

Community Assistance Planning Report No. 345

MILWAUKEE COUNTY HAZARD MITIGATION PLAN

Chapter 4

HAZARD MITIGATION GOALS

Planning is a rational process for formulating and meeting goals and objectives. Consequently, formulating goals and objectives is an essential task that must be undertaken before plans can be prepared. This chapter sets forth hazard mitigation goals and objectives when considering alternative hazard mitigation strategies for Milwaukee County and in selecting recommended strategies from among those alternatives. The Federal Emergency Management Agency (FEMA) defines goals and objectives as follows. Goals are general guidelines that explain what a community desires to achieve. Based on the selected goals, a community can develop specific objectives (or standards) needed to attain those goals.

4.1 RELATIONSHIP OF HAZARD MITIGATION GOALS AND OBJECTIVES TO OTHER RELEVANT PLANNING EFFORTS

The updated goals and objectives for this Milwaukee County hazard mitigation plan were built upon a combination of pertinent and relevant planning resources, including LPT input, the previous County and City of Milwaukee hazard mitigation plans¹ as well as local,² County, and Regional planning efforts. Also, watershed and Lake Michigan coastline plans and programs, as highlighted below, were essential in developing the updated goals and objectives included in this plan.

Regional and County Planning Efforts

- Southeastern Wisconsin Regional Planning Commission (Commission) Planning Report No. 42, *Regional Natural Areas Plan*, September 1997 (amended 2010)

¹ *Milwaukee County Office of Emergency Management*, Milwaukee County Hazard Mitigation Plan, October 19, 2017; *Southeastern Wisconsin Regional Planning Commission Community Assistance Planning Report No. 282*, City of Milwaukee All Hazards Mitigation Plan Update, November 2019.

² *Each of Milwaukee County's nineteen jurisdictions, including the City of Milwaukee's 14 neighborhoods, have prepared and adopted independent comprehensive (or "smart growth") plans: Southeastern Wisconsin Regional Planning Commission Community Assistance Planning Report No. 339, A Comprehensive Plan Update for the City of Cudahy: 2050 (2nd Edition), August 2021; PDI/GRAEF, R.A. Smith National, and Cedarburg Science, City of Franklin 2025 Comprehensive Master Plan, October 2009; Vandewalle & Associates, Inc., Glendale Comprehensive Plan: 2040, August 2020; Vandewalle & Associates, Inc., City of Greenfield Comprehensive Plan, December 2020; Conservation Design Forum, City of Milwaukee Citywide Policy Plan, March 2010, amended September, 2021; Houseal Lavigne Associates, Comprehensive Plan City of Oak Creek, March, 2020; Catalus, LLC., City of St. Francis 2016 Comprehensive Plan Update, February 2016; Graef, City of South Milwaukee 2035 Comprehensive Plan 2016, amended in 2023; Vandewalle & Associates, Inc., City of Wauwatosa Comprehensive Plan: 2008-2030, December 2008; Ayers Associates and GRAEF, 2045 Comprehensive Plan: City of West Allis, March 2024; Vandewalle & Associates, Inc., Village of Bayside Comprehensive Plan 2042, April 2022; URS Consulting, The Village of Brown Deer Comprehensive Plan Update 2023, November 2009; Vierbicher, Village of Fox Point Comprehensive Plan, June 2021; PDI/GRAEF, Village of Greendale Comprehensive Plan Update: 2020-2045, November 2019; GRAEF, Village of Hales Corner Comprehensive Plan Update 2050, October 2021; Crispell-Snyder, Inc., Village of River Hills Comprehensive Plan Update 2019, October 2019; Vandewalle & Associates, Inc., Shorewood Comprehensive Plan 2040, April 2021; Vandewalle & Associates, Inc., Village of West Milwaukee – 2040 Comprehensive Plan Update, December 2019; GRAEF, The Village of Whitefish Bay Comprehensive Plan Update, November 2019.*

- Southeastern Wisconsin Regional Planning Commission Planning Report No. 55, *VISION 2050: A Regional Land Use and Transportation Plan for Southeastern Wisconsin*, June 2020
- Southeastern Wisconsin Regional Planning Commission Community Assistance Planning Report No. 312 (2nd Edition), *A Land and Water Resource Management Plan for Milwaukee County: 2022-2031*, December 2021
- Southeastern Wisconsin Regional Planning Commission Community Assistance Planning Report No. 132 (2nd Edition), *A Long- Range Park and Open Space Plan for Milwaukee County*, February 2022

Commission Comprehensive Watershed Plans

Beginning in the mid-1960s, the Commission developed comprehensive watershed plans for the Kinnickinnic River watershed, the Menomonee River watershed, the Milwaukee River watershed, the Oak Creek watershed, and the Root River watershed, all of which are within Milwaukee County. These plans included an evaluation of alternatives and recommended flood mitigation plans on a comprehensive watershed-wide basis. Most of the flood control recommendations in these plans are obsolete, but their goals and objectives are still valid today. These plans also formed the basis for later work as discussed below.

Kinnickinnic River Watershed

- Southeastern Wisconsin Regional Planning Commission Planning Report No. 32, *A Comprehensive Plan for the Kinnickinnic River Watershed*, December 1978

Menomonee River Watershed

- Southeastern Wisconsin Regional Planning Commission Planning Report No. 26, *A Comprehensive Plan for the Menomonee River Watershed*, Volume 1, Inventory Findings and Forecast, October 1976, and Volume 2, Alternative Plans and Recommended Plan, October 1976

Milwaukee River Watershed

- Southeastern Wisconsin Regional Planning Commission Planning Report No. 13, *A Comprehensive Plan for the Milwaukee River Watershed*, Volume One, Inventory Findings and Forecasts, December 1970, and Volume Two, Alternative Plans and Recommended Plan, October 1971

- Southeastern Wisconsin Regional Planning Commission Planning Report No. 37, *A Water Resources Management Plan for the Milwaukee Harbor Estuary*, Volume One, Inventory Findings, March 1987, and Volume Two, Alternative and Recommended Plans, December 1987
- Southeastern Wisconsin Regional Planning Commission Community Assistance Planning Report No. 261, *Flood Mitigation Plan for the City of Milwaukee, Milwaukee County, Wisconsin*, October 2000

MMSD Comprehensive Stormwater Drainage and Flood Control System Plan

Subsequently, in 1986 and again in 1990, at the request of MMSD, Southeastern Wisconsin Regional Planning Commission developed a Comprehensive Stormwater Drainage and Flood Control System Plan³ which is built upon the findings in the comprehensive watershed system plans (listed above) within Milwaukee County. The Plan consists of two parts: a policy plan and a stormwater drainage and flood control system plan. Additionally, it discusses the District's stormwater management and flood control responsibilities, including the types, general locations, and horizontal and vertical alignments of needed drainage and flood control facilities within MMSD's jurisdiction.

MMSD Watercourse System Planning Program

Over the course of these planning efforts, MMSD's philosophy of flood "control" shifted to floodplain "management." As such, in 1996 MMSD began its environmentally responsible systemwide Watershed Planning Program. The program goals were to reduce current flood risk while putting policies and programs in place to mitigate future problems at the watershed level. Listed below are the watershed planning reports developed as part of this program.

Kinnickinnic River Watershed

- Milwaukee Metropolitan Sewerage District, *Kinnickinnic River Phase 1: Watercourse System Management Plan*, August 2000
- Milwaukee Metropolitan Sewerage District, *Kinnickinnic River Phase 2: Watercourse Management Plan*, May 2005

³ Southeastern Wisconsin Regional Planning Commission Community Assistance Planning Report No. 130, *A Stormwater Drainage and Flood Control Policy Plan for the Milwaukee Metropolitan Sewerage District*, March 1986; Southeastern Wisconsin Regional Planning Commission Community Assistance Planning Report No. 152, *A Stormwater Drainage and Flood Control System Plan for the Milwaukee Metropolitan Sewerage District*, December 1990

- Milwaukee Metropolitan Sewerage District, *Kinnickinnic River Watershed Flood Management Plan: Final Report*, May 4, 2017

Menomonee River Watershed

- Milwaukee Metropolitan Sewerage District, *Menomonee River Phase 1: Watercourse Management Plan*, August 2000
- Milwaukee Metropolitan Sewerage District, *Menomonee River Phase 2: Watercourse Management Plan*, July 2002

Milwaukee River Watershed

- Milwaukee Metropolitan Sewerage District, *Milwaukee River Watershed Phase 1: Watercourse System Management Plan*, August 2000
- Southeastern Wisconsin Regional Planning Commission Memorandum Report No. 172, *A Watercourse System Plan for the Milwaukee River in Milwaukee County Upstream of the Milwaukee Harbor Estuary*, December 2010

Oak Creek Watershed

- Milwaukee Metropolitan Sewerage District, *Oak Creek Phase 1: Watercourse Management Plan*, August 2000
- Southeastern Wisconsin Regional Planning Commission Memorandum Report No. 198, *Oak Creek Updated Phase 1: Watercourse Management Plan*, December 2011, Revised May 2019

Root River Watershed

- Milwaukee Metropolitan Sewerage District, *Root River Phase 1: Watercourse Management Plan*, August 2000

Lake Michigan Direct Drainage Area

- Milwaukee Metropolitan Sewerage District, *Lake Michigan Direct Drainage Area Phase 1: Watercourse System Management Plan*, August 2000

The overall goal of the MMSD Watershed Planning Program is to develop environmentally responsible, cost-effective flood management recommendations based upon the following fundamental objectives:

- Utilize and develop watercourse models that are consistent with Southeastern Wisconsin Regional Planning Commission methodology and anticipate future planning efforts
- Identify problems and design solutions for the FEMA regulatory event (1-percent-annual-probability)
- Utilize a watershed-based approach
- Utilize future land use conditions to identify problems and develop solutions
- Focus on environmentally sensitive and aesthetically acceptable engineering solutions
- Integrate local stormwater runoff control features
- Incorporate current regulatory requirements
- Identify costs and benefits of solutions
- Identify and resolve policy issues critical to the implementation of the watercourse plan
- Obtain community input to develop acceptable solutions

Other Watershed Planning Efforts

Other watershed planning efforts in the County have been completed over time and are listed below. These provide additional insights into goals and objectives for hazard mitigation planning.

- Milwaukee Metropolitan Sewerage District, *Kinnickinnic River Watershed Restoration Plan*, April 2010
- Southeastern Wisconsin Regional Planning Commission Community Assistance Planning Report No. 316, *A Restoration Plan for the Root River Watershed*, July 2014

- Milwaukee Metropolitan Sewerage District, *Kinnickinnic River Watershed: Green Infrastructure Plan*, 2018
- Southeastern Wisconsin Regional Planning Commission Community Assistance Planning Report No. 330, *A Restoration Plan for the Oak Creek Watershed*, December 2021

Coastal Planning

Listed below are a few planning efforts for the Lake Michigan coastline that impact Milwaukee County. These plans can provide additional ideas for goals and objectives for coastal hazard mitigation planning.

- Southeastern Wisconsin Regional Planning Commission Technical Report No. 36, *Lake Michigan Shoreline Recession and Bluff Stability in Southeastern Wisconsin: 1995*, December 1997
- Milwaukee County Environmental Services, *Milwaukee County Coastal Resources Inventory*, October 2020
- Southeastern Wisconsin Regional Planning Commission Memorandum Report No. 248, *Milwaukee County Coastline Management Guidelines*, February 2021

4.2 HAZARD MITIGATION GOALS AND OBJECTIVES FOR THE MILWAUKEE COUNTY HAZARD MITIGATION PLAN

Figure 4.1 presents the goals of the Milwaukee County hazard mitigation plan update. Complementing each of these goals is a set of objectives that can be used to define more specific actions or strategies to achieve the goals.

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FIGURES

Figure 4.1 Goals and Objectives for the Milwaukee County Hazard Mitigation Plan Update

- ▶ **Goal 1: Preserve life and minimize the potential for injuries.**
 - **Objective 1.1:** Identify natural hazards that threaten life in Milwaukee County.
 - **Objective 1.2:** Identify populations within Milwaukee County that are particularly vulnerable to each identified hazard.
 - **Objective 1.3:** Implement programs and projects that assist in protecting the lives of populations vulnerable to each identified hazard.

- ▶ **Goal 2: Preserve and enhance the quality of life throughout Milwaukee County by identifying potential property damage risks and recommending appropriate mitigation strategies to minimize potential damages.**
 - **Objective 2.1:** Identify locations where property damages are vulnerable to each identified hazard.
 - **Objective 2.2:** Improve and update hazard assessment information to be able to make informed recommendations that encourage adaptive and preventative measures for existing development in areas vulnerable to identified hazards, and to discourage new development in such areas.
 - **Objective 2.3:** Protect life and property by implementing and enforcing modern standards, codes, ordinances, and construction procedures.
 - **Objective 2.4:** The development of a stormwater management system, floodplain management system, dam safety system, and sanitary sewer system which reduce the exposure of people to drainage- and flooding-related inconvenience and health and safety hazards, and which reduces the exposure of real and personal property to damage through inundation and basement backup resulting from flooding, dam failure, inadequate stormwater drainage, or sewerage system capacity.
 - **Objective 2.5:** Continue to participate in the National Flood Insurance Program (NFIP) and encourage participation in the Community Rating System (CRS) program for all communities within the County.

- ▶ **Goal 3: Promote Countywide coordination, planning, and training that avoids transferring the risk of hazards from one community to an adjacent community, where appropriate.**
 - **Objective 3.1:** Identify and encourage uniformity across municipal boundaries in implementing modern standards, codes, ordinances, and construction procedures to mitigate hazard impacts, where appropriate, to strengthen desired outcomes (i.e.: stormwater management ordinances).
 - **Objective 3.2:** Identify and encourage cross-jurisdictional and/or multiple property owner programs and projects where such cooperation would strengthen desired outcomes (i.e.: stormwater and Lake Michigan shore structure protection projects).

- **Objective 3.3:** Provide and maintain facilities necessary to maintain high quality fire and police protection and emergency medical services throughout the County.
 - **Objective 3.4:** Provide for the capability to provide fire and police protection and emergency medical services and for adequate operation of wastewater treatment facilities during a one percent-annual-probability flood event.
 - **Objective 3.5:** Continue developing and strengthening inter-jurisdictional coordination and cooperation in the area of emergency services.
 - **Objective 3.6:** Continue to develop, maintain, and support comprehensive mutual aid agreements.
 - **Objective 3.7:** Continue providing Milwaukee County and municipal emergency services with training and equipment to address all identified hazards.
 - **Objective 3.8:** Identify and develop programs that complement County and local emergency operations plans to mitigate the potential exposure to health and safety risks and the exposure of property to damage from a broad range of hazards that are unpredictable and not geographically specific in nature.
 - **Objective 3.7:** Continue to develop and maintain backup plans and communications interoperability and redundancy for emergency response throughout the County. Communications interoperability for other crucial public health, public works, dispatch, emergency management, and hospitals should also ensure adequate prevention and operations response.
- **Goal 4: Maintain a spatial distribution of the various land uses that preserves and protects the natural resources of the County, including its soils, inland lakes and streams, groundwater, wetlands, woodlands, wildlife, floodplains, and natural areas and critical species habitats.**
- **Objective 4.1** Urban development should not be located in areas which would cause or be subject to flood damage.
 - **Objective 4.2:** No unauthorized structure or fill should be allowed to encroach upon and obstruct the flow of the floodway portion of stream channels.
 - **Objective 4.3:** The types and distribution of land uses should be developed considering the potential impacts on flood flows, surface water quality, and groundwater quantity and quality. Considerations should be made to limit the amount of impervious surface in new or redeveloped areas.
 - **Objective 4.4:** All remaining undeveloped lands within the designated primary environmental corridors in the County should be preserved in essentially natural, open uses.
 - **Objective 4.5:** All remaining undeveloped lands within the designated secondary environmental corridors and isolated natural resource areas in the County should be considered for preservation as urban development proceeds.
 - **Objective 4.6:** All wetlands adjacent to streams or lakes, all wetlands within areas having special wildlife or other natural values, and all wetlands having an area of five acres or greater should not be allocated to any urban development, except limited recreational use, and should not be drained or filled. In addition, County and local units of government may choose to preserve all wetlands.

► **Goal 5: 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 property to shoreline erosion and bluff recession.**

- **Objective 5.1:** Erosion risk areas and structure setback distances from the Lake Michigan shoreline should be established based upon the recommendations included in the Milwaukee County coastal erosion management plan. This plan provided recommendations for structural setback distances from the top of the coastal bluff based on shoreline protection, a stable bluff slope, and bluff recession over 50 years.
- **Objective 5.2:** Publicly-owned assets along the Lake Michigan shoreline should be protected and preserved from future development and shoreline hazards.

► **Goal 6: Increase public awareness of hazards that threaten life and property.**

- **Objective 6.1:** Increase public awareness of existing threats and the means to reduce these threats by conducting educational and outreach programs to all the various community groups in the County.
- **Objective 6.2:** Increase public awareness of populations that are particularly vulnerable to certain hazard threats, and inform them of actions they can take, as well as programs available to them, to reduce the risk of injury, death, and property damage.
- **Objective 6.3:** Provide informational items, partnership opportunities, and funding resource information to assist in implementing mitigation activities.

► **Goal 7: Identify potential funding sources that can assist in the implementation of mitigation projects and programs.**

- **Objective 6.1:** Because funding programs and opportunities are constantly changing, the involved County and local units of government staffs should monitor and maintain the potential funding sources and programs.
- **Objective 6.2:** Whenever possible, seek funding programs that meet multiple objectives and recommendations made for this hazard mitigation plan as well as those of other County and local community planning efforts.