

# Kenosha County Hazard Mitigation Plan: Local Planning Team Meeting

May 5, 2016

# Chapter III

## Analysis of Hazard Conditions

## Chapter III Overview

- Documents the identification of the hazards that the plan addresses
  - This includes brief descriptions of hazards that are not addressed but were considered for inclusion during the initial plan or one of the updates
- Describes how risks and vulnerabilities were assessed
- Gives a profile of each hazard addressed by the plan

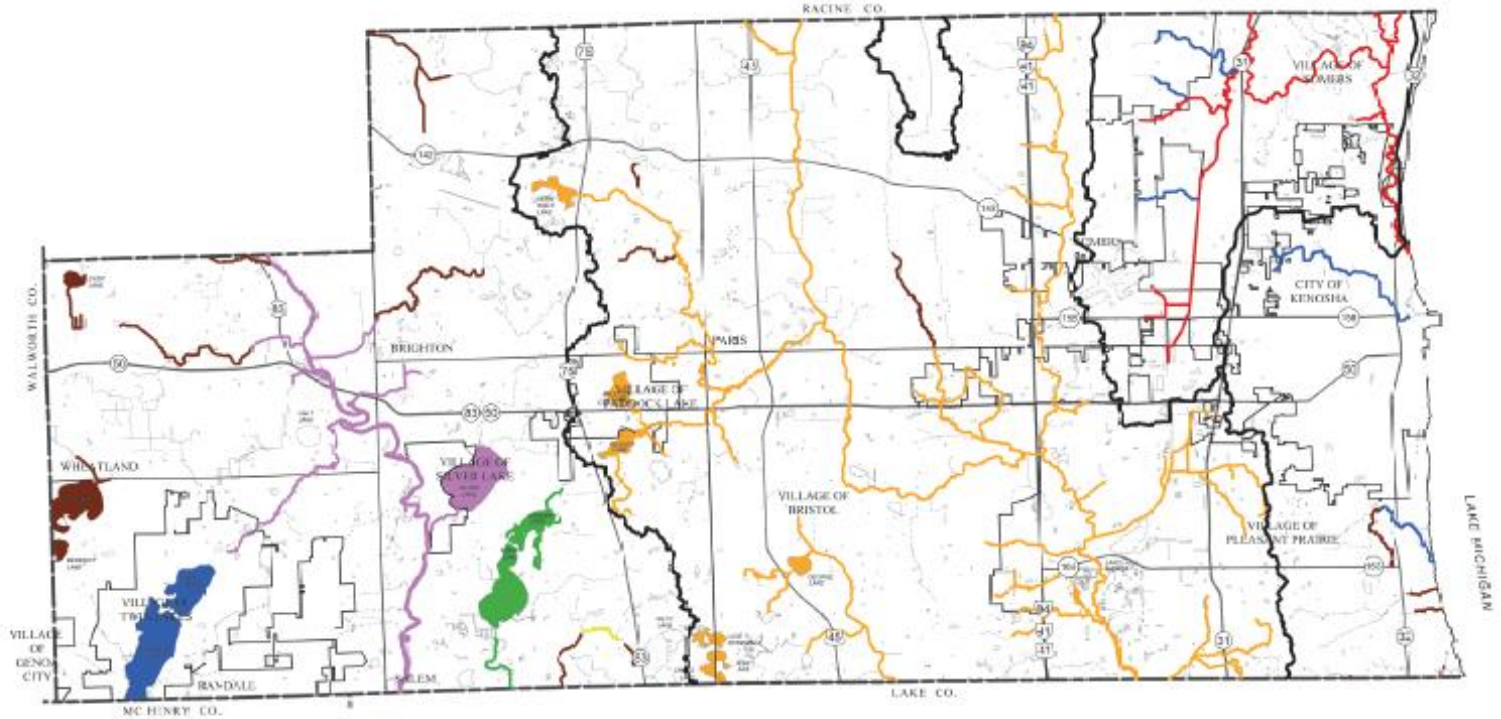
# Hazard Profiles

- Most profiles follow a similar format
  - Definition and description of the hazard
  - Description of notable historical events that affected the County
  - Description of some notable recent events that affected the County
  - Assessment of vulnerabilities to the hazard and community impacts from the hazard
  - Description of potential future changes in impacts
  - Discussion of any differences among communities in risks

Map III - 1

SOURCES OF FLOOD HAZARD DATA FOR STREAM REACHES IN KENOSHA COUNTY: 2015

PRELIMINARY DRAFT



- STREAM REACHES FOR WHICH FLOOD FLOWS AND STAGES WERE DEVELOPED UNDER THE DESPLAINES RIVER WATERSHED STUDY - INCORPORATED IN FLOOD INSURANCE STUDY (FIS)
- STREAM REACHES FOR WHICH FLOOD FLOWS AND STAGES WERE DEVELOPED UNDER THE FOX RIVER WATERSHED STUDY AND INCORPORATED IN THE FIS
- STREAM REACHES FOR WHICH FLOOD FLOWS AND STAGES WERE DEVELOPED UNDER THE PIKE RIVER WATERSHED STUDY - INCORPORATED IN THE FIS
- STREAM REACHES FOR WHICH FLOOD FLOWS AND STAGES WERE DEVELOPED UNDER A SPECIAL STUDY CONDUCTED BY THE COMMISSION AND WERE THEN INCORPORATED IN THE FIS
- STREAM REACHES FOR WHICH FLOOD FLOWS AND STAGES WERE DEVELOPED UNDER THE FIS
- APPROXIMATE DELINEATIONS UNDER THE FIS
- WATERSHED BOUNDARY

Source: Federal Emergency Management Agency and SEWRPC.



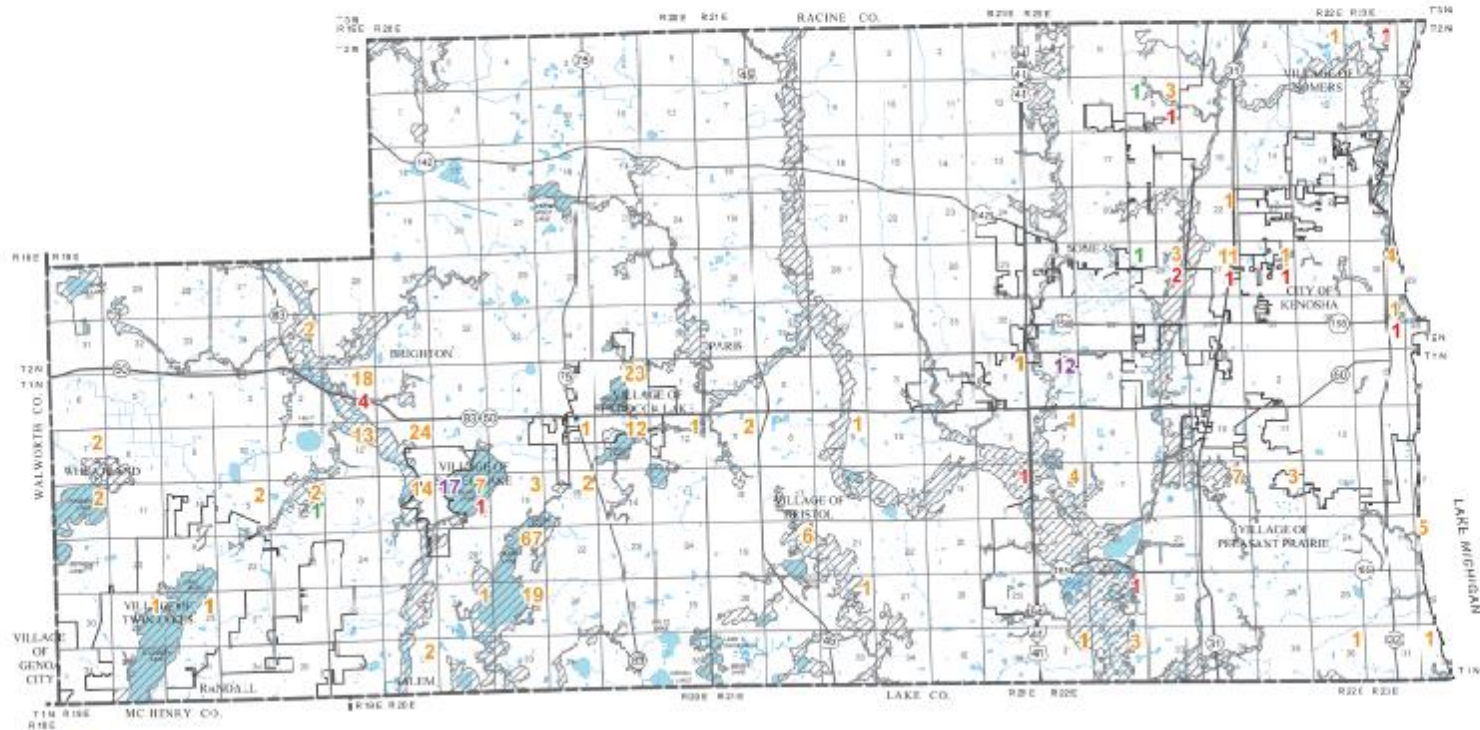




### Map III - 3

## NUMBER OF STRUCTURES WITHIN FLOOD HAZARD AREAS BY U.S. PUBLIC LAND SURVEY SECTION IN KENOSHA COUNTY: 2015

PRELIMINARY DRAFT



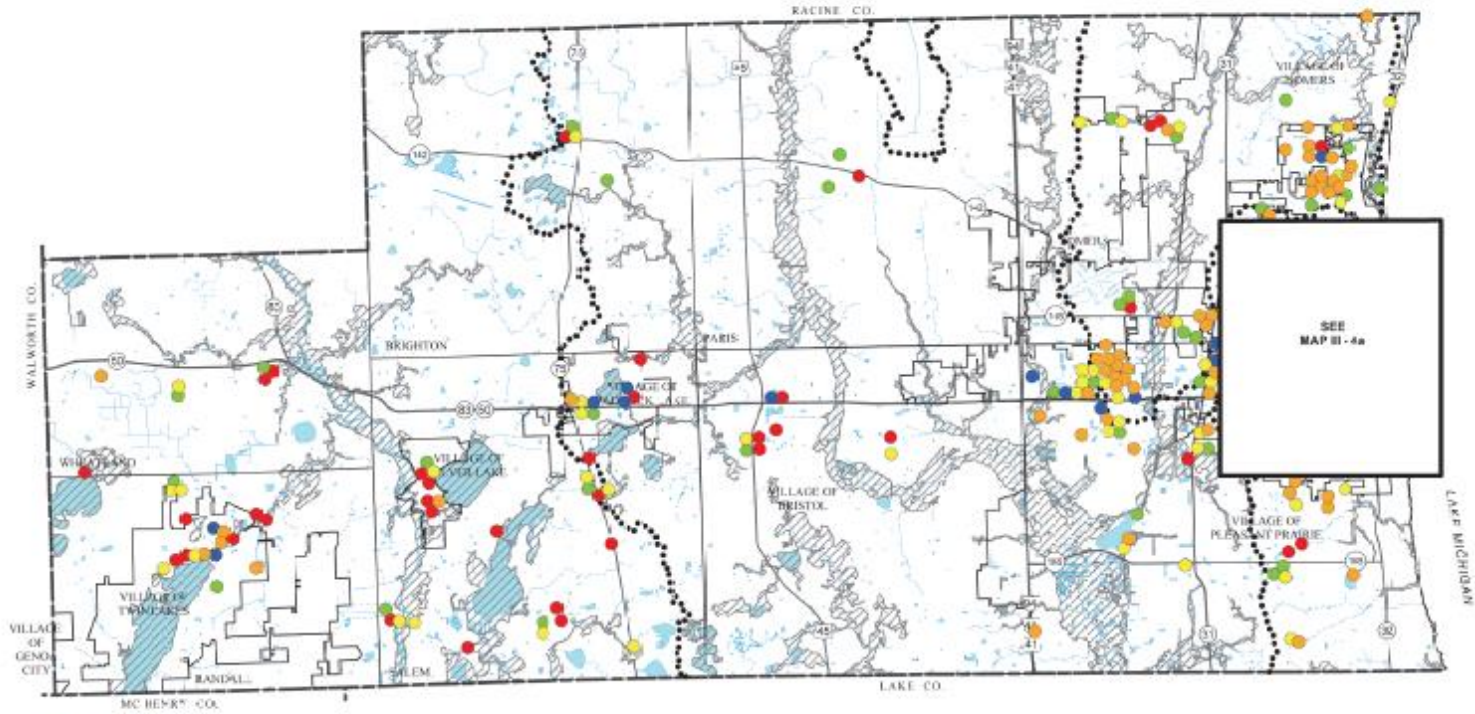
- 281** RESIDENTIAL STRUCTURES WITHIN U.S. PUBLIC LAND SURVEY SECTION
  - 14** COMMERCIAL STRUCTURES WITHIN SECTION
  - 3** AGRICULTURAL STRUCTURES WITHIN SECTION
  - 29** MOBILE HOMES WITHIN SECTION
- ONE - PERCENT - ANNUAL - PROBABILITY - 100 - YEAR RECURRENCE INTERVAL FLOODPLAINS (2012)
  - SURFACE WATER
  - PERENNIAL STREAM
  - INTERMITTENT STREAM
  - MAJOR WATERSHED BOUNDARY



Source: Kenosha County and SEWRPC

### Map III - 4

## LOCATIONS OF CRITICAL FACILITIES IN RELATION TO FLOODLANDS IN KENOSHA COUNTY: 2015



- GOVERNMENT BUILDING
- SCHOOL
- HOSPITAL, CLINIC, OR HEALTH DEPARTMENT
- CHILD CARE CENTER
- NURSING HOME OR ASSISTED LIVING FACILITY
- ONE PERCENT ANNUAL PROBABILITY (100-YEAR RECURRENCE INTERVAL) FLOODPLAINS (2012)
- SURFACE WATER
- PERENNIAL STREAM
- INTERMITTENT STREAM
- MAJOR WATERSHED BOUNDARY

SEE MAP III-4a

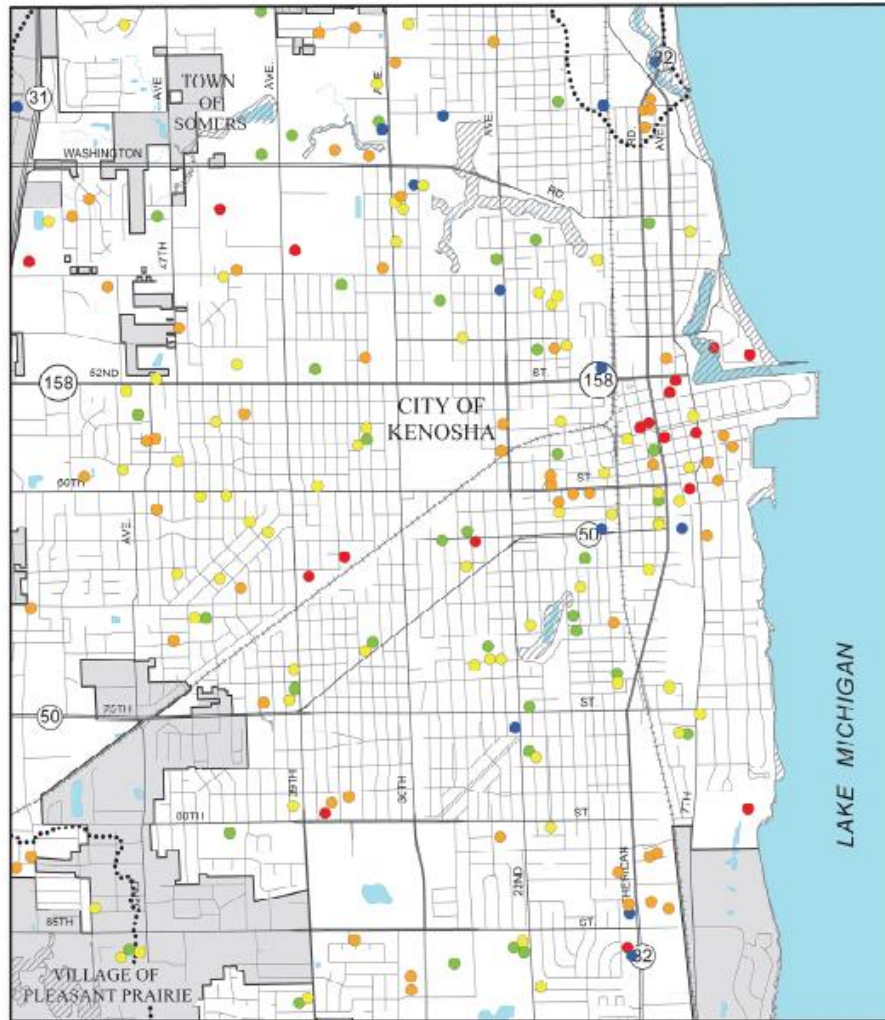
Source: Wisconsin Department of Children and Families, Wisconsin Department of Public Instruction, Kenosha County, and SEWRPC.





Map III - 4a

LOCATIONS OF CRITICAL FACILITIES IN RELATION TO FLOODLANDS IN THE CITY OF KENOSHA: 2015



● GOVERNMENT BUILDING	▨ ONE - PERCENT - ANNUAL - PROBABILITY (100 - YEAR RECURRENCE INTERVAL) FLOODPLAINS (2012)	
● SCHOOL	■ SURFACE WATER	
● HOSPITAL, CLINIC, OR HEALTH DEPARTMENT	— PERENNIAL STREAM	
● CHILD - CARE CENTER	— INTERMITTENT STREAM	
● NURSING HOME OR ASSISTED LIVING FACILITY	--- MAJOR WATERSHED BOUNDARY	

Source: Wisconsin Department of Children and Families, Wisconsin Department of Public Instruction, Kenosha County, and SEWRPC.



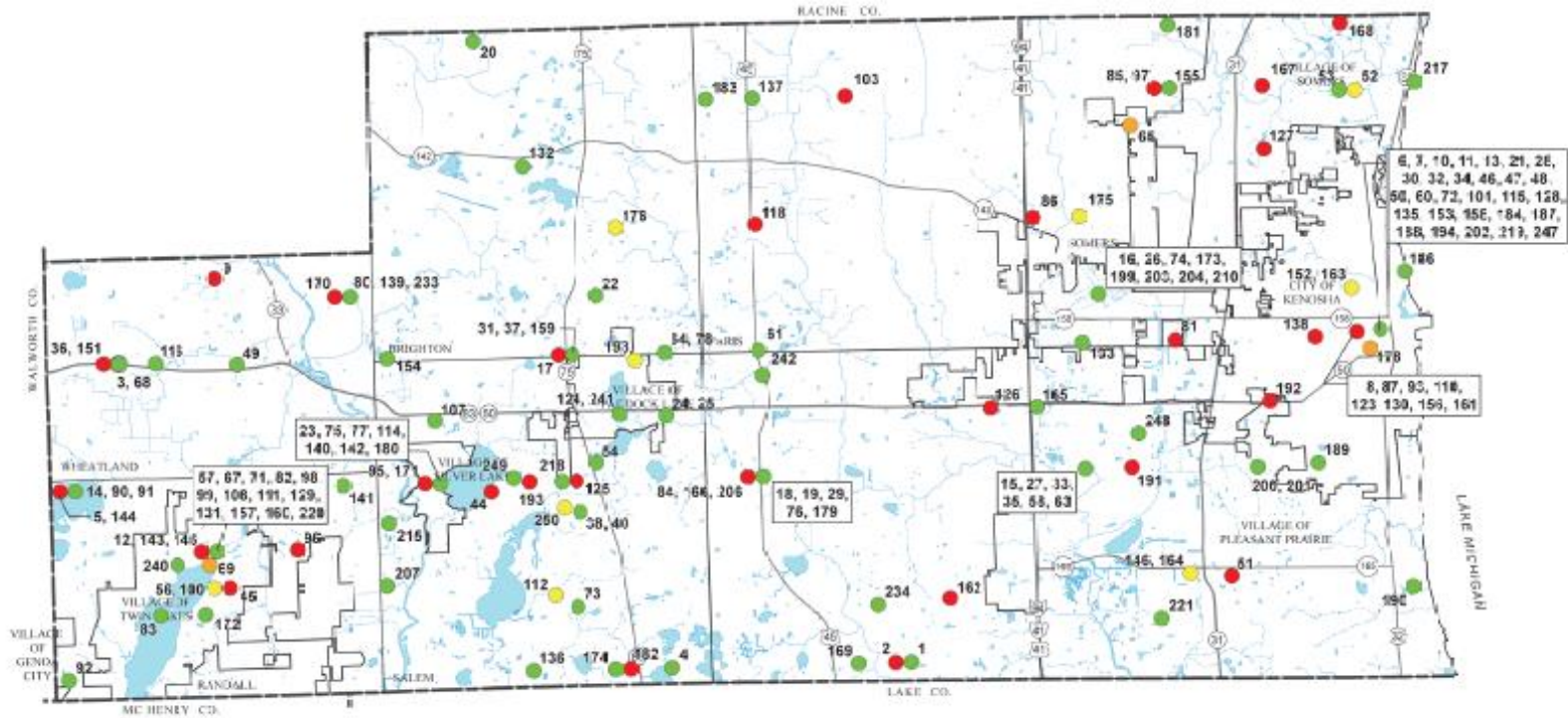




Map III - 7

THUNDERSTORM, HIGH - WIND, HAIL, AND LIGHTNING EVENTS REPORTED WITHIN KENOSHA COUNTY, JULY 1964 - DECEMBER 2014

PRELIMINARY DRAFT



- THUNDERSTORM AND HIGH WINDS
- HIGH WIND
- HAIL
- LIGHTNING
- 66** REFERENCE NUMBER (SEE TABLE III-13)

NOTE: THE NATIONAL CLIMATIC DATA CENTER INDICATES THAT THE EVENTS LISTED BELOW AFFECTED ALL OF KENOSHA COUNTY:

- 41, 43
- 55, 70, 79, 89, 94, 102, 104, 105, 106, 109, 113, 119, 121, 122, 134, 147, 148, 149, 150, 177, 185, 195, 196, 197, 205, 208, 209, 211, 212, 213, 214, 216, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 252, 235, 236, 237, 238, 239, 243, 244
- 38, 42, 245, 246
- 59, 62, 66, 88, 117

Source: National Climatic Data Center and SEWRPC.

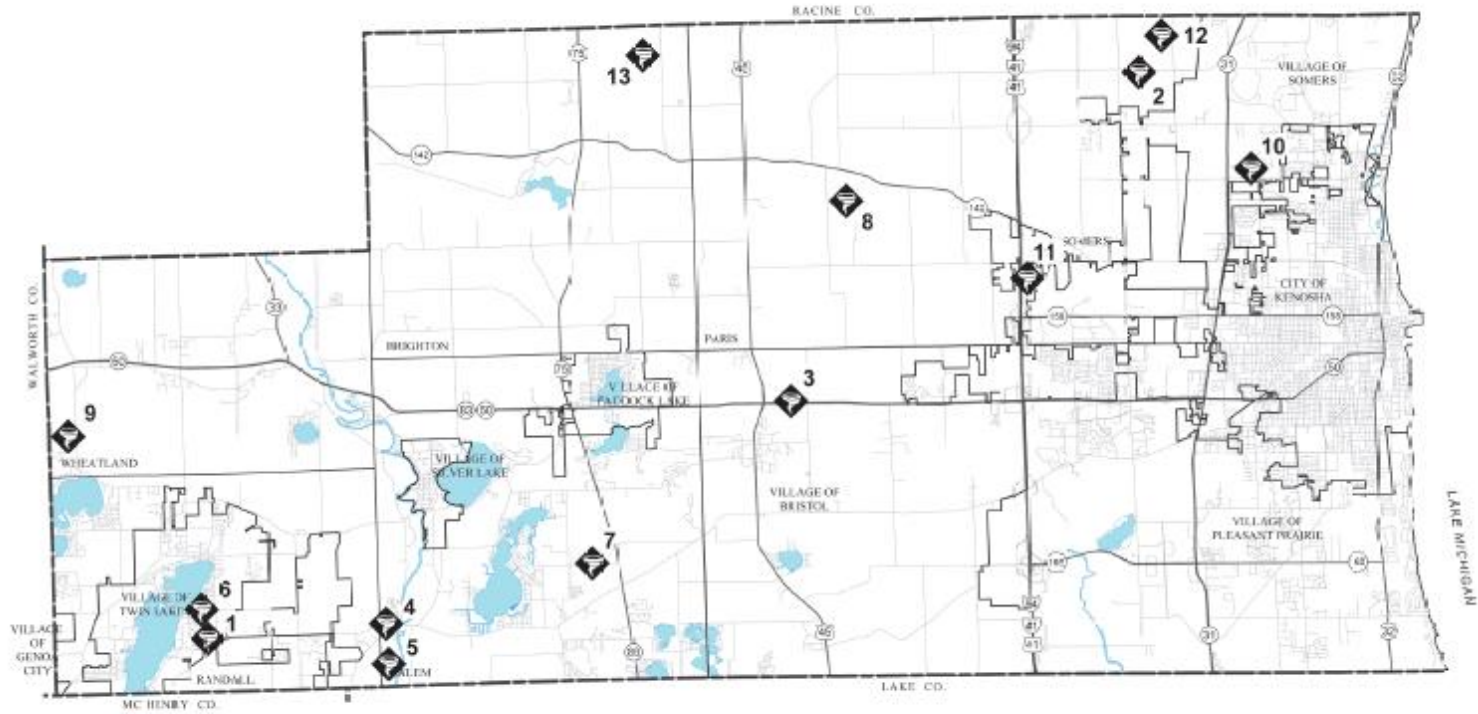




Map III - 8

TORNADO EVENTS IN KENOSHA COUNTY: JULY 1963 - DECEMBER 2014

PRELIMINARY DRAFT



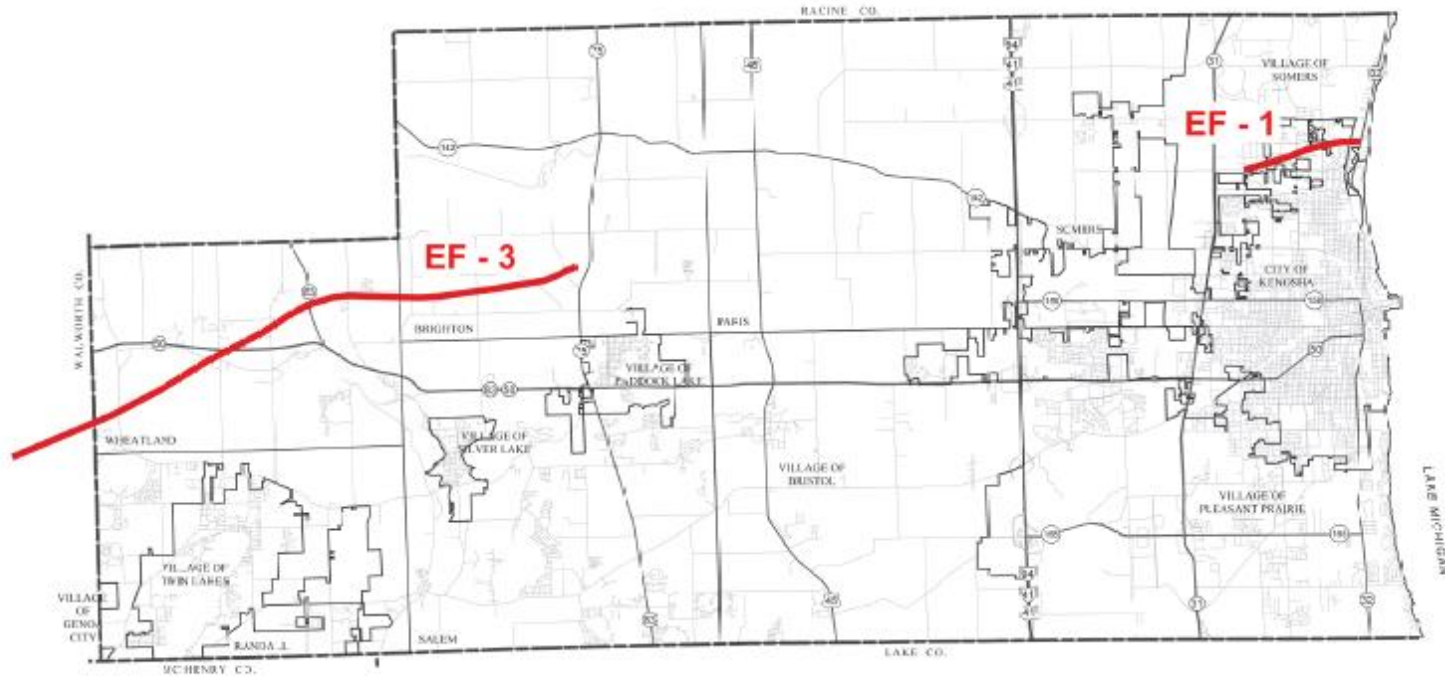
◆ REPORTED TORNADO SIGHTING AND REFERENCE NUMBER (SEE TABLE II - 16)



Source: National Climatic Data Center and SEWRPC

Map III - 9

PATHS OF THE JANUARY 7, 2008 TORNADOES THROUGH KENOSHA COUNTY



APPROXIMATE PATHS OF JANUARY 7, 2008 TORNADOES

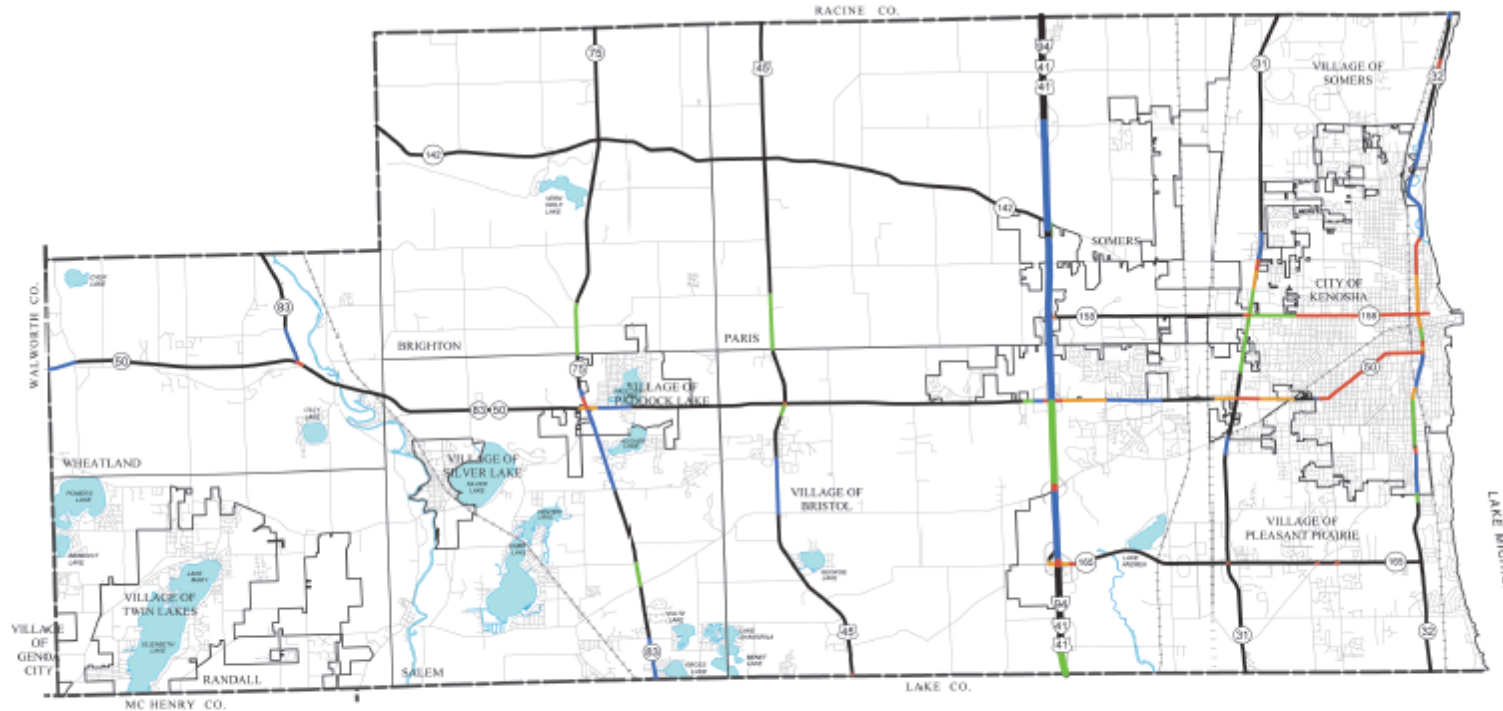
Source: National Climatic Data Center and SEWRPC.



Map III - 10

AVERAGE VEHICULAR CRASH RATE OF STATE TRUNK HIGHWAYS IN KENOSHA COUNTY: 2008-2012

PRELIMINARY DRAFT



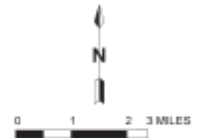
- STATE TRUNK HIGHWAY**
- FREEWAY
  - SURFACE ARTERIAL
- PERCENT OF COUNTYWIDE AVERAGE CRASH RATE**
- AT OR BELOW COUNTYWIDE AVERAGE
  - 1 PERCENT TO 50 PERCENT ABOVE
  - 51 PERCENT TO 100 PERCENT ABOVE
  - 100 PERCENT TO 200 PERCENT ABOVE
  - MORE THAN 200 PERCENT ABOVE

NOTE: 1. THE AVERAGE CRASH RATE ON THE STATE TRUNK HIGHWAY NETWORK IN KENOSHA COUNTY FROM 2008 THROUGH 2012 WAS 45.7 CRASHES PER 100 MILLION VEHICLE MILES FOR FREEWAYS AND 255.6 CRASHES PER 100 MILLION VEHICLE MILES FOR SURFACE ARTERIALS.

2. A SEPARATE CRASH RATE IS CALCULATED FOR EACH DIRECTION FOR DIVIDED HIGHWAYS. THE SIDE OF THE DIVIDED HIGHWAY HAVING THE WORST CRASH RATE IS DISPLAYED ON THE MAP.

3. ONLY CRASHES THAT OCCURRED IN YEARS SINCE THE ROADWAY WAS LAST RECONFIGURED ARE INCLUDED IN THE CRASH RATES SHOWN.

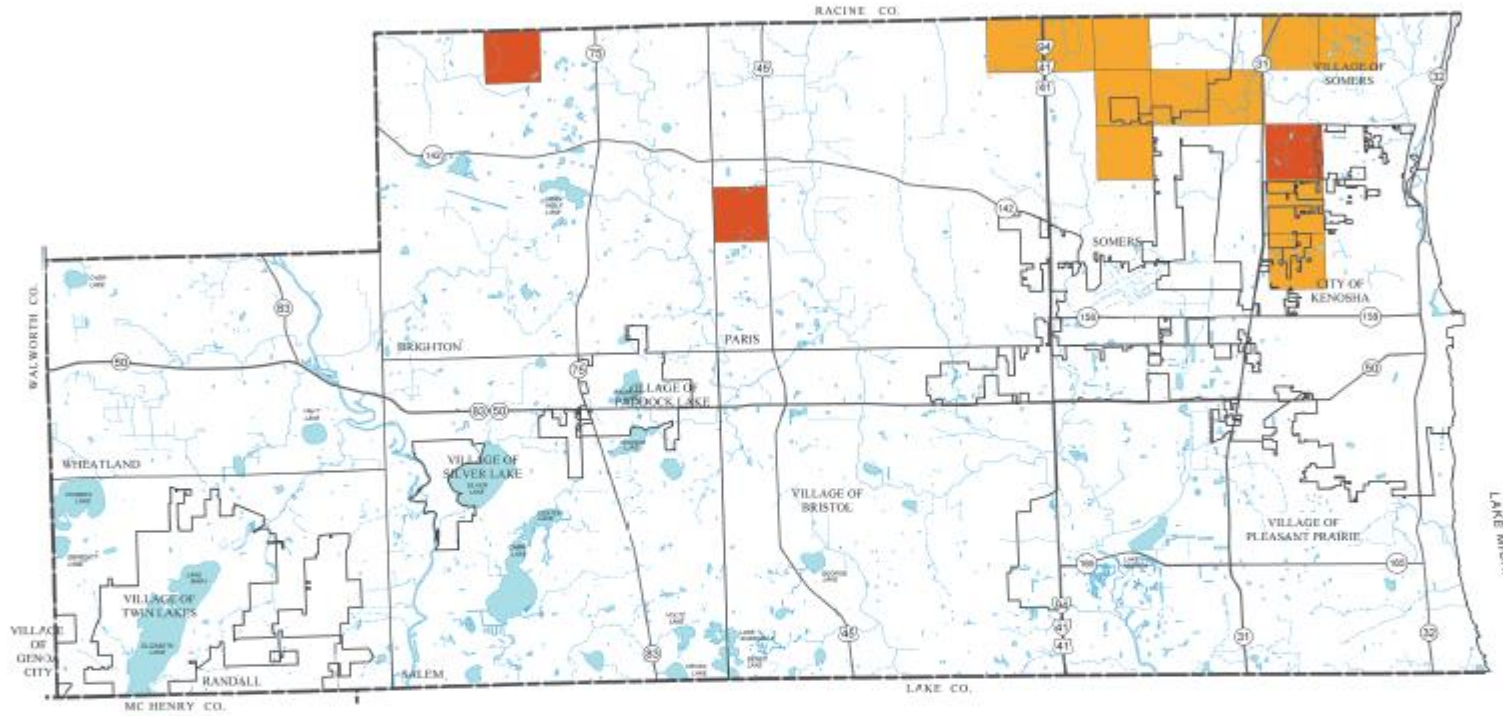
Source: Wisconsin Department of Transportation and SEWRPC



Map III - 11

TEST RESULTS FOR MOLYBDENUM IN PRIVATE WELLS IN KENOSHA COUNTY: 2013

PRELIMINARY DRAFT



- SECTION WITH AT LEAST ONE MOLYBDENUM SAMPLE WITH A CONCENTRATION GREATER THAN OR EQUAL TO 90 MICROGRAM PER LITER
- SECTION WITH ALL MOLYBDENUM SAMPLES HAVING CONCENTRATIONS LESS THAN 90 MICROGRAM PER LITER

Source: Wisconsin Department of Natural Resources and SEWRPC

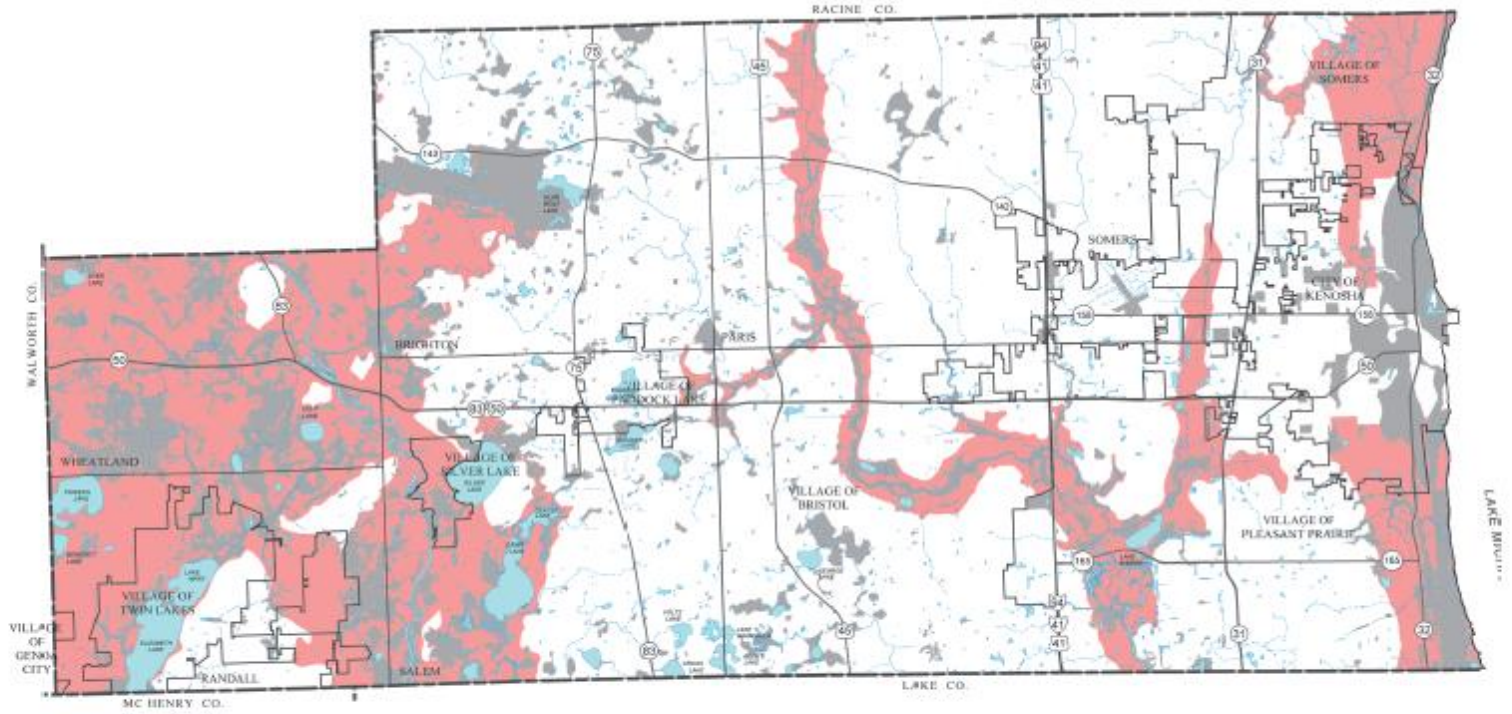




Map III - 12

AREAS NATURALLY VULNERABLE TO GROUNDWATER CONTAMINATION IN KENOSHA COUNTY

PRELIMINARY DRAFT



- AREAS WITH A HIGH CONTAMINATION POTENTIAL BASED UPON A COMBINATION OF FACTORS
- AREAS WHERE SOIL ATTENUATION OF POLLUTANTS IS CATEGORIZED AS LOW
- SURFACE WATER

NOTES: GROUNDWATER CONTAMINATION POTENTIAL IS RELATED TO SOIL PHYSICAL PROPERTIES AND TO THE PROXIMITY OF GROUNDWATER TO THE SOIL SURFACE. ACTIVITIES THAT MAY CREATE GROUNDWATER QUALITY PROBLEMS ARE LISTED IN TABLE III-33.

Source: Wisconsin Geological and Natural History Survey and SEWRPC.



# Chapter IV

## Hazard Mitigation Goals

# Hazard Mitigation Goals

1. A spatial distribution of the various land uses that minimizes hazards and dangers to health, welfare, and safety as well as further enhancing the economic base of the County, and will result in a compatible arrangement of land uses properly related to the existing and proposed supporting transportation, utility, public safety, and public facility systems.
2. A spatial distribution of the various land uses that maintains biodiversity and will result in the protection and wise use of the natural resources of the County, including its soils, inland lakes and streams, groundwater, wetlands, woodlands, and natural areas and critical species habitats.

# Hazard Mitigation Goals

3. An integrated transportation system that, through its location, capacity, and design, will safely, economically, and effectively serve the existing and proposed land use pattern and promote the implantation of the land use plan, meeting the current and anticipated travel demand and minimizing the potential for accidents and the associated toll on life and property damage.
4. The provision of facilities necessary to maintain a high quality of fire and police protection and emergency medical services throughout the County.



# Hazard Mitigation Goals

5. The development of a stormwater and floodplain management system that reduces the exposure of people to drainage- and flooding-related inconvenience and to health and safety hazards and that reduces the exposure of real and personal property to damage through inundation resulting from flooding and inadequate stormwater drainage.
6. The identification of high erosion risk Lake Michigan shoreline areas and the development of a coastal erosion management program that reduces the exposure of people and real and personal property to shoreline erosion and bluff recession.

# Hazard Mitigation Goals

7. The identification and development of programs that complement County and local emergency operations plans to mitigate the potential exposure to health and safety and the exposure of real and personal property resulting from a broad range of hazards that are unpredictable and not geographically specific in nature.
8. Communications interoperability throughout the County among all First Responders, so as to be able to quickly and effectively respond to any incident to prevent the loss of life and to save property.

# Public Meeting on Hazard Mitigation Plan

- May 23, 2016
  - 6:00 pm
  - Kenosha County Center
- Review progress on the plan update to date
- Seek public input
  - Problem areas relative to hazards
  - Potential mitigation measures and projects
  - Comments on draft plan

# 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
- Email to [jboxhorn@sewrpc.org](mailto:jboxhorn@sewrpc.org)