

SEWRPC Community Assistance Planning Report No. 332

OZAUKEE COUNTY HAZARD MITIGATION PLAN UPDATE: 2017-2022

Chapter 1

INTRODUCTION AND BACKGROUND

1.1 INTRODUCTION

In April 2017, the Southeastern Wisconsin Regional Planning Commission (SEWRPC) and the Ozaukee County Division of Emergency Management agreed to cooperatively prepare an update to the all hazards mitigation plan for Ozaukee County. The plan was designed to be consistent with the guidelines of the Wisconsin Department of Military Affairs, Division of Emergency Management (DMA, DEM), and the Federal Emergency Management Agency (FEMA).¹ The plan was directed to the “all hazards” mitigation approach which the Wisconsin Division of Emergency Management (WEM) and FEMA recommend as an alternative to single hazard mitigation planning. As such, the plan is consistent with the requirements and procedures defined in the Disaster Mitigation Act of 2000. The analysis includes three components: 1) profile and analysis of past hazard events, 2) inventory and vulnerability assessment of community assets, and 3) development of hazard mitigation strategies. Natural hazard conditions, which include flooding; Lake Michigan coastal hazards; severe weather conditions, including wind storms, tornadoes, periods of extreme heat or cold, and winter storms; and hazardous materials situations were specifically considered for the preparation of this hazard mitigation plan. While the plan considered all of the potential hazards, it must be recognized that only limited mitigated actions were feasible for some of these hazards, since they are not site-specific or repetitive in nature.

¹ *Federal Emergency Management Agency, State and Local Mitigation Planning How-to-Guide, “Understanding Your Risks: Identifying Hazards and Estimating Losses,” Publication No. FEMA 386-2, September 3, 2015; Federal Emergency Management Agency, Multi-jurisdictional Mitigation Planning, March 10, 2009; Federal Emergency Management Agency, Local Mitigation Planning Handbook, March 2013.*

The Disaster Mitigation Act of 2000² (DMA 2000) provides an opportunity for States, Tribes, and local governments to take a new and revitalized approach to mitigation planning. DMA 2000 amended the Robert T. Stafford Disaster Relief and Emergency Assistance Act by repealing the previous Mitigation Planning section (409) and replacing it with a new Mitigation Planning section (322). This new section emphasizes the need for State, Tribal, and local entities to closely coordinate mitigation planning and implementation efforts. Moreover, The Disaster Mitigation Act of 2000 requirements call for local hazard mitigation plans to be reviewed; updated to reflect changes in development, progress in local mitigation efforts, and changes in priorities; and reapproved every five years for local jurisdictions to be able to receive hazard mitigation funding.

The plan was developed as a multi-jurisdictional plan, covering Ozaukee County and all of the municipalities located within the County, including all of the Village of Newburg, which falls within both Washington and Ozaukee Counties. The mitigation planning requirements identified in 44 *Code of Federal Regulations*, Section 201.6 (44 CFR 201.6) call for all jurisdictions participating in a multi-jurisdictional hazard mitigation plan to participate in the planning process. Examples of participation include, but are not limited to, attending planning meeting; contributing research, data, or other information; and commenting on drafts of the plan.

The Ozaukee County Emergency Management Office initially applied for, and received, a hazard mitigation planning grant in 2003. In 2008, Ozaukee County and its municipalities adopted the original Ozaukee County All-Hazards Mitigation Plan. The Ozaukee County Flood Hazard Mitigation Plan,³ along with other County and municipal plans and ordinances, was used as reference material for the initial Ozaukee County hazard mitigation plan. The initial Hazard Mitigation Plan was approved as both a pre-disaster mitigation plan and a flood mitigation plan. In October of 2013, Ozaukee County updated and adopted the initial Hazard Mitigation Plan. Both the initial Plan and the Plan Update were prepared by Emergency Planning, Training and Exercise Consulting (EPTEC, Inc.). The participating municipalities included the Cities of Cedarburg, Mequon, and Port Washington; the Villages of Bayside, Belgium, Fredonia, Grafton, Newburg, Saukville, and Thiensville; and the Towns of Belgium, Cedarburg, Grafton, Port Washington, and Saukville. In preparing the updated plan, the County involved all appropriate County departments as needed. In addition, the planning was coordinated with the related activities of other concerned units and agencies of

² *Disaster Mitigation Act of 2000. Public Law 106-390, 114 Stat. 1552, October 30, 2000.*

³ *In December 1995, Ozaukee County completed a Flood Hazard Mitigation Plan, that plan was revised and finalized on September 10, 2001.*

government and was developed under the guidance of the Ozaukee County Hazard Mitigation Committee, which was created by the County specifically for plan development purposes and was comprised of elected and appointed officials, agency and business representatives, and citizens from throughout the County knowledgeable in hazard mitigation matters. Both plans were prepared under the requirements identified in 44 *Code of Federal Regulations*, Section 201.6 (44 CFR 201.6), The Disaster Mitigation Act of 2000.

In February 2018, Ozaukee County, in cooperation with its 16 municipalities (including the Village of Newburg) and the Southeastern Wisconsin Regional Planning Commission, began preparation of a third edition, making it the second update of the County's hazard mitigation plan. The participating municipalities include the Cities of Cedarburg, Mequon and Port Washington; the Villages of Bayside, Belgium, Fredonia, Grafton, Newburg, Saukville, and Thiensville; and the Towns of Belgium, Cedarburg, Fredonia, Grafton, Port Washington, and Saukville. The participating jurisdictions and their contributions to the planning effort are listed in **Table 1.1**. This updated plan was prepared by the staffs of the Ozaukee County Department of Emergency Management and the Southeastern Wisconsin Regional Planning Commission. In addition, the planning was coordinated with the related activities of other concerned units of government and was developed under the guidance of the Ozaukee County Hazard Mitigation Local Planning Team (LPT),⁴ which was formed by the County specifically for plan update development purposes and is comprised of elected and appointed officials; agency, business, and non-profit representatives; and citizens from throughout the County knowledgeable in hazard mitigation matters.

1.2 OVERVIEW OF STUDY AREA

Ozaukee County is located in Southeastern Wisconsin and bordered on its east by 26 miles of Lake Michigan coastline, on the north by Sheboygan County, on the west by Washington County, and on the south by Milwaukee County.

Ozaukee County was home to approximately 88,429 residents in 2017.⁵ It is the second-smallest county in the State, by land area, covering about 1,116 square miles. The County contains all or parts of three cities, seven villages, and six townships as shown on Map 1.1. There are parts of five watersheds and a total of 881 square miles of rivers, stream, and lakes within the County. Approximately 71,000 people reside in

⁴ For the development of the initial plan and the 2013 plan update, this group was referred to as the Ozaukee County Hazard Mitigation Committee and Workgroup. For the current plan update, the name of this group has been changed to reflect the current terminology used by FEMA.

⁵ Based on U.S. Census Bureau estimates.

incorporated cities and villages, while about 17,000 live in unincorporated towns. The majority of the population resides in the southern and central portions of the County, within the Cities of Cedarburg, Mequon and Port Washington. In addition, population centers are also found in the Villages of Belgium, Fredonia, Grafton, and Saukville.

Nonurban and agriculture are the primary land uses within the unincorporated parts of Ozaukee County. Ozaukee County values its rural character and farming tradition and is working to preserve farmlands with its Working Lands Initiative and through various conservation programs directed towards agricultural practices. The County also has some natural areas that will not be developed, streams and rivers, environmental corridors, light industry, residential, and business land uses. The impacts of urbanization from the greater Milwaukee metropolitan area are gradually affecting the County with incorporated areas of the County increasingly being developed for commercial and residential uses. With the impacts of urbanization and increase in population, hazard mitigation planning is an important topic for the County to address.

1.3 RELATIONSHIP OF HAZARD MITIGATION PLANNING TO EMERGENCY OPERATIONS PLANNING

The focus of this planning effort is on hazard mitigation measures. Such measures generally involve lasting, often permanent, strategies designed to reduce the exposure to, probability of, or potential loss from hazardous events. Such measures tend to focus on actions related to where and how to build structures, education to reduce losses or injury, and programs to improve the safety of identified hazard areas. A hazard mitigation plan outlines the strategy for mitigating the hazards potentially impacting a county or community.

The mitigation plan should be distinguished from, but compatible with, an emergency operations plan. An emergency operations plan is defined as a plan which describes how people and property will be protected in disaster and disaster threat situations; details who is responsible for carrying out specific actions; identifies the personnel, equipment, facilities, supplies, and other resources available for use in the disaster; and outlines how all actions will be coordinated. Numerous such plans have been developed at the jurisdictional level, and often involve mutual assistance and cooperation agreements between local units of government in adjoining municipalities, both within and outside of Ozaukee County. Plans for mitigating hazards are related to emergency operation activities involving short-term recovery decision-making, since such recovery activities may highlight prospects for implementation of a mitigation strategy aimed at reducing long-term risk to human life and property.

1.4 SCOPE AND PURPOSE OF PLAN

This plan updates the 2013 hazard mitigation plan which was an update of the initial 2008 County Hazard Mitigation plan. The scope of this plan is countywide, and is intended to set forth the most appropriate, feasible, and effective hazard mitigation strategy for Ozaukee County and the local units of government within the County. The plan complements, refines and focuses the *State Hazard Mitigation Plan of Wisconsin*⁶ on local conditions and hazards likely to occur or be experienced within Ozaukee County and Southeastern Wisconsin. The plan development process is intended to encourage innovative programming and leadership and to build constructive partnerships with local units of government, business, and other stakeholders with a shared interest and obligation in protecting the safety and economic stability of Ozaukee County, and to provide information and guidance to neighboring communities as they develop jurisdictional hazard mitigation plans at the local and subregional levels.

While it is acknowledged that the County can be affected by hazardous incidents that occur outside of the County jurisdiction, the degree of impact—in terms of property damage, injury and loss of life, and ability of the County to respond, is significantly limited, and frequently unquantifiable. Thus, while some hazards, such as weather-related events, can extend over a wide area, most affect Ozaukee County only tangentially, and many result in site specific impacts. Those that are site-specific in their impact may be best addressed within local level hazard mitigation plans and through local action. Nevertheless, where appropriate, areas of cooperation between jurisdictions have been noted, especially with respect to hazards such as flooding, which commonly affect entire river basins as well as the specific communities located within them. Generally, hazard mitigation and emergency response planning at the local and subregional levels are beyond the scope of this plan.

Development of the Ozaukee County Hazard Mitigation Plan and of subsequent updates was a collective effort involving a number of agencies, organizations, and business representatives. These efforts were conducted under the guidance of the Ozaukee County Local Planning Team which was created by the County specifically for plan development purposes. That group is comprised of elected and appointed officials and business representatives knowledgeable about, and directly involved in, hazard mitigation matters. The membership, formation, and active participation of the Local Planning Team is documented in **Appendix A** of this report. In addition to formation and active participation of the Local Planning Team, the development of the plan update included the following steps:

⁶*Wisconsin Emergency Management, State Hazard Mitigation Plan of Wisconsin, December 2016, amended January 2017.*

- Collation and review of all pertinent reports relating to the hazard mitigation activities in Ozaukee County
- Review of materials developed as a part of the multi-jurisdictional comprehensive planning process for Ozaukee County⁷
- Review and updating of hazard risk assessments
- Review of implementation activities completed or underway since the last plan update
- Inventory mapping and analysis of hazards pertinent to Ozaukee County
- Identification of the facilities and ongoing programs related to hazard mitigation
- Assessment of the vulnerability of the County assets to each hazard
- Identification, and prioritization, of needed facilities and programs
- Consideration of issues relating to neighboring municipalities and units of government likely to be affected or influenced by natural hazards within Ozaukee County
- Development and evaluation of alternatives to address the identified needs
- The development of plan recommendations and an implementation plan
- Development of a public informational and educational program and program of public consultation to guide the plan development and implementation program, including a prioritization of the recommended plan elements
- Adoption of a strategy for monitoring and refining the plan

⁷ SEWRPC *Community Assistance Planning Report No. 285, A Multi-Jurisdictional Comprehensive Plan for Ozaukee County: 2035, May 2008, amended April 2009.*

1.5 PLAN MAINTENANCE AND IMPLEMENTATION ACTIVITIES

Outreach Activities

Since the adoption of the initial hazard mitigation plan, local municipalities in Ozaukee County have conducted outreach activities to educate the public about emergency preparedness, including hazard mitigation. The most recent activities are summarized in [Table 1.2](#). The most common methods used by the communities include making information available through posting on the municipality's website and mailing or emailing periodic newsletters to residents. These methods have been used to distribute information on hazard awareness and preparedness related to topics such as flooding, winter weather awareness, tornado awareness, hazardous materials awareness, heat awareness, pandemic influenza, fire safety, and family preparedness. In recent years, local municipalities have also begun reaching the public through social media sites such as Facebook® and Twitter®. Throughout the County, residents can sign up to receive text message alerts through MyState USA public emergency notification system. Additionally, the Ozaukee County Division of Emergency Management, and municipal emergency responders meet on a quarterly basis with American Red Cross and other non-governmental organizations as part of their review process of plans pertaining to mass care. Ozaukee County continues to participate in public outreach efforts pertaining to flood mitigation efforts such as informing citizens about the National Flood Insurance Program (NFIP).

Implementation Activities

Since the adoption of the first update to the hazard mitigation plan (2013), Ozaukee County and the local municipalities have conducted several projects intended to implement recommendations of the plan. These projects are summarized in [Table 1.3](#). One implementation activity the County recently participated in was incorporating LiDAR into their GIS mapping systems for better digital terrain mapping to help with flood modeling and projections.

1.6 REVIEW OF PLAN DEVELOPMENT EFFORTS, PROCESS AND ADOPTION

As previously noted, the first edition of the Ozaukee County all hazards mitigation plan was prepared under the guidance of a Hazard Mitigation Committee comprised of elected officials from all of the incorporated communities within the County, as well as County businesses and agency representatives. That Committee met several times during the plan preparation period to incorporate input on the types of hazards to be considered, the appropriate mitigation strategies, and to review the draft report chapters with each report chapter then being refined to reflect the comments and recommendations of the Committee and other public, local officials, academia, and business and industry leaders.

The Ozaukee County Hazard Mitigation Committee reviewed past hazard events and a consensus was reached on the anticipated probability of future events as either “high,” “medium,” or “low.” After the draft plan review, the Committee selected potential mitigation projects based on a “high,” “medium,” or “low” priority. This plan followed the Disaster Mitigation Act of 2000, meaning that it was designed to be a “living” document that would be reviewed and updated every five years at a minimum.

The first update to the original Ozaukee County All Hazards Mitigation Plan (2013) was again prepared under the guidance of a Hazard Mitigation Committee. The Ozaukee County Division of Emergency Management completed (and regularly updated) the Ozaukee County Hazard Analysis. This Hazard Vulnerability Analysis (HVA) identifies likely natural and technological hazards that have occurred or may occur in the future within the County based on the State of Wisconsin’s HVA. The HVA served as the starting point for the first plan update along with historical events, recent news reports, local resources, and FEMA Region V mitigation survey, and knowledge of the local planning team members. Team members ranked their concern (likelihood of future occurrences and amount of disruption/damage should it occur) on a five-point scale of “very high,” “high,” “medium,” “low,” or “very low.” From those rankings, planning team members determined hazard mitigation strategies that might benefit their communities.

This 3rd Edition of the Ozaukee County Hazard Mitigation Plan was prepared under the guidance of a Local Planning Team comprised of representatives of all of the incorporated communities within the County⁸ including elected officials, law enforcement and fire personnel, engineering and public works departments, and planning departments. In addition, the Local Planning Team included representatives from utilities, a university and school districts. The Local Planning Team met four times during the plan update preparation period to provide input on the types of hazards to be considered, the appropriate mitigation strategies, and to review the draft report chapters. Those chapters were then refined to reflect the comments and recommendations of the Team (see Appendix A).

As draft chapters of this 3rd Edition of the plan were completed, copies were placed in downloadable form on the SEWRPC website and a webpage was available on which members of the public could ask questions and submit comments. Following completion of updates to the community profiles and the risk and vulnerability assessments sections of the plan and review of drafts of the corresponding chapters by the

⁸ Except the Village of Bayside, which is located in both Milwaukee and Ozaukee Counties, and is covered under the Milwaukee County hazard mitigation plan.

Local Planning Team, a public informational meeting was held to review these sections of the plan with local officials, business and industry, and citizens and solicit their input.

After this 3rd Edition of the plan was completed in draft form, an additional public informational meeting was held to review the draft plan with local officials, businesses and industry, and citizens. Copies of the draft plan were made available at the Ozaukee County Division of Emergency Management and on the SEWRPC website.

Following a finding by FEMA that the plan was approvable after adoption, the plan was brought to the Ozaukee County Board for adoption (a copy of the adopted resolution approving the plan is included in **Appendix B**). Copies of the plan were also sent to each of the local units of government requesting that they adopt the plan in order to retain future eligibility for mitigation funding for the FEMA Hazard Mitigation Grant, Flood Mitigation Assistance, and Pre-Disaster Mitigation programs administered by the Wisconsin DMA, DEM. In addition, County and SEWRPC staffs were available to meet with communities on an individual basis to review the plan update and consider adoption and implementation steps.

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TABLES

Table 1.1
Participation in the Ozaukee County All Hazards Mitigation Plan Update Planning Process

Civil Division	Attendance at Local Planning Team Meetings			Provision of Data ^a	Review of Report
	February 13, 2018	August 28, 2018			
Cities					
Cedarburg	--				
Mequon	--				
Port Washington	--				
Villages					
Bayside ^b					
Belgium	X				
Fredonia	X				
Grafton	--				
Newburg	X				
Saukville	--				
Thiensville	X				
Towns					
Belgium	--				
Cedarburg	X				
Fredonia	--				
Grafton	--				
Port Washington	--				
County					
Ozaukee County	X				
Other					
State of Wisconsin	X				
SEWRPC	X				
Mequon-Thiensville School District	X				
Ozaukee County Amateur Radio Emergency Service (OZARES)	X				
Ozaukee Washington Public Health	X				

Note: X indicates participation by at least one representative of the municipality or organization.

^a Provision of data includes providing information on hazards experienced, projects undertaken, and outreach efforts as well as sharing of relevant plans, reports, and concerns.

^b The Village of Bayside is covered under Milwaukee County's hazard mitigation plan.

Source: SEWRPC

Table 1.2
Outreach Activities by Local Communities in Ozaukee County Related To Hazard Mitigation

Community	Activity
Ozaukee County	County Website Twitter account Facebook page Department of Emergency Management webpage Department of Land and Water Management webpage – “Flood Protection” link Department of Land Information – “Interactive Map” link Email and text message information and alert system “Notify Me” Public alert emergency notification system County Police, Fire, and EMS Live audio radio online “Nextdoor” social networking service County meets with American Red Cross and other NGO’s as part of their planning efforts for mass care along with public health and human services County Fair safety and mitigation Emergency Preparedness Day OZARES (Ozaukee County Amateur Radio Emergency Service) and RACES (Radio Amateur Civil Emergency Service)
City of Cedarburg	City website Department of Emergency Management webpage Seasonal Newsletter “The Post” Facebook page Fire Department Twitter account Fire Department Facebook page Engineering and Public Works Facebook page
City of Mequon	City website “Hyper-Reach” emergency telephone notification system Fire Department Facebook page
City of Port Washington	City website Integrated Nowcast/Forecast Operation System Email alert system Seasonal email Newsletter Facebook page Fire Department Facebook page Police Department Facebook page Police Department Twitter account
Village of Bayside	Village website Monthly newsletter “Scene” Weekly email newsletter “Bayside Buzz” Weekly newsletter “Tuesday Talk” Email and text message information and alert system “Notify Me” Facebook page Twitter account
Village of Belgium	Village website Seasonal newsletter Facebook page
Village of Fredonia	Village website Quarterly Newsletter Twitter account
Village of Grafton	Village website E-newsletter Facebook page

Table continued on next page.

Table 1.2 (Continued)

Community	Activity
Village of Grafton (continued)	Twitter account Email and text message information and alert system "Notify Me"
Village of Newburg	Village website Board of Emergency Management Monthly Newsletter Fire Department Facebook page Police Department Facebook page
Village of Saukville	Village website Department of Emergency Management webpage Seasonal Newsletter Email and text message information and alert system "Notify Me" Facebook page Fire Department Facebook page Police Department Facebook page Department of Public Works Facebook page Twitter account
Village of Thiensville	Village website Department of Emergency Government webpage Seasonal Newsletter " <i>The Village Voice</i> " Email and text message information and alert system "Notify Me" Facebook page Twitter account
Town of Belgium	Town website
Town of Cedarburg	Town website Email notification of timely news and upcoming meetings E-Notify Seasonal Newsletters Cedarburg TV governmental access channel
Town of Fredonia	Town website Seasonal Newsletter
Town of Grafton	Town website Email and text updates River Monitoring link on town website
Town of Port Washington	Town website Seasonal Newsletters Facebook page
Town of Saukville	Town website

Source: Community websites, Ozaukee County, and SEWRPC

Table 1.3
Hazard Mitigation Activities in Ozaukee County: 2013-2018

Community	Project	Cost	Funding Source	Completion Date
Ozaukee County	Ozaukee Fish Passage Program. Ulao Creek, Little Menomonee River, and Mole Creek habitat enhancement and restoration projects helped to restore floodplains along the waterways which help with flood control	\$10.5 million	Ozaukee County Planning and Parks Department awarded over 10.5 million dollars in Federal, State, Local, and Private Funds for the various stream restoration projects throughout the County	2015-2017
	9-1-1 Emergency Medical Dispatch program training	\$56,000 ^a	Aurora Foundation (Aurora Medical Center- Grafton) Cities of Mequon and Cedarburg	2016
	Light Detection and Ranging (LiDAR) surveying program	--	Ozaukee County	2016-2017
	Flood Control Project- Buyout, 1.53 acre parcel (partnership with Town of Grafton)	\$222,075	FEMA, WEM, WDNR Municipal Flood Control Grant	2015
	Flood Control Project-Buyout, 0.5 acre parcel (partnership with Town of Grafton)	\$232,755	FEMA, WEM, WDNR Municipal Flood Control Grant	2017
City of Port Washington	Replacement of one Outdoor Warning Siren	--	City of Port Washington	2018
Village of Saukville	Replaced all 4 Outdoor Warning Sirens	\$20-25,000 ^b	Village of Saukville	2016

^a \$500.00 per dispatcher training

^b Per siren

Source: Ozaukee County Division of Emergency Management and SEWRPC

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MAPS

**Map 1.1
Civil Division Boundaries in Ozaukee County: 2018**

