

SUMMARY NOTES OF THE FEBRUARY 13, 2018 MEETING OF THE OZAUKEE COUNTY HAZARD MITIGATION PLAN LOCAL PLANNING TEAM

INTRODUCTION

The February 13, 2018 meeting of the Ozaukee County Hazard Mitigation Plan Local Planning Team was convened at the Ozaukee County Sheriff's Office at 1:10 p.m. The meeting was called to order by Scott Ziegler, Director of Ozaukee County's Division of Emergency Management. Attendance was taken by circulating a sign-in sheet.

In attendance at the meeting were the following individuals:

Local Planning Team Members

Scott Ziegler, Chair	Emergency Management Director, Ozaukee County
Megan A. Beauchaine, Secretary	Research Analyst, Southeastern Wisconsin Regional Planning Commission
Daniel Birenbaum	Fire Chief and Department of Public Works, Village of Belgium
Tom Czaja	OZARES-Ozaukee County Amateur Radio Emergency Service, Member
Paul Dondero	Staff, Concordia University of Wisconsin
Skip Douglas	OZARES-Ozaukee County Amateur Radio Emergency Service, Member
Jason Dzwiniel	Ozaukee County Administrator
Rachel Fellenz	Mequon-Thiensville School District, Executive Director of Student Services
Daniel Gellert	Emergency Management Deputy Director, Ozaukee County
Laura Herrick	Chief Environmental Engineer, Southeastern Wisconsin Regional Planning Commission
Terry Hoffman	WE Energies, Staff
John Koster	Director of Public Works, Town of Cedarburg
Andy LaFond	Director of Public Works, Village of Thiensville
Aaron Owens	Planner, Southeastern Wisconsin Regional Planning Commission
Sean Rausch	Disaster Response and Recovery Planner, Wisconsin Division of Emergency Management
Christina Richards	Land Information Coordinator, Ozaukee County
Patty Ruth	Emergency Preparedness Coordinator, Washington and Ozaukee Counties
Justin Schoenemann	Assistant City Administrator, City of Mequon
Ben Schliesman	Southeast Regional Director, Wisconsin Division of Emergency Management
Sarah Viera	Executive Director of Business Services, Mequon Thiensville School District
Dawn Wagner	Administrator, Village of Saukville
Patrick Wester	Assistant Fire Chief and Department of Public Works Director, Village of Belgium
Brian Weyker	Fire Chief, Village of Fredonia
Tom Zajdel	Volunteer Village Emergency Manager of Newburg, Ozaukee County

Mr. Ziegler welcomed the attendees to the meeting and thanked them for their participation. He then asked attendees to introduce themselves.

OVERVIEW OF HAZARD MITIGATION AND HAZARD MITIGATION PLANNING PROCESS

Mr. Ziegler introduced Megan Beauchaine, Research Analyst, Southeastern Wisconsin Regional Planning Commission (SEWRPC). Ms. Beauchaine briefly reviewed the meeting's agenda. She then introduced Sean Rausch, Disaster Response and Recovery Planner, Wisconsin Division of Emergency Management. At Ms. Beauchaine's request, Mr. Rausch presented an overview of hazard mitigation and the hazard mitigation planning process.

[Secretary's Note: A copy of Mr. Rausch's presentation is attached herein as Exhibit A.]

Related to discussion on elevating structures above the regulatory floodplain, Ben Schliesman asked what changes to flood insurance could a property owner expect if they choose to elevate their structure and get mapped out of the floodplain. Mr. Rausch noted that technically, the property owner would not be required to carry flood insurance if they were mapped out of the floodplain, although Wisconsin Emergency Management would still recommend they keep flood insurance. The flood insurance would be significantly less expensive than if they were still below the regulatory floodplain elevation. Mr. Rausch also noted that even if a building is raised above the regulatory floodplain, there would also need to be dry land access to the structure for emergency response purposes per Chapter NR 116 of Wisconsin Administrative Code.

BACKGROUND ON THE CURRENT EDITION OF THE OZAUKEE COUNTY HAZARD MITIGATION PLAN AND DEVELOPMENT OF THE PLAN UPDATE

Ms. Beauchaine presented a brief background on SEWRPC and its role in hazard mitigation planning. She then discussed the first update of Ozaukee County's hazard mitigation plan that was completed in 2013.

After discussion of the current edition of the County's plan, Ms. Beauchaine presented the main components that are developed as part of SEWRPC's hazard mitigation planning format. She also presented a tentative schedule for the current plan updating process. In addition, Ms. Beauchaine explained the main functions of the Local Planning Team in the plan development process.

[Secretary's Note: Ms. Beauchaine's presentation is attached herein as Exhibit B.]

HAZARD AND VULNERABILITY ASSESSMENT EXERCISE

Ms. Beauchaine introduced Aaron Owens from SEWRPC's staff and asked him to lead the hazard and vulnerability assessment exercise. Mr. Owens stated that as part of the hazard and vulnerability analysis for the plan, it will be necessary to decide which hazards will be addressed by the plan. He noted that a hazard and vulnerability assessment tool and instructions for completing the tool were included with the agenda for this meeting. He explained that the tool is a modified version of a tool developed by Kaiser Permanente for assessing the risks faced by healthcare facilities.

[Secretary's Note: A copy of the hazard and vulnerability assessment tool and the instructions for completing the tool are attached herein as Exhibit C.]

Mr. Owens asked the members of the Local Planning Team to complete the hazard and vulnerability assessment tool. He explained that the results of this exercise would be one of the factors used to determine which hazards are addressed by the hazard mitigation plan. Additionally, Mr. Owens asked the members of the Local Planning Team to note at the bottom of the exercise their community affiliation. He explained that the tool should be completed based on their experiences with the community they represent or reside in.

ADJOURNMENT

There being no further business, the meeting was adjourned at 2:40 p.m.

OZAUKEE CO. SUMMARY NOTES 02-13-2018 KICK OFF MEETING.DOC

500-1128

LKH/MAB/AWO

02/15/18, 02/16/2018

Exhibit A

Why Plan?
 Sean Rausch
 Disaster Response and Recovery Planner-Mitigation
 Ozaukee County Hazard Mitigation Kickoff Meeting
 February 13, 2018



What is Mitigation?

According to the Federal Emergency Management Agency (FEMA):

“Mitigation is any sustained action taken to eliminate or reduce the long-term risk to human life and property from natural and technological hazards”




Why Do We Mitigate?

Nationwide

- \$8 billion per year in flood damages
- Costs continue to rise
- People continue to build and live in high-risk areas



In Wisconsin

- \$3 billion in disaster-related damages last 3 decades



Why Do We Mitigate?

- Disasters cost society too much
- State and federal aid insufficient
- To prevent future damages
- Decrease impact and speed response and recovery process

Mitigation happens at the local level!

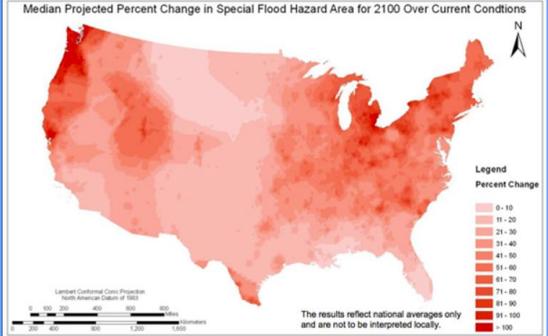



Break the Cycle



Why Do We Mitigate?

Median Projected Percent Change in Special Flood Hazard Area for 2100 Over Current Conditions



Legend
 Percent Change

- 0 - 10
- 11 - 20
- 21 - 30
- 31 - 40
- 41 - 50
- 51 - 60
- 61 - 70
- 71 - 80
- 81 - 90
- 91 - 100
- > 100

The results reflect national averages only and are not to be interpreted locally.

Exhibit A



Value of Mitigation




For every \$1 spent on mitigation, \$6 is saved in future damages.
(National Institute of Building Sciences – 2018)



Mitigation Planning





Disaster Mitigation Act of 2000

- Public Law 106-390, 10/30/2000 established national hazard mitigation program
- Vision:
 - Reduce disaster losses through pre-disaster mitigation planning by pre-identifying cost-effective mitigation.
 - Mitigation planning would then streamline and speed up the recovery process.
- State, local, tribal planning
- Describe actions to mitigate hazard impacts and establish a strategy to implement those actions
- Pre-identify projects to ensure a comprehensive approach to hazard impact reduction



Local/Tribal Planning

- Components
 - Planning Process
 - Risk Assessment
 - Mitigation Strategy
 - Plan Maintenance
 - Plan Review
 - Plan Adoption
- Options
 - Stand-alone plan
 - **Countywide**, tribal, watershed, regional, etc.
 - Integration with other planning

All plans must be updated every 5 years!



Comprehensive Planning

- Issues and Opportunities
- Housing
- Transportation
- Utilities and Community Facilities
- Agricultural, Natural, and Cultural Resources
- Economic Development
- Intergovernmental Cooperation
- Land Use
- Implementation



Benefits of Pre-Disaster Planning

- All-hazards planning
- Support other goals of the community
- Identify and prioritize mitigation projects
- Identify and pursue sources of technical and financial assistance
 - Ex. FEMA HMA grants, DNR Municipal Flood Control
- Fewer constraints on time and resources vs. post-disaster
- Gain public and political support.
- Involve and educate citizens
- Bring local partners together



Darlington, WI

Exhibit A



Planning Tools and Resources

- <http://emergencymanagement.wi.gov/mitigation>
- <http://www.fema.gov/hazard-mitigation-assistance>
- <https://www.fema.gov/hazard-mitigation-planning>
- Resource Guide to All Hazards Mitigation Planning – April 2003
- State of Wisconsin Hazard Mitigation Plan
- FEMA How-To Guides (386-1 through 386-9) – <http://www.fema.gov/media-library/collections/6>



Hazard Mitigation Assistance (HMA) Programs



- Hazard Mitigation Grant Program
- Pre-Disaster Mitigation Program
- Flood Mitigation Assistance Program



Examples of Mitigation



Acquisition/Demolition



Communities acquire land, demolish structures, and deed restrict the land to open space in perpetuity.

Images from Gays Mills, WI



Elevation



Elevation raises a structure out of the floodplain.

Images from Soldiers Grove, WI



Floodproofing



Any combination of structural techniques that reduce or prevent flood damage to the structure or its contents.

Images from Darlington, WI

Exhibit A

Stormwater Retention/Detention



Detention/retention ponds can store storm water runoff, decreasing flash flooding in urban areas.

Image from Oshkosh, WI

Stormwater



Stream restoration allows watersheds to better manage flooding.

Image from Thiensville, WI

River Warning Systems



River warning systems installed on conservation dams to warn county officials about expected dam breaching.

Images from Vernon County

Community Safe Room



Community safe rooms built to FEMA P-361 standards can withstand winds up to 250 MPH.

Image from Town of Dunn, WI

Other Projects

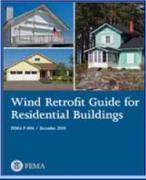
- Raise appliances and utilities
- Install back-flow valves
- Retrofit for wind resistance
- Education and public awareness
- Insurance (flood and sewer backup)
- Land-use planning



NOAA Weather Radios



Mobile Home Tie-Downs



Wind Retrofit Guide for Residential Buildings



Proper Landscaping

Benefits of Mitigation

- Protect the health and safety of citizens
- Preserve or expand tax base
- Attract or retain business/industry
- Revitalize an area
- Enhance recreation & tourism – parks, trails, etc.
- Increase community pride & improve quality of life
- Save tax dollars



Bayfield County, WI



Eau Claire, WI

Exhibit A



Questions?

Contacts:

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Margaret Zieke
Disaster Response & Recovery Planner
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margaret.zieke@wisconsin.gov

Sean Rausch
Disaster Response & Recovery Planner
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Email: DMAWEMHazardMitigation@wisconsin.gov

Exhibit B

**OZAUKEE COUNTY HAZARD MITIGATION PLAN UPDATE
KICK OFF MEETING
February 13, 2018**



**Megan Beauchaine, Research Analyst
Southeastern Wisconsin Regional Planning Commission**

**Aaron Owens, Planner
Southeastern Wisconsin Regional Planning Commission**

**Sean Rausch, Disaster Response and Recovery Planner
Wisconsin Division of Emergency Management**




DOEM #2-40339

Southeastern Wisconsin Regional Planning Commission (SEWRPC)



- 1960
- Kenosha, Milwaukee, Ozaukee, Racine, Walworth, Washington, Waukesha
- Work with State and Federal agencies on behalf of local government
- Supported by Federal, State, and Local Taxes
- Largest
 - 35% of State's Population
 - Most Urbanized
 - Largest Budget
- Focus goes beyond community boundaries

Southeastern Wisconsin Regional Planning Commission (SEWRPC)

4 Major Divisions:

- Transportation
- Environmental
- Land Use
- **Community Assistance** and Economic Development
 - Hazard Mitigation Planning



SEWRPC: Hazard Mitigation Planning

These plans fulfill requirements set forth by

- Wisconsin Department of Military Affairs
 - Division of Emergency Management (WEM)
- Federal Emergency Management Agency (FEMA)




Ozaukee County's Previous Hazard Mitigation Plans

- Original Plan 2008
 - FEMA-approved Flood Mitigation plan tied in with All-Hazards Mitigation Plan
- Updated in 2013
 - EPTEC, Inc.





2013 Hazard Mitigation Plan Update Review

- Ozaukee County EM Department applied for AND received assistance from HMGP to update existing plan in 2011
- Coordinated County Comprehensive Emergency Plan v.2 (CEMP) and Ozaukee County Public Health HVA update



Exhibit B

2013 Hazard Mitigation Plan Update (Cont.)

- 2013 Plan Assessed and Presented
 - Profile and Analysis of **Past Hazardous Events**
 - Assessment of Vulnerability of Community Assets
 - Mitigation Strategies and Goals
 - Methods for Building Community Support
- Conducted Hazard Vulnerability Analysis (HVA)
- In Conjunction with other County Plans and Ordinances
- Report published in 2013

2013 Hazard Mitigation Plan Update (Cont.)

Planning Components:

- Background
 - Planning efforts
 - Physical and demographic characteristics
- Hazard Identified
 - Physical Characteristics
 - Frequency of Occurrence
 - Vulnerability
 - Hazard Mitigation Strategies
- Appendices
 - Maps
 - Plan Adoption
 - Summary of Mitigation Strategies (Tabular format)
 - Report on PREVIOUS Mitigation Strategies
 - HAZUS- Flood Analysis for Ozaukee Co.
 - Supporting Documentation

2013 Hazard Mitigation Plan Update (Cont.)

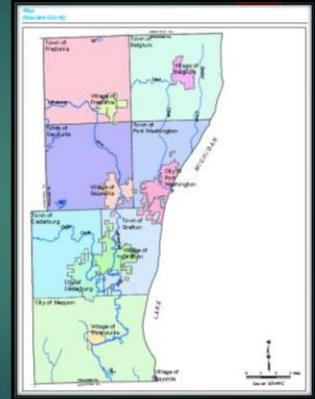
- Hazards Identified in 2013 Plan:
 - Coastal Erosion
 - Drought and Dust Storms
 - Earthquakes
 - Flooding and Dam Failure
 - Fog
 - Forest and Wildfire
 - Landslide
 - Severe Temperatures
 - Storms
 - Hail, Lightning, Thunderstorms,
 - Tornadoes and High Winds, Winter
 - Utility Failure



2013 Hazard Mitigation Plan Update (Cont.)

2013 Adoption/Participating Jurisdictions:

- **Cities**- Cedarburg, Mequon, and Port Washington
- **Villages**- Bayside, Belgium, Fredonia, Grafton, Newburg, Saukville and Thiensville
- **Towns**- Belgium, Cedarburg, Grafton, Port Washington and Saukville
- **County** October, 2013



Plan Components for The Ozaukee County Hazard Mitigation Plan Update

1. Introduction and Background
2. Description of Study Area
3. Analysis of Hazard Conditions
4. Hazard Mitigation Goals and Objectives
5. Hazard Mitigation Strategies
6. Plan Adoption, Implementation, Maintenance, and Revision

Plan Components

1. Introduction and Background

- Discussion of the Planning Process and Efforts
- Overview of Study Area
- Hazard Mitigation Planning Vs. Emergency Operations Planning
- Scope and Purpose of Plan
- Plan Maintenance and Implementation Activities
 - Studies or Local Planning Efforts Since Last Update

Exhibit B

Plan Components

2. Description of Study Area

- Demographic
- Surface Waters
- Transportation
- Public Facilities
 - Police facilities
 - Fire facilities
 - EMS facilities
- Related Regulations and Programs
- Lake Michigan Shoreline Hazard Areas
- Land Use
- Flood Hazard Areas
- Utility Systems
- Critical Community Facilities
- Hazardous Material Use and Storage
- Emergency Operation Planning
- Historic Sites

Ozaukee County Maps

GENERALIZED LAND USE



SURFACE WATERS, WETLANDS, AND FLOODPLAINS



Plan Components

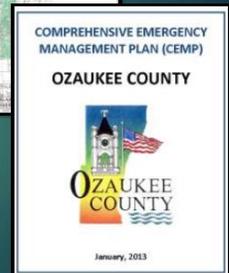
3. Analysis of Hazard Conditions

- Hazard Identification and Mapping
- Vulnerability and Risk Analysis for Each Covered Hazard
 - Historical and Recent Events
 - Vulnerability and Community Impacts Assessment
 - Human lives, Property Damages, Crop Damages
 - Potential for Future Changes in Hazard Conditions
 - Multijurisdictional Aspects

Plan Components

4. Hazard Mitigation Goals

- Express What the Plan is Trying to *Achieve*- Main Objectives
- Ties this Plan to Other Active Plans
 - e.g. The County Comprehensive Emergency Plan (January, 2013) and the Multi-Jurisdictional Comprehensive Plan for Ozaukee County: 2050 (SEWRPC, starting 2018)



Plan Components

5. Hazard Mitigation Strategies

- Develop a Range of Actions and Projects to **Reduce** the Impacts of Each Hazard
 - Structural, Nonstructural, Educational Outreach
- Prioritize Actions for Implementation
- Identify Responsible Parties
- Examine **Costs and Benefits**
- Consider Multi-Jurisdictional Aspects



<https://www.co.ozaukee.wi.us/222/Emergency-Management>

Plan Components

6. Plan Adoption, Implementation, Maintenance, and Revisions

- Detail Available Funding and Technical Assistance
- Monitoring of Plan Implementation
- Table of Mitigation Measures and Implementation Assignments
- County and Incorporated Municipalities *Must* Formally Adopt the Plan
 - **Towns** are Covered by County Adoption

Exhibit B

Local Planning Team Role

- Review Draft Chapters of the Plan
- Weigh in on hazard identification
- Help us get needed information
 - Recent and historical problems with hazards → Location, occurrence, damages
 - Recent projects, planned and contemplated projects, recent hazard-related outreach
 - Inventory data

Key Dates (*all tentative*)

Task	Estimated Completion Date*
Update Planning Team Membership	October 31, 2017
Survey Designated Management Agencies Regarding Status of Implementation of Original Plan	On Going
Kickoff Planning Team Meeting	February 2018
Public Participation	February 2018 through March 2020
Planning Team Meeting (Review Chapter 1 Introduction and Background and Chapter 2 Study Area Inventory)	Summer 2018
Planning Team Meeting (Review Chapter 3 Analysis of Hazard Conditions and Chapter 4 Hazard Mitigation Goals)	Spring 2019
First Public Meeting – Introduction to Hazard Mitigation Planning and Review of Chapters 1-4	Spring 2019
Planning Team Meeting (Review Chapter 5 Hazard Mitigation Strategies and Chapter 6 Plan Adoption, Implementation, Maintenance, and Revision)	Winter 2020
Second Public Meeting – Review Draft Report	Spring 2020
Submit Draft Plan Update to Wisconsin Division of Emergency Management for Review	April 1, 2020
Revise Plan Based on State Review	May 2020
Submit Final Plan Update to the Federal Emergency Management Agency for Approval Pending Adoption	May 31, 2020
Formal Adoption by County and Municipalities	July 31, 2020
Anticipated Period of Performance Deadline	August 30, 2020

*Estimated completion dates assume a one year extension approval by FEMA.
NOTE: The 2013 Hazard Mitigation Plan expires 10/18/2018 per WEM.

Hazard Mitigation Goals

- To preserve life and minimize the potential for injuries or death.
- To preserve and enhance the quality of life throughout Ozaukee County by identifying potential property damage risks and recommending appropriate mitigation strategies to minimize potential property damage.
- To promote County-wide planning that avoids transferring the risk from one community to an adjacent community, where appropriate.
- To identify potential funding sources for mitigation projects and form the basis for FEMA project grant applications.

Project Web Site

<http://www.sewrpc.org/SEWRPC/communityassistance/Hazard-Mitigation-Planning.htm>

- Agendas and other meeting materials
- Summary notes from meetings
- Presentations
- Draft chapters as they are completed
- Comment screen
- Other ways to send a comment:
 - mbeauchaine@sewrpc.org
 - 262.953.4286

Project Web Site (cont.)



Exhibit B



Attachment 4
HAZARD AND VULNERABILITY ASSESSMENT TOOL
OZAUKEE COUNTY HAZARD MITIGATION PLAN UPDATE

EVENT	FREQURABILITY Likelihood This Will Occur	SEVERITY - (MAGNITUDE - MITIGATION)			
		HUMAN IMPACT	PROPERTY IMPACT	BUSINESS AND AGENCY IMPACT	
		Possibility of Death or Injury	Physical Losses and Damages	Interruption of Services	
PREPAREDNESS	Pre-planning				
SCORE	0 = N/A 1 = Low 2 = Moderate 3 = High	0 = N/A 1 = Low 2 = Moderate 3 = High	0 = N/A 1 = Low 2 = Moderate 3 = High	0 = N/A 1 = Low 2 = Moderate 3 = High	0 = N/A 1 = High 2 = Moderate 3 = Low or none
1. Riverine flooding					
2. Stormwater flooding					
3. Lake flooding					
4. Tornado					
5. Thunderstorm					
6. High straight-line wind					
7. Lightning					
8. Hail					
9. Heavy snow storm					
10. Sizzard					
11. Ice storm					
12. Extreme cold					
13. Extreme heat					
14. Drought					
15. Fog					
16. Dust storm					
17. Lake Michigan Emission					
18. Earthquake					

Exhibit C

INSTRUCTIONS FOR COMPLETING HAZARD VULNERABILITY AND ASSESSMENT TOOL

The purpose of this Hazard Vulnerability and Assessment Tool is to evaluate the potential that specific hazards may occur, the likely severity of impacts resulting from these hazards, and the extent to which these impacts may be mitigated by current levels of preparedness. The tool uses estimates of probability of occurrence, likely severity of impacts, and level of preparedness to estimate the risk posed by each hazard.

Please address all of the potential threats that are listed. Instructions for completing entries in each column are given below.

Probability

For each of the listed hazards, please indicate the likelihood that it will occur, with 1 indicating a low probability of occurrence, 2 indicating a moderate probability of occurrence, and 3 indicating a high probability of occurrence. Issues to consider for probability include, but are not limited to:

- Known risk,
- Historical data and experience, and
- Local government or agency experience.

Human Impacts

For each of the listed hazards, please indicate what you consider to be the likely level of impacts to human life if the hazard occurs, with 1 indicating a low level of impacts, 2 indicating a moderate level of impacts, and 3 indicating a high level of impacts. Issues to consider for human impacts include, but are not limited to:

- Potential of the hazard to cause death, and
- Potential of the hazard to cause injury requiring medical treatment.

Property Impacts

For each of the listed hazards, please indicate the likely level of physical losses and damages to property if the hazard occurs, with 1 indicating a low level of losses and damages, 2 indicating a moderate level of losses and damages, and 3 indicating a high level of losses and damages. Issues to consider for property impacts include, but are not limited to:

- The potential of the hazard to cause damage to property or crops,
- The cost to replace damaged property,
- The cost to set up a temporary replacement for damaged property,
- The cost to repair damaged property, and
- The time to recover from the property damage.

Business and Government Agency Impacts

For each of the listed hazards, please indicate what the likely level of impacts to the operations of businesses and government agencies is if the hazard occurs, with 1 indicating a low level of impacts, 2 indicating a moderate level of impacts, and 3 indicating a high level of impacts. Issues to consider for business impacts include, but are not limited to:

- Business or agency interruption,
- Employees unable to report to work,
- Customers or clients unable to reach facility,
- Company or agency in violation of contractual agreements,
- Imposition of fines and penalties or legal costs,
- Interruption of access to critical supplies,
- Interruption of product or service distribution,
- Financial impact or burden, and
- Interruption of critical care and emergency services.

Exhibit C

Preparedness

For each of the listed hazards, please indicate the current level of preparedness for dealing with the hazard and its impacts, with 1 indicating a high level of preparedness, 2 indicating a moderate level of preparedness, and three indicating a low level of preparedness or no preparedness. Issues to consider for preparedness include, but are not limited to:

- The status of current plans that address the hazard,
- The frequency of drills that address the hazard,
- The status of training related to the hazard and its impacts,
- Insurance,
- The availability of back-up systems, and
- The availability of community resources.

This survey will be compiled and the results will be reported during the hazard identification phase of developing or updating the hazard mitigation plan.

Exhibit C

Attachment 4

**HAZARD AND VULNERABILITY ASSESSMENT TOOL
OZAUKEE COUNTY HAZARD MITIGATION PLAN UPDATE**

EVENT	PROBABILITY	SEVERITY = (MAGNITUDE - MITIGATION)			
		HUMAN IMPACT	PROPERTY IMPACT	BUSINESS AND AGENCY IMPACT	PREPAREDNESS
		<i>Likelihood This Will Occur</i>	<i>Possibility of Death or Injury</i>	<i>Physical Losses and Damages</i>	<i>Interruption of Services</i>
SCORE	0 = N/A 1 = Low 2 = Moderate 3 = High	0 = N/A 1 = Low 2 = Moderate 3 = High	0 = N/A 1 = Low 2 = Moderate 3 = High	0 = N/A 1 = Low 2 = Moderate 3 = High	0 = N/A 1 = High 2 = Moderate 3 = Low or none
1. Riverine flooding					
2. Stormwater flooding					
3. Lake flooding					
4. Tornado					
5. Thunderstorm					
6. High straight-line wind					
7. Lightning					
8. Hail					
9. Heavy snow storm					
10. Blizzard					
11. Ice storm					
12. Extreme cold					
13. Extreme heat					
14. Drought					
15. Fog					
16. Dust storm					
17. Lake Michigan Erosion					
18. Earthquake					
19. Contamination or loss of water supply system					
20. Wildfire					
21. Dam failure					
22. Landslide					
23. Land subsidence					
Other Hazard Event (write in):					
Other Hazard Event (write in):					
AVERAGE SCORE	--	--	--	--	--

RESPONDENT AFFILIATION: _____

Source: Kaiser Permanente and SEWRPC.