

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

Chapter I

INTRODUCTION AND BACKGROUND

INTRODUCTION

In January 2003, the Southeastern Wisconsin Regional Planning Commission (SEWRPC) and the City of Milwaukee Department of Public Works agreed to cooperatively prepare an all hazards mitigation plan for the City of Milwaukee. The plan was designed to be consistent with the guidelines of the Wisconsin Department of Military Affairs, Division of Emergency Management, and the Federal Emergency Management Agency (FEMA). The plan utilized an “all hazards” mitigation approach which the Wisconsin Division of Emergency Management and FEMA recommend as an option to single hazard mitigation planning. As such, consideration was given to many hazard conditions, including flooding; lakeshore bluff failure episodes; severe weather conditions, including wind storms, tornadoes, periods of extreme heat or cold, and winter storms, as well as certain other human-induced or technical hazards. While the plan considered all of the potential hazards, it was recognized that only limited mitigative actions would be feasible for some of these hazards, since they are not site-specific or repetitious in nature.

This initial planning effort was focused upon activities which are most directly related to the City of Milwaukee government operations. However, because of the importance in developing a partnership approach to coordinate emergency mitigation programs, the plan also incorporated consideration of programs involving other agencies, units of government, and private interests both inside and outside of the boundaries of the City of Milwaukee.

The original City of Milwaukee all hazard mitigation plan was adopted and approved by the City in 2005. The plan was prepared by the staffs of the City of Milwaukee Department of Public Works and the Southeastern Wisconsin Regional Planning Commission. In preparing the plan, the City involved all appropriate City and Milwaukee County departments as needed. The planning was coordinated with the related activities of other concerned units and agencies of government and was developed under the guidance of the City of Milwaukee All Hazards Mitigation Plan Steering Committee, which was created by the City specifically for plan development

purposes and was comprised of elected and appointed officials, agency and business representatives, and citizens from throughout the City knowledgeable in hazard mitigation matters.

The mitigation planning requirements of 44 *Code of Federal Regulations*, Section 201.6 (d) (44 CFR 201.6(d)) require that local hazard mitigation plans must be reviewed; updated to reflect changes in development, progress in local mitigation efforts, and changes in priorities; and reapproved every five years for local jurisdictions to be able to receive hazard mitigation funding. Thus, in November 2010, the City of Milwaukee and SEWRPC began preparation of an update of the initial hazard mitigation plan. The updated plan was prepared by the staffs of the City of Milwaukee Department of Public Works, the City of Milwaukee Office of Emergency Management and Homeland Security, and SEWRPC. In preparing the updated plan, the City involved all appropriate City departments as needed. In addition, the planning was coordinated with the related activities of other concerned units and agencies of government and was developed under the guidance of the City of Milwaukee All Hazards Mitigation Plan Steering Committee, which was created by the City specifically for plan development purposes and, once again, was comprised of elected and appointed officials, agency and business representatives, and citizens from throughout the City knowledgeable in hazard mitigation matters.

In May 2016, the City of Milwaukee and SEWRPC began preparation of a second update of the City of Milwaukee all hazards mitigation plan. The updated plan was prepared by the staffs of the City of Milwaukee Department of Public Works, the City of Milwaukee Office of Emergency Management and Homeland Security, and SEWRPC. In preparing the updated plan, the City involved all appropriate City and Milwaukee County departments as needed. In addition, the planning was coordinated with the related activities of other concerned units and agencies of government and was developed under the guidance of the City of Milwaukee All Hazard Mitigation Plan Local Planning Team,¹ which was formed by the City specifically for plan development purposes and is comprised of elected and appointed officials, agency and business representatives, and citizens from throughout the City knowledgeable in hazard mitigation matters.

In assembling the City of Milwaukee Hazard Mitigation Plan Local Planning Team, the City Department of Public Works and the City Office of Emergency Management and Homeland Security sought representatives of law enforcement; the City's fire, public works, and community development departments; the County emergency management office and transit system; the Milwaukee Metropolitan Sewerage District; interested nongovernmental organizations; and the health care community.

¹For the development of the initial plan and the 2010-2011 update, this group was called the City of Milwaukee All Hazards Mitigation Plan Steering Committee. For the current plan update, the name of this group has been changed to reflect the current terminology used by FEMA.

For more complete details on the level of participation of local citizens and community groups in the committees, public involvement process, and the summary of minutes for each **Local Planning Team** meeting, see Appendix A.

The procedures utilized in the plan are based upon guidance provided by the FEMA and the Wisconsin Department of Military Affairs, Division of Emergency Management.² As such, the plan is consistent with the requirements and procedures defined in the Disaster Mitigation Act of 2000. The analysis includes three components: 1) profile and analysis of hazard events, 2) inventory of vulnerability assessment of community assets, and 3) development of hazard mitigation strategies.

OVERVIEW OF STUDY AREA

The City of Milwaukee is located in southeastern Wisconsin, and covers about 96 square miles as shown on Map I-1. There are all or parts of six major river systems within the City, including the Milwaukee River, Menomonee River, Kinnickinnic River, Root River, Oak Creek, and the Lake Michigan direct drainage area encompassing a total of about 620 acres of inland surface waters. The City's natural resource base is primarily located among the environmental corridors associated with the main stems of these river systems, as well as the Lake Michigan shoreline.

Much of the land in the City is urban in character with residential land uses comprising the largest area. In addition, commercial and industrial land uses comprise a significant portion of the City's area. The majority of the City is developed and population centers can be found throughout the entire City. Urban area redevelopment activities are ongoing in several areas of the City.

RELATIONSHIP OF HAZARD MITIGATION PLANNING TO EMERGENCY OPERATIONS PLANNING

The focus of this planning effort is upon hazard mitigation measures. Such measures generally involve lasting, often permanent, measures designed to reduce the exposure to, probability of, or potential loss from hazardous events. Such measures tend to focus on actions related to where and how to build structures, education to reduce losses or injury, and programs to improve the safety of identified hazard areas. A hazard mitigation plan outlines the strategy for mitigating the hazards potentially impacting a county or municipality.

²*Federal Emergency Management Agency, State and Local Mitigation Planning How-to Guide, "Understanding Your Risks, Identifying Hazards and Estimating Losses," Publication No. FEMA 386-2, August 2001; Federal Emergency Management Agency, Local Multi-Hazard Mitigation Planning Guidance, July 1, 2008; See also Federal Emergency Management Agency, State and Local Plan Interim Criteria Under the Disaster Mitigation Act of 2000, July 11, 2002.*

The mitigation plan should be distinguished from, but compatible with, an emergency response or operations plan. Such a plan is defined as a plan which describes how people and property will be protected in disaster and disaster threat situations; details who is responsible for carrying out specific actions; identifies the personnel, equipment, facilities, supplies, and other resources available for use in the disaster; and outlines how all actions will be coordinated. Numerous such plans have been developed at the jurisdictional level, and often involve mutual assistance and cooperation agreements between local units of government in adjoining municipalities, both within and outside of the City of Milwaukee. Emergency response or operations is not directly considered in the planning program described herein. Plans for mitigating hazards are related to emergency operation activities involving short-term recovery decision-making, since such activities may highlight prospects for implementation of a mitigation strategy aimed at reducing long-term risk to human life and property.

With regard to the distinction between mitigation planning and emergency response or operations planning, the following definitions are noted for further clarification:

- **Emergency Response or Operations Services**—The actions of first responders, such as firefighters, police, and other emergency services personnel at the scene of a hazard event. The first responders take appropriate action to contain the hazard, protect property, conduct search and rescue operations, provide mass care, and ensure public safety. Emergency response or operations services are not the subject of the current planning program.
- **Hazard Mitigation**—Sustained actions or projects taken to reduce or eliminate long-term risk from hazards and their effects.
- **Mitigation Plan**—The document that identifies results from the systematic process of identifying hazards and evaluating vulnerability, identify goals, objectives and actions to reduce or eliminate the effects of identified hazards, and sets forth an implementation plan for carrying out the actions. The mitigation plan is the subject of the current planning program.

SCOPE AND PURPOSE OF PLAN

This update of the initial 2005 **and of the updated 2011** City All Hazard Mitigation Plan is a City Level Plan and is intended to set forth the most appropriate, feasible, and effective hazard mitigation strategy for the City of Milwaukee. However, the scope of this plan is countywide for some aspects of the plan and inclusive of the local units of government adjacent to the City, where appropriate. The plan complements, refines and focuses the *State*

*Hazard Mitigation Plan of Wisconsin*³ on local conditions and hazards likely to occur or be experienced within the City of Milwaukee.

While it is acknowledged that the City can be affected by hazardous incidents that occur outside of the City jurisdiction, the degree of impact—in terms of property damage, injury, and loss of life, and ability of the City to respond—is significantly limited, and frequently unquantifiable. Thus, while some hazards, such as weather-related events, can extend over a wide area, some affect the City of Milwaukee only tangentially, and many result in site-specific impacts. Nevertheless, where appropriate, areas of cooperation between the City and other jurisdictions have been noted, especially with respect to hazards, such as flooding, for example, which commonly affect entire river basins, as well as the specific communities located within them.

The City of Milwaukee Hazard Mitigation Plan was developed during the period 2003 through 2005, updated in 2010 and 2011, and updated again in 2016 and 2017 through a collective effort under the guidance of the City of Milwaukee All Hazards Mitigation Plan Local Planning Team, which was created by the City specifically for plan development purposes. That committee is comprised of elected and appointed officials knowledgeable about, and directly involved in, hazard mitigation matters. The membership, formation, and active participation of the Local Planning Team is documented in Appendix A of this report. In addition to formation and active participation of the Local Planning Team, the plan development process included the following steps:

- Collation and review of all pertinent reports relating to the hazard mitigation activities in the City of Milwaukee;
- Inventory mapping and analysis of hazards pertinent to the City of Milwaukee;
- Identification of the facilities and ongoing programs related to hazard mitigation;
- Assessment of the vulnerability of the City assets to each hazard;
- Identification of and prioritization of needed facilities and programs;
- Consideration of issues relating to neighboring municipalities and units of government likely to be affected or influenced by natural hazards within the City of Milwaukee;
- Development and evaluation of alternatives to address the identified needs;
- The development of plan recommendations and an implementation plan;

³*Wisconsin Emergency Management, State Hazard Mitigation Plan of Wisconsin, December 2, 2016.*

- Development of a public informational and educational program and program of public consultation to guide the plan development and implementation program, including a prioritization of the recommended plan elements; and
- Adoption of a strategy for monitoring and refining the plan.

Additional activities conducted as a part of the updating process **for both plan updates** include:

- Collation and review of all pertinent reports relating to the hazard mitigation activities in the City of Milwaukee since adoption of the initial plan;
- Review of materials developed as a part of the comprehensive planning process for the City of Milwaukee;⁴
- Review and updating of inventories developed for the initial plan;
- Review and updating of hazard and risk assessments;
- Review of implementation activities; and
- Review and updating of plan recommendations and the initial implementation plan.

⁴*City of Milwaukee Department of City Development, Milwaukee Comprehensive Plan: Citywide Policy Plan, March 2010; City of Milwaukee Department of City Development, **Menomonee Valley 2.0: A Plan for the Area, June 2015**; City of Milwaukee Department of City Development, Milwaukee Comprehensive Plan: Fond du Lac and North—A Plan for the Area, March 2004; City of Milwaukee Department of City Development, Milwaukee Comprehensive Plan: Near West Side—A Plan for the Area, March 2004, **amended March 3, 2009**; City of Milwaukee Department of City Development, Milwaukee Comprehensive Plan: The Third Ward—A Plan for the Neighborhood, May 2005, **amended July 12, 2006**; City of Milwaukee Department of City Development, Milwaukee Comprehensive Plan: Washington Park—A Plan for the Area, June 2006; City of Milwaukee Department of City Development, Milwaukee Comprehensive Plan: Northwest Side—A Plan for the Area, January 2008; City of Milwaukee Department of City Development, Milwaukee Comprehensive Plan: An Area Plan for the Southeast Side, October 2008; City of Milwaukee Department of City Development, Milwaukee Comprehensive Plan: Near South Side—A Plan for the Area, May 2009, **amended May 27, 2009 and March 1, 2016**; City of Milwaukee Department of City Development, Milwaukee Comprehensive Plan: Northwest Side—A Plan for the Area, July 2009; City of Milwaukee Department of City Development, Milwaukee Comprehensive Plan: Near North Side—A Plan for the Area, December 2009; City of Milwaukee Department of City Development, Milwaukee Comprehensive Plan: Southwest Side—A Plan for the Area, December 2009; City of Milwaukee Department of City Development, Milwaukee Comprehensive Plan: West Side—A Plan for the Area, December 2010; and City of Milwaukee Department of City Development, Milwaukee Comprehensive Plan: Downtown—A Plan for the Area, October 2010.*

PLAN MAINTENANCE AND IMPLEMENTATION ACTIVITIES

Outreach Activities

Since the adoption of the initial City of Milwaukee hazard mitigation plan, the City has conducted outreach activities to educate the public about emergency preparedness, including hazard mitigation. As part of these activities, the City Office of Emergency Management and Homeland Security makes information on hazards, emergency preparedness, and travel conditions available to the public through its pages on the City of Milwaukee's website. These web pages provide links to preparedness information provided by the Milwaukee Health Department, the Milwaukee County Office of Emergency Management, the American Red Cross, the Wisconsin Department of Transportation, the Wisconsin Division of Emergency Management, the National Weather Service, and FEMA. The City Office of Emergency Management and Homeland Security also provides news releases related to emergency preparedness, including hazard mitigation, to local media organizations. These news releases are also available on the City's website.

The City also provides outreach through its television facility, City Channel 25, which can be accessed through Time Warner Cable, AT&T U-verse, and directly through the internet. This station broadcasts meetings of the Common Council, Council committees, City boards, and commissions as well as other informational programming on City activities and services. Much of its programming is archived at the City Clerk's Legislative Research Center, which can be accessed through the internet. **The City conducts additional outreach through an electronic mail notification service. City residents can subscribe to this service to receive notifications regarding a variety of events and City government activities. The City's Office of Emergency Management and Homeland Security conducts outreach related to seasonally occurring hazards via this service.**

Implementation Activities

Since the adoption of the initial hazard mitigation plan, the City of Milwaukee and other entities with implementation responsibilities have conducted several projects and activities to implement recommendations of the plan.

Implementation of Measures to Mitigate Flooding and Associated Stormwater Drainage Problems

Preservation of Environmentally Sensitive Areas and Open Space

Relative to the plan's recommendations related to the preservation of environmentally sensitive areas and open space, the MMSD Greenseams program has acquired 3,383 acres of floodplains and environmentally sensitive lands, including about 104 acres within the City of Milwaukee.

Floodland Management Measures in the Kinnickinnic River Watershed

The City of Milwaukee replaced the S. 6th Street bridge along the Kinnickinnic River. This project was completed in 2010 at a cost of \$2.8 million. Related to this **project**, MMSD **conducted** a bank stabilization project **along** about 1,000 feet of channel in the Kinnickinnic River between S. 6th Street and Chase Avenue. This project

was completed in 2011. The cost of the project was about \$2.45 million, with about \$1.54 million of the costs being paid for through a grant from the Federal Great Lakes Restoration Initiative.

The Milwaukee Metropolitan Sewerage District (MMSD) is currently proceeding with removal of the concrete lining from the reach of the Kinnickinnic River between S. 6th and S. 27th Streets. Stakeholder involvement and preliminary design efforts for this project began in 2007. This project involves removal of 12,000 linear feet of concrete channel; replacement of four road bridges and four pedestrian bridges; widening and lowering of the floodplain overbank; restoration of the channel; and acquisition and removal of 82 residences and one commercial building that are currently within the floodplain. As of December 2016, 74 of the structures have been acquired by MMSD and removed. As of May 2015, the District estimated that the project will cost \$80 million.

Wilson Park Creek was remodeled as part of a Milwaukee County floodplain mapping project being conducted by the Milwaukee County Automated Land Information System (MCAMLIS) Steering Committee, MMSD, and SEWRPC. MMSD is pursuing improvements to Wilson Park Creek to eliminate flooding. The improvements include four culvert improvements (S. 30th Street, S. 27th Street, W. Howard Avenue, S. 5th Street), offline storage at the Central Steel and Wire facility, concrete removal from W. Euclid Ave. to S. 20th Street and from S. 6th Street to S. 2nd Street, and channel rehabilitation near the Central Steel & Wire Company facility. As of December 2016, these improvements were still in the planning stage and under reevaluation.

In 2014, a consultant to MMSD completed an updated hydrologic model for the S. 43rd Street Ditch for the MCAMLIS Steering Committee and MMSD. In 2015, SEWRPC completed an updated hydraulic model for the S. 43rd Street Ditch for the MCAMLIS Steering Committee⁵ and MMSD. Completion of these models has resulted in an updated one-percent-annual-probability floodplain for this tributary.

Floodland Management Measures in the Menomonee River Watershed

In 2007, MMSD completed the Hart Park Project along the Menomonee River to reduce the risk of flooding in the Cities of Milwaukee and Wauwatosa. As part of this project, 80 formerly floodprone residences and business in the area east of the Hart Park stadium were acquired and removed; the area of the park was expanded from 20 acres to 50 acres; a system of earthen levees, concrete floodwalls, and road grade raises was installed to contain the one-percent-annual-probability flood; the overbank north of the channel was excavated to provide floodwater storage and conveyance; and a gravity flow interior drainage system was constructed to convey stormwater from the “protected” side of the levee/floodwall system to the River.

⁵In June 2016, the MCAMLIS Steering Committee was replaced by the Milwaukee County Land Information Council.

In 2011, the MMSD completed construction of the Milwaukee County Grounds detention basin in the City of Wauwatosa. This basin covers about 65 acres and has the potential to hold 315 million gallons of floodwaters from Underwood Creek and slowly release them to the Menomonee River. It will provide flood relief benefits downstream in the Cities of Milwaukee and Wauwatosa. The basin became operational in 2011. The project cost was about \$90 million.

In 2016, a Conditional Letter of Map Revision (CLOMR) was approved by FEMA for the Menomonee River from North Avenue downstream to its mouth. The CLOMR was issued based upon the completion of updated floodplain delineations related to completed and proposed flood mitigation projects.

Floodland Management Measures in the Milwaukee River Watershed

In 2016, MMSD approved plans to acquire land in Estabrook Park for the demolition and removal of Estabrook dam. Removal of this dam would be expected to lower the one-percent-annual-probability flood profile along the 3.2-mile reach of the Milwaukee River extending from the dam (1.4-foot decrease in one-percent-probability flood stage) upstream to Bender Road (0.03-foot decrease in one-percent stage). Demolition and removal is scheduled to be completed in 2017. The estimated cost of removing the dam is \$1.7 million.

Floodland Management Measures in the Oak Creek Watershed

As of February 2011, SEWRPC was assisting the MMSD in a revision of its watercourse system plan for the Oak Creek Watershed. This study includes the North Branch of Oak Creek in the City of Milwaukee. A draft plan was completed in December 2011. Implementation of this plan is currently on hold pending adoption of a new MMSD policy regarding structure floodproofing and elevation.

Secondary Plan Element

As part of its Map Modernization program, FEMA incorporated the City of Milwaukee Flood Insurance Study (FIS) information into a countywide FIS that became effective on September 26, 2008.

Floodplain mapping revisions have been completed by SEWRPC for the Menomonee and Kinnickinnic Rivers and tributaries as part of the MCAMLIS effort. Once floodplain revision for the Kinnickinnic River watershed are approved by the Wisconsin Department of Natural Resources (WDNR), it is anticipated that SEWRPC will submit a letter of map revision (LOMR) to FEMA for revision of the flood insurance rate map (FIRM).

Private Property Inflow and Infiltration Reduction Program

In 2010 and 2011, the MMSD drafted a policy to reduce infiltration and inflow (I/I) in an effort to further reduce sanitary sewer backups into basements and sanitary sewer overflows both caused primarily by I/I into the sanitary sewer system. Infiltration is stormwater and groundwater that may enter the sanitary sewer system through such sources as defective pipes, pipe joints, connections or leaking manholes. Clearwater inflow to the sanitary sewer

is stormwater from foundation drains, connected downspouts, catch basins, and leaking manhole covers. With the assistance of the Technical Advisory Team comprised of public works, engineering, and/or administrative staff from the MMSD's 28 member communities, a program was developed to fund projects to reduce I/I from the privately owned components of sanitary sewerage systems. As of April 2011, it was proposed that the program provide \$151 million over a period of 10 years for design, inspection and activities to remove I/I from private sources. Funding of the program is based on the equalized value of the municipality. Each member community, including the City of Milwaukee, would control how the funds are used (within the eligible cost guidelines) and municipal staff could be responsible for managing the work. The program would fund activities such as foundation drain disconnection; sewer lateral repair or replacement; and design, planning, and investigation costs.

This program will assist the City in addressing the existing deficiencies in the private portion of the sewerage system. The City's sewerage system would benefit from this program by reducing flows within the system. City residents would benefit from the improvement of their laterals and increased protection from basement backups. The City is responsible for maintaining or reducing its flows to the MMSD. This will assist the flow reduction effort by becoming part of the City's long-term maintenance program.

From 2011 through 2013, MMSD and the City of Milwaukee completed the Cooper Park Sewer Lateral Demonstration Project. This project was intended to reduce the likelihood of sewage backups causing basement flooding in the Cooper Park neighborhood during heavy rainfalls. As part of this project, private property owners allowed inspections and rehabilitation or repair of sewer laterals, and City contractors lined private sewer laterals at 432 homes. The City had previously lined municipal sanitary sewers serving this area. The City reported reductions in peak flows of about 46 percent in sewers in this neighborhood during heavy rains.⁶

In October 2014, the City began a second project in the Cooper Park neighborhood, in which foundation drains were disconnected from sewer laterals.

Implementation of Measures Related to Other Hazards

Since the adoption of the first update to this all hazards mitigation plan, the Milwaukee Fire Department has upgraded its capabilities for responding to several types of incidents. In 2010, the Department's HAZMAT team purchased a PlumeRae monitoring system for rapid monitoring and assessment of situations involving the release of hazardous substances. The HAZMAT team also purchased a wireless handheld video camera that allows a member to monitor the hot zone of a fire and direct an entry team's actions, reducing the number of entries needed. This camera also allows the team to remotely monitor incidents and record them for later evaluation. The

⁶Don Behm, "Milwaukee Proposes Preventive Sewer Maintenance for 50 Homes," Milwaukee Journal-Sentinel, July 6, 2014.

HAZMAT team has also purchased meters which provide the ability to identify unknown solids and liquids and to detect nerve agents, blood agents, and toxic industrial chemicals. A confined space simulator was constructed at the Department's training academy. The Department purchased a foam trailer capable of producing 1,000 gallons of fire-fighting foam per minute. The Department purchased water depth locators and search lights for conducting water rescues. The Department's Dive Rescue Team purchased new communication units which led to a significant increase in efficiency and operability. The Dive Rescue team also put two new ice rescue sleds into service, increasing the Department's capacity for conducting thin ice rescue operations. The Department put its Surge House into operation in late December 2013. This facility allows the Department's emergency medical services (EMS) system to expand capabilities beyond normal activity levels, to manage a sudden, unexpected increase in patient volume that would otherwise severely challenge or exceed the current capacity of the EMS system.

The Milwaukee Fire Department conducts several public residential, school, and workplace fire safety, extinguisher, and evacuation programs. In 2014, the Milwaukee Fire Department participated at 1,400 community outreach events. Between its inception in 1992 and 2014, the Department's Survive Alive House program has educated over 380,000 school children in fire safety and fire escape plans. In addition, as part of its Firefighters Out Creating Urban Safety (F.O.C.U.S.) and Smoke Detector Hotline programs, the Department installed over 5,300 smoke detectors in residences between 2012 and 2014. The Department has installed over 25,000 smoke detectors since the inception of F.O.C.U.S. in 1991.

County emergency management representatives from southeastern Wisconsin have worked with computer science students from the University of Wisconsin-Parkside's "App Factory" to develop the *Ready Badger* application (app) for wireless devices.⁷ The app is designed to speed the process of sharing and gathering hazard-related information. This app allows emergency managers to send custom-made alerts for any type of emergency, including severe thunderstorm and high-wind related events. It also provides users with access to emergency preparedness information specific to their county. Users can also use the app to submit digital damage reports to County emergency managers, allowing them to assess damages and respond to disasters more quickly.

PLAN DEVELOPMENT REVIEW PROCESS AND ADOPTION

As previously noted, the initial City of Milwaukee all hazards mitigation plan was prepared under the guidance of a City advisory Steering Committee comprised of local official representatives, including representatives, such as police departments, fire departments, and the MMSD. The Steering Committee met four times during the plan preparation period to provide input on the types of hazards to be considered, and the appropriate mitigation

⁷The *Ready Badger* app can be downloaded for free from the Apple App Store and Android Google Play Store.

strategies, and to review the draft report chapters with the report chapter then being refined to reflect the comments and recommendations of the Steering Committee (see Appendix A).

Members of this Steering Committee included representatives from agencies that serve both the City and the County, including Milwaukee County Emergency Management staff, and in the case of MMSD staff, serving a jurisdiction that extends beyond the County boundary. In effect, the City of Milwaukee Hazard Mitigation Plan is an extension of the aforementioned Milwaukee County Pre-Disaster Mitigation Plan which developed resources and information to assist Milwaukee County residents, organizations, local government, and others in the promotion of sound public policy designed to protect citizens, critical facilities, infrastructure, private property, and the environment from natural hazards. The County Plan offered the opportunity for members of neighboring communities within and adjacent to the City of Milwaukee, to provide input into hazard mitigation planning within the context of the County as a whole. The City of Milwaukee Hazard Mitigation Plan and review process continued this involvement of persons and organizations representing jurisdictions and interests that extended beyond the City boundary, including County staff and MMSD staff on the Steering Committee.

Following completion of the City plan in draft form, a public informational meeting was held in conjunction with a City Committee meeting to provide the opportunity to review and provide input on the plan as part of the planning process. The plan was introduced to the Public Safety Committee on March 16, 2005, for Committee review. On April 21, 2005, the plan was formally presented to the City of Milwaukee at the Public Safety Committee meeting, which was broadcast live on television (City Channel 25), and online at [www.milwaukee.gov/channel 25](http://www.milwaukee.gov/channel%2025). Copies of the report were also provided to City officials for adoption of the plan and advising them of the need for such action in order to retain future eligibility for mitigation funding for the Hazard Mitigation Grant, the Pre-Disaster Mitigation Program, and other FEMA or related programs administered by the Wisconsin Department of Military Affairs, Division of Emergency Management. In addition, the plan was provided to all neighboring communities in order to continue the coordination of hazard mitigation activities as provided by the use of the Milwaukee County plan as a framework for the City plan. The City of Milwaukee Common Council formally adopted the plan at its May 3, 2005, meeting.

The 2017 hazard mitigation plan update was prepared under the guidance of a City Local Planning Team comprised of local official representatives, including representatives of City Departments, such as the police, fire, community development, and public works departments; County departments and agencies, including the County emergency management office and transit system; the MMSD; interested nongovernmental organizations; and the health care community. The Local Planning Team met four times during the plan preparation period to provide input on the types of hazards to be considered, the appropriate mitigation strategies, and to review the draft report chapters. Those chapters were then refined to reflect the comments and recommendations of the Steering Committee (see Appendix A).

As draft chapters of the plan report were completed, copies were placed in downloadable form on the SEWRPC website. Downloadable copies of agendas and summary notes from Local Planning Team meetings and presentations related to this plan updating effort were also available on this webpage. Finally, a webpage was provided on the SEWRPC website on which members of the public could ask questions and submit comments on the draft plan update. Following completion of updates to the community profiles and the risk and vulnerability assessment sections of the plan and review of drafts of the corresponding chapters by the Local Planning Team, public informational meetings were held to review these sections of the plan with local officials, business and industry, and citizens and solicit their input.

Following completion of the updated City plan in draft form, additional public informational meetings were held to provide the public an opportunity to review and provide input on the updated plan as part of the planning process. The plan was introduced to the Public Safety Committee on [REDACTED], [REDACTED] for Committee review. On [REDACTED], [REDACTED], the plan was formally presented to the City of Milwaukee at the Public Safety Committee meeting, which was broadcast live on television (City Channel 25), and online at www.milwaukee.gov/channel25. Copies of the report were also provided to City officials for adoption of the updated plan and advising them of the need for such action in order to retain future eligibility for mitigation funding for the Hazard Mitigation Grant Program, the Pre-Disaster Mitigation Program, and other FEMA or related programs administered by the Wisconsin Department of Military Affairs, Division of Emergency Management. In addition, the updated plan was provided to all neighboring communities in order to continue the coordination of hazard mitigation activities as provided by the use of the Milwaukee County plan as a framework for the City plan. The City of Milwaukee Common Council formally adopted the plan at its [REDACTED], [REDACTED] meeting.

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Chapter I

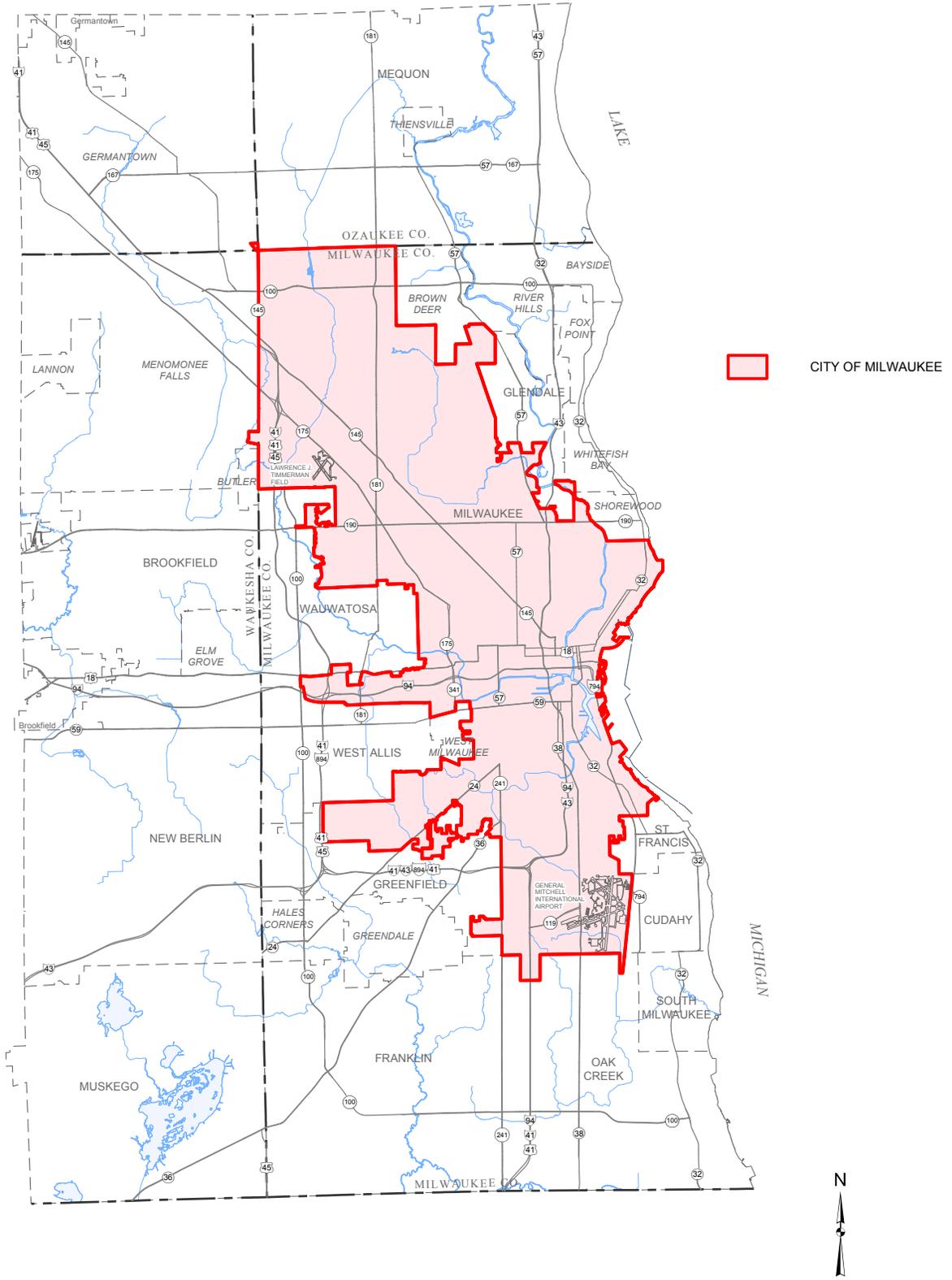
INTRODUCTION AND BACKGROUND

MAPS

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Map I - 1

LOCATION OF THE CITY OF MILWAUKEE



Source: SEWRPC.