

RACINE COUNTY HAZARD MITIGATION PLAN UPDATE

April 26, 2017



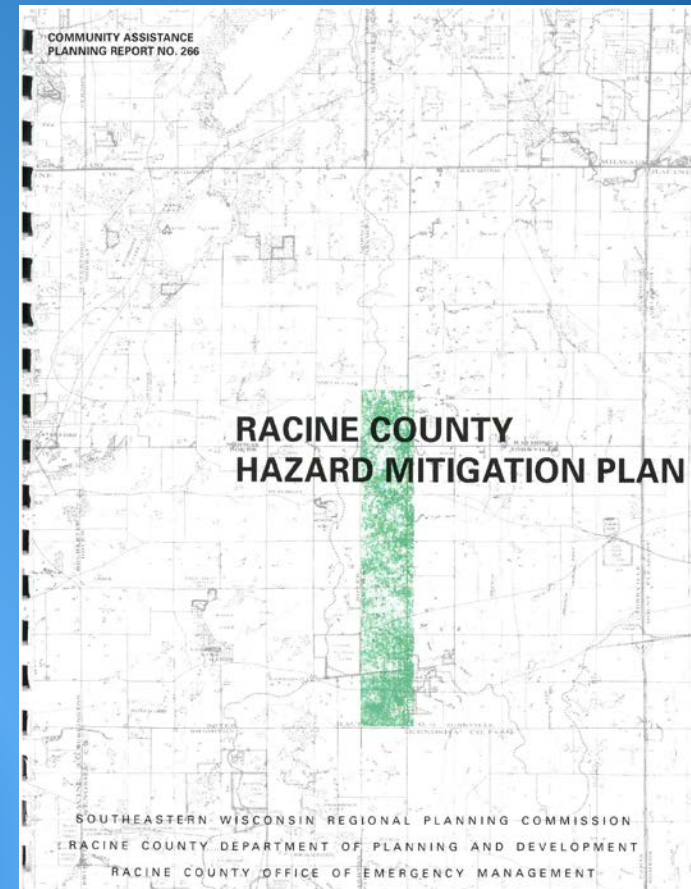
Agenda for Meeting



- Discuss purpose of plan update
- Review the updated plan
- Answer questions on the plan update
- Take comments on plan update

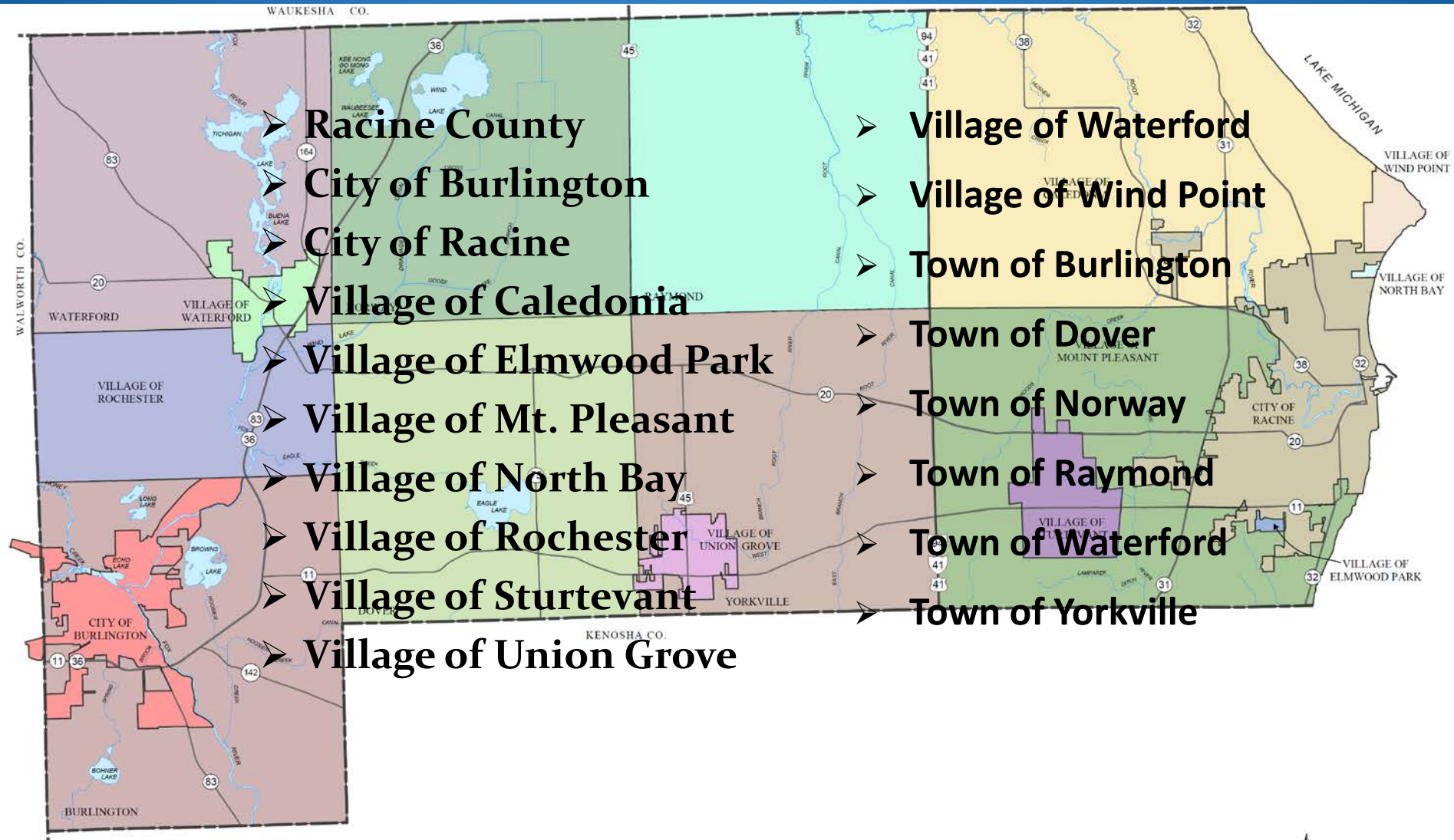
Plan Documentation:

**SEWRPC Community Assistance
Planning Report No. 266 (3rd Edition),
Racine County Hazard Mitigation Plan
Update: 2017-2021**



Participating Jurisdictions:

(as of 4/25/2017)



What is Hazard Mitigation?

- “Mitigation is any sustained action taken to eliminate or reduce the long-term risk to human life and property from natural and technological hazards” —FEMA
- Actions to reduce the damages that result when disasters occur



What is Hazard Mitigation?

- Mitigation is not:
 - Emergency response
 - Crisis management
 - Disaster recovery
- Mitigation focuses on reducing the impacts from hazard events before they occur



Why Do We Mitigate Hazards?




- Disasters are costly
- State and Federal assistance are insufficient
- We can prevent future damages
- Lesser impacts mean a quicker response and recovery process
- Can do this locally



Racine County Hazard Mitigation Plan

- Includes all of the municipalities in the County
- Sets forth strategies for mitigating impacts of several natural and technological hazards
- Establishes eligibility for hazard mitigation funding from the Federal Emergency Management Agency (FEMA)
 - FEMA requires that local hazard mitigation plans be updated and revised every five years



Racine County Hazard Mitigation Planning Program--History

- Initial plan developed 2003-2004
 - Report published 2004
- First update conducted 2009-2010
 - Coordinated with development of the County comprehensive plan
 - Report published 2010
- Current update conducted 2015-2016
 - Anticipate that the report will be published early 2017



Racine County Hazard Mitigation Plan

- Plan development and updating is overseen by a Local Planning Team
 - Team includes elected officials, appointed officials, department and agency representatives, business representatives, knowledgeable citizens
 - Law enforcement, fire, and EMS departments; public works and engineering departments, planning departments, conservation departments, health department, private sector firms, nonprofit agencies, and educational institutions
- Staff include Racine County Office of Emergency Management, Racine County Public Works and Development Services, and SEWRPC



Plan Components to Review and Revise

(Described in Chapter I)

- Review implementation activities
- Update inventories of natural and built features
- Review and reevaluate identification of hazards
- Update and reevaluate risk analysis
- Review and revise mitigation goals
- Review and revise mitigation strategies
- Update plan implementation and maintenance
 - Update potential funding sources

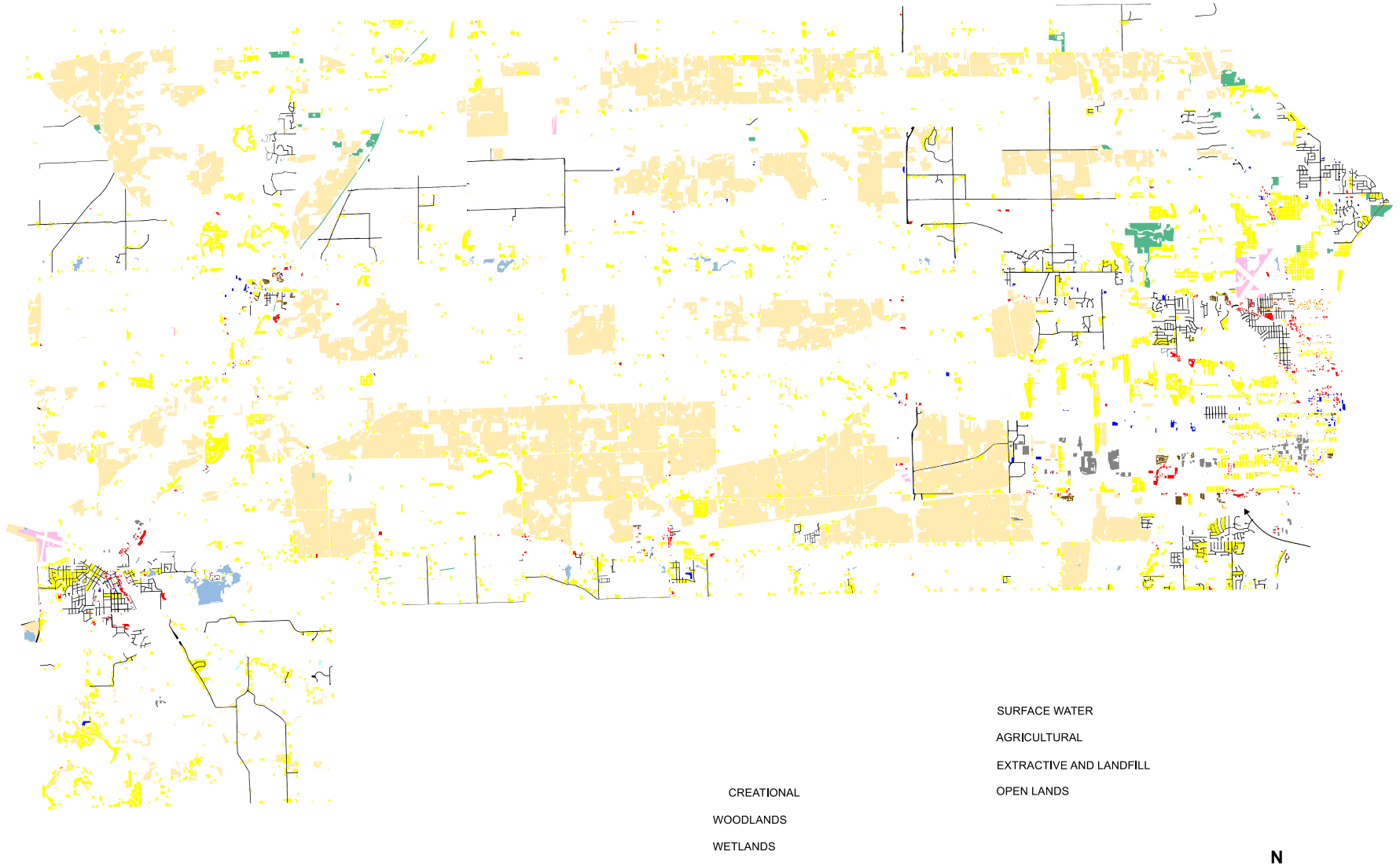


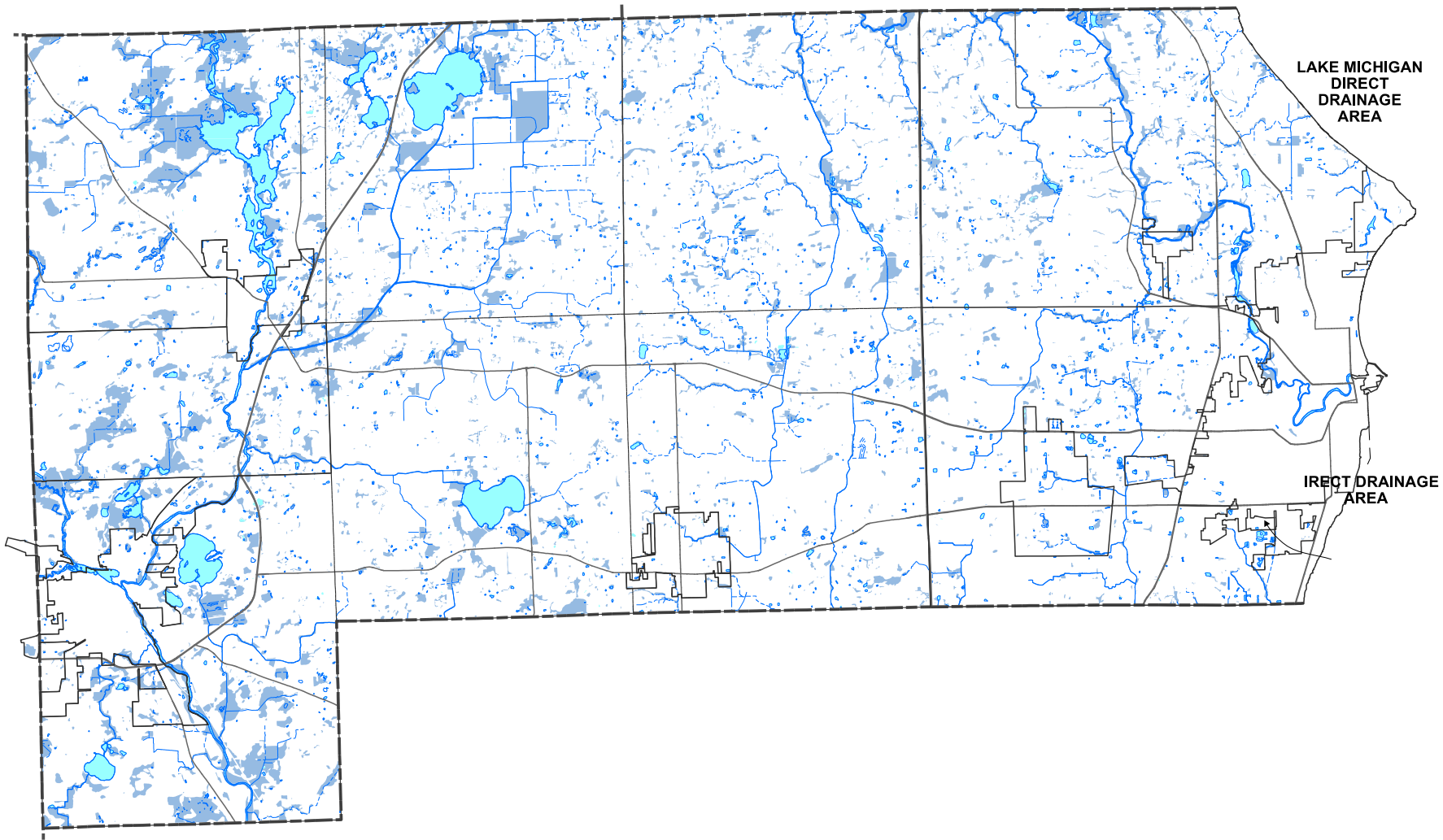
Inventory Data

(Chapter II)

- Demographic characteristics
- Existing and planned land use
- Surface water and Lake Michigan Shoreline
 - One-percent-annual-probability floodplains
- Transportation and utility systems
- Critical community facilities
- Existing programs and regulations

EXISTING LAND USE IN RACINE COUNTY: 2010





**LAKE MICHIGAN
DIRECT
DRAINAGE
AREA**

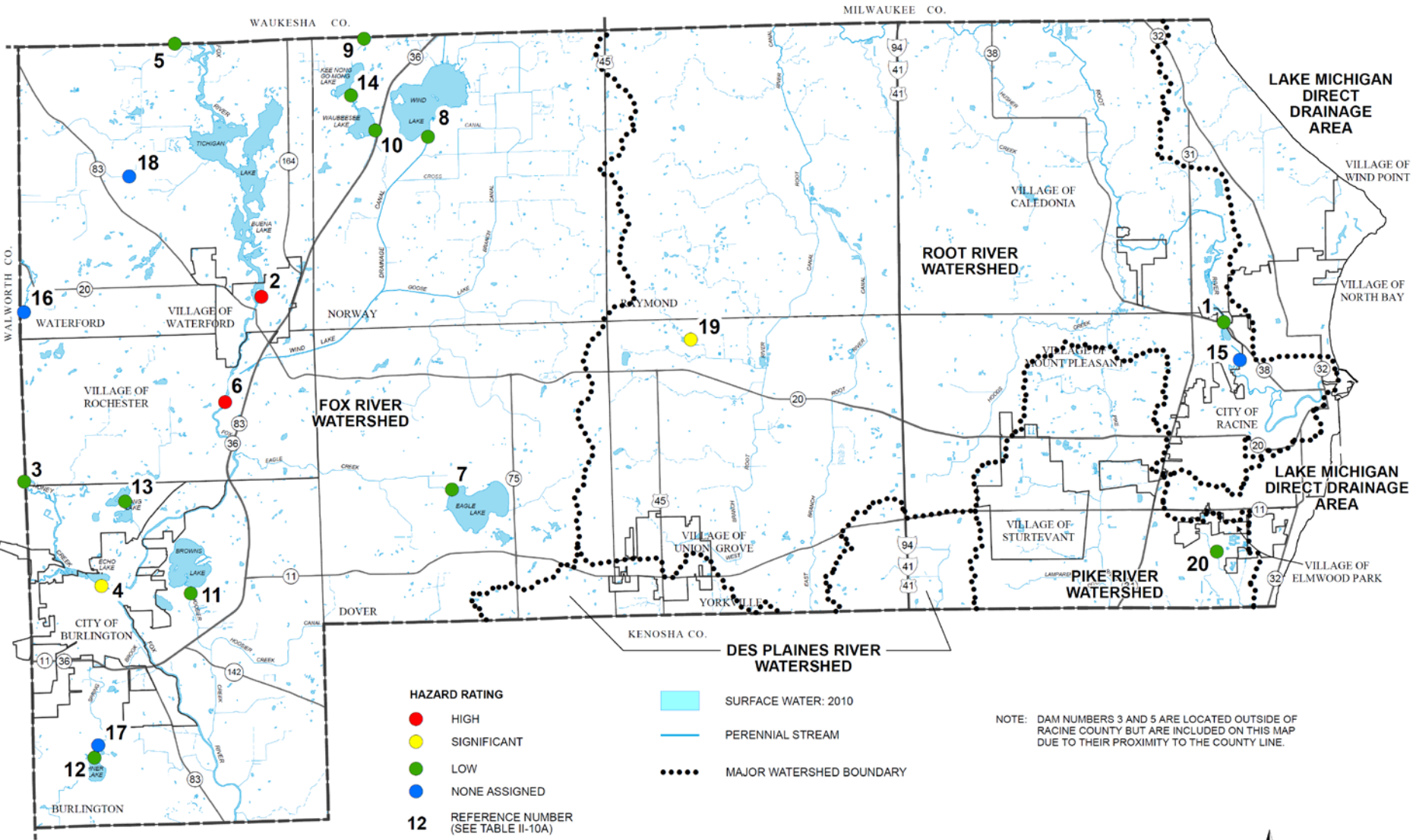
**DIRECT DRAINAGE
AREA**

N

0 1 2 3 MILES

Source: Federal Emergency Management Agency and SEWRPC.

WISCONSIN DEPARTMENT OF NATURAL RESOURCES DAM LOCATIONS: 2015



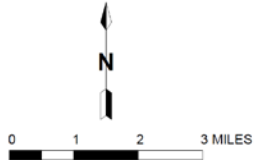
HAZARD RATING

- HIGH
- SIGNIFICANT
- LOW
- NONE ASSIGNED

12 REFERENCE NUMBER (SEE TABLE II-10A)

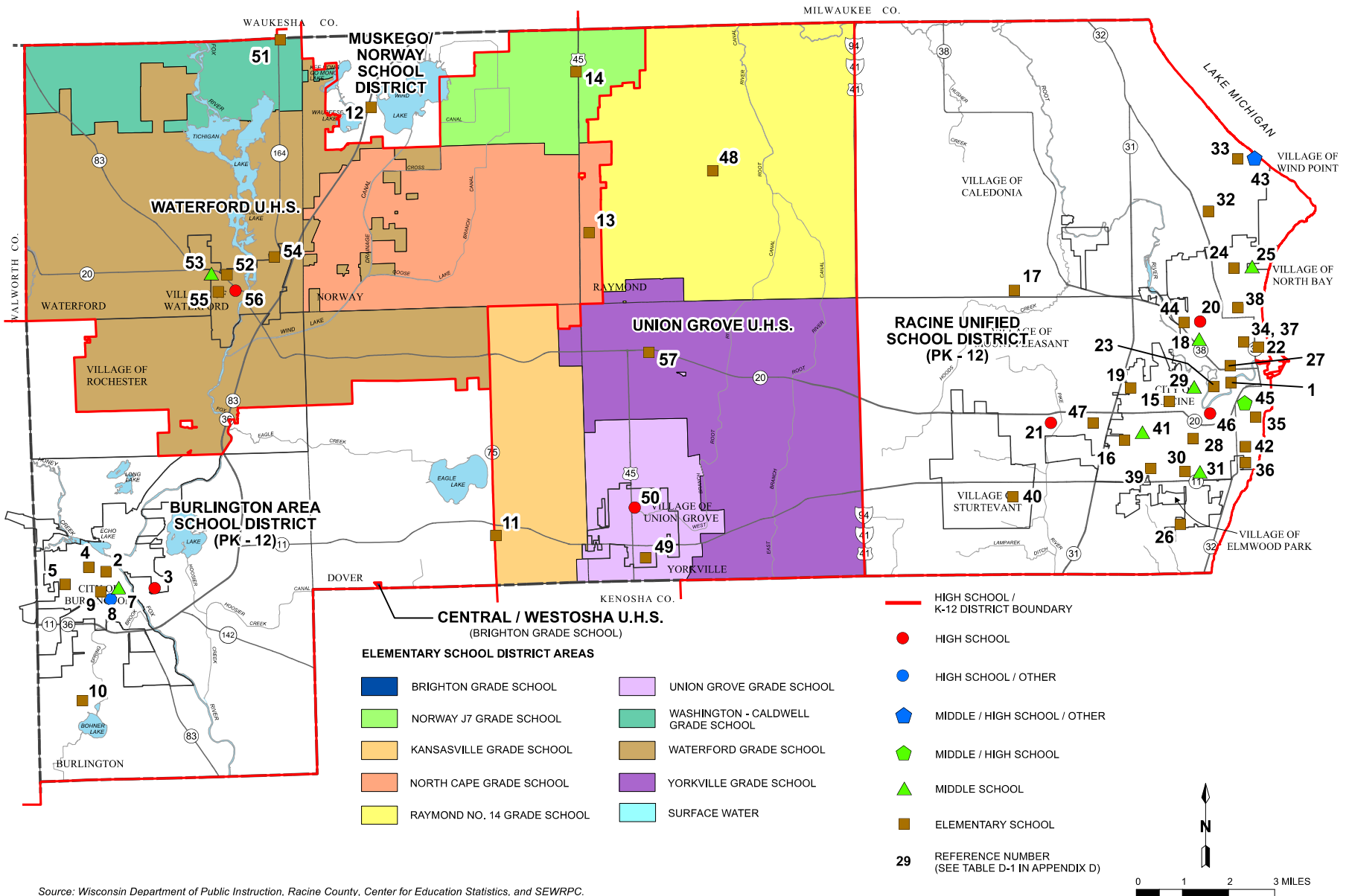
- SURFACE WATER: 2010
- PERENNIAL STREAM
- MAJOR WATERSHED BOUNDARY

NOTE: DAM NUMBERS 3 AND 5 ARE LOCATED OUTSIDE OF RACINE COUNTY BUT ARE INCLUDED ON THIS MAP DUE TO THEIR PROXIMITY TO THE COUNTY LINE.

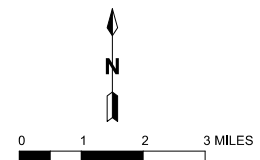


Map II - 23

PUBLIC SCHOOLS AND SCHOOL DISTRICTS IN RACINE COUNTY: 2015

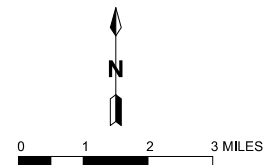
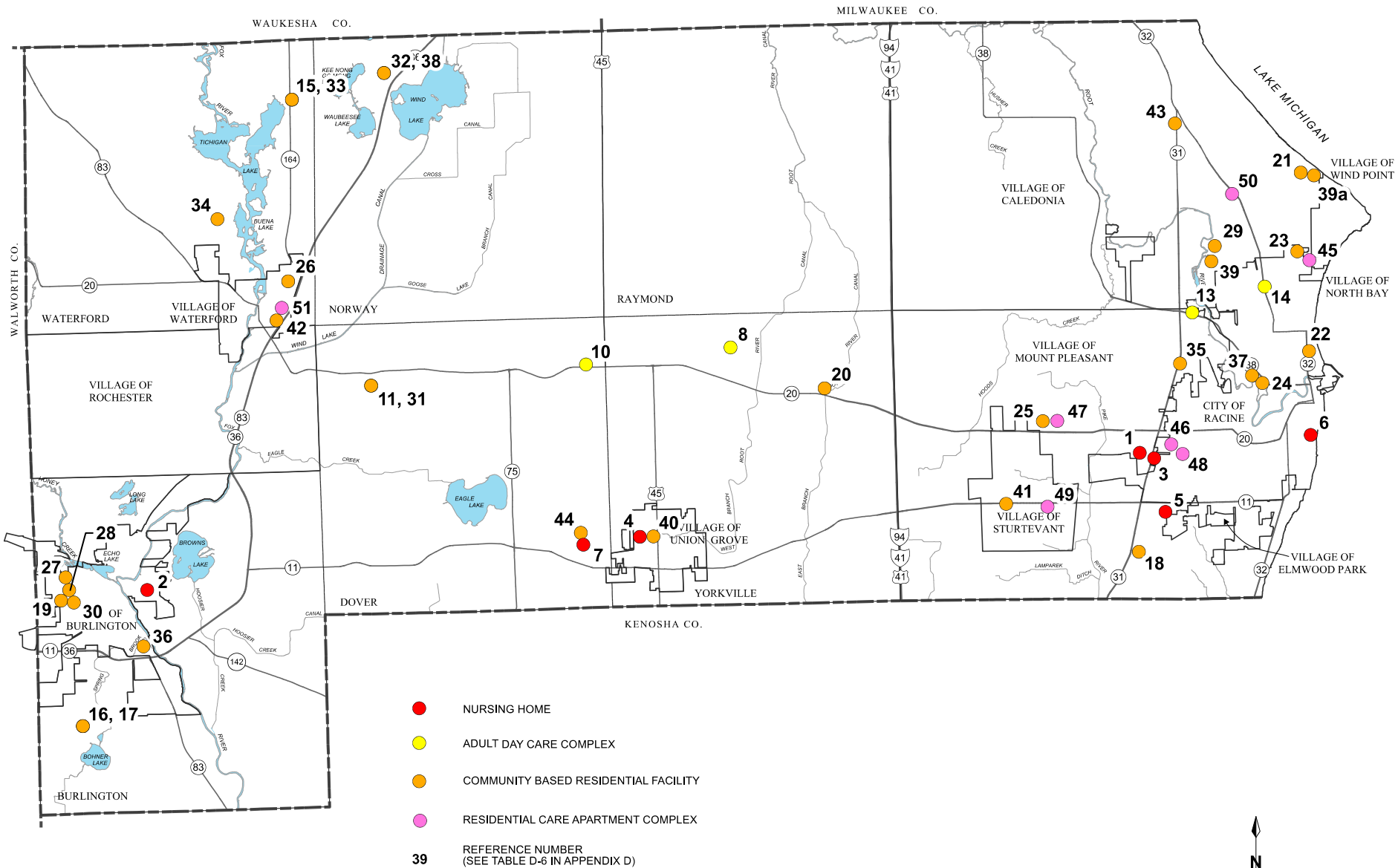


Source: Wisconsin Department of Public Instruction, Racine County, Center for Education Statistics, and SEWRPC.



Map II - 26

NURSING HOMES, ADULT DAY CARE CENTERS, AND SELECTED ASSISTED LIVING FACILITIES IN RACINE COUNTY: 2015





Hazard Mitigation Goals

Chapter III

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 implementation 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 control program which reduces the exposure of people and real property to shoreline erosion and bluff recession.
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.



Hazard Identification

(Chapter IV)

- Local Planning Team input
 - Hazard and Vulnerability Assessment tool
- Past hazard experience
 - Frequency of occurrence
 - Property and crop damages
 - Fatalities and injuries

Natural Hazards Profiled in the Plan

(Required by FEMA)



Flooding



Thunderstorms
High Wind/Hail/Lightning



Tornado



Lake Michigan Coastal Hazards



Extreme Temperatures



Drought



Winter Storms

Technological Hazards Profiled in the Plan

(Optional under FEMA rules)



Transportation
Accidents



Contamination/Loss
of Water Supply



Hazardous
Material Incidents



Public Health
Emergency



Terrorism



Power Outages

Technological Hazards Profiled in the Plan

(Optional under FEMA rules)

NEWLY ADDED FOR THIS PLAN UPDATE:



Active Shooter
Incidents



Cyber-attack on
Local Government



Risk Analysis—Hazard Profiles

Chapter IV

- 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
 - Mapped events such as thunderstorms, tornados, number of structures in the floodplain, vehicle crash rates, etc.



Risk Analysis—Hazard Profiles

Continued...

- Assessment of vulnerabilities to the hazard and community impacts from the hazard
- Description of potential future changes in impacts
 - Climate Change
- Discussion of any differences among communities in risks

Average Annual Damages

Table G-2

PRIORITY RANKING OF NATURAL AND OTHER HAZARDS AFFECTING RACINE COUNTY BASED UPON PROPERTY AND CROP DAMAGE

Order Based on Local Planning Team Prioritization ^a	Natural and Other Hazards	Period of Record	Number of Hazard Incidents per Year (average)	Total Property Damage per Year (dollars) ^b	Total Crop Damage per Year (dollars) ^b	Sum of Property and Crop Damage per Year (dollars) ^b	Priority Ranking Based on Analysis
7	Transportation Accidents	1999-2013 ^c	3,891.1	61,164,825	0	61,164,825	1
9	Flooding	1990-2014	1.6	334,446	1,533,736	1,868,182	2
2	Tornadoes	1957-2014	0.4	513,240	250	513,490	3
5	Thunderstorms/High Wind	1990-2014	10.6	367,488	50,263	417,751	4
37	Drought	2002-2014	0.4	0	298,214	298,214	5
13	Hazardous Material Incidents	1971-2014 ^d	3.6	8,196	0	8,196	6
4	Temperature Extremes	1995-2014	2.7	285	5,562	5,847	7
1	Winter Storms	1996-2014	6.3	1,322	444	1,766	8
32	Lake Michigan Coastal Erosion	1975-1995	1-2 (feet of erosion per year) ^e	-- ^f	-- ^f	-- ^f	99
34	Contamination or Loss of Water Supply	--	-- ^h	-- ^h	-- ^h	-- ^h	10
18	Power Outage Incidents	2010-2015	9.3	-- ^f	-- ^f	-- ^f	11
20	Cyber Attack on Local Government	--	-- ^h	-- ^h	0	--	12
27	Terrorism Incident	2000-2014	0.0	0	0	0	13
25	Active Shooter Incident	1966-2014	0.0	0	0	0	14
31	Public Health Emergencies	2005-2013	1,552.3 ⁱ	0	0	0	15

NOTE: The solid horizontal line within the table separates hazards for which property and crop damages were documented and hazards for which no property or crop damages had occurred (or for which no data was available).

^aThese numbers indicate the ranked order of the hazards assigned by the Racine County Hazard Mitigation Plan Local Planning Team through responses given in the Hazard and Vulnerability Assessment Tool (HVA). Where hazards listed in the HVA have been consolidated for analysis and planning purposes, the order is based upon the highest rank given in the HVA. There were 45 separate hazards that were ranked. For more details see Hazard Identification section and Table IV-3 in Chapter IV in this report.

^bDollar values were adjusted to year 2014 by using the average annual Consumer Price Index (CPI) values from the U.S. Department of Labor, Bureau of Labor Statistics.

^cData reflect automobile accidents from years 1999 through 2013 and railroad accidents from years 1975 through 2014.

^dData reflect pipeline-related incidents from years 1976 through 2014 and transportation-related incidents from years 1971 through 2014.

^eA SEWRPC study completed in 1997 found erosion rates ranging from zero to nine feet per year. A similar study by the Wisconsin Coastal Management Program covering areas in Racine, Ozaukee, and Manitowoc Counties, found erosion rates ranging from zero to 5.5 feet per year for Racine County. Recently areas of Racine County, specifically the Villages of Mount Pleasant and Caledonia, have experienced much greater bluff recession rates. In 2016, property owners in the Lake Park neighborhood in Mount Pleasant lost more than 40 feet of bluff.

^fIncidents have been reported, however no data is available to calculate annual averages.

^gGiven the current situation regarding Lake Michigan bluff recession in the Villages of Caledonia and Mount Pleasant, as described in Chapter IV of this report, the priority ranking of this hazard as shown in this table may be too low.

^hNo data available.

ⁱBased upon cases of selected communicable diseases reported in Racine County from 2005 through 2013.

Average Annual Fatalities and Injuries

Table G-1

PRIORITY RANKING OF NATURAL AND OTHER HAZARDS AFFECTING RACINE COUNTY BASED UPON MORTALITY AND INJURY

Order Based on Local Planning Team Perception ^a	Natural and Other Hazards	Period of Record	Number of Hazard Incidents per Year (average)	Number of Mortalities per Year (average)	Number of Injuries per Year (average)	Sum of Average Mortality and Injury Incidences per Year	Priority Ranking Based on Analysis
31	Public Health Emergencies	2005-2013	1,552.3 ^b	1,394.9 ^c	1,552.3 ^b	2,947.2	1
7	Transportation Accidents	1999-2013 ^d	3,891.1	18.2	2,094.4	2,112.6	2
5	Thunderstorms/High Wind	1990-2014	10.6	0.1	26.0	26.1	3
13	Hazardous Material Incidents	1971-2014 ^e	3.6	0.0	1.0	0.2	4
4	Temperature Extremes	1995-2014	2.7	0.1	0.1	0.2	5
2	Tornadoes	1957-2014	0.4	0.0	0.2	0.2	6
1	Winter Storms	1996-2014	6.3	0.1	0.1	0.1	7
9	Flooding	1990-2014	1.6	0.1	0.0	0.1	8
34	Contamination or Loss of Water Supply	-- ^f	-- ^f	-- ^f	-- ^f	-- ^f	9
32	Lake Michigan Coastal Erosion	1975-1995	1-2 (feet of erosion per year) ^g	0.0	0.0	0.0	10
37	Drought	2002-2014	0.4	0.0	0.0	0.0	11
27	Terrorism Incident	2000-2014	0.0	0.0	0.0	0.0	12
25	Active Shooter Incident	1966-2014	0.0	0.0	0.0	0.0	13
18	Power Outage Incidents	2010-2015	9.3	-- ^f	-- ^f	-- ^f	14
20	Cyber Attack on Local Government	-- ^h	-- ^h	0.0	0.0	0.0	15

NOTE: The solid horizontal line within the table separates hazards for which injuries and mortalities were documented and hazards for which no injuries or mortalities occurred (or for which no data was available).

^aThese numbers indicate the ranked order of the hazards assigned by the Racine County Hazard Mitigation Plan Local Planning Team through responses given in the Hazard and Vulnerability Assessment Tool (HVA). Where hazards listed in the HVA have been consolidated for analysis and planning purposes, the order is based upon the highest rank given in the HVA. There were 45 separate hazards that were ranked. For more details see Hazard Identification section and Table IV-3 in Chapter IV in this report.

^bBased upon cases of selected communicable diseases reported in Racine County from 2005 through 2013.

^cBased upon the total number of mortalities reported due to selected causes in Racine County from 2005 through 2013, as reported in Table IV-35 (deaths due to accidents were not included).

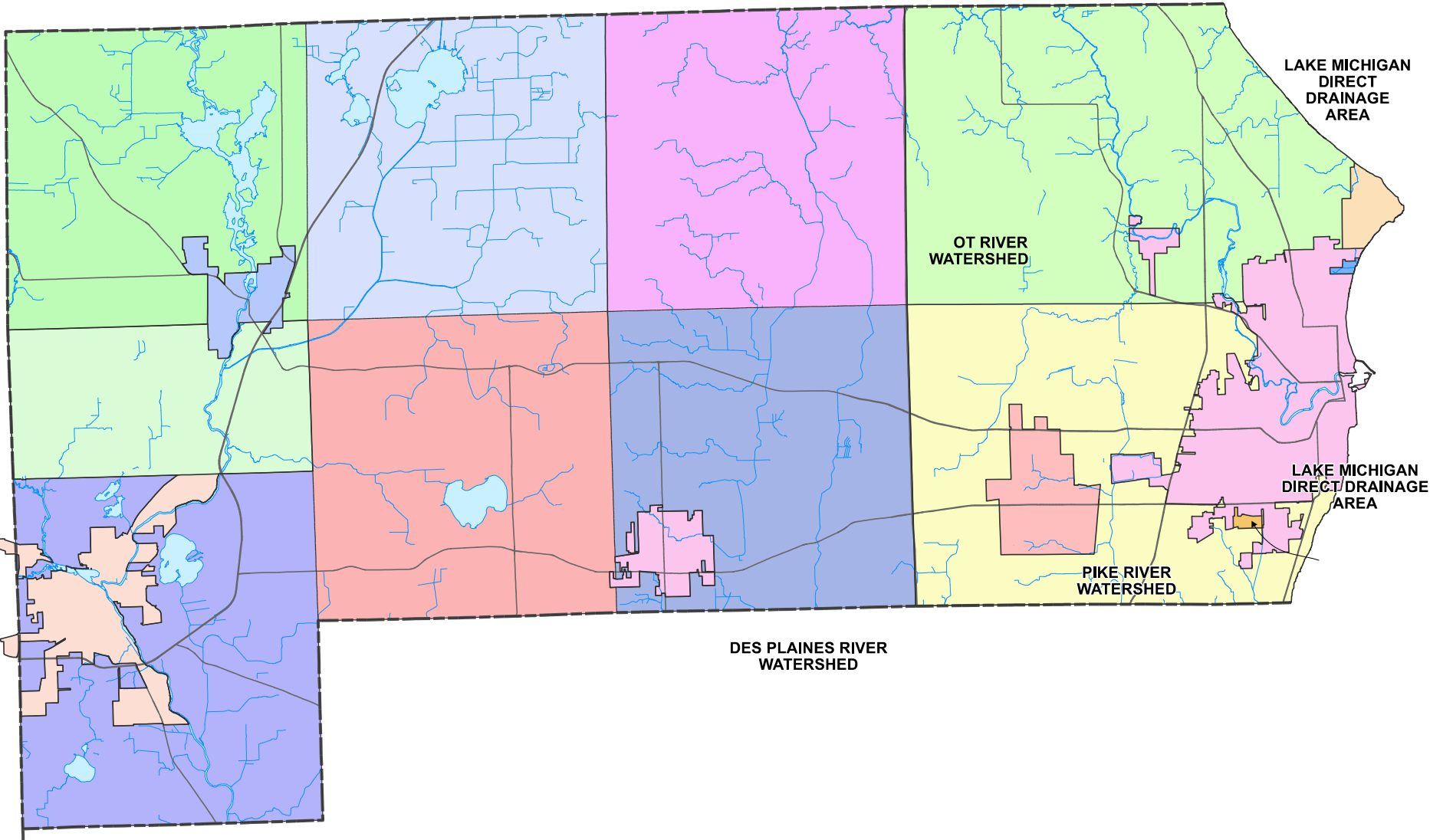
^dData reflect automobile accidents from years 1999 through 2013 and railroad accidents from years 1975 through 2014.

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^hNo data available.



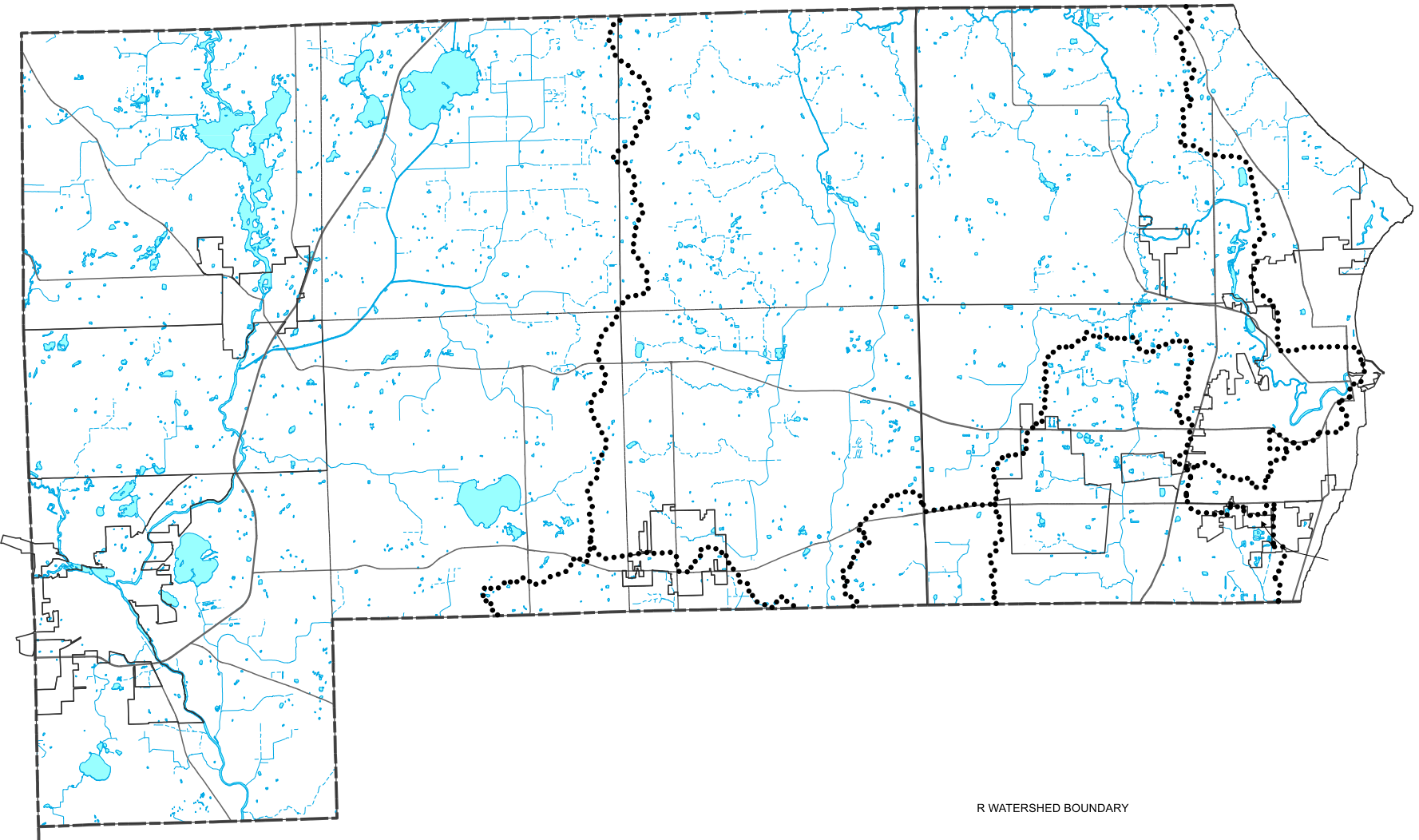
**LAKE MICHIGAN
DIRECT
DRAINAGE
AREA**

**OT RIVER
WATERSHED**

**LAKE MICHIGAN
DIRECT/DRAINAGE
AREA**

**PIKE RIVER
WATERSHED**

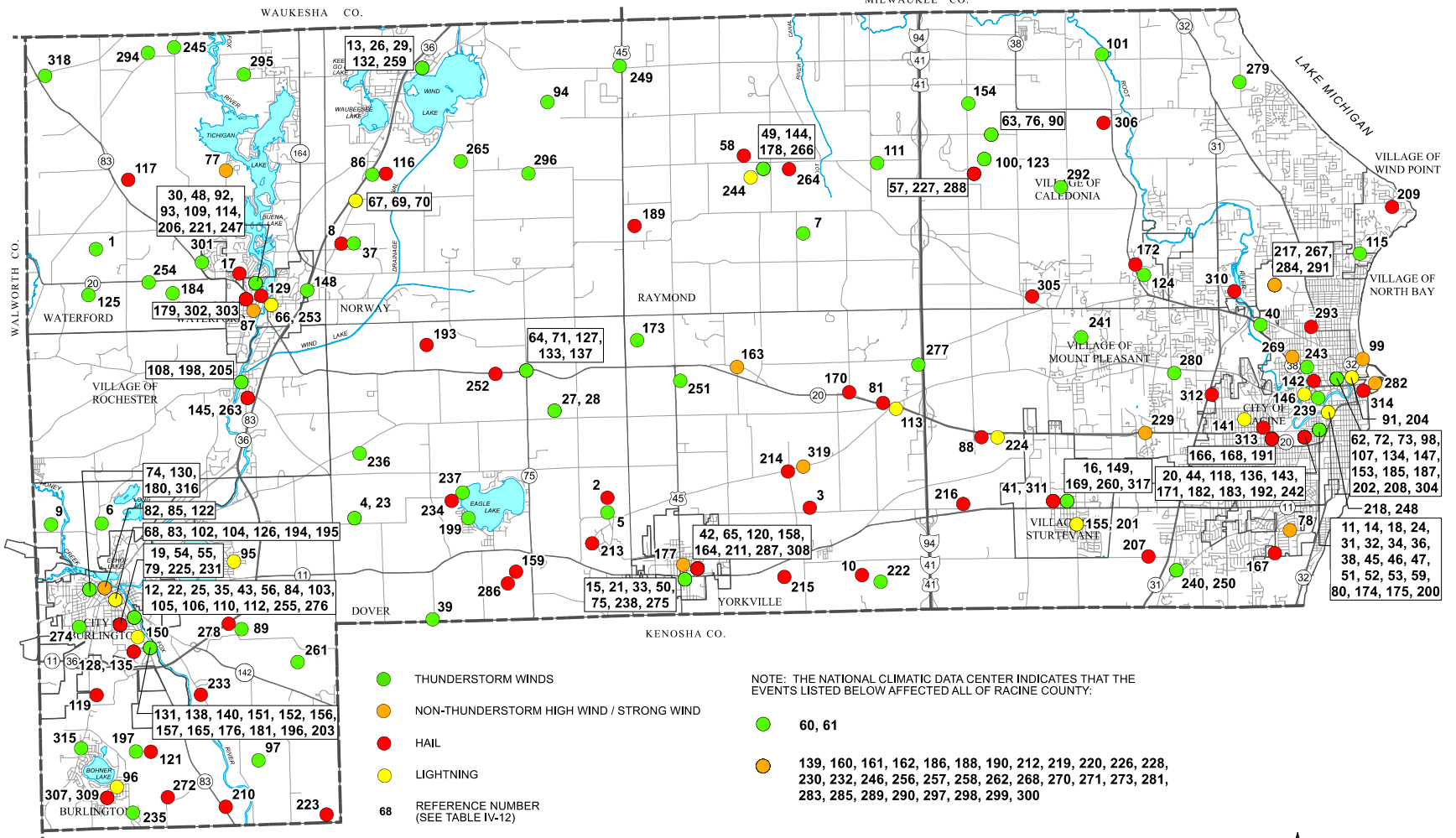
**DES PLAINES RIVER
WATERSHED**



R WATERSHED BOUNDARY

Map IV - 6

THUNDERSTORM WIND, NON-THUNDERSTORM HIGH-WIND, HAIL, AND LIGHTNING EVENTS REPORTED WITHIN RACINE COUNTY: SEPTEMBER 1961 - DECEMBER 2014

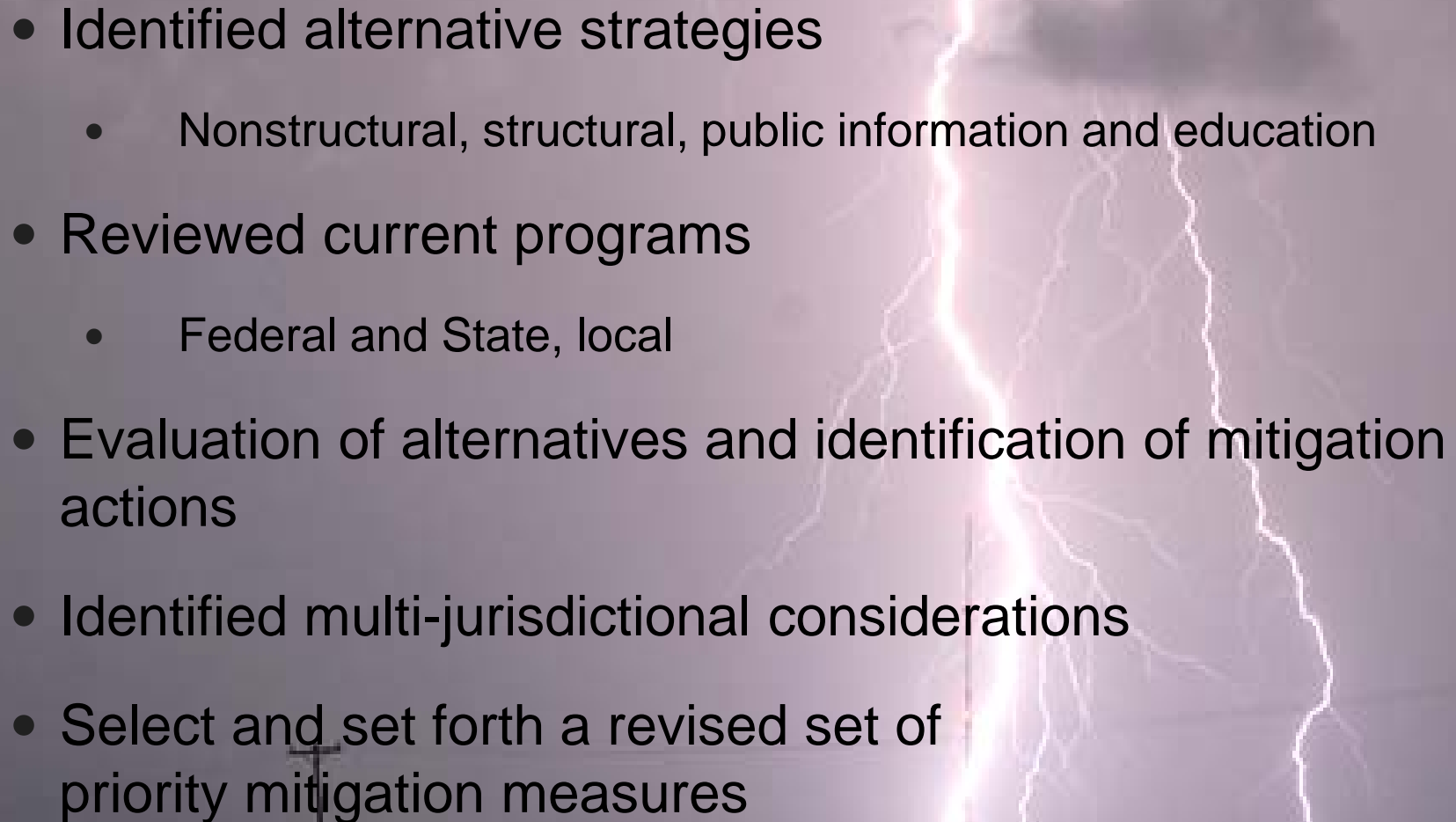


Source: National Climatic Data Center and SEWRPC.



Development of Hazard Mitigation Strategies

(Chapter V)

- Identified alternative strategies
 - Nonstructural, structural, public information and education
 - Reviewed current programs
 - Federal and State, local
 - Evaluation of alternatives and identification of mitigation actions
 - Identified multi-jurisdictional considerations
 - Select and set forth a revised set of priority mitigation measures
- 

Plan's Flood Mitigation Strategies

Chapter V

Floodland and wetland zoning and zoning review

Preservation of open space and sensitive areas

Purchase, demolition, and removal or flood proofing of up to 684 structures

Channel cleaning, maintenance, or rehabilitation for selected streams

Stormwater management planning and regulation

Stormwater management facility maintenance

Restoration of prairies and wetlands

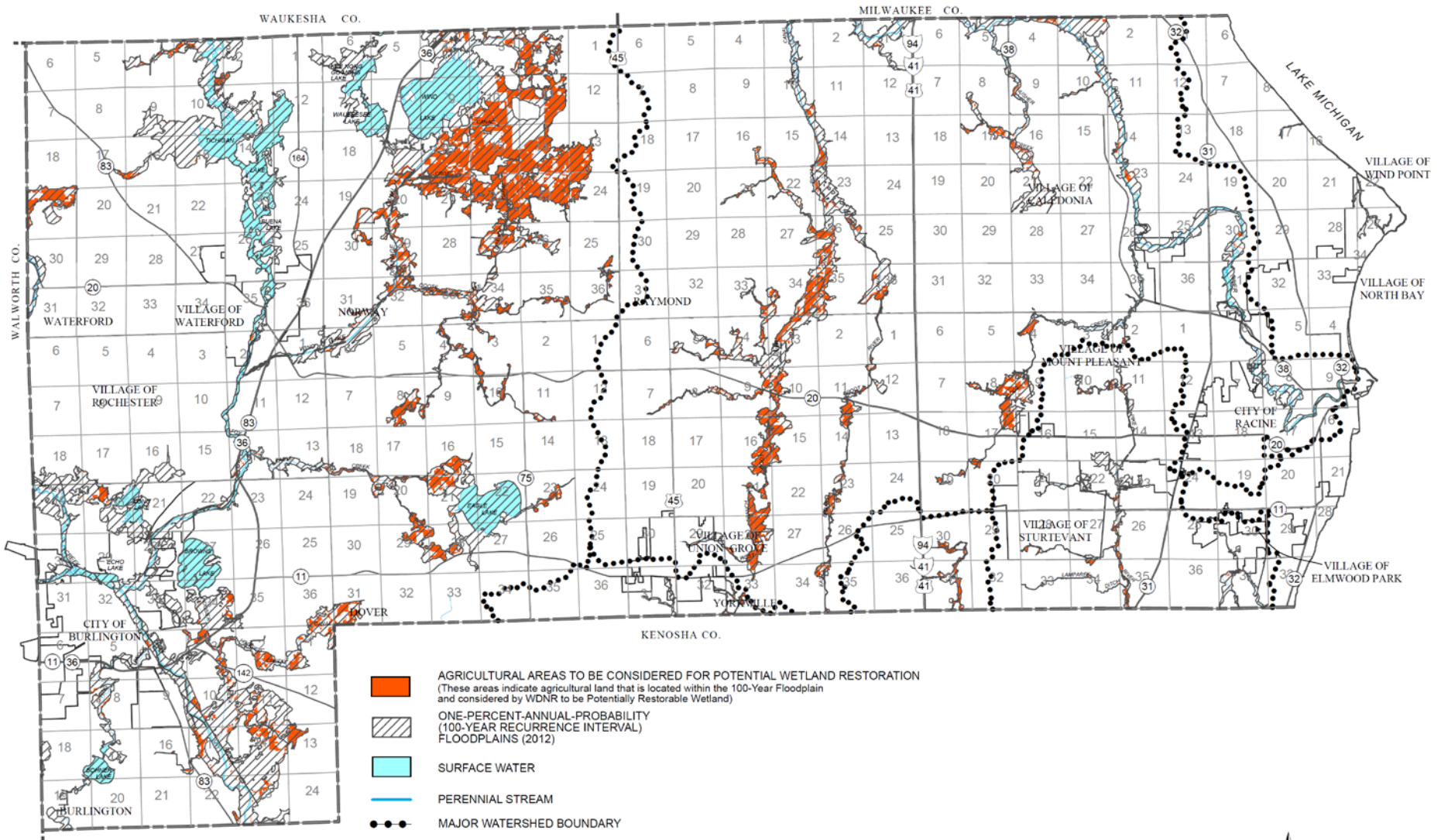
Survey of buildings near flood hazard areas



National Flood Insurance Program
map updating

Map V - 3

AGRICULTURAL AREAS TO BE CONSIDERED FOR POTENTIAL WETLAND RESTORATION



- AGRICULTURAL AREAS TO BE CONSIDERED FOR POTENTIAL WETLAND RESTORATION
(These areas indicate agricultural land that is located within the 100-Year Floodplain and considered by WDNR to be Potentially Restorable Wetland)
- ONE-PERCENT-ANNUAL-PROBABILITY (100-YEAR RECURRENCE INTERVAL) FLOODPLAINS (2012)
- SURFACE WATER
- PERENNIAL STREAM
- MAJOR WATERSHED BOUNDARY



Mitigation Strategies for Weather-related Hazards



(Chapter V)

Maintain early warning systems

NOAA Weather Radio, EAS broadcasting, CodeRED, Ready Badger App

Public information and education

Identify and advertise shelters (storm shelters, heating/cooling centers)

Installation of community storm shelters at mobile home parks

Review and enforcement of building code requirements

Continued coordination of local government emergency operations and response plan

Priority Mitigation Strategies for Human-induced Hazards

(Chapter V)



Public information and education

Driver safety, hazardous materials,
public health, power outages

Continued coordination of
emergency response

Governmental units, emergency
responders

Continued support of training,
equipping, planning and
preparedness for emergency
responders

Hazard event drills and preparation

Plan Implementation

(Chapter VI)

- Updated estimates of mitigation measure costs
- Summarized benefits of implementing mitigation measures
- Designated lead management agencies
- Updated current implementation status
- Identified potential sources of funding





Approval and Adoption

- When a draft plan is complete
 - Incorporate comments
 - Review by Wisconsin Division of Emergency Management → Incorporate comments
 - Review and approval by FEMA → Incorporate comments
 - The plan will need to be adopted by:
 - Racine County Board
 - Governing bodies of the Cities and Villages in the County



Project Web Site

- <http://www.sewrpc.org/HMP>
- Agendas and other meeting materials
- Summary notes from meetings
- Presentations
- Draft chapters as they are completed
- Comment screen
- Other ways to send a comment

Also Can Email Comments to aowens@sewrpc.org

Please Send Comments By May 12, 2017