety or maintain life saving operations.
Updating/maintaining/identifying storm shelters for county parks	Costs to be determined with assistance from grant funding	County Emergency Management and Parks Department	7 - 10 years	Low	
Tornado and Strong Wind					
Identification of emergency shelter locations	Covered by existing budgets	County Emergency Management, Red Cross, and towns	Ongoing	High	
Identification of emergency shelter deficit locations	Covered by existing budgets	County Emergency Management, Red Cross, and towns	Ongoing	Low	
Add shelters in manufactured housing communities	Covered by property owners	Property owners, County Emergency Management, and towns	As funds are available	Low	
Maintain list of logging contractors' locations for assistance with clearing roads	Covered by existing budgets	County Forestry Department	Ongoing	Low	
Lightning and Thunderstorms; and Hail					
Provide public information about severe weather	Covered by existing budgets	County Emergency Management	Ongoing	Low	During Spring Severe Weather Awareness Week



Table 4.1: Action Plan (Cont.)

Mitigation Measures	Costs of Project	Responsible Parties	Project Timetable	Priority	Comments
Flooding					
Incorporation of floodplain management in comprehensive planning	Covered by existing budgets with assistance from grants	County Land Information	3 - 5 years	High	Comprehensive plans will need to be updated for Marinette County and the local jurisdictions.
County maintenance in the National Flood Insurance Program	Covered by existing budgets with grant funding through HAS	County Land Information	Ongoing	High	Enactment and enforcement of floodplain management regulations consistent with National Flood Insurance Program (NFIP) requirements is the responsibility of local jurisdictions in the planning area.
Update Floodplain mapping	Covered by existing budgets	FEMA	2025-2030	High	In process by FEMA.
Preservation of natural resources in floodplains	Covered by existing annual budget with state stewardship grant funding	County Land Information	Ongoing	High	
Stormwater management	Costs to be determined with assistance from grant funding	County Land Information, City of Marinette, Marinette County Public Health, and WDNR	Ongoing	High	
Acquisition and relocation	Costs to be determined with assistance from grant funding	County Land Information	As needed	Medium	Direct assistance in acquisition and relocation activities would only occur if grants became available.
Address farm manure storage concerns with respect to flooding	Covered by existing budgets	County Land Information	Ongoing	Medium	
Develop GIS culvert inventory	Costs to be determined with assistance from grant funding	County Land Information and County Highway Commission	2025-2030	Medium	
Flood forecasting and warning systems, and emergency plans	Covered by existing budgets with federal grant assistance through HAS	National Weather Service, County Emergency Management	Ongoing	Low	
Implement floodproofing, where needed	Covered by existing budgets and grants	Cities of Marinette, Peshtigo, and Niagara; and villages of Coleman, Crivitz, Pound, and Wausaukee	Ongoing	Low	Covered under existing budgets in the case of review of proposed new construction, but floodproofing activities for existing structures would only occur if grants become available.
Maintain county orthophotography	Covered by existing budgets	County Land Information and County Highway Commission	Ongoing every 5 years	Medium	



4. Mitigation Strategy

Table 4.1: Action Plan (Cont.)

Mitigation Measures	Costs of Project	Responsible Parties	Project Timetable	Priority	Comments
Winter Storms					
Review priority policy for salting and plowing streets and highways	Covered by existing budgets	County Highway Department and municipalities	Ongoing	High	Municipalities will provide information to the public concerning the counties priority policy for salting and plowing streets and highways.
Promote winter storm hazard awareness	Covered by existing budgets	County Emergency Management	Ongoing	Medium	
Drought					
Promote water conservation activities during drought	Covered by existing budgets	USDA through FSA and NRCS and UW-Extension	Ongoing	Low	
Wildland Fires					
Clean up fuel/debris after wind storms	Covered by existing budgets	County Forestry Department	Ongoing	Medium	
Provide fire education and prevention information	Covered by existing budgets with assistance from state and federal forestry grants	WDNR and municipal fire response units	Ongoing	Medium	Provided through Community Wildfire Protection Plans, and brochures.
Update structural zone maps	Covered by WDNR budget	County Land Information and WDNR	Ongoing every five years	Low	Initiated and developed by WDNR with data provided by County Land Information.
Provide the state with a list of fire equipment for wildfire suppression as needed	Covered by existing budgets	County Forestry Department	Ongoing	Medium	
Extreme Cold					
Publicize extreme cold events	Covered by existing budgets	County Public Health and County Emergency Management	Ongoing	Low	
Excessive Heat					
Publicize excessive heat events	Covered by existing budgets	County Public Health and County Emergency Management	Ongoing	Low	
Coastal Hazards					
Promote coastal hazard awareness	Covered by existing budgets	NOAA through WCMP and UW Sea Grant	Ongoing	Low	



Table 4.1: Action Plan (Cont.)

Mitigation Measures	Costs of Project	Responsible Parties	Project Timetable	Priority	Comments
Dam Failure Flooding					
Dam failure warning systems and emergency plans	Covered by existing budgets	County Emergency Management and facility owners/operators	Ongoing	Low	WPS & WE Energies have separate plans in place that address specific actions and notifications in case of dam failure. Ongoing by FERC regulations.
Dense Fog					
Publicize fog events	Covered by existing budgets	National Weather Service	Ongoing	Low	



4. Mitigation Strategy

► Policies, Programs, and Resources for Mitigation

Marinette County has a number of authorities that enforce policies, execute programs, and provide resources that support the mitigation action plan for reducing potential losses identified in the risk assessment. These authorities have been identified under the responsible parties (where applicable) in the mitigation action plan (Table 4.1), and include the following;

Marinette County Zoning

Relevant policies and programs include planning and zoning (including enforcement of county shoreland and floodplain management regulations).

Marinette County Emergency Management

Relevant policies and programs include coordinating effective disaster response and recovery efforts in the county through response, recovery, planning, training, and exercises, and mitigation.

Marinette County Sheriff's Department

Relevant policies and programs include coordinating emergency preparedness, mitigation, response, and recovery efforts.

Marinette County Highway Department

Relevant policies and programs include road maintenance, stormwater management, and management of salt storage for winter storms.

Marinette County Health & Human Services Department

Relevant policies and programs focus on protecting and promoting the health and safety of the people in the county in cooperation with community partners (includes assisting citizens with emergency preparedness).

Marinette County Parks Department

Relevant policies and programs include mitigation and recovery efforts.

Marinette County Forestry Department

Relevant policies and programs include mitigation and recovery efforts.

Municipal Law Enforcement and Fire Departments

Relevant policies and programs include coordinating emergency preparedness, mitigation, response, and recovery efforts.

Wisconsin Department of Natural Resources

Relevant policies and programs include regulation enforcement of state shoreland and floodplain management rules; and wildland fire response and education, training of volunteer fire departments, implementing fire response MOUs, and providing grant assistance.

National Weather Service (Green Bay Regional Office)

Relevant policies and programs include publicizing information, and providing outreach and education about hazardous weather.

Power Utilities

Relevant policies and programs include maintaining electrical power and transmission facilities.

American Red Cross - Northeast Wisconsin

Relevant policies and programs include disaster relief and educational programs that promote health and safety.

The aforementioned authorities have the ability to expand or modify their programs when needed to improve existing tools to address mitigation. Marinette County has taxing authority through property taxes to raise funds for the purpose hazard mitigation. Additional funding sources for hazard mitigation actions are available from a number of federal and state grant programs.

► Mitigation Strategies for Communities

Table 4.2 indicates the mitigation strategies for communities in Marinette County. These communities were contacted to add or update their mitigation measures from the county's 2020 hazard mitigation plan.



Table 4.2: Mitigation Strategies for Communities in Marinette County

Hazard Type	Mitigation Measures	Costs of Project	Responsible Parties	Project Timetable	Priority
City of Marinette					
Multi-Hazard	Acquisition of emergency power generators	Covered by existing budgets with assistance from grant funding	City of Marinette	As funding is available	High
Tornado/Strong Winds	ID emergency shelters	Covered by existing budgets	City of Marinette	Ongoing	High
Tornado/Strong Winds	ID Shelter deficit locations	Covered by existing budgets	City of Marinette	Ongoing	Med/High
Tornado/Strong Winds	Ensure mobile home park operators ID shelters	Covered by existing budgets	City of Marinette	Ongoing	Med/High
City of Niagara					
Excessive Heat	Cooling or splash station/shelter	Existing budget and grants	City of Niagara	1 - 2 years	Medium
City of Peshtigo					
Multi-Hazard	Acquisition of emergency power generators	\$200,000; covered by existing budgets with assistance from grant funding	City of Peshtigo	1 - 5 years	Medium
Village of Coleman					
Flooding	Stormwater management	Covered by existing budgets	Village of Coleman, WDNR	Ongoing	High
Village of Crivitz					
Extreme Cold	Publicize extreme cold events	Covered by existing budget and grants	Village of Crivitz	Ongoing	Low
Winter Storms	Review priority policy for salting and plowing streets and highways	Covered by existing budgets	Village of Crivitz	Ongoing	Low
Winter Storms	Promote winter storm hazard awareness	Covered by existing budgets	Village of Crivitz	Ongoing	Low
Village of Pound					
Tornado and Strong Wind	Identification of emergency shelters/debris clean-up/structure damage clean-up	Covered by existing budgets	Village of Pound, County Emergency Management	Ongoing	Low
Village of Wausaukee					
Multi-Hazard	Create/maintain storm shelter for municipal campground guests to mitigate injury/loss of life in the event of inclement weather	Covered by existing budgets with assistance from grant funding	Village of Wausaukee	2 - 5 years	Medium



4. Mitigation Strategy

► Potential Funding Sources for Mitigation

Funding for hazard mitigation programs and projects can come from a number of sources both public and private. Non-local funding can come from a number of sources, either in the form of a grant or a loan. The following text provides a description of a number of potential grant programs available to Marinette County (or other entities seeking to carry out hazard mitigation actions) in funding future mitigation actions identified in this plan:

Federal Programs

EDA Public Works and Development Facilities

These funds are available for local units of government to enhance regional competitiveness and promote long-term economic development in regions experiencing substantial economic distress. EDA provides Public Works investments to help distressed communities and regions revitalize, expand, and upgrade their physical infrastructure to attract new industry, encourage business expansion, diversify local economies, and generate or retain long-term private sector jobs and investment.

FEMA Assistance to Firefighters Grant

The primary goal of the Assistance to Firefighters Grants (AFG) is to meet the firefighting and emergency response needs of fire departments and nonaffiliated emergency medical services organizations. The AFG program helps firefighters and other first responders to obtain critically needed equipment, protective gear, emergency vehicles, training, and other resources needed to protect the public and emergency personnel from fire and related hazards. The National Preparedness Directorate in the Federal Emergency Management Agency administers the grants in cooperation with the U.S. Fire Administration.

FEMA Fire Prevention and Safety Grant

The Fire Prevention and Safety Grants (FP&S) are part of the AFG, and are also under the purview of the National Preparedness Directorate in FEMA. FP&S grants support projects that enhance the safety of the public and firefighters from fire and related hazards. The primary goal is to target high-risk populations and mitigate high incidences of death and injury.

FEMA Flood Mitigation Assistance Program

The Flood Mitigation Assistance (FMA) program was authorized as part of the National Flood Insurance Reform Act (NFIRA) of 1994 with the goal of reducing or eliminating claims under the National Flood Insurance Program (NFIP). FEMA provides FMA funds to assist states, territories, federally recognized tribes and local communities with implementing measures that reduce or eliminate the long-term risk of flood damage to buildings, manufactured homes, and other structures insurable under the NFIP. Eligible activities include: acquisition, relocation, elevation, and floodproofing of flood-prone insured properties; flood mitigation planning; and technical assistance. In order to be eligible for funding through this program, the local government must be in compliance with the NFIP.

FEMA Hazard Mitigation Grant Program

The Hazard Mitigation Grant Program (HMGP) provides funds to states, tribes and local communities after a disaster declaration to protect public or private property through various mitigation measures. Hazard mitigation includes long-term efforts to reduce the impact of future events. HMGP recipients have the primary responsibility for prioritizing, selecting, and administering state and local hazard mitigation projects. Although individuals may not apply directly to a state for assistance, local governments may sponsor an application on their behalf. The purpose of the HMGP is to help communities implement hazard mitigation measures following a Presidential Major Disaster Declaration in areas of the state, tribe or territory requested by the Governor or Tribal Executive. The key purpose of this grant program is to enact mitigation measures that reduce the risk of loss of life and property from future disasters.



Building Resilient Infrastructure and Communities (BRIC)

Building Resilient Infrastructure and Communities (BRIC) supports states, local communities, tribes, and territories as they undertake hazard mitigation projects, reducing the risks they face from disasters and natural hazards. BRIC replaces the Pre-Disaster Mitigation program and is a new FEMA pre-disaster hazard mitigation program. Guiding principles of the BRIC program include: supporting communities through capability- and capacity-building; encouraging and enabling innovation; promoting partnerships; enabling large projects; maintaining flexibility; and providing consistency.

Pipeline and Hazardous Materials Safety Administration, Hazardous Materials Emergency Preparedness

The HMEP grant program is intended to provide financial and technical assistance as well as national direction and guidance to enhance State, Territorial, Tribal, and local hazardous materials emergency planning and training. The HMEP grant program distributes fees collected from shippers and carriers of hazardous materials to emergency responders for hazmat training and to Local Emergency Planning Committees (LEPCs) for hazmat planning.

U.S. Department of Education School Emergency Response and Crisis Management Plan Discretionary Grant Program

This grant program is designed to provide funds to Local Education Agencies (LEAs) to strengthen and improve their emergency response and crisis plans, at the district and school building levels. Grantees are required to address all four phases of crisis planning: prevention and mitigation, preparedness, response, and recovery. In addition, LEAs are required to form partnerships and collaborate with community organizations, local law enforcement agencies, heads of local governments, and offices of public safety, health, and mental health, as they review and revise school crisis plans. Plans must be coordinated with state or local homeland security plans and support implementation of the National Incident Management System (NIMS). Grant funds may be used for the following activities: training school safety teams and students; conducting building and facilities audits; communicating emergency response policies to parents and guardians; implementing an Incident Command System (ICS); purchasing school safety equipment (to a limited extent); conducting drills and tabletop simulation exercises; and preparing and distributing copies of crisis plans.

State Programs

WDNR Municipal Flood Control Grant Program

The WDNR Bureau of Community Financial Assistance and Bureau of Watershed Management offer this grant assistance to all cities, villages, towns, tribes, and metropolitan sewerage districts concerned with municipal flood control management throughout the state. Eligible project types (in ranked order) include the following:

- Property acquisition and removal of structures for permanent open space or flood water storage;
- Acquisition of vacant land or flood water flowage easement to facilitate more efficient flood flows to the water body;
- Floodproofing and flood elevation of public and private structures in the 100-year floodplain;
- Flood water control detention ponds;
- Riparian restoration projects on a watercourse; and
- Flood mapping.

The grant period is for two years, with a possible extension of one year with written justification. WDNR reimburses 50 percent of eligible costs under this program.

WDNR Forest Fire Protection Grant Program

Forest fire protection (FFP) grants are available to Wisconsin fire departments and county/area fire associations. Grant funding is intended to expand the use of local fire departments to augment and strengthen the WDNR's overall initial attack fire suppression capabilities on forest fires.

WDNR Lead Service Line Replacement Programs

The WDNR, in collaboration with the Wisconsin Department of Administration and the Wisconsin Public Service Commission, established the Private Lead Service Line (LSL) Replacement Program to assist municipalities in their efforts to replace private LSLs. This is part of the WDNR's Safe Drinking Water Loan Program (SDWLP). Funding for LSL replacements on private property will be awarded as principal forgiveness, which means that no debt is incurred on behalf of the municipality for these funds. The private portion of the service line is defined as the portion between the curb stop and the normal connection point inside the building. The public portion of the service

4. Mitigation Strategy

line is eligible for SDWLP funding. This program has gone in and out of existence in recent years, but the Bipartisan Infrastructure Law (BIL) recently gave it new life.

Wisconsin Department of Administration (WDOA) Division of Energy, Housing, and Community Resources - Community Development Block Grant (CDBG) – Emergency Assistance Program (EAP)

The CDBG-EAP is administered by the WDOA's Division of Energy, Housing, and Community Resources (DEHCR) under Title I of the Housing and Community Development Act of 1974, as amended. CDBG-EAP funds are used to assist local units of government in addressing emergency housing, public facility, infrastructure, and business assistance needs that occur as a result of natural or manmade disasters. Such assistance may include, but is not limited to: housing rehabilitation, acquisition/demolition, housing replacement, road repairs, storm water drainage and public facilities. A local unit of government interested in applying for CDBG-EAP funds must submit a notice of intent to apply within 90 days of the disaster event. These funds must be used for the benefit of low-to-moderate income households or persons; income information is collected and reviewed to ensure participant eligibility.

Wisconsin Department of Health Services (WDHS) Public Health Emergency Preparedness Program

The WDHS applies for federal funding each year through the Hospital Preparedness Program – Public Health Emergency Preparedness Cooperative Agreement. The WDHS Health Emergency Preparedness (HEP) Section must submit an application, budget narrative and other documentation each year in order to receive funding for the upcoming fiscal year. Once that documentation has been reviewed and approved, the federal government distributes a Notice of Award that allocates the amount of funding that the state receives for the fiscal year. This funding is typically distributed between two programs: the Public Health Emergency Preparedness Program (PHEP) and the Hospital Preparedness Program (HPP). A certain percentage of PHEP funding goes to local health departments and tribal health centers, with one of these being the Marinette County Health Department.

Wisconsin Economic Development Corporation (WEDC) Disaster Recovery Microloan Program

The goal of the WEDC Disaster Recovery Microloan (DRM) program is to provide short-term assistance to businesses affected by disaster events in Wisconsin. Nine regional entities in the state (including the Bay-Lake Regional Planning Commission (RPC) and nearly all RPCs in the state) have been designated by the WEDC “with the capacity to deploy rapid response microloans to businesses affected by disasters, either natural or manmade.” These regional entities contract with the WEDC to distribute and administer DRM funds. Within 30 days following a natural or manmade disaster event (which may or may not include a corresponding state of emergency or disaster declaration), the regional entity can request allocation of funding to make microloans in their region, and the WEDC will expedite review and approval of the request. Eligible activities include: (1) procurement of cleanup and restoration services; (2) operating expenses (such as payroll); (3) rent or mortgage for temporary space; and (4) repair and reconstruction. There are several eligibility criteria, and certain business types are ineligible. Up to \$20,000 in loans are available at an interest rate of 0.0 percent, and the loans should be paid back within 24 months. There are provisions for deferral, collateral and guarantees. Additional information regarding this program can be found at: [https://baylakerpc.org/fundingresources/disaster-recovery-microloan-program\(.\)](https://baylakerpc.org/fundingresources/disaster-recovery-microloan-program(.))

Wisconsin Emergency Management (WEM) Emergency Planning and Community Right-to-Know Act (EPCRA) Grants

WEM offers two grants that have been authorized in the federal EPCRA:

- **Planning Grants** – WEM will provide grant funds to a county emergency management office for eligible expenses that support their Local Emergency Planning Committee (LEPC) completion of required Plan-of-Work (POW) hazardous materials planning and preparedness activities. Grant awards are formula based and are funded by EPCRA program revenue/fees. The grant is administered in conjunction with the Emergency Management Performance Grant (EMPG).

Computer and Hazmat Equipment Grants – WEM will provide grant funds to a county emergency management office to support the purchase of



eligible computer and hazmat equipment for a county sponsored hazmat team. The maximum total award may be up to \$10,000 annually (subject to approval), and with consideration of a four-year funding cycle. The grant will reimburse 80 percent of eligible expenses, with a 20 percent local match required. Counties without a county sponsored hazmat team are eligible only for the computer portion of the grant. The grant is funded by state general purpose revenue (GPR).

Wisconsin Disaster Fund

The Wisconsin Disaster Fund (WDF) is a state-funded reimbursement program intended to assist counties, city, village, town and tribal units of government recoup costs incurred in responding to and recovering from natural disasters. The state reimburses 70 percent of eligible costs after the local governmental unit submits a complete WDF application. The WDF does not cover individuals, businesses, the agricultural sector, costs associated with snowstorms, damages covered by insurance, nor does it provide funds for mitigation activities. The WDF does reimburse public disaster costs under three categories of work: debris clearance; protective measures; and road and bridge repair.

The WDF is modeled after FEMA's Public Assistance Program, and is guided by the Robert T. Stafford Disaster Relief and Emergency Assistance Act, as amended.

In order to be eligible for the WDF, the following steps must occur:

- The local unit of government has declared a "State of Emergency," in accordance with their own policies and procedures.
- The applicant must show that federal disaster assistance is not available.
- Recovery costs meet or exceed the countywide per capita damage threshold.



5. Plan Adoption and Maintenance

► Plan Adoption Process

The *Marinette County Natural Hazards Mitigation Plan 2025 - 2030* development process was guided by the County Hazard Mitigation Plan Steering Committee over an ____-month time-frame, with professional planning support from the Bay-Lake Regional Planning Commission. A list of Steering Committee members can be found in Chapter 1 - Introduction of this document.

WEM and FEMA reviewed a final draft of the county's hazard mitigation plan prior to adoption by the Marinette County Board. Comments received from WEM and FEMA were reviewed by the Steering Committee and necessary revisions were made.

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

Adoption of the this hazard mitigation plan update by a local unit of government certifies their participation. **The plan was adopted by resolution by the Marinette County Board on _____.** Local resolutions of adoption can be found on page _____. **Approval letters from WEM and FEMA can be found on pages _____.**

► Plan Maintenance

Planning is an ongoing process, and this plan should grow and adapt in order to keep pace with growth and change in the planning area and its local jurisdictions. The Disaster Mitigation Act of 2000 requires that local plans be evaluated and updated at least every five years in order to remain eligible for assistance.

Plan Monitoring, Evaluation, and Updating

This *Marinette County Natural Hazards Mitigation Plan 2025 - 2030* is an update to the 2020 plan, and will continue to be monitored, evaluated, and updated by the Marinette County Emergency Management Coordinator.

Plan monitoring will occur every five years, and will involve convening the Steering Committee to review the identified mitigation strategies and track the progress toward implementation.

Plan evaluation will include an assessment of the effectiveness of the plan at achieving the stated goals by convening the steering committee every five years to review the plan and ensure that all information is still relevant and applicable.

Plan updating will occur every five years, and will involve the collection of the most current data to support the plan and the development of new mitigation strategies and an implementation plan. This planning effort will be comprehensive, and will incorporate opportunities for public involvement to meet all requirements of 44 CFR Part 201.6 and/or any applicable requirements or regulations developed over the next five years.

The plan monitoring, evaluation and updating will be coordinated by the Marinette County Emergency Management Coordinator, and will be approved by the County Board. All meetings to monitor, evaluate, and/or update the plan will be subject to the Wisconsin Open Meetings Law, and will be properly noticed to allow for public involvement and comment. All communities in Marinette County will be invited to participate in the process.

Additional Plan Review

Within three to six months following a significant natural hazard event, a special post-disaster review will occur. Information concerning the disaster shall be collected by Marinette County Emergency Management from local law enforcement personnel, fire department personnel, disaster response personnel, Wisconsin Emergency Management staff, FEMA staff, affected citizens, and any other pertinent entities. This information shall be provided to the Steering Committee for its review.

At a public meeting, the Steering Committee will analyze the contributing factors to the impact(s) of the hazard event, the likelihood of the event recurring, and any strategies that should be implemented to mitigate the impact(s) in the future. The County Emergency Management Coordinator will have primary responsibility for establishing post-disaster review meeting dates, distributing related materials, facilitating the meetings, and advertising these special meetings to affected county department heads and citizens and community groups, so that additional input and comment can be received. Special post-disaster review meetings shall be subject to the Wisconsin



Open Meeting Law and shall be properly noticed to allow for public involvement and comment.

The Steering Committee may choose to revise or amend the existing county plan based on what is learned in the review process. Any recommended changes to the plan shall be forwarded to the Marinette County Board for its action and consideration.

► Plan Incorporation

The mitigation action plan (provided in Chapter 4) ties the mitigation strategies to related plans or policies. As the county and jurisdictions in the planning area develop or update their comprehensive plans, incorporation of this Hazard Mitigation Plan is highly recommended. The Wisconsin comprehensive planning law includes a detailed description of elements that need to be addressed in all comprehensive plans. The following items must be considered when incorporating this Hazard Mitigation Plan into the required elements of local comprehensive plans for jurisdictions in the planning area:

- **Issues and Opportunities Element:** A summary of major hazards that local governments are vulnerable to, and what is proposed to be 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/manufactured homes, recommendations concerning building codes, shelter opportunities, and a survey of homeowners that may be interested in a voluntary buyout and relocation program.
- **Transportation Element:** Identify any transportation routes or facilities that are more at risk during flooding or winter storms.
- **Agricultural, Natural, and Cultural Resources Element:** Identify the floodplains and agricultural areas that are at risk during hazardous events. Incorporate recommendations on how to mitigate future losses to these areas.
- **Economic Development Element:** Describe the impacts that past hazards have had on area businesses.
- **Intergovernmental Cooperation Element:** Identify intergovernmental police, fire and rescue service sharing agreements that are in effect or which may merit further investigation, and consider

cost sharing and resource pooling of government services and facilities.

- **Land Use Element:** Describe how flooding has impacted land uses and what is being done to mitigate negative land use impacts from flooding; map and identify natural hazard areas, such as floodplains and soils with limitations.
- **Implementation Element:** Recommended actions from this plan included in the implementation element of comprehensive plans of all jurisdictions in the planning area.



5. Plan Adoption and Maintenance

Elements of the *Marinette County Natural Hazards Mitigation Plan 2025 - 2030* should continue to be incorporated into the Marinette County 20-Year Comprehensive Plan Update and all comprehensive plans developed/updated for communities within the county.

Plan Coordination

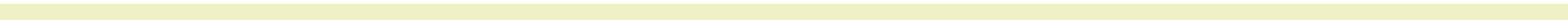
To maximize coordination of the Hazard Mitigation Plan with other related plans for Marinette County, mitigation strategies recommended in this plan have been, and should continue to be, considered when developing capital improvement plans, stormwater management plans, or flood mitigation plans.

Several relevant plans, reports, and technical data were referenced and incorporated into the *Marinette County Natural Hazards Mitigation Plan 2025 - 2030*. The following is a comprehensive list of the data and reports that were used in plan development:

- Population and housing data from the Bureau of the Census (1990, 2000, 2010 and 2020);
- Employment by industry from the Bureau of the Census (2020 American Community Survey (ACS) 5-Year Estimates);
- Median household income and poverty rate (2016 and 2020 ACS 5-Year Estimates);
- Annual unemployment rate (2016 and 2020 Wisconsin Department of Workforce Development Local Area Unemployment Statistics);
- Land use inventory data (2023, Bay-Lake Regional Planning Commission);
- National Oceanic and Atmospheric Administration (NOAA) National Centers for Environmental Information, past natural hazard occurrence data;
- Wisconsin Department of Natural Resources (WDNR) Fire Management Dashboards Wildfire View, and Burning Permit Map;
- Traffic Operations and Safety (TOPS) Laboratory, UW-Madison, WisTransPortal System;
- Federal Emergency Management Agency (FEMA), Federal Disaster Declarations affecting Marinette County, Wisconsin, and Wind Zones Map;
- U.S. Geological Survey maps on landslides, land subsidence and earthquakes were used to describe those hazards;
- National Weather Service, various graphics, including: Explanation of Enhanced Fujita Scale; Tornado Tracks in Marinette County; Where to go when sheltering from a tornado; Average Annual Snowfall in Wisconsin; Number of Heat Wave Days; and Hailstone Size Chart;
- Wisconsin State Climatology Office, graphics, including: Average Days with Below Zero Lows; and Average Lightning Density;
- Wisconsin Initiative on Climate Change Impacts - Assessment Report (2021) contributed to the climate impacts language;
- National Drought Mitigation Center, Drought Guide Chart;
- Crondall Weather, Lightning Types;
- Internet Crime Complaint Center, Victims (of cybercrime) by Age Group; and Crime Type by Victim Count;
- FEMA, Flood Insurance Studies and Flood Insurance Rate Maps (FIRMs) were used to map floodplain areas;
- Parcel data from Marinette County were used to determine impacts of hazards with defined areas;
- Assessed valuation data from Marinette County were used to derive estimates of potential dollar losses;
- The Marinette County 20-Year Comprehensive Plan Update was used to develop the community profile and contributed to the development of the mitigation action plan;
- Risk Assessment Matrix Worksheet adapted from the Resource Guide to All Hazards Mitigation Planning in Wisconsin (AWRPC, 2003);
- Local Hazard Mitigation Plan Review Crosswalk completed for Marinette County in December 2019 was used to ensure that recommended revisions were addressed;
- State of Wisconsin Hazard Mitigation Plan (2016) was used to develop hazard descriptions for the risk assessment;
- FEMA Local Mitigation Planning Handbook (2013) was used to ensure that the plan contained all required information; and
- FEMA Mitigation Ideas: A Resource for Reducing Risk to Natural Hazards (2013) contributed to the development of the mitigation action plan.

It is recommended that similar materials be referenced when completing any updates to the hazard mitigation plan.





Appendices

► Appendix A: Steering Committee Agendas



AGENDA
HAZARD MITIGATION PLAN STEERING COMMITTEE
 Thursday, November 16, 2023
 9:00 a.m.
 County Board Room 1st floor
 Marinette County Courthouse
 1926 Hall Ave., Marinette WI

1. Call meeting to order
2. Approve agenda
3. Election of Chairperson
4. Election of Vice Chairperson
5. Public Comment – Speaker will be limited to 5 minutes
6. Introductions
7. Project description: Overview/Purpose of planning process and plan content – information only.
8. Review 2020 Hazard Mitigation Plan – information only
9. Review new FEMA guidelines and outreach strategies – information only
10. Evaluate/update goals and hazard ratings, action if any
11. Discuss next steps – information only
12. Next meeting – Date/Time/Location
13. Adjournment

Eric Burmeister	Jessica Olson	Kirsten Burmeister	Molly Bonjean
Ryan Bourassa	Martin Keyport	Tim Oestreich	Tina Barnes
Jay Heckel	Jessica Demler	County Clerk	Agendas
Jessica Missall – Bay-Lake Regional Planning Commission			

1



AGENDA
HAZARD MITIGATION PLAN STEERING COMMITTEE
 Tuesday, January 16, 2024
 9:00 a.m.
 County Board Room 1st floor
 Marinette County Courthouse
 1926 Hall Ave., Marinette WI

1. Call meeting to order
2. Approve agenda
3. Approve/correction of minutes from November 16, 2023, action if any.
4. Public Comment – Speaker will be limited to 5 minutes.
5. Attendance/Introductions
6. Review/Modify goals set on Nov 16, 2023, action if any.
7. Review/Update list of critical facilities, action if any
8. Review/Discuss priority ranking of hazards, action if any
9. Review/Modify Chapters 1 and 2, action if any
10. Discuss next steps – information only
11. Next meeting – Date/Time/Location
12. Adjournment

Eric Burmeister	Jessica Olson	Kirsten Burmeister	Molly Bonjean
Ryan Bourassa	Martin Keyport	Tim Oestreich	Tina Barnes
Jay Heckel	Jessica Demler	County Clerk	Agendas
Jessica Missall – Bay-Lake Regional Planning Commission			

Supervisors present at this meeting may constitute an unintended quorum of other County Board committees. Supervisors appointed to the committee shall participate in action. Others may be present to listen and observe.

1



AGENDA
HAZARD MITIGATION PLAN STEERING COMMITTEE
 Tuesday, February 20, 2024
 10:00 a.m.
 Wausaukee Village Hall
 704 Main St. Wausaukee WI 54177

1. Call meeting to order
2. Approve agenda
3. Approve/correction of minutes from January 16, 2024, action if any.
4. Public Comment – Speaker will be limited to 5 minutes.
5. Attendance/Introductions
6. Review/Modify Chapters 1 and 2, from Jan 16, 2024 meeting, action if any.
7. Review/Update list of critical facilities, action if any
8. Review/Discuss Action Plan, action if any
9. Review/Modify Chapter 3, action if any
10. Discuss next steps – information only
11. Next meeting – Date/Time/Location
12. Adjournment

Eric Burmeister	Jessica Olson	Kirsten Burmeister	Molly Bonjean
Ryan Bourassa	Martin Keyport	Tim Oestreich	Tina Barnes
Jay Heckel	Jessica Demler	County Clerk	Agendas
Jessica Missall – Bay-Lake Regional Planning Commission			

Supervisors present at this meeting may constitute an unintended quorum of other County Board committees. Supervisors appointed to the committee shall participate in action. Others may be present to listen and observe.

1



AGENDA
HAZARD MITIGATION PLAN STEERING COMMITTEE
 Wednesday, April 24, 2024
 10:00 a.m.
 Marinette County Courthouse, County Board Room
 1926 Hall Ave, Marinette, WI 54143

1. Call meeting to order
2. Approve agenda
3. Approve/correction of minutes from February 20, 2024, action if any.
4. Public Comment – Speaker will be limited to 5 minutes.
5. Attendance/Introductions
6. Review/Update list of critical facilities, action if any
7. Review/Modify Chapter 4, action if any
8. Discuss next steps – information only
9. Next meeting – Date/Time/Location
10. Adjournment

Eric Burmeister	Jessica Olson	Brenda Powell	Molly Bonjean
Ryan Bourassa	Martin Keyport	Tim Oestreich	Tina Barnes
Jay Heckel	Jessica Demler	County Clerk	Agendas
Jessica Missall – Bay-Lake Regional Planning Commission			

Supervisors present at this meeting may constitute an unintended quorum of other County Board committees. Supervisors appointed to the committee shall participate in action. Others may be present to listen and observe.

Note: Agenda items may not be considered and acted upon in the order listed.

1



AGENDA
HAZARD MITIGATION PLAN STEERING COMMITTEE
 Wednesday, June 26, 2024
 10:00 a.m.
 County Board Room 1st floor
 Marinette County Courthouse
 1926 Hall Ave., Marinette WI

1. Call meeting to order
2. Approve agenda
3. Approve/correction of minutes from April 24, 2024, action if any.
4. Public Comment – Speaker will be limited to 5 minutes.
5. Attendance/Introductions
6. Review/Update list of critical facilities, action if any
7. Review/Modify Chapter 4, action if any
8. Overview of Chapter 5 (Plan Adoption and Maintenance) and Draft Document, action if any
9. Discuss next steps – information only
10. Next meeting – Date/Time/Location
11. Adjournment

Eric Burmeister	Jessica Olson	Brenda Powell	Molly Bonjean
Ryan Bourassa	Martin Keyport	Tim Oestreich	Tina Barnes
Jay Heckel	Jessica Demler	County Clerk	Agendas
Brandon Robinson – Bay-Lake Regional Planning Commission			

Supervisors present at this meeting may constitute an unintended quorum of other County Board committees. Supervisors appointed to the committee shall participate in action. Others may be present to listen and observe.

Note: Agenda items may not be considered and acted upon in the order listed.

1

Appendix B: Steering Committee Meeting Minutes



MINUTES
HAZARD MITIGATION PLAN STEERING COMMITTEE
Thursday, November 16, 2023
County Board Room 1st floor
Marinette County Courthouse
1926 Hall Ave., Marinette WI

MEMBERS PRESENT: Jessica Olson, Kirsten Burmeister, Molly Bonjean, Ryan Bourassa, Martin Keyport, Jay Hecke, Jessica Demier
MEMBERS EXCUSE/ABSENT: Eric Burmeister, Tim Oestreich, Tina Barnes

OTHERS PRESENT: Jessica Missall – Bay-Lake Regional Planning Commission, Brandon Robinson – Bay-Lake Regional Planning Commission

- Call meeting to order.**
Jessica Demier called the meeting to order at 9:02 AM.
- Approve agenda**
Motion (K. Burmeister/Bonjean) to approve agenda as presented. Motion carried, no negative votes.
- Election of Chairperson**
Election was carried out in accordance with Robert's Rules of Order. J. Demier nominated Eric Burmeister. No other nominations. **Motion** (Keyport/K. Burmeister) to elect Eric Burmeister as Chairperson. Motion carried, no negative votes.
- Election of Vice Chairperson**
Election was carried out in accordance with Robert's Rules of Order. K. Burmeister nominated Jessica Demier. No other nominations. **Motion** (Keyport/K. Burmeister) to elect Jessica Demier as Vice Chairperson. Motion carried, no negative votes.
- Public Comment – Speaker will be limited to 5 minutes**
None
- Attendance/Introductions**
All present introduced themselves to the committee.
- Project description: Overview/Purpose of planning process and plan content – information only**
Jessica Missall provided an overview of the hazard mitigation plan process and content. No action taken.
- Review 2020 Hazard Mitigation Plan – information only**
Information only. No action taken.
- Review new FEMA guidelines and outreach strategies – information only**
Jessica Missall and Brandon Robinson provided an overview of the FEMA guidelines and outreach strategies. No action taken.
- Evaluate/update goals and hazard ratings, action if any**
Motion (Bonjean/K. Burmeister) to add infectious disease to existing hazard risk assessment plan. Motion carried, no negative votes.
- Discuss next steps – information only**
Information only. No action taken.

1



MINUTES
HAZARD MITIGATION PLAN STEERING COMMITTEE
Tuesday January 16, 2024
County Board Room 1st floor
Marinette County Courthouse
1926 Hall Ave., Marinette WI

MEMBERS PRESENT: Jessica Olson, Kirsten Burmeister, Molly Bonjean, Ryan Bourassa, Martin Keyport, Jay Hecke, Jessica Demier, Eric Burmeister, Tina Barnes
MEMBERS EXCUSE/ABSENT: Tim Oestreich

OTHERS PRESENT: Jessica Missall – Bay-Lake Regional Planning Commission, Matthew Schruck

- Call meeting to order.**
Eric Burmeister called the meeting to order at 9:06 AM.
- Approve agenda**
Motion (E. Burmeister/Barnes) to approve the agenda as presented. Motion carried. No negative votes.
- Approve/correction of minutes from November 16, 2023, action if any.**
Motion (K. Burmeister/Bourassa) to approve the meeting minutes from November 16, 2023 as presented. Motion carried, no negative votes.
- Public Comment – Speaker will be limited to 5 minutes.**
None
- Attendance/Introductions**
Discussion was held on proper documentation and payroll classification for meetings and all time worked on the Natural Hazard Mitigation Plan.
- Review/Modify goals set on Nov 16, 2023, action if any.**
Current plan was reviewed and will be updated first. Once updates are completed, new chapters may be added, to brought back at a future meeting.
- Review/Update list of critical facilities, action if any**
Jessica Missall reported that she has received only minimal response from the municipalities within the County. An additional follow-up email will be sent out.
- Review/Discuss priority ranking of hazards, action if any**
Current plan rankings were reviewed, discussed, and modified.
- Review/Modify Chapters 1 and 2, action if any**
Chapters 1 and 2 of the current plan were reviewed and corrections were made.
- Discuss next steps – information only**
None.
- Next meeting – Date/Time/Location**
Late Feb/Early March at the Village of Wausaukee Hall, 10:00 AM. The meeting date will be coordinated with the Clerk at the Village of Wausaukee for availability of the hall meeting area.
- Adjournment**
Motion (Barnes/Hecke) to adjourn at 10:32 AM. Motion carried. No negative votes.

Jessica Olson, Administrative Specialist
Date/Approved

1



MINUTES
HAZARD MITIGATION PLAN STEERING COMMITTEE
Tuesday February 20, 2024
County Board Room 1st floor
Wausaukee Village Hall
704 Main St, Wausaukee, WI 54177

MEMBERS PRESENT: Jessica Olson, Jessica Demier, Ryan Bourassa, Tim Oestrich, Martin Keyport, Tina Barnes
MEMBERS EXCUSE/ABSENT: Kirsten Burmeister, Molly Bonjean, Jay Hecke, Eric Burmeister

OTHERS PRESENT: Jessica Missall – Bay-Lake Regional Planning Commission, Brandon Robinson – Bay-Lake Regional Planning Commission, Ruth Jicha

- Call meeting to order.**
Jessica Demier called the meeting to order at 10:00 AM.
- Approve agenda**
Motion (Oestrich/Keyport) to approve the agenda as presented. Motion carried. No negative votes.
- Approve/correction of minutes from January 16, 2024, action if any.**
Motion (Bourassa/Barnes) to approve the meeting minutes from January 16, 2024 as presented. Motion carried, no negative votes.
- Public Comment – Speaker will be limited to 5 minutes.**
None
- Attendance/Introductions**
All present introduced themselves.
- Review/Modify Chapters 1 and 2 from January 16, 2024 meeting, action if any.**
No changes.
- Review/Update list of critical facilities, action if any**
Jessica Missall reported that she is still missing 6 municipalities critical facilities reports. Contact has been made with all of the Clerks and the reports will be reviewed at the next meeting.
- Review/Discuss Action Plan, action if any**
The current action plan was reviewed and modifications were made.
- Review/Modify Chapter 3, action if any**
Chapter 3 was reviewed. No changes at this time.
- Discuss next steps – information only**
Review Chapter 4. Review and update critical facilities reports.
- Next meeting – Date/Time/Location**
Late March/early April at the Niagara Senior Center, 569 Washington Ave, Niagara, WI, 10:00 AM. The meeting date will be coordinated with the facility for availability of the hall meeting area.
- Adjournment**
Motion (Barnes/Bourassa) to adjourn at 10:58 AM. Motion carried. No negative votes.

Jessica Olson, Administrative Specialist
Date/Approved

1



MINUTES
HAZARD MITIGATION PLAN STEERING COMMITTEE
Wednesday, April 24, 2024
County Board Room 1st floor
1926 Hall Ave.
Marinette, WI 54143

MEMBERS PRESENT: Jessica Olson, Jessica Demier, Ryan Bourassa, Tim Oestrich, Tina Barnes, Molly Bonjean, Jay Hecke, Eric Burmeister, Brenda Powell
MEMBERS EXCUSE/ABSENT: Martin Keyport

OTHERS PRESENT: Brandon Robinson – Bay-Lake Regional Planning Commission, Matthew Shuck

- Call meeting to order.**
Eric Burmeister called the meeting to order at 10:02 AM.
- Approve agenda**
Motion (Oestrich/Bourassa) to approve the agenda as presented. Motion carried. No negative votes.
- Approve/correction of minutes from February 20, 2024, action if any.**
Motion (Barnes/Shruck) to approve the meeting minutes from February 20, 2024 as presented. Motion carried, no negative votes.
- Public Comment – Speaker will be limited to 5 minutes.**
None
- Attendance/Introductions**
New member, Brenda Powell, was introduced.
- Review/Update list of critical facilities, action if any**
Critical Facilities reports were distributed and reviewed. Brandon Robinson states there has still been no response from Town of Goodman and Town of Silver Cliff.
- Review/Modify Chapter 4, action if any**
Chapters 4 and 5 were reviewed. No changes at this time.
- Discuss next steps – information only**
Review Chapters 4 and 5, and critical facilities reports. Any changes can be sent to Brandon or discussed at the next meeting.
- Next meeting – Date/Time/Location**
June or July at the Marinette County Courthouse, County Board Room, 10:00 AM. The meeting date will be coordinated with the facility for availability and a survey will be sent to all members for scheduling the next date.
- Adjournment**
Motion (Barnes/Hecke) to adjourn at 10:54 AM. Motion carried. No negative votes.

Jessica Olson, Administrative Specialist
Date/Approved

1



MINUTES
HAZARD MITIGATION PLAN STEERING COMMITTEE
Wednesday, June 26, 2024
County Board Room 1st floor
1926 Hall Ave.
Marinette, WI 54143

MEMBERS PRESENT: Jessica Demier, Ryan Bourassa, Tim Oestrich, Tina Barnes, Molly Bonjean, Jay Hecke, Eric Burmeister, Brenda Powell
MEMBERS EXCUSE/ABSENT: Martin Keyport, Jessica Olson

OTHERS PRESENT: Brandon Robinson – Bay-Lake Regional Planning Commission, Matthew Shuck

- Call meeting to order.**
Eric Burmeister called the meeting to order at 10:07 AM.
- Approve agenda**
Motion (Hecke/Bourassa) to approve the agenda as presented. Motion carried. No negative votes.
- Approve/correction of minutes from April 24, 2024, action if any.**
Motion (Barnes/Powell) to approve the meeting minutes from April 24, 2024 as presented. Motion carried, no negative votes.
- Public Comment – Speaker will be limited to 5 minutes.**
Marinette County Board Supervisor, Peter Noppenberg, introduced himself to the committee.
- Attendance/Introductions**
All present signed in.
- Review/Update list of critical facilities, action if any**
Critical Facilities reports were distributed and reviewed. Brandon Robinson states there has still been no response from Town of Goodman and Town of Silver Cliff.
- Review/Modify Chapter 4, action if any**
Chapters 4 was reviewed. No changes at this time.
- Overview of Chapter 5 (Plan Adoption and Maintenance) and Draft Document, action if any**
Brandon Robinson gave overview of plan adoption process, no changes made.
- Discuss next steps – information only**
WEM feedback, open house, and plan adoption.
- Next meeting – Date/Time/Location**
To be determined, based on feedback from WEM
- Adjournment**
Motion (Barnes/Bonjean) to adjourn at 11:08 AM. Motion carried. No negative votes.

Jessica Demier, Emergency Management Coordinator
Date/Approved

1

Appendices

► Appendix C: Public Meeting Notices

PUBLIC INPUT NEEDED!

Help Marinette County plan, prepare for, and respond to future weather events and natural hazards. Residents are encouraged to provide feedback on ways the Village and County can improve safety during extreme weather events.

MARINETTE COUNTY HAZARD MITIGATION PLAN

MEETING ON FEBRUARY 20 AT 10:00AM IN VILLAGE HALL

704 Main St. Wausaukee, WI 54177

Hazard mitigation planning is a process that assesses risks and evaluates the community's vulnerability from potential hazards. Hazards include winter storms, tornadoes, wildland fires, and other naturally-occurring climate events.

BAY LAKE
Regional Planning | Commission Since 1922

PLANES DE MITIGACIÓN CONTRA PELIGROS NATURALES DEL CONDADO MARINETTE

Reunión el 20 de febrero a las 10:00am

704 Main St. Wausaukee, WI 54177

Planes de Mitigación Contra Peligros Naturales identifican los peligros y riesgos naturales que pueden afectar a una comunidad. Los peligros incluyen tormentas de invierno, tornados, incendios forestales, y otros eventos climáticos que ocurren naturalmente.

SE NECESITA APORTE PUBLICO

Ayuda el Condado de Marinette planificar, preparar y responder a los eventos climáticos y peligros naturales del futuro. Se anima a los residentes a proporcionar comentarios sobre la forma que el pueblo y el condado pueda mejorar la seguridad de los residentes durante eventos extremos climáticos.

BAY LAKE
Regional Planning | Commission Since 1922

PUBLIC INPUT NEEDED!

Help Marinette County plan, prepare for, and respond to future weather events and natural hazards. Residents are encouraged to provide feedback on ways the City and County can improve safety during extreme weather events.

MARINETTE COUNTY HAZARD MITIGATION PLAN

MEETING ON APRIL 4 AT 10:00AM IN THE SENIOR CENTER

569 Washington Ave. Niagara, WI 54151

Hazard mitigation planning is a process that assesses risks and evaluates the community's vulnerability from potential hazards. Hazards include winter storms, tornadoes, wildland fires, and other naturally-occurring climate events.

BAY LAKE
Regional Planning | Commission Since 1922

Canceled due to weather

PLANES DE MITIGACIÓN CONTRA PELIGROS NATURALES DEL CONDADO MARINETTE

Reunión el 4 de abril a las 10:00am

569 Washington Ave. Niagara, WI 54151

Planes de Mitigación Contra Peligros Naturales identifican los peligros y riesgos naturales que pueden afectar a una comunidad. Los peligros incluyen tormentas de invierno, tornados, incendios forestales, y otros eventos climáticos que ocurren naturalmente.

SE NECESITA APORTE PUBLICO

Ayuda el Condado de Marinette planificar, preparar y responder a los eventos climáticos y peligros naturales del futuro. Se anima a los residentes a proporcionar comentarios sobre la forma que la ciudad y el condado pueda mejorar la seguridad de los residentes durante eventos extremos climáticos.

BAY LAKE
Regional Planning | Commission Since 1922

Canceled due to weather



► Appendix D: Multi-Jurisdictional Cooperation Exercise



MARINETTE COUNTY HIGHWAY DEPARTMENT
DIVISION OF EMERGENCY MANAGEMENT

Jessica Demler
Emergency Management Coordinator

Jessica Olson
Administrative Specialist

November 8, 2023

RE: Request for Review of Hazard Mitigation Materials

(Please forward to the Plan Commission or Council/Board)

The Marinette County Emergency Management and the Bay-Lake Regional Planning Commission have been working with a local steering committee to update the Hazard Mitigation Plan for Marinette County and the municipalities.

The Federal Disaster Mitigation Act of 2000 established a **requirement for local governments** to prepare a hazard mitigation plan to be eligible for funding from FEMA through the Pre-Disaster Mitigation Grant Program, the Flood Mitigation Assistance Program, the Hazard Mitigation Grant Program, and disaster assistance.

The hazard mitigation planning process is being conducted at the county level. In order to be covered by the plan, cities and villages will need to provide input on the plan, and adopt it once complete. The following materials have been enclosed to facilitate this participation in development of the plan, and ensure that the plan contains accurate municipal information:

EXERCISE #1: Using the current inventory of the critical facilities found in your municipality, plus a list of the critical facility types/categories that are to be included, **review the information for accuracy and write in any edits.**

- Ensure that there is an address or lat/long coordinates provided for each critical facility that you add.
- Only include publicly owned facilities.

EXERCISE #2: **Review and sign the sheet** of county mitigation strategies.

EXERCISE #3: **Identify at least one mitigation strategy specific to your municipality** that the community would like to implement if grant funding were available.

Please return your information (with or without edits) **no later than January 31, 2024** to Jessica Missall at jmissall@baylakerpc.org or 1861 Nimitz Drive, De Pere, WI 54115.

If you have any questions or need any additional information, please contact Jess via email or phone at (920) 448-2820, Ext. 109. Thank you for your participation in reviewing the enclosed materials.

PLEASE NOTE THAT THIS IS THE ONLY REQUEST THAT WILL BE MADE FOR THIS INFORMATION. IF CITY/VILLAGE MATERIALS ARE NOT RECEIVED, THE MUNICIPALITY WILL NOT BE A PART OF THE PLAN. Not participating in this plan will require the development of a municipal plan in order to be eligible for FEMA funding – including disaster assistance.

Sincerely,

Eric Burmeister

Emergency Management Administrator

Enclosures (3): Exercise #1 - Critical Facility Categories and Municipal Critical Facilities List); Exercise #2 - County Mitigation Strategies; and Exercise #3 - Municipal Mitigation Strategy Form

Appendices

► Appendix E: Non-Natural Hazards Determined to Pose a Significant Risk

CYBERATTACK

Description

The State of Wisconsin Hazard Mitigation Plan 2021 describes cyberattacks as “the hostile use of information technology by individuals or groups for the purpose of financial gain or as an action to further a social or political agenda.” Cyberattacks can occur at any level of society, from the individual level to larger organizations.

Information technology systems are connected in networks or through the Internet, and thus are at risk of cyberattack. An attack may be a deliberate effort to gain access to the system or processes; or it may be the result of a randomly initiated threat, such as a worm or virus. Cyber threats are often difficult to identify and have increased significantly in the US recently, exposing sensitive personal and business information, disrupting critical operations, and imposing high costs on the economy.

Probability, Impact, Mitigation

Cyberattacks have increased throughout the world and are a major concern due to the increasing reliance on computers and networked technology. The probability of a cyberattack is based on the increase of cyberattacks throughout the country and world. Therefore, The probability of Marinette County experiencing a cyberattack is considered high.

Cyberattacks would likely have limited effect on the built environment, but may severely affect the transportation of goods and services to and from critical facilities. Infrastructure damage or interruption of power or communication services could have a substantial impact. Economic and financial systems could potentially be significantly impacted.

To mitigate the risk of these attacks, individuals and organizations need to adopt proper technology security and stay updated on the types of cyberattacks. It is important to consider instituting security controls to protect vulnerable systems and networks. Actions could include conducting an assessment of networks and processes to check for weaknesses, regularly updating software to fix vulnerabilities, and educate local officials and the public about the risks of cyberattacks and what can be done to keep networks safe. In addition, maintaining an up-to-date and complete backup of files is critical for ongoing operations in the event of a major cyberattack.

Marinette County is currently in the process of developing procedures related to cybersecurity specific to Marinette County facilities.

INFECTIOUS DISEASES

Description

According to the State of Wisconsin Hazard Mitigation Plan 2021, infectious diseases are considered hazardous because they can rapidly overwhelm a healthcare system and other support networks. Infectious diseases can be spread among humans or between animals and humans through direct or indirect contact; these diseases can also mutate, creating new strains.

An outbreak can occur when a number of new virus' or infections emerge 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. Most recently, COVID-19 was a disease caused by a new virus strain that began spreading in people in December 2019. On March 11, 2020 the COVID-19 outbreak was characterized as a pandemic by the World Health Organization. Then on April 4, 2020 a Presidential Disaster Declaration was signed for the pandemic in the US. On May 11, 2023, the federal government ended the Public Health Emergency in the US.

Probability, Impact, Mitigation

The probability of an infectious disease occurring in Marinette County is equal throughout the county, but it is unknown when a disease might occur. It is likely that common diseases like influenza would occur each year.

Infectious diseases have the potential to impact several different levels of society. Significant economic disruption can occur due to loss of employee work time and costs of treating or preventing the spread of the pathogen. Additionally, public interactions can become extremely limited having a significant impact on social wellness.

The impacts of infectious diseases can be mitigated by immunization, reporting, investigation, surveillance, and response. Infectious disease outbreaks in Marinette County have the potential to have a larger impact, as the county contains a limited number of medical centers.



The Marinette County Emergency Operations Plan (EOP) is a flexible and adaptable document to all hazards. The EOP is reviewed and/or updated annually due to the unique nature of emergencies and the evolution of emergency planning. Each organization and agency, which has a role in this plan or its elements, will develop standard operating procedures (SOP) which provide step by step instructions for accomplishing assigned functions.

DOMESTIC TERRORISM, INCLUDING ACTIVE SHOOTERS, AND CIVIL DISTURBANCES

Description

The State of Wisconsin Hazard Mitigation Plan 2021 describes terrorism as “the threat of use of violence, by individuals or groups, to create fear for the purpose of furthering or achieving a political goal.”

Probability, Impacts, and Mitigation

The probability of one of these events is considered low in Marinette County.

The impacts of these events are numerous and are not limited to loss of life, injury, damage to buildings, and capital losses. A domestic terrorism or active shooter event can have an impact anywhere. Events in the US ranging from school shootings to protests have shown to be devastating. Schools and other public facilities such as the municipal buildings, including the Marinette County County Courthouse could be the target of a domestic terrorism or active shooter event, particularly in the case of criminal or civil proceedings in the courtroom. Most recent events in Marinette County include:

- **Niagara Train Bridge shooting:** On July 31, 2008, a call was received at the Marinette County Dispatch Center from Dickinson County, MI Dispatch Center that shots were reported fired from the WI side of the East Kingsford train bridge. Arriving First Response and Law Enforcement units confirmed three fatalities and one injury as the result of gunfire (one fatality in Michigan and two fatalities in Wisconsin).
- **Marinette High School:** On November 29, 2010, a call was received at the Marinette County Dispatch Center from the Marinette High School that an armed student was holding a classroom.

Mitigation measures include identifying strategies to make the public facilities more secure. Scenario training can also be utilized to educate others on how to react to these events, such as active shooter training.

HAZARDOUS MATERIALS

Description

Per- and polyfluoroalkyl substances (PFAS), nicknamed “forever chemicals,” are synthetic chemicals that persist in the environment and can be harmful to human and ecosystem health. They originate from consumer, commercial, and industrial products and have been found in water, soil, air, wildlife, and food.

Probability, Impacts, and Mitigation

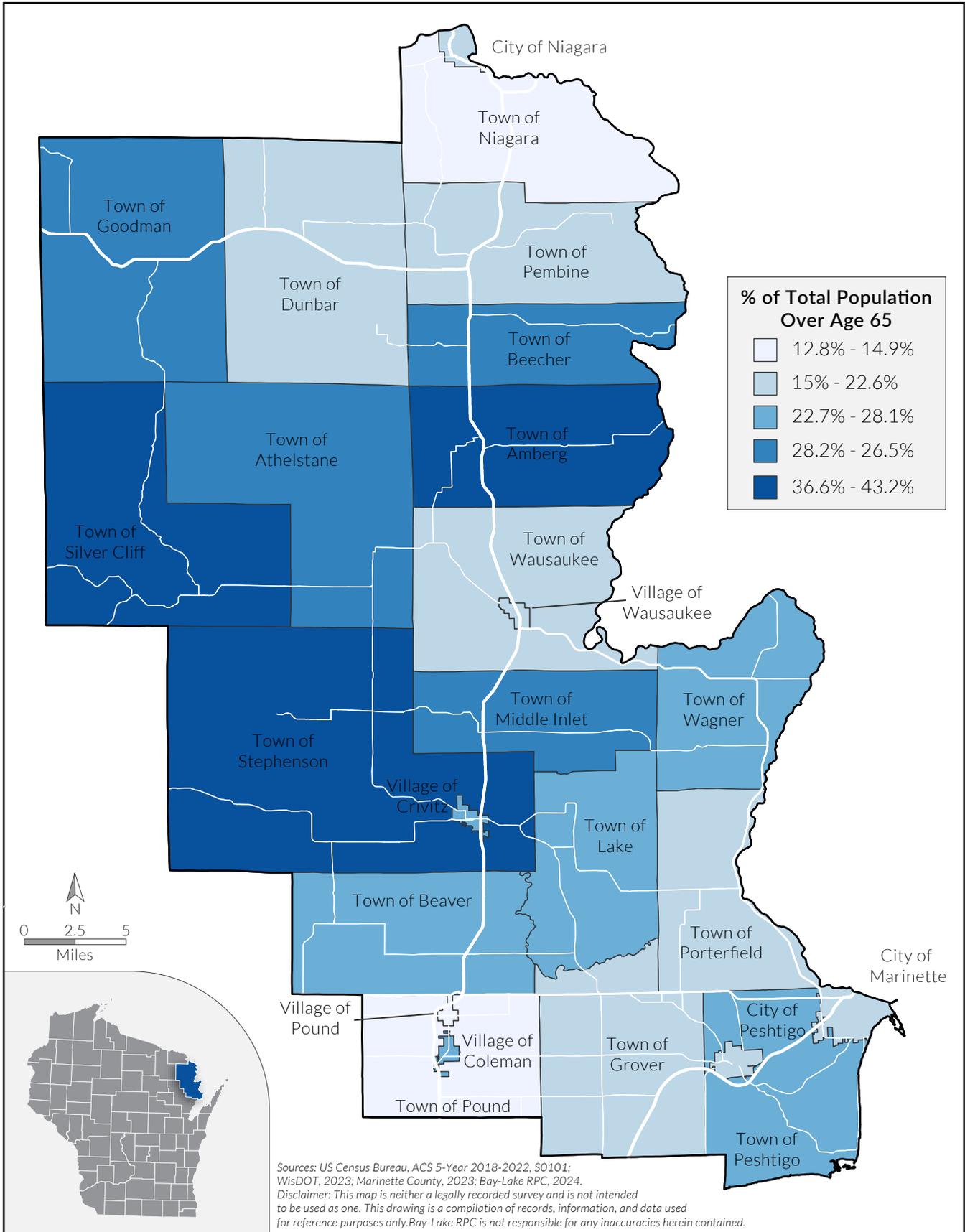
PFAS have been found all over the world, including remote areas. Exposure to PFAS in Marinette County is occurring, but the extent is uncertain. Depending on level of exposure, residents of Marinette County could experience health impacts.

Marinette County is encouraged to review and implement initiatives to address the growing public health and environmental concerns regarding certain PFAS substances as directed by the Wisconsin DNR and the Wisconsin PFAS Action Council (WISPAC).

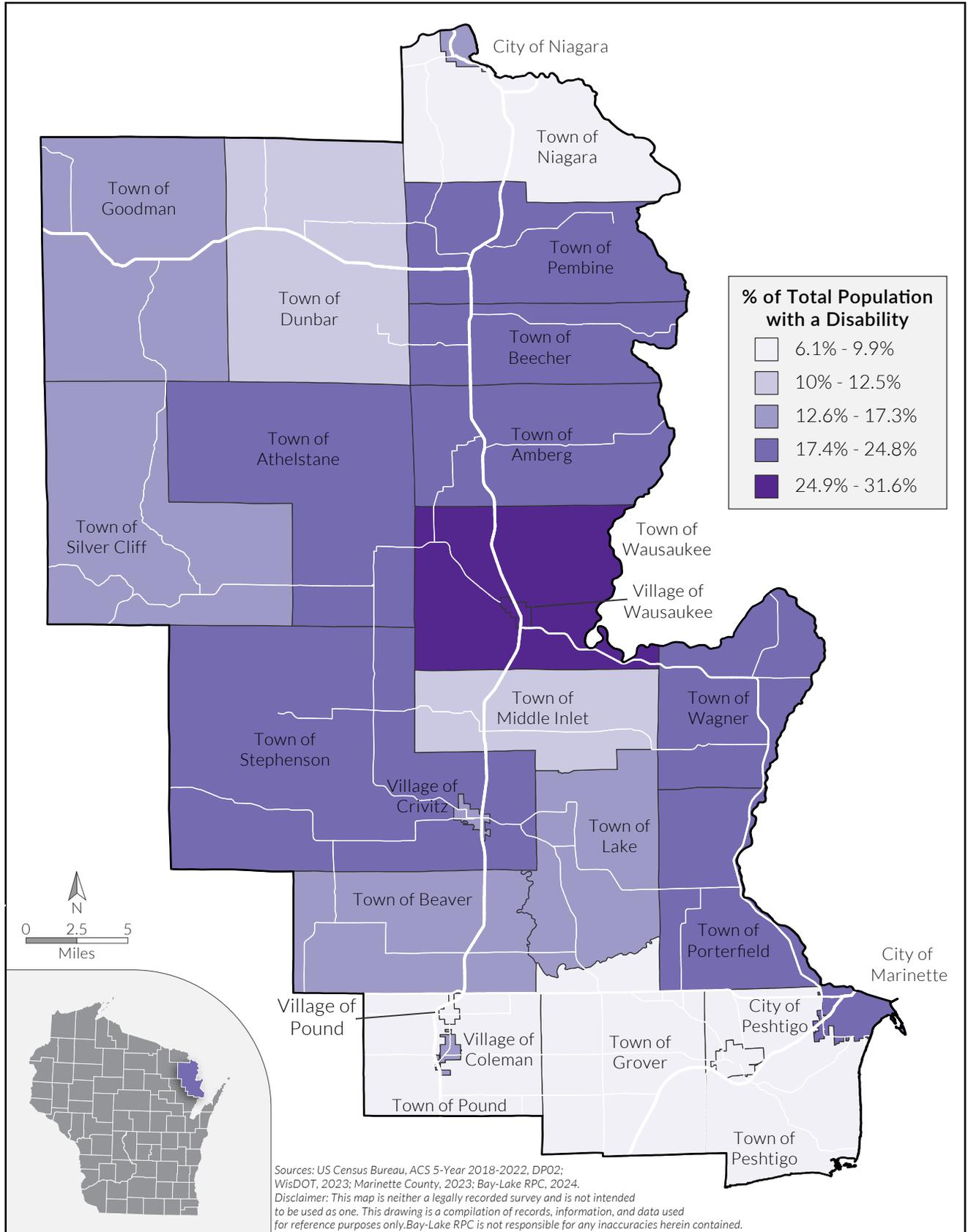


Appendices

► Appendix F: Underserved/Vulnerable Populations

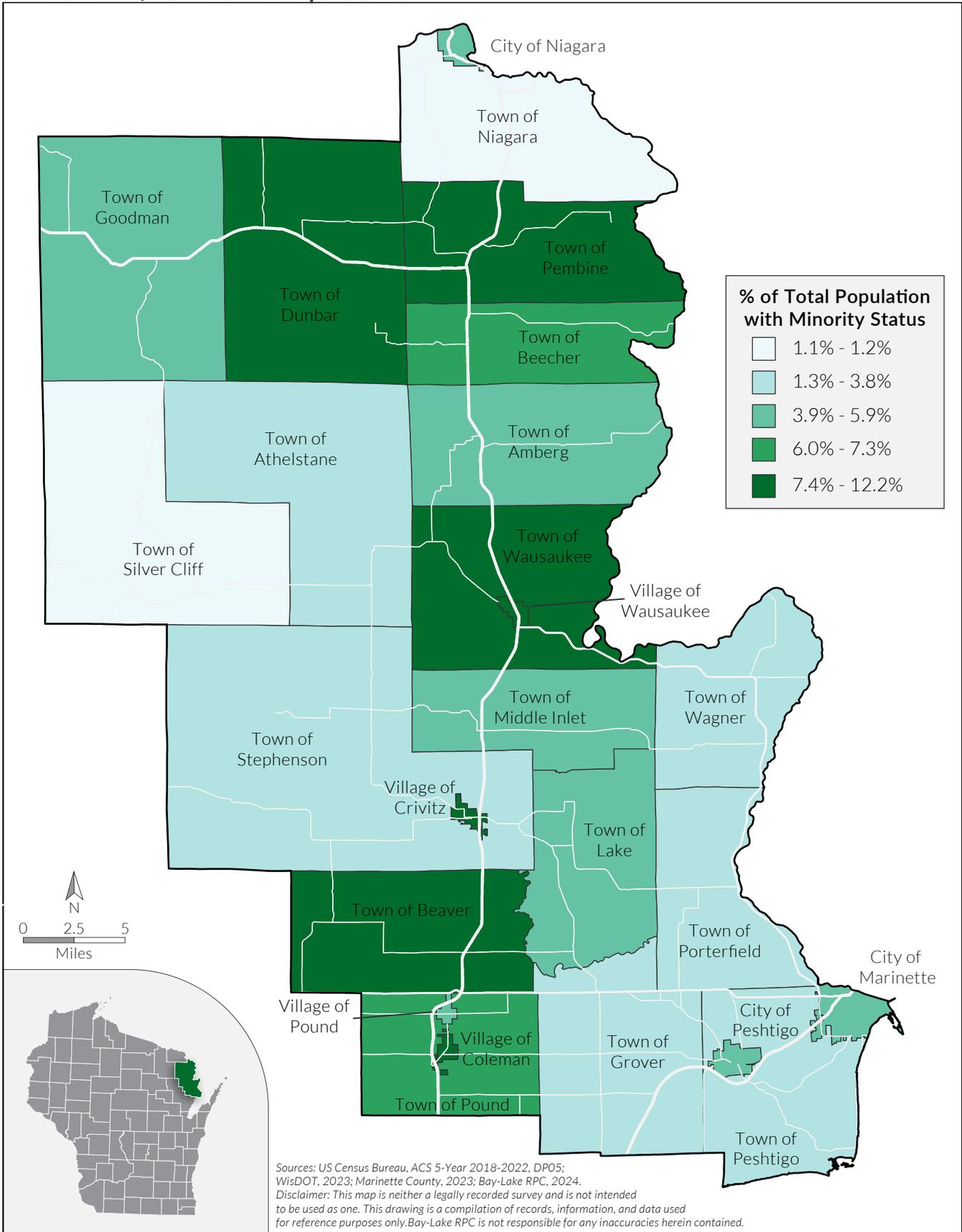


► Underserved/Vulnerable Populations

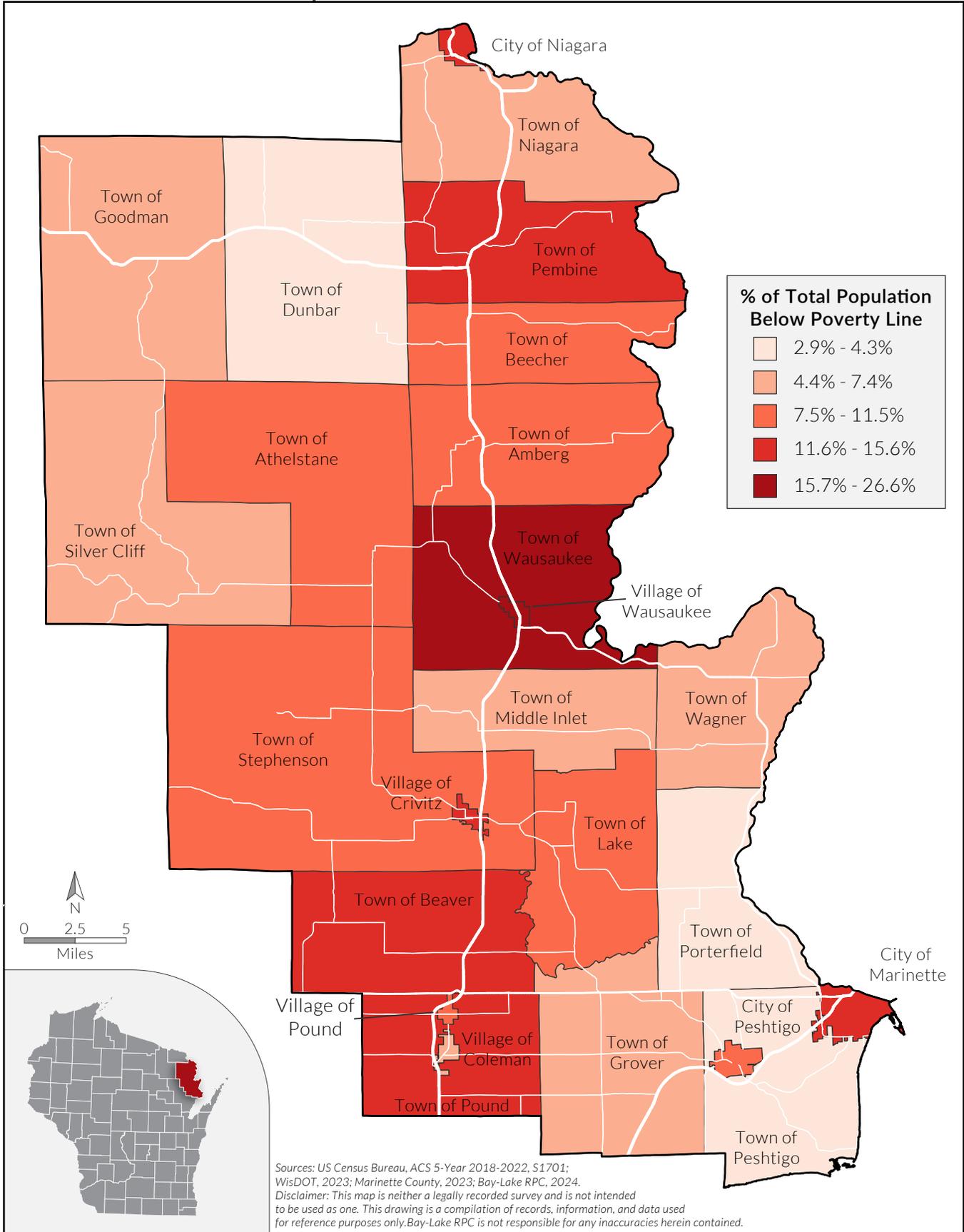


Appendices

► Underserved/Vulnerable Populations



► Underserved/Vulnerable Populations



Appendices

► Appendix G: Critical Facilities by Municipality

Type	Name	Location Community	Address
Bridge	Hattie St Bridge	City of Marinette	Hattie St/Menominee River
Bridge	Ogden/Menekaunee Bridge	City of Marinette	Ogden St/Menominee River
Bridge	Railroad Bridge	City of Marinette	Railroad/Menominee River
Bridge	US Highway 41 Interstate Bridge	City of Marinette	USH 41/Bridge St/Menominee River
Bridge	US Highway 41 Interstate Bridge	City of Marinette	USH 41/Bridge St/Menominee River
Communication Tower/Facility	Time Warner Cable	City of Marinette	3611 Murray St
Communication Tower/Facility	WLCJ 92.5	City of Marinette	1223 Carney Blvd
Communication Tower/Facility	WMAM 570	City of Marinette	400 Wells St
Communication Tower/Facility	WMAM 570 Tower	City of Marinette	400 Wells St
Dam	Kimberly Clark/Menominee River	City of Marinette	Menominee River
Dam	Menominee River	City of Marinette	Menominee River
Daycare	Faith Lutheran Preschool	City of Marinette	4009 Irving St
Daycare	Kids R Us Take Two	City of Marinette	3917 Hall Ave
Daycare	Kids R Us University LLC	City of Marinette	3919 Hall Ave
Daycare	Kids R Us University LLC	City of Marinette	3036 Carney Ave
Daycare	Noah's Ark Christian Day Care	City of Marinette	2535 Roosevelt Rd
Daycare	Open Arms Family Day Care	City of Marinette	1503 Daggett St
Daycare	Peter Piper Kiddie Nursery Inc	City of Marinette	561 Cleveland Ave
Dry Hydrant/Fire Pond	Waupaca Foundary	City of Marinette	805 Ogden St
Fuel Substation	FerrellGas, Inc	City of Marinette	2909 Mary St
Fuel Substation	WPSC	City of Marinette	Roosevelt Rd
Hazmat	Airgas North Central, Inc	City of Marinette	1801 Marinette Ave
Hazmat	CenturyLink - Marinette	City of Marinette	1727 Stephenson St
Hazmat	ChemDesign Corp.	City of Marinette	2 Stanton St
Hazmat	Karl Schmidt Uniiai Inc	City of Marinette	1731 Industrial Pkwy
Hazmat	Kimberly-Clark Tissue Co	City of Marinette	3120 Riverside Ave
Hazmat	KS Large Bore Pistons, Inc	City of Marinette	2945 Angwall Dr
Hazmat	Nestegg Marine	City of Marinette	300 Wells St
Hazmat	Samuel Pressure Vessel	City of Marinette	2121 Cleveland Ave
Hazmat	The Marinette Fuel & Dock Co. Docks	City of Marinette	808 Ogden St
Hazmat	Time Warner Cable Headend/Hub #8	City of Marinette	3611 Murray St
Hazmat	Tyco Fire Protection Products	City of Marinette	1 Stanton St
Hazmat	Tyco Fire Protection Products, Industrial Parkway	City of Marinette	2700 Industrial Pkwy
Hazmat	United Parcel Service	City of Marinette	2640 Industrial Pkwy
Hazmat	Waupaca Foundary Inc - Plant 4	City of Marinette	805 Ogden St
Hazmat	Westland Bus Lines, Inc	City of Marinette	1615 Badger Pkwy
Hazmat	Winsert, Inc	City of Marinette	2645 Industrial Pkwy
Healthcare Facility	Augustana Manor/Luther Manor	City of Marinette	831 Pine Beach Rd
Healthcare Facility	Aurora Health Center	City of Marinette	4061 Old Peshtigo Rd
Healthcare Facility	Aurora Healthcare Clinic	City of Marinette	1510 University Dr
Healthcare Facility	Aurora Healthcare Clinic	City of Marinette	3130 Shore Dr
Healthcare Facility	Bayshore Pines North	City of Marinette	875 University Dr
Healthcare Facility	Edgewood Manor	City of Marinette	1101 Northland Terrace Ln
Healthcare Facility	Mobility Rehab Center, LLC	City of Marinette	3117 Shore Dr
Healthcare Facility	Northland Terrace Estates & Homes	City of Marinette	1200 Northland Terrace Ln
Healthcare Facility	Northland Village	City of Marinette	1025 Pine Beach Rd
Healthcare Facility	NorthReach Healthcare	City of Marinette	2935 Shore Dr
Healthcare Facility	NorthReach Healthcare	City of Marinette	3123 Shore Dr
Healthcare Facility	NorthReach Healthcare - Marinette Clinic	City of Marinette	2720 Cahill Rd
Healthcare Facility	NorthReach Healthcare Pediatric Clinic	City of Marinette	1106 University Dr
Healthcare Facility	Prevea Marinette Health Center	City of Marinette	1409 Cleveland Ave
Institutional/Government Facility	County Health and Human Services	City of Marinette	2500 Hall Ave
Institutional/Government Facility	Marinette City Hall	City of Marinette	1905 Hall Ave
Institutional/Government Facility	Marinette Civic Center	City of Marinette	2000 Alice Ln
Institutional/Government Facility	Marinette County Courthouse	City of Marinette	1926 Hall Ave
Institutional/Government Facility	Marinette County Courthouse	City of Marinette	1925 Ella Ct
Institutional/Government Facility	Marinette County Jail	City of Marinette	2161 University Dr



Type	Name	Location Community	Address
Institutional/Government Facility	Marinette Housing Authority	City of Marinette	1520 Ludington St
Institutional/Government Facility	Senior Citizens Center	City of Marinette	1603 Ludington St
Institutional/Government Facility	Stephenson Public Library	City of Marinette	1700 Hall Ave
Institutional/Government Facility	Marinette Housing Authority	City of Marinette	1545 Ludington St
Institutional/Government Facility	Marinette REC Center	City of Marinette	2501 Pierce Ave
Military Installation	Army National Guard	City of Marinette	2000 Mary St
Mobile Home Park	Country Meadows	City of Marinette	3415 Pierce Ave
Mobile Home Park	Country Meadows	City of Marinette	3325 Pierce Ave
Mobile Home Park	Cramer's Mobile Home Park	City of Marinette	2650 Merchant St
Mobile Home Park	Forest Glen	City of Marinette	1450 Myrtle St
Mobile Home Park	Foxx Glen	City of Marinette	3920 Hall Ave
Mobile Home Park	Golden Sands	City of Marinette	3400 Pierce Ave
Mobile Home Park	Parkview Terrace	City of Marinette	2430 Mary St
Municipal Garage	Marinette Public Works	City of Marinette	2411 Cleveland Ave
Parks and Campground	Marinette City Park	City of Marinette	Mary St
Parks and Campground	Red Arrow Park	City of Marinette	Leonard St
Parks and Campground	Stephenson Island Park	City of Marinette	USH 41/Bridge St
Police/Fire/Rescue	Emergency Rescue Squad Inc	City of Marinette	623 Madison St
Police/Fire/Rescue	Marinette Fire Dept	City of Marinette	1450 Main St
Police/Fire/Rescue	Marinette Police Dept	City of Marinette	1905 Hall Ave
Police/Fire/Rescue	Marinette County Sheriff Dept	City of Marinette	2161 University Dr
Port Facility	Ansul Fire Protection; Coal Dock	City of Marinette	1 Stanton St
Port Facility	Marinette Fuel & Dock Co	City of Marinette	808 Ogden St
Post Office	Post Office	City of Marinette	2016 Maple Ave
Post-Secondary School	NWTC - Marinette	City of Marinette	1601 University Dr
Post-Secondary School	UW Green Bay - Marinette Campus	City of Marinette	750 W Bayshore Dr
Resident Health Care Facility	Bayshore Pines North	City of Marinette	875 University Dr
Resident Health Care Facility	Bayshore Pines South	City of Marinette	3206 Woodland Rd
Resident Health Care Facility	Edgewood Manor	City of Marinette	1101 Northland Terrace Ln
Resident Health Care Facility	Northland Lutheran Services	City of Marinette	831 Pine Beach Rd
Resident Health Care Facility	Northland Village	City of Marinette	1025 Pine Beach Rd
Resident Health Care Facility	REM Wisconsin	City of Marinette	413 W Russell St
Resident Health Care Facility	The Renaissance	City of Marinette	2909 Shore Dr
Resident Health Care Facility	Washington Square	City of Marinette	2502 Taylor St
School (Primary & Secondary)	Marinette High School	City of Marinette	2135 Pierce Ave
School (Primary & Secondary)	Marinette Middle School	City of Marinette	1011 Water St
School (Primary & Secondary)	Merryman Elementary	City of Marinette	611 Elizabeth Ave
School (Primary & Secondary)	Marinette Intermediate School	City of Marinette	826 Owena St
School (Primary & Secondary)	St Thomas Aquinas Academy Middle/High	City of Marinette	1200 Main St
School (Primary & Secondary)	Trinity Lutheran	City of Marinette	1501 Thomas St
Utility	Electric Substation	City of Marinette	CTH T
Utility	Electric Substation	City of Marinette	805 Ogden St
Utility	Electric Substation	City of Marinette	Wells St
Utility	Electric Substation at Dam/Menominee River	City of Marinette	
Wastewater Treatment Facility	Marinette Wastewater Treatment Plant	City of Marinette	1603 Ely St
Water Supply Facility	Marinette Water Utility	City of Marinette	501 Water St
Water Supply Facility	Water Tower	City of Marinette	Pierce Ave
Water Supply Facility	Water Tower	City of Marinette	Cleveland Ave
Bridge	Bridge	City of Niagara	Roosevelt Rd/Menominee River
Bridge	Bridge	City of Niagara	Railroad/Menominee River
Communication Tower/Facility	Borderlands Communications	City of Niagara	1133 Main St
Dam	Menominee River	City of Niagara	Menominee River
Daycare	Auntie M's Child Care Center LLC	City of Niagara	801 Roosevelt Rd
Daycare	Wee Care Day Care and Preschool LLC	City of Niagara	537 Adams St
Healthcare Facility	Mary Hill Manor	City of Niagara	501 Madison Ave
Healthcare Facility	Niagara Health Center, Pain Management Ctr	City of Niagara	1601 Roosevelt Rd

Appendices

Type	Name	Location Community	Address
Healthcare Facility	Northern Lights Clinic (ENT)	City of Niagara	500 Roosevelt Rd
Institutional/Government Facility	County Health and Human Services	City of Niagara	1201 Jackson St
Institutional/Government Facility	Niagara City Hall	City of Niagara	1029 Roosevelt Rd
Institutional/Government Facility	Public Health Clinic/Senior Center	City of Niagara	569 Washington Ave
Municipal Garage	Niagara City Garage	City of Niagara	Tyler Rd
Police/Fire/Rescue	Niagara Fire/Rescue Dept	City of Niagara	1241 Jackson St
Police/Fire/Rescue	Niagara Police Dept	City of Niagara	1029 Roosevelt Rd
Post Office	Post Office	City of Niagara	617 Washington Ave
Temporary Emergency Gathering Center	Riverside United Methodist Church	City of Niagara	1957 River St
Temporary Emergency Gathering Center	St Anthony's Church	City of Niagara	1432 River St
Utility		City of Niagara	700 Jefferson Ave
Wastewater Treatment Facility	Niagara Wastewater Treatment Plant	City of Niagara	2309 Sherman St
Water Supply Facility		City of Niagara	Roosevelt Rd
Bridge	Bridge	City of Peshtigo	N Lake St/Trout Creek
Bridge	Bridge	City of Peshtigo	N Emery Ave/Trout Creek
Bridge	Bridge	City of Peshtigo	French St/Peshtigo River
Bridge	Bridge	City of Peshtigo	Railroad/Peshtigo River
Daycare	Good Hands Academy	City of Peshtigo	101 S Beebe Ave
Daycare	Marinette-Peshtigo Head Start	City of Peshtigo	830 Pine St
Daycare	Pitter Patter Child Care and Learning Center	City of Peshtigo	131 S Stephenson Ave
Daycare	Zion Lutheran Child Development Center	City of Peshtigo	241 S Ellis Ave
Fuel Substation	Charter Fuels, Inc	City of Peshtigo	371 S Cranberry Ave
Fuel Substation	WPS	City of Peshtigo	E Front St
Hazmat	BPM, Inc	City of Peshtigo	200 W Front St
Hazmat	Sentinel Structures, Inc	City of Peshtigo	477 S Peck Ave
Hazmat	Tom Joy & Son Trucking, LLC	City of Peshtigo	970 Frontage Rd
Healthcare Facility	Aurora Health Center - Peshtigo	City of Peshtigo	603 French St
Healthcare Facility	Bellin Health - Peshtigo Clinic	City of Peshtigo	441 French St
Healthcare Facility	Park Manor (Elderly/Disabled)	City of Peshtigo	131 N West Front St
Healthcare Facility	Rennes Health & Rehab Center - East	City of Peshtigo	701 Willow Rd
Healthcare Facility	Rennes Health & Rehab Center - West	City of Peshtigo	501 N Lake St
Healthcare Facility	Whispering Oaks Care Center	City of Peshtigo	620 Harper Ave
Healthcare Facility	Woodland Manor (Elderly/Disabled)	City of Peshtigo	181 Chicago Ct
Institutional/Government Facility	Peshtigo City Hall	City of Peshtigo	331 French St
Mobile Home Park	Brookview Village	City of Peshtigo	901 Aubin St
Mobile Home Park	Kramer's Woodside Estates	City of Peshtigo	1100 French St
Municipal Garage	Marinette County Highway Department - Peshtigo	City of Peshtigo	501 Pine St
Municipal Garage	Peshtigo City Utility Garage	City of Peshtigo	401 S E Front St
Parks and Campground	Badger Park	City of Peshtigo	E Park Dr
Police/Fire/Rescue	City of Peshtigo Fire Dept Station #2	City of Peshtigo	800 Pine St
Police/Fire/Rescue	City of Peshtigo Police & Fire Dept	City of Peshtigo	331 French St
Post Office	Post Office	City of Peshtigo	201 W Front St
Resident Health Care Facility	Rennes Health & Rehab Center - East	City of Peshtigo	701 Willow Rd
Resident Health Care Facility	Rennes Health & Rehab Center - West	City of Peshtigo	501 N Lake St
School (Primary & Secondary)	Peshtigo Elementary School	City of Peshtigo	341 N Emery Ave
School (Primary & Secondary)	Peshtigo Middle/High School	City of Peshtigo	380 Green St
School (Primary & Secondary)	St Thomas Aquinas Academy Elementary	City of Peshtigo	141 S Wood Ave
Temporary Emergency Gathering Center	Good Shepherd Lutheran Church	City of Peshtigo	331 Pine St
Temporary Emergency Gathering Center	Zion Lutheran Church	City of Peshtigo	221 S Ellis Ave
Utility	Electric Power Substation	City of Peshtigo	E Front St
Utility	Electric Substation at Dam/Peshtigo River	City of Peshtigo	
Utility	Wastewater Lift Station	City of Peshtigo	401 S E Front St
Water Supply Facility	Peshtigo Water Tower	City of Peshtigo	Maple St
Water Supply Facility	Peshtigo Water Tower	City of Peshtigo	W Railroad St
Water Supply Facility	Peshtigo Water Well #2	City of Peshtigo	548 1/2 French St
Water Supply Facility	Peshtigo Water Well #3	City of Peshtigo	461 E Park Dr



Type	Name	Location Community	Address
Water Supply Facility	Peshtigo Water Well #4	City of Peshtigo	680 Pine St
Bridge	Bridge	Village of Coleman	CTH CP/Little Peshtigo River
Bridge	Bridge	Village of Coleman	Railroad/Little Peshtigo River
Communication Tower/Facility		Village of Coleman	119 Hammes St
Hazmat	AgVentures, LLC	Village of Coleman	123 McArthur Dr
Hazmat	Patz Corporation	Village of Coleman	917 Business 141
Institutional/Government Facility	Colman Village Hall	Village of Coleman	202 E Main St
Police/Fire/Rescue	Coleman Fire Dept	Village of Coleman	107 W Main St
Police/Fire/Rescue	Coleman Police Dept	Village of Coleman	202 E Main St
Police/Fire/Rescue	Coleman Rescue Squad	Village of Coleman	119 E 16th Rd
Post Office	Post Office	Village of Coleman	153 W Main St
School (Primary & Secondary)	Coleman Elementary School	Village of Coleman	347 Business 141 N
School (Primary & Secondary)	Coleman Middle/High School	Village of Coleman	343 Business 141 N
School (Primary & Secondary)	Faith Christian	Village of Coleman	233 W Main St
Wastewater Treatment Facility	Coleman Wastewater Treatment Plant	Village of Coleman	718 CTH CP
Water Supply Facility	Coleman Water Well #1	Village of Coleman	217 Business 141
Water Supply Facility	Coleman Water Well #2	Village of Coleman	651 N USH 141
Water Supply Facility	Water Tower	Village of Coleman	217 Business USH 141
Bridge	Bridge	Village of Crivitz	Main Ave/Peshtigo River
Daycare	Crivitz Youth Child Development Center	Village of Crivitz	713 George St
Daycare	Kid's Place Day Care	Village of Crivitz	717 Anderson Ave
Fuel Substation		Village of Crivitz	409 Hall Ave
Hazmat	Lake Gas Co	Village of Crivitz	409 Hall Ave
Healthcare Facility	NEWCARE Convalescent Center	Village of Crivitz	903 Main St
Healthcare Facility	NorthReach Healthcare - Crivitz Medical Center	Village of Crivitz	218 S USH 141, Ste 100
Healthcare Facility	Quantum Healthcare	Village of Crivitz	515 N US Hwy 141
Healthcare Facility	Aurora Crivitz	Village of Crivitz	294 N US Hwy 141
Institutional/Government Facility	Crivitz Village Hall	Village of Crivitz	800 Henriette Ave
Mobile Home Park	Westwood Meadows	Village of Crivitz	1516 Kenny Dr
Municipal Garage	Marinette County Highway Department - Crivitz	Village of Crivitz	E2235 CTH W
Police/Fire/Rescue	Crivitz Fire Dept	Village of Crivitz	FJ St
Police/Fire/Rescue	Crivitz Police Dept	Village of Crivitz	800 Henriette Ave
Police/Fire/Rescue	Crivitz Rescue Squad	Village of Crivitz	1020 Henriette Ave
Post Office	Post Office	Village of Crivitz	1210 FJ St
Resident Health Care Facility	NEWCARE Residence/Convalescent Center	Village of Crivitz	903 Main St
School (Primary & Secondary)	Crivitz Elementary/Middle School	Village of Crivitz	718 Hall Hay St
School (Primary & Secondary)	Crivitz High School	Village of Crivitz	400 South Ave
Wastewater Treatment Facility	Crivitz Wastewater Treatment Plant	Village of Crivitz	2000 Gene St
Water Supply Facility		Village of Crivitz	1130 Wilbert St
Bridge	Bridge	Village of Pound	Business US 141/USH 141
Healthcare Facility	Parkview Apts (Elderly)	Village of Pound	2029 CTH Q
Institutional/Government Facility	Community Center	Village of Pound	1013 County Rd Q
Institutional/Government Facility	Pound Village Hall	Village of Pound	2002 CTH Q
Mobile Home Park	Bamboo Run Mobile Home Park	Village of Pound	3917 Cty Rd CP (Business Hwy 141)
Municipal Garage	Pound Village Park Pavillion	Village of Pound	Parkview Ln
Police/Fire/Rescue	Village of Pound Fire Dept	Village of Pound	4011 Business Hwy 141 (Cty Rd CP)
Post Office	Post Office	Village of Pound	1018 CTH Q
Sewage Lift Station	Sewage Lift Station	Village of Pound	5030 Business Hwy 141 (Cty Rd CP)
Water Supply Facility	Village of Pound Water	Village of Pound	2002 CTH Q
Bridge	Bridge	Village of Wausaukee	Main St/Wausaukee River
Bridge	Bridge	Village of Wausaukee	Railroad/Wausaukee River
Communication Tower/Facility		Village of Wausaukee	515 Van Buren Ave
Dam	Wausaukee River	Village of Wausaukee	Wausaukee River

Appendices

Type	Name	Location Community	Address
Daycare	Pam's Daycare	Village of Wausaukee	715 Church St
Dry Hydrant/Fire Pond	Wausaukee Pond	Village of Wausaukee	Wausaukee Pond
Fuel Substation	Hot Flame Gas, Inc	Village of Wausaukee	913 Main St
Hazmat	Wausaukee Composites, Inc	Village of Wausaukee	837 Cedar St
Healthcare Facility	Eden Restored Health	Village of Wausaukee	536 Kenny Dr
Institutional/Government Facility	Ranger Station	Village of Wausaukee	1025 CTH C
Institutional/Government Facility	Wausaukee Housing Authority	Village of Wausaukee	926 Main St
Institutional/Government Facility	Wausaukee Village Hall	Village of Wausaukee	704 Main St
Municipal Garage	Wausaukee Village Garage	Village of Wausaukee	428 Harrison Ave
Parks and Campground	Evergreen Park	Village of Wausaukee	500 North Ave
Parks and Campground	Payant Park	Village of Wausaukee	Main St
Parks and Campground	Steve Strumbris Sr. Memorial Park	Village of Wausaukee	132 Fairgrounds Rd
Police/Fire/Rescue	Wausaukee Fire Dept	Village of Wausaukee	428 Harrison Ave
Police/Fire/Rescue	Wausaukee Rescue Squad	Village of Wausaukee	429 Harrison Ave
Post Office	Post Office	Village of Wausaukee	614 Main St
Utility	WPS	Village of Wausaukee	912 Main St
Water Supply Facility	Water Tower	Village of Wausaukee	755 Van Buren Ave
Water Supply Facility	Wausaukee Composites Fire Protection Building	Village of Wausaukee	Cedar St/Fairgrounds Rd
Water Supply Facility	Well #4	Village of Wausaukee	755 Van Buren Ave
Water Supply Facility	Well #3	Village of Wausaukee	N11941 USH 141



Type	Name	Location Community	Address
Bridge	Bridge	Town of Amberg	CTH K/Pike River
Bridge	Bridge	Town of Amberg	USH 141/Pike River
Bridge	Bridge	Town of Amberg	CTH V/Pike River
Bridge	Bridge	Town of Amberg	Mathis Rd/SB Pike River
Bridge	Bridge	Town of Amberg	Barker Rd/Pike River
Bridge	Bridge	Town of Amberg	Dow Dam Rd/NB Pike River
Bridge	Bridge	Town of Amberg	CTH K/Menominee River
Bridge	Bridge	Town of Amberg	Railroad/Pike River
Communication Tower/Facility		Town of Amberg	Weycker Rd
Communication Tower/Facility		Town of Amberg	Amberg Wausaukee Rd
Communication Tower/Facility		Town of Amberg	N15570 Old 38 Rd
Dam	McAllister Creek	Town of Amberg	McAllister Creek
Dam	Squaw Creek	Town of Amberg	Squaw Creek
Dry Hydrant/Fire Pond		Town of Amberg	
Dry Hydrant/Fire Pond		Town of Amberg	Nutt Rd
Dry Hydrant/Fire Pond		Town of Amberg	County Rd V
Fuel Substation	Amerigas Propane	Town of Amberg	N15291 USH 141
Institutional/Government Facility	Old Amberg Town Hall - Museum Complex	Town of Amberg	N15065 Grant St
Institutional/Government Facility	Town of Amberg Community Center	Town of Amberg	N15035 Grant St
Municipal Garage	Amberg Town Garage	Town of Amberg	McClellan Aly
Parks and Campground	Dave's Falls Park	Town of Amberg	W7902 County Park Rd
Parks and Campground	Veterans Park	Town of Amberg	
Parks and Campground	Swimming Hole	Town of Amberg	
Parks and Campground	Amberg Ball Diamond	Town of Amberg	
Police/Fire/Rescue	Amberg Fire & Rescue	Town of Amberg	N15065 Grant St
Post Office	Post Office	Town of Amberg	N15075 Dutton Ave
School (Primary & Secondary)	Victory Academy for Boys	Town of Amberg	W4705 Wallace Rd
Utility		Town of Amberg	CTH K
Utility		Town of Amberg	USH 141
Bridge	Bridge	Town of Athelstane	CTH-C Wausaukee River
Bridge	Bridge	Town of Athelstane	Benson Lake Rd/SB Pike River
Bridge	Bridge	Town of Athelstane	Forbes Rd/SB Pike River
Dry Hydrant/Fire Pond	Fire Pond	Town of Athelstane	N12244 CTH AC
Dry Hydrant/Fire Pond		Town of Athelstane	Northway Dr/Railroad St
Dry Hydrant/Fire Pond		Town of Athelstane	Benson Lake Rd/SB Pike River
Dry Hydrant/Fire Pond		Town of Athelstane	Forbes Rd/SB Pike River
Dry Hydrant/Fire Pond		Town of Athelstane	CTH-C Wausaukee River
Institutional/Government Facility	Athelstane Town Hall	Town of Athelstane	N12244 CTH AC
Municipal Garage	Athelstane Town Shop	Town of Athelstane	W10073 CTH C
Parks and Campground	Dolan Lake Park	Town of Athelstane	N15218 Dolan Lake Rd
Police/Fire/Rescue	Athelstane Fire Dept Station #1	Town of Athelstane	W10073 CTH C
Police/Fire/Rescue	Athelstane Fire Dept Station #2	Town of Athelstane	W10815 Benson Lake Rd
Post Office	Athelstane Post Office	Town of Athelstane	W10056 CTH C
Temporary Emergency Gathering Center	Athelstane Town Hall	Town of Athelstane	N12244 CTH AC
Bridge	Bridge	Town of Beaver	CTH P/NB Beaver Creek
Bridge	Bridge	Town of Beaver	USH 141/SB Beaver Creek
Bridge	Bridge	Town of Beaver	19th Rd/SB Beaver Creek
Bridge	Bridge	Town of Beaver	STH 64/SB Beaver Creek
Bridge	Bridge	Town of Beaver	3rd Rd/Beaver Creek
Bridge	Bridge	Town of Beaver	11th Rd/Beaver Creek
Bridge	Bridge	Town of Beaver	CTH P/Peshtigo River
Bridge	Bridge	Town of Beaver	15th Rd/SB Beaver Creek
Bridge	Bridge	Town of Beaver	Railroad/NB Beaver Creek
Communication Tower/Facility		Town of Beaver	21st Rd
Dam	Murphy Creek	Town of Beaver	Murphy Creek
Dam	Murphy Creek	Town of Beaver	Murphy Creek
Hazmat	Pound Control #66, Northeast Asphalt, Inc.	Town of Beaver	W7980 Highway 64
Institutional/Government Facility	Beaver Town Hall	Town of Beaver	W8405 CTH P

Appendices

Type	Name	Location Community	Address
Utility		Town of Beaver	USH 141
Bridge	Bridge	Town of Beecher	CTH Z/Menominee River
Bridge	Bridge	Town of Beecher	Sand Rd/Miscuano Creek
Bridge	Bridge	Town of Beecher	Town Corner Lake Rd/NB Pike River
Bridge	Bridge	Town of Beecher	Smeester School Rd/NB Pike River
Bridge	Bridge	Town of Beecher	Dam Rd/Beecher Creek
Communication Tower/Facility		Town of Beecher	W8998 Pembine Beecher Rd
Dam	Beecher Lake	Town of Beecher	Beecher Lake
Dry Hydrant/Fire Pond		Town of Beecher	
Dry Hydrant/Fire Pond		Town of Beecher	
Institutional/Government Facility	Beecher Town Hall	Town of Beecher	W7971 CTH Z
Municipal Garage	Beecher Town Garage	Town of Beecher	W7971 CTH Z
Bridge	Bridge	Town of Dunbar	Lily Lake Rd/NB Pike River
Bridge	Bridge	Town of Dunbar	CCC Camp Rd/NB Pike River
Bridge	Bridge	Town of Dunbar	Old County A Rd/NB Pike River
Bridge	Bridge	Town of Dunbar	Twin Lake Rd/NB Pike River
Bridge	Bridge	Town of Dunbar	USH 8/KC Creek
Bridge	Bridge	Town of Dunbar	Old County A Rd/SB Pike River
Bridge	Bridge	Town of Dunbar	Railroad/KC Creek
Bridge	Bridge	Town of Dunbar	Walton Rd/SB Pembonwon River
Bridge	Bridge	Town of Dunbar	Camp 12/SB Pembonwon River
Communication Tower/Facility	Verticle Bridge Dunbar	Town of Dunbar	Mill Pond Rd
Dry Hydrant/Fire Pond	Dunbar Pond	Town of Dunbar	USH 8
Institutional/Government Facility	Dunbar Town Hall	Town of Dunbar	N19856 CCC Camp Rd
Municipal Garage	Town of Dunbar Public Works	Town of Dunbar	W11554 Wisconsin Ave
Parks and Campground	Twelve Foot Falls County Park	Town of Dunbar	N17116 Twelve Foot Falls Rd
Parks and Campground	Veteran's Memorial Park	Town of Dunbar	N18961 CTH O
Parks and Campground	Dunbar Baseball Field	Town of Dunbar	CCC Camp Ln
Parks and Campground	Lily Lake Beach	Town of Dunbar	N18226 Lily Lake Rd
Parks and Campground	Marinette Equestrian Trails and Campground	Town of Dunbar	N16401 Twelve Foot Falls Rd
Parks and Campground	Lindquist Lake Boat Landing	Town of Dunbar	Lindquist Lake Rd
Private School	Northland	Town of Dunbar	W10085 Pike Plains Rd
Post Disaster Recovery Site	Holmes Junction Pit	Town of Dunbar	W9301 Holmes Junction Rd
Post Disaster Recovery Site	Blueberry Pit	Town of Dunbar	Parcel 010-02169.000
Water Supply	Northland Water Tower	Town of Dunbar	W10085 Pike Plains Rd
Wastewater Treatment Facility	Northland Wastewater	Town of Dunbar	W10085 Pike Plains Rd
Bridge	Bridge	Town of Goodman	USH 8/NB Pike River
Bridge	Bridge	Town of Goodman	Pike River Dr/NB Pike River
Bridge	SOO Line	Town of Goodman	Railroad/USH 8
Communication Tower/Facility		Town of Goodman	A Ave
Communication Tower/Facility		Town of Goodman	Partridge Rd
Communication Tower/Facility		Town of Goodman	USH 8
Communication Tower/Facility		Town of Goodman	W14553 Wilderness Dr
Fuel Substation		Town of Goodman	USH 8
Institutional/Government Facility	Goodman Town Hall	Town of Goodman	506 Mill St
Municipal Garage		Town of Goodman	Woods Lake Rd
Parks and Campground	Goodman Township Park	Town of Goodman	Town Park Dr
Police/Fire/Rescue	Goodman Fire/Rescue Dept	Town of Goodman	506 Mill St
Post Office		Town of Goodman	200 A St
School (Primary & Secondary)	Goodman - Armstrong Creek Elementary	Town of Goodman	4th St
School (Primary & Secondary)	Goodman - Armstrong Creek High	Town of Goodman	1 Falcon Crest
Utility		Town of Goodman	Woods Lake Rd
Utility		Town of Goodman	4th St
Utility		Town of Goodman	4th St
Water Supply Facility		Town of Goodman	7th St
Bridge	Bridge	Town of Grover	Radtke Rd/Bundy Creek



Type	Name	Location Community	Address
Bridge	Bridge	Town of Grover	CTH B/Bundy Creek
Bridge	Bridge	Town of Grover	CTH W/Little Peshtigo River
Bridge	Bridge	Town of Grover	STH 64/Little Peshtigo River
Bridge	Bridge	Town of Grover	CTH W/Peshtigo River
Bridge	Bridge	Town of Grover	Townline Rd/Little Peshtigo River
Bridge	Bridge	Town of Grover	Tower Hill Rd/Little Peshtigo River
Bridge	Bridge	Town of Grover	Poplar Ridge Ln/Trout Creek
Bridge	Bridge	Town of Grover	Railroad/Unnamed Water
Communication Tower/Facility	WSFQ 96.3 Tower	Town of Grover	Gross La
Communication Tower/Facility		Town of Grover	Augustine Rd
Communication Tower/Facility		Town of Grover	Lepinsky Ln
Communication Tower/Facility		Town of Grover	Tower Hill Rd
Communication Tower/Facility		Town of Grover	Church Ln
Communication Tower/Facility		Town of Grover	W5170 Votava Ln
Communication Tower/Facility		Town of Grover	N2793 CTH Y
Fuel Substation	Coleman Propane	Town of Grover	W6586 CTH M
Institutional/Government Facility	Grover Town Hall	Town of Grover	W5161 Town Hall Rd
Police/Fire/Rescue	Grover-Porterfield Fire Dept	Town of Grover	N3890 S Harmony Rd
School (Primary & Secondary)	St John Lutheran	Town of Grover	N1926 Church Rd
Utility		Town of Grover	N3898 CTH E
Bridge	Bridge	Town of Lake	Noquebay Rd/The Outlet
Bridge	Bridge	Town of Lake	Ferndale Rd/Peshtigo River
Dam	The Outlet	Town of Lake	The Outlet
Daycare	Little Tykes Child Care	Town of Lake	W6675 Birchwood Rd
Dry Hydrant/Fire Pond	#1 Two Mile Rd	Town of Lake	
Dry Hydrant/Fire Pond	#2 Riverview Rd, Sawmill Pond	Town of Lake	
Dry Hydrant/Fire Pond	#3 Loomis Rd	Town of Lake	
Dry Hydrant/Fire Pond	#4 Pioneer Rd	Town of Lake	
Institutional/Government Facility	Town of Lake Hall	Town of Lake	W6202 Loomis Rd
Mobile Home Park	Noquebay Resort	Town of Lake	N7900 Noquebay Rd
Mobile Home Park	Timberline Resort	Town of Lake	W6296 Circle Dr
Mobile Home Park	C&L Lakeview Mobile Home	Town of Lake	W6225 CTH GG
Municipal Garage	Cty Shop, Lake Noquebay Park	Town of Lake	W6188 CTH GG
Municipal Garage	Town of Lake Public Works	Town of Lake	W6071 Loomis Rd
Parks and Campground	Lake Noquebay Park	Town of Lake	W6212 County Rd GG
Parks and Campground	Marinette County Park	Town of Lake	W6212 Cty Hwy GG
Police/Fire/Rescue	Town of Lake Fire Dept	Town of Lake	
Gravel Pit	Peters Concrete	Town of Lake	Cty Hwy G
Gravel Pit	MCP	Town of Lake	Pit Lane, Hwy W
Gravel Pit	Zorn's Trucking	Town of Lake	South Lane
Bridge	Bridge	Town of Middle Inlet	USH 141/Middle Inlet
Bridge	Bridge	Town of Middle Inlet	USH 141/Lower Middle Inlet
Bridge	Bridge	Town of Middle Inlet	Camp 5 Rd/Middle Inlet
Bridge	Bridge	Town of Middle Inlet	Creek Rd/Upper Middle Inlet
Bridge	Bridge	Town of Middle Inlet	CTH X/Middle Inlet
Bridge	Bridge	Town of Middle Inlet	Maple Beach Rd/Middle Inlet
Bridge	Bridge	Town of Middle Inlet	Railroad/Middle Inlet
Communication Tower/Facility		Town of Middle Inlet	Moonshine Hill Rd
Institutional/Government Facility	Middle Inlet Town Hall	Town of Middle Inlet	W7901 CTH X
Mobile Home Park	East End Resort	Town of Middle Inlet	N8598 Lake Rd
Police/Fire/Rescue	Middle Inlet Fire Dept	Town of Middle Inlet	N9299 USH 141
Bridge	Bridge	Town of Niagara	USH 8/Menominee River
Bridge	Bridge	Town of Niagara	Morgan Park Rd/NB Pemebonwon River
Bridge	Bridge	Town of Niagara	CTH O/NB Pemebonwon River
Bridge	Bridge	Town of Niagara	Forest Rd 1003/NB Pemebonwon River
Bridge	Bridge	Town of Niagara	USH 141/NB Pemebonwon River
Bridge	Bridge	Town of Niagara	West Rd/Spikehorn Creek

Appendices

Type	Name	Location Community	Address
Bridge	Bridge	Town of Niagara	USH 141/Spikehorn Creek
Bridge	Bridge	Town of Niagara	Railroad/Menominee River
Bridge	Bridge	Town of Niagara	Railroad/NB Pemebonwon River
Bridge	Bridge	Town of Niagara	Railroad/Menominee River
Communication Tower/Facility	Cell Tower	Town of Niagara	N22370 Schindler Rd
Communication Tower/Facility	Cell Tower	Town of Niagara	N20888 Genrich Rd
Dam	Menominee River	Town of Niagara	Menominee River
Dam	Menominee River	Town of Niagara	Menominee River
Institutional/Government Facility	Niagara Town Hall	Town of Niagara	W6889 USH 8
Municipal Garage	Niagara Town Garage	Town of Niagara	W7280 USH 8
Municipal Garage	Niagara Town Garage	Town of Niagara	W7250 USH 8
Parks and Campgrounds	Long Slide Falls Park	Town of Niagara	N20219 Morgan Park Rd
Parks and Campground	Morgan Park	Town of Niagara	19882 Timms Lake Road
Parks and Campgrounds	Smalley Falls Park	Town of Niagara	N20501 Morgan Park Rd
Water Supply Facility	Niagara Water Well #3	Town of Niagara	South Truman St
Bridge	Bridge	Town of Pembine	CTH R/SB Pemebonwon River
Bridge	Bridge	Town of Pembine	USH 141/SB Pemebonwon River
Bridge	Bridge	Town of Pembine	USH 141/SB Pemebonwon River
Bridge	Bridge	Town of Pembine	USH 8/SB Pemebonwon River
Bridge	Bridge	Town of Pembine	USH 8/SB Pemebonwon River
Bridge	Bridge	Town of Pembine	CTH R/SB Pemebonwon River
Bridge	Bridge	Town of Pembine	CTH R/NB Pemebonwon River
Bridge	Bridge	Town of Pembine	Railroad/SB Pemebonwon River
Bridge	Bridge	Town of Pembine	USH 141/Railroad
Bridge	Bridge	Town of Pembine	Railroad/SB Pemebonwon River
Bridge	Bridge	Town of Pembine	Railroad/SB Pemebonwon River
Bridge	Bridge	Town of Pembine	Railroad/SB Pemebonwon River
Bridge	Bridge	Town of Pembine	Railroad/SB Pemebonwon River
Bridge	Bridge	Town of Pembine	Railroad/SB Pemebonwon River
Bridge	Bridge	Town of Pembine	Railroad/SB Pemebonwon River
Bridge	Bridge	Town of Pembine	Horseshoe Rd/Pemebonwon River
Communication Tower/Facility		Town of Pembine	N18670 Algonquin Trl
Communication Tower/Facility		Town of Pembine	W7622 Cemetery Rd
Communication Tower/Facility		Town of Pembine	W8095 Rifle Range Rd
Dam	Miscauno Creek	Town of Pembine	Miscauno Creek
Dry Hydrant/Fire Pond		Town of Pembine	
Dry Hydrant/Fire Pond	Hwy 8 Dry Hydrant	Town of Pembine	
Hazmat	Specialty Granules	Town of Pembine	Kremlin Rd
Institutional/Government Facility	Pembine Town Hall	Town of Pembine	N18765 Sauld St
Municipal Garage	Marinette County Highway Dept - Pembine	Town of Pembine	N18291 USH 141
Municipal Garage		Town of Pembine	N18835 Milwaukee St
Municipal Garage	Pembine Sand Salt Shed	Town of Pembine	N18478 Marsh Ln
Municipal Garage	Town of Pembine Hwy Dept	Town of Pembine	N18835 Milwaukee St
Parks and Campground	Pembine Township Park	Town of Pembine	Pembine Park Ln
Parks and Campground	American Legion Park	Town of Pembine	N18772 Willis Ave
Police/Fire/Rescue	Beecher-Dunbar-Pembine Fire Dept	Town of Pembine	W8095 Rifle Range Rd
Police/Fire/Rescue	Pembine-Dunbar-Beecher Rescue Squad	Town of Pembine	N18251 USH 141
Post Office	Post Office	Town of Pembine	N18656 USH 141
School (Primary & Secondary)	Beecher-Dunbar-Pembine Schools	Town of Pembine	N18775 Sauld St
Bridge	Bridge	Town of Peshtigo	CTH BB/Little River
Bridge	Bridge	Town of Peshtigo	Hale School Rd/Unnamed Water
Bridge	Bridge	Town of Peshtigo	Hale Rd/Unnamed Water
Bridge	Bridge	Town of Peshtigo	Richter Rd/Unnamed Water
Bridge	Bridge	Town of Peshtigo	Drys Rd/Unnamed Water
Bridge	Bridge	Town of Peshtigo	Spitzmacher Rd/Unnamed Water
Bridge	Bridge	Town of Peshtigo	USH 41/Railroad
Bridge	Bridge	Town of Peshtigo	USH 41/Railroad



Type	Name	Location Community	Address
Bridge	Bridge	Town of Peshtigo	USH 41/Railroad
Bridge	Bridge	Town of Peshtigo	USH 41/Railroad
Bridge	Bridge	Town of Peshtigo	Railroad/Unnamed Water
Bridge	Bridge	Town of Peshtigo	USH 41/Schacht Rd
Bridge	Bridge	Town of Peshtigo	USH 41/Schacht Rd
Bridge	Bridge	Town of Peshtigo	USH 41/Old Peshtigo Rd
Bridge	Bridge	Town of Peshtigo	USH 41/Old Peshtigo Rd
Bridge	Bridge	Town of Peshtigo	USH 41/CTH B
Bridge	Bridge	Town of Peshtigo	USH 41/CTH B
Bridge	Bridge	Town of Peshtigo	USH 41/Peshtigo River
Bridge	Bridge	Town of Peshtigo	USH 41/Peshtigo River
Bridge	Bridge	Town of Peshtigo	Hale Rd/USH 41
Bridge	Bridge	Town of Peshtigo	CTH Y/USH 41
Communication Tower/Facility	WHYB 103.7 Tower	Town of Peshtigo	W1451 Roosevelt Rd
Communication Tower/Facility	WLST 95.1	Town of Peshtigo	N2880 Roosevelt Rd
Communication Tower/Facility		Town of Peshtigo	Krause Rd
Communication Tower/Facility		Town of Peshtigo	N2170 Keller Rd
Communication Tower/Facility		Town of Peshtigo	Old Peshtigo Rd
Communication Tower/Facility		Town of Peshtigo	N2400 Hale Rd
Dry Hydrant/Fire Pond	Dry Hydrant	Town of Peshtigo	N1618 Hale Rd
Dry Hydrant/Fire Pond	Dry Hydrant	Town of Peshtigo	Badger Rd/Harbor Rd
Dry Hydrant/Fire Pond	Dry Hydrant	Town of Peshtigo	Rader Rd
Dry Hydrant/Fire Pond	Dry Hydrant	Town of Peshtigo	Leaf Rd
Dry Hydrant/Fire Pond	Dry Hydrant	Town of Peshtigo	W1432 CTH B
Dry Hydrant/Fire Pond	Dry Hydrant	Town of Peshtigo	STH 64/Peshtigo River
Fuel Substation	WPS	Town of Peshtigo	W2753 CTH B
Hazmat	Marinette Concrete Products	Town of Peshtigo	W1584 USH 41
Institutional/Government Facility	Peshtigo Town Hall	Town of Peshtigo	W2435 Old Peshtigo Rd
Municipal Garage	Peshtigo Town Garage	Town of Peshtigo	W2435 Old Peshtigo Rd
Parks and Campground	Michaelis Park	Town of Peshtigo	CTH BB
Police/Fire/Rescue	Town of Peshtigo Fire Dept	Town of Peshtigo	W2435 Old Peshtigo Rd
Resident Health Care Facility	Crossroads Group Home	Town of Peshtigo	N2189 Schacht Rd
Utility	WPS	Town of Peshtigo	W1830 W Cleveland Ave
Wastewater Treatment Facility	Peshtigo Wastewater Treatment Plant	Town of Peshtigo	N1890 Harbor Rd
Bridge	Bridge	Town of Porterfield	STH 180/Twin Creek
Bridge	Bridge	Town of Porterfield	CTH E/Peshtigo River
Bridge	Bridge	Town of Porterfield	STH 64/Peshtigo River
Communication Tower/Facility	WLWR 107.7	Town of Porterfield	N5233 Nettleton Rd
Communication Tower/Facility		Town of Porterfield	W Townline Rd
Communication Tower/Facility		Town of Porterfield	Bagley
Communication Tower/Facility		Town of Porterfield	Hwy 64
Hazmat	Alter Trading Corp	Town of Porterfield	N4395 STH 180
Hazmat	Northeast Asphalt Portable Asphalt Plant 27	Town of Porterfield	Anderson Rd
Institutional/Government Facility	Porterfield Town Hall	Town of Porterfield	W3435 CTH G
Mobile Home Park	Butler's Mobile Home	Town of Porterfield	W4660 STH 64
Parks and Campground	Crystal Springs County Park	Town of Porterfield	N6838 Highway 180
Parks and Campground	Green's Green Acres Campground	Town of Porterfield	N4247 River Dr
Parks and Campground	Weber Field	Town of Porterfield	Shady Ln
Utility	Electric Substation at Dam/White Potato Rapids	Town of Porterfield	
Bridge	Bridge	Town of Pound	CTH B/Little Peshtigo River
Bridge	Bridge	Town of Pound	CTH B/Little Peshtigo River
Bridge	Bridge	Town of Pound	N 7th Rd/Little Peshtigo River
Bridge	Bridge	Town of Pound	CTH B/Little Peshtigo River
Bridge	Bridge	Town of Pound	N 1st Rd/Little Peshtigo River
Bridge	Bridge	Town of Pound	N 5th Rd/Little Peshtigo River
Bridge	Bridge	Town of Pound	N 23rd Rd/Little Peshtigo River
Bridge	Bridge	Town of Pound	S 27th Rd/Little Peshtigo River
Bridge	Bridge	Town of Pound	S 31st Rd/Little Peshtigo River



Appendices

Type	Name	Location Community	Address
Bridge	Bridge	Town of Pound	CTH B/Unnamed Water
Bridge	Bridge	Town of Pound	CTH B/USH 41
Bridge	Bridge	Town of Pound	USH 141/Little Peshtigo River
Bridge	Bridge	Town of Pound	USH 141/Little Peshtigo River
Bridge	Bridge	Town of Pound	USH 141/Unnamed Water
Bridge	Bridge	Town of Pound	USH 141/Unnamed Water
Bridge	Bridge	Town of Pound	CTH Q/USH 141
Communication Tower/Facility		Town of Pound	W 24th Rd
Communication Tower/Facility		Town of Pound	W8254 E 12th Rd
Communication Tower/Facility		Town of Pound	N 19th Rd
Daycare	Playful Minds Child Care LLC	Town of Pound	W6919 County Rd M
Dry Hydrant/Fire Pond	Fire Pond	Town of Pound	CTH M/7th Rd
Institutional/Government Facility	Pound Town Hall	Town of Pound	W8484 CTH B
Mobile Home Park		Town of Pound	W9294 W 14th Rd
Parks and Campground	Montana Lake Park	Town of Pound	W 12th Rd
Post Disaster Recovery Site	Limestone Pit	Town of Pound	S 11th Rd
Post Disaster Recovery Site	Gravel Pit	Town of Pound	N 9th Rd
Post Disaster Recovery Site	Gravel Pit	Town of Pound	County B West
Utility	Electric Substation	Town of Pound	E Springside Rd
Utility	Dump Station/Well	Town of Pound	N 15th Rd/County CP
Utility	Electric Substation	Town of Pound	N 9th Rd
Bridge	Bridge	Town of Silver Cliff	Camp 5 Rd/Peshtigo River
Bridge	Bridge	Town of Silver Cliff	Harper Rd/Rat River
Bridge	Bridge	Town of Silver Cliff	Swede John Rd/Peshtigo River
Bridge	Bridge	Town of Silver Cliff	CTH C/Eagle Creek
Bridge	Bridge	Town of Silver Cliff	CTH C/Peshtigo River
Communication Tower/Facility		Town of Silver Cliff	Conklin Rd
Communication Tower/Facility		Town of Silver Cliff	Harveys Ln
Communication Tower/Facility		Town of Silver Cliff	Harveys Ln
Dam	Babson Pond Creek	Town of Silver Cliff	Babson Pond Creek
Dry Hydrant/Fire Pond		Town of Silver Cliff	Harper Rd/Rat River
Dry Hydrant/Fire Pond		Town of Silver Cliff	Boat Landing 12 Rd/Peshtigo River
Institutional/Government Facility	Silver Cliff Town Hall	Town of Silver Cliff	N11929 CTH I
Municipal Garage		Town of Silver Cliff	CTH I
Parks and Campground	Goodman Park	Town of Silver Cliff	N15201 Goodman Park Rd
Parks and Campground	McClintock Campground	Town of Silver Cliff	N14201 County Rd I
Parks and Campground	McClintock County Park	Town of Silver Cliff	N14251 County Rd I
Police/Fire/Rescue	Silver Cliff Fire/Rescue Dept	Town of Silver Cliff	W13576 CTH C
Utility		Town of Silver Cliff	Old J Rd
Airport Facility	Crivitz Municipal Airport	Town of Stephenson	County Rd W/Airport Rd
Bridge	Bridge	Town of Stephenson	Smith Creek Rd/Railroad
Bridge	Bridge	Town of Stephenson	USH 141/Peshtigo River
Bridge	Bridge	Town of Stephenson	CTH W/CTH GG Noquebay Outlet
Bridge	Bridge	Town of Stephenson	CTH W/Main Ave - Peshtigo River
Bridge	Bridge	Town of Stephenson	Shaffer Rd/Peshtigo River
Bridge	Bridge	Town of Stephenson	CTH X/Peshtigo River
Bridge	Bridge	Town of Stephenson	High Falls Rd/Peshtigo River
Bridge	Bridge	Town of Stephenson	Caldron Falls Rd/Thunder River
Bridge	Bridge	Town of Stephenson	Parkway Rd/Peshtigo River
Bridge	Bridge	Town of Stephenson	Parkway Rd/Thunder River
Bridge	Bridge	Town of Stephenson	Left Foot Lake Rd/Left Foot Creek
Bridge	Bridge	Town of Stephenson	Eagle Rd/Little Eagle Creek
Bridge	Bridge	Town of Stephenson	Eagle Rd/Eagle Creek
Bridge	Bridge	Town of Stephenson	High Falls Rd/Medicine Brook
Bridge	Bridge	Town of Stephenson	Kottle Rd/Medicine Brook
Bridge	Bridge	Town of Stephenson	Parkway Rd/Woods Lake Outlet
Bridge	Bridge	Town of Stephenson	Railroad/The Outlet
Bridge	Bridge	Town of Stephenson	Railroad/Peshtigo River



Type	Name	Location Community	Address
Bridge	Bridge	Town of Stephenson	Poplar Ln
Bridge	Bridge	Town of Stephenson	St Paul Rd/Peshtigo River
Bridge	Bridge	Town of Stephenson	St Paul Rd/Peshtigo River Railroad
Bridge	Bridge	Town of Stephenson	Devils Lake Rd/Devils Lake Outlet
Communication Tower/Facility	WPS Corp	Town of Stephenson	1111 Mira Ave
Communication Tower/Facility		Town of Stephenson	315 Hall Ave
Communication Tower/Facility	Nsight Spectrum, LLC	Town of Stephenson	407 USH 141 N
Communication Tower/Facility	WPS Corp	Town of Stephenson	Calderon Falls Dam
Communication Tower/Facility	WPS Corp	Town of Stephenson	Calderon Falls Dam Siren
Communication Tower/Facility	WPS Corp	Town of Stephenson	High Falls Dam
Communication Tower/Facility	WPS Corp	Town of Stephenson	High Falls Dam Siren
Communication Tower/Facility	Marinette County	Town of Stephenson	N7000 U.S. Hwy 141 - Tower 1
Communication Tower/Facility	WEC Business Services, LLC	Town of Stephenson	N7000 U.S. Hwy 141 - Tower 1
Communication Tower/Facility	Wisconsin Electric Power Co	Town of Stephenson	N7000 U.S. Hwy 141 - Tower 1
Communication Tower/Facility	Wisconsin Electric Power Co	Town of Stephenson	N7000 U.S. Hwy 141 - Tower 1
Communication Tower/Facility	Nsight Spectrum, LLC	Town of Stephenson	N7000 U.S. Hwy 141 - Tower 2
Communication Tower/Facility	Nsight Spectrum, LLC	Town of Stephenson	N7000 U.S. Hwy 141 - Tower 2
Communication Tower/Facility	Bushman Farms, Inc	Town of Stephenson	N8151 Bushman Rd
Communication Tower/Facility	Camp Daniel	Town of Stephenson	W10541 Army Ln
Communication Tower/Facility	Krzewina Farms, LLC	Town of Stephenson	W10640 Cty W
Communication Tower/Facility	County of Marinette	Town of Stephenson	W11280 Cty X - Tower 1
Communication Tower/Facility	Town of Stephenson	Town of Stephenson	W11280 Cty X - Tower 1
Communication Tower/Facility	Astrea Connect	Town of Stephenson	W11280 Cty X - Tower 2
Communication Tower/Facility	Nsight Spectrum, LLC	Town of Stephenson	W11280 Cty X - Tower 2
Communication Tower/Facility	Wisconsin Public Services Corp	Town of Stephenson	W11543 High Falls Road
Communication Tower/Facility	AMS Spectrum Holdings, LLC	Town of Stephenson	W11591 Archer Ln
Communication Tower/Facility	JS Electronics	Town of Stephenson	W11591 Archer Ln
Communication Tower/Facility	JS Electronics	Town of Stephenson	W11591 Archer Ln
Communication Tower/Facility	Nsight Spectrum, LLC	Town of Stephenson	W12519 Parkway Rd
Communication Tower/Facility	Fendryk Brothers	Town of Stephenson	W9075 Cty P
Communication Tower/Facility	Wisconsin Public Services Corp	Town of Stephenson	W9304 Sandstone Lane
Dam	Peshtigo River - High Falls Reservoir	Town of Stephenson	Peshtigo River
Dam	Peshtigo River - Calderon Falls Reservoir	Town of Stephenson	Peshtigo River
Dam	Peshtigo River - Sandstone Reservoir	Town of Stephenson	Peshtigo River
Dam	Peshtigo River - Johnson Falls Flowage	Town of Stephenson	Peshtigo River
Dry Hydrant/Fire Pond	Boat Landing 1	Town of Stephenson	High Falls Flowage
Dry Hydrant/Fire Pond	Boat Landing 2	Town of Stephenson	High Falls Flowage
Dry Hydrant/Fire Pond	Boat Landing 3	Town of Stephenson	High Falls Flowage
Dry Hydrant/Fire Pond	Boat Landing 4	Town of Stephenson	High Falls Flowage
Dry Hydrant/Fire Pond	Boat Landing 5	Town of Stephenson	High Falls Flowage
Dry Hydrant/Fire Pond	Boat Landing 6	Town of Stephenson	High Falls Flowage
Dry Hydrant/Fire Pond	Boat Landing 7	Town of Stephenson	High Falls Flowage
Dry Hydrant/Fire Pond	Boat Landing 8	Town of Stephenson	Calderon Falls Reservoir
Dry Hydrant/Fire Pond	Boat Landing 9	Town of Stephenson	Calderon Falls Reservoir
Dry Hydrant/Fire Pond	Boat Landing 10	Town of Stephenson	Calderon Falls Reservoir
Dry Hydrant/Fire Pond	Boat Landing 11	Town of Stephenson	Calderon Falls Reservoir
Dry Hydrant/Fire Pond	Boat Landing 13 / Gov. Thompson State Park	Town of Stephenson	Calderon Falls Reservoir
Dry Hydrant/Fire Pond	Stephenson Town Park	Town of Stephenson	High Falls Flowage
Dry Hydrant/Fire Pond	Left Foot Lake	Town of Stephenson	Left Foot Lake Access
Dry Hydrant/Fire Pond	St. Paul Road	Town of Stephenson	St. Paul Rd/Peshtigo River
Dry Hydrant/Fire Pond	Bushman Road - Right of Way	Town of Stephenson	Privately-funded CF within Right-of-Way
Dry Hydrant/Fire Pond	Hideaway Lane Cul de Sac	Town of Stephenson	Sandstone Reservoir
Dry Hydrant/Fire Pond	Trailer Park Lane	Town of Stephenson	Popp's Resort
Dry Hydrant/Fire Pond	Hephner Lane	Town of Stephenson	Hephner Lane
Dry Hydrant/Fire Pond	Pine Acres 1	Town of Stephenson	N10184 Parkway Rd
Dry Hydrant/Fire Pond	Pine Acres 2	Town of Stephenson	N10184 Parkway Rd
Fuel Substation	Charter Fuels, Inc.	Town of Stephenson	N9873 CTH A
Fuel Substation	Crivitz Propane	Town of Stephenson	W10100 Dreamland Ave
Fuel Substation	Gasco	Town of Stephenson	N5093 US Hwy 141
Fuel Substation	Natural Gas Substation	Town of Stephenson	N7439 Left Foot Lake Rd

Appendices

Type	Name	Location Community	Address
Gravel Pit	Pitt Lane	Town of Stephenson	Pitt Lane
Gravel Pit	Crivitz Redi Mix Inc	Town of Stephenson	Old Highway 141
Hazmat	Crivitz Redi Mix Inc	Town of Stephenson	N7820 Old Highway 141
Institutional/Government Facility	Stephenson Town Hall	Town of Stephenson	W11280 CTH X
Institutional/Government Facility	Stephenson Town Garage - Crivitz Quarters	Town of Stephenson	315 Louisa St
Institutional/Government Facility	Stephenson Town Hall - Crivitz Annex	Town of Stephenson	801 Main Ave
Institutional/Government Facility	Marinette County Hwy Dept - Pump 2	Town of Stephenson	101 Henriette Ave
Licensed Childcare Facility	Camp Daniel	Town of Stephenson	W10541 Army Ln
Licensed Childcare Facility	Camp Bird Youth Center	Town of Stephenson	N8395 Caldron Falls Road
Licensed Childcare Facility	Crivitz Youth Development Center	Town of Stephenson	713 George St
Licensed Childcare Facility	Crivitz Youth, Inc	Town of Stephenson	902 Henriette Ave
Mobile Home Park	Parkway	Town of Stephenson	N9906 Parkway Rd
Mobile Home Park	Popps Resort	Town of Stephenson	W11581 County Road X
Mobile Home Park	Hilltop Homesteads - North Park	Town of Stephenson	N10120 Parkway Dr
Mobile Home Park	Hilltop Homesteads - South Park	Town of Stephenson	W11840 Blackberry Patch Ln
Parks and Campground	Governor Thompson State Park	Town of Stephenson	N10008 Paust Ln
Parks and Campground	Old Veteran's Park Campground	Town of Stephenson	Veterans Memorial Pk
Parks and Campground	Thunder Mountain Overlook	Town of Stephenson	W14000 Thunder Mountain Rd
Parks and Campground	Twin Bridge Park	Town of Stephenson	N9714 Parkway Road
Parks and Campground	Veteran's Memorial Park	Town of Stephenson	W12170 Parkway Rd
Parks and Campground	Peshigo River Campground	Town of Stephenson	W7948 Airport Rd
Parks and Campground	Thornton's Resort & Campground	Town of Stephenson	W12882 Parkway Rd
Parks and Campground	Crivitz Community Veteran's Park	Town of Stephenson	515 Park Place
Police/Fire/Rescue	Stephenson Fire Dept #2	Town of Stephenson	W12580 CTH W
Police/Fire/Rescue	Stephenson Fire Dept/Twin Bridge Rescue	Town of Stephenson	W11280 CTH X
Police/Fire/Rescue	Stephenson Fire Dept/Crivitz Quarters	Town of Stephenson	801 Main St/Crivitz
Police/Fire/Rescue	Crivitz Police Dept	Town of Stephenson	800 Henriette Ave
Police/Fire/Rescue	Crivitz Fire Dept	Town of Stephenson	1211 FJ St
School	Crivitz Elementary School	Town of Stephenson	718 Hall Hay
School	Crivitz High School	Town of Stephenson	400 South St
Utility	Electric Substation at Dam/Caldron Falls Reservoir	Town of Stephenson	Calderon Falls Dam
Utility	Electric Substation at Dam/High Falls Reservoir	Town of Stephenson	High Falls Dam
Utility	Electric Substation at Dam/Johnson Falls Flowage	Town of Stephenson	Johnson Falls Dam
Utility	Electric Substation at Dam/Sandstone Reservoir	Town of Stephenson	Sandstone Falls Dam
Wastewater Treatment Facility	Crivitz Utilities	Town of Stephenson	2000 Gene St
Water Supply Facility	Crivitz Water Well #2	Town of Stephenson	N7615 St. Paul Rd
Water Supply Facility	Crivitz Water Well #3	Town of Stephenson	N7707 St. Paul Rd
Water Supply Facility	Contaminated - No longer in use	Town of Stephenson	W8707 CTH W
Bridge	Bridge	Town of Wagner	CTH JJ/Menominee River
Bridge	Bridge	Town of Wagner	Pohl Rd/Unnamed Water
Bridge	Bridge	Town of Wagner	Bruette Rd/Wagner Creek
Bridge	Bridge	Town of Wagner	Cottage Rd/Unnamed Water
Bridge	Bridge	Town of Wagner	Bruette Rd/Wagner Creek
Bridge	Bridge	Town of Wagner	Wagner Rd/Wagner Creek
Bridge	Bridge	Town of Wagner	Golf Rd/Wagner Creek
Bridge	Bridge	Town of Wagner	Old Rail Rd/Wagner Creek
Bridge	Bridge	Town of Wagner	CTH JJ/Menominee River
Communication Tower/Facility		Town of Wagner	W2361 CTH X
Communication Tower/Facility		Town of Wagner	N10143 STH 180
Dam	Menominee River	Town of Wagner	Menominee River
Fuel Substation	Charter Fuels, Inc	Town of Wagner	N10101 STH 180
Institutional/Government Facility	Wagner Town Hall	Town of Wagner	N2379 CTH JJ
Parks and Campground	Menominee River Park	Town of Wagner	9012 Park Pl Dr
Police/Fire/Rescue	Wagner Fire Dept	Town of Wagner	W2379 CTH JJ
Temporary Emergency Gathering Center	Community Lutheran Church	Town of Wagner	W2680 STH 180
Bridge	Bridge	Town of Wausaukee	Pike River Rd/Pike River
Bridge	Bridge	Town of Wausaukee	Jamros Rd/Wausaukee River
Bridge	Bridge	Town of Wausaukee	McMahon Rd/Upper Middle Inlet



Type	Name	Location Community	Address
Bridge	Bridge	Town of Wausaukee	Glandale Rd/Wausaukee River
Bridge	Bridge	Town of Wausaukee	Bielak Rd/Wausaukee River
Bridge	Bridge	Town of Wausaukee	Railroad/Upper Middle Inlet
Bridge	Bridge	Town of Wausaukee	Railroad/Little Wausaukee Creek
Bridge	Bridge	Town of Wausaukee	Old Hwy 38/Little Wausaukee Creek
Bridge	Bridge	Town of Wausaukee	USH 141/Upper Middle Inlet
Communication Tower/Facility		Town of Wausaukee	Russ Mainik Rd
Communication Tower/Facility		Town of Wausaukee	N12910 USH 141
Communication Tower/Facility		Town of Wausaukee	N12324 USH 141
Daycare	Wausaukee Little Learners Center	Town of Wausaukee	N11941 USH 141
Fuel Substation	FerrellGas, Inc	Town of Wausaukee	W7390 USH 141
Institutional/Government Facility	Wausaukee Town Hall	Town of Wausaukee	N11856 USH 141
Municipal Garage	Wausaukee Town Garage	Town of Wausaukee	N11856 USH 141
Parks and Campground	Bear Point Boat Landing	Town of Wausaukee	W5100 Hwy 180/Menominee River
Parks and Campground	Grogan Rd Boat Landing	Town of Wausaukee	Grogan Rd/Menominee River
Parks and Campground	Long Lake Boat Landing	Town of Wausaukee	Long Lake Rd/Long Lake
Parks and Campground	McCall Lake Boat Landing	Town of Wausaukee	McCall Lake Rd/McCall Lake
Parks and Campground	River Road Boat Landing	Town of Wausaukee	River Rd/Menominee River
School (Primary & Secondary)	Wausaukee Schools	Town of Wausaukee	N11941 USH 141
Wastewater Treatment Facility	Wausaukee Water & Sewer Treatment Plant	Town of Wausaukee	N11888 Decor Dr



