

Southeastern Wisconsin **Regional Planning Commission**



Local Planning Team Meeting

Kenosha County
Hazard Mitigation Plan Update

March 15, 2023

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➤ Introduction

➤ Meeting Agenda

➤ Draft Chapters 1-3 Review

➤ County/Community Projects and Implementation Activities (LPT Input)

➤ Questions/Adjourn





Chapter 1

Introduction and Background



➤ Introduction

- Plan Requirements
 - Stafford Act, Title 44 CFR Sec. 201
 - Must be updated every 5 years
 - ❖ Eligible for Federal grant funds (BRIC, HMGP, etc..)
- 4th Edition, updates 2017 plan
- Hazards Addressed
 - Natural Weather Hazards

➤ Overview of Study Area

- Kenosha County - Map 1.1



➤ Relation to Other Plans or Ordinances

- Table 1.1
- Plans
 - Emergency Management
 - Stormwater Management
- Ordinances
 - General Zoning
 - Floodland Zoning
 - Shoreland/Wetland Zoning

➤ Scope and Purpose of Plan Update

- Plan Participation
 - Meeting Attendance, Data/Research, Plan Review
- Table 1.2, Appendix A



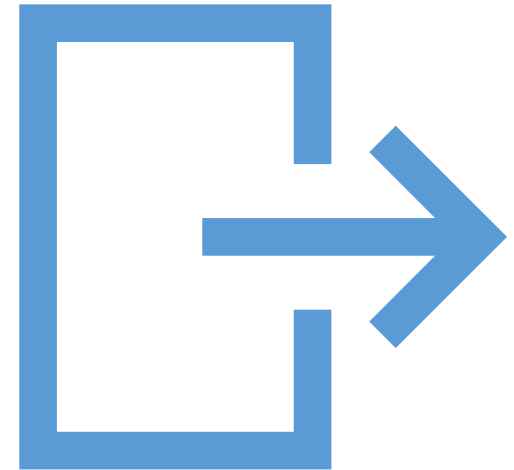
➤ Plan Maintenance and Implementation

- Outreach Activities – Table 1.3
 - Websites/Social Media
 - Newsletters/Brochures
 - Email/Text Notifications
- Implementation Activities – Table 1.4
 - Stormwater Management Plans
 - Storm Sewer Rehabilitation
 - Fox River Flood Mitigation Program



Plan Adoption

- To Receive FEMA Approval, **All Jurisdictions** (Participants) Must Adopt Plan with Documentation Proving So
- **Towns** Fall under County Adoption





Chapter 2

Basic Study Area Inventory and Analysis



➤ **Population** (Table 2.2)

- 2020 – 169,151
- 2050 – 251,100 (48% increase)

➤ **Households** (Table 2.3)

- 2020 – 66,842
- 2050 – 100,900 (51% increase)

➤ **Employment** (Table 2.4)

- 2020 – 84,636
- 2050 – 102,700 (21% increase)

➤ **Equalized Value** (Table 2.5)

- 2022 - \$22.2 Billion



➤ **Existing Land Use - 2020** (Map 2.1, Table 2.6)

- 25% urban uses
 - Residential – 49% of urban land uses
 - ❖ Manufactured homes – 2,099 in 2021 (map 2.2)
- 75% non-urban uses
 - Agriculture – 60% of non-urban land uses
 - Surface waters, floodplains, Lake Michigan coastline
 - ❖ 110 miles of major streams, 4 watersheds (Des Plaines, Fox, Pike, Root)
 - ❖ 20 major lakes of 50 acres or more
 - ❖ Floodplains – 20,193 acres
 - ❖ Lake Michigan coastline – 15.4 miles

➤ **Planned Land Use - 2050** (Map 2.3, Table 2.7)

- SEWRPC VISION 2050
- Urban land uses to increase by 21%



➤ **Emergency Services** (Map 2.4, Appendix C)

- Fire and Rescue
- Law Enforcement

➤ **Critical Community Facilities** (Map 2.5, Appendix C)

- Hospitals/Clinics
- Schools
- Government Facilities
- Assisted Living
- Childcare





Wisconsin Initiative on Climate Change Impacts

Nelson Institute for Environmental Studies | Wisconsin Department of Natural Resources

Working Groups ▾

Trends and Projections

Impacts and Adaptation

Education and Outreach

➤ WICCI Data

➤ Trends and Projections

- Online, 2011 and 2021 Data/Maps
- 1950-2018: Trends
- 2041-2060: Projections
- **Figures 2.1-2.4**

➤ Impacts to Each Hazard

- Flooding and Extreme Temps





Chapter 3

Analysis of Hazard Conditions



Chapter 3 Overview:

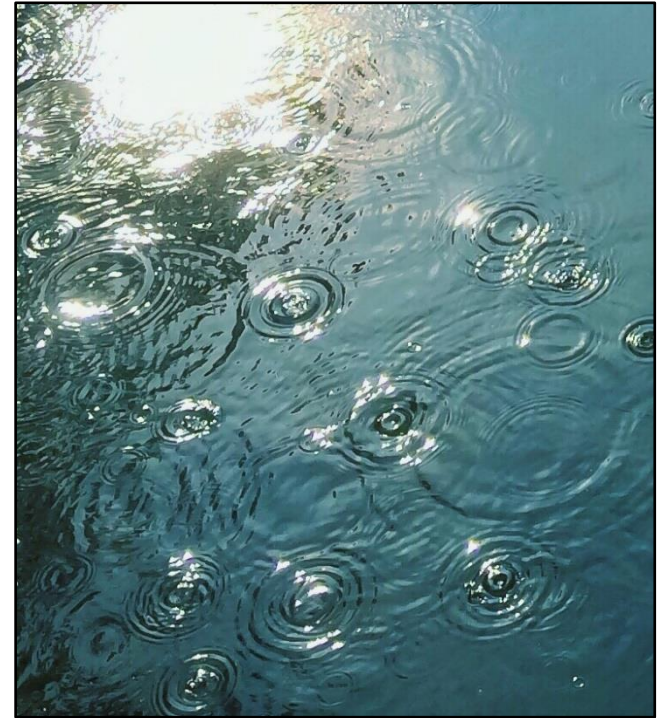
Hazard Identification Process:

- Summary and Results of HVA (Table 1.1)
- Hazard Rankings (Table 3.2)

Description of Risk Analysis

Hazard Vulnerability and Risk Assessment Profiles:

- Tornadoes
- Flooding
- Severe Weather
- Extreme Heat and Cold
- Lake Michigan Coastal Hazards
- Winter Storms
- Drought



- Definition and Description of Each Hazard
- Description of Notable Events that Have Affected the County
 - "Recent Events"
- Assessment of Vulnerabilities to the Hazard and it's Impact on Community and/or Community Assets
 - "Vulnerability and Community Impact Assessment"
- Description of Potential Future Changes in Impacts due to the Changing Climate
 - "Future Changes and Conditions"
- Discussion of Any Differences Among Communities at Risk
 - "Multi-Jurisdictional Risk Management"



1. Tornadoes



➤ Fujita Scale

- Table 3.6

➤ Watches/Warnings (2001-2021)

- Table 3.5
- 44 watches, 14 warnings

➤ Recent Events (2001-2021)

- Table 3.7
- 2008, 2010
- \$30.4 million damages
- 0 deaths, 15 injuries

➤ Vulnerability/Impact Assessment

- Unpredictable
- Uniform risk



2. Flooding



- 110 Miles Major Streams
- 4 Major Watersheds
- 20 Major Lakes
- 20,193 Acres Of 1-Percent Floodplain



2. Flooding (cont.)

➤ Types of Flooding Concerns

- Riverine
- Stormwater Drainage
- Dam Failure
 - DNR Dam Inventory (Map 3.3, Table 3.9)
 - ❖ 21 dams in County
 - ❖ 2 with "High" hazard potential, 3 with "Significant" hazard potential
- Agricultural
 - 4,516 acres of ag land in 1-percent floodplain
 - \$38.4 million in damages (2021 dollars) from 1950 - 2021

➤ Recent Events (Table 3.10)

- 23 flood events 2011 – 2021
- Over \$5 million in damages (2021 dollars)
- 2017 – Significant flooding on Fox River in Town of Wheatland and Village of Salem Lakes



2. Flooding (cont.)

➤ Vulnerability and Community Impact Assessment

- Parcel-Based Loss Analysis (Table 3.11)
 - ❖ 286 structures in 1-percent floodplain
 - ❖ \$5.7 million – estimated damages for a 1-percent probability flood
 - ❖ No emergency service structures or critical community facilities located in 1-percent floodplain
- Communities with Special Flood Considerations (Table 3.12)
 - ❖ Structures in 1-percent floodplain
 - ❖ Repetitive loss properties
 - ❖ Substantial agricultural flood damages
 - ❖ Localized stormwater drainage problems





3. Severe Weather (Thunderstorm-Related)

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➤ Thunderstorm-Related Problems

- Thunderstorm Winds
- Non-Thunderstorm High Winds
- Hail
- Lightning

➤ Recent Events (2011-2021)

- Table 3.13
- 94 severe weather events
- Over \$860,000 in damages (2021)
- 2 deaths, 2 injuries



➤ Vulnerability and Community Impact Assessment

- Uniform risk



4. Extreme Temperatures

➤ Extreme Heat

- Heat Index (HI)
 - ❖ Figure 3.2, Table 3.15
- Recent Events (2011-2021)
 - ❖ Table 3.16
- Heat Vulnerability Index
 - ❖ Figure 3.3

➤ Extreme Cold

- Wind Chill Index
 - ❖ Table 3.17
- Recent Events (2011-2021)
 - ❖ Table 3.18
 - ❖ 3 deaths



5. Lake Michigan Coastal Hazards

➤ Types of Lake Michigan Coastal Hazards

- Erosion of coastal bluffs, beaches, and near shore lake beds
- Coastal flooding
- Damage and failure of shoreline protection structures

➤ Lake Level Fluctuations

- Hazard problems most evident during high water periods
 - ❖ 2019 levels approached record high (1986)
 - ❖ Lake still about 13 inches above long-term average in November 2021

➤ Vulnerability and Community Impact Assessment

- Maps 3.9 – 3.15, Tables 3.19 – 3.21
- Village of Somers – unstable or failing bluffs
- City of Kenosha – shoreline recession
- Village of Pleasant Prairie – shoreline recession and coastal flooding



6. Severe Winter Storms

➤ Different Winter Related Phenomena (NWS)

- Heavy Snowfall
- Blizzard
- Ice Storm
- Freezing Rain
- Sleet
- Wind Chill (Covered in Extreme Cold Hazard)

➤ Recent Events (2011-2021)

- Table 3.22
- 94 events
- 0 deaths, 8 injuries

➤ Vulnerability and Community Impact Assessment

- Uniform risk



7. Drought

➤ Drought Definitions

- Meteorological Drought
- Hydrological Drought
- Agricultural Drought
- Socioeconomic Drought

➤ Palmer Drought Severity Index

- Figures 3.6 and 3.7

➤ Recent Events (2011- 2021)

- Table 3.23
- Over \$1.1 million (2021 dollars) in crop damages

➤ Vulnerability and Community Impact Assessment

- Agricultural



➤ www.sewrpc.org/HMP

- Agendas and other meeting materials
- Summary notes from meetings
- Presentations
- Draft chapters as they are completed
- Comment Screen
 - Or email to cparisey@sewrpc.org

➤ **LPT Review Comments for Chapters 1-3 until 4/14/23**

➤ **1st Public Meeting – following today's meeting**





Hazard Mitigation Activities and Projects

Examples:

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- Flooding/Stormwater (only stormwater projects completed to relieve flooding problems)
- Planning Activities
- Buyouts, demolition of damaged structures, flood proofing of structures
- New construction of dams, levees, channels, bridge/culvert replacements, pump stations, etc.
- Floodplain studies, stormwater management plans, etc.
- Severe weather training
- Channel clearing/dredging
- Stormwater detention basins or storm sewer work designed to relieve flooding
- Newly installed tornado sirens
- Newly installed tornado safe rooms
- Riverbank stabilization
- Outreach- newsletters, websites, Facebook, twitter, public meetings
- Wetland mitigation/preservation



Thank You

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