

Marinette County, Wisconsin Hazard Mitigation Plan



May 16, 2014

PREPARED BY THE MARINETTE COUNTY EMERGENCY MANAGEMENT PLAN STEERING COMMITTEE
WITH ASSISTANCE FROM THE BAY-LAKE REGIONAL PLANNING COMMISSION



Marinette County, Wisconsin

Hazard Mitigation Planning Committee Members

Eric Burmeister	Marinette County Emergency Management Director
Philip Everhart	Citizen
Jay Heckel	Marinette FD/Hazmat Team
Craig Kahoun	Wisconsin Public Service
Mary Rosner	Marinette County Health & Human Services
Ted Sauve	Citizen/County Board
Vilas Schroeder	Marinette County Board
Bob Thull	Marinette FD/Hazmat Team



MARINETTE COUNTY, WISCONSIN HAZARD MITIGATION PLAN

**ADOPTED:
MARCH 25, 2014**

**APPROVED:
MAY 16, 2014**

Prepared by:

Bay-Lake Regional Planning Commission
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Green Bay, WI 54301
(920) 448-2820



The preparation of this document was financed through contract #12005-06 between Marinette County and the Bay-Lake Regional Planning Commission. The cost to develop this plan was paid for through a grant from the Federal Emergency Management Agency (FEMA) through the Pre-Disaster Mitigation program. A local match for the grant was provided through in-kind efforts by Marinette County.

RESOLUTION OF COUNTY ADOPTION

Resolution No. 418 - 14

Adoption of the *Marinette County, Wisconsin Hazard Mitigation Plan*

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


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

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

NOW, THEREFORE BE IT RESOLVED, that the County Board of Marinette County, Wisconsin, hereby adopts the *Marinette County Natural Hazards Mitigation Plan* as an official plan; and

BE IT FURTHER RESOLVED, that upon approval of the *Marinette County Natural Hazards Mitigation Plan*, the Bay-Lake Regional Planning Commission, on behalf of the Marinette County Emergency Management Department, will submit the adopted plan to Wisconsin Emergency Management and Federal Emergency Management Agency officials as required under the Hazard Mitigation Grant Program.

Hereby granted this 25th day of March 2014 by a majority of a quorum of the Marinette County Board of Supervisors.


Vilas Schroeder, Chair


Katherine K. Brandt, County Clerk

Recommended: Law Enforcement Committee on March 10, 2014

FEMA/WEM APPROVAL LETTERS

Rec'd 5/19/14

U.S. Department of Homeland Security
Region V
536 S. Clark St., 6th Floor
Chicago, IL 60605-1509



FEMA

MAY 16 2014

Ms. Roxanne Gray
State Hazard Mitigation Officer
Wisconsin Emergency Management
2400 Wright Street, P.O. Box 7865
Madison, WI 53707-7865

Dear Ms. ^{Rox.}Gray:

Thank you for submitting the adoption documentation for the Marinette County Hazard Mitigation Plan. The plan was reviewed based on the local plan criteria contained in 44 CFR Part 201, as authorized by the Disaster Mitigation Act of 2000. Marinette County met the required criteria for a multi-jurisdiction hazard mitigation plan and the plan is now approved. Please submit the adoption resolutions for any remaining jurisdictions who participated in the planning process.

The approval of this plan ensures continued availability of the full complement of Hazard Mitigation Assistance (HMA) Grants. All requests for funding, however, will be evaluated individually according to the specific eligibility and other requirements of the particular program under which the application is submitted.

We encourage Marinette County to follow the plan's schedule for monitoring and updating the plan, and continue their efforts to implement the mitigation measures. The expiration date of the Marinette County Plan is five years from the date of this letter. In order to continue project grant eligibility, the plan must be reviewed, revised as appropriate, resubmitted, and approved no later than the plan expiration date.

Please pass on our congratulations to Marinette County for this significant action. If you or the communities have any questions, please contact Kirstin Kuenzi at (312) 408-4460.

Sincerely,



Christine Stack, Director
Mitigation Division



STATE OF WISCONSIN
DEPARTMENT OF MILITARY AFFAIRS
DIVISION OF EMERGENCY MANAGEMENT

Brian M. Satula
Administrator

Scott Walker
Governor

May 22, 2014

Eric Burmeister, Director
Marinette County Emergency Management
2161 University Drive
Marinette, WI 54143

Dear Eric:

It gives me great pleasure to inform you that the *Marinette County, Wisconsin Hazard Mitigation Plan* has officially been approved for the County by FEMA. Approval for the remaining participating jurisdictions is contingent upon receipt of adoption resolutions from those jurisdictions. The plan complies with the requirements of the Disaster Mitigation Act of 2000. The County is eligible to apply for funding through the Hazard Mitigation Grant Program, Pre-Disaster Mitigation Program, and the Flood Mitigation Assistance Program through May 16, 2019, for projects identified in the Plan. Per the regulations, the Plan is required to be updated and resubmitted for approval every five years to remain eligible for mitigation funding.

With the FEMA Meets Requirements letter you received the Local Hazard Mitigation Plan Review Crosswalk includes recommended revisions for the five-year update.

Congratulations on the approval of the Plan. I also want to commend the County for its commitment to mitigation and reducing future disaster losses, and I look forward to working with you in the future.

If you have any questions, please feel free to call me at 608-242-3222.

Sincerely,

Katie Sommers
Disaster Response and Recovery Planner
Wisconsin Division of Emergency Management

Enclosure

Cc: Michelle Hartness, Northwest Regional Emergency Management Director
Janell Rucinski, Northwest Regional Office Operations Associate
Angela Pierce, Bay-Lake Regional Planning Commission

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EXECUTIVE SUMMARY

PLAN UPDATE SUMMARY

To aid in the identification of the changes that have been made to the *Marinette County, Wisconsin Natural Hazards Mitigation Plan* in this current update to the original 2007 plan, Table 0.1 below lists the plan changes and the updates made to the identified mitigation actions.

Table 0.1: Marinette County Hazard Mitigation Plan Update Summary

Project	Changes
Multi-Hazards	
Disaster Preparedness	Changed Project Timetable from "1-5 years" to "Ongoing." Removed "federal" from Costs of Project.
Acquisition of Emergency Power Generators for Critical Facilities	Partially completed: City of Marinette Fire Department and County Health and Human Services added generators. Removed "state and federal block" from Costs of Project.
Storm Shelters for County Parks	Removed "state and federal block" from Costs of Project.
Flooding	
Flood Forecasting and Warning Systems, and Emergency Plans	Changed Project Timetable from "7-10 years" to "Ongoing"
National Flood Insurance Program	Changed Project Timetable from "1-5 years" to "Ongoing"
Preservation of Natural Resources in Floodplains	Changed Project Timetable from "1-5 years" to "Ongoing"
Floodproofing Techniques	Removed "state and federal block" from Costs of Project. Changed Project Timetable from "7-10 years" to "Ongoing"
Stormwater Detention	Removed "state and federal block" from Costs of Project. Changed Project Timetable from "7-10 years" to "Ongoing"
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 Project Timetable from "7-10 years" to "Ongoing"
Stormwater Management	Removed "state and federal block" from Costs of Project. Changed Project Timetable from "1-5 years" to "Ongoing"
Incorporation of Floodplain Management in Comprehensive Planning	Completed in 2010, but will continue as "ongoing every ten years" with 10-year updates to comprehensive plans. Changed "2010" in note to "2020."
Orthophotography Base Maps of Marinette County	Completed in 2010, but will continue as "ongoing every five years."
Hydrology Study of Marinette County	Completed with FEMA floodplain updates.
Flood Insurance Rate Map (FIRM) Amendments and Revisions	Completed with FEMA floodplain updates.
Geographic Information System (GIS) Coverage	Completed with comprehensive planning, but will continue as "ongoing every ten years."
Inform Property Owners in Cases Where Property is Located in the 100-Year Floodplain	Removed
Reevaluation of Floodplain Zoning Ordinances	Removed "state and federal block" from Costs of Project. Changed Responsible Parties from "Marinette County" to "Marinette County Zoning" and changed Project Timetable from "5-7 years" to "Ongoing."
Acquisition and Relocation	Removed "state and federal block" from Costs of Project. Changed Project Timetable from "5-7 years" to "As needed."

Table 0.1: Marinette County Hazard Mitigation Plan Update Summary (continued)

Project	Changes
Tornadoes	
Identification of Emergency Shelter Locations	Removed "state and federal block" from Costs of Project. Changed Project Timetable from "1-5 years" to "Ongoing."
Identification of Emergency Shelter Deficit Locations	Partially completed: City of Marinette was completed and a shelter was added in Menominee. Removed "state and federal block" from Costs of Project. Changed Project Timetable from "7-10 years" to "Ongoing."
Add shelters in mobile home parks	Addition
Enhanced Construction Standards and Techniques	Removed - State responsibility
Encourage Use of Tie-Downs with Ground Anchors for Manufactured Homes and Mobile Homes	Changed Project Timetable from "7-10 years" to "Ongoing."
Lightning Storms and Thunderstorms	
Review of Building Codes	Removed - State responsibility
Lightning Safety Guidelines	Removed "federal" from Costs of Project. Changed Project Timetable from "7-10 years" to "Ongoing." Added note "During Spring Severe Weather Awareness Week."
Wildland Fires	
Fire Education and Prevention	Changed Project Timetable from "5-7 years" to "Ongoing."
Update structural zone maps (Marinette County Emergency Services Atlas)	Addition
Extreme Heat	
Supplies for Vulnerable Populations	Removed
Publicize of Extreme Heat Events	Changed Responsible Parties from "Marinette County" to "Marinette County Public Health Dept." Changed Project Timetable from "1-5 years" to "Ongoing during extreme heat forecasts." Changed Priority from "High" to "Low."
Winter Storms	
Promote Winter Storm Hazard Awareness	Removed "federal" from Costs of Project. Changed Project Timetable from "5-7 years" to "Ongoing."
Priority Policy for Salting and Plowing Streets and Highways	Added "Review" to Mitigation Measure. Add "and communities" to Responsible Parties. Changed Project Timetable from "1-5 years" to "Ongoing." Reworded note from "All jurisdictions in the planning area will work to better educate the public concerning their priority policy for salting and plowing streets and highways. This policy gives top priority to the more highly traveled principal arterials, and gives lowest priority to low traveled local roads." to "Jurisdictions in the planning area will work to educate the public concerning the counties priority policy for salting and plowing streets and highways."
Extreme Cold	
Publicize of Extreme Cold Events	Removed "state and federal block" from Costs of Project. Changed Responsible Parties from "Marinette County Emergency Management Coordinator and American Red Cross staff" to "Marinette County Public Health Dept." Changed Project Timetable from "5-7 Years" to "Ongoing." Changed Priority from "Medium" to "Low."
Fog	
Publicize of Fog Events	Changed Responsible Parties from "Marinette County Emergency Management Coordinator and American Red Cross staff" to "National Weather Service." Changed Project Timetable from "7-10 years" to "Ongoing." Removed Note.
Dam Failure	
Dam Failure Warning Systems and Emergency Plans	Removed "federal" from Costs of Project. Changed Project Timetable from "7-10 years" to "Ongoing." Added note "Ongoing by FERC regulations."
Coastal Hazards	
Promote Coastal Hazard Awareness	Removed "federal" from Costs of Project. Changed Project Timetable from "7-10 years" to "Ongoing."
Drought	
Promote Water Conservation activities during drought	Removed "federal" from Costs of Project. Changed Project Timetable from "7-10 years" to "Ongoing."

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CHAPTER 1 - INTRODUCTION

PURPOSE OF THE PLAN

The primary focus of the *Marinette County Hazard Mitigation Plan* is to evaluate the planning area's potential exposure to natural hazards and to identify appropriate mitigation strategies. Consistent with the Code of Federal Regulations (44 CFR Part 201.6), the County decided to limit 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. 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 development and update of the *Marinette County Hazard Mitigation Plan* is in response to passage of the Disaster Mitigation Act of 2000. This act was signed into law in October of 2000. The Act attempts to stem the losses from disasters, reduce future public and private expenditures, and speed up response and recovery from disasters. The Act (Public Law 106-390) was amended by the Robert T. Stafford Relief and Emergency Assistance Act. The following is a summary of the parts of the Disaster Mitigation Act of 2000 that pertain to local governments and tribal organizations:

- The Act establishes a new requirement for local governments and tribal organizations to prepare a hazard mitigation plan in order to be eligible for funding from FEMA through the Pre-Disaster Mitigation Assistance Program and the Hazard Mitigation Grant Program.
- The Act establishes a requirement that natural hazards need to be addressed in the risk assessment/vulnerability analysis part of a hazard mitigation plan. Man-made/technological hazards are encouraged, but not required, to be addressed.
- The Act authorizes up to seven percent of Hazard Mitigation Grant Program funds available to a state after a federal disaster to be used for development of state, local and tribal organization hazard mitigation plans.
- The Act established November 1, 2004, as the date by which local governments and tribal organizations are to prepare and adopt their respective plans in order to be eligible for the FEMA Hazard Mitigation Grant Program; this deadline was November 1, 2003, for the Pre-Disaster Mitigation Program.
- If a plan is not prepared by November 1, 2004, and a major disaster is declared, in order for a local government or tribal organization to be eligible to receive funding through the Hazard Mitigation Grant Program, they must agree to prepare a hazard mitigation plan within one year.

- In addition, by not having a current, FEMA-approved, and adopted hazard mitigation plan, local and tribal governments cannot utilize funding through the Pre-Disaster Mitigation Grant Program.

Funding of the Hazard Mitigation Plan

In November 2011, the Marinette County received a planning grant to develop an update to their hazard mitigation plan in the amount of \$33,622 from FEMA through Wisconsin Emergency Management (WEM) under disaster declaration DR-1933-WI. Through the grant (Agreement #: 1933.16-P), FEMA provided 75 percent of the funds (\$25,202), Wisconsin Emergency Management provided 12.5 percent of the required match (\$4,210), while the remaining 12.5 percent (\$4,210) was required by Marinette County to meet the local match.

Marinette County entered into a contract (#12005-06) with the Bay-Lake Regional Planning Commission to prepare the update to the hazard mitigation plan. Development of the plan began in May 2012.

Five Parts of this Natural Hazards Mitigation Plan

The *Marinette County Hazard Mitigation Plan* was divided into five chapters in order to address FEMA's local mitigation plan requirements. The five chapters are as follows:

- Chapter 1 – Introduction (Planning Process);
- Chapter 2 – Planning Area;
- Chapter 3 – Risk Assessment;
- Chapter 4 – Mitigation Strategy; and
- Chapter 5 – Plan Maintenance and Adoption Process.

PLANNING PROCESS

Development of the *Marinette County Hazard Mitigation Plan* was based on the planning requirements and guidance provided by FEMA and WEM. Following these requirements and guidance, the plan meets the requirements of the Disaster Mitigation Act of 2000. Since the WEM guidance for hazard mitigation plans recommended that planning areas “be consistent with a community’s comprehensive planning boundary,” the planning area for this *Marinette County Hazard Mitigation Plan* includes all of Marinette County with its three cities (Marinette, Niagara, and Peshtigo), four villages (Coleman, Crivitz, Pound, and Wausaukee), and eighteen towns.

The steering committee comprised of county and state officials, emergency management personnel, organizations, and citizens, guided the plan development process over an 18-month timeframe beginning in May 2012. Professional planning support was provided by the Bay-Lake Regional Planning Commission. 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 along a five-phase planning process:

Phase I: Pre-planning and review of steering committee appointments

Phase II: Reassessing risks and critical facilities

Phase III: Updating the mitigation action plan

Phase IV: Reviewing the policies and procedures for plan implementation

Phase V: Documenting the planning process and plan adoption

Phase I involved initial conversations and meetings aimed at reviewing the previous steering committee appointments, reconvening the steering committee, and outlining the planning process and responsibilities of the steering committee.

Phase II was comprised of a meeting with the steering committee to reassess natural hazards and potential risks to the County, and reassessing identified critical facilities.

Phase III involved updating the mitigation action plan to address identified risks including removing completed task and adding new mitigation methods to address risks.

Phase IV involved reviewing the policies that affect plan implementation and the procedures that would be followed to implement the plan.

Phase V involved documenting the planning process, developing a complete draft of the plan, and plan adoption.

Plan development was completed with the adoption of the plan by resolution at the Marinette County Board meeting on March 25, 2014. 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), allowing greater manipulation and analysis from the use of a consistent base map. The FEMA HAZUS software was not utilized due to the availability of current local data and numerous differences between census boundaries and locally available map features. Maps included in this plan are for general planning purposes only, and are not for legal or formal survey purposes.

Hazard Mitigation Plan Steering Committee

Marinette County established a Hazard Mitigation Plan Steering Committee as a sub-committee of the Local Emergency Planning Committee (LEPC) (Table 1.1). All steering committee meetings were open to the public, and local media often attended. The steering committee was responsible for providing input, helping to guide the planning process, and reviewing draft chapters of the plan.

Table 1.1: Marinette County Hazard Mitigation Plan Steering Committee

Eric Burmeister	Marinette County Emergency Management Director
Philip Everhart	Citizen
Jay Heckel	Marinette FD/Hazmat Team
Craig Kahoun	Wisconsin Public Service
Mary Rosner	Marinette County Health and Human Services
Ted Sauve	Citizen/County Board
Vilas Schroeder	Marinette County Board
Bob Thull	Marinette FD/Hazmat Team

Source: Marinette County, 2012.

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/High Winds
2. Lightning Storms/Thunderstorms
3. Winter Storms
4. Drought
5. Flooding (Flash, Riverine, Lake)
6. Hail Storms

- | | |
|-------------------------|--|
| 7. Stormwater Flooding | 11. Extreme Heat |
| 8. Dam Failure Flooding | 12. Fog |
| 9. Wildland Fires | 13. Coastal Hazards (Ice Shoves, etc.) |
| 10. Extreme Cold | |

Steering Committee Plan Review

The steering committee reviewed and analyzed each section of the plan, and considered Table 0.1 to evaluate which sections were revised as part of the update process. The steering committee held seven meetings to develop the plan update: May 31, 2012; August 6, 2012; October 15, 2012; January 28, 2013; March 25, 2013; July 22, 2013, and September 30, 2013. Copies of the sign-in sheets are included in Appendix A.

Public Involvement

Steering Committee Meetings

Opportunities for public comment during the drafting stage of the plan were held at all meetings of the steering committee, which were all open to the public. No comments were provided by the public at these meetings.

Public Informational Meeting/Public Comments

An informational meeting was held for the public on August 29, 2013 at the Marinette County Courthouse. This meeting was held to provide an opportunity for the public to review and comment on the draft plan and maps.

Both the steering committee meetings and the public informational meeting were open to the public, notices were posted at County Courthouse, and notice was provided to local media.

The draft plan was also posted on the Marinette County website with the ability to submit online comments. The following comments were received:

Comments from Jolene Ackerman and Mike Folgert, Wisconsin DNR

Page 3-15 Description of Hazard – I don't think both terms, forest fire and wildfires, need to be used. In state statute, the term "forest fire" is defined as any type of uncontrolled fire, whether it is in trees, brush, marsh, field, etc. It's a little confusing to the general public and so if your plan does not need to have the state statute definition of a forest fire, I would suggest just using wildfire as the catch-all term.

Page 3-24, first line of Wildland Fires Description of Hazards – add 'forests' and 'woodlands' to your list..."A wildland fire is any instance of unplanned burning in forests, woodlands, brush, marshes..."

Page 3-25 Probability of Hazard Occurring in the Future, last sentence – Take of 'naturally occurring' so it reads "Overall, the probability of a wildfire fire occurring is high for the county."

Page 3-25 Structures at Risk – If you care to include info about structures lost/threatened by wildfires, I ran a data query. Here's what I found out. For Marinette County, during the timeframe of 2005 through 2011, 11 structures were lost to wildfires and another 111 were threatened, yet ultimately saved by fire suppression efforts.

Page 4-8 – USDA Forest Service has no land ownership, nor fire response responsibility as indicated in the western third of Marinette County.

Page 4-8 – WDNR responsibilities also include the training of VFD's, implementing MOU's and providing grant assistance to them.

Page 4-11 – WDNR funding sources should be listed as FFP grants not VFA grants.

A couple mitigation activities that come to mind include:

- *Updating structural zone maps (Marinette County Emergency Services Atlas). Every 5 years.*
- *Conduct a wildland fire/structural protection table top exercise followed up with a full scale exercise.*
- *Develop additional CWPP's.*
- *Promote Firewise*
- *Reduce Fuels/manage vegetation after severe weather events (Act quickly to reduce the volume of dead and down timber after a severe weather event to reduce the available fuel for a wildfire.)*

County Board Meeting

On March 25, 2014 the Marinette County Board adopted this hazard mitigation plan update at a meeting that was open to the public. A copy of the resolution of adoption can be found at the front of this plan on page iii.

Neighboring Jurisdictions

The Marinette County 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.

Contact Information

Eric J. Burmeister
Marinette County Emergency Management Director
2161 University Drive
Marinette, WI 54143
(715) 732-7660
egov@marinettecounty.com

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CHAPTER 2 - COMMUNITY PROFILE

GENERAL GEOGRAPHY

The planning area for the *Marinette County Hazards 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	Total Planning Area (Square Miles)
<u>CITIES</u>	
Marinette	7.29
Niagara	3.00
Peshtigo	3.18
<u>VILLAGES</u>	
Coleman	1.16
Crivitz	1.53
Pound	0.81
Wausaukee	1.39
<u>TOWNS</u>	
Amberg	72.31
Athelstane	107.13
Beaver	69.47
Beecher	49.52
Dunbar	105.20
Goodman	107.68
Grover	73.30
Lake	59.55
Middle Inlet	51.22
Niagara	68.35
Pembine	67.31
Peshtigo	60.39
Porterfield	53.35
Pound	50.13
Silver Cliff	106.96
Stephenson	176.86
Wagner	54.63
Wausaukee	77.51
COUNTY TOTAL	1,429.25

Source: U.S. Bureau of the Census, 2010, and Bay-Lake Regional Planning Commission, 2012.

Note: Total Planning Area includes land areas only.

HISTORICAL SETTING

According to the *Marinette County Centennial 1879-1979*, Marinette County was created from part of Oconto County in 1879, and the present boundaries were established in 1882. In that year, Marinette County acquired additional land from Oconto County, and Florence County was created and detached from the northern end of Marinette County. Marinette County is comprised of 18 towns, four villages, and three cities.

Early French explorers, fur traders, and missionaries who passed through this region may have visited Marinette County. The earliest record of a white settler was Louis Chappee, a fur trader who came to the area in 1796 as an agent of the American Fur Company to establish a trading post on the Wisconsin side of the Menominee River. Twenty-five years later, William Farmsworth and Charles Brush arrived with the assistance of the Chippewa Native Americans and forcibly took possession of the trade.

In reaction to the decline of fur trade and the increasing importance of lumbering, Farmsworth and Brush constructed the first sawmill on the Menominee River in 1832. This operation was small compared to the size of the sawmill operations that later appeared on the Menominee and Peshtigo Rivers. In 1866, the Boom Company was formed to organize the various lumbermen to float logs down the Menominee River. From 1866 to 1917, the Boom Company built 44 dams on the Menominee River and its tributaries to control water and floated over 10.5 billion board feet of lumber to sawmills in the cities of Marinette and Menominee. Both the Menominee and Peshtigo Rivers reached far into the virgin pine forests and provided watercourses to float the logs to the mills (*Marinette County Centennial 1879-1979*).

By 1920, most of the forests had been cut over and abandoned. A large part of the land was unsuitable for agriculture and reverted to the county because of tax delinquency. The county took advantage of the 1929 State Forest Crop Law and became one of Wisconsin's first counties to establish a county forest by ordinance (*Marinette County Centennial 1879-1979*).

The quarrying of rock was another early enterprise in Marinette County. Granite from the Amberg and Athelstane areas furnished materials for many buildings constructed around the turn of the century in many large cities across the United States (*Marinette County Centennial 1879-1979*).

The first farmer in the county was John Kittson, who built a home near the Menominee River in 1830. By 1850, there were 579 acres of cultivated land between the Menominee and Peshtigo Rivers. Farming grew in importance as the timber resources were depleted (*Marinette County Centennial 1879-1979*).

DEMOGRAPHIC PROFILE

Population Trends

From 1970 to 2010, Marinette County has grown by 5,040 persons (13.7 percent). The County's growth has fluctuated over time, but has maintained an upward trend from 1970 to 2000, but had a population dip of 3.8 in 2010. Table 2.2 and Figure 2.1 indicate the historic Census population counts by community in Marinette County.

Although it has seen continued population loss since 1970, the City of Marinette comprises 26 percent of the population of the county. The towns of Dunbar, Beecher, Silver Cliff, and Wausaukee have seen substantial population growth of over 100 percent since 1970. Every

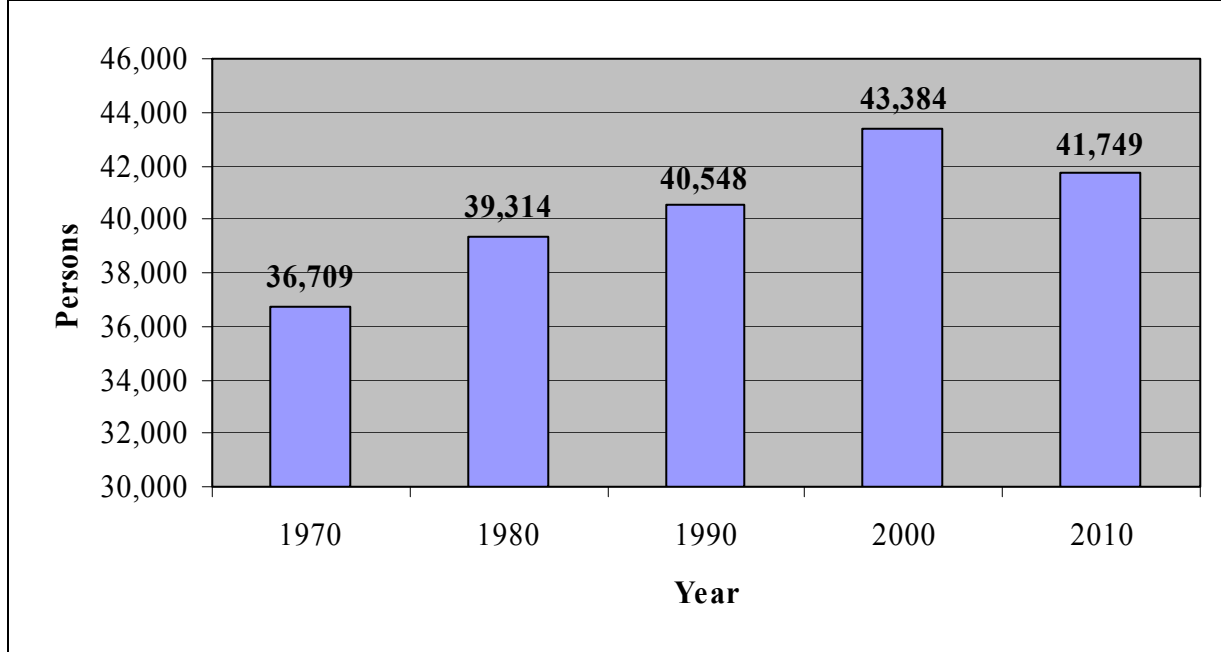
municipality in Marinette County, except Marinette (city), Niagara (city), and Goodman (town) have had population gains from 1970 to 2010.

Table 2.2: Marinette County Population Trends, 1970-2010

Municipality	Year					1970-2010	
	1970	1980	1990	2000	2010	Number	Percent
Marinette (city)	12,696	11,965	11,843	11,749	10,968	-1,728	-13.6
Niagara (city)	2,347	2,079	1,999	1,880	1,624	-723	-30.8
Peshtigo (city)	2,836	2,807	3,154	3,357	3,502	666	23.5
Coleman (village)	683	852	839	716	724	41	6.0
Crivitz (village)	899	1,041	996	998	984	85	9.5
Pound (village)	284	407	434	355	377	93	32.7
Wausaukee (village)	557	648	656	572	575	18	3.2
Amberg (town)	665	852	917	854	726	61	9.2
Athelstane (town)	330	364	437	601	504	174	52.7
Beaver (town)	995	1,042	1,041	1,123	1,146	151	15.2
Beecher (town)	279	521	626	783	724	445	159.5
Dunbar (town)	359	522	838	1,303	1,094	735	204.7
Goodman (town)	750	803	758	820	619	-131	-17.5
Grover (town)	1,575	1,709	1,670	1,729	1,768	193	12.3
Lake (town)	741	915	989	1,064	1,135	394	53.2
Middle Inlet (town)	457	681	744	831	840	383	83.8
Niagara (town)	561	717	891	924	853	292	52.0
Pembine (town)	654	773	817	1,036	889	235	35.9
Peshtigo (town)	2,951	3,566	3,564	3,819	4,057	1,106	37.5
Porterfield (town)	1,405	1,857	1,805	1,991	1,971	566	40.3
Pound (town)	1,297	1,412	1,386	1,367	1,425	128	9.9
Silver Cliff (town)	189	267	259	529	491	302	159.8
Stephenson (town)	2,202	2,137	2,288	3,065	3,006	804	36.5
Wagner (town)	500	624	660	722	681	181	36.2
Wausaukee (town)	497	753	937	1,196	1,066	569	114.5
Marinette County	36,709	39,314	40,548	43,384	41,749	5,040	13.7

Source: U.S. Census 1970-2010.

Figure 2.1: Population Trends, Marinette County, 1950-2010



Source: U.S. Census 1970-2010.

Population Projections

Marinette County has seen a slow, but steady growth in its population from 1970 to 2000, with a 3.8 percent drop in 2010. According to the Wisconsin Department of Administration (WDOA), the county's population is expected to increase to 47,415 persons by the year 2030 (Table 2.3). However, the WDOA projections are based on the 2000 Census, not the recent 2010 Census so the decrease seen in 2010 is not factored into these projections. The WDOA projections have ended up quite accurate for the county and are only 8 percent greater than the actual 2010 Census.

Table 2.3: Population Projections, Marinette County, 2000-2030

Municipality	U.S. Census 2000	U.S. Census 2010	WDOA Population Projections					Number Change 2000-2030	Percent Change 2000-2030
			2010	2015	2020	2025	2030		
Marinette (city)	11,749	10,968	11,320	11,137	10,943	10,694	10,366	-1,383	-11.8
Niagara (city)	1,880	1,624	1,816	1,773	1,728	1,675	1,610	-270	-14.4
Peshtigo (city)	3,357	3,502	3,553	3,623	3,688	3,732	3,743	386	11.5
Coleman (village)	716	724	673	642	612	579	542	-174	-24.3
Crivitz (village)	998	984	1,002	999	996	986	970	-28	-2.8
Pound (village)	355	377	325	311	296	280	262	-93	-26.2
Wausaukee (village)	572	575	529	505	482	456	427	-145	-25.3
Amberg (town)	854	726	846	836	826	812	790	-64	-7.5
Athelstane (town)	601	504	646	681	716	746	769	168	28.0
Beaver (town)	1,123	1,146	1,203	1,236	1,267	1,291	1,303	180	16.0
Beecher (town)	783	724	850	892	933	969	995	212	27.1
Dunbar (town)	1,303	1,094	1,454	1,566	1,677	1,777	1,857	554	42.5
Goodman (town)	820	619	863	880	896	906	909	89	10.9
Grover (town)	1,729	1,768	1,862	1,907	1,949	1,979	1,992	263	15.2
Lake (town)	1,064	1,135	1,163	1,205	1,244	1,276	1,296	232	21.8
Middle Inlet (town)	831	840	910	947	983	1,012	1,032	201	24.2
Niagara (town)	924	853	959	978	998	1,011	1,015	91	9.8
Pembine (town)	1,036	889	1,167	1,234	1,299	1,356	1,401	365	35.2
Peshtigo (town)	3,819	4,057	4,081	4,206	4,325	4,419	4,473	654	17.1
Porterfield (town)	1,991	1,971	2,135	2,197	2,255	2,300	2,326	335	16.8
Pound (town)	1,367	1,425	1,392	1,393	1,393	1,385	1,366	-1	-0.1
Silver Cliff (town)	529	491	633	687	740	788	827	298	56.3
Stephenson (town)	3,065	3,006	3,547	3,795	4,035	4,248	4,420	1,355	44.2
Wagner (town)	722	681	829	871	913	948	973	251	34.8
Wausaukee (town)	1,196	1,066	1,395	1,496	1,593	1,680	1,751	555	46.4
Marinette County	43,384	41,749	45,153	45,997	46,787	47,305	47,415	4,031	9.3

Source: Wisconsin Department of Administration, Official Municipal Population Projections, 2000-2030; 2009.

Housing Trends

From 1990 to 2010, Marinette County gained 4,729 housing units (Table 2.6). The county and the municipalities have seen a lot of fluctuation in the number of housing units from decade to decade. Due to being the most populous municipality in the county, the City of Marinette has held the greatest percentage of housing units in the county over all decades from 1990 to 2010.

Table 2.4: Housing Units, Marinette County, 1990-2010

Municipality	1990		2000		2010		1990-2000		2000-2010	
	Number	Percent of Total	Number	Percent of Total	Number	Percent of Total	Number	Percent Change	Number	Percent Change
Marinette (city)	5268	20.1	5553	21.2	5464	18.0	285	5.4	-89	-1.6
Niagara (city)	826	3.2	812	3.1	797	2.6	-14	-1.7	-15	-1.8
Peshtigo (city)	1217	4.7	1315	5.0	1621	5.3	98	8.1	306	23.3
Coleman (village)	361	1.4	352	1.3	343	1.1	-9	-2.5	-9	-2.6
Crivitz (village)	449	1.7	457	1.7	533	1.8	8	1.8	76	16.6
Pound (village)	171	0.7	174	0.7	164	0.5	3	1.8	-10	-5.7
Wausaukee (village)	333	1.3	294	1.1	325	1.1	-39	-11.7	31	10.5
Amberg (town)	922	3.5	942	3.6	1051	3.5	20	2.2	109	11.6
Athelstane (town)	999	3.8	995	3.8	1202	4.0	-4	-0.4	207	20.8
Beaver (town)	615	2.4	542	2.1	797	2.6	-73	-11.9	255	47.0
Beecher (town)	809	3.1	971	3.7	1097	3.6	162	20.0	126	13.0
Dunbar (town)	771	2.9	793	3.0	883	2.9	22	2.9	90	11.3
Goodman (town)	648	2.5	680	2.6	840	2.8	32	4.9	160	23.5
Grover (town)	652	2.5	676	2.6	763	2.5	24	3.7	87	12.9
Lake (town)	704	2.7	524	2.0	875	2.9	-180	-25.6	351	67.0
Middle Inlet (town)	748	2.9	643	2.5	899	3.0	-105	-14.0	256	39.8
Niagara (town)	418	1.6	453	1.7	549	1.8	35	8.4	96	21.2
Pembine (town)	826	3.2	871	3.3	1016	3.3	45	5.4	145	16.6
Peshtigo (town)	1490	5.7	1567	6.0	1854	6.1	77	5.2	287	18.3
Porterfield (town)	780	3.0	848	3.2	993	3.3	68	8.7	145	17.1
Pound (town)	527	2.0	537	2.1	628	2.1	10	1.9	91	16.9
Silver Cliff (town)	880	3.4	963	3.7	1162	3.8	83	9.4	199	20.7
Stephenson (town)	3786	14.5	3777	14.4	4708	15.5	-9	-0.2	931	24.6
Wagner (town)	503	1.9	384	1.5	591	1.9	-119	-23.7	207	53.9
Wausaukee (town)	947	3.6	1036	4.0	1224	4.0	89	9.4	188	18.1
Marinette County	25,650	36.5	26,159	100.0	30,379	100.0	509	2.0	4,220	16.1

Source: US Census 2000 and 2010; Wisconsin Department of Administration, Official Municipal Population Projections, 2000-2030; 2012.

EMPLOYMENT CHARACTERISTICS

As a result of the recession that affected the entire country, there was a significant jump in the county's unemployed between 2008 and 2009, from which it has not yet fully recovered. The unemployment rate reached its highest level, 11.8 percent during this period (Table 2.5).

The civilian labor force is comprised of employed persons and those seeking employment, and excludes persons in the armed forces and those under age 16. Variations in the number of persons in the labor force are the result of many factors. Shifts 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 2.5: Average Civilian Labor Force Estimates, 2000-2011, Marinette County

Year	Civilian Labor	Unemploy.		
	Force	Unemployed	Rate	Employed
2000	22,568	982	4.4	21,586
2001	22,771	1348	5.9	21,423
2002	22,838	1524	6.7	21,314
2003	23,232	1687	7.3	21,545
2004	22,777	1485	6.5	21,292
2005	22,463	1375	6.1	21,088
2006	22,140	1418	6.4	20,722
2007	22,397	1367	6.1	21,030
2008	22,052	1336	6.1	20,716
2009	22,573	2,659	11.8	19,914
2010	21,726	2,395	11.0	19,331
2011	21,694	2,053	9.5	19,641

Source: Wisconsin Department of Workforce Development, Office of Economic Advisors, 2000-2011.

GENERAL DEVELOPMENT PATTERN

A detailed field inventory of land use in the county was conducted in 2008 by the Bay-Lake Regional Planning Commission (Map 2.2). Using GIS, land use types were tabulated to calculate the total area of Marinette County at 914,286 acres, or approximately 1,430 square miles (Table 2.6).

The vast majority of the county is comprised of natural areas (specifically woodlands) with 757,772 acres or 83 percent of the land. Agricultural land (crops and pasture) comprise 110,874 acres or 12 percent. Approximately 45,600 acres or about 5 percent of Marinette County is developed. Developed land is comprised of residential, commercial, industrial, transportation, communications/utilities, institutional/governmental, and recreation.

Table 2.6: Marinette County Land Use, 2008

Land Use Category	Acres	Percent of Total
		Land Use
Residential	14,562	1.6%
Commercial	1,195	0.1%
Industrial/Manufacturing	2,530	0.3%
Transportation	20,856	2.3%
Communications/Utilities	374	0.0%
Institutional/Governmental Facilities	986	0.1%
Outdoor Recreation	5,134	0.6%
Agricultural	110,874	12.1%
Natural Areas	757,772	82.9%
Total Acres	914,286	100.0%

Source: Bay-Lake Regional Planning Commission, 2012.

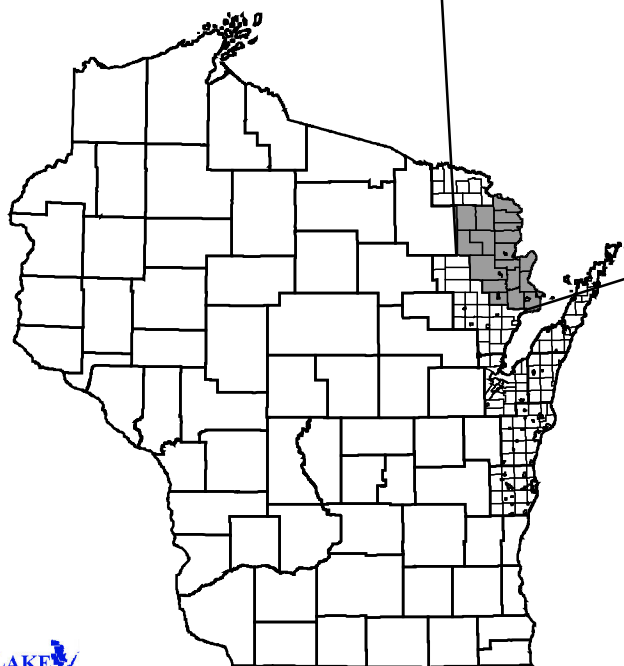
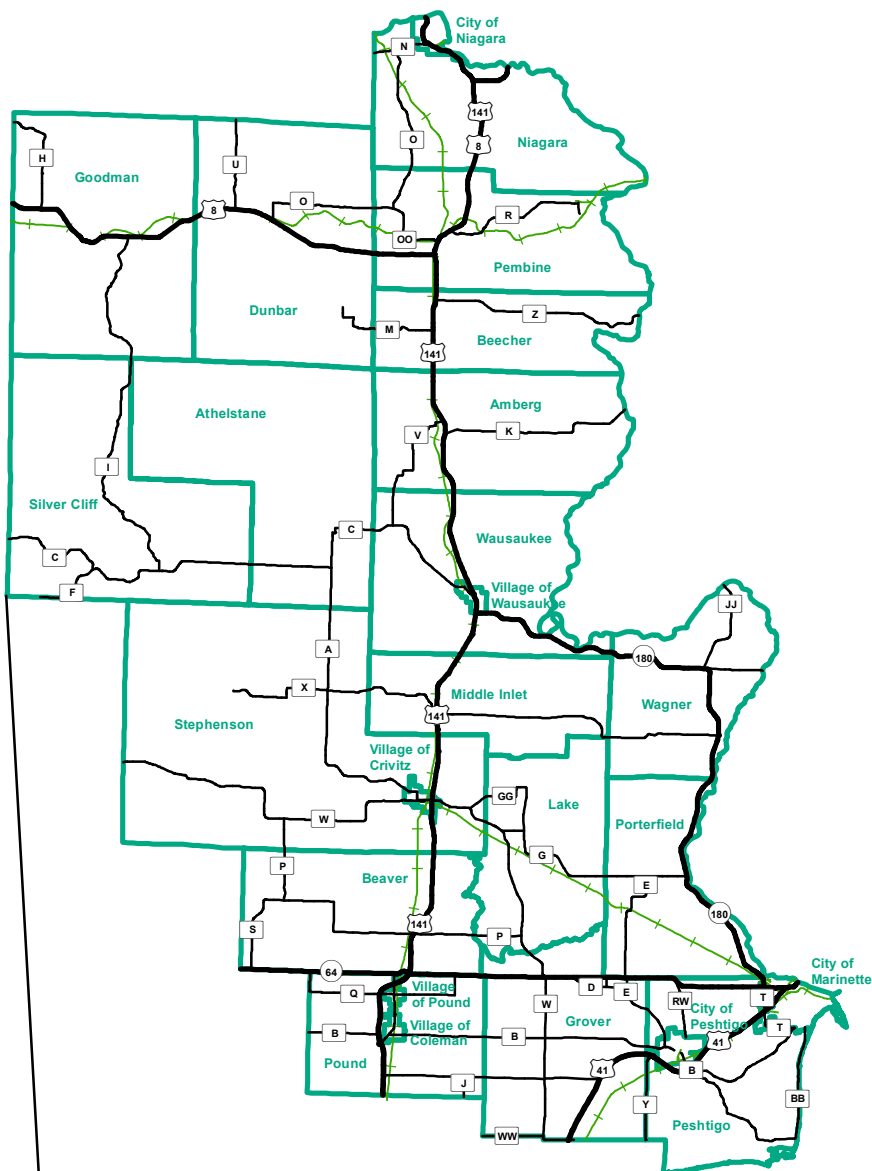
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Location Map

Marinette County Hazard Mitigation Plan

Marinette County, Wisconsin

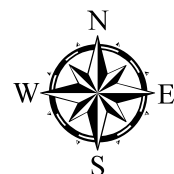
**Marinette
County**



Wisconsin



Source: Marinette County; Bay-Lake Regional Planning Commission, 2013.

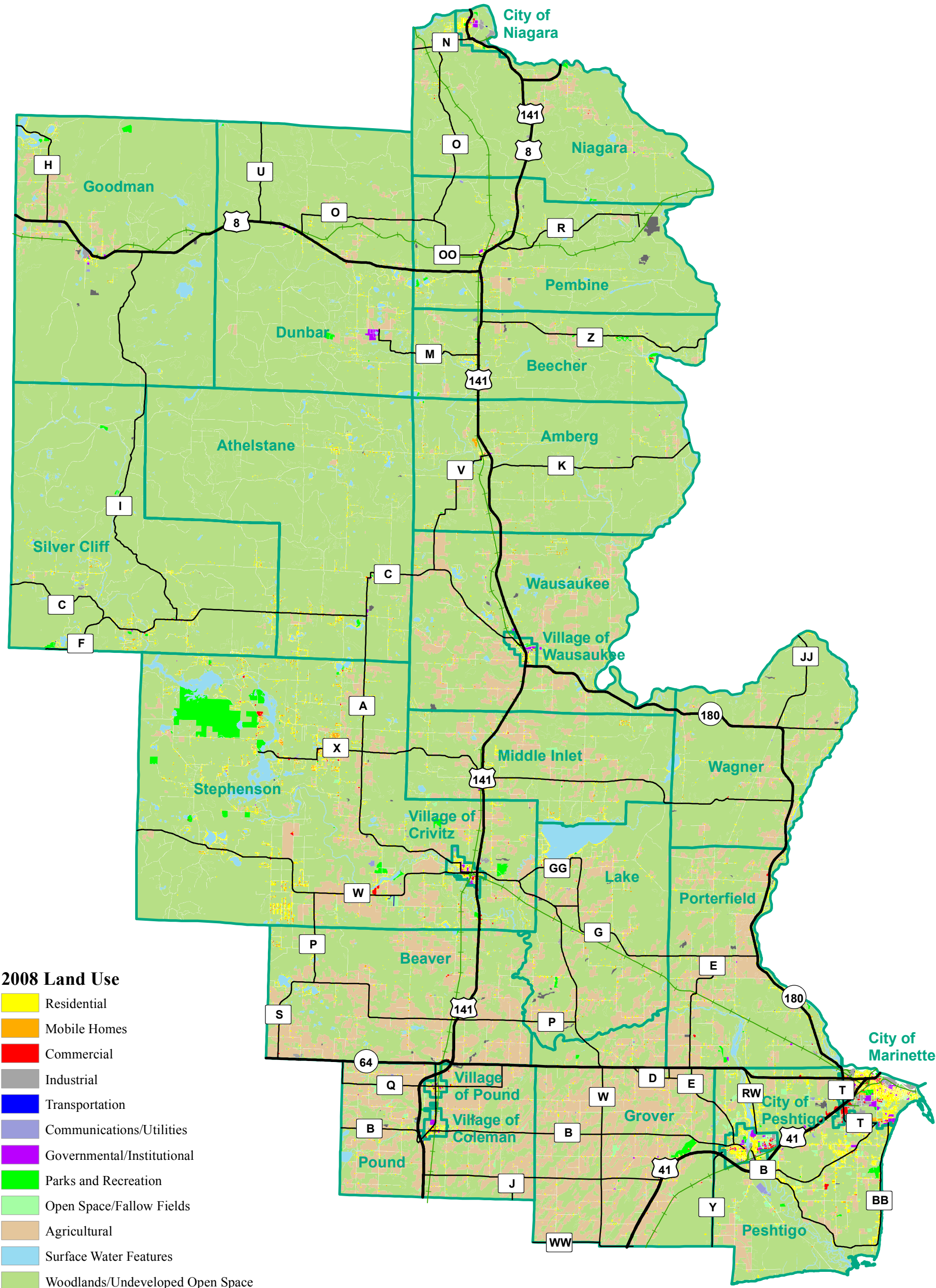


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2008 Land Use

Map 2.2

Marinette County Hazard Mitigation Plan Marinette County, Wisconsin



CHAPTER 3 - RISK ASSESSMENT

In order to more effectively evaluate potential hazard mitigation measures and develop useful strategies to address the risks associated with the identified natural hazards, a risk assessment has been prepared for Marinette County. The risk assessment identifies the natural hazards thought 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.

HAZARD IDENTIFICATION

Although the county could potentially be at risk from several distinct hazards, this plan focuses on addressing the natural 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 priority rank ordering of the many different natural hazards identified in the Resource Guide to All Hazards Mitigation Planning in Wisconsin (prepared by the Association of Wisconsin Regional Planning Commissions through funding provided by the State of Wisconsin Department of Military Affairs, Wisconsin Emergency Management, and the Federal Emergency Management Agency).

Hazard Risk Assessment Survey

Members of the plan steering committee agreed by consensus at a meeting on May 31, 2012 to keep the same hazard risk ranking derived during development of the original plan. The committee felt that the information was still valid and applicable and was based on lengthy historical hazard occurrence data.

The original hazard risk assessment survey was conducted in March 2006 and each plan steering committee member was asked to assign a risk rating of 1 point for low, 2 points for moderate, and 3 points for high to each of the following risk assessment criterion for each natural hazard.

- Frequency of past hazard occurrences
- Probability of hazard occurring in the future
- Degree of past hazard events causing injuries, sickness and/or deaths
- Degree of past hazard events causing damage to homes
- Degree of past hazard events causing damage to business and/or interruption of business trade
- Amount of local, state, and federal funds expended on past hazard recovery activities
- Amount of population still vulnerable to injury, sickness, and/or death from hazard
- Amount of homes still vulnerable to damage from hazard
- Amount of businesses still vulnerable to damage or interruption of business trade

The total number of points for each criterion for each of the identified natural hazards was then calculated. An averaged risk rating was then calculated for each natural hazard. Table 3.1 shows the risk rating calculated for each natural hazard. The steering committee chose not to assess and rank Man-Made Hazards as part of this planning process.

Table 3.1: Risk Assessment Ranking

Rank	Natural Hazards	Risk Assessment Rating Total
1	Tornado/High Winds	18
2	Lightening Storms/Thunderstorms	14
3	Heavy Snow Storm	13
4	Ice Storm	12
4	Drought	12
5	Flooding (Flash, Riverine, Lake)	11
5	Hail Storms	11
5	Blizzard	11
5	Agricultural Hazards	11
6	Stormwater Flooding	10
6	Dam Failure Flooding	10
6	Wildland Fires	10
6	Extreme Cold	10
6	Extreme Heat	10
6	Fog	10
7	Coastal Hazards (Ice Shoves, etc.)	9

Source: Marinette County Hazard Mitigation Plan Steering Committee, 2012.

Natural Hazard Events Historical Summary

The National Oceanic and Atmospheric Administration (NOAA) National Climatic Data Center (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. Historical hazard events were available from January 1, 2000 through October 1, 2011. The query for that time period resulted in 120 events recorded (Table 3.2).

The data from the NCDC shows that of the 120 events, hail storms (29 events), lightning and thunderstorms (28 events), winter storms (33 events), and tornadoes/high winds (13 events) have been the most frequently occurring natural hazards in Marinette County between January 2000 and October 2011. Other events occurring less than 10 times in the county since 2000 include flooding (8 events), drought (4 events), stormwater flooding (2 events), fog (2 events), and extreme cold (1 event). Some of these hazard events may not have been specific to the 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 storms/thunderstorms, may only get recorded by the NCDC if they are extreme events that cause property damage, injury, or death.

Only one death and two injuries have been reported in Marinette County from any hazard events since 2000. The most costly hazard events in terms of property damage since 2000 has been flooding (\$451,300), lightning and thunderstorms (and associated thunderstorm winds) (\$189,000), and tornadoes/high winds (\$140,000).

Table 3.2: Natural Hazard Occurrences Data, Marinette County 2000-2011

Natural Hazard	# of Events ¹	Avg #/Year	Risk ²	Deaths	Injuries	Property Damage ^{3,4}
Hail Storms	29	2	high	0	0	\$0
Lightning Storms/Thunderstorms	28	2	high	0	0	\$189,000
Winter Storms	33	3	high	0	0	\$0
Tornado/High Winds	13	1	medium	1	2	\$140,000
Flooding	8	1	medium	0	0	\$451,300
Drought	4	0.3 ⁵	low	0	0	\$0
Stormwater Flooding	2	0.2 ⁶	low	0	0	\$0
Fog	2	0.2 ⁶	low	0	0	\$0
Extreme Cold	1	0.1 ⁷	low	0	0	\$0
Extreme Heat	0	0	low	0	0	\$0
Dam Failure Flooding	0	0	low	0	0	\$0
Wildland Fires	848	74		-	-	-
Coastal Hazards	No Records	-	medium ⁸	-	-	-
Total Events	120	--		1	2	\$780,300

1. January 1, 2000 to October 1, 2011 (12 years)

2. Risk based on occurrences per year: High >1; Medium 0.5-1; and Low <0.5

3. Includes Crop Damages

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

5. One event every 3 years.

6. One event every 6 years.

7. One event every 13 years.

8. Based on information provided by *Resource Guide for Great Lakes Coastal Hazards in Wisconsin* (http://coastal.lic.wisc.edu/urpl999.htm#Section_4).

Source: NOAA-NCDC, 2012; Wisconsin DNR (for wildland fire data); and Bay-Lake Regional Planning Commission, 2012.

Natural Hazards Prioritization

The 2012 plan steering committee identified the following ranked natural hazards to be the focus of the plan assessment and mitigation action strategies. Ranking the potential risks associated with each natural hazard helped the steering committee prioritize the mitigation action strategies that are addressed later in the plan. The following natural hazards combined more than one listing from the NCDC data for consistency (the additional listings are provided in parenthesis). The hazards are listed in order of their prioritized ranking.

1. Tornado/High Winds (includes strong winds, high winds, and funnel clouds)
2. Lightning Storms/Thunderstorms (includes thunderstorm winds)
3. Winter Storms (includes heavy snow, ice storms, and glaze)
4. Drought
5. Flooding (includes flash flood)
6. Hail Storms
7. Stormwater Flooding (includes urban/small stream flooding)
8. Dam Failure Flooding

9. Wildland Fires
10. Extreme Cold (includes wind chill)
11. Extreme Heat
12. Fog
13. Coastal Hazards (Bluff Erosion, Ice Shoves, etc.)

Other Natural Hazards Determined Not to Pose a Significant Risk

The following natural hazards were determined to have a minimal chance of occurring or pose minimal risk to the safety of residents or property in Marinette County. These natural hazards are excluded from the full assessment, but are briefly discussed here to meet the comprehensive requirements for developing a natural hazards mitigation plan under Federal law.

Earthquakes

According to the U.S. Geological Survey (USGS), there have been 19 earthquake events in Wisconsin. The closest of these to Marinette County occurred in northern Ozaukee County (Lake Church) in 1956, as well as in Fond du Lac County in 1922. 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 being an intensity of 5.3 (Beloit, 1909), which may be strong enough to crack some plaster, but typically does not cause serious damage. Due to the lack of recent 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 percent 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 considered very low.

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 U.S. Geological Survey *Landslide Overview Map of the Conterminous United States* identifies low landslide risks for all of Marinette County. The majority of the land within Marinette 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 damage or injury from large landslides within Marinette County, and these hazard threats are considered low.

Subsidence

Land subsidence is an event in which a portion of the land surface collapses or settles. Common causes of subsidence in Wisconsin occur in areas with karst topography. Marinette County is not an area of particularly karst topography and there are no records of substantial damage or injury from land subsidence within Marinette County and these hazard threats are considered low.

RISK AND VULNERABILITY ASSESSMENT

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

Critical Facilities

Although the risk assessment focuses on the risk potential to the overall planning area, critical facilities are of particular concern. Critical facilities are necessary to preserve health, welfare, and quality of life in the county, and fulfill important public safety, emergency response, and/or disaster recovery functions, or they house vulnerable populations (such as schools, childcare, and mobile home parks).

Critical facilities in the planning area have been identified and mapped, and are illustrated in Map 3.3. Table 3.3 lists the types and number of critical facilities within the county. Appendix C lists the critical facilities 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. The pipeline runs north-south and follows approximately along Highway 141 in the towns of Silver Cliff and Goodman.

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

Critical Facility Type	Count
Bridge	178
Communication Tower/Facility	51
Dry Hydrant/Fire Pond	43
Institutional/Government Facility	39
Hazmat	37
Recreational	42
Police/Fire/Rescue	31
Utility	27
Daycare	23
School (Primary & Secondary)	23
Water Supply Facility	23
Municipal Garage	22
Dam	19
Mobile Home Park	20
Fuel Substation	18
Healthcare Facility	17
Resident Health Care Facility	13
Post Office	12
Wastewater Treatment Facility	6
Post-Secondary School	4
Temporary Emergency Gathering Center	4
Port Facility	3
Airport Facility	1
Military Installation	1
Fuel Station	1
Recreation	1
Total	659

Source: Bay-Lake Regional Planning Commission, 2012.

HAZARD PROFILES

Hazard profiles are intended to describe the frequency, severity, and probability of future natural hazards that could 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. These potential risks are evaluated to determine their likelihood of reoccurrence and to gauge the impacts to the existing (or planned) population and property that could occur as a result of these hazards.

Hazard probabilities are represented as high, medium, and low. High probability hazards are defined as hazards that occur an average of more than once per year; medium probability hazards are those that occur an average of more than once every two years, but not more than once per year; and low probability hazards occur less frequently than once every two years.

Tornado/High Winds

Description of Hazard

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.

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.

Table 3.4 shows the Enhanced Fujita (EF Scale), which is recognized as the acceptable tornado magnitude measurement rating.

Table 3.4: Tornado Magnitude Measurement, 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, 2011.

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. Tornadoes have occurred in Wisconsin in every month except February.

Wisconsin's tornado season runs from the beginning of April through September. 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.

Previous Significant Hazard Occurrences

According to National Climatic Data Center (NCDC), Marinette County has experienced 13 significant tornado events (including strong winds, high winds, and funnel clouds) in the last 12 years from January 1, 2000 to October 1, 2011. One significant tornado of note was an EF1 in Wausaukee that occurred on August 19, 2011 causing one death and \$120,000 in damage.

Hazard Frequency

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

Probability of Hazard Occurring in the Future

Based on the hazard frequency, Marinette County is considered to have a **medium** probability of experiencing a tornado event in any given year.

Areas at Greatest Risk

Tornadoes have no defined hazard area within the county. Past events have been relatively uniform across the planning area; however, mobile home residents are often most vulnerable to death, injury, and property damage from tornadoes. Therefore, mobile home parks in the planning area are the areas of greatest risk from this hazard.

Impacts from Hazard

Death and Injury

One death and two injuries have been reported from significant tornado events for Marinette County over the last 12 years from January 1, 2000 to October 1, 2011, according to NCDC data.

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 mobile 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 clean-up. Downed trees caused by tornadoes can be problematic in terms of impacting infrastructure (transportation, sewer, water, etc.) as well as critical facilities.

Critical Facilities

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. Police 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..

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 \$140,000 in public property damages over the last 12 years from January 1, 2000 to October 1, 2011 according to NCDC data.

Estimate of Potential Dollar Losses

Since mobile homes are especially vulnerable to tornadoes, a “worst case scenario” for this hazard would involve the total destruction of all mobile homes in the county. In such a “worst case scenario,” the total destruction of all buildings and facilities in the 20 mobile home parks in the County would result in estimated dollar losses of approximately \$6,353,000 plus with an additional estimated value of building contents of \$3,176,500 (calculated as 50 percent of the building value), for total estimate of potential dollar losses of \$9,529,500.

Lightning Storms and Thunderstorms

Description of Hazard

The lightning storms and thunderstorms include hail, thunderstorm winds, strong winds, and high winds. 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 National Climatic Data Center (NCDC), Marinette County has experienced 28 significant lightning storm and/or thunderstorm events (including thunderstorm winds) in the last

12 years from January 1, 2000 to October 1, 2011. Some of these reported occurrences may not have been specific to Marinette County, and may have been recorded for a larger regional area.

Hazard Frequency

Based on previous hazard occurrences as reported by the NCDC, Marinette County experiences approximately two significant lightning storm and/or thunderstorm events per year.

Probability of Hazard Occurring in the Future

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

Areas at Greatest Risk

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

Impacts from Hazard

Death and Injury

No deaths or injuries from lightning storms or thunderstorms have been reported for Marinette County over the last 12 years from January 1, 2000 to October 1, 2011, according to 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 storms and thunderstorms.

Critical Facilities

Hospitals can see increases in patient load with sufficiently severe lightning storms 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. Police and fire departments often see an increased workload during and after lightning storms and/or severe thunderstorms. Emergency operations can be disrupted as lightning storms and thunderstorms affect radio and cellular communications, as antennas are a prime target for lightning.

Economic Impacts

Reported property damage from significant lightning storms and thunderstorm (including thunderstorm winds) for Marinette County has totaled approximately \$189,000 over the last 12 years from January 1, 2000 to October 1, 2011 according to NCDC data. Some of this reported property damage may not have been specific to Marinette County, and may have been recorded for a larger regional area.

Property Damage

No significant public property damages have been reported from lightning storms or thunderstorms events for Marinette County over the last 12 years from January 1, 2000 to October 1, 2011 according to NCDC data.

Estimate of Potential Dollar Losses

Since mobile homes are especially vulnerable to the winds associated with thunderstorms, a “worst case scenario” for this hazard would involve the total destruction of all mobile homes in the county. In such a “worst case scenario,” the total destruction of all buildings and facilities in the 20 mobile home parks in the County would result in estimated dollar losses of approximately \$6,353,000 plus with an additional estimated value of building contents of \$3,176,500 (calculated as 50 percent of the building value), for total estimate of potential dollar losses of \$9,529,500.

Winter Storms

Description of Hazard

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.

Previous Significant Hazard Occurrences

According to National Climatic Data Center (NCDC), Marinette County has experienced 33 significant winter storm events in the last 12 years from January 1, 2000 to October 1, 2011 (including heavy snow, ice storms, and glaze). Many of these hazard events may not have been specific to Marinette County, and may have been recorded for a larger regional area.

Hazard Frequency

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

Probability of Hazards Occurring in the Future

Based on the hazard frequency, Marinette County is considered to have a **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 at 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.

Impacts from Hazard

Death and Injury

No deaths or injuries have been reported from significant winter storm events for Marinette County over the last 12 years from January 1, 2000 to October 1, 2011 according to NCDC data.

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.

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.).

Police 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 public property damages have been reported from winter storm events for Marinette County over the last 12 years from January 1, 2000 to October 1, 2011 according to NCDC data.

Estimate of Potential Dollar Losses

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 12 years.

Drought

Description of Hazard

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 National Climatic Data Center (NCDC), Marinette County has experienced four significant drought events in the last 12 years from January 1, 2000 to October 1, 2011. Many of these hazard events may not have been specific to Marinette County, and may have been recorded for a larger regional area.

Hazard Frequency

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

Probability of Hazards 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 **low** probability of experiencing a drought event in any given year.

Areas at 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 110,874 acres of agricultural lands (based on land use data shown in Table 2.6).

Impacts from Hazard

Death and Injury

No deaths or injuries have been reported from significant drought events for Marinette County over the last 12 years from January 1, 2000 to October 1, 2011, according to 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.

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 last 12 years from January 1, 2000 to October 1, 2011 according to NCDC data.

Estimate of Potential Dollar Losses

Agricultural croplands are most vulnerable to losses from drought events. A “worst case scenario” would involve the total destruction of all 110,874 acres of agricultural lands in the county (based on land use data shown in Table 2.6). The USDA conducts a Census of Agriculture every 5 years based on a sample of farms to estimate the market value of agricultural land and buildings. Based on the 2007 Census of Agriculture, the average value per acre of agricultural land in Marinette County was \$2,691. Therefore, it can be estimated that if this

“worst case scenario” were to occur, the total destruction of all agricultural land in Marinette County would cause a loss of \$298,362,922.

Flooding

Description of Hazard

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.

Previous Significant Hazard Occurrences

According to National Climatic Data Center (NCDC), Marinette County has experienced eight significant flooding events (including flash floods) in the last 12 years from January 1, 2000 to October 1, 2011. Some of these reported occurrences may not have been specific to Marinette County, and may have been recorded for a larger regional area.

Hazard Frequency

Based on previous hazard occurrences as reported by the NCDC, Marinette County experiences approximately one significant flooding event every 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 **medium** probability of sustaining a 100-year flood in any given year.

Areas at 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 3.1. Properties that potentially lie within the floodplain and would be affected by the 100-year flood are shown in Map 3.2.

Impacts from Hazard

Death and Injury

No death or injuries from flooding has been reported for Marinette County over the last 12 years from January 1, 2000 to October 1, 2011, according to NCDC data.

Structures at Risk

Analysis of the data used to produce Map 3.2 indicates that 4,716 buildings could potentially be impacted by the base flood in the planning area.

A review of FEMA flood insurance claims from January 1, 1978 through April 30, 2013, indicates that there were four paid claims in Marinette County in the amount of \$10,920.84 (NFIP, WR2C1040).

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 3.4, indicates that there are 209 critical facilities located within 100-year floodplains in Marinette County. Table 3.5 lists the critical facility types of those facilities potentially within the 100-year floodplains.

Table 3.5: Critical Facilities within the 100-Year Floodplains, Marinette County

Type	Count
Bridge	143
Dry Hydrant/Fire Pond	28
Dam	13
Utility	7
Hazmat	5
Recreational	4
Communication Tower/Facility	3
Port Facility	2
Institutional/Government Facility	1
Resident Health Care Facility	1
School (Primary & Secondary)	1
Wastewater Treatment Facility	1
Total	209

Source: Bay-Lake Regional Planning Commission, 2012.

Economic Impacts

Property Damage

Reported significant public property damage from flooding in Marinette County has totaled approximately \$451,300 over the last 12 years from January 1, 2000 to October 1, 2011 according to NCDC data. Some of this reported property damage may not have been specific to Marinette County, and may have been recorded for a larger regional area.

Value of Structures at Risk

The value of all at-risk structures is estimated at \$488,265,740. 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.

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 roads, bridges, or railroads are washed out by a flood, it can be weeks or months before they are repaired and reusable. A key evacuation and safety concern is when roads and bridges go under water. Generally, the larger the road, the more likely it will not flood, but this is not always the case.

Analysis of the GIS data used to produce Map 3.5, indicates that there are 141 bridges that could potentially be underwater during a base flood. In addition to the sites shown on the map, 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.

Estimate 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 \$488,265,740 in losses would occur with the 100-year flood in zones projected to be impacted by the 100-year flood in a “worst case scenario” of total structural damage for buildings in all of the 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.

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.

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

Not Participating in NFIP

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 Storms

Description of Hazard

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 National Climatic Data Center (NCDC), Marinette County has experienced 29 significant hail storm events in the last 12 years from January 1, 2000 to October 1, 2011. Some of these reported occurrences may not have been specific to Marinette County, and may have been recorded for a larger regional area.

Hazard Frequency

Based on previous hazard occurrences as reported by the NCDC, Marinette County experiences approximately two 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 **high** probability of experiencing a significant hail storm event in any given year.

Areas at 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 last 12 years from January 1, 2000 to October 1, 2011, according to 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 last 12 years from January 1, 2000 to October 1, 2011 according to 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 12 years.

Stormwater Flooding

Description of Hazard

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 National Climatic Data Center (NCDC), Marinette County has experienced two significant stormwater flooding events (including urban/small stream flooding) in the last 12 years from January 1, 2000 to October 1, 2011.

Hazard Frequency

Based on previous hazard occurrences as reported by the NCDC, Marinette County experiences approximately one significant stormwater flooding event per six 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 stormwater flooding event in any given year.

Areas at Greatest Risk

Areas of recurrent stormwater flooding are mostly associated with overflow of the Peshtigo and Menominee Rivers and Green Bay and their tributaries. Town roads can also be more vulnerable to stormwater flooding since they often lack adequate stormwater management infrastructure.

Impacts from Hazard

Death and Injury

No death or injuries from stormwater flooding has been reported for Marinette County over the last 12 years from January 1, 2000 to October 1, 2011, according to NCDC data.

Structures at Risk

The impacts from stormwater flooding are essentially the same as flooding. Erosion damage to roads can occur from stormwater flooding, especially if the stormwater facilities in the area are inadequate for the flow volumes.

Critical Facilities

Interior water damage can occur to critical facilities, just as it does for any building when storm drains back up.

Economic Impacts

Clean up and replacement of damaged items can be costly after a building has experience storm drain backup flooding. Maintenance of roads and parking lots after stormwater flooding damage can be costly.

Property Damage

No significant public property damages have been reported from stormwater events for Marinette County over the last 12 years from January 1, 2000 to October 1, 2011 according to NCDC data.

Estimate of Potential Dollar Losses

An estimate of potential dollar losses cannot be calculated for stormwater flooding events, since no vulnerable structures have been identified. Based on previous damages reported by the NCDC, property damages from stormwater flooding has been minimal over the past 12 years.

Dam Failure Flooding

Description of Hazard

A "dam" is an artificial barrier, together with its appurtenant works, 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.

There are approximately 3,800 dams in existence in the State of Wisconsin. Since the late 19th century, more than 700 dams have been built, then washed out or removed. Since 1967, approximately 100 dams have been removed.

Almost 60 percent of the dams in Wisconsin are owned by a former company or private individual, 9 percent by the State of Wisconsin, 17 percent by a municipality such as a town or county government, and 14 percent by other ownership types.

The federal government has jurisdiction over dams in Wisconsin that produce hydroelectricity - approximately 5 percent 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. A dam is assigned a rating of High Hazard when its failure would put lives at risk. 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 last 12 years from January 1, 2000 to October 1, 2011.

Hazard Frequency

No record has been found of any significant dam failures in Marinette County in the last 12 years from January 1, 2000 to October 1, 2011 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 at Greatest Risk

As identified by the WDNR, there are a total of 58 dams in Marinette County. Of these, 29 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 3.6 displays the dams in the county with a high or significant 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 fifteen large dams that have a high hazard rating and three large dams 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).

Impacts from Hazard

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 eighteen 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 public property damages have been reported from dam failure events for Marinette County over the last 12 years from January 1, 2000 to October 1, 2011 according to NCDC data.

Estimate of Potential Dollar Losses

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.

Wildland Fires

Description of Hazard

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. 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 2007-2011, an average of 65 fires were reported and suppressed annually in Marinette County. Annual occurrence during those 5 years ranged from a low of 44 fires to a high of 88. Several of those fires were over 100 acres in size (112-acre peat fire in 2011 and a 275-acre fire in 2007). According to the Wisconsin Department of Resources (WDNR), Marinette County has experienced 848 wildland fire events of various sizes (with the average being one acre) in the last 11.5 years from March 2000 to October 2011.

The Great Peshtigo Fire of 1871

On the evening of October 8, 1871, Peshtigo, then a booming town of 1700 people, was wiped out of existence 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/>.)

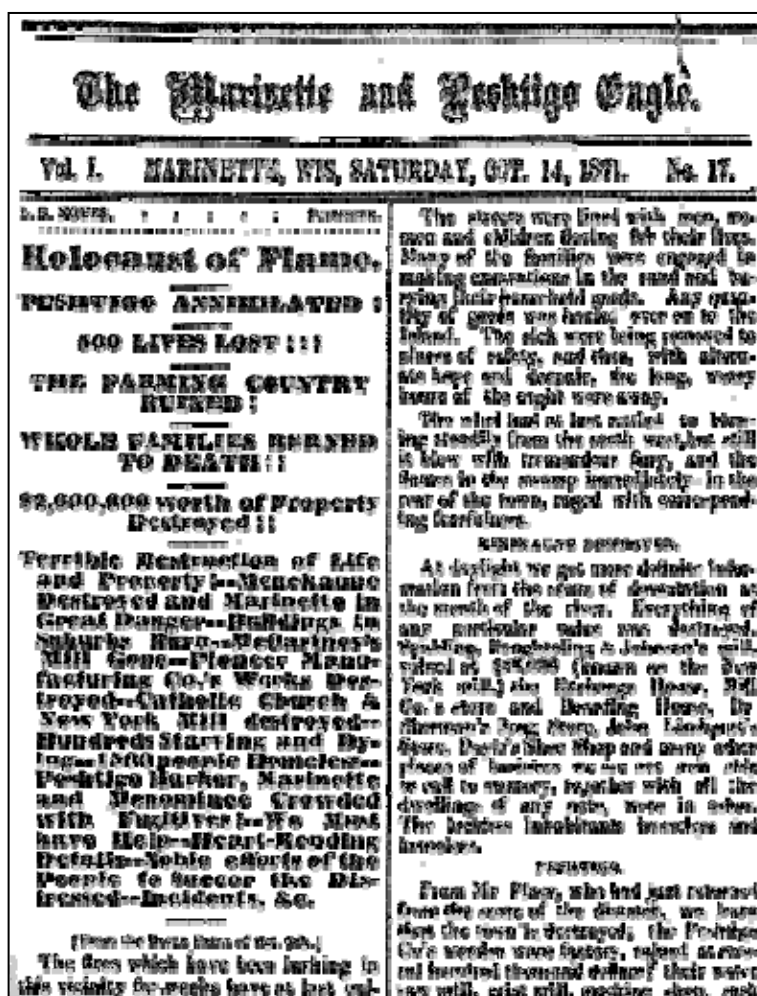
Although the perfect storm of drought, land clearing activities, and inefficient suppression technology that resulted in the Great Peshtigo Fire nearly 150 years ago is unlikely to occur again, wildland fire continues to be a high risk in Marinette County.

Hazard Frequency

Based on previous hazard occurrences as reported by the WDNR, Marinette County experiences approximately 74 wildland fire events every year.

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



Source: State Historical Society of Wisconsin. Reference: Pam 57-1251, F902 P22 / MA

state. They have more DNR fire suppression resources and ranger stations. Fire detection is accomplished with fire towers, 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 **high** for the county.

Areas at 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.

Nearly all of Marinette County has been classified as a community at risk or community of concern, with just five of the 25 community in the county having low wildfire risk. One community, the Town of Stephenson (including the Village of Crivitz), has been classified as a high risk community. Table 3.6 lists the communities 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 3.7). Marinette County contains 713,600 acres of woodlands within these wildfire risk areas (based on 2008 land use data).

Table 3.6: Wildland Fire Risk, Marinette County

Community	Risk Classification	Total Acres	Woodland Acres
Stephenson (+ Village of Crivitz)	Very High	114,166.31	88,853.3
Amberg	High	46,281.46	39,455.0
Athelstane	High	68,566.35	64,712.3
Beecher	High	31,693.40	27,458.0
Dunbar	High	67,328.33	63,195.4
Middle Inlet	High	32,782.60	24,637.3
Pembine	High	43,077.55	38,248.7
Peshtigo (+ Cities of Marinette and Peshtigo)	High	45,350.37	29,122.9
Wausaukee (+ Village of Wausaukee)	High	50,496.58	37,736.2
Beaver	Concern	44,463.50	25,503.5
Goodman	Concern	68,916.43	61,697.7
Lake	Concern	38,109.07	25,550.3
Niagara (+ City of Niagara)	Concern	45,665.40	39,823.5
Porterfield	Concern	34,143.23	21,424.0
Silver Cliff	Concern	68,455.38	65,727.0
Grover	Low	46,910.50	20,454.9
Pound (+ Villages of Coleman and Pound)	Low	33,351.62	11,844.1
Wagner	Low	34,961.78	28,156.4
Total		916,070.48	713,600.5

Impacts from Hazard

Death and Injury

No data on deaths or injuries is available for significant wildland fire events for Marinette County over the last 12 years from January 1, 2000 to October 1, 2011.

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.

In Marinette County, from 2005 through 2011, 11 structures were lost to wildland fires and another 111 were threatened, yet ultimately saved by fire suppression efforts (Wisconsin DNR Division of Forestry, 2013).

Critical Facilities

Police, 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 can not 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 significant public property damages have been reported from wildland fire events for Marinette County over the last 12 years from January 1, 2000 to October 1, 2011 according to NCDC data.

Estimate of Potential Dollar Losses

Based on the land use data of properties within the High to Extremely High Fire Risk zone overlaid with parcel data, there are approximately 12,042 parcels potentially at risk throughout Marinette County from wildland fires. The value of all structures on at-risk parcels in Marinette County is estimated at \$800,761,550. This information was obtained from Marinette County databases on improved values of real property overlaid with WDNR's Wisconsin Fire Risk Analysis Map.

Extreme Cold

Description of Hazard

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 who are stranded outdoors or in a disabled car, or those who live in a home that is poorly insulated or without heat.

Previous Significant Hazard Occurrences

According to National Climatic Data Center (NCDC), Marinette County has experienced one significant extreme cold events in the last 12 years from January 1, 2000 to October 1, 2011.

Hazard Frequency

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

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 at 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 last 12 years from January 1, 2000 to October 1, 2011 according to 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.

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 last 12 years from January 1, 2000 to October 1, 2011 according to 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 12 years.

Extreme Heat

Description of Hazard

Extreme 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 National Climatic Data Center (NCDC), Marinette County has not experienced any significant extreme heat events in the last 12 years from January 1, 2000 to October 1, 2011.

Hazard Frequency

Since there are no NCDC records of a significant extreme heat event in Marinette County in the last 12 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 extreme heat event in any given year.

Areas at Greatest Risk

Extreme 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 extreme heat events for Marinette County over the last 12 years from January 1, 2000 to October 1, 2011 according to NCDC 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 extreme 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 extreme heat episodes. There have been fears that an extreme heat episode could cause the power grid to. Hospitals and clinics will like experience an increased demand due to heat related illnesses during an extreme 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 extreme 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 extreme 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.

Economic Impacts

Economic impacts of an extreme 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 extreme 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. Extreme heat can negatively impact agriculture in the surrounding area when combined with drought.

Property Damage

No significant public property damages have been reported from extreme heat events for Marinette County over the last 12 years from January 1, 2000 to October 1, 2011 according to NCDC data.

Estimate of Potential Dollar Losses

An estimate of potential dollar losses cannot be calculated for extreme heat events, since no vulnerable structures have been identified. Based on previous damages reported by the NCDC, property damages from extreme heat has been minimal over the past 12 years.

Fog

Description of Hazard

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.

Previous Significant Hazard Occurrences

According to National Climatic Data Center (NCDC), Marinette County has experienced two significant fog events in the last 12 years from January 1, 2000 to October 1, 2011.

Hazard Frequency

Based on previous hazard occurrences as reported by the NCDC, Marinette County experiences approximately one significant fog event every six 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 fog event in any given year.

Areas at Greatest Risk

Portions of the planning area along waterways, wetlands, and low lying areas can be at greater risk for fog under certain meteorological conditions. However, no portion of the planning area is free of the possibility of experiencing 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 deaths or injuries have been reported from significant fog events for Marinette County over the last 12 years from January 1, 2000 to October 1, 2011, according to NCDC data.

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.

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 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

No significant public property damages have been reported from fog events for Marinette County over the last 12 years from January 1, 2000 to October 1, 2011 according to 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, property damages from fog have been minimal over the past 12 years.

Coastal Hazards

Description of Hazard

In northeastern Wisconsin, coastal hazards can be described as natural hazards occurring along the shores of Lake Michigan. The coastal hazards of concern in Wisconsin 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 Lake Michigan.

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* website (<http://coastal.lic.wisc.edu/urpl999.htm>), Marinette County is at greatest risk for coastal flooding. Overall, the probability of coastal hazards is **medium** for the planning area.

Areas at Greatest Risk

Portions of the county situated along Lake Michigan are at risk for coastal hazards.

Impacts from Hazard

Death and Injury

No data on deaths or injuries is available for significant coastal hazard events for Marinette County over the last 12 years from January 1, 1995 to September 30, 2011.

Structures at Risk

Homes and other structures located along Green Bay/Lake Michigan are at risk to damage from coastal hazards. This risk increases where structures are closer to the shoreline, especially over high bluffs. There are 290 improved privately-owned structures directly adjacent to Lake Michigan in Marinette County.

Critical Facilities

There are no critical facilities located along Lake Michigan at risk of damage from coastal hazards.

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 as private property and houses.

Property Damage

No significant public property damages have been reported from coastal hazard events for Marinette County over the last 12 years from January 1, 2000 to October 1, 2011 according to NCDC data.

Estimate of Potential Dollar Losses

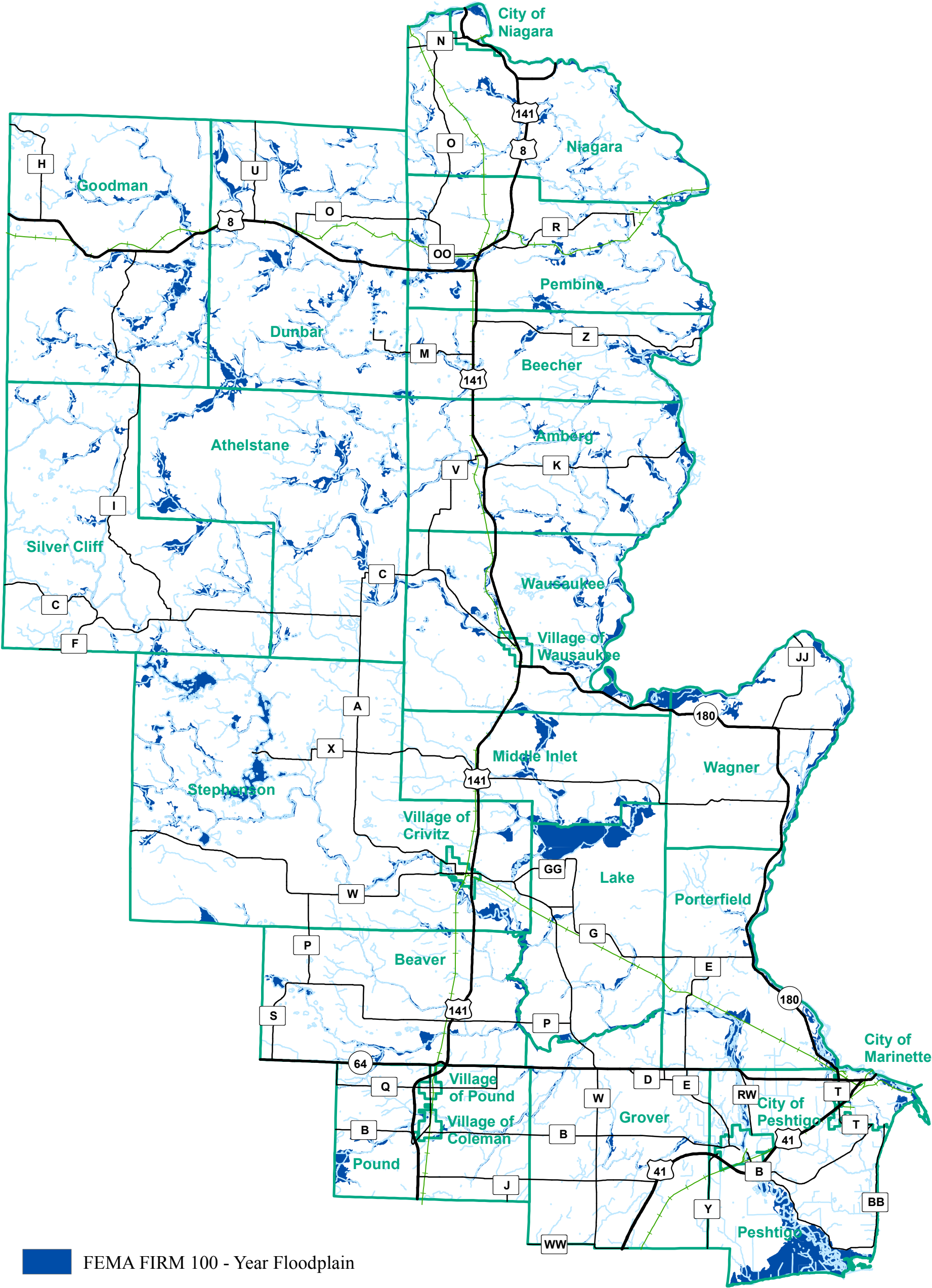
A “worst case scenario” for potential dollar losses from coastal hazards in Marinette County would involve the total destruction of all private structures along Lake Michigan, which would cause a loss of \$30,192,000 in private damages. There are no assessed values available for public properties.

This information was obtained from the Marinette County database on assessed values of real property (structures and land). This only involves damage to structures themselves, and may not account for damage to personal property inside or adjacent to vulnerable structures.

100-Year Floodplains

Marinette County Hazard Mitigation Plan Marinette County, Wisconsin

Map 3.1

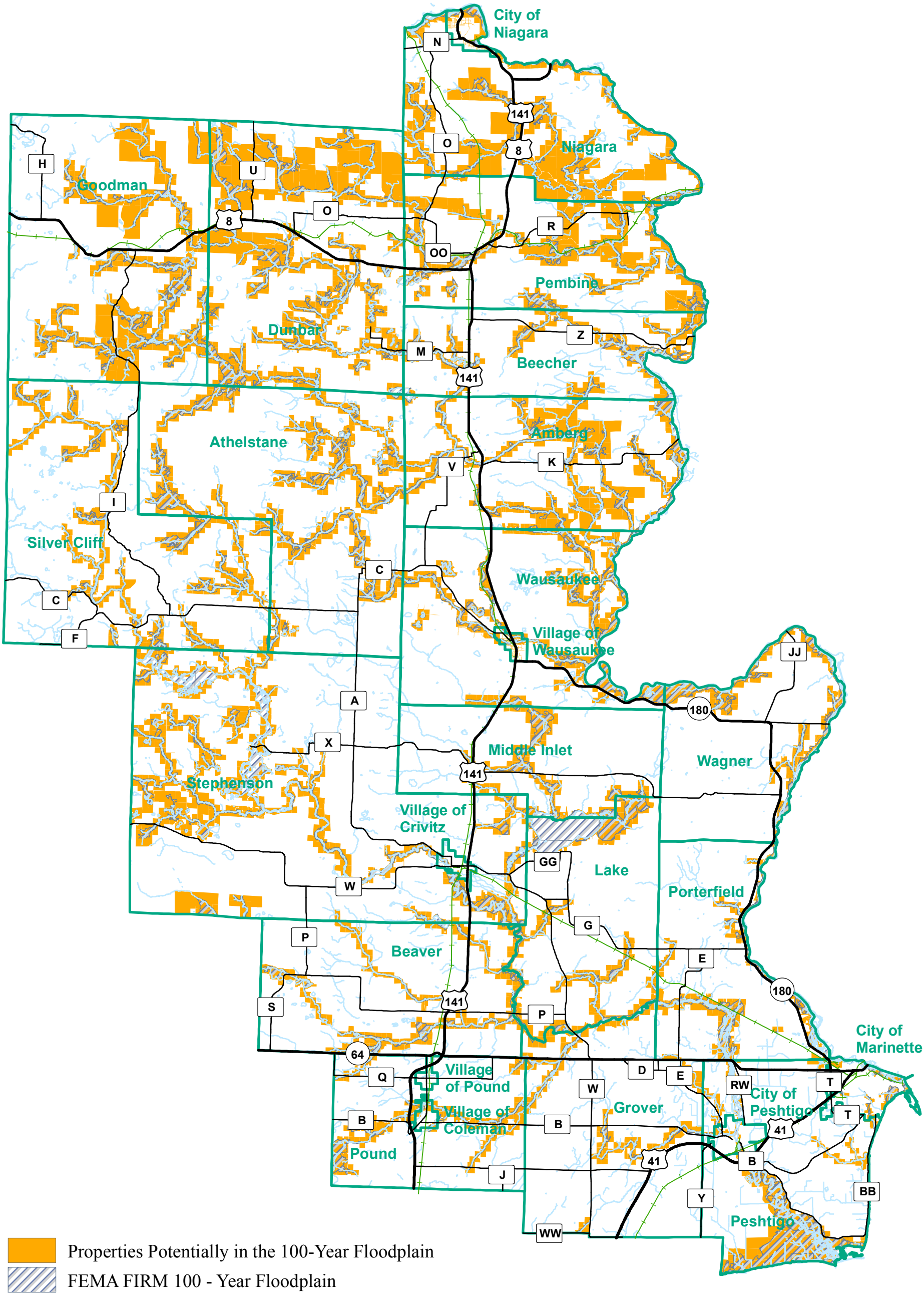


Properties within the 100-Year Floodplains

Map 3.2

Marinette County Hazard Mitigation Plan
Marinette County, Wisconsin

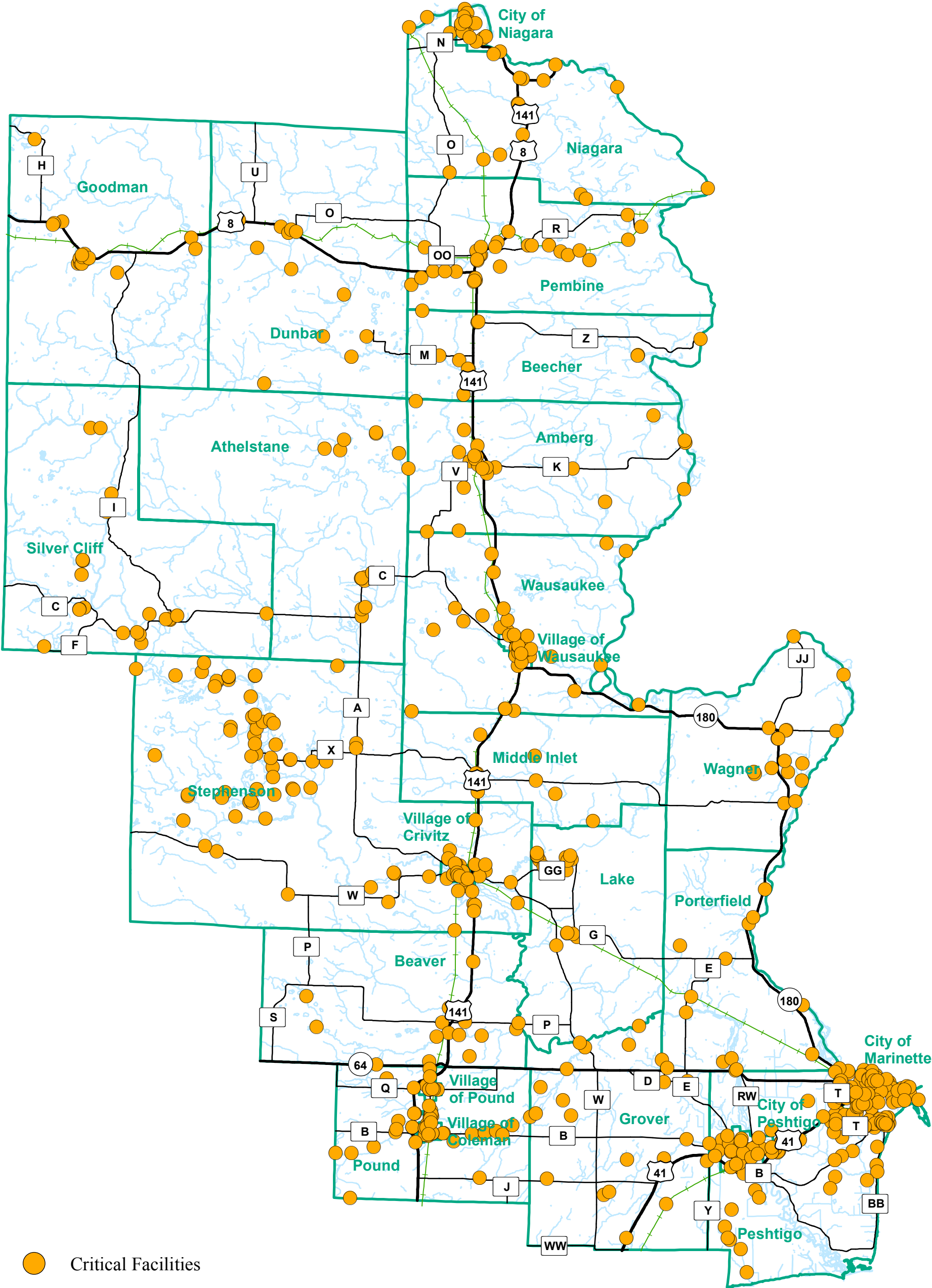
Marinette County Hazard Mitigation Plan



Critical Facilities

Marinette County Hazard Mitigation Plan Marinette County, Wisconsin

Map 3.3

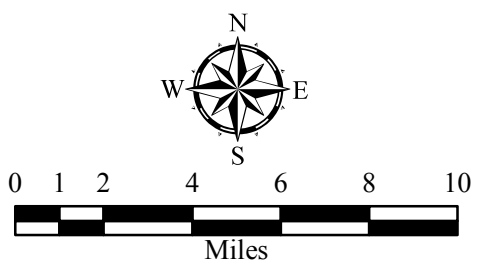
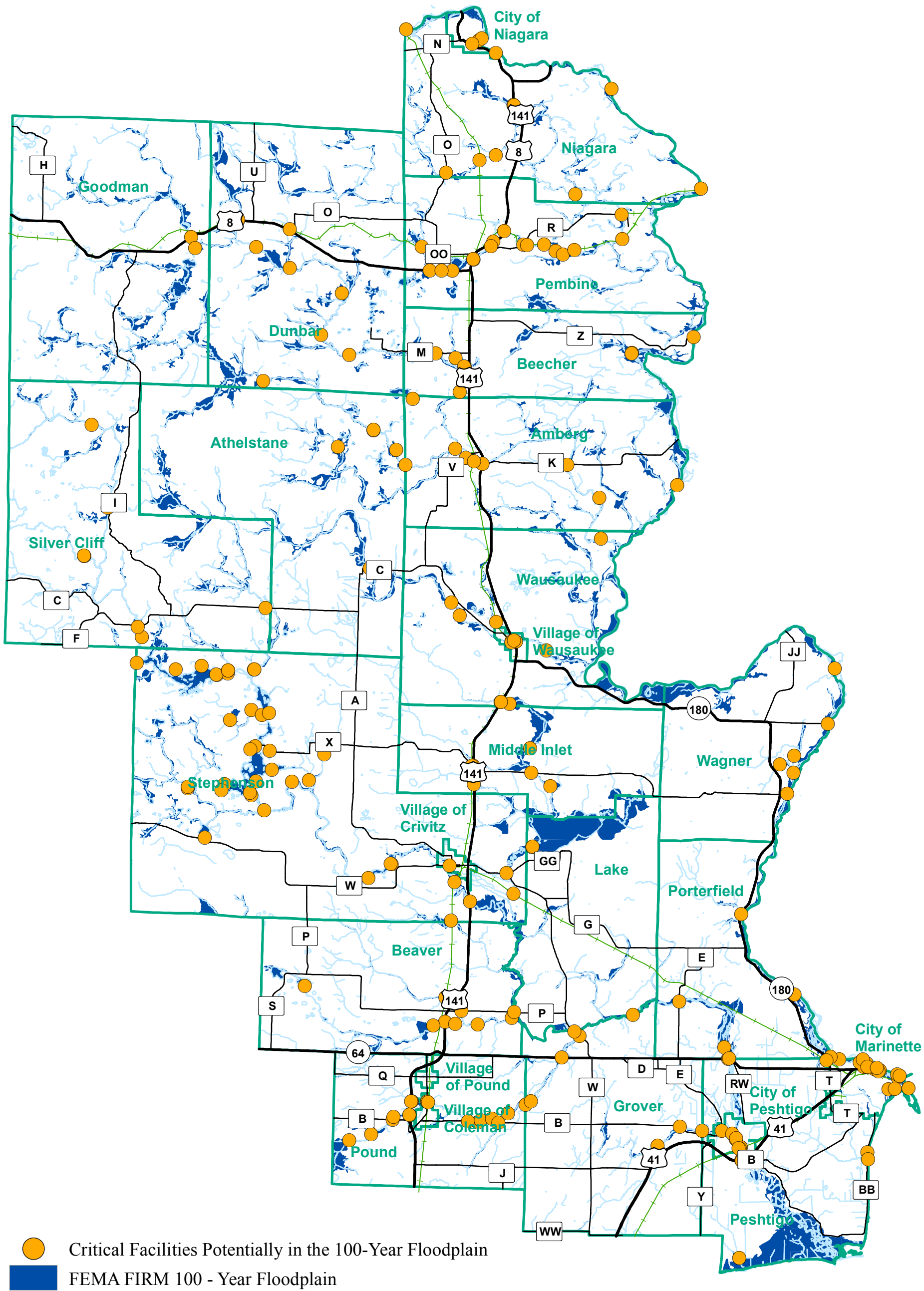


Critical Facilities within the 100-Year Floodplains

Map 3.4

Marinette County Hazard Mitigation Plan
Marinette County, Wisconsin

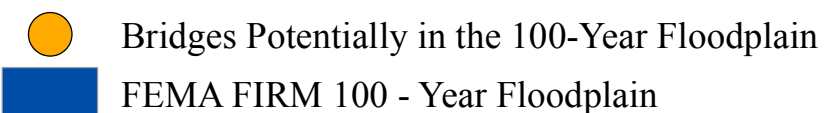
Marinette County Hazard Mitigation Plan



Map 3.5

Marinette County, Wisconsin

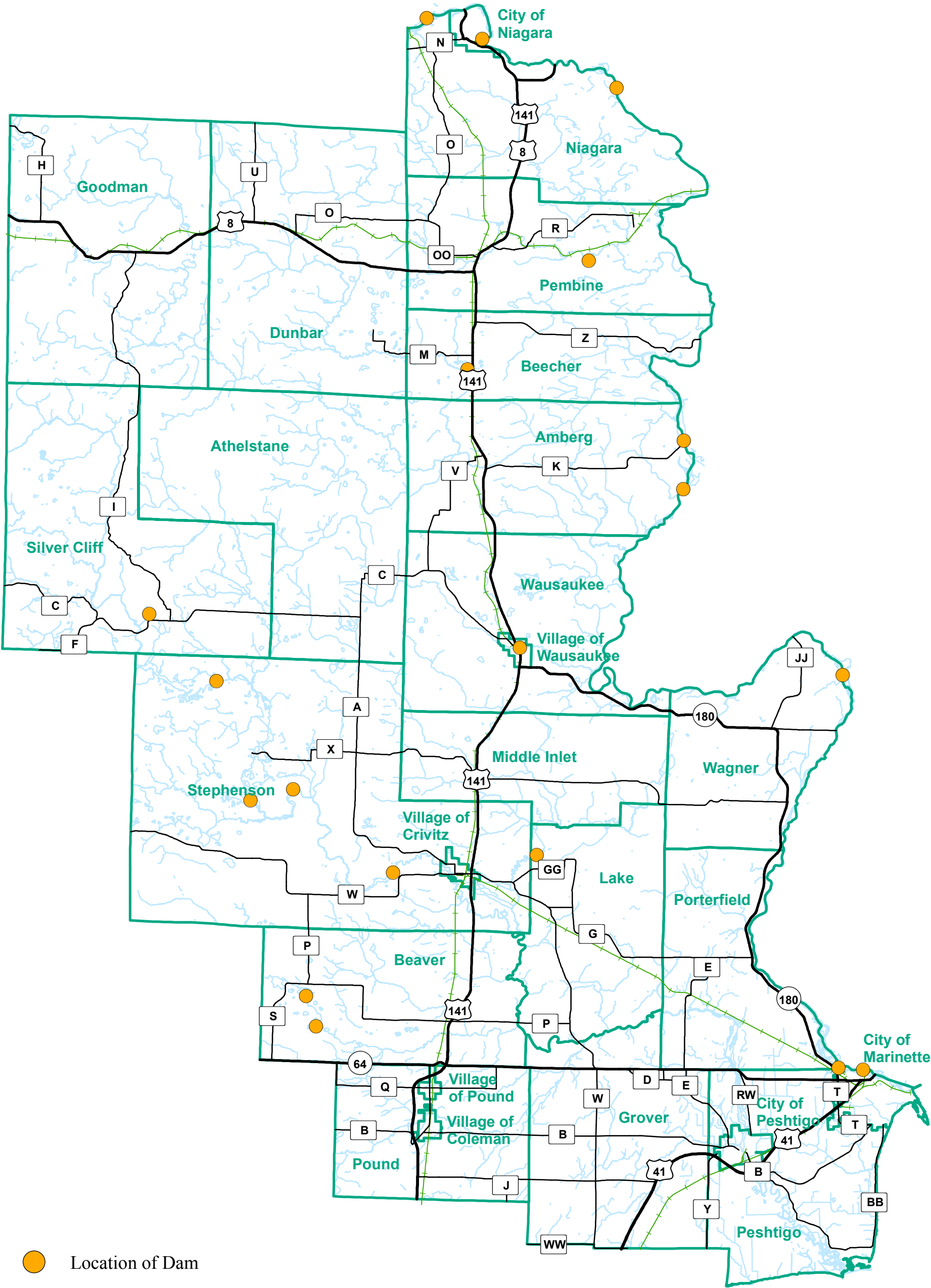
Marinette County Hazard Mitigation Plan



Location of Dams

Map 3.6

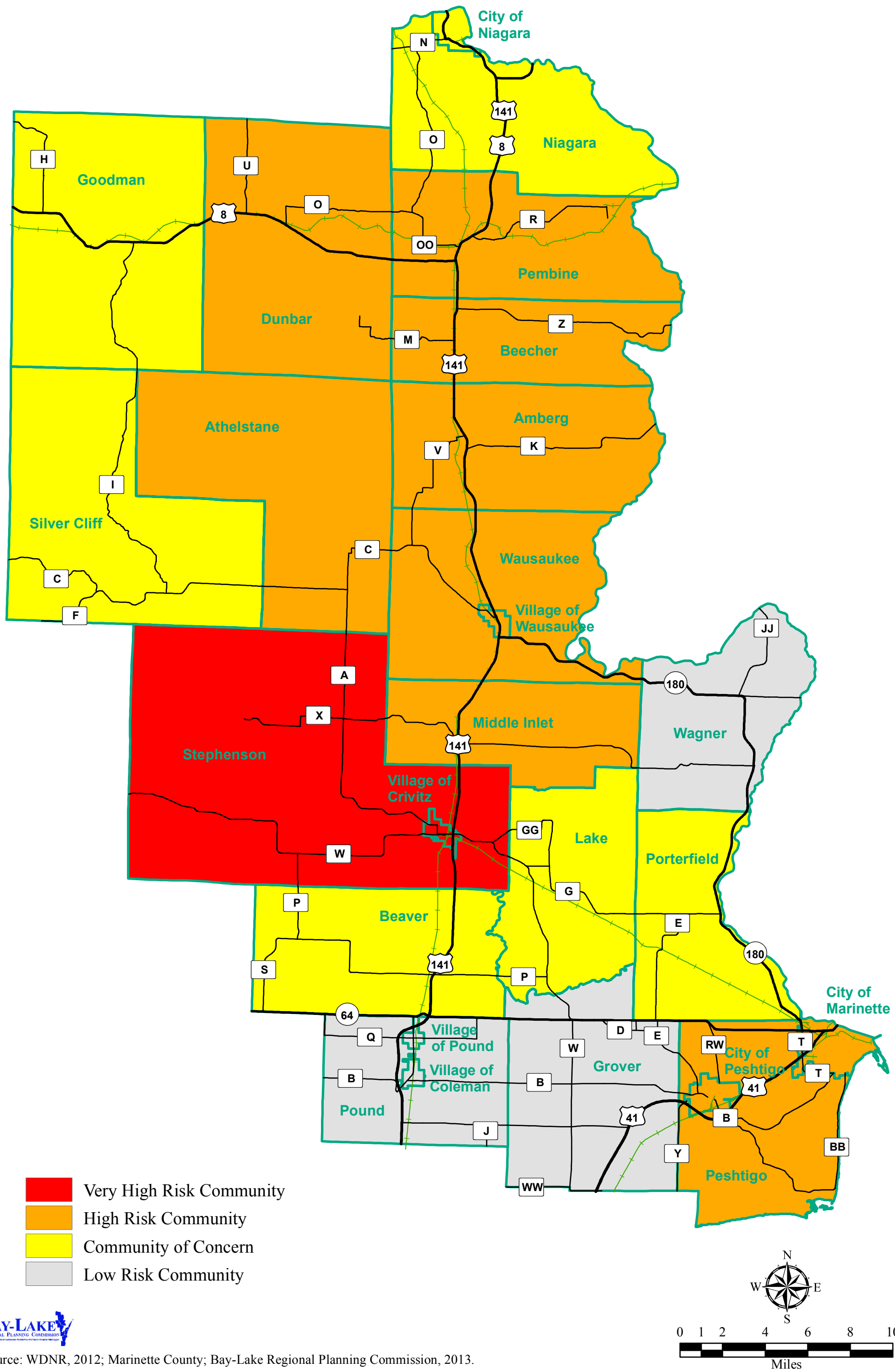
Marinette County Hazard Mitigation Plan Marinette County, Wisconsin



Areas of Greatest Wildland Fire Risk

Map 3.7

Marinette County Hazard Mitigation Plan
Marinette County, Wisconsin



CHAPTER 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; and 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. 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 and Table 4.2 lists the mitigation action plan developed for the incorporated communities in Marinette County. The table lists the hazard type, associated mitigation actions, the estimated costs of each project (where known), 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 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 mitigation strategy, 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 strategy, 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 the 2007 hazard mitigation plan for Marinette County, some of 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 has been completed with FEMA floodplain updates.

Table 4.1: Marinette County Mitigation Action Plan

Hazard Type	Mitigation Measures	Costs of Project	Responsible Parties	Project Timetable	Priority	Comments
Multi-Hazard	Disaster Preparedness	Covered by existing annual budgets with assistance from federal grants.	Marinette County Emergency Management Coordinator, Marinette County Zoning Dept.	Ongoing	High	
	Acquisition of Emergency Power Generators for Critical Facilities	Covered by existing annual budgets with assistance from grants.	Individual owners of critical facilities. Jurisdictions in the planning area are encouraged to apply for any existing grants to defray the cost of the power generators.	5-7 Years	Medium	For use when the power supply may be temporarily interrupted. Educate personnel in critical facilities as to proper use of the generators. Priority should be given to the critical facilities that impact upon the health and safety of area residents and maintain life saving operations in the community.
Flooding	Storm Shelters for County Parks	Costs to be determined with assistance from grant funding.	Marinette County Emergency Management Coordinator and Parks Department	7-10 years	Low	
	Incorporation of Floodplain Management in Comprehensive Planning	Covered by comprehensive planning grants.	Marinette County Zoning Dept	Ongoing every ten years	High	Comprehensive plans will need to be updated for Marinette County and all the towns by 2020.
	National Flood Insurance Program*	Covered by existing annual budget with federal grant funding through HSA.	Federal Emergency Management Agency (FEMA)	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.
	Preservation of Natural Resources in Floodplains	Covered by existing annual budget with state stewardship grant funding.	Marinette County Zoning Dept	Ongoing	High	Marinette County Land Conservation Department can provide technical advice concerning this action item
	Stormwater Management	Costs to be determined with assistance from grant funding.	Marinette County Zoning Dept, upstream communities, neighboring county planning departments, and the Wisconsin Department of Natural Resources	Ongoing	High	Involves implementation of stormwater management ordinances.
	Reevaluation of Floodplain Zoning Ordinances*	Costs to be determined with assistance from grant funding.	Marinette County Zoning	Ongoing	Medium	
	Acquisition and Relocation	Costs to be determined with assistance from grant funding.	Marinette County	As needed	Medium	Direct assistance in acquisition and relocation activities would only occur if grants became available.
	Flood Forecasting and Warning Systems, and Emergency Plans	Covered by existing annual budget with federal grant assistance through HSA.	National Weather Service, Marinette County Emergency Management Coordinator	Ongoing	Low	

Note: The actions items that address NIFP compliance are indicated with an asterisks (*).

Table 4.1: Marinette County Mitigation Action Plan (cont'd)

Hazard Type	Mitigation Measures	Costs of Project	Responsible Parties	Project Timetable	Priority	Comments
Flooding (cont'd)	Floodproofing Techniques	Costs to be determined with assistance from grant funding.	Cities of Marinette, Peshigo, Niagara; villages of Coleman, Crivitz, Pound and Wausaukee	Ongoing	Low	Covered under existing budgets in the case of review of proposed new construction, but direct city assistance in floodproofing activities would only occur if grants become available (for existing structures).
	Stormwater Detention	Costs to be determined with assistance from grant funding.	Cities of Marinette, Peshigo, Niagara; villages of Coleman, Crivitz, Pound and Wausaukee	Ongoing	Low	
	Individual Property Measures for Basements	Costs to be determined with assistance from grant funding.	Cities of Marinette, Peshigo, Niagara; villages of Coleman, Crivitz, Pound and Wausaukee	Ongoing	Low	
	Orthophotography Base Maps of Marinette County	Costs to be determined after partners are fully identified. Some funding through state and federal agencies.	Marinette County Zoning Dept, Marinette County Land Information Dept, and Marinette County Highway Commission	Ongoing every five years	Low	All jurisdictions in the county will benefit from the project.
	Geographic Information System (GIS) Coverage	Possible grant funding from Wisconsin Land Information Program and WDNR once costs are determined.	Marinette County Land Information Dept and WDNR	Ongoing every ten years	Low	Used to identify individual property owners and businesses located in the 100-year floodplain. All jurisdictions in the county will benefit from the project.
	Identification of Emergency Shelter Locations	Costs to be determined with assistance from grant funding.	Marinette County Emergency Management Coordinator and Towns	Ongoing	High	Coordinate with Red Cross
Tornadoes	Identification of Emergency Shelter Deficit Locations	Costs to be determined with assistance from grant funding.	Marinette County Emergency Management Coordinator and Towns	Ongoing	Low	
	Add shelters in mobile home parks	Covered by existing annual budget with assistance from grants.	Marinette County Emergency Management Coordinator and Towns	7-10 years	Low	
	Encourage Use of Tie-Downs with Ground Anchors for Manufactured Homes and Mobile Homes	Covered by existing annual budget.	Marinette County Emergency Management Coordinator and Towns	Ongoing	Low	Shelters in Mobile Home Parks
	Lightning Safety Guidelines	Covered by existing annual budgets with assistance from grants.	Marinette County Emergency Management Coordinator and American Red Cross staff	Ongoing	Low	During Spring Severe Weather Awareness Week

Table 4.1: Marinette County Mitigation Action Plan (cont'd)

Hazard Type	Mitigation Measures	Costs of Project	Responsible Parties	Project Timetable	Priority	Comments
Wildland Fires	Fire Education and Prevention	Covered by existing annual local budgets with assistance from state and federal forestry grants.	Marinette County Fire Response Unit	Ongoing	Medium	Community Wildfire Protection Plans, Signage
	Update structural zone maps (Marinette County Emergency Services Atlas)	Covered by WDNR budget.	Wisconsin DNR and Marinette County Land Information	Ongoing every five years	Low	Initiated and developed by WDNR with data provided by Marinette County Land Information Dept.
Extreme Heat	Publicize of Extreme Heat Events	Covered by existing annual budget with state and federal grant assistance.	Marinette County Public Health Dept	Ongoing during extreme heat forecasts	Low	
Winter Storms	Review priority Policy for Salting and Plowing Streets and Highways	Covered by existing annual budgets with assistance from state and federal grants.	Marinette County Highway Dept and communities	Ongoing	High	Jurisdictions in the planning area will work to educate the public concerning the counties priority policy for salting and plowing streets and highways.
	Promote Winter Storm Hazard Awareness	Covered by existing annual budgets with assistance from grants.	Marinette County Emergency Management Coordinator and American Red Cross staff	Ongoing	Medium	
Extreme Cold	Publicize of Extreme Cold Events	Covered by existing annual budgets with assistance from grants.	Marinette County Public Health Dept	Ongoing	Low	
Fog	Publicize of Fog Events	Covered by existing annual budget.	National Weather Service	Ongoing	Low	
Dam Failure	Dam Failure Warning Systems and Emergency Plans	Covered by existing annual budgets with assistance from grants.	Marinette County Emergency Management Coordinator and Municipalities	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.
Coastal Hazards	Promote Coastal Hazard Awareness	Covered by existing annual budgets with assistance from grants.	Marinette County Emergency Management Coordinator and Municipalities	Ongoing	Low	
Drought	Promote Water Conservation activities during drought	Covered by existing annual budgets with assistance from grants.	Marinette County Land Conservation Dept	Ongoing	Low	

Table 4.2: Incorporated Communities Mitigation Action Plan

Hazard Type	Mitigation Measures	Costs of Project	Responsible Parties	Project Timetable	Priority
City of Marinette					
Multi-Hazard	Disaster preparedness	Covered by existing annual budgets	City of Marinette, County Emergency Management, County Zoning Dept.	Ongoing	High
Tornado	Replace and maintain the City's two outdoor emergency sirens	~\$38,000	City of Marinette	2017-2019	High
Tornado	Identify, communicate, and maintain emergency storm shelters in close proximity to mobile home parks within the City	Costs to be determined with assistance from grant funding	City of Marinette	2017-2019	Medium
City of Niagara					
Multi-Hazard	Disaster preparedness	Covered by existing annual budgets	City of Niagara, County Emergency Management, County Zoning Dept.	Ongoing	High
City of Peshtigo					
Multi-Hazard	Add an automatic transfer switch for the generator at City Hall/Command Center	\$10,000	City of Peshtigo	2014	High
Multi-Hazard	Disaster preparedness	Covered by existing annual budgets	City of Peshtigo, County Emergency Management, County Zoning Dept.	Ongoing	High
Village of Coleman					
Multi-Hazard	Disaster preparedness	Covered by existing annual budgets	Village of Coleman, County Emergency Management, County Zoning Dept.	Ongoing	High
Village of Crivitz					
Multi-Hazard	Disaster preparedness	Covered by existing annual budgets	Village of Crivitz County Emergency Management, County Zoning Dept.	Ongoing	High
Multi-Hazard	Review Temporary Emergency Gathering Center locations at Crivitz Village Hall and at Crivitz Fire Station	Covered by existing annual budgets	Village of Crivitz	Annually	Medium
Village of Pound					
Multi-Hazard	Disaster preparedness	Covered by existing annual budgets	Village of Pound, County Emergency Management, County Zoning Dept.	Ongoing	High
Multi-Hazard	Back up generator for fire/emergency center	\$50,000	Village of Pound and Pound Fire Dept.	2019	Medium
Village of Wausaukee					
Multi-Hazard	Disaster preparedness	Covered by existing annual budgets	Village of Wausaukee, County Emergency Management, County Zoning Dept.	Ongoing	High

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.
- Municipal Police and Fire Departments
 - 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 Forestry and Parks Department
 - Relevant policies and programs include mitigation 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.
- 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.

- National Weather Service (Green Bay Regional Office)
 - Relevant policies and programs include publicizing information, and providing outreach and education about hazardous weather.

These 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.

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 has 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 Staffing for Adequate Fire & Emergency Response Grants Grant

The Staffing for Adequate Fire and Emergency Response (SAFER) Grants were created to provide funding directly to fire departments and volunteer firefighter interest organizations to help them increase the number of trained, "front line" firefighters available in their communities. The goal of SAFER is to enhance the local fire departments' abilities to comply with staffing, response and operational standards established by the NFPA and OSHA (NFPA 1710 and/or NFPA 1720 and OSHA 1910.134).

FEMA Fire Prevention and Safety Grant

The Fire Prevention & Safety (FP&S) Grants are part of the Assistance to Firefighters Grants and support projects that enhance the safety of the public and firefighters from fire and related hazards. The primary goal is to reduce injury and prevent death among high-risk populations. In 2005, Congress reauthorized funding for FP&S and expanded the eligible uses of funds to include Firefighter Safety Research and Development.

FEMA Flood Mitigation Assistance Program

The Flood Mitigation Assistance (FMA) program was created 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 and communities implement measures that reduce or eliminate the long-term risk of flood damage to buildings, manufactured homes, and other structures insurable under the National Flood Insurance Program. Eligible activities include: acquisition, relocation, elevation, and flood-proofing 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 National Flood Insurance Program.

FEMA Hazard Mitigation Grant Program

The Hazard Mitigation Grant Program (HMGP) provides grants to States and local governments to implement long-term hazard mitigation measures after a major disaster declaration. The purpose of the HMGP is to reduce the loss of life and property due to natural disasters and to enable mitigation measures to be implemented during the immediate recovery from a disaster. Eligible activities include: flood proofing; acquisition and relocation of flood prone properties; elevation of flood prone properties; retrofitting properties to be wind resistant; stormwater improvements; and education and awareness. In order to be eligible for funding through this program, the local government must be in compliance with the National Flood Insurance Program. All projects must be cost-effective, environmentally sound, and solve a problem. Funds are available anytime after a Presidential Disaster Declaration has been made in the State of Wisconsin.

FEMA Pre-Disaster Mitigation Program

The Pre-Disaster Mitigation (PDM) program provides funds to states, territories, Indian tribal governments, communities, and universities for hazard mitigation planning and the implementation of mitigation projects prior to a disaster event. Funding these plans and projects reduces overall risks to the population and structures, while also reducing reliance on funding from actual disaster declarations. PDM grants are to be awarded on a competitive basis and without reference to state allocations, quotas, or other formula-based allocation of funds. Grant funds can be used to cover management costs, information dissemination, planning, technical assistance, and mitigation projects. In order to be eligible for funding through this program the local government must be in compliance with the National Flood Insurance Program. All projects must be cost-effective and environmentally sound.

Pipeline and Hazardous Materials Safety Administration, Hazardous Materials Emergency Preparedness

The Hazardous Materials Emergency Preparedness (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 Agriculture Rural Development Assistance

USDA Rural Development assistance is provided in many ways, including direct or guaranteed loans, grants, technical assistance, research, and educational materials. Grant programs include

Business and Cooperative Grant Assistance, Housing and Community Facilities Grant Assistance, and Utilities Grants.

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 (LEA) to strengthen and improve their emergency response and crisis plans, at the district and school-building level. 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 of Wisconsin Programs

WDNR Lake Planning Grant Program

Counties, towns, cities, villages, tribes, qualified non-profit conservation organizations, qualified lake associations, school districts (in partnership with another eligible party), public inland lake protection and rehabilitation districts, town sanitary districts, and other local governmental units that are established for the purpose of lake management, are eligible to apply for funding to collect and analyze information needed to protect and restore lakes and their watersheds.

Eligible activities include: gathering and analysis of physical, chemical, and biological information on lakes; describing present and potential land uses within lake watersheds and on shorelines; reviewing jurisdictional boundaries and evaluating ordinances that relate to zoning, sanitation, or pollution control or surface use; assessments of fish, aquatic life, wildlife, and their habitats; and developing, evaluating, publishing, and distributing alternative courses of action and recommendations in a lake management plan.

WDNR Municipal Flood Control Grant Program

The Wisconsin Department of Natural Resources, Bureau of Community Financial Assistance and Bureau of Watershed Management, offers this grant assistance package to all cities, villages, towns, Indian Tribes, and metropolitan sewerage districts concerned with municipal flood control management in the State of Wisconsin. Assistance is provided with the availability of Acquisition and Development grants to purchase property or vacant land, structure removal, construction or other development costs and with Local Assistance Grants for providing administrative support activities.

WDNR River Planning Grant Program

Under this grant program, counties, cities, towns, villages, tribes, other local governmental units, qualified river management organizations, and qualified nonprofit conservation organizations are eligible to apply for funding under this program. Projects funded by this program must be designed to collect, assess and disseminate information on riverine ecosystems; assist in

developing organizations to help manage rivers; assist the public in understanding riverine ecosystems; and/or create management plans for the long term protection and improvement of riverine ecosystems. Eligible activities include: organizational development for existing river protection/improvement organizations; assistance with the formation of a qualified river management organization; public education projects; and planning and assessment projects. Capital improvement projects are not eligible for funding under this grant.

WDNR Forest Fire Protection Grant

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 Department of Natural Resources (DNR) overall initial attack fire suppression capabilities on forest fires. By May 1 of each year, Wisconsin fire departments and county/area fire associations statewide receive notification that the FFP application cycle is open. The FFP program is a 50/50 cost-share reimbursement grant program.

WDOA Comprehensive Planning Grant Program

The Division of Intergovernmental Relations administers the Wisconsin Comprehensive Planning Grant Program to assist local governments in the development and adoption of comprehensive plans. The Comprehensive Planning Grant Program has established a framework that promotes cooperation, collaboration and the exchange of ideas relating to planning and land use issues.

WDOA, Division of Housing and Intergovernmental Relations, Emergency Housing Grant Program

This program makes available funds for acquisition, rehabilitation, and/or demolition projects after a disaster event has occurred. These funds can be used as a local match to receive FEMA mitigation funds. The project must be used to benefit low and moderate income individuals.

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CHAPTER 5 - PLAN ADOPTION AND MAINTENANCE

PLAN ADOPTION PROCESS

The Marinette County Hazard Mitigation Plan development process was guided by the County Hazard Mitigation Plan Steering Committee (a sub-committee of the LEPC) over an 18-month timeframe, with professional planning support from the Bay-Lake Regional Planning Commission. A list of Steering Committee members is located in Chapter 1 - Introduction of this document.

Both 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. The plan was then adopted by resolution by the Marinette County Board on March 25, 2014. The resolution adopting the plan can be found on page iii, just before the Table of Contents. After the plan was adopted by the Marinette County Board, it was approved by WEM and FEMA. Approval letters from WEM and FEMA can be found on page v.

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 Hazard Mitigation Plan is an update to the initial 2007 plan, and will continue to be monitored, evaluated, and updated by Marinette County Emergency Management. Every five years, the Marinette County Hazards Mitigation Plan will be comprehensively reviewed, and fully updated. This update shall 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 five-year plan update will be coordinated by the Marinette County Emergency Management Director for Marinette County Board approval. All meetings to update the plan shall be subject to the Wisconsin Open Meeting Law, and shall be properly noticed to allow for public involvement and comment.

Additional Plan Review

Within three to six months following a significant natural hazard event (as determined by the Steering Committee), a special post-disaster review will occur. Information concerning the disaster shall be collected by the Marinette County Emergency Management Coordinator 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 Committees for the plan will analyze factors that contributed to any impacts of the hazard event, the likelihood of the event recurring, and any strategies that should be implemented to mitigate the impacts in the event of a recurrence. The County

Emergency Management Director 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 COORDINATION

The mitigation action plan 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 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, and 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 – Have recommended actions from this plan included in the implementation element of comprehensive plans of all jurisdictions in the planning area.

To maximize coordination 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.

A number of plans, reports, and technical data were referenced and incorporated into the Marinette County Hazard Mitigation Plan. The following is a comprehensive list of the data and reports that were utilized in plan development:

- Population, housing, and employment data from the Bureau of the Census (2000 and 2010);
- Bay-Lake Regional Planning Commission land use inventory data (2008);
- 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 April 2009 was used to complete the updated Crosswalk;
- *State of Wisconsin Hazard Mitigation Plan* (2008) was used to develop hazard descriptions for the risk assessment;
- FEMA *Local Mitigation Plan Review Guide* (2011) was used to ensure the plan contained all required information;
- Past hazard occurrences were obtained from National Oceanic and Atmospheric Administration (NOAA) – National Climatic Data Center – severe weather event data (2000 – October 2011);
- U.S. Geological Survey maps on landslides, land subsidence and earthquakes were used to describe those hazards;
- FEMA Flood Insurance Studies and FEMA Flood Insurance Rate Maps (FIRMs) were used to map floodplain areas;
- Parcel data from Marinette County was used to determine impacts of hazards with defined areas;
- Assessed valuation data from Marinette County was used to derive estimates of potential dollar losses;
- *Marinette County Emergency Operations Plan* contributed to the development of the mitigation action plan;
- *Marinette County Comprehensive Plan* was used to develop the community profile and contributed to the development of the mitigation action plan;
- Local municipal comprehensive plans contributed to the development of the mitigation action plan; and
- FEMA *Mitigation Ideas: Possible Mitigation Measures by Hazard Type* (2002) 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.

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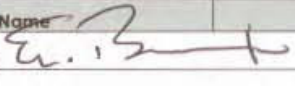
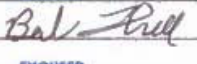
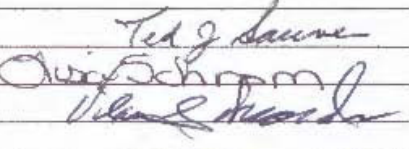
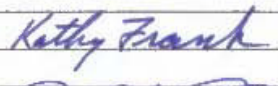
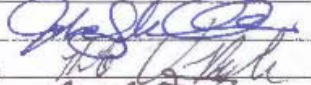

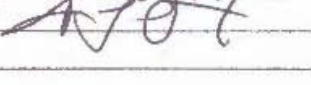
APPENDIX A - STEERING COMMITTEE SIGN-IN SHEETS

In order to assist in plan development, Marinette County established a Hazard Mitigation Plan Steering Committee. A table listing all members of the Committee can be found in Chapter 1 - Introduction. The plan steering committee met on seven occasions: May 31, 2012; August 6, 2012; October 15, 2012; January 28, 2013; March 25, 2013; July 22, 2013; and September 30, 2013. This Appendix contains the sign-in sheets from each of these meetings to verify attendance and participation by Committee members.

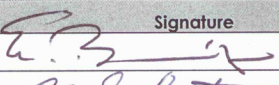
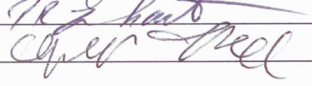
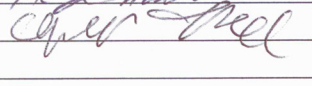
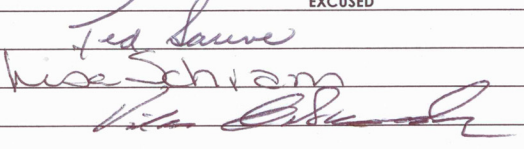
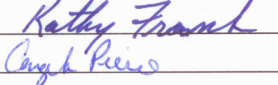
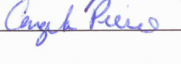
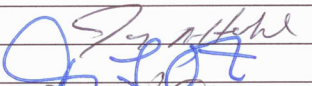

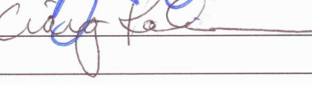
May 31, 2012

 <div style="text-align: center;"> Marinette County Hazard Mitigation Plan Steering Committee Sign-In May 31, 2012 </div>	
Name	Affiliation
Angela Pierce	BAY-LAKE REGIONAL PLANNING COMMISSION
Craig Kahoun	WPS
Krista Van Dyck	Marinette City Public Health
Kyle Schaefer	County Ed
TED J SAUVE	MARINETTE COUNTY BOARD
Robert Thull	Marinette Fire Dept Hazmat Team
Philip Everhart	LEPC chair / NWTC
Lisa Schram	Bay Area Medical Center
Eric Boemers	MARINETTE COUNTY EM.

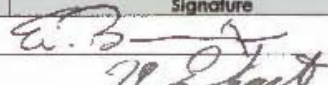
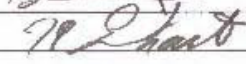
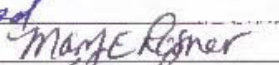
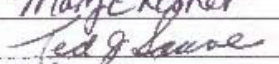
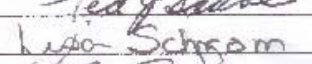
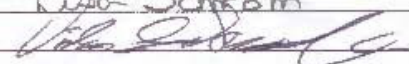
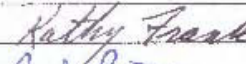
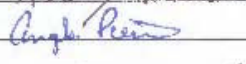
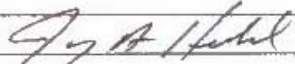
August 6, 2012

Hazard Mitigation Planning Committee Sign-In Sheet				AUGUST 6, 2012
First Name	Last Name	Company Name	Signature	
Eric	Burmeister	Marinette County EM Director		
Philip	Everhart	Citizen, LEPC Chairperson	EXCUSED	
Chief Bob	Thull	Marinette City FD & Hazmat Team		
Craig	Kahoun	WI Public Service	EXCUSED	
Mary	Rosner	Marinette County HHSD		
Ted	Sauve	Citizen		
Lisa	Schram	Bay Area Medical Center		
Vilas	Schroeder	Marinette County Board		
David	Thibodeau	Peshigo Times		
Kathy	Frank	Marinette Co. EM Program Asst. (LEPC Secretary)		
Angela	Pierce	Bay-Lake RPC		
Joshua	Schedler	Bay-Lake RPC		
Van Dyke	Kristel	Marinette County HHSD (Mary Rosner sub)		
Tim	Destreich	Marinette County LEO		


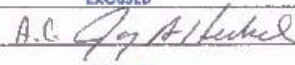
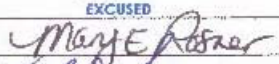
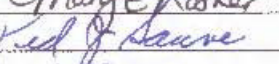
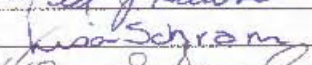
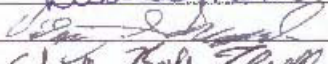
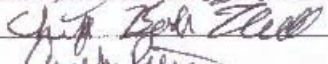
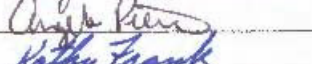
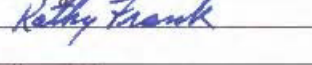

October 15, 2012

Hazard Mitigation Planning Committee Sign-In Sheet			
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Eric	Burmeister	Marinette County EM Director	
Philip	Everhart	Citizen, LEPC Chairperson	
Chief Bob	Thull	Marinette City FD & Hazmat Team	
Craig	Kahoun	WI Public Service	
Mary	Rosner	Marinette County HHSD	EXCUSED
Ted	Sauve	Citizen	
Lisa	Schram	Bay Area Medical Center	
Vilas	Schroeder	Marinette County Board	
Kathy	Frank	Marinette Co. EM Program Asst. (LEPC Secretary)	
Angela	Pierce	Bay-Lake RPC	
Joshua	Schedler	Bay-Lake RPC	
JAYSON	HECKEL	MARINETTE CITY FIRE	
Tim	DESTRECH	MARINETTE CITY	
Craig	Kahoun	WPS	

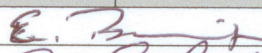

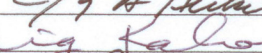
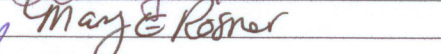
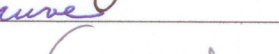
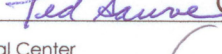

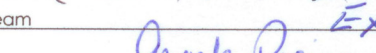
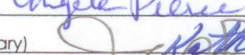
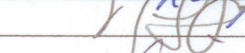

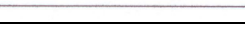

January 28, 2013

Hazard Mitigation Planning Committee Sign-In Sheet				January 28, 2013
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Eric	Burmeister	Marinette County EM Director		
Philip	Everhart	Citizen, LEPC Chairperson		
Chief Bob	Thull	Marinette City FD & Hazmat Team	EXCUSED	
Craig	Kahoun	WI Public Service	Excused	
Mary	Rosner	Marinette County HHSD		
Ted	Sauve	Citizen		
Lisa	Schram	Bay Area Medical Center		
Vilas	Schroeder	Marinette County Board		
Kathy	Frank	Marinette Co. EM Program Asst. (LEPC Secretary)		
Angela	Pierce	Bay-Lake RPC		
Joshua	Schedler	Bay-Lake RPC		
Jay	HECKEL	MARINETTE CITY FD + HAZMAT		

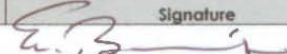
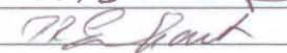
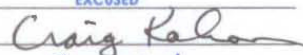
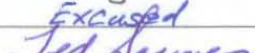
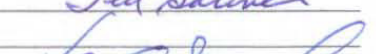

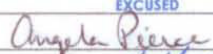


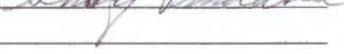
March 25, 2013

Hazard Mitigation Planning Committee Sign-In Sheet				March 25, 2013
First Name	Last Name	Company Name	Signature	
Eric	Burmeister	Marinette County EM Director		
Philip	Everhart	Citizen, LEPC Chairperson	EXCUSED	
Asst. Chief Jay	HECKEL	Marinette City FD & Hazmat Team		
Craig	Kahoun	WI Public Service	EXCUSED	
Mary	Rosner	Marinette County HHSD		
Ted	Sauve	Citizen		
Lisa	Schram	Bay Area Medical Center		
Vilas	Schroeder	Marinette County Board		
Chief Bob	Thull	Marinette City FD & Hazmat Team		
Angela	Pierce	Bay-Lake RPC		
Kathy	Frank	Marinette Co. EM Program Asst. (LEPC Secretary)		
Molly Bonjean		Marinette County Public Health		
D. Cahn		Peshigo Times	Bob	

July 22, 2013

1		Hazard Mitigation Planning Committee Sign-In Sheet		July 22, 2013
First Name	Last Name	Company Name	Signature	
Eric	Burmeister	Marinette County EM Director		
Philip	Everhart	Citizen, LEPC Chairperson		
Asst. Chief Jay	Heckel	Marinette City FD & Hazmat Team		
Craig	Kahoun	WI Public Service		
Mary	Rosner	Marinette County HHSD		
Ted	Sauve	Citizen		
Lisa	Schram	Bay Area Medical Center		
Vilas	Schroeder	Marinette County Board		
Chief Bob	Thull	Marinette City FD & Hazmat Team		
Angela	Pierce	Bay-Lake RPC		
Kathy	Frank	Marinette Co. EM Program Asst. (LEPC Secretary)		
TIM	DESTREICH	MARINETTE CITY LPO		
Craig	Kahoun	WPS		

September 30, 2013

1		Hazard Mitigation Planning Committee Sign-In Sheet		March 25, 2013
First Name	Last Name	Company Name	Signature	
Eric	Burmeister	Marinette County EM Director		
Philip	Everhart	Citizen, LEPC Chairperson		
Asst. Chief Jay	Heckel	Marinette City FD & Hazmat Team	EXCUSED	
Craig	Kahoun	WI Public Service		
Mary	Rosner	Marinette County HHSD	EXCUSED	
Ted	Sauve	Citizen		
Lisa	Schram	Bay Area Medical Center		
Vilas	Schroeder	Marinette County Board		
Chief Bob	Thull	Marinette City FD & Hazmat Team	EXCUSED	
Angela	Pierce	Bay-Lake RPC		
Kathy	Frank	Marinette Co. EM Program Asst. (LEPC Secretary)		
Tim	Destreich	Land Information		
Shirley	Pruchonme	ReshtigoTimes		

APPENDIX B - MULTI-JURISDICTIONAL COOPERATION EXERCISE

As a way to ensure accurate data and multi-jurisdictional cooperation in the update of the county's hazard mitigation plan, the steering committee and Bay-Lake Regional Planning Commission engaged the local communities in a cooperation exercise to review and provide input on plan materials.

Communities were provided a listing of their critical facilities, goals identified in the plan, and hazards mitigation actions, and were asked to review and comment on the materials. Additionally, they were asked to identify mitigation actions specific to their community.

The following is the letter that was sent to the municipalities in Marinette County and Table B.5.1 below displays the incorporated communities (i.e. cities and villages) that returned the reviewed materials.

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April 30, 2013

Clerk
City/Village
Address
City, WI Zip

RE: Request for Review of Hazard Mitigation Materials

(Please forward to your Plan Commission if you have one, or review with your Common Council or Village Board)

Marinette County Emergency Management and the Bay-Lake Regional Planning Commission have been working with the Marinette County Hazards Mitigation Plan Steering Committee to update the Hazard Mitigation Plan for Marinette County and the municipalities.

The 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.

Hazard mitigation planning is being conducted at the county level, with local municipalities participating in the plan by providing valuable input. Once completed, the plan must be adopted locally and by the county before receiving plan approval from FEMA. **Your community's participation in the development of this plan is necessary in order for your community to eventually adopt this plan and to be fully eligible for future assistance from FEMA.**

The following materials have been enclosed to facilitate your participation in development of this plan update:

- A current inventory of the critical facilities found in your community, plus a list of the categories to include. **Please review this information for accuracy, comment, and sign-off on your approval.** It is very likely that some critical facilities have been omitted and others need to be removed. Write in edits and sign.
 - Ensure that there is an address or lat/long coordinates provided for each critical facility.
 - Fill in the name for each critical facility that is missing one.
 - Add missing dry hydrants and their location. This may require review by your fire department.
- Goals of the plan, and hazards to be addressed in the plan listed in prioritized order based on impact and frequency (from the steering committee). **Please review, comment, and sign-off on your approval.**
- The mitigation actions identified by the steering committee. **Please review, comment, and sign-off on your approval** and **ADD AT LEAST ONE MITIGATION ACTION**

SPECIFIC TO YOUR COMMUNITY that you plan to implement or would like to implement if grant funding were available.

If you have any questions or need any additional information please contact Angela Pierce with the Bay-Lake Regional Planning Commission at (920) 448-2820. Please return your information **no later than July 16, 2013** to Bay-Lake Regional Planning Commission, 441 S. Jackson Street, Green Bay, WI 54301.

PLEASE NOTE THAT THIS IS THE ONLY REQUEST THAT WILL BE MADE FOR THIS INFORMATION. IF YOUR MATERIALS ARE NOT RECEIVED, YOU WILL NOT BE A PART OF THE PLAN. Not participating in this plan will require your community to develop its own plan if you wish to be eligible for future FEMA funding – including disaster assistance. Thank you for your participation in reviewing the enclosed materials.

Sincerely,

Eric Burmeister
Emergency Management Director

Enclosures (4):

1) Listing of Municipal Critical Facilities; 2) Critical Facility Categories; 3) Plan Goals; 4) Hazards Addressed; and 5) Mitigation Actions

Table B.5.1: Returned Hazard Mitigation Plan Update Review Materials

Municipality	Community Representative		
	Name	Title	Date Signed
City of Marinette	Denise Ruleau	Mayor	8/8/2013
City of Niagara	George Bousley	Mayor	7/10/2013
City of Peshtigo	Allan J. Krizenesky	Mayor	7/9/2013
Village of Coleman	Glenn Woulf	President	6/24/2013
Village of Crivitz	Marilyn Padgett	Clerk	8/7/2013
Village of Pound	Kevin Schutte	Public Works	8/15/2013
Village of Wausaukee	Toshia Ranallo	Clerk	6/26/2013

Source: Bay-Lake Regional Planning Commission, 2013.

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APPENDIX C - CRITICAL FACILITIES BY COMMUNITY

The Marinette County Hazard Mitigation Plan Steering Committee and community representatives identified critical infrastructure assets for all the communities in the county. The tables below summarize the critical facilities by municipality for Marinette County.

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TYPE	NAME	ADDRESS
Bridge	Ogden/Menekaunee Bridge	Ogden St/Menominee River
Bridge	Hattie St Bridge	Hattie St/Menominee River
Bridge	Ogden/Menekaunee Bridge	Ogden St/Menominee River
Bridge	US Highway 41 Interstate Bridge	USH 41/Bridge St/Menominee River
Bridge	US Highway 41 Interstate Bridge	USH 41/Bridge St/Menominee River
Bridge	Railroad Bridge	Railroad/Menominee River
Bridge	Railroad Bridge	Railroad/Menominee River
Communication Tower/Facility	WMAM 570	400 Wells St
Communication Tower/Facility	Time Warner Cable	3611 Murray St
Communication Tower/Facility	WLCJ 92.5	1223 Carney Blvd
Communication Tower/Facility	WMAM 570 Tower	400 Wells St
Dam	Menominee River	Menominee River
Dam	Kimberly Clark/Menominee River	Menominee River
Daycare	Open Arms Family Day Care	1503 Daggett St
Daycare	Peter Piper Kiddie Nursery	561 Cleveland St
Daycare	Faith Lutheran Preschool	4009 Irving St
Daycare	Lisa's Little Ones	3211 Parkdale Dr
Daycare	Kids R Us University	3919 Hall Ave
Daycare	Adventure Time Daycare	439 Water St
Daycare	Kids R Us Take Two	3917 Hall Ave
Daycare	Kids R Us Experience Summer	4009 Irving St
Dry Hydrant/Fire Pond	Waupaca Foundary	805 Ogden St
Fuel Substation	WPSC	Roosevelt Rd
Fuel Substation	FerrellGas, Inc.	2909 Mary St
Hazmat	Winert, Inc.	2645 Industrial Pkwy
Hazmat	ChemDesign Corp.	2 Stanton St
Hazmat	Waupaca Foundary Inc - Plant 4	805 Ogden St
Hazmat	Kimberly-Clark Tissue Co.	3120 Riverside Ave
Hazmat	Karl Schmidt Uniaai Inc.	1731 Industrial Pky
Hazmat	Marinette Marine Corp.	1600 Ely St
Hazmat	Tyco Fire Protection Products	One Stanton St
Hazmat	The Marinette Fuel & Dock Co. Docks	808 Ogden St
Hazmat	Time Warner Cable Headend/Hub #8	3611 Murray St
Hazmat	KS Large Bore Pistons, Inc.	2945 Angwall Dr
Hazmat	Alliance Industries, Inc.	301 E Russell St
Hazmat	Tyco Fire Protection Products, Industrial Parkway	2700 Industrial Pkwy
Hazmat	Airgas North Central, INC.	1801 Marinette Ave
Hazmat	Nestegg Marine	300 Wells St
Hazmat	CenturyLink - Marinette	1727 Stephenson St
Hazmat	Westlund Bus Lines, Inc.	1615 Badger Pkwy
Hazmat	Karl Schmidt Kolbenschmidt US, Inc.	1731 Industrial Pkwy

City of Marinette Critical Facilities (2013) (cont'd)

TYPE	NAME	ADDRESS
Hazmat	Winsert, Inc.	2645 Industrial Pkwy
Hazmat	Silvan Industries, INC	2121 Cleveland Ave
Hazmat	United Postal Service	2640 Industrial Pkwy
Hazmat	Biehl Construction Company, Inc.	2505 Biehl Ave
Healthcare Facility	Aurora Health Center	4061 Old Peshtigo Rd
Healthcare Facility	Bay Area Medical Center	3100 Shore Dr
Healthcare Facility	NorthReach Healthcare - Marinette Clinic	2720 Cahill Rd
Healthcare Facility	Northern Lights Clinic (ENT)	3200 Shore Dr
Healthcare Facility	Aurora Healthcare Clinic	1510 University Dr
Healthcare Facility	NorthReach Healthcare	2935 Shore Dr
Healthcare Facility	Mobility Rehab Center, LLC	3117 Shore Dr
Healthcare Facility	NorthReach Helathcare Pediatric Clinic	1106 University Dr
Healthcare Facility	NorthReach Healthcare	3123 Shore Dr
Healthcare Facility	Aurora Healthcare Clinic	3130 Shore Dr
Healthcare Facility	Prevea Marinette Health Center	1409 Cleveland Ave
Institutional/Government Facility	County Health and Human Services	2500 Hall Ave
Institutional/Government Facility	Marinette City Hall	1905 Hall Ave
Institutional/Government Facility	Stephenson Public Library	1700 Hall Ave
Institutional/Government Facility	Marinette County Jail (vacant)	1925 Ella Ct
Institutional/Government Facility	Marinette County Jail	2161 University Dr
Institutional/Government Facility	Marinette County Courthouse	1926 Hall Ave
Institutional/Government Facility	Marinette Civic Center	2000 Alice Ln
Institutional/Government Facility	Senior Citizens Center	1603 Ludington St
Institutional/Government Facility	Marinette Housing Authority	1520 Ludington St
Military Installation	Army National Guard	2000 Mary St
Mobile Home Park	Country Meadows	3415 Pierce Ave
Mobile Home Park	Golden Sands	3400 Pierce Ave
Mobile Home Park	Forest Glen	1450 Myrtle St
Mobile Home Park	Parkview Terrace	2430 Mary St
Mobile Home Park	Marinette Mobile Home Court	1596 Marinette Ave
Mobile Home Park	Foxx Glen	3920 Hall Ave
Mobile Home Park	Country Meadows	3325 Pierce Ave
Mobile Home Park	Cramer's Mobile Home Park	2650 Merchant St
Municipal Garage	Marinette Public Works	2411 Cleveland Ave
Police/Fire/Rescue	Marinette Police Dept	1905 Hall Ave
Police/Fire/Rescue	Marinette Fire Dept	1450 Main St
Police/Fire/Rescue	Emergency Rescue Squad Inc.	623 Madison St
Police/Fire/Rescue	Marinette County Sheriff Dept	2161 University Dr
Port Facility	Ansul Fire Protection; Coal Dock	1 Stanton St
Port Facility	Marinette Marine Corp	1600 Ely St

City of Marinette Critical Facilities (2013) (cont'd)

TYPE	NAME	ADDRESS
Port Facility	Marinette Fuel & Dock Co	808 Ogden St
Post Office	Post Office	2016 Maple Ave
Post-Secondary School	NWTC - Marinette	1601 University Dr
Post-Secondary School	University of Wisconsin - Marinette	750 W Bayshore Dr
Recreational	Red Arrow Park	Leonard St
Recreational	Stephenson Island Park	USH 41/Bridge St
Recreational	Marinette City Park	Mary St
Resident Health Care Facility	Northland Lutheran Services	831 Pine Beach Rd
Resident Health Care Facility	The Renaissance	2909 Shore Dr
Resident Health Care Facility	Northland Village	1025 Pine Beach Rd
Resident Health Care Facility	REM Wisconsin	413 W Russell St
Resident Health Care Facility	Edgewood Manor	1101 Northland Terrace Ln
Resident Health Care Facility	Bayshore Pines North	875 University Dr
Resident Health Care Facility	Bayshore Pines South	3206 Woodland Rd
Resident Health Care Facility	Washington Square	2502 Taylor St
School (Primary & Secondary)	St. Thomas Aquinas Academy Middle/High	1200 Main St
School (Primary & Secondary)	Trinity Lutheran	1501 Thomas St
School (Primary & Secondary)	Marinette High	2135 Pierce Ave
School (Primary & Secondary)	Marinette Middle	1011 Water St
School (Primary & Secondary)	Merryman Elementary	611 Elizabeth Ave
School (Primary & Secondary)	Park Elementary	1225 Hockridge St
School (Primary & Secondary)	Garfield Elementary	1615 Carney Blvd
School (Primary & Secondary)	Menekaunee Sunrise Early Learning Center	115 Hancock St
Utility	Electric Substation	Wells St
Utility	Electric Substation at Dam/Menominee River	
Utility	Electric Substation	CTH T
Utility	Electric Substation	805 Ogden St
Wastewater Treatment Facility	Marinette Wastewater Treatment Plant	1603 Ely St
Water Supply Facility	Marinette Water Utility	501 Water St
Water Supply Facility	Water Tower	Pierce Ave
Water Supply Facility	Water Tower	Cleveland Ave

City of Niagara Critical Facilities (2013)

TYPE	NAME	ADDRESS
Bridge	Bridge	Roosevelt Rd/Menominee River
Bridge	Bridge	Railroad/Menominee River
Communication Tower/Facility	Borderlands Communications	1133 Main St
Dam	Menominee River	Menominee River
Daycare	Just-4-Kids Child Care Center	801 Roosevelt Rd
Daycare	Wee Care Day Care and Preschool, LLC	537 Adams Ave
Hazmat	Gunville Trucking Inc.	1050 Washington Ave
Healthcare Facility	Niagara Health Center, Pain Management Ctr	1601 Roosevelt Rd
Healthcare Facility	Northern Lights Clinic (ENT)	500 Roosevelt Rd
Institutional/Government Facility	Public Health Clinic/Senior Center	569 Washington Ave
Institutional/Government Facility	Niagara City Hall	1029 Roosevelt Rd
Institutional/Government Facility	County Health and Human Services	1201 Jackson St
Municipal Garage	Niagara City Garage	Tyler Rd
Police/Fire/Rescue	Niagara Police Dept	1029 Roosevelt Rd
Police/Fire/Rescue	Niagara Fire/Rescue Dept	1241 Jackson St
Post Office		617 Washington Ave
Post-Secondary School	NWTC - Niagara	705 Washington Ave
Resident Health Care Facility	Mary Hill Manor	501 Madison Ave
School (Primary & Secondary)	Niagara Schools	700 Jefferson Ave
Utility		Washington Ave
Wastewater Treatment Facility	Niagara Wastewater Treatment Plant	2309 Sherman St
Water Supply Facility		Roosevelt Rd

City of Peshtigo Critical Facilities (2013)

TYPE	NAME	ADDRESS
Bridge	Bridge	N Lake St/Trout Creek
Bridge	Bridge	N Emery Ave/Trout Creek
Bridge	Bridge	French St/Peshtigo River
Bridge	Bridge	Railroad/Peshtigo River
Daycare	Marinette/Peshtigo Headstart	830 Pine St
Daycare	Cherished Child, LLC	101 S. Beebe Ave
Daycare	Pitter Patter Child Care	131 N Stephenson St
Daycare	Zion Lutheran Child Development Ctr	221 S Ellis Ave
Fuel Substation	WPS	E Front St
Fuel Substation	FerrellGas, Inc	319 W Railroad St
Fuel Substation	Charter Fuels, Inc.	371 S Cranberry Ave
Hazmat	Tom Joy & Son Trucking, LLC	970 Frontage Rd
Hazmat	BPM, Inc.	200 W Front St
Hazmat	Sentinel Structures, Inc.	477 S Peck Ave
Hazmat	UTC Airospace	701 Maple St
Healthcare Facility	NorthReach Healthcare - Peshtigo Clinic	441 French St
Healthcare Facility	Aurora Health Center - Peshtigo	603 French St.
Institutional/Government Facility	Peshtigo City Hall	331 French St.
Mobile Home Park	Brookview Village	901 Aubin St
Mobile Home Park	Kramer's Woodside Estates	1100 French St
Municipal Garage	Marinette County Highway Department-Peshtigo	501 Pine St
Municipal Garage	Peshtigo City Utility Garage	451 S E Front St
Police/Fire/Rescue	City of Peshtigo Fire Dept Station #2	800 Pine St
Police/Fire/Rescue	City of Peshtigo Police & Fire Dept	331 French St
Post Office	Post Office	201 W Front St
Recreational	Badger Park	E Park Dr
Resident Health Care Facility	Rennes Health & Rehab Center - East	701 Willow Rd
Resident Health Care Facility	Rennes Health & Rehab Center - West	501 N. Lake St
School (Primary & Secondary)	St. Thomas Aquinas Academy Elementary	141 S Wood Ave
School (Primary & Secondary)	Peshtigo Elementary	341 N Emery Ave
School (Primary & Secondary)	Peshtigo Middle/High	380 Green St
Temporary Emergency Gathering Center	Good Shepherd Lutheran Church	331 Pine St
Temporary Emergency Gathering Center	Zion Lutheran Church	221 S Ellis Ave
Utility	Electric Power Substation	E Front St
Utility	Electric Substation at Dam/Peshtigo River	
Utility	Wastewater Lift Station	451 S E Front St
Water Supply Facility	Peshtigo Water Well #3	461 E Park Dr
Water Supply Facility	Peshtigo Water Well #2	548 1/2 French St
Water Supply Facility	Peshtigo Water Tower	Maple St
Water Supply Facility	Peshtigo Water Tower	W Railroad St
Water Supply Facility	Peshtigo Water Well #4	680 Pine St

Village of Coleman Critical Facilities (2013)

TYPE	NAME	ADDRESS
Bridge	Bridge	CTH CP/Little Peshtigo River
Bridge	Bridge	Railroad/Little Peshtigo River
Communication Tower/Facility		119 Hammes St
Daycare	Just Kidd'n Child Care Center	219 Linda Ln
Daycare	Grandma Birdie's Family Day Care	550 Business 141 N
Hazmat	AgVentures, LLC	123 McArthur Dr
Hazmat	Patz Corporation	917 Business 141
Hazmat	ChemCoat Inc	117 Hammes St
Institutional/Government Facility	Coleman Village Hall	202 E Main St
Police/Fire/Rescue	Coleman Rescue Squad	119 E 16th Rd
Police/Fire/Rescue	Coleman Fire Dept	107 W Main St
Police/Fire/Rescue	Coleman Police Dept	202 E Main St
Post Office		153 W Main St
School (Primary & Secondary)	Coleman Elementary	347 Bus 141 N
School (Primary & Secondary)	Faith Christian	233 W Main St
School (Primary & Secondary)	Coleman Middle/High	343 Business 141 N
Wastewater Treatment Facility	Coleman Wastewater Treatment Plant	718 CTH CP
Water Supply Facility	Coleman Water Well #2	651 N. STH 141
Water Supply Facility	Water Tower	217 Bus USH 141
Water Supply Facility	Coleman Water Well #1	217 Bus USH 141

Village of Crivitz Critical Facilities (2013)

TYPE	NAME	ADDRESS
Bridge	Bridge	Main Ave/Peshtigo River
Daycare	Crivitz Youth Child Development Ctr	713 George St
Daycare	Kid's Place Day Care	717 Anderson Ave
Fuel Substation		409 Hall Ave
Hazmat	Lake Gas Co.	409 Hall Ave
Healthcare Facility	NorthReach Healthcare - Crivitz Medical Ctr	218 S. Hwy 141, Ste. 100
Institutional/Government Facility	Crivitz Village Hall	800 Henriette Ave
Mobile Home Park	Westwood Meadows	1516 Kenny Drive
Municipal Garage	Marinette County Highway Department-Crivitz	E2235 CTH W
Police/Fire/Rescue	Crivitz Police Dept.	800 Henriette Ave
Police/Fire/Rescue	Crivitz Rescue Squad	1020 Henrietta Ave
Police/Fire/Rescue	Crivitz Fire Dept	FJ Street
Post Office		1210 FJ St
Resident Health Care Facility	NEWCARE Residence/Convalescent Center	903 Main St
School (Primary & Secondary)	Crivitz High	400 South Ave
School (Primary & Secondary)	Crivitz Elementary/Middle	718 Hall Hay St
Wastewater Treatment Facility	Crivitz Wastewater Treatment Plant	2000 Gene St
Water Supply Facility		1130 Wilbert St

Village of Pound Critical Facilities (2013)

TYPE	NAME	ADDRESS
Bridge	Bridge	Bus US 141/USH 141
Institutional/Government Facility	Pound Village Hall	2002 CTH Q
Institutional/Government Facility	Community Center	1013 County Rd Q
Municipal Garage	Pound Village Garage	Parkview Ln
Police/Fire/Rescue	Village of Pound Fire Dept	2002 CTH Q
Post Office		1018 CTH Q
Utility	Electric Substation	CTH Q
Water Supply Facility	Village of Pound Water	2002 CTH Q

Village of Wausaukee Critical Facilities (2013)

TYPE	NAME	ADDRESS
Bridge	Bridge	Main St/Wausaukee River
Bridge	Bridge	Railroad/Wausaukee River
Communication Tower/Facility		515 Van Buren Ave
Dam	Wausaukee River	Wausaukee River
Daycare	Kid's Come First Childcare	149 Van Buren Ave
Daycare	Pam's Daycare	715 Church St
Dry Hydrant/Fire Pond	Wausaukee Pond	Wausaukee Pond
Fuel Substation	Hot Flame Gas, Inc.	913 Main St
Hazmat	Wausaukee Composites, Inc.	837 Cedar St
Healthcare Facility	Wausaukee Rural Healthcare	536 Kenny Dr
Institutional/Government Facility	Ranger Station	1025 CTH C
Institutional/Government Facility	Wausaukee Village Hall	428 Harrison Ave
Institutional/Government Facility	Wausaukee Housing Authority	926 Main St
Municipal Garage	Wausaukee Village Garage	428 Harrison Ave
Police/Fire/Rescue	Wausaukee Rescue Squad	429 Harrison Ave
Police/Fire/Rescue	Wausaukee Fire Dept	428 Harrison Ave
Post Office		614 Main St
Recreational	Evergreen Park	North Ave
Recreational	Steve Strumbris Sr. Memorial Park	132 Fairgrounds Rd
Recreational	Payant Park	Main St
Utility	WPS	912 Main St
Water Supply Facility	Wausaukee Composites Fire Protection Building	Cedar St/Fairgrounds Rd
Water Supply Facility	Well #1	Pump House Rd
Water Supply Facility	Water Tower	West end of Vanburen Ave
Water Supply Facility	Well #3	N11941 USH 141

Town of Amberg Critical Facilities (2013)

TYPE	NAME	ADDRESS
Bridge	Bridge	CTH K/Pike River
Bridge	Bridge	USH 141/Pike River
Bridge	Bridge	CTH V/Pike River
Bridge	Bridge	Mathis Rd/SB Pike River
Bridge	Bridge	Barker Rd/Pike River
Bridge	Bridge	Dow Dam Rd/NB Pike River
Bridge	Bridge	CTH K/Menominee River
Bridge	Bridge	Railroad/Pike River
Communication Tower/Facility		Weycker Rd
Communication Tower/Facility		Amberg Wausaukee Rd
Communication Tower/Facility		N15570 Old 38 Rd
Dam	Squaw Creek	Squaw Creek
Dam	McAllister Creek	McAllister Creek
Dry Hydrant/Fire Pond		
Fuel Substation	Customers Gas Service of Amberg	W8975 Smith Rd
Fuel Substation	Amerigas Propane	N15291 Hwy 141
Institutional/Government Facility	Old Amberg Town Hall - Museum Complex	N15065 Grant St
Institutional/Government Facility	Town of Amberg Community Center	N15035 Grant St
Municipal Garage	Amberg Town Garage	McClellan Aly
Police/Fire/Rescue	Amberg Fire & Rescue	N15065 Grant St
Post Office		N15075 Dutton Ave
Recreational	Dave's Falls Park	County Park Rd
School (Primary & Secondary)	Victory Academy for Boys	W4705 Wallace Rd
Utility		CTH K
Utility		USH 141

Town of Athelstane Critical Facilities (2013)

TYPE	NAME	ADDRESS
Bridge	Bridge	Benson Lake Rd/SB Pike River
Bridge	Bridge	Forbes Rd/SB Pike River
Bridge	Bridge	CTH C/W ausaukee River
Dry Hydrant/Fire Pond		Northway Dr/Railroad St
Dry Hydrant/Fire Pond	Fire Pond	N12244 CTH AC
Dry Hydrant/Fire Pond		Benson Lake Rd/SB Pike River
Dry Hydrant/Fire Pond		Forbes Rd/SB Pike River
Dry Hydrant/Fire Pond		CTH C/W ausaukee River
Fuel Station	Log Cabin Gas Station	N12799 CTH AC
Institutional/Government Facility	Athelstane Town Hall	N12244 CTH AC
Municipal Garage	Athelstane Town Shop	W10073 CTH C
Police/Fire/Rescue	Athelstane Fire Dept Station #1	W10073 CTH C
Police/Fire/Rescue	Athelstane Fire Dept Station #2	W10815 Benson Lake Rd
Post Office	Athelstane Post Office	W10056 CTH C
Recreational	Dolan Lake Park	Doland Landing Rd
Temporary Emergency Gathering Center	Cornerstone Assembly of God Church	W10082 Perch Lake Rd

Town of Beaver Critical Facilities (2013)

TYPE	NAME	ADDRESS
Bridge	Bridge	CTH P/NB Beaver Creek
Bridge	Bridge	USH 141/SB Beaver Creek
Bridge	Bridge	19th Rd/SB Beaver Creek
Bridge	Bridge	STH 64/SB Beaver Creek
Bridge	Bridge	3rd Rd/Beaver Creek
Bridge	Bridge	11th Rd/Beaver Creek
Bridge	Bridge	CTH P/Peshtigo River
Bridge	Bridge	15th Rd/SB Beaver Creek
Bridge	Bridge	Railroad/NB Beaver Creek
Communication Tower/Facility		21st Rd
Dam	Murphy Creek	Murphy Creek
Dam	Murphy Creek	Murphy Creek
Hazmat	Pound Control #66, Northeast Asphalt, Inc.	W7980 Highway 64
Institutional/Government Facility	Beaver Town Hall	W8405 CTH P
Utility		USH 141

Town of Beecher Critical Facilities (2013)

TYPE	NAME	ADDRESS
Bridge	Bridge	CTH Z/Menominee River
Bridge	Bridge	Sand Rd/Miscauno Creek
Bridge	Bridge	Town Corner Lake Rd/NB Pike River
Bridge	Bridge	Smeester School Rd/NB Pike River
Bridge	Bridge	Dam Rd/Beecher Creek
Communication Tower/Facility		W8998 Pembine Beecher Rd
Dam	Beecher Lake	Beecher Lake
Dry Hydrant/Fire Pond		
Dry Hydrant/Fire Pond		
Institutional/Government Facility	Beecher Town Hall	W7971 CTH Z
Municipal Garage	Beecher Town Garage	W7971 CTH Z

Town of Dunbar Critical Facilities (2013)

TYPE	NAME	ADDRESS
Bridge	Bridge	Lily Lake Rd/NB Pike River
Bridge	Bridge	CCC Camp Rd/NB Pike River
Bridge	Bridge	Old County A Rd/NB Pike River
Bridge	Bridge	Twin Lake Rd/NB Pike River
Bridge	Bridge	USH 8/ K C Creek
Bridge	Bridge	Old County A Rd/SB Pike River
Bridge	Bridge	Railroad/K C Creek
Bridge	Bridge	USH 8
Dry Hydrant/Fire Pond		
Institutional/Government Facility	Dunbar Town Hall	N18965 CCC Camp Rd
Municipal Garage		USH 8
Post-Secondary School	Northland Baptist Bible College	W10085 Pike Plains Rd
Recreational	Twelvefoot Falls County Park	Twelve Foot Falls Rd
Recreational	Veteran's Memorial Park	N18961 CTH O

Town of Goodman Critical Facilities (2013)

TYPE	NAME	ADDRESS
Bridge	SOO LINE	Railroad/US 8
Bridge	Bridge	USH 8/NB Pike River
Bridge	Bridge	Pike River Dr/NB Pike River
Communication Tower/Facility		A Ave
Communication Tower/Facility		Partridge Rd
Communication Tower/Facility		US HWY 8
Communication Tower/Facility		W 14553 Wilderness Dr
Fuel Substation		USH 8
Institutional/Government Facility	Goodman Town Hall	506 Mill St
Municipal Garage		Woods Lake Rd
Police/Fire/Rescue	Goodman Fire/Rescue Dept	506 Mill St
Post Office		200 A St
Recreational	Goodman Township Park	Town Park Dr
School (Primary & Secondary)	Goodman - Armstrong Creek High	1 Falcon Crest
School (Primary & Secondary)	Goodman - Armstrong Creek Elementary	4th St
Utility		Woods Lake Rd
Utility		4th St
Utility		4th St
Water Supply Facility		7th St

Town of Grover Critical Facilities (2013)

TYPE	NAME	ADDRESS
Bridge	Bridge	Radtko Rd/Bundy Creek
Bridge	Bridge	CTH B/Bundy Creek
Bridge	Bridge	CTH W/Little Peshtigo River
Bridge	Bridge	STH 64/Little Peshtigo River
Bridge	Bridge	CTH W/Peshtigo River
Bridge	Bridge	Townline Rd/Little Peshtigo River
Bridge	Bridge	Tower Hill Rd/Little Peshtigo River
Bridge	Bridge	Poplar Ridge Ln/Trout Creek
Bridge	Bridge	Railroad/Unnamed Water
Communication Tower/Facility	WSFQ 96.3 Tower	Gross La
Communication Tower/Facility		Augustine Rd
Communication Tower/Facility		Lepinsky Ln
Communication Tower/Facility		Tower Hill Rd
Communication Tower/Facility		Church Ln
Communication Tower/Facility		W5170 Votava Ln
Communication Tower/Facility		N2793 CTH Y
Fuel Substation	Coleman Propane	W6586 CTH M
Institutional/Government Facility	Grover Town Hall	W5161 Town Hall Rd
Police/Fire/Rescue	Grover-Porterfield Fire Dept	N3890 S Harmony Rd
School (Primary & Secondary)	St John Lutheran	N1926 Church Rd
Utility		N3898 CTH E

Town of Lake Critical Facilities (2013)

TYPE	NAME	ADDRESS
Bridge	Bridge	Noquebay Rd/The Outlet
Bridge	Bridge	Ferndale Rd/Peshtigo River
Dam	The Outlet	The Outlet
Daycare	Little Tykes Child Care	W6675 Birchwood Rd
Dry Hydrant/Fire Pond		
Dry Hydrant/Fire Pond		
Dry Hydrant/Fire Pond		
Dry Hydrant/Fire Pond		
Institutional/Government Facility	Town Of Lake Hall	W6202 Loomis Rd
Mobile Home Park		N7900 Noquebay Rd
Mobile Home Park		W6296 Circle Dr
Mobile Home Park		W6225 CTH GG
Municipal Garage		W6188 CTH GG
Municipal Garage		Loomis Rd
Police/Fire/Rescue	Town Of Lake Fire Dept	W6202 Loomis Rd
Recreational	Lake Noquebay Park	Crescent Ln

Town of Middle Inlet Critical Facilities (2013)

TYPE	NAME	ADDRESS
Bridge	Bridge	USH 141/Middle Inlet
Bridge	Bridge	USH 141/Lower Middle Inlet
Bridge	Bridge	Camp 5 Rd/Middle Inlet
Bridge	Bridge	Creek Rd/Upper Middle Inlet
Bridge	Bridge	CTH X/Middle Inlet
Bridge	Bridge	Maple Beach Rd/Middle Inlet
Bridge	Bridge	Railroad/Middle Inlet
Communication Tower/Facility		Moonshine Hill Rd
Institutional/Government Facility	Middle Inlet Town Hall	W7901 CTH X
Mobile Home Park		N8598 Lake Rd
Police/Fire/Rescue	Middle Inlet Fire Dept	N9299 US HWY 141

Town of Niagara Critical Facilities (2013)

TYPE	NAME	ADDRESS
Bridge	Bridge	USH 8/Menominee River
Bridge	Bridge	Morgan Park Rd/NB Pemebonwon River
Bridge	Bridge	CTH O/NB Pemebonwon River
Bridge	Bridge	Forest Rd 1003/NB Pemebonwon River
Bridge	Bridge	USH 141/NB Pemebonwon River
Bridge	Bridge	West Rd/Spikehorn Creek
Bridge	Bridge	USH 141/Spikehorn Creek
Bridge	Bridge	Railroad/Menominee River
Bridge	Bridge	Railroad/NB Pemebonwon River
Bridge	Bridge	Railroad/Menominee River
Communication Tower/Facility	Cell Tower	N22370 Schindler Rd
Communication Tower/Facility	Cell Tower	N20888 Genrich Rd
Dam	Menominee River	Menominee River
Dam	Menominee River	Menominee River
Institutional/Government Facility	Niagara Town Hall	W6889 USH 8
Municipal Garage	Niagara Town Garage	W7280 USH 8
Municipal Garage	Niagara Town Garage	W7250 USH 8
Recreational	Morgan Park	Morgan Park Rd
Water Supply Facility	Niagara Water Well #3	South Truman St

Marinette County Hazard Mitigation Plan

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Town of Peshtigo Critical Facilities (2013)

TYPE	NAME	ADDRESS
Bridge	Bridge	CTH BB/Little River
Bridge	Bridge	Hale School Rd/Unnamed Water
Bridge	Bridge	Hale Rd/Unnamed Water
Bridge	Bridge	Richter Rd/Unnamed Water
Bridge	Bridge	Drys Rd/Unnamed Water
Bridge	Bridge	Spitzmacher Rd/Unnamed Water
Bridge	Bridge	USH 41/Railroad
Bridge	Bridge	USH 41/Railroad
Bridge	Bridge	USH 41/Railroad
Bridge	Bridge	USH 41/Railroad
Bridge	Bridge	Railroad/Unnamed Water
Bridge	Bridge	USH 41/Schacht Rd
Bridge	Bridge	USH 41/Schacht Rd
Bridge	Bridge	USH 41/Old Pestigo Rd
Bridge	Bridge	USH 41/Old Pestigo Rd
Bridge	Bridge	USH 41/CTH B
Bridge	Bridge	USH 41/CTH B
Bridge	Bridge	USH 41/Peshtigo River
Bridge	Bridge	USH 41/Peshtigo River
Bridge	Bridge	Hale Rd/USH 41
Bridge	Bridge	CTH Y/USH 41
Communication Tower/Facility		Krause Rd
Communication Tower/Facility	WLST 95.1	N2880 Roosevelt Rd
Communication Tower/Facility		N2170 Keller Rd
Communication Tower/Facility		Old Peshtigo Rd
Communication Tower/Facility		N2400 Hale Rd
Communication Tower/Facility	WHYB 103.7 Tower	W1450 Roosevelt Rd
Daycare	Busy Bee Child Care	N1969 Keller Rd
Daycare	Noah's Ark Christian Day Care	N2535 Roosevelt Rd
Dry Hydrant/Fire Pond	Dry Hydrant	N1618 Hale Rd
Dry Hydrant/Fire Pond	Dry Hydrant	Badger Rd/Harbor Rd
Dry Hydrant/Fire Pond	Dry Hydrant	Rader Rd
Dry Hydrant/Fire Pond	Dry Hydrant	Leaf Rd
Dry Hydrant/Fire Pond	Dry Hydrant	W1432 CTH B
Dry Hydrant/Fire Pond	Dry Hydrant	HWY 64/Peshtigo River
Fuel Substation	WPS	W2753 CTH B
Hazmat	Marinette Concrete Products	W1584 USH 41
Institutional/Government Facility	Peshtigo Town Hall	W2435 Old Peshtigo Rd
Municipal Garage	Peshtigo Town Garage	W2435 Old Peshtigo Rd
Police/Fire/Rescue	Town of Peshtigo Fire Dept	W2435 Old Peshtigo Rd

Town of Peshtigo Critical Facilities (2013) (cont'd)

TYPE	NAME	ADDRESS
Recreational	Michaelis Park	CTH BB
Resident Health Care Facility	Crossroads Group Home	N2189 Schacht Rd
Utility	WPS	W1830 W Cleveland Ave
Wastewater Treatment Facility	Peshtigo Wastewater Treatment Plant	N1890 Harbor Rd

Town of Porterfield Critical Facilities (2013)

TYPE	NAME	ADDRESS
Bridge	Bridge	STH 180/Twin Creek
Bridge	Bridge	CTH E/Peshtigo River
Bridge	Bridge	STH 64/Peshtigo River
Communication Tower/Facility		W Townline Rd
Communication Tower/Facility	WLWR 107.7	N5233 Nettleton Rd
Hazmat	Northeast Asphalt Portable Asphalt Plant 27	Anderson Rd
Hazmat	Marinette Iron & Metal	N4395 STH 180
Institutional/Government Facility	Porterfield Town Hall	W3435 CTH G
Mobile Home Park	Butler's Mobile Home Park	
Post Office		N5450 CTH E
Recreation	Weber Field	Shady Lane
Recreational	Green's Green Acres Campground	N4247 River Dr
Recreational	Crystal Springs County Park	STH 180
Utility	Electric Substation at Dam/White Potato Rapids	

Town of Pound Critical Facilities (2013)

TYPE	NAME	ADDRESS
Bridge	Bridge	CTH B/Little Peshtigo River
Bridge	Bridge	CTH B/Little Peshtigo River
Bridge	Bridge	N 7th Rd/Little Peshtigo River
Bridge	Bridge	CTH B/Little Peshtigo River
Bridge	Bridge	N 1st Rd/Little Peshtigo River
Bridge	Bridge	N 5th Rd/Little Peshtigo River
Bridge	Bridge	N 23rd Rd/Little Peshtigo River
Bridge	Bridge	S 27th Rd/Little Peshtigo River
Bridge	Bridge	S 31st Rd/Little Peshtigo River
Bridge	Bridge	CTH B/Unnamed Water
Bridge	Bridge	CTH B/USH 41
Bridge	Bridge	USH 141/Little Peshtigo River
Bridge	Bridge	USH 141/Little Peshtigo River
Bridge	Bridge	USH 141/Unnamed Water
Bridge	Bridge	USH 141/Unnamed Water
Bridge	Bridge	CTH Q/USH 141
Communication Tower/Facility		W 24th Rd
Communication Tower/Facility		W8254 E 12th Rd
Dry Hydrant/Fire Pond	Fire Pond	CTH M/7th Rd
Institutional/Government Facility	Pound Town Hall	W8484 CTH B
Mobile Home Park		W9294 W 14th Rd
Municipal Garage		W8484 CTH B
Recreational	Montana Lake Park	W 12th Rd
Utility		N 15th Rd
Utility	Electric Substation	E Springside Rd

Town of Silver Cliff Critical Facilities (2013)

TYPE	NAME	ADDRESS
Bridge	Bridge	Camp 5 Rd/Peshtigo River
Bridge	Bridge	Harper Rd/Rat River
Bridge	Bridge	Swede John Rd/Peshtigo River
Bridge	Bridge	CTH C/Eagle Creek
Bridge	Bridge	CTH C/Peshtigo River
Communication Tower/Facility		Conklin Rd
Communication Tower/Facility		Harveys Ln
Communication Tower/Facility		Harveys Ln
Dam	Babson Pond Creek	Babson Pond Creek
Dry Hydrant/Fire Pond		Boat Landing 12 Rd/Peshtigo River
Dry Hydrant/Fire Pond		Harper Rd/Rat River
Institutional/Government Facility	Silver Cliff Town Hall	N11929 CTH I
Municipal Garage		CTH I
Police/Fire/Rescue	Silver Cliff Fire/Rescue Dept	W13576 CTH C
Recreational	Goodman Park	Benson Lake Rd
Recreational	McClintock County Park	CTH I
Recreational	Kosirs Rapid Rafts	W14072 CTH C
Recreational	Mt. Jeds Campground and Canoeing	W13364 CTH C
Recreational	Silver Cliff Camp	W14301 CTH C
Recreational	Mc Caslin Mountain Campground	W15720 CTH F
Utility		Old J Rd

Town of Stephenson Critical Facilities (2013)

TYPE	NAME	ADDRESS
Airport Facility	Crivitz Municipal Airport	County Road W/Airport Road
Bridge	Bridge	Smith Creek Rd/Railroad
Bridge	Bridge	USH 141/Peshtigo River
Bridge	Bridge	CTH W/The Outlet
Bridge	Bridge	Shaffer Rd/Peshtigo River
Bridge	Bridge	CTH X/Peshtigo River
Bridge	Bridge	High Falls Rd/Peshtigo River
Bridge	Bridge	Caldron Falls Rd/Thunder River
Bridge	Bridge	Parkway Rd/Peshtigo River
Bridge	Bridge	Parkway Rd/Thunder River
Bridge	Bridge	Eagle Rd/Eagle Creek
Bridge	Bridge	High Falls Rd/Unnamed Water
Bridge	Bridge	Left Foot Lake Rd/Left Foot Creek
Bridge	Bridge	Kettle Rd/Medicine Brook
Bridge	Bridge	Parkway Rd/Woods Lake Outlet
Bridge	Bridge	Eagle Rd/Little Eagle Creek
Bridge	Bridge	Railroad/The Outlet
Bridge	Bridge	Railroad/Peshtigo River
Communication Tower/Facility		W11942 Engel Ln
Communication Tower/Facility		USH 141
Communication Tower/Facility		USH 141
Communication Tower/Facility	WRUK	W11591 Archer Ln
Dam	Peshtigo River	Peshtigo River
Dam	Peshtigo River	Peshtigo River
Dam	Peshtigo River	Peshtigo River
Dam	Peshtigo River	Peshtigo River
Dry Hydrant/Fire Pond		
Dry Hydrant/Fire Pond		
Dry Hydrant/Fire Pond		
Dry Hydrant/Fire Pond		
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Dry Hydrant/Fire Pond		

Town of Stephenson Critical Facilities (2013) (cont'd)

TYPE	NAME	ADDRESS
Dry Hydrant/Fire Pond		
Dry Hydrant/Fire Pond		
Dry Hydrant/Fire Pond		
Dry Hydrant/Fire Pond		
Fuel Substation		N 16th St
Fuel Substation		Left Foot Lake Rd
Fuel Substation	Charter Fuels, Inc.	N9873 CTH A
Fuel Substation	Crivitz Propane	W10100 Dreamland Ave
Hazmat	Crivitz Redi Mix Inc	N7820 Old Highway 141
Institutional/Government Facility	Stephenson Town Hall	W11280 CTH X
Mobile Home Park	Popps Resort	W11581 County Road X
Mobile Home Park	Parkway	N9960 Parkway Rd
Mobile Home Park		W11840 Blackberry Patch Ln
Police/Fire/Rescue	Stephenson Fire Dept #2	W12580 CTH W
Police/Fire/Rescue	Stephenson Fire Dept/Twin Bridge Rescue	W11280 CTH X
Recreational	Old Veteran's Lake Campground	Veterans Memorial Pk
Recreational	Twin Bridges Park	Parkway Rd
Recreational	Veteran's Memorial Park	Parkway Rd
Recreational	Thunder Mountain Overlook	Thunder Mtn Ranch Rd
Recreational	Pine Acres Resort	N10184 Parkway Rd
Recreational	Camp Bird	Camp Bird
Recreational	Country Convenience Store	W10901 Kottke Rd
Recreational	Wolf Rock Campground	W11685 Boat Landing 7 Rd
Recreational	Thornton's Rafting Resort and Campgrounds	W12882 Parkway Rd
Recreational	Governor Thompson State Park	N10008 Paust Ln
Utility	Electric Substation at Dam/High Falls Reservoir	
Utility	Electric Substation at Dam/Sandstone Reservoir	
Utility		High Falls Rd
Utility	Electric Substation at Dam/Peshigo River	
Utility	Electric Substation at Dam/Caldron Falls Reservoir	
Water Supply Facility	Crivitz Water Well #2	N7615 St. Paul Rd
Water Supply Facility		W8707 CTH W
Water Supply Facility	Crivitz Water Well #3	N7707 St. Paul Rd

Town of Wagner Critical Facilities (2013)

TYPE	NAME	ADDRESS
Bridge	Bridge	CTH JJ/Menominee River
Bridge	Bridge	Pohl Rd/Unnamed Water
Bridge	Bridge	Bruette Rd/Wagner Creek
Bridge	Bridge	Cottage Rd/Unnamed Water
Bridge	Bridge	Bruette Rd/Wagner Creek
Bridge	Bridge	Wagner Rd/Wagner Creek
Bridge	Bridge	Golf Rd/Wagner Creek
Bridge	Bridge	Old Rail Rd/Wagner Creek
Bridge	Bridge	CTH JJ/Menominee River
Communication Tower/Facility		W2361 CTH X
Communication Tower/Facility		N10143 STH 180
Dam	Menominee River	Menominee River
Fuel Substation	Charter Fuels, Inc.	N10101 Hwy 180
Institutional/Government Facility	Wagner Town Hall	N2379 CTH JJ
Police/Fire/Rescue	Wagner Fire Dept	W2379 CTH JJ
Recreational	Menominee River Park	N9012 Park Place Dr
Temporary Emergency Gathering Center		W2680 STH 180

Town of Wausaukee Critical Facilities (2013)

TYPE	NAME	ADDRESS
Bridge	Bridge	Pike River Rd/Pike River
Bridge	Bridge	Jamros Rd/Wausaukee River
Bridge	Bridge	McMahon Rd/Upper Middle Inlet
Bridge	Bridge	Glendale Rd/Wausaukee River
Bridge	Bridge	Bielak Rd/Wausaukee River
Bridge	Bridge	Railroad/Upper Middle Inlet
Bridge	Bridge	Railroad/Little Wausaukee Creek
Bridge	Bridge	Old Hwy 38/Little Wausaukee Creek
Bridge	Bridge	USH 141/Upper Middle Inlet
Communication Tower/Facility	Communication Tower	Russ Mainik Rd
Communication Tower/Facility	Communication Tower	N12910 US HWY 141
Communication Tower/Facility	Communication Tower	N12324 US Hwy 141
Fuel Substation	FerrellGas, Inc.	W7390 Hwy 141
Institutional/Government Facility	Wausaukee Town Hall	N11856 US Hwy 141
Municipal Garage	Wausaukee Town Garage	N11856 US Hwy 141
Recreational	McCall Lake Boat Landing	McCall Lake Rd/McCall Lake
Recreational	Long Lake Boat Landing	Long Lake Rd/Long Lake
Recreational	River Road Boat Landing	River Rd/Menominee River
Recreational	Grogan Rd Boat Landing	Grogan Rd/Menominee River
Recreational	Bear Point Boat Landing	STH 180/Menominee River
School (Primary & Secondary)	Wausaukee Schools	N11941 USH 141
Wastewater Treatment Facility	Wausaukee Water & Sewer Treatment Plant	N11888 Decor Dr

APPENDIX D - PUBLIC MEETING NOTICE AND SIGN-IN SHEET



MARINETTE COUNTY EMERGENCY MANAGEMENT

Eric Burmeister
Director

Kathy Frank
Program Assistant
County Public Information Officer

Media Contact: Kathy Frank, Tel: (715) 732-7666

For Immediate Release

July 29, 2013

Marinette County Undertaking Hazard Mitigation Planning – Draft Plan Available for Public Review

Marinette County Emergency Management and response, and planning personnel from the private and public sectors have been working together to update the County's Hazard Mitigation Plan. The original plan was developed in 2007 under funding from the Federal Emergency Management Agency (FEMA). The committee developing the plan has been appointed by the Local Emergency Planning Committee. The Bay-Lake Regional Planning Commission is facilitating the process and drafting the plan.

Hazard mitigation planning involves developing a set of actions designed to reduce or eliminate long-term risk to people and property from hazards and their effects. The rising costs associated with hazard recovery activities have led to a much greater emphasis being placed on dealing with hazards before they occur.

With this plan, the County is able to identify actions needed in order to minimize risk and damage to people and property from natural hazards. Additionally, a current plan qualifies the County to apply for FEMA funding to undertake identified projects that will minimize future risks.

Public input is requested on the draft plan. A public informational meeting to present the draft plan, maps, and materials will be held August 28, 2013 from 6:00-8:00PM at the Marinette County Courthouse in the Jury Assembly Room (Annex basement) at 1926 Hall Avenue in Marinette.

Alternatively, the draft plan can be viewed and comments submitted on-line at Marinette County's website at www.marinettecounty.com. On-line comments are being accepted now through August 28th.

#

APPENDIX E -RESOLUTIONS OF ADOPTION FROM INCORPORATED COMMUNITIES

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CITY OF MARINETTE, WISCONSIN

RESOLUTION NO. 21-2014

ADOPTION OF THE MARINETTE COUNTY, WISCONSIN NATURAL HAZARDS MITIGATION PLAN.

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

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

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

NOW, THEREFORE, BE IT RESOLVED, that the Marinette Common Council of the City of Marinette, Wisconsin, hereby adopts the **Marinette County, Wisconsin Natural Hazards Mitigation Plan** as an official plan; and


BE IT FURTHER RESOLVED, that upon approval of the **Marinette County, Wisconsin Natural Hazards Mitigation Plan**, the Bay-Lake Regional Planning Commission, on behalf of the Marinette County Emergency Management Department, will submit the adopted plan to Wisconsin Emergency Management and Federal Emergency Management Agency officials as required under the Hazard Mitigation Grant Program.

Dated this 3rd day of June 2014.

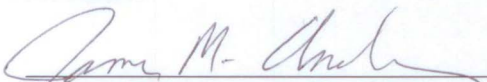
Resolution introduced and adoption moved by Alderperson Buechler,

Motion for adoption seconded by Alderperson Keller,

Upon a call of the roll, motion was adopted by a unanimous vote of 9 ayes to 0 nays.


DENISE J. RULEAU, MAYOR

ATTEST:


James M. Anderson, City Clerk

RESOLUTION NO. 2014 – 07

**ADOPTION OF THE MARINETTE COUNTY NATURAL HAZARDS
MITIGATION PLAN**

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

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

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

NOW, THEREFORE BE IT RESOLVED, that the Common Council of the City of Peshtigo, Wisconsin, hereby adopts the **Marinette County Natural Hazards Mitigation Plan** as an official plan; and

BE IT FURTHER RESOLVED, that upon approval of the **Marinette County Natural Hazards Mitigation Plan**, the Bay-Lake Regional Planning Commission, on behalf of the Marinette County Emergency Management Department, will submit the adopted plan to Wisconsin Emergency Management and Federal Emergency Management Agency officials for final review and approval, as required under the Hazard Mitigation Grant Program.

Dated this 3rd Day of June, 2014.

OFFERED BY: Mary E. Lock
Alderman

SECONDED BY: Bryan A. Aho
Alderman

APPROVED:

Catherine Malke
Mayor

ATTEST:

Vicki L. Krumholz
Interim Clerk Treasurer

Resolution #2014-1
Adoption of the Marinette County, Wisconsin Natural Hazards
Mitigation Plan.

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

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

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

NOW, THEREFORE BE IT RESOLVED, that the Board of the Village of Coleman, Wisconsin, hereby adopts the **Marinette County, Wisconsin Natural Hazards Mitigation Plan** as an official plan; and

BE IT FURTHER RESOLVED, that upon approval of the **Marinette County, Wisconsin Natural Hazards Mitigation Plan**, the Bay-Lake Regional Planning Commission, on behalf of the Marinette County Emergency Management Department, will submit the adopted plan to Wisconsin Emergency Management Agency officials as required under the Hazard Mitigation Grant Program.

Hereby granted this 2nd day of June, 2014 by a majority of a quorum of the Board of the Village of Coleman.

Dated: 6-2-2014

Signed: _____

Glenn Woulf
Glenn Woulf, Village President

Attest: _____

Julie Nosgovitz
Julie Nosgovitz, Village Clerk

VILLAGE OF CRIVITZ

RESOLUTION NO. 261

A RESOLUTION ADOPTING THE MARINETTE COUNTY, WISCONSIN, NATURAL HAZARDS MITIGATION PLAN.

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

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

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

NOW, THEREFORE BE IT RESOLVED, that the Village Board of the Village of Crivitz, Wisconsin, hereby adopts the *Marinette County, Wisconsin, Natural Hazards Mitigation Plan* as an official plan; and

BE IT FURTHER RESOLVED, that upon approval of the *Marinette County, Wisconsin, Natural Hazards Mitigation Plan*, the Bay-Lake Regional Planning Commission, on behalf of the Marinette County Emergency Management Department, will submit the adopted plan to Wisconsin Emergency Management and Federal Emergency Management Agency officials as required under the Hazard Mitigation Grant Program.

Adopted this 17 day of June, 2014.

OFFERED BY TRUSTEE

SECONDED BY TRUSTEE

Dick Kaminski
Shirley Keller

VOTE:

AYES: 4 NAYS: 0 ABSENT: 3

VILLAGE OF CRIVITZ
Marinette County, Wisconsin


John J. Deschane
President


Marilyn L. Padgett
Clerk/Treasurer

VILLAGE OF WAUSAUKEE

RESOLUTION No. 2014-04

Adoption of the

Marinette County, Wisconsin Natural Hazards Mitigation Plan.

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

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

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

NOW, THEREFORE BE IT RESOLVED, that the Village Board of Wausaukee, Wisconsin, hereby adopts the *Marinette County, Wisconsin Natural Hazards Mitigation Plan* as an official plan; and

BE IT FURTHER RESOLVED, that upon approval of the *Marinette County, Wisconsin Natural Hazards Mitigation Plan*, the Bay-Lake Regional Planning Commission, on behalf of the Marinette County Emergency Management Department, will submit the adopted plan to Wisconsin Emergency Management and Federal Emergency Management Agency officials as required under the Hazard Mitigation Grant Program.

Hereby granted this 19th day of May, 2014 by a majority of a quorum of the Village of Wausaukee Board.

VILLAGE OF WAUSAUKEE

BY: _____

Hilbert Radtke, Village President

ATTEST:

Toshia Ranallo, Village Clerk

Approved/Adopted:

6/16/2014

Vote: Ayes 7 Nays 0

Adoption of the Marinette County, Wisconsin Natural Hazards Mitigation Plan

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

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

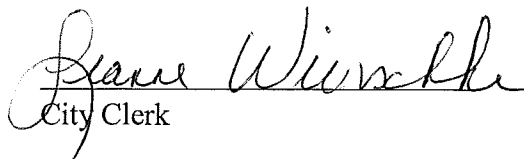
WHEREAS, an adopted all hazards mitigation plan is required as a condition of future grant funding for mitigation projects.

NOW, THEREFORE BE IT RESOLVED, that the Council of the City of Niagara, Wisconsin, hereby adopts the **Marinette County, Wisconsin Natural Hazards Mitigation Plan** as an official plan; and

BE IT FURTHER RESOLVED, that upon approval of the **Marinette County, Wisconsin Natural Hazards Mitigation Plan**, the Bay-Lake Regional Planning Commission, on behalf of the Marinette County Emergency Management Department, will submit the adopted plan to Wisconsin Emergency Management and Federal Emergency Management Agency officials as required under the Hazard Mitigation Grant Program.

Hereby granted this 28 day of May, 2014 by a majority of a quorum of the City Council of the City of Niagara.


Mayor


City Clerk

Village Of Pound

Resolution No. 2014-54

ADOPTION OF THE MARINETTE COUNTY, WISCONSIN NATURAL HAZARDS MITIGATION PLAN

WHEREAS, Village Of Pound recognizes the threat that natural hazards pose to people and property; and

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

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

NOW, THEREFORE BE IT RESOLVED, that the Board of Trustees of the Village Of Pound, Wisconsin, hereby adopts the ***Marinette County, Wisconsin Natural Hazards Mitigation Plan*** as an official plan; and

BE IT FURTHER RESOLVED, that upon approval of the ***Marinette County, Wisconsin Natural Hazards Mitigation Plan***, the Bay-Lake Regional Planning Commission, on behalf of the Marinette County Emergency Management Department, will submit the adopted plan to Wisconsin Emergency Management and Federal Emergency Management Agency officials as required under the Hazard Mitigation Grant Program.

EFFECTIVE DATE: The standards of this resolution shall be effective immediately upon passage and publication, as pursuant to law.

Hereby granted this *7th* day of *July*, *2014* by a majority of a quorum of the Board of Trustees of the Village Of Pound

Motion by: **Mary Meyer**

Seconded by: **Gerald Rogge**

Vote: Ayes: **5**

Naye: **0**

Abstentions: **0**

Absent: **0**

APPROVED: *Gerald Martens*
Gerald Martens – President

ATTEST: *Patricia Schutte*
Patricia Schutte - Clerk

Date of Acceptance: **July 7, 2014**

Date of Publication: **July 9, 2014**



FEMA

SEP 15 2014

Ms. Katie Sommers
State Hazard Mitigation Officer
Wisconsin Emergency Management
2400 Wright Street, P.O. Box 7865
Madison, WI 53707-7865

Dear Ms. *Katie* Sommers:

Thank you for submitting the adoption documentation for the Marinette County Hazard Mitigation Plan. The plan was reviewed based on the local plan criteria contained in 44 CFR Part 201, as authorized by the Disaster Mitigation Act of 2000. Marinette County met the required criteria for a multi-jurisdiction hazard mitigation plan. The Marinette County plan is effective as of May 16, 2014 and the plan is now approved for the villages of Coleman, Crivitz, Pound, and Wausaukee; and the cities of Marinette, Niagara, and Peshtigo. According to our records, all participating jurisdictions have now adopted the plan.

The approval of this plan ensures continued availability of the full complement of Hazard Mitigation Assistance (HMA) Grants. All requests for funding, however, will be evaluated individually according to the specific eligibility and other requirements of the particular program under which the application is submitted.

We encourage the communities to work with Marinette County to follow the plan's schedule for monitoring and updating the plan, and continue their efforts to implement the mitigation measures. The expiration date of the Marinette County Plan is May 16, 2019. In order to continue project grant eligibility, the plan must be reviewed, revised as appropriate, resubmitted, and approved no later than the plan expiration date.

Please pass on our congratulations to Marinette County for this significant action. If you or the communities have any questions, please contact Kirstin Kuenzi at (312) 408-4460 or Kirstin.Kuenzi@fema.dhs.gov.

Sincerely,

Christine Stack

Christine Stack, Director
Mitigation Division

Bay-Lake Regional Planning Commission

Commission Members

Brown County

Tom Sieber

Door County

Ken Fisher

Florence County

Edwin A. Kelley

Larry Neuens

Yvonne Van Pembroke

Kewaunee County

Eric Corroy

Bruce Heidmann

Robert Weidner

Manitowoc County

Chuck Hoffman

Dan Koski

Donald C. Markwardt, Vice-Chairperson

Marinette County

Alice Baumgarten

Cheryl R. Maxwell, Chairperson

Mary G. Meyer

Oconto County

Terry Brazeau

Dennis Kroll

Thomas D. Kussow

Sheboygan County

Mike Hotz

Ed Procek

Appointment Pending

Wisconsin Economic Development Corporation

CEO, Reed Hall

Staff

Richard L. Heath

Executive Director

Jeffrey C. Agee-Aguayo

Transportation Planner

Richard J. Malone

Office Accounts Coordinator

Angela M. Pierce

Natural Resources Planner

Brandon G. Robinson

Community Assistance Planner

Joshua W. Schedler

GIS Coordinator

