

SEWRPC Community Assistance Planning Report No. 282-3ED
CITY OF MILWAUKEE ALL HAZARDS MITIGATION PLAN UPDATE

Chapter IV

HAZARD MITIGATION GOALS AND OBJECTIVES

Planning may be defined as a rational process for formulating and meeting goals and objectives. Consequently, the formulation of 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 for use in consideration of alternative hazard mitigation strategies for the City of Milwaukee and in the selection of recommended strategies from among those alternatives.

It is important to note that Milwaukee County has completed a Pre-Disaster Mitigation Plan that includes specific goals and objectives that were developed through a series of public meetings and stakeholder interviews to assist County residents, local governments, and others in reducing risk and preventing loss from future hazard events.¹ The two goals stated in the Milwaukee County plan that are identified specifically for the City of Milwaukee, are to reduce the impacts from flooding and to enhance emergency response capabilities, both of which have been incorporated into the formulation of goals and objectives for this Plan as shown in Table IV-1 (see Goals No. 4 and 6 below).

In formulating and setting forth goals and objectives, their differing natures and purposes must be kept in mind. In this regard, the definition of goals and objectives used herein is as promoted by the Federal Emergency Management Agency (FEMA). Goals are general guidelines that explain what a community desires to achieve. Based upon the selected goals, a community can then develop the specific objectives or standards needed to attain the goals. Objectives and standards more narrowly define strategies for meeting the selected goals and are more specific than goals.

¹*Milwaukee County Emergency Management, Milwaukee County Wisconsin Pre-Disaster Mitigation Plan, August 2004; Milwaukee County Emergency Management, Milwaukee County Wisconsin Pre-Disaster Mitigation Plan, June 2011; Milwaukee County Office of Emergency Management, Milwaukee County Hazard Mitigation Plan, draft, October 19, 2017.*

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

The City of Milwaukee has prepared a comprehensive plan that will provide a basis for broad-based decision-making on land use-related issues by City officials and will increase the awareness of City planning goals and objectives by landowners, developers, and other private interests. That plan incorporates elements from other pertinent City, County, and Regional plans as appropriate. Components of that plan are listed in Table I-1 in Chapter I of this report.

Milwaukee County has also prepared and adopted a park and open space plan² and the Regional Planning Commission has prepared and adopted a regional land use and transportation plan.³ The City of Milwaukee has prepared a comprehensive outdoor recreation plan.⁴ These plans provide guidance in preserving and developing recreational, land use, and other open space uses throughout the City. In addition, comprehensive watershed plans⁵ have been developed for each of the major watershed areas which include areas in the City of Milwaukee. These plans included evaluation of alternatives and recommended flood mitigation plans developed on a comprehensive watershedwide basis. As park and open space planning, land use, and floodplain management planning is carried out in the City of Milwaukee and in the related watersheds, an integration and coordination of the goals and objectives has taken place. Park and open space and land use planning goals and objectives are integrated and coordinated with floodplain management planning. This is accomplished at the watershed level by developing comprehensive watershed plans which include floodplain management, land use, park and open space, and water quality planning in one integrated planning program. These watershed plans form a potential framework for subwatershed-level planning programs. As an example, the comprehensive watershed planning

²SEWRPC Planning Report No. 132, A Park and Open Space Plan for Milwaukee County, November 1991.

³SEWRPC Planning Report No. 55, Vision 2050: A Regional Land Use and Transportation Plan for Southeastern Wisconsin, July 2017.

⁴City of Milwaukee Department of City Development, Department of Public Works, and Environmental Collaboration Office, City of Milwaukee Comprehensive Outdoor Recreation Plan 2016-2021, September 2016.

⁵SEWRPC 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; SEWRPC 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; SEWRPC Planning Report No. 32, A Comprehensive Plan for the Kinnickinnic River Watershed, December 1978; SEWRPC 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; and SEWRPC Community Assistance Planning Report No. 261, Flood Mitigation Plan for the City of Milwaukee, Milwaukee County, Wisconsin, October 2000.

objectives, principles, and standards for the comprehensive plan for the Menomonee River watershed⁶ include several specific objectives and supporting standards related to land use and park and open space use, as well as objectives and standards relating to flood control.

It is important to note that the flood control element of his hazard mitigation plan relies directly on the Milwaukee Metropolitan Sewerage District (MMSD) Watercourse Management Planning Program. That program includes a set of watercourse management plan objectives which are incorporated herein. The goals and objectives of the MMSD program are summarized as follows and are documented in the MMSD Phase 1 and Phase 2 watercourse management plans **and subsequent documents**.⁷

The overall goal of the MMSD watercourse management plan 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 SEWRPC methodology and anticipate future planning efforts.
- Identify problems and design solutions for the 100-year event.
- 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.

⁶SEWRPC Planning Report No. 26, op cit.

⁷Milwaukee 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; Milwaukee Metropolitan Sewerage District, Kinnickinnic River Watershed Flood Management Plan, May 4, 2017; Milwaukee Metropolitan Sewerage District, Menomonee River Phase 1 Watercourse System Management Plan, August 2000; Milwaukee Metropolitan Sewerage District, Menomonee River Phase 2 Watercourse Management Plan, July 2002; Milwaukee Metropolitan Sewerage District, Milwaukee River Watershed Phase 1 Watercourse System Management Plan, August 2000; Milwaukee Metropolitan Sewerage District, Lake Michigan Direct Drainage Area Phase 1 Watercourse System Management Plan, August 2000; Milwaukee Metropolitan Sewerage District, Oak Creek Phase 1 Watercourse Management Plan, August 2000; Milwaukee Metropolitan Sewerage District, Root River Phase 1 Watercourse Management Plan, August 2000; and SEWRPC Memorandum Report No. 172, A Watercourse System Plan for the Milwaukee River in Milwaukee County Upstream of the Milwaukee Harbor Estuary, December 2010.

- 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.

HAZARD MITIGATION GOALS AND OBJECTIVES FOR THE CITY OF MILWAUKEE HAZARD MITIGATION PLAN

The following objectives have been established for the City of Milwaukee hazard mitigation planning program. The objectives have been established based, in part, upon goals previously established in watershed, park and open space, and land use planning programs.

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 City, and which 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 which maintains biodiversity and which will result in the protection and wise use of the natural resources of the City, including its soils, inland lakes and streams, groundwater, wetlands, woodlands, wildlife, and natural areas and critical species habitats.
3. The provision of facilities necessary to maintain a high-quality of fire and police protection and emergency medical services throughout the City.
4. The development of a stormwater management system, **floodplain** management system, and sanitary sewer systems which reduce the exposure of people to drainage- and flooding-related inconvenience and to health and safety hazards and which reduces the exposure of real and personal property to damage through inundation and basement backup resulting from flooding, inadequate stormwater drainage, or sewerage system capacity.
5. The identification of high erosion risk Lake Michigan shoreline areas and the development of a coastal erosion management program which reduces the exposure of people and real and personal property to shoreline erosion and bluff recession.
6. The identification and development of programs which complement emergency operations plans from the County and adjacent municipalities, to mitigate the potential exposure to health and safety and the exposure of real and personal property resulting from a broad range of hazards which are unpredictable and not geographically specific in nature.

The population distribution by census block in the year 2010 shows maximum populations densities of more than 2,300 persons per census block, while most of the City of Milwaukee has population densities of 50 to 300 persons per census block, as shown on Map II-2 in Chapter II of this report.

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Chapter IV

HAZARD MITIGATION GOALS AND OBJECTIVES

TABLES

[Blue highlighting indicates additions or revisions to the previous edition of the plan.]

Table IV-1

OBJECTIVES AND STANDARDS FOR THE CITY OF MILWAUKEE ALL HAZARDS MITIGATION PLAN

OBJECTIVE NO. 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 City, and which 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.

STANDARDS

1. Urban high-, medium-, and low-density residential uses should be located within planning units which are served with centralized public sanitary sewerage and water supply facilities and contain, within a reasonable walking distance, necessary supporting local service uses, such as neighborhood park, local commercial, and elementary school facilities, and should have reasonable access through the appropriate component of the transportation system to employment, commercial, cultural, and governmental centers, and secondary school and higher educational facilities; and should be provided with readily available fire and police protection and emergency medical services.
2. Rural- and suburban-density residential uses should have reasonable access through the appropriate component of the transportation system to local service uses; employment, commercial, cultural, and governmental centers; and secondary school and higher educational facilities and should have reasonable access to fire and police protection and emergency medical services.
3. Industrial uses should be located to have direct access to arterial street and highway facilities and reasonable access through an appropriate component of the transportation system to residential areas and to railway, seaport, and airport facilities, and should not be intermixed with commercial, residential, governmental, recreational, or institutional land uses; and should be provided with readily available fire and police protection and emergency medical services.
4. Major commercial uses should be located in centers of concentrated activity on only one side of an arterial street and should be afforded direct access to the arterial street system; and should be provided with readily available fire and police protection and emergency medical services.

OBJECTIVE NO. 2

A spatial distribution of the various land uses which maintains biodiversity and which will result in the protection and wise use of the natural resources of the City, including its soils, inland lakes and streams, groundwater, wetlands, woodlands, wildlife, and natural areas and critical species habitats.

STANDARDS

1. Urban development should not be located in areas which would cause or be subject to flood damage.
2. No structure or fill should be allowed to encroach upon and obstruct the flow of water in perennial stream channels.
3. The types and distribution of land uses should be developed considering the potential impacts on flood flows, on surface water quality, and on groundwater quality and quantity.
4. All remaining undeveloped lands within the designated primary environmental corridors in the City should be preserved in essentially natural, open uses.
5. All remaining undeveloped lands within the designated secondary environmental corridors and isolated natural areas in the City should be considered for preservation as urban development proceeds and used as drainageways, floodwater storage areas, and parks.
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, the City may choose to preserve all wetlands.

Table IV-1 (continued)

OBJECTIVE NO. 3

The provision of facilities necessary to maintain a high quality of fire and police protection and emergency medical services throughout the City.

STANDARDS

1. Because adequate fire and police protection and emergency medical services are essential to the protection of the public health and safety and of real property values, and is a public service which enhances the economic development potential of an area, fire and police stations and emergency medical equipment should be developed and distributed based upon the accepted standards for such services.

OBJECTIVE NO. 4

The development of a stormwater management system, floodplain management system, and sanitary sewer systems which reduce the exposure of people to drainage- and flooding-related inconvenience and to health and safety hazards and which reduces the exposure of real and personal property to damage through inundation and basement backup resulting from flooding, inadequate stormwater drainage, or sewerage system capacity.

STANDARDS

1. In order to prevent significant property damage and safety hazards, the major components of the stormwater management system and the floodplain management system should be designed to accommodate runoff from a one-percent-annual probability storm event.
2. In order to provide for an acceptable level of access to property and of traffic service, the minor components of the stormwater management system should be designed to accommodate a runoff from a 10-percent-annual-probability storm event in the combined sewer area of the City and a 20-percent-annual-probability storm event in the separate sewer area of the City.
3. In order to provide for an acceptable level of access to property and of traffic service, the stormwater management system should be designed to provide two clear 10-foot lanes for moving traffic on existing arterial streets, and one clear 10-foot lane for moving traffic on existing collector and land access streets during storm events up to and including the 10-percent-annual-probability event in the combined sewer area of the City and a 20-percent-annual-probability event in the separate sewer area of the City.
4. Flow of stormwater along and across the full pavement width of collector and land access streets shall be acceptable during storm events exceeding a 10-percent-annual-probability event in the combined sewer area of the City and a 20-percent-annual-probability event in the separate sewer area of the City when the streets are intended to constitute integral parts of the major stormwater drainage system.
5. Plan components shall be designed to comply with the requirements of Chapter NR 116 of the *Wisconsin Administrative Code*.
6. All new and replacement bridges and culverts over waterways shall be designed so as to accommodate, according to the categories listed below, the designated flood events without overtopping of the related roadway or railway track.
 - a. Minor and collector streets used or intended to be used primarily for access to abutting properties: a 10-percent-annual-probability flood discharge.
 - b. Arterial streets and highways, other than freeways and expressways, used or intended to be used primarily to carry heavy volumes of through traffic: a two-percent-annual-probability flood discharge.
 - c. Freeways and expressways: a one-percent-annual-probability flood discharge.
 - d. Railways: a one-percent-annual-probability flood discharge.
7. All new and replacement bridges and culverts along waterways shall be designed so as not to inhibit fish passage in areas especially during low flow time periods which are supporting, or which are capable of supporting, valuable recreational sport and forage fish species.

Table IV-1 (continued)

8. 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.
9. In order to prevent property losses and health and safety hazards, the sanitary sewerage system and related stormwater and floodplain management systems should be designed to minimize basement backups through a) implementing the recommendations of the Milwaukee Metropolitan Sewerage District 2050 facilities plan and b) reducing problem sources of infiltration and inflow to the sanitary sewerage system.

OBJECTIVE NO. 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 real and personal property to shoreline erosion and bluff recession.

STANDARDS

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 study.^a

OBJECTIVE NO. 6

The identification and development of programs which complement emergency operations plans from the County and adjacent municipalities, to mitigate the potential exposure to health and safety and the exposure of real and personal property resulting from a broad range of hazards which are unpredictable and not geographically specific in nature.

^aSEWRPC Community Assistance Planning Report No. 163, A Lake Michigan Shoreline Erosion Management Plan for Milwaukee County, Wisconsin, October 1989; SEWRPC Technical Report No. 36, Lake Michigan Shoreline Recession and Bluff Stability in Southeastern Wisconsin, December 1997.

Source: SEWRPC.