

Southeastern Wisconsin **Regional Planning Commission**



Local Planning Team Meeting

Milwaukee County
Hazard Mitigation Plan Update

February 18, 2025

Megan Shedivy - Planner, SEWRPC

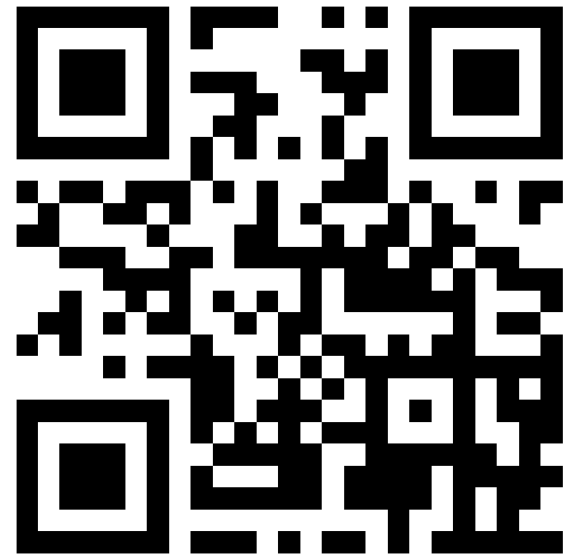
Laura Herrick, PE, CFM - Chief Environmental Engineer, SEWRPC



- Welcome/Introduction
- February 20, 2024, LPT Meeting **Summary Notes**
 - www.sewrpc.org/HMP
- Overview of Draft Chapters 4-6
- Online Community Capability Assessment
- Public Meeting March 3, 2025
- Questions/Adjourn

Community Capacity Online Survey

<https://arcg.is/0uWi9z>





Chapter 4

Hazard Mitigation Goals



●●●●● Chapter 4 – Goals and Objectives

- **Reduce risks to people and property**, including populations and assets deemed most **vulnerable**, from each of the identified hazards.
- **Promote Countywide coordination, planning, and training** that avoids transferring the risk of hazards from one community to an adjacent community, where appropriate.
- **Maintain** a spatial distribution of the various **land uses that preserves and protects the natural resources** of the County.
- **Identify high erosion risk sites along Lake Michigan** and develop/promote a **coastal erosion control program**.
- **Increase public awareness**, particularly to those that are **vulnerable**, of hazards that threaten life and property.
- **Identify potential funding sources** for mitigation projects and programs.





Chapter 5

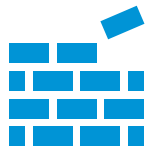
Hazard Mitigation Strategies



Profiled Hazards:

- Flooding
- Severe Thunderstorms (high winds, hail, lightning)
- Tornadoes
- Winter Storms
- Extreme Temperatures
- Drought
- Lake Michigan Coastal Hazards

❖ MULTI-HAZARD MITIGATION ALTS



Chapter 5- Mitigation Strategies

Chapter Outline

- Categorized Mitigation Strategies by:
 - Nonstructural/Nature-based
 - Structural
 - Public Information and Education
- Current Programming/Outreach Efforts
 - Federal, State, Local
- Multi-Jurisdictional Considerations
- Recommended Priority Actions



Cost-Benefit Analysis for Mitigation Measures

- Table 5.1 – Multi-Hazards
- Table 5.10 – Flood and Stormwater Drainage Problems
- Table 5.11 – Thunderstorms
 - (High-Winds, Hail, and Lightning)
- Table 5.12 – Tornado
- Table 5.13 – Winter Storms
- Table 5.14 – Extreme Temps
- Table 5.15 – Drought
- Table 5.16 – Coastal Hazards

More Mitigation Measures, More Savings



**One dollar invested in mitigation =
13 dollars U.S. saves in future costs**



Chapter 5 – Example of C/B Table

Table 5.1
Cost-Benefit Analysis for Hazard Mitigation Measures Within Milwaukee County: Multiple Hazards

Mitigation Measures	Estimated Cost ^a		Costs of Implementation ^b			Benefits						Community/ Jurisdictions Affected
	Capital	Average Annual Operation and Maintenance	Low	Moderate	High	Enhanced Preparedness/ Protection	Reduced Property Damage	Reduced Injuries	Reduced Mortalities	Enhanced quality of life/social benefits	Increased Environmental and/or Recreational Benefits/Ecosystems	
	Nonstructural											
Continue to enforce State building code regulations that aim to improve the ability of structures to withstand hazardous weather conditions (i.e., strong winds, hail, winter storms, extreme temps)	-- ^c	-- ^c	X			X	X	X	X			Milwaukee County and all local jurisdictions ^d
Encourage and enforce the periodic review of new and/or updated municipal and/or County development regulations, especially in known hazard areas	-- ^c	-- ^c	X			X	X	X	X			Milwaukee County and all local jurisdictions ^d
Encourage local municipalities to participate in the National Weather Service's (NWS) <i>StormReady</i> program	-- ^c	-- ^c	X			X						Milwaukee County and all local jurisdictions ^d
Continue the integration and expansion of hazard mitigation planning into other local planning efforts (i.e., comprehensive, watershed, and land use planning)	-- ^c	-- ^c	X			X						Milwaukee County and all local jurisdictions ^d
Create more local funding opportunities and programs for hazard mitigation	-- ^c	-- ^c		X		X						Milwaukee County and all local jurisdictions ^d
Continue to update a list of potential funding sources associated with hazard mitigation planning	-- ^c	-- ^c	X			X						Milwaukee County and all local jurisdictions ^d

Table continued on next page.





1. **Nonstructural:**

- Enforce State Building Code Regulations
- Periodic review of New/Updated Development/Zoning Regulations
- Integration/Expansion of Hazard Mitigation Planning into Other Planning Efforts
- Coordinate Emergency Mitigation, Response, and Operation Plans among County and Local governmental units

2. **Structural:**

- Maintain and upgrade public safety interoperability radio communication network and infrastructure systems

3. **Public Information/Educational Programming Outreach**

- Update and Maintain County OEM website and Other Related County and Local Departments and Organization Websites on Hazardous Weather Events, Preparedness, and Available Resources
- Increase participation in public outreach events to educate residents, notably those in **vulnerable** situations, on severe weather events and preparedness



1. Preservation of Floodplains, Open Space and Env. Sensitive Areas

- ❖ MMSD Greenseams Program

2. Floodplain Management

- ❖ Continue in **MMSD Watercourse and Floodplain Mgmt. Project Recs (Table 5.3)**
- ❖ Actions to Address Structures Potentially located in High-Risk Flood Areas:
 - Look into voluntary purchase, demolition, and removal or floodproofing of up to **1,276** structures (**Parcel-Based Analysis**)

3. Stormwater Management

4. Public Information and Education Outreach



Table 5.3
Major MMSD Watercourse Flood Mitigation Planning Projects
and Studies in Milwaukee County: Up to Year 2035

Watershed	Watercourse Project or Study	2023 Estimated Cost (millions)
Milwaukee River	Indian Creek Flooding Improvements Study	0.31
	Milwaukee River Estabrook - Post Dam Removal Project	2.65
	N. 30th Street Corridor Project	15.14
	Milwaukee River/Lake Estuary Study	0.36
Menomonee River	Concordia Avenue Acquisition/Floodproof Project	5.17
	Menomonee River - Western Milwaukee (Phase 2B)	58.24
	Menomonee River - FEMA Levee System Accreditation	16.03
	Menomonee River - Levee Sewer Rehabilitation	11.73
	Underwood Creek Reach 1 - Concrete Removal Project (Phase 2)	7.45
	Honey Creek Reach 1 - Concrete Removal Project	6.44
	Honey Creek- State Fair Culvert Preliminary Engineering (Phase 1 and 2)	30.99
	Menomonee River/Lake Estuary Study	0.05
Kinnickinnic (KK) River	KK River Watershed Flood Management Plan (Wilson Creek, Villa Mann Creek, Lyons Creek, and 43rd Ditch Projects)	6.88
	KK River - Pulaski Park Project	39.00
	KK River - Jackson Park Project	73.93
Oak Creek	Oak Creek Flood Management Plan - Floodproofing/Acquisition	9.33
Root River	Root River Floodplain Flood Mapping Study	0.73
Lake Michigan Direct Drainage	Impacts of Lake and River Water Levels Study on MMSD Facility	1.04
	Coastal Flood Resiliency Improvements Projects (Jones Island and South Shore Water Reclamation Facilities)	4.48
All	Greenseams Projects 2025-2030	10.40
	Impact of 1000-year Flood	0.35
Totals	Floodplain-Related Projects	274.72
	Stormwater-Related Projects	25.89
Total Project Costs		300.70

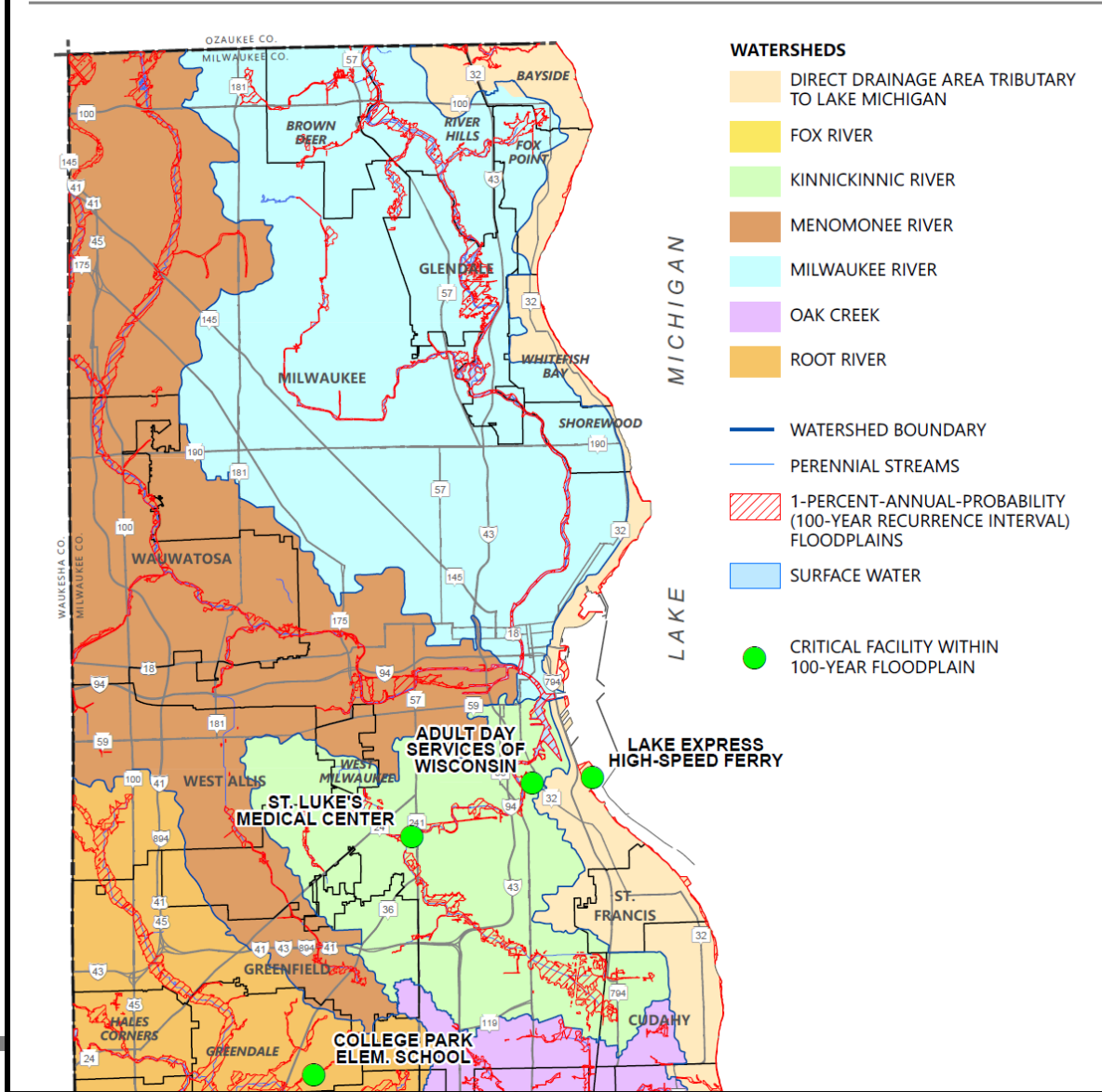


Table 5.7
Roadway Flooding Concerns in Milwaukee County: 2024

Community	Roadway Flooding Locations	Resource
City of Franklin	Around Whitnall Park beer garden along Root River Parkway and College Avenue	Milwaukee County
City of Greenfield	The intersection of Layton Avenue and the Root River Parkway 630-foot-long stretch of S. 43rd Street, just north of W. Edgerton Avenue W. Loomis Road crossing W. Layton Avenue crossing West of Honey Creek on S. Placid Drive just south of W. Allerton Avenue East of the Creek on W. Allerton Avenue just west of S. Honey Creek Drive	Milwaukee County Southeastern Wisconsin Regional Planning Commission (Commission) Commission Commission Commission Commission
City of Milwaukee	Between Morgan Avenue and Howard Avenue on the Oak Leaf Trail Lincoln Park on Hampton Avenue on north side of the road, just west of Milwaukee River Parkway W. Ohio Avenue east and west of Honey Creek 200-foot-long stretch of W. Honey Creek Drive and 500-foot-long stretch of S. Honey Creek Drive southwest of Honey Creek near S. 72nd Street 1,170-foot-long stretch of S. 72nd Street intersecting Honey Creek 600-foot-long stretch of W. Lakefield Drive north of Honey Creek 490-foot-long stretch of N. Honey Creek Parkway east of Honey Creek, 610 feet south of W. Bluemound Road	Milwaukee County Milwaukee County Commission Commission Commission Commission Commission
City of Oak Creek	Stormwater pond adjacent to Howell Avenue (west side of road) floods during high rain events	Commission
City of South Milwaukee	Stormwater flooding under railroad tracks at College Avenue due to inadequate inlet capacity at street level Stormwater flooding along Rawson Avenue at the railroad tracks during extreme events Stormwater flooding occurs at Marquette Avenue and UP railroad overpass during heavy rain events	Commission Commission Commission
City of Wauwatosa	W. Wisconsin Avenue intersecting Honey Creek (bridge) 1,490-foot-long stretch of N. Honey Creek Parkway east of Honey Creek, 670 feet southwest of Portland Avenue N. Honey Creek Parkway crossing, 250 feet southwest of Portland Avenue 860-foot-long stretch of W. Honey Creek Parkway north of Honey Creek, 1,400 feet west of N. 70th Street	Commission Commission Commission Commission
City of West Allis	Between Cleveland Avenue and Oklahoma Avenue on the west side Between National Avenue and Morgan Avenue	Milwaukee County Milwaukee County
Village of Greendale	College Avenue across from College Park Intersection of College Avenue and 51st Street	Milwaukee County Milwaukee County



Map 5.6
Critical Community Facilities Located within the
100-Year Floodplain of Milwaukee County Via Parcel-Based Analysis

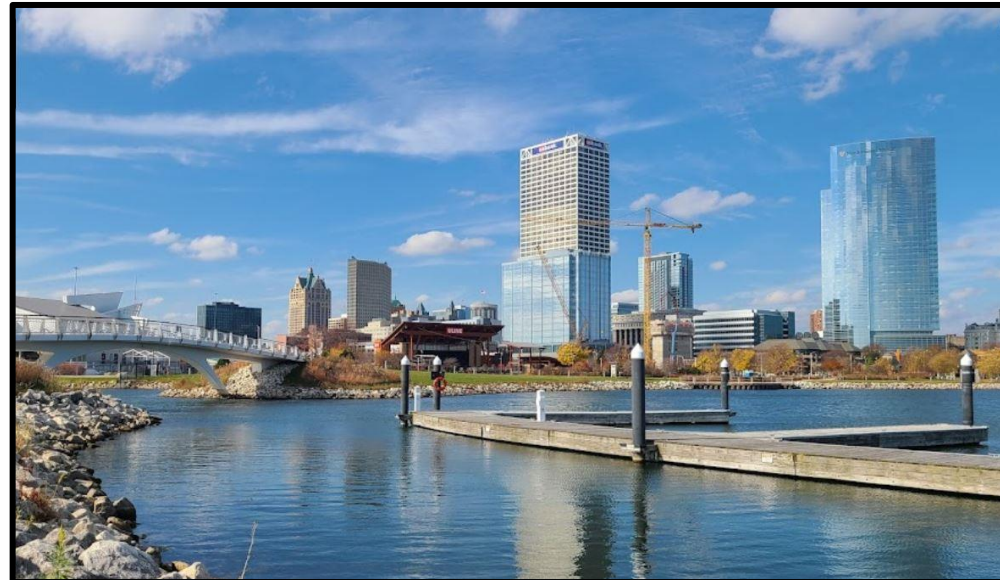


Chapter 5 –Flood Mitigation Strategies (Cont.)

Table 5.10
Cost-Benefit Analysis for Measures Included in the Milwaukee County Hazard Mitigation Plan Update:
Flood and Associated Stormwater Drainage Problems Hazards

Priority Mitigation Measures	Estimated Cost ^a		Costs of Implementation ^b			Estimated Benefits (dollars) ^c	Benefits						Community/Jurisdictions Affected
	Capital	Average Annual Operation and Maintenance (thousands of dollars)	Low	Moderate	High		Enhanced Preparedness/Protection	Reduced Property Damage	Reduced Injuries	Reduced Mortalities	Enhanced quality of life/social benefits	Increased Environmental and/or Recreational Benefits/Ecosystems	
Floodland and Environmentally Sensitive Land Preservation Element													
Maintain and potentially update floodplain and wetland zoning regulations and ordinances ^d	-- ^e	-- ^e	X				X	X	X	X	X	X	Milwaukee County and all cities and villages
Continue to promote and improve the preservation and/or maintenance of environmentally sensitive, natural and open space lands ^d	-- ^f	-- ^f			X		X	X		X	X		Milwaukee County and all cities and villages
Continue participation in the MMSD Greenseams program	-- ^g	-- ^g			X		X	X		X	X		Milwaukee County and all cities and villages
Floodplain Management Element													
Implementation of MMSDs Watercourse and Flood Management Planning Program floodplain projects through planned year 2035 (see Table 5.2 for individual project costs)	\$274.7M (2023 dollars)	-- ^f			X		X	X	X	X	X		MMSD, Milwaukee County and all cities and villages
Remove up to 16 repetitive loss structures ^{d,i}	\$2.9M (2022 dollars)	-- ^h			X		\$4.3M (per 100-yr flood event)	X	X	X	X	X	Milwaukee County and all affected communities
Surveys of up to 1,276 structures identified as being potentially located in flood hazard areas ^d	\$2.6M ⁱ (2022 dollars)	-- ^h			X		--	X					Milwaukee County and all affected communities
Floodproofing 207 structures identified as potentially located in flood hazard area ^{d,j}	\$96.8M (2023 dollars)	-- ^h			X		\$89.8M (per 100-year flood event)	X	X	X	X	X	Milwaukee County and all affected communities
Acquisition and removal/demolition of 1,260 structures identified as being potentially located in flood hazard area ^d	\$508M (2022 dollars)	-- ^h			X		\$76.1M (per 100-year flood event)	X	X	X	X	X	Milwaukee County and all affected communities

1. Coastline Reg.s and Policy Measures
2. Bluff Top BMPs
3. Bluff Face, Toe, and Shoreline Mgmt. BMPs
4. Coastal Flooding
5. Informational/Education Outreach



Chapter 5 – Coastal Strategies (Cont.)

- Enforce County/Municipal Shoreland Regs/Ords Related to Setbacks- Update/Adjust as Needed
- Ensure Shoreland Regs are Consistent with WCM/County Coastal Mgmt. Guidelines
- Re-evaluate Current Shoreline Protection Structures, Notably:
 - City Structures/Infrastructure
 - Port of Milwaukee
 - MMSD WRF
 - At-Risk Structures
- Relocate At-Risk Coastal Buildings
- Provide Information/Resources on Bluff and Shoreline BMPs.

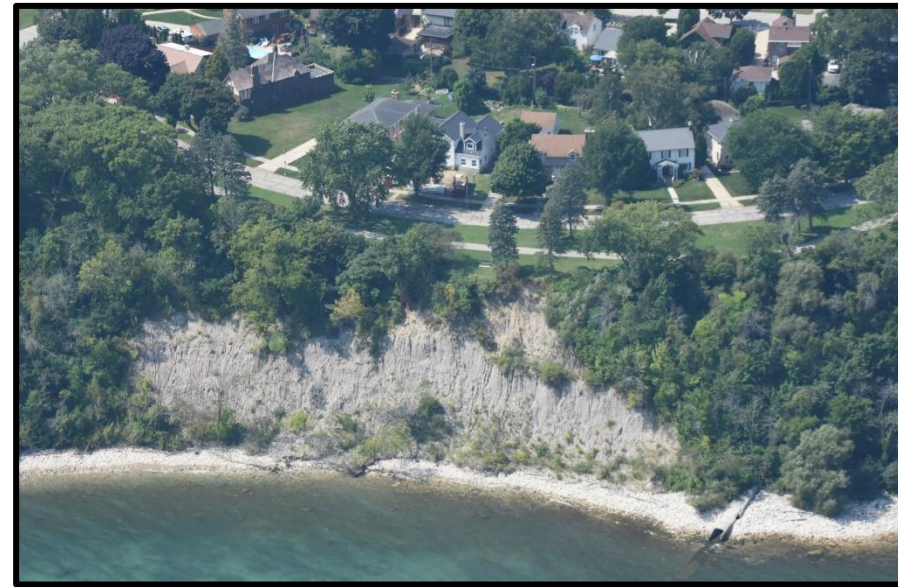
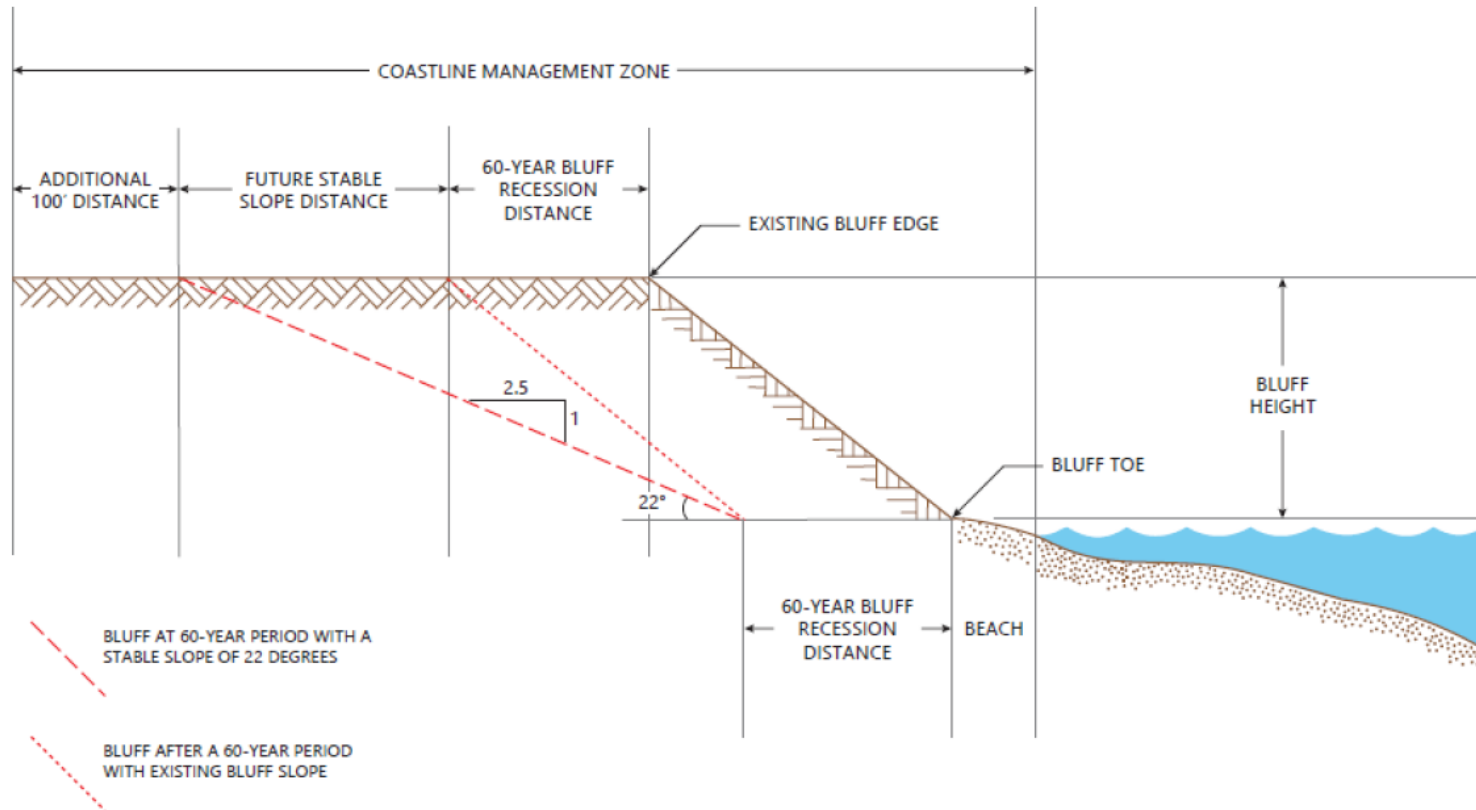


Figure 5.10
Coastal Management Zone Setback

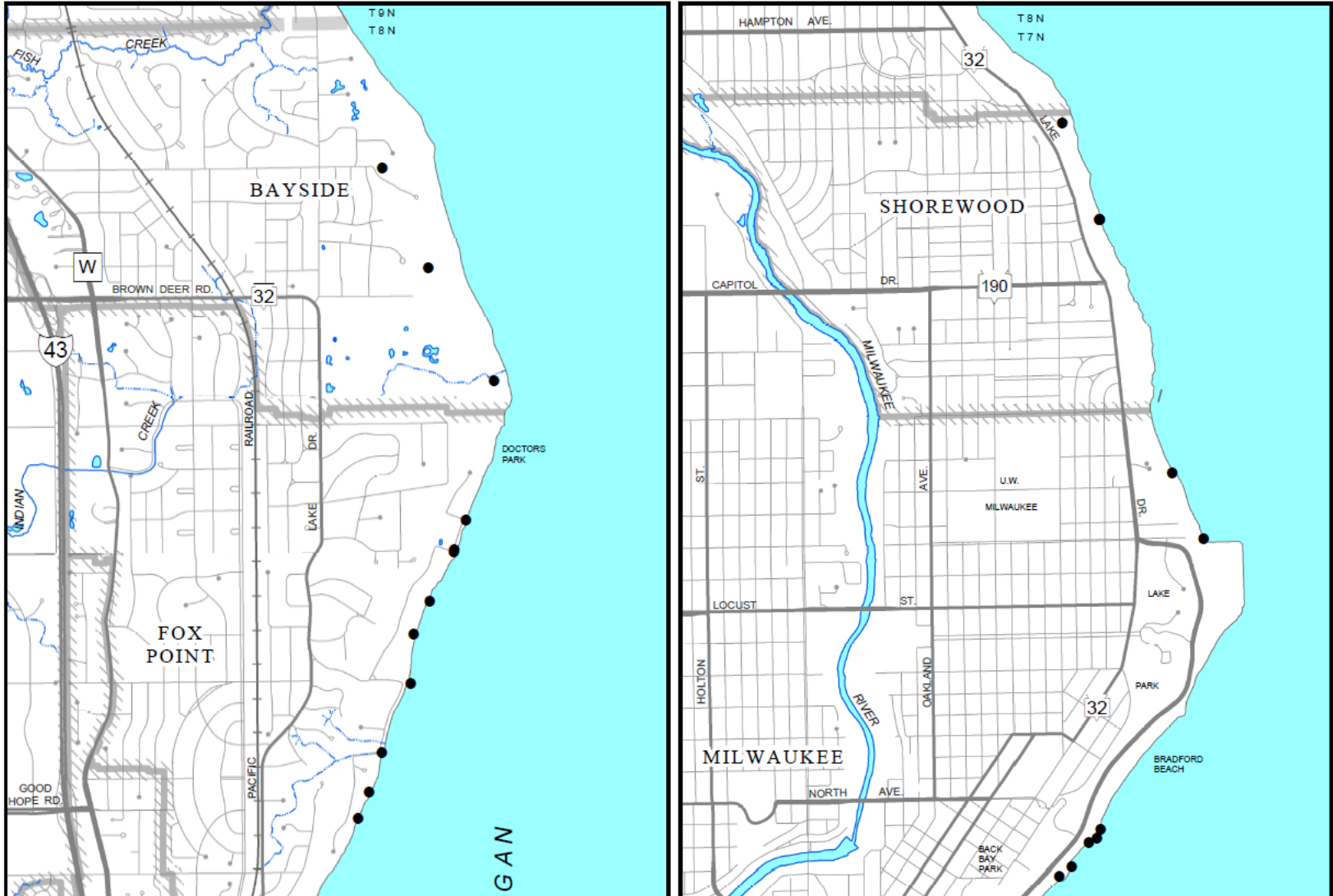


Source: University of Wisconsin Sea Grant Program and the Southeastern Wisconsin Regional Planning Commission





Map 5.10 (North Half)
Stormwater Outfalls along the Milwaukee County Lake Michigan Coastline





Chapter 6

Plan Adoption, Implementation, Maintenance, and Revision



- Steps to Review, Refine, and Adopt Plan
 - Plan implementation strategies
- Funding Sources
 - **Table 6.1**
 - Appendix L
- Annual Review



Table 6.1
Summary of Mitigation Measures and Funding Sources

Mitigation Measures	Status	Priority	Implementation Timetable	Designated Department, Management Agency, or Personnel	Potential Funding Programs (see Appendix L)
Multi-Hazards					
Continue to enforce State building code regulations that aim to improve the ability of structures to withstand increasingly harsh and/or hazardous weather conditions.	Implemented	High	Ongoing	Wisconsin Department of Safety and Professional Services (WSPS) Municipal-Building Inspector and/or Engineering/Development/Planning Department(s)	1, 2, 3, 6, 7, 8, 9, 21, 22, 23, 24, 26, 27, 29, 31, 34, 36, 37, 38, 40, 41, 42, 43, <u>44</u> , <u>45</u> , 43, 46, 50, 53, 54, 55, 56, 57, 58, 59, 61, 63
Encourage and persistently enforce the review of new and/or updated municipal and County development codes and regulations, especially in known hazard areas.	Partially Implemented	Medium	Ongoing	Commission, OEM, CMOEM, and Municipal Planning, Development, and Engineering departments Municipal- Building Inspector and/or Engineering/Planning/ Development Department(s)	
Encourage local municipalities to participate in the National Weather Service’s (NWS) <i>StormReady</i> program (i.e., weather spotter training).	Not Implemented	Low	As funding and opportunities become available	NWS, OEM, and CMOEM Municipal-Fire/Police, Health and Human Services, and/or Community Outreach and Event Department(s)	
Continue the integration and expansion of hazard mitigation planning into other local and County planning efforts.	Implemented	High	Ongoing	FEMA, WEM, MMSD, and Commission Milwaukee County-OEM, DHHS, Sheriff’s, and/or Parks Department(s) Municipal-Planning/ Development/Engineering, Utility/Public Works, Health and Human Services, and/or Fire/Police Department(s)	
Create and promote local funding opportunities and mechanisms for hazard mitigation.	Partially Implemented	Low	As funding and opportunities become available	OEM and CMOEM	

Table continued on next page.





Appendices



- A – LPT members and meetings (In Progress)
- B – Adoption Resolutions (TBD)
- C – Milwaukee Co. Socioeconomic Characteristics
- D – Different Alert, Warning, and Notification Systems
- E – Critical Comm. Facilities, Park and Open Sites, Historic Sites
- F – Percentage of Building Damage
- G through K – Hazard Mit. Resources
- L – Funding Programs
- M – Community Capability Assessment (In Progress)

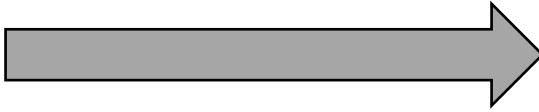


➤ To Finalize the Plan:

- Incorporate Final LPT Input/Comments
- Review by Wisconsin Division of Emergency Management (WEM): Incorporate Comments
- Review and Approval by FEMA: Incorporate comments
- The Plan Will Need to be Adopted by:
 - Milwaukee County Board
 - Governing Bodies of the Cities and Villages in the County within **1 year of FEMA approval date**



➤ Online or...



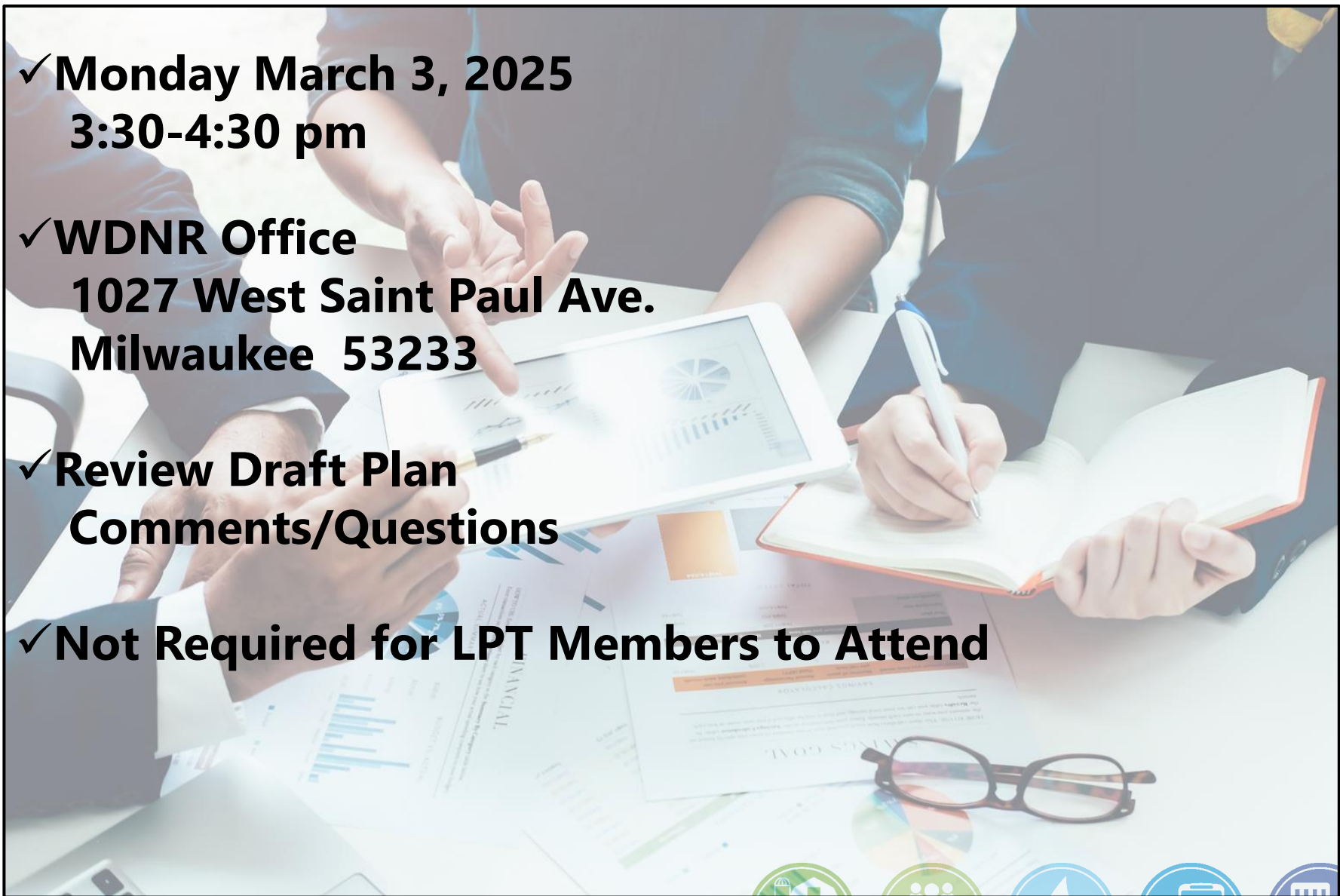
Community Capacity Online Survey

<https://arcg.is/0uWi9z>



➤ **Due March 7, 2025**





- ✓ **Monday March 3, 2025**
3:30-4:30 pm
- ✓ **WDNR Office**
1027 West Saint Paul Ave.
Milwaukee 53233
- ✓ **Review Draft Plan**
Comments/Questions
- ✓ **Not Required for LPT Members to Attend**



➤ www.sewrpc.org/HMP

- Draft chapters
- Meeting Minutes
- Presentations
- Comment Box

Also...

➤ mshedivy@sewrpc.org

Comments and Community Capability Assessment Due by March 7, 2025

The screenshot shows the website for the Southeastern Wisconsin Regional Planning Commission. The navigation menu includes 'About Us', 'Regional Planning', 'Local Planning' (circled in red), 'Info & Data', and 'Services'. The main heading is 'Hazard Mitigation Planning' with a subtext: 'The Commission assists counties and local governments in preparing hazard mitigation plans aimed at minimizing the impact of disasters.'

Hazard Mitigation Planning

Hazard mitigation plans fulfill requirements by the Federal Emergency Management Agency (FEMA) and Wisconsin Emergency Management (WEM), assuring communities are eligible to apply for federal funding for hazard mitigation projects. **Hazard mitigation projects help communities reduce the loss of life and property by minimizing the impact of natural disasters.**

Mitigation Strategies

Hazard mitigation plans are focused on natural weather-related hazards, including flooding, coastal bluff failure, tornadoes, thunderstorms, extreme temperature events, and severe winter storms. After identifying these risks, the plans include long-term and equitable strategies for protecting people and property from similar events.

Mitigation strategies may include floodplain protection, structure acquisition or buyouts, dam inspections, installation of community safe rooms, critical infrastructure protection, green infrastructure (or nature-based solutions), and warning systems to protect people and property from natural hazard events, along with accessible community outreach and education for all residents and communities throughout a county.

Current Planning Efforts

The Commission is currently assisting Milwaukee County in updating their hazard mitigation plan. Hazard planning efforts were also recently completed for the Kenosha County, Racine County, and Washington County.

Milwaukee County Plan Update

[Open All](#)

- + Draft Plan Chapters and Appendices
- + Meeting Materials
- + Meeting Presentations

Contacts

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Chief Environmental Engineer
262.953.3224

Current Plans

- City of Milwaukee
- Kenosha County
- Ozaukee County
- Racine County
- Washington County
- Fox (IL) River Watershed

Related Links

- Wisconsin Emergency Management
- Federal Emergency Management Agency



Thank You

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