SECTION 6: COMPREHENSIVE STATE HAZARD MITIGATION PROGRAM

This section of the Plan will serve as the State's Enhanced Hazard Mitigation Plan and will demonstrate that the State of Wisconsin has developed a comprehensive, effective, and integrated hazard mitigation program. This section will describe how the Plan has been integrated with other State planning initiatives as well as the FEMA mitigation programs. Further, it will provide documentation and describe how the State effectively utilizes available mitigation funding and is capable of managing increased mitigation funding that will become available upon approval.

The State of Wisconsin Hazard Mitigation Plan was updated and approved as a Standard and Enhanced State Mitigation Plan by the Federal Emergency Management Agency (FEMA) in a letter from the Regional Administrator dated December 6, 2011.

6.1 Integration with Other Planning Initiatives

The Mitigation staff in the Wisconsin Division of Emergency Management (WEM) is responsible for integrating, to the extent practicable, hazard mitigation planning and programs with other state and local planning initiatives and programs. This section includes a discussion of the state agencies that the Mitigation staff cooperates with as partners in the effort to meet the State mitigation goals as identified in Section 3. Throughout the planning process, mitigation staff coordinated with and utilized information provided by the other state agencies. Section 2 provides a thorough discussion of the state planning process and initiatives while Section 3 identifies the state's pre and post-disaster hazard management policies, programs, and capabilities to mitigate the state's hazards. As planning efforts continue and mature, interaction among the various agencies will expand. The state agencies, as part of the Wisconsin Silver Jackets Hazard Mitigation Team, were integral in the creation of the state's mitigation goals and action plan found in Section 4.

Section 2 and the State Capability Assessment found in Section 3.2 discuss the related mitigation programs and projects that make up the state's overall mitigation capacity and contribute to the state's mitigation program. The table in Figure 6.1-1 summarizes the integration of hazard mitigation planning with other state planning initiatives. They are discussed in more detail in Section 2.

Figure 6.1-1: State Planning Initiatives

Initiative	Description
Comprehensive Planning – State Agency Resource Working Group	The state's comprehensive law required communities to develop a comprehensive plan by January 1, 2010, if they wish to make decisions to change and manage land use in their jurisdiction. The State Agency Resource Working Group (SARWG) was a statutorily funded group of the Wisconsin Land Council administered through the Department of Administration, Division of Intergovernmental Relations which is responsible for administering the Comprehensive Planning Grant Program for the State. Representatives came from various state agencies and participated in promoting and cooperating on land use issues. The State Hazard Mitigation Officer

Initiative	Description
	participated on the group to promote mitigation planning as part of the comprehensive planning process. The DOA-Comprehensive Planning Grants Program representative on the SARWG also participates on the WSJHMT. With the sunset of the Wisconsin Land Council, the group is no longer statutorily funded or required, however, members continue to communicate and share information via e-mail to promote comprehensive and mitigation planning. The nine comprehensive planning elements and ideas for how to integrate mitigation planning are included in local hazard mitigation guidance, *Resource Guide to All-hazards mitigation Planning in Wisconsin*. The nine planning elements include: Issues and Opportunities; Housing; Transportation; Utilities and Community Facilities; Agriculture, Natural and Cultural Resources; Economic Development; Intergovernmental Cooperation; Land Use; and Implementation.
Wisconsin Coastal Management Program (WCMP)	The WCMP provides technical assistance and coordinates state resources to support the management of Wisconsin's Great Lakes coasts. The WCMP administers the Coastal Grant Program, which provides grants to communities for coastal resource protection and organizes the Wisconsin Coastal Hazards Work Group (CHWG), which includes representatives from the DNR, University of Wisconsin, UW Sea Grant, and WEM. In turn, there is a WCMP representative on the WSJHMT. Program objectives, as described in the Wisconsin 2016-2020 Needs Assessment and Strategy, include: • Developing and enhancing government hazard policies through targeted outreach and technical assistance, with a focus on shoreline and bluff erosion policies • Developing new local regulations, reviewing local plans, maps, and ordinances, and generating documents for policy makers and homeowners • Working with partner agencies and local governments through the CHWG • Educating landowners and other stakeholders about coastal hazards, and supporting efforts to train government staff, coastal engineers, and real estate interests • Providing technical assistance in the form of reports, outreach documents, visualization tools and mapping to communicate conditions of the coastline in support of local decision making and policy development
Wisconsin Emergency Response Plan	The State Hazard Mitigation Plan is an appendix to the 2015 Wisconsin Emergency Response Plan. Each ESF includes mitigation activities in support of the function. ESF-14 addresses Long Term Community Recovery and Mitigation and identifies priorities for short and long-term recovery; and roles and responsibilities for supporting agencies. It includes the Wisconsin Recovery Task Force (WRTF) and the WSJHMT. The WSJHMT is the Mitigation RSF Subcommittee of the WRTF.
Wisconsin Recovery Plan	The Plan was completed in May 2016 and provides a framework to support local and tribal government in recovering from declared and non-declared events. It outlines the state's recovery structure including the Wisconsin Recovery Task Force, and identifies programs that are available in declared and non-declared events.
Threat Hazard Identification and	The THIRA is a process to identify risk, assess impacts, and define targets for measuring capability gaps and improvements. The THIRA sets capability baselines

Initiative	Description
Risk Analysis (THIRA)	for the State Preparedness Report (SPR). The SPR is a self-assessment of the state's current level of preparedness relative to the capability targets identified in the THIRA. For this plan update, the state risk assessment is being rolled into the THIRA, see Appendix A. The THIRA identifies thirteen hazards (6 considered natural hazards, and 7 technological/human caused.) The THIRA describes the hazard and past history; probability, vulnerability, impact and potential losses; mitigation potential; catastrophic scenario; summary risk analysis; and sources.
Wisconsin Recovery Task Force (WRTF)	A key element of ESF-14 and the State Recovery Plan is the WRTF which is comprised of state and federal agencies and NGOs with recovery responsibilities. The WRTF is chaired by the WEM Administrator and consists of six Recovery Support Function (RSF) Subcommittees: agriculture, economic, housing, health and social services, infrastructure, and mitigation. The State Hazard Mitigation Officer serves as the Chair of the RSF Mitigation Subcommittee. The members of the WSJHMT make up the RSF Mitigation Subcommittee. The WRTF serves as the state-level organization responsible for pre-disaster recovery planning, coordination of state and federal recovery efforts, and maintaining readiness and capability to align state RSF subcommittees with the National Disaster Recovery Framework. The WRTF can be activated in declared and non-declared disasters to assist county, local, and tribal jurisdictions in recovering from a disaster.
Homeland Security Council – Interagency Working Group	The Interagency Working Group is chaired by Wisconsin Emergency Management and comprised of representatives of the Departments of Administration; Agriculture, Trade and Consumer Protection; Health Services; Children and Family Services; Corrections; Justice; Natural Resources; and Transportation; as well as the Office of Energy Independence; the National Guard; and UW Police. The Group was formed in the late 90's with its original focus on terrorism preparedness. Since that time, its mission has evolved to cover all hazards and all phases of emergency management. The Group meets the second Thursday of the month or more often if dictated by current events and acts as a support group to the Governor's Homeland Security Council.
Wisconsin Comprehensive Response Group (WCRG)	The WCRG was formed in November 2013 by the WEM Administrator with a mission to address response in the first 72 hours of an event. The workgroup works to enable response, address survivor needs, and look at restoration needs. There are 11 committees. The Mitigation Section Supervisor chairs the Short and Long Term Recovery Committee. The workgroup meets quarterly.
Building Resilience Against Climate Change (BRACE)	The BRACE Workgroup was formed in 2013 and is located in the Wisconsin Department of Health Services, Bureau of Environmental and Occupational Health. The Wisconsin BRACE program seeks to develop climate adaptation strategies based on best practices and scientific knowledge to address health risks related to potential severe weather and climate-driven events. The Climate and Health Program explores the ability to predict the public health burden for the following climate-related risk factors: extreme heat, changing precipitation patterns and flooding, drought, impacts on ground water aquifers and surface waters, vector-borne diseases, and winter weather events. The BRACE program seeks to expand partnerships, provide expertise, foster collaboration and develop strategies that will address health risk factors related to severe weather event indicators. The State Hazard Mitigation Officer participates on the BRACE Workgroup and provided

Initiative	Description
	input into the BRACE Strategic Adaptation Plan.
Wisconsin Initiative on Climate Change Impacts (WICCI)	The mission of WICCI is to generate and share information that can limit vulnerability to climate change in Wisconsin and the upper Midwest. WICCI is a network of many groups and individuals who work together through communication and collaboration. There are working groups who focus on specific climate problems; a Working Group Council that brings working groups together and gives them guidance and support; a Science Advisory Board on climate science and on-the-ground implementation issues, and a Coordination Team to assist with day-to-day operations and outreach. WEM is not part of WICCI, however, they are resource to the WSJHMT and provides information and data to support mitigation activities. Agencies and some members of the WSJHMT serve various WICCI working groups.
Wisconsin Voluntary Organizations Active in Disasters (WIVOAD)	WI VOAD is a humanitarian association of independent voluntary organizations who may be active in all phases of disaster. Its mission is to foster efficient, streamlined service delivery to people affected by disaster, while eliminating unnecessary duplication of effort, through cooperation in the four phases of disaster. Staff from WEM provides coordination and assistance to WIVOAD members. WIVOAD has taken a lead role in long-term recovery and sponsors Long Term Recovery Committees. These committees, using WIVOAD's 501(c)(3) tax exempt status, focus on fundraising, reaching out to individuals and families with unmet disaster needs, and providing services to them through a uniform case management process. The WIVOAD chair also sits on the WSJHMT and the WRTF.
Risk Assessment of State-Owned and Operated Buildings, Critical Facilities, and Infrastructure	There are 6,579 state facilities per the Department of Administration's database. The structures range from small storage sheds to large multi-story office buildings. WEM has identified 1,086 critical facilities including agency, location, and replacement cost. The total replacement cost is $5.56 billion. The plan identifies the vulnerability from the hazards in the THIRA.

As stated above, the state agencies on the Wisconsin Silver Jackets Hazard Mitigation Team were integral in the creation of the State Plan through the development of the mitigation goals, capability assessment, and action plan found in Section 3. The table in Figure 6.1-2 lists the agencies that were active in the planning process and summarizes their contributions to the process and the state's overall mitigation program.

Figure 6.1-2: Contributing Agencies

Agency	Contribution to Process
Department of Administration (DOA)	• Demographic Services Center supplies state and local agencies with population and housing estimates and projections. Information used in hazard mitigation planning. • Comprehensive Planning provides guidance and assistance to local governments in the development of comprehensive plans. Planning elements are included in hazard mitigation planning guidance. Hazard mitigation is identified in several planning elements. • The Wisconsin Land Information Program provides a data resource for state and local governments in the development of both comprehensive and hazard mitigation plans.

Agency	Contribution to Process
	• Wisconsin Coastal Management Program provides guidance and assistance to the 15 coastal counties on incorporating coastal hazards into comprehensive and hazard mitigation planning. • The Division of State Facilities provides WEM with a list of state-owned and -operated assets for assessing risks, vulnerability and potential damages from the hazards identified in the THIRA. • Manages and administers the state's Community Development Block Grants for both housing and public facilities. Mitigation activities are encouraged and costs are eligible within the programs. Coordinates closely with WEM to further mitigation and disaster recovery after an event and in many instances provides local match to FEMA mitigation grant programs.
Dept. of Agriculture, Trade and Consumer Protection (DATCP)	• Manages and administers several programs that reduce environmental damages from flooding. • Chairs the WRTF Agriculture Subcommittee.
Wisconsin Emergency Management (WEM)	• Responsible for the development, maintenance and implementation of the State Hazard Mitigation Plan. • Responsible for administration of HMGP, FMA, and PDM programs. • Provides guidance and assistance in the development and updates of local hazard mitigation plans. This includes plan review and providing comments. As plans are approved, local goals/objectives, capabilities, and mitigation actions are incorporated into updates of the State Plan. • Promotes hazard awareness and mitigation through awareness campaigns, newsletter, agency website, and workshops. • The State Hazard Mitigation Officer is chair of the RSF Mitigation Subgroup on the WRTF and also leads the WSJHMT. • Provides technical assistance to local and tribal jurisdictions by developing tools such as worksheets, and providing training through conducting workshops and webinars. • Provides support to the Wisconsin Association for Floodplain, Stormwater and Coastal Management.
Department of Health Services (DHS)	• Provides technical assistance and/or personnel to address special needs populations, environmental health issues, communicable or infectious disease, radiological/nuclear issues, and bio-terrorism preparedness. • Administers FEMA crisis counseling grants and case management for declared disasters. Works closely with the Long Term Recovery Committees, Individual Assistance and Mitigation staff. • Chairs the WRTF RSF Health and Social Services Subcommittee. • The Bureau of Environmental and Occupational Health coordinates the BRACE (Building Resilience Against Climate Change) program that looks at health impacts as a result of climate change.
Wisconsin Historical Society (WHS)	• Provides historic preservation assistance. Reviews proposed mitigation projects to meet Section 106 requirements. Maintains inventory of historic structures. Provides technical assistance in projects involving historic and archaeological sites and structures.
Office of the Commissioner of Insurance (OCI)	• Responsible for the regulation of insurance carriers and agents. Provides public information on insurance issues. Provides CEU instruction to insurance industry.

Agency	Contribution to Process
Department of Natural Resources (DNR)	• DNR staff has provided text, review, and comment on this State Plan, previous plans, and Mitigation Strategies after each disaster event. • Floodplain management staff assists WEM Mitigation staff in reviewing proposed mitigation projects for engineering feasibility and provides information from Flood Insurance Studies for conducting Benefit-Cost Analyses. • Environmental staff provides review and input in the environmental review process on proposed mitigation projects. • Administers the state's Shoreland Protection Program, Local Floodplain Management Standards, and State Wetland Standards. • Administers the Municipal Flood Control and Riparian Restoration program that provides grants to local governments for flood mitigation. Coordinates closely with WEM and in some cases provides local match to federal mitigation grants. • Administers the NFIP and provides information on flood insurance, floodplain management and flood hazard mapping. • Administers the Dam Safety Program which inspects dams and reviews repair plans and operation and maintenance plans. Provides grants to repair and remove dams. Ensures that high-hazard dams have the required emergency action plans. • Administers Chapter 30 which sets standards for placement of structures and material, diversion of water, and other activities in navigable waters. • Stormwater management requires erosion controls and stormwater management practices on construction sites. • Administers Non-point Targeted Runoff Management Program. • Manages and administers the provisions of the Managed Forest Law, and provides technical assistance to private forests statewide. • Administers Forest Fire Protection Grant Program, Healthy Forests Initiative, Single Engine Air Tanker Program, and the Wildland Urban Interface and Fire Wise Communities programs. • DNR representative co-chairs with WisDOT the WRTF RSF Infrastructure Subcommittee. • Provides support to the Wisconsin Association for Floodplain, Stormwater, and Coastal Management.
Department of Safety and Professional Services (DSPS)	• Administers the State's Building Codes. This includes training, inspection licensing, plan reviews, and enforcement. Coordinating with WEM and DNR on the development of response teams that would assist local governments after a disaster in inspection of damaged structures.
Public Service Commission (PSC)	• Regulates construction, service, and operations of electric, natural gas, telecommunications, and water utilities.
Department of Transportation (WisDOT)	• Administers the Disaster Damage Aids Program that provides grants to local governments for flood-damaged roads. Allows improvements to prevent future damages. • In highway and bridge improvement projects, strives to eliminate or reduce potential damages from hazards. • Identifies mitigation opportunities as part of project developments. • Transportation Security identifies measures to reduce damages to critical

Agency	Contribution to Process
	infrastructure, airports, rail, and maritime assets. • DOT representative co-chairs with DNR the WRTF RSF Infrastructure Subcommittee.
University of Wisconsin Extension (UWEX)	• Provides community education and public information programs promoting hazard awareness and mitigation concepts.
Wisconsin Economic Development Corporation (WEDC)	• Coordinates with the business community to address impacts from disasters and develop an economic recovery framework incorporating mitigation. • Chairs the WRTF RSF Economic Subcommittee.

6.1.1 Comprehensive Planning

Wisconsin's Comprehensive Planning Law was enacted in 1999 and is often referred to the "smart growth law." It requires all local governments to develop and adopt a comprehensive plan. Beginning January 1, 2010, if a town, village, city, or county enacts or amends an official mapping, subdivision regulation, or zoning ordinance, the enactment or amendment ordinance must be consistent with the community's comprehensive plan. The law was amended in 2010 to delay the requirements until January 1, 2012, for those local governments that have applied for but have not received a comprehensive planning grant; and to allow the Department of Administration (DOA) to grant local governments that have received a planning grant a time extension to adopt the plan by January 1, 2012.There are nine planning elements:

- Issues and Opportunities
- Housing
- Transportation
- Utilities and Community Facilities
- Agricultural, Natural, and Cultural Resources
- Economic Development
- Intergovernmental Cooperation
- Land Use
- Implementation

At the same time the legislation was passed in 1999, a Comprehensive Planning Grant Program was created in the DOA to help local governments develop their comprehensive plans. Grant funds were available through the DOA for completing comprehensive plans. As of September 2010, $21 million in grants had been awarded to 1,171 communities. As of September 27, 2016, 66 county plans, 1,455 municipal plans, four tribal plans, and seven Regional Planning Commission plans had been submitted. Due to budget cuts, no grants have been awarded since 2010 and no grants are planned for the future.

Based on a 2011 report, it is estimated that 100 county and municipal governments exercise

local land use regulations subject to the Comprehensive Planning Law's consistency requirement, but have not adopted a comprehensive plan and are not completing one.

Figures 6.1.1-1 and 6.1.1-2 show the comprehensive planning status statewide.

Figure 6.1.1-1 Statewide Municipal Comprehensive Planning Status

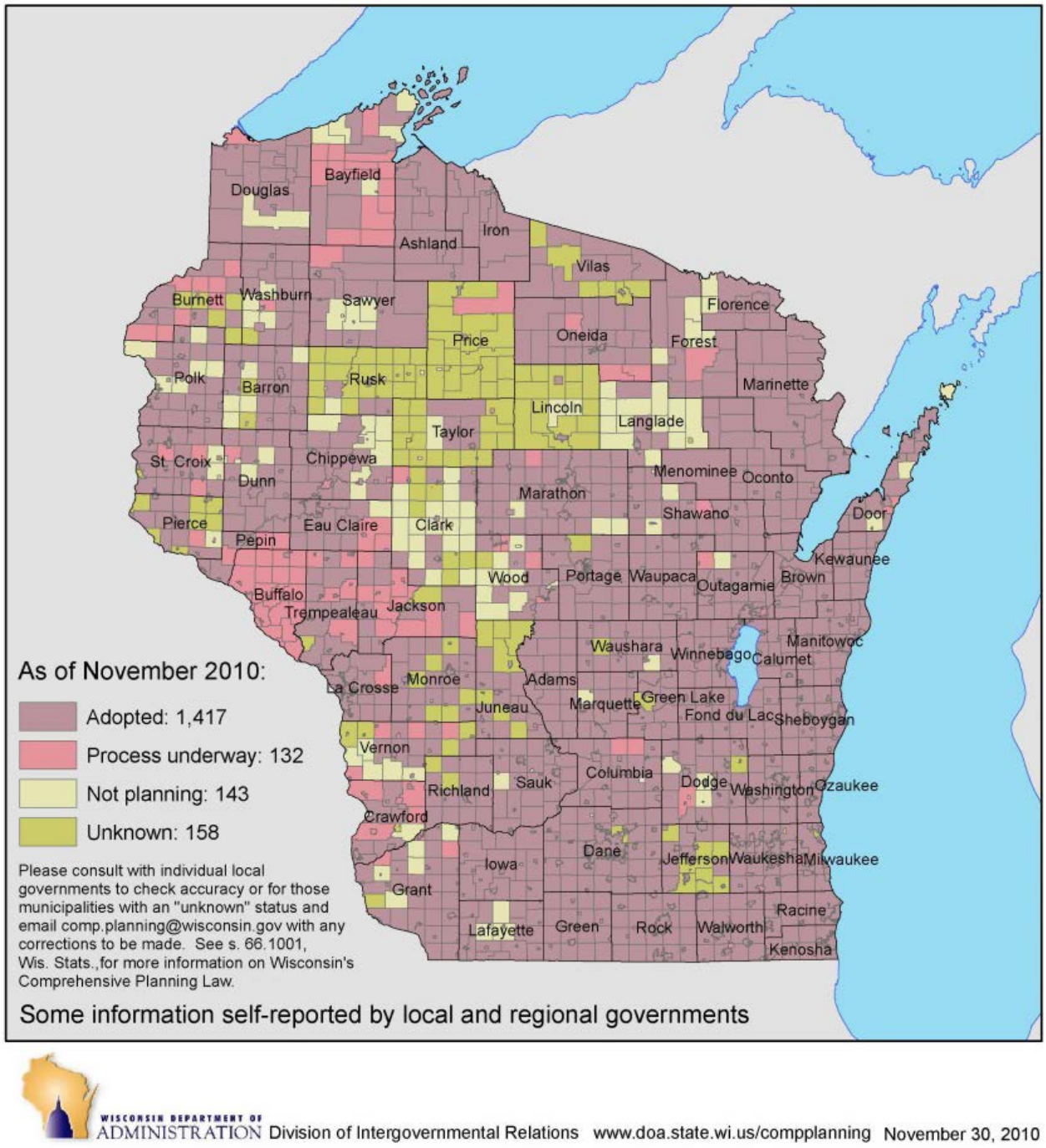
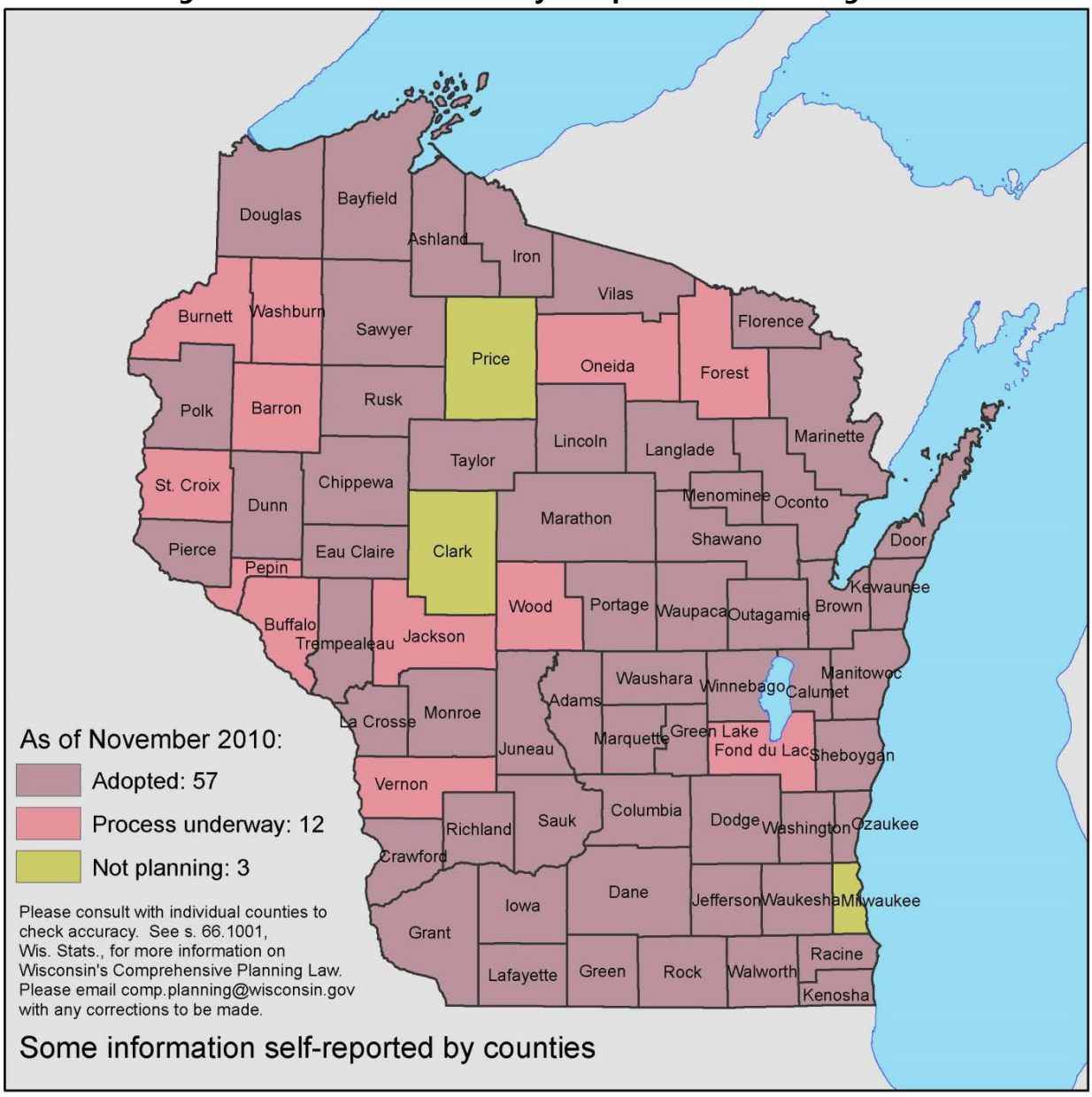


Figure 6.1.1-2 Statewide County Comprehensive Planning Status



There is a DOA Comprehensive Planning representative on the Wisconsin Silver Jackets Hazard Mitigation Team. The State Hazard Mitigation Officer (SHMO) was also a member of and participated on the State Agency Resource Working Group.

Although there is no required element for hazard mitigation, the importance of comprehensive planning is discussed and stressed at the annual Hazard Mitigation Planning Workshops held by Wisconsin Emergency Management. It is imperative future development plans identify and locate hazards to assist policymakers in making the best and safest decisions for their residents.

In turn, hazard mitigation planning needs to be cognizant of future development plans. A list of the nine comprehensive planning elements and some ideas on how to integrate all-hazards mitigation planning concepts into them are included in the *Resource Guide to All Hazards Mitigation Planning in Wisconsin*. In addition, where to integrate the comprehensive planning elements into the all-hazards mitigation plan are also described in the Guide. The DOA's website includes a link to the Guide. Local all-hazards mitigation plans can be integrated into the comprehensive plan as long as all of the required elements are included, and vice versa. Hazard Mitigation Assistance planning grants could be provided to communities desiring to develop one plan that meets both mitigation and comprehensive planning requirements, however, only those portions directly related to the mitigation requirements would be eligible for funding.

6.1.2 Regional Planning

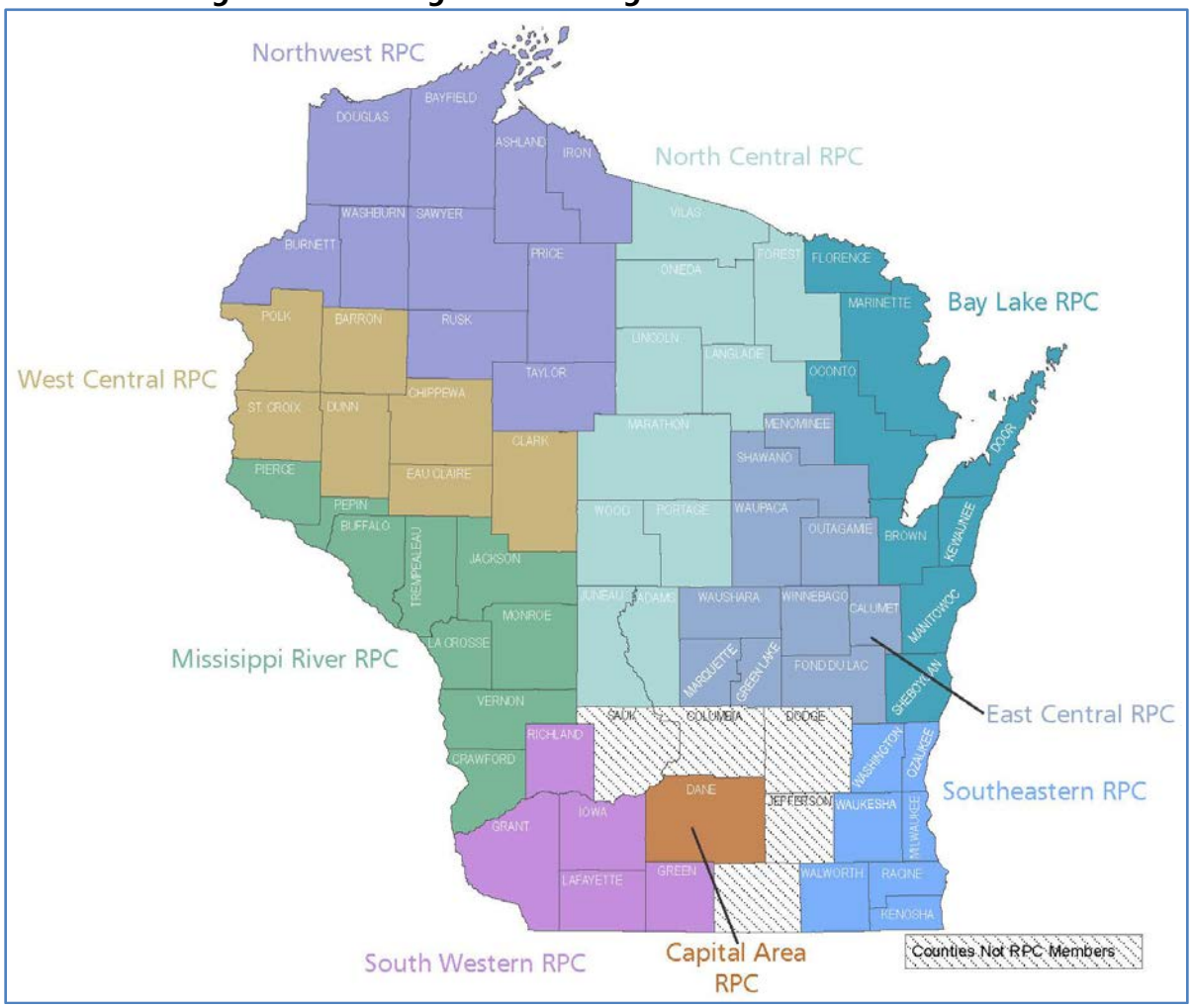
The Association of Wisconsin Regional Planning Commissions (AWRPC) represents the nine Regional Planning Commissions (RPCs) in Wisconsin. Figure 6.1.2-1 shows a statewide map with the service areas for each RPC. For most communities in Wisconsin, RPCs serve as the only affordable local planning body available and are a source of planning expertise in the development of comprehensive plans and special purpose plans including all-hazards and flood mitigation plans. The RPCs provide the mechanism by which multiple jurisdictions within a region may coordinate their plans. Most of Wisconsin's RPCs assist communities in developing their comprehensive plans as required by state law. Recognizing the close relationship the RPCs have with local governments, the resources they can provide, and the link between comprehensive and hazard mitigation planning, WEM utilized its 2002 FEMA Pre-Disaster Mitigation $50,000 (one-time) grant to contract with the Council of Regional Planning Organizations (now the AWRPC) to develop local mitigation planning guidance. The *Resource Guide to All-Hazards Mitigation Planning in Wisconsin* is provided to local and tribal governments to assist them in the development of hazard mitigation plans. The Guide is utilized at planning workshops and distributed upon request.

Since there is a close relationship between the RPCs and the local governments, and between comprehensive and hazard mitigation planning, a representative from the AWRPC (formerly Council of Regional Planning Organizations) joined the Wisconsin Hazard Mitigation Team (now the Wisconsin Silver Jackets Hazard Mitigation Team – WSJHMT) in 2003. This member serves as a conduit between the RPCs and the WSJHMT. Having an AWRPC member participate on the WSJHMT helps the state share resources, combine planning requirements, avoid duplication, and provide additional local and regional assistance to communities that choose to plan. This individual is also a member of the WRTF RSF Mitigation Subcommittee.

As a result of the 2008 flood disaster, the Economic Development Administration (EDA) provided grants to the RPCs in the disaster area for the development of Flood Recovery Strategies. To accomplish the tasks assigned, the Department of Commerce took the lead and coordinated the effort that was referred to as the EDA Disaster Recovery Collaboration. The group met monthly through August 2011. WEM Mitigation staff participated in the collaboration by attending the meetings and providing input. Potential projects were brought forward and discussed to

maximize funding opportunities. In addition, a collaboration website was established where members shared information. One of the outcomes of the group, again with the Department of Commerce as the lead, was the development of a Community Economic Recovery Guidebook to assist economic development organizations, businesses, and community leaders in preparation of economic recovery from a disaster. A link to the updated guidebook was placed on WEM's website and can be downloaded at https://sites.google.com/a/schoolfactory.org/recovery/.

Figure 6.1.2-1: Regional Planning Commission Service Areas



Source: Association of Wisconsin Regional Planning Commissions, www.awrpc.org, accessed 10/31/2016.

The RPCs are one of WEM's strongest partners in mitigation planning. They have provided planning services to many of the counties in the development and update of all-hazards mitigation plans. In addition, the RPCs prepare grant applications for local governments to obtain federal and state assistance for many types of activities including mitigation grant subapplications for both plans and projects. After the 2008 floods, RPCs located in the southern part of the state worked with their respective local jurisdictions to assist in the completion of additional grant applications for recovery assistance. With the involvement of the RPCs in the state and local planning process, they are knowledgeable on both state and local mitigation

priorities and program requirements. Therefore, they are able to develop comprehensive grant applications.

6.1.3 Rural Electric Cooperatives

Rural Electric Cooperatives (RECs) are integral to the State of Wisconsin and its communities. The first REC in Wisconsin energized its system in the spring of 1937 and the last REC energized its system in 1945. Today, there are 25 RECs in Wisconsin that generate, transmit and distribute electric power. Wisconsin's RECs collectively serve more than 257,000 consumers (approximately 625,000 people); and maintain 50,807 miles of power lines. Nationally, investor-owned and municipal power companies have 34 and 48 services per mile of line, respectively. Service densities directly relate to the amount of revenue per mile of line and to the impact of service outages from natural hazard events.

Initial discussions of development of a REC Annex to the State of Wisconsin Hazard Mitigation Plan began in late 2007. Several RECs in the State had been recipients of hazard mitigation funding. WEM approached the Cooperative Network (at that time Wisconsin Federation of Cooperatives) to gauge the interest of the state's RECs in developing a REC Annex to the State of Wisconsin Hazard Mitigation Plan.

Thirteen of the state's RECs entered into a Memorandum of Understanding with Wisconsin Emergency Management that included the following:

- Joint development of a REC annex for inclusion in the State of Wisconsin's Hazard Mitigation Plan
- Identification of natural hazards that have the potential of affecting a REC's infrastructure
- Conducting an assessment of vulnerabilities of the infrastructure to these hazards and mitigation measures to reduce these vulnerabilities
- Active participation in the periodic review, evaluation, and update of the REC Annex.

In previous versions of the Hazard Mitigation Assistance (HMA) Unified Guidance, private nonprofits were required to have participated in a FEMA-approved hazard mitigation plan to be an eligible subapplicant for the Hazard Mitigation Grant Program. In the 2015 HMA Guidance, however, that requirement was removed (as long as the entity meets the Public Assistance definition of a private, non-profit organization.) Because the state strongly believes in pre-disaster mitigation planning, whether required or not, we will continue to work with the electric cooperatives to update the REC Annex, although it may be completed at a later date than the main body of the State of Wisconsin Hazard Mitigation Plan. This delay is in part because of the two flooding disasters the state experienced this year, both in regions served primarily by RECs and whose cooperatives were impacted.

In working with the RECs throughout the state, WEM Mitigation staff learned that the RECs felt the biggest barrier to implementing mitigation projects through the HMA programs was passing

the benefit-cost analysis (BCA). Many miles of power lines are vulnerable to hazards, but without having past damage events, it is difficult for a project to pass the BCA. Some RECs were hesitant to participate in the REC Annex planning process because they did not see the point if their projects could not pass the BCA and become eligible for funding. To address this issue, in 2015, WEM and FEMA staff jointly held a REC BCA Workshop in Black River Falls, a location central to many of the RECs. Additionally, in early 2016, WEM staff, a Wisconsin Electric Cooperative Association representative, and a REC representative held a call with a FEMA BCA expert and worked through the BCA for a potential project using future damage probability instead of recorded past damages. This work will facilitate the implementation of REC mitigation projects.

6.2 Integration with FEMA Mitigation Programs and Initiatives

There are several federal programs that the state utilizes, which include regulations that provide local communities with guidance for state and regional agencies. Section 3, Figure 3.2.1-2 provides information on federal capabilities.

6.2.1 Public Assistance Program

Mitigation measures can be implemented through FEMA's Public Assistance (PA) program after a disaster declaration (under Section 406 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act, 42 U.S.C. 5172). PA funds allow an existing damaged facility to incorporate mitigation measures during repairs if the measures are cost-effective or are required by code.

This provision in the regulations, however, has been very much underutilized. Initially, PA provided funds to repair facilities to pre-disaster condition without considering mitigation opportunities. Beginning in 1996 with disaster declaration FEMA-1131-DR-WI, a greater effort was made to fund Section 406 mitigation through the PA program. Federal mitigation staff was assigned to liaise with state PA staff and to provide technical assistance. To further emphasize mitigation opportunities, a Memorandum of Understanding (MOU) for disaster declaration FEMA-1180-DR-WI was developed between state and federal representatives to promote the implementation of Section 406 mitigation measures.

In disaster FEMA-1332-DR declared in July 2000, the Federal Coordinating Officer's goal was to incorporate Section 406 mitigation into 20% of all PA projects. Mitigation was actually incorporated into 40% of projects, significantly exceeding the goal.

State PA staff strongly supports mitigation. The Mitigation and PA staffs coordinate closely to ensure that Section 406 mitigation opportunities are included wherever possible. Mitigation staff can provide support to PA subapplicants in completing benefit-cost analyses to support Section 406 projects. Following the declarations in 2012, 2013 and 2016, WEM developed strategic objectives to coordinate with PA to better identify 406 mitigation projects in the state to highlight success stories. WEM mitigation staff consults with State PA staff on any Hazard Mitigation Grant Program pre-applications that have potential for Section 406 funding.

6.2.2 National Flood Insurance Program (NFIP)

The three components of the program are: flood insurance, floodplain management, and flood hazard mapping. By participating in the NFIP, communities agree to adopt and enforce a floodplain management ordinance to reduce future flood risks to new construction in Special Flood Hazard Areas (SFHAs). In turn, federally backed flood insurance is made available within the community as financial protection against flood losses. Flood insurance and floodplain management are the first line of flood mitigation. Flood insurance is an alternative to disaster assistance, which is not available in every flood event. Gaining participation in the NFIP and encouraging property owners to purchase flood insurance significantly reduces disaster costs. Flood insurance and floodplain management reduce flood exposure to people and property.

Flood insurance policies within communities participating in the regular NFIP program include benefits for Increased Cost of Compliance (ICC). For structures with a substantial damage determination, up to $30,000 is made available to bring the structure to current NFIP standards, which will mitigate the structure from future flood events. This can include elevation, relocation, or demolition. State Mitigation staff provides ICC information and guidance to communities after a flood disaster. The ICC can provide for demolition costs in an HMA acquisition/ demolition project and count towards the required local match. ICC benefits are also available for severe repetitive loss properties mitigated with FMA funds regardless of whether recent flood damage has occurred.

From 2006 through 2015, total flood insurance claims nationwide averaged more than $1.9 billion per year. In 2015 the NFIP was over $23 billion in debt to the US Treasury with little chance that the program could ever repay that debt. Congress looked at why the program was in debt and what could be changed to improve it. The 2012 Flood Insurance Reform Act, otherwise known as Biggert-Waters 2012 (BW-12) included provisions for the phase-out of subsidies and discounts on flood insurance premiums which would equate to 25% increase in premium rates each year until the premiums reflected full risk rates. The Act also included other measures to improve the financial soundness of the NFIP. When the first rate increases hit, homeowners in affected areas responded with anger. This led to Congress to pass the Homeowner Flood Insurance Affordability Act of 2014 (HFIAA) that repealed and modified certain provisions of the BW-12 and made additional program changes to other aspects of the program not covered by the original Act. HFIAA lowered the recent rate increases on some policies, prevented some future rate increases, and implemented a surcharge on all policyholders. It also repealed certain rate increases that had already gone into effect and provided for refunds to those policyholders. The law required FEMA to designate a Flood Insurance Advocate to advocate for the fair treatment of NFIP policy holders. HFIAA also authorized additional resources to complete an affordability study. HFIAA will impact over 5.5 million flood insurance policies of which 16,262 are in Wisconsin.

Knowing the importance of flood insurance, WEM, the Office of the Commissioner of Insurance (OCI), and the Department of Natural Resources participated in an effort that promoted flood insurance in Wisconsin during Flood Insurance Awareness Week (March 16-20, 2009). Several

press releases were distributed to media outlets encouraging citizens to purchase flood insurance. On March 17, 2009, the WEM Administrator, the Insurance Commissioner, the DNR Secretary, and the Region V Mitigation Division Director toured three Wisconsin cities promoting the need for and importance of flood insurance. The three agencies again coordinated efforts to promote subsequent Flood Awareness Weeks March 15-19, 2010 and March 14-18, 2011. Efforts included mailing media packets to the county emergency management offices and media outlets promoting flood safety awareness and encouraging residents to assess their risks and purchase flood insurance. The information was posted to the WEM and Ready Wisconsin websites. Following the flooding in northern Wisconsin that resulted in the federal declaration 4276-DR, the Commissioner of Insurance attended meetings along with several other Department Secretaries in Sawyer and Ashland Counties providing information and answering questions regarding insurance. The Office of Commissioner of Insurance's website provide information regarding flood insurance (https://oci.wi.gov/Pages/Consumers/FloodInsurance.aspx) as well as provides information after flooding events, answers questions, and respond to complaints.

The NFIP's Community Rating System (CRS) was implemented in 1990 to recognize and encourage community floodplain management activities that exceed the minimum NFIP standards. The National Flood Insurance Reform Act of 1994 codified the CRS in the NFIP. Policy holders in communities that participate in the Community Rating System (CRS) are entitled to a discount on their policy. Under the CRS, flood insurance premium rates are adjusted to reflect the reduced flood risk resulting from community activities that meet the three goals of the CRS: (1) reduce flood losses; (2) facilitate accurate insurance rating; and (3) promote the awareness of flood insurance.

There are 10 CRS classes (categories): class 1 requires the most credit points and results in the largest premium reduction; class 10 receives no premium reduction. Only one community in the nation has achieved a class 1 rating: Roseville, California. The CRS recognizes 18 creditable activities, in four categories: Public Information, Mapping and Regulations, Flood Damage Reduction, and Flood Preparedness. The table in Figure 6.2.2-1 shows the credit points earned, classification awarded, and premium reductions given for Wisconsin communities in the CRS.

Figure 6.2.2-1: Wisconsin Communities in the CRS

Community Number	Community Name	CRS Entry Date	Current Effective Date	Current Class	Credit for SFHA	Credit for Non- SFHA
550001	Adams County	10/1/1991	5/1/2012	7	15	5
550612	Allouez, Village	10/1/1992	5/1/2012	6	20	10
550128	Eau Claire, City	10/1/1991	10/1/2008	7	15	5
550578	Elm Grove, Village	5/1/2001	5/1/2012	5	25	10
550366	Evansville, City	5/1/2010	5/1/2010	7	15	5
550136	Fond du Lac, City	5/1/2013	5/1/2013	7	15	5
550022	Green Bay, City	10/1/1991	10/1/2001	7	15	5
550523	Kenosha County	5/1/2013	5/1/2013	5	25	10
555562	La Crosse, City	10/1/1991	10/1/2002	8	10	5

Community Number	Community Name	CRS Entry Date	Current Effective Date	Current Class	Credit for SFHA	Credit for Non- SFHA
550001	Adams County	10/1/1991	5/1/2012	7	15	5
550612	Allouez, Village	10/1/1992	5/1/2012	6	20	10
550128	Eau Claire, City	10/1/1991	10/1/2008	7	15	5
550578	Elm Grove, Village	5/1/2001	5/1/2012	5	25	10
550366	Evansville, City	5/1/2010	5/1/2010	7	15	5
550136	Fond du Lac, City	5/1/2013	5/1/2013	7	15	5
550022	Green Bay, City	10/1/1991	10/1/2001	7	15	5
550523	Kenosha County	5/1/2013	5/1/2013	5	25	10
555562	La Crosse, City	10/1/1991	10/1/2002	8	10	5
550085	Mazomanie, Village	10/1/1991	5/1/2012	8	10	5
550487	New Berlin, City	10/1/2005	5/1/2010	7	15	5
550310	Ozaukee County	10/1/1991	10/1/2007	8	10	5
550402	Reedsburg, City	5/1/2013	5/1/2013	6	20	10
550660	Suamico, Village	5/1/2008	5/1/2013	7	15	5
550107	Watertown, City	10/1/1991	10/1/2007	7	15	5
550108	Waupun, City	10/1/1991	10/1/2001	8	10	5
550537	Winnebago County	10/1/1991	10/1/2001	8	10	5

Source: FEMA, 2016.

Three communities, the cities of Fond du Lac and Reedsburg and Kenosha County, joined the CRS since the last Plan update. All three communities have completed acquisition and demolition activities. In addition, ratings for five communities went down (remember: a lower score is better, like in golf), resulting in additional savings in flood insurance premiums for their constituents (Adams County, and the villages of Allouez, Elm Grove, Mazomanie, and Suamico).

In addition to providing flood insurance and reducing flood damages through floodplain management regulations, the NFIP identifies and maps the nation's floodplains. Mapping flood hazards creates the broad-based awareness of the flood hazards and provides the data needed for floodplain management programs to actuarially rate new construction for flood insurance.

Floodplain maps and Flood Insurance Studies (FIS) provide critical flood hazard information needed to develop effective planning focusing on the areas with the greatest flood risk. In addition, WEM utilizes this flood hazard information in evaluating proposed hazard mitigation projects and conducting benefit-cost analyses.

Figure 6.2.2-2 shows NFIP participation statistics for Wisconsin as of October 1, 2016. There are serious consequences for communities that elect not to participate in the NFIP: flood insurance is not available to individuals or businesses (lending institutions cannot approve mortgages for properties located in a SFHA without the purchase of flood insurance); certain disaster assistance (HGMP, FMA, and PDM programs) and other federal grants are not available to individuals, businesses, or local governments.

Figure 6.2.2-2: NFIP Statistics for Wisconsin

Participating communities - regular program	544
Participating communities - emergency program	3
Total participating communities	547
Participating communities with no SFHA identified	18
Non-participating communities with SFHAs identified	65
Total communities with SFHAs identified	594*
Suspended communities	16
Withdrawn communities	2

* This number includes all 72 counties. Source: FEMA, 2016.

As part of the mitigation strategy after a disaster declaration, DNR contacts the non-participating and suspended communities to provide them with information and technical assistance and to encourage them to join the program.

The NFIP is administered by the Wisconsin DNR Floodplain Management Program (FMP). WEM works closely with the DNR on NFIP issues, since community eligibility for pre- and post-disaster mitigation programs relies on NFIP participation. The FMP plays an important role in state mitigation efforts. The responsibilities of FMP staff members include, but are not limited to, the following:

- Help communities administer local floodplain management programs
- Provide technical assistance to local floodplain managers in making substantial damage determinations after a flood
- Ensure that communities are in compliance with local ordinances
- Assist non-participating communities in enrolling in the NFIP
- Assist NFIP-participating communities in enrolling in the CRS
- Represent the FMP on the Wisconsin Silver Jackets Hazard Mitigation Team
- Represent the FMP on the Wisconsin Recovery Task Force RSF Mitigation Subcommittee
- Work with WEM Mitigation staff to administer mitigation programs and develop a repetitive loss strategy for the state
- Provide training to local government and emergency management officials on floodplain management and mitigation

In 1995 the DNR developed the "Wisconsin Community Flood Mitigation Planning Guidebook." WEM then developed additional flood mitigation planning guidance to assist local governments in meeting Flood Mitigation Assistance program planning requirements. WEM and the DNR sponsored and conducted flood mitigation planning workshops using both of these documents as training tools.

As complement to the guidebook, the DNR, with financial assistance from FEMA/WEM, developed the video "Mitigation Revitalizes a Flood Community: The Darlington Story." The video showed how the City investigated mitigation measures following recurrent flooding events. The City followed a mitigation planning process similar to the one described in the guidebook to produce a plan that included strategies to decrease future flood damages and attack the underlying economic problems. The video explained how the City brought civic leaders, business owners, and citizens together. The efforts of the City have been recognized in videos produced by FEMA and the Association of State Floodplain Managers.

The DNR has produced a brochure, "Living in the Floodplain: What You Need to Know – Who You Need to Know", which has been widely distributed since 2007. The brochures are handed out at Public Officials Applicants Briefings, training workshops, public meetings, mitigation courses and workshops, and at Disaster Recovery Centers.

After flooding events, local officials are responsible for inspecting flood damaged structures in the special flood hazard area (SFHA) to determine if they are substantially damaged (50% or more damaged). If so, the property owner is required to bring a non-conforming structure into compliance with the local floodplain ordinance. After the 2004, 2007, 2008, and 2010 federal disaster declarations the DNR and WEM Mitigation staff conducted Substantial Damage Determination Workshops to provide information to local officials on their responsibilities under their local floodplain ordinance and advise them of their mitigation options. In addition, the DNR sponsored the FEMA L-273 course, Managing Floodplain Development through the NFIP in 2007 in La Crosse, 2008 in Kenosha County, and 2014 in Eau Claire. The DNR also co-sponsored the course with the Wisconsin Association for Floodplain, Stormwater, and Coastal Management (WAFSCM) and the Association of State Floodplain Managers (ASFPM) in 2016 in Pewaukee. Local officials from around the state attended the class. To further support floodplain management in the state, the DNR conducted 19 floodplain development and permitting workshops in 2008 and 2009, 15 flood insurance workshops in 2010 and 2011, 10 LOMC workshops in 2012, 15 Floodplain Workshops in 2013, 10 Floodplain Workshops in 2014, 11 Floodplain Workshops in 2015, and 12 Floodplain Workshops in 2016; developed and distributed the Floodplain and Shoreland Notes newsletter three times a year to over 1,000 subscribers; and provided support to the WAFSCM. DNR staff also did outreach to the following organizations: Wisconsin County Code Administrators, Wisconsin Building Inspectors Association, Wisconsin Realtors Association, Wisconsin Lakes Association, Wisconsin League of Municipalities, Wisconsin Counties Association, American Society of Civil Engineers, Wisconsin Bar Association, Wisconsin Surveyors Association and Wisconsin Counties Highways Association as well as to the tribal governments of the Ho-Chunk Nation, the Forest County Potawatomi Community, and the Sokaogon Chippewa Community.

6.2.3 Risk MAP

Flood Hazard Maps produced by the NFIP are basic and essential tools for flood insurance, floodplain management, and flood hazard mitigation. Flood Map Modernization (Map Mod) was a multi-year Presidential initiative funded by Congress from fiscal year FY 2003 to FY 2008, which

improved and updated flood maps and provided 92% of the nation's population with digital Flood Insurance Rate Maps.

Risk MAP (Risk Mapping, Assessment, and Planning) is the successor to FEMA's Map Modernization and expands the focus to include risk assessment, mitigation planning and traditional hazard identification (flood mapping) activities. Risk MAP is meant to better inform communities as they make decisions related to reducing flood risk by implementing mitigation actions. Risk MAP will build on the strong foundation of Map Modernization that is in place. This integrated flood risk management approach will weave county-level flood hazard data developed in support of the NFIP into watershed-based risk assessments that serve as the foundation for local hazard mitigation plans and targeted risk communication activities.

The vision for Risk MAP is to deliver quality data that increases public awareness and leads to action that reduces risk to life and property. The Risk MAP goals are:

1. Address gaps in flood hazard data
2. Measurably increase public's awareness and understanding
3. Lead effective engagement in mitigation planning
4. Provide an enhanced digital platform
5. Align risk analysis programs and develop synergies

The outcomes and benefits are: engaged communities making informed decisions; increases in accuracy and reliability of products; effective risk assessments and mitigation plans; and communities that can more effectively communicate risk. Risk MAP products may include: flood risk database, flood risk report, and/or flood risk map.

The creation of maps under Risk MAP is a multi-step process:

Step 1. Discovery Meeting: Meet with representatives from the communities chosen for remapping to gather information on local priorities and any available engineering and topographic data

Step 2. Data Development: Information and data gathered at the scoping meeting is reviewed for compliance with FEMA's mapping standards. New engineering studies are done if funding is available.

Step 3. Preliminary FIRMs: Preliminary FIRMs are created using the gathered data. The preliminary maps are made available to local officials and the public for review during an open house.

Step 4. Expanded Appeal Process: A 90-day appeal period is set by the NFIP during which the public can submit comments and appeals to the preliminary FIRMs. The community collects all comments and/or appeals and then forwards those on to the DNR for final evaluation. Changes are then made to the preliminary FIRMs to incorporate any valid comments and appeals.

Step 5. Final Map Creation: Once all changes are made to the preliminary FIRMs, the engineering data and maps are sent to FEMA for final map production. FEMA's Map Service Center is responsible for providing the final maps and the Flood Insurance Study to the affected communities.

Step 6. Letter of Final Determination and Ordinance Adoption: FEMA is responsible for notifying the communities of the effective date of the FIRMs. Each community that will have new FIRM panels is sent a Letter of Final Determination (LFD). The LFD notifies the community that it has six months to amend the current floodplain ordinance.

DNR started working with FEMA as a Cooperating Technical Partner (CTP) in 2001. DNR's priorities for watershed selection were based on flood risk, recent flood events, and availability of digital floodplain and high quality elevation data. The scope of Risk MAP activities in Wisconsin continues to broaden. Risk MAP activities include efforts to update and digitize flood maps; to conduct "discovery meetings" focusing on riverine mapping needs; "discovery meetings" focusing on potential local mitigation actions, and discovery meetings focused on coastal mapping needs. Community officials will have the opportunity to share their local knowledge and concerns on which streams warranted new floodplain map engineering and other related topics. State Mitigation staff attended the discovery meetings, open houses, and resiliency and community outreach meetings. Staff discussed the status of the communities' hazard mitigation plans and how Risk MAP products might assist in making the plans more comprehensive; previous mitigation projects in the area; and hazard mitigation funding opportunities. Mitigation staff will continue to support NFIP efforts in the state.

In the last several years, Risk MAP efforts have focused on the following:

1. The update of maps in Ashland County, Wisconsin.
2. Great Lakes pilot meetings in Brown County and others.
3. New maps for Dodgeville, Wisconsin and Iowa County.
4. Wolf River Discovery meetings
5. Upper Fox Watershed (Wisconsin) on May 18, 2016

Figure 6.2.3-1: Risk MAP Activities

Watershed	Discovery	Flood Risk Review	Open Houses	Resilience	Community Outreach
Chippewa/Eau Claire/Rusk Counties	January 2011		January, February 2013		
Upper and Lower Rock River	February 2011		March, April, June, July, October, November 2013	January 2014	May 2014, April 2015, August 2016
Lower Wisconsin River	November 2011		May, June, August 2014	March 2014	July, August, September 2014; August 2016
Upper (Illinois) Fox River	November 2012, February 2014	May 2016		May 2016	
Wolf River	February 2015				May 2015

Watershed	Discovery	Flood Risk Review	Open Houses	Resilience	Community Outreach
Milwaukee River	May 2013				
Great Lakes	March 2014	September 2014			February 2015, August 2016
Ashland, Bayfield, Douglas Counties (inland scoping)	July 2014				

As of October 2016, five counties are in the preliminary map production phase, one county is in the final map production phase, and 58 counties have DFIRMS available. Eight counties will not be mapped due to limited funding.

6.2.4 Severe Repetitive Loss and Repetitive Loss Properties

The NFIP paid over $9 billion in 2012 in flood insurance claims. Historically, over 30% of claims go to property owners who hold only 1% of the policies issued. To address this issue, Congress passed the Flood Insurance Reform Act on June 30, 2004. It included measures to address those properties that result in a disproportionate amount of claims on the NFIP. The Act created the Repetitive Flood Claims and Severe Repetitive Loss programs described below.

In 2006, Congress appropriated $10 million for the Repetitive Flood Claims (RFC) program to provide funding to reduce or eliminate the long-term risk of flood damage to structures insured through the NFIP. RFC funds were made available to mitigate residential or commercial properties that had received one or more NFIP insurance payments within a state or community that could not meet the requirements of the FMA program for either cost share or capacity to manage the activities. RFC grants were eligible for up to 100% federal funding. Like in the other programs, the state was required to have an approved Hazard Mitigation Plan; however, a local mitigation plan was not required. WEM solicited applications for RFC through the annual HMA application period. The state did not receive any eligible RFC applications from local governments. In 2009, the state worked with a community in Waukesha County where they did not have an approved all-hazards mitigation plan on the potential acquisition and demolition of a property that was substantially damaged in the June 2008 floods. However, the project did not have a positive BCR, therefore, was determined not to be cost-effective.

The Act also created a pilot program for mitigation of severe repetitive loss (SRL) properties, and increased funding in the FMA program would be from $20 million to $40 million for five years. Severe repetitive loss properties were defined as NFIP-insured residential properties that meet one of two triggers:

1) Four or more claims over $5,000 (including building and contents) each, the cumulative amount of such claims payments exceeding $20,000

or

2) At least two claims with a cumulative amount exceeding the value of the building.

For both, at least two of the claims must have occurred within any rolling ten-year period since 1978 and must be greater than ten days apart.

The SRL Pilot Program was announced in 2008 with $80 million available to mitigate properties that met the SRL definition. The purpose of the program was to reduce or eliminate the long-term risk of flood damage to SRL residential properties and the associated drain on the NFIP from such properties. Eligible activities included acquisition, demolition, or relocation; elevation; dry-floodproofing of historic structures; minor physical localized flood control projects; and mitigation reconstruction (demolition and rebuilding of structures). Both the state and community were required to have an approved hazard mitigation plan. Funding was 75% federal with a 25% local match. The match could be reduced to 10% for states with an approved state mitigation plan that included a strategy for reducing the number of repetitive loss properties.

There were 17 states designated at "target states" meaning they had over 51 identified SRL properties. Illinois was the only state in FEMA Region V that met the criteria. Target states received allocations based on the number of SRL properties in the state. 10% was set aside for non-target states.

The Repetitive Loss Report, Appendix D, is used as a resource to prioritize mitigation projects for mitigation grants. The Report provides the state with a resource to identify the properties with the most repetitive losses and to prioritize specific mitigation recommendations for those properties. The state utilizes the Repetitive Loss Report statistics from past and current mitigation projects to provide guidance for future mitigation projects and to reduce future flood losses. Repetitive loss information is a criteria in selecting mitigation projects for funding. RLP information is also provided to local governments to address and include in development and update of their all-hazards mitigation plans.

A summary of repetitive loss (RL) properties in Wisconsin can be found in Appendix D, Wisconsin's Repetitive Loss Report. As of July 2016, there were 659 statewide RL properties that meet the **NFIP** definition (those properties that have had two or more flood insurance claims of at least $1,000 each within a rolling ten-year period since 1978). Of that number, 103 (15.6%) have been mitigated through acquisition/demolition or elevation. The NFIP database lists 13 (2.0%) as mitigated due to a lack of recent, accurate data. The report identifies 114 communities with RL properties (including mitigated properties). Over 97% of Wisconsin communities with RL properties have five or fewer, as displayed in Table 2 of the report.

The City of Milwaukee, which has 230 repetitive loss properties, is the only community with more than 50 such properties. The City of Milwaukee and the Milwaukee Metropolitan Sewage District (MMSD) actively undertake mitigation projects. In most cases, they are not funded with federal mitigation grants; therefore, WEM is not aware of all of the activities undertaken. As such, it can be difficult to track the status of those repetitive loss properties. The same is true for other communities around the state that engage in locally-funded mitigation activities.

FEMA Region V provides an annual report for SRL and RL properties that meet the **FMA** definition (see Section 6.2.5.) It is important to note that the FMA definition of RLP and SRL is different than the NFIP definition. The reports provide the state with a resource to identify the properties with the most repetitive losses and to prioritize specific mitigation recommendations for those properties. The state utilizes the reports to reach out to the communities and provide guidance for future mitigation of the properties to reduce future flood losses. Since 2010, the state through the HMA programs has mitigated seven SRL and seven RL properties. The tables in Figures 7.2.6-1 and 7.2.6-2 identify those communities with SRL and RL properties remaining.

Figure 6.2.4-1: 2016 Severe Repetitive Loss Communities

Community	SRL Properties	Comment
Berlin, City of	1	Insured
Crawford County	1	Cannot be located due to insufficient data, uninsured
Durand, City of	2	1 insured part of a pending FFY16 FMA grant; 1 uninsured
Janesville, City of	1	Insured
Jefferson County	2	1 insured and part of a FFY 14 FMA grant; 1 uninsured
Milwaukee, City of	3	All uninsured
Pierce County	1	Insured
Prescott, City of	2	1 uninsured
Steuben, Village of	1	Insured
Washington County	2	Insured
Waukesha County	1	Uninsured
Total	**17**	

Figure 6.2.4-2: 2016 Repetitive Loss Communities

Community	Repetitive Loss Properties	Comment
Dane County	1	Insured
Gays Mills, Village of	1	Acquired/demolished
Jefferson County	5	1 acquired/demolished; 1 insured; 3 uninsured
Kenosha County	1	Insured
Marquette County	1	Uninsured
Milwaukee, City of	6	All uninsured
Pierce County	4	1 acquired/demolished; 2 uninsured
Richland County	1	Insured
Rock County	1	Uninsured
Village of Steuben	1	Acquired/demolished
Trempealeau County	1	Uninsured
Total	**23**	

Repetitive loss information is a consideration in the funding criteria for mitigation projects. When a community submits an application for mitigation funding, the state refers to the SRL and RLP reports as well as the State's Repetitive Loss Report to determine if there are any repetitive loss properties identified in the application. If they are not identified and the

properties fit within the original scope of the project, the state recommends that the repetitive loss properties become part of the project. SRL and RLP information is also provided to local governments to address and include in development or update of local all-hazards mitigation plans.

One of the challenges in addressing SRL and RL properties is that as flood claims are processed, data constantly changes. As the state works to mitigate repetitive loss properties, additional properties are identified in subsequent flooding events. In addition, some of the repetitive loss properties are impossible to identify due to poor location information.

As stated previously, mitigating SRL and RL properties is high state priority. WEM strongly encourages local governments to mitigate such properties; however it cannot force local governments or property owners to do so.

The State of Wisconsin supports, through funding and technical assistance, the development of local mitigation plans in counties with SRL and RL properties. In addition, WEM will work with the county to assist in the plan, and with the community to assist in the project application for such properties. All of the communities with an identified SRL or RL property either have an approved all-hazards mitigation plan or are in the process of updating the plan with one exception. Washington County contains two SRL properties. The County is presently developing their first all-hazards mitigation plan.

WEM reaches out to those communities with identified SRL and RL properties annually as part of the HMA non-disaster grant application period as well as after disasters when HMGP funds are available.

6.2.5 Flood Mitigation Assistance Program

On June 30, 1994, the National Flood Insurance Reform Act (NFIRA) was signed into law. The purpose of the NFIRA was to improve the financial condition of the National Flood Insurance Program (NFIP) and reduce the federal expenditures for federal disaster assistance to flood damaged properties. One of the things that the NFIRA did was create a pre-disaster mitigation grant program called the Flood Mitigation Assistance (FMA) program. The Biggert-Waters Flood Insurance Reform Act of 2012 consolidated the Repetitive Flood Claims and Severe Repetitive Loss grant programs under the Flood Mitigation Assistance program. Although the DNR administers the NFIP, WEM administers the FMA program. It is a cost-share program (minimum 75% federal with a 25% local match) through which states and communities can receive grants for flood mitigation planning and projects and management costs.

The overall goal of the FMA is to reduce or eliminate claims under the NFIP. This is done by funding cost-effective mitigation measures to buildings, manufactured homes and other NFIP-insured structures. Program priority is given to reducing the number of severe repetitive loss (SRL) and repetitive loss properties (RLP) and their associated claims under the NFIP. Other goals of the program are to encourage long-term, comprehensive mitigation planning; respond to the needs of communities participating in the NFIP; and complement other federal and state

mitigation programs with similar goals. The program is subject to the availability of appropriation funding as well as any directive or restriction made with respect to the funds.

Prior to 2011, the state received an allocation based on the number of flood insurance policies in force and the number of repetitive loss structures in the state. At that time repetitive loss structures were defined as those structures that have had two or more flood insurance claims of at least $1,000 each in the last ten years. The minimum amount any state received was $10,000 for flood mitigation planning grants and $100,000 for project grants to implement mitigation activities identified in approved mitigation plans. States could submit applications above the allocation to be considered through a national competition. In addition, up to 10% of the project funds are allowed to be used for state management costs.

Due to program restrictions at the time, the state was not always able to spend the available allocation. In 2004, funds were required to be used for RLPs. The state solicited applications, but there were no projects submitted that met the requirement. Although the state solicited FMA applications in 2008, no applications were received, therefore, the state did not apply for FMA funds. The state solicited FFY 11 FMA applications during the annual HMA (Hazard Mitigation Assistance) program application period. The state reviewed applications to determine if any of the projects fit the FMA program criteria. None were received. The State submitted an application in FFY12 for elevation of a RLP; acquisition and demolition of a SRL property in FFY13, and the acquisition and demolition of two SRL properties in FFY14. The state submitted an application in FFY15 to acquire and demolish an SRL property. The property was found eligible and met program requirement, but was not selected for funding by FEMA. The application was resubmitted in FFY 2016 and has been selected for further review.

Appendix C contains detailed tables describing the FMA projects and plans that have been funded in Wisconsin. Below are the FMA funds (federal share) by year the state has received and implemented:

Figure 6.2.5-1: Flood Mitigation Assistance Funding

FFY	Planning	Project	State Mgmt.	Total
1996/1997	$11,800	$117,100		$128,900
1998*	$30,754	$401,500		$432,254
1999	$11,250	$125,100		$136,350
2000	$13,307	$148,110		$161,417
2001	$14,257	$145,250		$159,507
2002	$13,800	$114,125		$127,925
2003	$0	$89,349	$3,811	$93,160
2004	$0	$0	$0	$0
2005	$13,399	$107,512	$8,183	$129,094
2006	$10,364	$0	$0	$10,364
2007	$0	$180,441	$5,360	$185,801
2009	$0	$153,000	$0	$153,000
2010	$0	$83,250	$2,155	$85,405

FFY	Planning	Project	State Mgmt.	Total
2011	$0	$0	$0	$0
2012	$0	$84,644	$8,040	$92,684
2013	$0	$187,637	$10,473	$198,110
2014	$0	$473,592	$33,042	$506,634
2015	$0	$0	$0	$0
Total	**$118,931**	**$2,410,610**	**$71,064**	**$2,600,605**

* Due to unspent funds in other states, Wisconsin was able to receive additional funds.
Source: WEM, 2016.

To receive FMA grant funds, the community must be participating and in good standing with the NFIP. Eligible projects and criteria are basically the same as for the Hazard Mitigation Grant Program. The biggest difference is that this program focuses only on flood hazards, not all hazards, and aims to reduce claims submitted under the NFIP, so the projects must reduce the risk of flood damage to structures insured under the NFIP.

Emphasis and priority is given to insured SRL and RL properties. WEM makes every attempt to utilize FMA funds to mitigate losses to these properties. A summary of Wisconsin's Repetitive Loss Report dated October 2016 is presented in Appendix D. The state makes every attempt to mitigate SRL and RL properties through all of the HMA programs.

With the notice of funding availability for the FMA program, WEM Mitigation staff solicits subapplications from those communities that have properties identified as SRL or RLP, and advises of the potential for increased funding. In order to receive increased funding, properties must meet the FMA SRL or RLP definition.

SRL: A structure that is

a) covered under a current flood insurance policy, and

b) has incurred flood damage

   i) for which 4 or more separate claims payment (including building and contents) have been made under flood insurance coverage with the amount of each such claim exceeding $5,000 and with the cumulative amount of such claims payment exceeding $20,000,

   or

   ii) for which at least two separate claims payment (includes only building) have been made under such coverage, with the cumulative amount of such claims exceeding the market value of the insured structure.

RLP: A structure with a current flood insurance policy that

a) has incurred flood-related damage on two occasions in which the cost of the repair, on the average, equaled or exceeded 25% of the market value of the structure at the time of each such flood event,

and

b) at the time of the second incidence of flood-related damage, the contract for flood insurance contains increased cost of compliance coverage.

SRL properties can be eligible for 100% federal funding and RLP for 90% federal funds with a 10% local match. Properties with a current flood insurance policy, but that do not meet the SRL or RLP definition are eligible for funding of 75% federal funds with a 25% local match.

FEMA and the state have identified the highest priority for funding is SRL properties followed by RLPs.

The previous plan update identified challenges with the FMA program. Some of those challenges have been addressed, but one still remains, which is that planning grant funds can only be used to address flood hazards, not all hazards in a community. They can be used to complete flood mitigation components of local all-hazards mitigation plans. This restriction makes it difficult to award planning grant funds through the FMA program. Communities are not interested in applying for two different planning grants to complete one all-hazards mitigation plan.

Previously the state received several projects that included SRL properties, but failed the benefit-cost analysis. With the change in allowing states to utilize pre-calculated benefits for acquisition and demolition projects, this challenge has been greatly reduced and has opened up more opportunities to mitigate SRL and RL properties.

6.2.6 Hazard Mitigation Grant Program

The Section 404-Hazard Mitigation Grant Program (HMGP) is a critical component of the state's mitigation efforts. The program was created in November 1988 as a result of the Robert T. Stafford Disaster Relief and Emergency Assistance Act that amended PL 93-288, the Federal Disaster Relief Act of 1974. The HMGP is administered by WEM and makes grants available to state and local governments as well as eligible private, non-profit organizations and Indian tribes to implement long-term mitigation measures following a major disaster declaration. Eligible projects must be environmentally sound, cost-effective, solve a problem, and prevent future disaster damages. The grants are cost-shared with 75% provided in federal funds through FEMA with a 25% local match. Wisconsin provides half of the local match; thereby reducing the required local match to 12.5%. In order to receive HMGP funds, a community must be participating and in good standing with the National Flood Insurance Program (NFIP). Further, beginning November 1, 2004, communities must have a FEMA-approved all-hazards mitigation plan to be eligible for funds for project implementation.

President Bill Clinton signed the Hazard Mitigation and Relocation Assistance Act that amended Section 404 of the Stafford Act on December 3, 1993. This amendment significantly increased the amount of funding available in the HMGP in two ways. First, it increased the federal share of grant funds from 50% to 75%. Second, the proportion of federal funds allotted to the HMGP was

increased to 15% of the federal funds spent on the Individual and Public Assistance programs for each disaster, whereas before it was based on 10% of the federal funds spent in the Public Assistance program only. The change of the funding formula raised the amount of HMGP funds available in the state for the 1993 Midwest Flood from $2 million to $14 million. Unfortunately, in 2003 the amount of federal funds allocated to each federal declaration was reduced from 15% to 7.5%. States including Wisconsin supported restoring the federal share back to 15% of the Individual and Public Assistance funds for each federal declaration.

On October 30, 2000, the Disaster Mitigation Act of 2000 (DMA2K) was enacted and amended the Stafford Act. The purpose of the Act was to establish a national program for pre-disaster mitigation, streamline administration of disaster relief, and control federal costs of disaster assistance. Section 322 of the act had a great impact on the HMGP. States are required to have a FEMA-approved Standard Hazard Mitigation Plan to be eligible for certain disaster assistance programs including the HMGP. This section also increased HMGP funding from 15% (previously 7.5%) to 20% for those states that have an approved State Enhanced Hazard Mitigation Plan. In addition, it established a requirement for local and tribal mitigation plans and authorized 7% of the HMGP funds to be available to states for use in developing such plans. The Interim Final Rule, 44 CFR Part 201, Hazard Mitigation Planning, published February 26, 2002, and Final Rule, published October 31, 2007, established criteria for state and local hazard mitigation planning authorized by Section 322 of the Stafford Act, as amended by Section 104 of the DMA2K, and contained the rules for hazard mitigation planning and the Hazard Mitigation Grant Program. The rules addressed state and local mitigation planning requirements.

WEM Mitigation staff solicits, reviews, evaluates, and ranks HMGP subapplications before presenting to the Wisconsin Silver Jackets Hazard Mitigation Team for discussion. Based on those discussions, funding recommendations are made to the Division Administrator for a final decision on which applications are forwarded to FEMA for approval. As of October 1, 2016, $92,093,801 in HMGP project funds and $1,998,689 in HMGP planning funds have been used in or allocated to the state for 143 mitigation projects and 47 local plans or plan updates. Four federal declarations were declared since the last plan update (4076-DR in 2012, 4141-DR in 2013, and most recently 4276-DR and 4288-DR in 2016). Projects consist of acquisition and demolition, elevation, safe room construction, wind retrofits, stormwater management, utility protection, education and outreach, NOAA weather radio purchase and distribution, river gauge installation, and mitigation planning. The table in Figure 6.8.17-1 identifies approved funding by declaration. In addition, Appendix B provides a detailed history of the disaster declarations and the HMGP. Appendix C identifies mitigation projects implemented statewide. The HMGP is the primary funding component for implementing mitigation actions identified in state and local hazard mitigation plans.

WEM Mitigation staff makes every attempt to fully utilize all available funding. Applications are submitted in the amount of or exceeding all available funding for the declaration within the required timeframe (i.e. 12 months from the declaration, 18 months with approved time extensions). In addition, eligible projects over above the allocation are submitted in the event funds become available. As projects are completed, any unspent funds in projects are

reobligated to projects that have cost overruns. The goal is to spend as much funds as possible and returning as little as possible at the end of the performance period.

The program does have some challenges which are not unique to HMGP, but impact all of the FEMA mitigation programs. The requirement for the project to be cost-effective, meaning that the benefits must outweigh the costs, is the largest challenge that faces projects submitted for funding. In some cases, viable mitigation projects are not funded as they cannot meet FEMA's strict BCA requirements. In most situations the required documentation cannot be obtained. This is particularly frustrating when repetitive loss or severe repetitive loss properties are involved. The planning requirements can be another challenge. In order for a community to be eligible for funding, they must have a FEMA-approved all-hazards mitigation plan. This requirement in limited instances may delay funding of mitigation projects because either the community does not have an approved all-hazards mitigation plan or the plan has expired. In most instances the plan is in the update process, but not yet completed. WEM diligently works with counties to ensure that the plans remain current and do not expire. WEM annually notifies those with plans expiring within two years to start their update process and provides information on available grant funding. If there is a county that doesn't have a plan or if it is expired, they would be a high priority to receive HMGP planning grant funds.

Under the HMGP program, the BCA requirement is waived for properties located in the special flood hazard area (SFHA) that are determined by the authorized local official to be substantially damaged under the local floodplain ordinance. This greatly expedites project approval for acquiring flood-damaged properties. However, a challenge is getting the community to complete the substantial damage determinations. After a declaration, DNR contacts all impacted communities to remind them of their responsibility to complete substantial damage determinations. WEM will work with those communities that have substantially damaged structures to apply for HMGP funding to mitigate those structures. In addition, DNR and WEM conduct substantial damage workshops for local officials. DNR also provides technical assistance to communities if requested.

In August 2013 FEMA issued a memo on pre-calculated benefits for acquisition and elevation projects located in the SFHA. FEMA determined that acquisition and demolition of properties located in the SFHA for which costs are equal to or less than $276,000 is cost-effective. Further, FEMA determined that elevation of structures located in the SFHA for which costs are equal to or less than $175,000 is cost-effective. For projects that include multiple properties, the average cost of all structures in the project must meet the stated criterion. This has greatly expedited and increased the number of acquisition and elevation projects including SRL and RL properties.

Further, FEMA has identified and quantified environmental benefits that can be incorporated into the overall benefits for acquisition-related activities. FEMA developed economic values for green open space and riparian areas into the BCA toolkit for acquisition projects. The benefit cost ratio (BCR) must be at least 0.75 before incorporating the environmental benefit. This will assist those projects where the acquisition cost exceeds the pre-calculated benefit and the traditional BCA is required. In addition, FEMA has developed Fact Sheets and Benefit Cost Analysis guidance for Climate Resilient Mitigation Activities (CRMAs). The Fact Sheets provide

high-level technical information and requirements for HMA programs. The Benefit Cost Analysis tools have been developed to calculate benefits for drought mitigation and/or ecosystem services for mitigation projects.

In October 2000, Wisconsin was recognized has a Managing State for the HMGP. This means that FEMA recognized the state is capable of performing benefit-cost analyses and environmental reviews for proposed projects. Based on a Memorandum of Understanding signed by FEMA and WEM, the state prepared a project summary sheet for all HMGP applications submitted to FEMA. Then, instead of reviewing the entire application package, FEMA reviewed the project summary sheet and approved the project and environmental documents. This significantly streamlined the approval process. In a letter dated February 15, 2006, the MOU was terminated. The reason was that with the passage of the DMA2K, Interim Final Rule, published on February 26, 2002, 44 CFR 201, stated: "Management State means a State to which FEMA has delegated the authority to administer and manage the HMGP under the criteria established by FEMA . . ." To date, such criteria has never been developed. Therefore, there are no "managing states."

The Sandy Recovery Improvement Act (SRIA) provided FEMA with the authority to implement provisions of Program Administration by States (PAS). States that wish to participate may be delegated additional defined responsibilities by FEMA based on their staffing plan, grants management and hazard mitigation experience, and demonstrated past performance. In return, the state will have increased control and oversight to implement the HMGP. FEMA approved PAS for the state in administering declaration 4141-DR. Under the PAS agreement, WEM received an expedited application approval process by FEMA, delegated authority to approve extensions for performance periods, approved post-award scope of work changes with no change in activity and no need for additional funds such as extensions for demolition, and approved post-award budget revisions using available funds as a result of cost underruns.

6.2.7 Pre-Disaster Mitigation Program

The Disaster Mitigation Act of 2000 (DMA2K), Public Law 106-390, was signed into law on October 30, 2000, and established a national program for pre-disaster hazard mitigation. The purpose of the law was to reduce disaster losses through pre-disaster mitigation planning; streamline recovery processes through planned, pre-identified, cost-effective mitigation; and link pre- and post-disaster mitigation planning and initiatives.

Section 203 of the Stafford Act, as amended by Section 102 of the DMA2K, created the Pre-Disaster Mitigation (PDM) program. The PDM makes funding available to state, local, and tribal governments to implement cost-effective hazard mitigation activities that complement a comprehensive mitigation program. Funding may be awarded for the development and update of all-hazards mitigation plans or for cost-effective hazard mitigation projects. Subapplicants must be participating in the NFIP for projects located in a Special Flood Hazard Area.

Interim Final Rule, 44 CFR Part 201, Hazard Mitigation Planning, published February 26, 2002, and Final Rule published October 31, 2007, established criteria for state, local, and tribal hazard

mitigation planning authorized by Section 322 of the Stafford Act, as amended by Section 104 of the DMA2K. After November 1, 2004, local and tribal governments applying for PDM funds through states have to have an approved local mitigation plan prior to the approval of local mitigation project grants. States are also required to have an approved Standard Mitigation Plan in order to receive PDM funds for state or local mitigation projects. A major change in the final rule was that all plans approved after October 1, 2008, must address participation in the NFIP and continued compliance with NFIP requirements as well as NFIP insured properties that have been repetitively damaged by floods. The development and subsequent updates of the State of Wisconsin Hazard Mitigation Plan will meet that requirement. Therefore, the development of state, local, and tribal hazard mitigation plans is the key to maintaining eligibility for PDM funding. Another major change to 44 CFR Part 201 was made on April 25, 2014, which changed state plan submissions from three years to five years.

Successful grants receive 75% federal funding of total project costs. The subapplicant is responsible for 25%. Small, impoverished communities may receive federal funding of 90%.

In 2002 FEMA provided a one-time grant in the amount of $50,000 to the states for developing a statewide strategy for PDM program implementation. Wisconsin used the funds to contract with the Council of Regional Planning Organizations to develop local mitigation planning guidance. Members of the Council were representatives from the Regional Planning Commissions throughout the state. The *Resource Guide to All-Hazards Mitigation Planning in Wisconsin* was completed and has been used to provide guidance to local and tribal governments developing mitigation plans. The Guide is utilized at planning workshops and distributed upon request. In addition, the state received $476,883 in federal funds for local hazard mitigation planning. The funds were used to award planning grants to thirteen counties and five jurisdictions for the development of all-hazards mitigation plans. In addition, FEMA provided planning grants directly to three of the state’s tribal governments.

The 2003 PDM budget provided $248,375 in federal funds to each state. The state used the funds to award planning grants to another seven counties for the development of mitigation plans.

The remaining PDM appropriation of approximately $130 million was made available to initiate a national PDM competitive grant program for pre-disaster mitigation activities. The intent of the PDM-C is to provide a consistent source of funding to state, local, and tribal governments for pre-disaster mitigation planning and projects. The state submitted five planning grant applications (three counties and two tribal governments), six project grant applications, and a State Management Costs (SMC) application for a total of $4,166,387 ($3,142,442 federal share). One planning and one project subgrant were determined to be small and impoverished; therefore, eligible for 90% federal funding. The PDM-C applications were determined to be eligible by a National Evaluation Panel in accordance with PDM-C Grant Guidance and Notice of Funds Availability, and subsequently were approved for funding. In addition, one tribal organization applied as a direct grantee to FEMA and received a planning grant.

PDM-C funds for 2004 and 2005 were combined and announced in FFY 2005. The state's

application included 19 planning and five project subgrants in addition to SMC in the amount of $3,549,249. The state was awarded $1,556,063 for 17 planning grants, and two projects along with SMC.

PDM-C funding in 2006 was reduced to $50 million nationwide. This limited the state to five subapplications plus SMC. The state submitted three planning, two project subgrants, and state management costs totaling $947,011. The planning grants and one project were funded in the amount of $243,553. The second project application for a storm shelter was determined to be eligible, but was not funded due to the lack of funds. The subapplication was resubmitted and funded in 2007.

The state submitted a PDM-C application in 2007 for $1,831,102. The application included a request for 11 planning subgrants and two projects as well as SMC. Nine of the 11 planning grants and one project grant were approved along with SMC for a total of $1,758,611.

The 2008 PDM-C application included seven planning subgrants and one project along with SMC for a total of $2,167,758. The planning subgrants and SMC were approved in the amount of $262,914. As a result of a Congressional Directive, the state submitted an LPDM (Legislative Pre-Disaster Mitigation) subgrant in the amount of $630,000. The initial subapplication was denied as it was determined not to be cost-effective. The community resubmitted a subapplication that was approved in the amount of $238,344.

The 2009 PDM-C application included eight planning and one project subgrant along with SMC totaling $5,155,319. All of the planning subgrants and SMC were approved for a total of $379,217. Again in 2009, the state was designated with an LDPM subgrant in the amount of $300,000 (federal share). Two LPDM subgrants were approved for a generator and sirens in the amount of $136,500 and $229,883 for a total of $366,383. Along with SMC the total grant was $383,409.

The 2010 PDM-C application included 11 planning and two project subgrants along with SMC in the amount of $1,104,398. Nine of the planning subgrants and one project along with SMC were approved for $734,825.

The 2011 PDM-C application included eight planning and three project subgrants along with SMC in the amount of $4,228,135. The state was initially notified that all of the planning subgrants and two of the projects were selected for further review. However, due to funding cuts, one of the planning and one of the project subgrants were removed from consideration. The state resubmitted these two subapplications, along with one of the other unfunded projects, for funding through the HMGP under declaration 1933-DR. The one remaining project was withdrawn from the competition and was funded under declaration 1933-DR. The planning subgrants along with SMC were approved in the amount of $302,661.

Figure 6.2.7-1: Pre-Disaster Mitigation Funding

FFY	Planning	Project	State Mgmt.	Total
2002	$476,883	$0	$50,000*	$ 526,883

FFY	Planning	Project	State Mgmt.	Total
2003	$230,990	$3,758,585	$176,812	$4,166,387
2004-05	$1,064,142	$341,600	$150,321	$1,556,063
2006	$156,412	$65,000	$22,141	$243,553
2007	$1,037,919	$650,500	$70,092	$1,758,611
2008	$239,017	$0	$23,897	$262,914
2008-LPDM	$0	$238,344	$18,906	$257,250
2009	$353,639	$0	$25,579	$379,218
2009-LPDM	$0	$366,383	$17,026	$383,409
2010	$593,373	$93,593	$47,859	$734,825
2011	$275,924	$0	$26,737	$302,661
2012**	$0	$0	$0	$0
2013	$166,001	$0	$16,536	$182,537
2014	$440,672	$0	$43,709	$484,380
2015	$362,528	$349,782	$0	$712,310
2016***	$680,622	$1,078,314	$175,893	$1,934,829
Total	$6,078,122	$6,942,101	$815,508	$13,835,731

*One-time grant. **Did not submit an application. ***Pending approval.
Source: WEM, 2016.

The state received four project subapplications for the 2012 PDM cycle. Due to sufficient funding in HMGP that year, the subgrants that met the BCA requirements were submitted through the HMGP instead. Therefore, the state did not submit a 2012 PDM application.

The 2013 PDM application included five planning subapplications as well as SMC in the amount of $182,537. All subapplications as well as SMC were approved.

The 2014 PDM application included ten planning subapplications along with SMC in the amount of $484,380. The subapplications and SMC were all approved.

The 2015 PDM application included nine planning and one project subapplication in the amount of $712,310. The subapplications were all approved.

The 2016 PDM application included 11 planning and two project subapplications along with SMC in the amount of $1,934,829. The state was advised that all of the subapplications were selected for further review and are presently under review at the Regional Office.

On January 22, 2009, the State of Wisconsin had its first Disaster Resistant University (DRU) plan approved for the University of Wisconsin-River Falls. As a result of the plan, the University received a project subgrant for the construction of small storm shelters located at two research farms. The University of Wisconsin-Madison, the state's largest campus, was awarded a 2011 PDM subgrant for the development of a hazard mitigation plan. The University of Wisconsin-Superior also participated in the City of Superior's plan update in 2016. The DRU plans follow the same methodology as the local mitigation plans.

WEM applied for and received a 2007 PDM-C subgrant for updating the State Hazard Mitigation

Plan. A larger portion of the grant was for the development of a statewide Hazus flood risk assessment. With support from the University of Indiana Purdue-POLIS Center, the University of Wisconsin-Land Information and Computer Graphics Facility (LICGF) completed a statewide Hazus flood risk assessment. The statewide Hazus flood risk assessment was included in the 2008 update of the State of Wisconsin Hazard Mitigation Plan. In addition, the individual county Hazus flood risk assessments were distributed to all counties and to each respective Regional Planning Commission. FEMA highlighted Wisconsin's Statewide Flood Risk Assessment efforts in a Best Practices story. With the 2011 update of the State Plan, a Hazus risk assessment was completed for the counties that had digitized FIRM maps completed since the 2008 update. This included new assessments for 13 counties. The statewide summary was updated to reflect these changes. The project was also highlighted at GIS Day held at the State Capitol in February 2009 for State Legislators.

There are several challenges in administering and implementing the PDM program. As in the FMA and HMGP programs, meeting FEMA's BCA requirements for projects other than acquisition and elevation remain a challenge, although FEMA has developed several tools to assist in the BCA process. Another major challenge is that the annual funding for the program is uncertain from year to year. States solicit and process applications without knowing what the funding availability is. In the past funding has been cut resulting in a limited number of subapplications allowed. In addition, the guidance changes from year to year, although it has been more consistent in recent years. Another challenge is the short application period of 90 days. It is almost impossible to develop complete subapplications in this short timeframe other than acquisition projects and sometimes safe rooms. In this time period the state has to review the guidance, solicit applications, and review and process those applications including completing the benefit-cost analysis and the preliminary consultation for the environmental review. The state does not get any management costs up-front to complete this effort. State Management Costs are only awarded based on subgrant awards. So if funding is drastically reduced or subgrants are not awarded, the state may have put a considerable amount of effort and resources into the program without being awarded adequate management costs. Finally, all applications have to be submitted through FEMA's eGrants system. Subapplicants are not familiar with utilizing this system and some have great difficulty in completing the required subapplication. Another issue is the subapplication utilized in eGrants does not request the required information needed for the BCA. This requires state staff to provide additional technical assistance and guidance outside of the eGrants system to obtain the documentation necessary to complete the subapplication.

WEM Mitigation staff work with local jurisdictions and Regional Planning Commissions to develop projects. When there were National Evaluations, state Mitigation staff participated on the panels every year. WEM will continue to work directly with FEMA Region V to submit projects for future PDM funding. As included in the previous plan update, the SHMO participated on the National Review Panel for the Maryland, Washington, and Florida State Enhanced Plan reviews. Another mitigation staff person sat on the panel that reviewed the second update of the State of Washington's Enhanced Plan.

Appendix C contains detailed tables describing the PDM projects and plans that have been funded in Wisconsin.

6.2.8 Hazus

Hazus was developed by the FEMA under contract with the National Institute of Building Sciences (NIBS). NIBS maintains committees of wind, flood, earthquake, hurricane, and software experts to provide technical oversight and guidance to Hazus development. Loss estimates produced by Hazus are based on current scientific and engineering knowledge of the effects of hurricane winds, floods, and earthquakes. Estimating losses is essential to decision-making at all levels of government, providing a basis for developing mitigation plans and policies, emergency preparedness, and response and recovery planning. Hazus provides estimates of hazard-related damage before a disaster occurs and takes into account various impacts of a hazard event. The impacts include the following:

- Physical damage to residential and commercial buildings, schools, critical facilities, and infrastructure.
- Economic loss, including lost jobs, business interruptions, and repair and reconstruction costs.
- Social impacts, including impacts to people, and requirements for shelters and medical aid.

Hazus uses state-of-the-art GIS software to map and display hazard data, the results of damage, and economic loss estimates for buildings and infrastructure. It also allows users to estimate the impacts of hurricane winds, floods, and earthquakes on populations. Hazus provides three levels of analysis:

- A Level 1 analysis yields a rough estimate based on the nationwide database and is a way to begin the risk assessment process and prioritize high-risk communities.
- A Level 2 analysis requires the input of additional or refined data and hazard maps that will produce more accurate risk and loss estimates. Assistance from local emergency management personnel, city planners, GIS professionals, and others may be necessary for this level of analysis.
- A Level 3 analysis yields the most accurate estimates of loss and typically requires the involvement of technical experts such as structural and geotechnical engineers who can modify loss parameters based on the specific conditions of a community. This level of analysis will allow users to supply their own techniques to study special conditions such as dam failures and tsunamis. Engineering and other expertise is needed at this level.

The risk assessment and vulnerability analysis is one of the most difficult tasks for local governments to complete in developing a hazard mitigation plan. Hazus can significantly assist in this effort. In addition, Hazus may assist local governments in developing mitigation policies, developing and improving emergency operations plans, generating scenarios for exercises and training purposes, and quickly estimating losses after a disaster and what resources will be

required for response and recovery. The GIS capability of local governments will determine how successful they are in utilizing Hazus.

A previous WEM mitigation staff member completed Hazus training at the Emergency Management Institute, and interfaced with software developers to gain access to updated versions of the programs and to solve problems encountered with the software. WEM hosted a four-day Hazus class in 2006 conducted by FEMA contractors. The four-day class included both an introduction to GIS and an advanced Hazus Flood class. 32 people attended the training including state staff, RPC staff, and local government staff. FEMA highlighted Wisconsin's Statewide Hazus Flood Risk Assessment efforts in a Best Practices story.

In 2008, WEM partnered with the University of Wisconsin Land Information and Computer Graphics Facility, and the Polis Center at Indiana-Purdue University at Indianapolis on a joint effort to create at statewide Hazus flood risk assessment for all 72 Wisconsin counties. This statewide Hazus flood risk assessment was included in the 2011 State Plan. In addition, the individual county Hazus flood risk assessments were distributed to all counties and each respective Regional Planning Commission. Since DFIRMs (Digital Flood Insurance Rate Maps) provide better results in Hazus, as additional FIRMs were digitized, WEM reran the Hazus for those counties for the 2011 update of the State Plan. This included 13 additional counties. The statewide summary was then updated to include the data. WEM's website includes an interactive map where the county Hazus risk assessment can be viewed and downloaded. WEM staff also participates in the Central Hazus Users Group.

Mitigation staff made a presentation for State Legislators on the statewide Hazus flood risk assessment at GIS Day at the State Capitol in February 2009. In addition, a presentation was made to the Wisconsin Land Information Association in June 2010.

One of the Disaster Response and Recovery Planners on WEM's Mitigation Section staff has attended the Basic Hazus (December 2014) and the Hazus for Flood (July 2015) at the Emergency Management Institute. One of the WEM Recovery Section staff has attended Hazus for Risk Management, Hazus for Disaster Operations, and Hazus for Comprehensive Data Management.

In 2015 WEM Mitigation staff conducted two Level 1+ Hazus analyses for Washington County in support of the County's first hazard mitigation planning process. The first analysis followed the program's Enhanced Quick Look (EQL) method, using the most recent DFIRM for the county and a USGS 30 meter Digital Elevation Model (DEM) to generate flood depth grids. The second used flood depth grids generated by Wisconsin DNR staff. Loss estimates for both analyses were generated using default inventory data contained within the Hazus software. WEM provided Washington County with maps, tabular outputs, and other data as requested by the Southeastern Wisconsin Regional Planning Commission (SEWRPC).

In this plan update, a different approach was utilized in identifying the flood risk statewide. To identify properties at risk to flood damage, WEM staff used ArcGIS to overlay the Special Flood Hazard Area with the Statewide Parcel Inventory layer. Wisconsin's Statewide Parcel Inventory

was first released in 2015, with the most recent update occurring in August 2016. Attributes contained in the statewide parcel layer include assessed value of land and improvements, estimated fair market value, acreage information, and more. Although this analysis does not provide the same wealth of data generated by Hazus, the locally-provided information contained in the parcel layer is thought to be a more accurate representation of actual property values than the national estimates contained in Hazus. Additionally, WEM lacked the staff, funding, and assistance from outside agencies that made the statewide Hazus analysis possible in 2008. Given the time and funding constraints, the SFHA-parcel layer overlay presented a simpler and more tractable alternative to conducting Hazus runs for all 72 counties.

6.3 Project Implementation Capability

WEM is responsible for the management and administration of the federal hazard mitigation assistance programs. The responsibility for program coordination, implementation, and administration is delegated to the State Hazard Mitigation Officer who complies with federal requirements and involves appropriate state, local, and tribal governments in pre- and post-disaster hazard mitigation programs. Close coordination is maintained with the agencies on the Wisconsin Silver Jackets Hazard Mitigation Team (WSJHMT) as well as the Wisconsin Recovery Task Force (WRTF) RSF Mitigation Subcommittee who provide financial and technical assistance during disaster recovery as well as implementing the mitigation strategy of the State Hazard Mitigation Plan.

Since 1993, WEM and the WHMT (now WSJHMT) have established the top priority of acquisition, demolition, relocation, and/or elevation of flood-prone properties, and have approved projects for these activities. In administering the hazard mitigation programs, WEM has established the following priorities based on funding availability and provided the projects meet all of the program criteria:

- Acquisition and demolition of properties substantially damaged (properties in the floodplain where losses are greater than 50% of equalized assessed value);
- Acquisition and demolition or relocation of severe repetitive loss (SRL) properties and repetitive loss properties (RLPs);
- Acquisition and demolition or relocation of damaged properties in the floodplain;
- Acquisition and demolition or relocation of floodplain properties;
- Acquisition or relocation of flood damaged properties not in the floodplain;
- Elevation or retrofitting flood damaged structures in the floodplain;
- Elevation, floodproofing, or retrofitting flood damaged structures not in the floodplain;
- Other hazard reduction projects (such as detention ponds, storm sewer improvements, protection of utilities, drainage, and safe rooms, etc.); and
- Promotion of the National Flood Insurance Program.

Education or public awareness, purchase and distribution of NOAA weather radios, and river gauge projects are funded under the 5% Initiative in the Hazard Mitigation Grant Program (HMGP) when it is felt there will be a positive outcome from the project. In addition, the state has utilized 7% of the HMGP funds available since 2001 to award planning subgrants to communities for the development and update of all-hazards mitigation plans. The above priorities can also be found in this Plan in Section 3 as well as the State Administrative Plan for the HMGP, Appendix F.

To be eligible for the federal hazard mitigation programs, a project must meet the federal minimum project criteria listed below.

1. Be in conformance with the State Hazard Mitigation Plan.
2. Have a beneficial impact upon the project area.
3. Be in conformance with 44 CFR Part 9, Floodplain Management and Protection of Wetlands and 44 CFR Part 10, Environmental Considerations.
4. Solve a problem independently or constitute a functional portion of a solution where there is assurance that the project as a whole will be completed. (Projects that merely identify or analyze hazards or problems without a funded, scheduled implementation program are not eligible.)
5. Be both feasible and effective at mitigating the risks of the hazard for which the project is designed. A project's feasibility is demonstrated through conformance with accepted engineering practices, established codes, standards, modeling techniques, or best practices. Engineering designs area accepted if a registered professional engineer (or other design professional) certifies that the design meets the appropriate code or industry design.
6. Be cost-effective. Both costs and benefits will be computed on a net present value basis (i.e. obtaining expected damage estimates as a function of hazard intensity).
    a. Address a problem that has been repetitive, or a problem that poses a significant risk if left unsolved (i.e. evaluating the hazard in terms of the frequency and intensity of expected occurrences).
    b. Cost no more than the anticipated value of the reduction in both direct damages (property) and subsequent negative impacts (loss of function, death, injuries) to the area if future disasters were to occur.
7. Be the most practical, effective, and environmentally sound alternative after consideration of a range of options, including the "no action" alternative.
8. Contribute, to the extent practicable, to a long-term solution to the problem it is intended to address.
9. Consider long-term changes to the areas and entities it protects, and have manageable future maintenance and modification requirements.
10. Have an approved hazard mitigation plan. If not (for HMGP), must have the capability

and desire to complete within twelve months.

In addition, WEM also considers the following criteria in evaluating proposed mitigation projects:

1. Conformance with the goals and priorities of the State Hazard Mitigation Plan.
2. Mitigation activities that fit within an overall plan for development in the community, disaster area, or state.
3. Mitigation activities that if not taken will have a severe detrimental impact on the community such as the loss of life, loss of essential services, damage to critical facilities, or economic hardship.
4. Mitigation activities that have the greatest potential for reducing future disaster losses.
5. Mitigation activities that are designed to accomplish multiple objectives, including damage reduction, environmental enhancement, historical preservation, tourism/recreation, economic recovery/development, and building community resilience to climate change.
6. The community's level of interest and demonstrated degree of commitment to mitigation programs and activities.
7. Community's participation in and compliance with the National Flood Insurance Program. WEM coordinates closely with the Wisconsin Department of Natural Resources in determining a community's compliance with the NFIP.
8. The proposed project does not encourage development in the Special Flood Hazard Area.
9. The proposed project is in conformance with the community's comprehensive land use plan, hazard mitigation plan, and capital improvements program where such plans and programs exist.

WEM reviews all proposed mitigation measures to ensure that the proposed projects are eligible and meet minimum criteria as outlined above. In evaluating proposed projects, WEM reviews, scores, and ranks proposed projects based on certain criteria (see Appendix F, State Administrative Plan for the Hazard Mitigation Grant Program-September 2016, Attachment C). Based on the evaluation and funding availability, a list of recommended projects will be submitted to the WEM Administrator for further consideration. Based on state priorities, non-structural projects such as acquisition, demolition, relocation, and elevation receive the highest ranking and the greatest consideration for funding. Some projects may be referred to other agencies through the WSJHMT for appropriate funding. In addition, WEM will work with the WSJHMT, and where applicable, the WRTF, to "package" funding for projects, where possible, to maximize the funding that is available. Proposed projects are evaluated based on project type, site vulnerability, project benefits, and other considerations.

Items considered in evaluating proposed projects:

1. Type of project (structural versus non-structural)
2. Site vulnerability
   - Frequency of event
   - Does the project involve removing structures from the hazard area?
   - Does the project address SRL or RL properties?
   - Does the project address multiple hazards?
3. Project Benefits
   - Alleviate or reduce the need for emergency services during disasters
   - Alleviate or reduce damages to improved structures
   - Beneficial impact on more than one community (multi-jurisdictional)
   - Solve a problem independently or as part of another solution with assurance that the project will be completed
   - Long-term solution to a repetitive problem or imminently dangerous situation
   - Directly prevents death and injury by reducing a person's vulnerability to the hazard
   - Substantially reduces future disaster costs
   - Reduces the cost of repairing repetitive damages
   - Restores floodplains and/or wetlands
   - Multiple objectives such as damage reduction, environmental enhancement, and economic recovery
   - Promotes economic growth and community development
   - Promotes development of recreational areas/historic areas
   - Provides flood protection beyond the 100-year flood event
   - Alleviate or reduce the negative impacts of changing future conditions and natural hazard risks, as identified in the Risk Assessment component of the State Hazard Mitigation Plan.

The following additional criteria is considered on projects that meet state priorities, particularly when there is insufficient funding and there is a need to prioritize projects among multiple jurisdictions (state priorities are listed on p. 6-38):

- In a declared disaster area
- Status of mitigation plan
- Involves use of innovative approaches to mitigation
- Project submitted previously
- Other agencies willing to provide funds towards the proposed project
- Community willing to put funds towards the project over and above the required local match
- Funds available to fund the entire project
- Future maintenance requirements for the project
- Community has successfully implemented previous mitigation grants

- Community participates in the Community Rating System

For the Flood Mitigation Assistance program, the proposed project must address mitigating an NFIP-insured property with repetitive loss or severe repetitive loss properties receiving priority.

As stated in the above criteria, projects must be cost-effective. Only projects with a benefit-cost ratio of at least 1:1 will be forwarded to FEMA for approval. WEM Mitigation staff have been performing and completing benefit-cost analyses since 1997 for the federal hazard mitigation grant programs. The staff has developed expertise in performing this function by attending benefit-cost analysis training when it is offered by FEMA, as well as utilizing the FEMA Mitigation BCA Toolkit and Guidance.

Although the state mitigation staff completes the benefit-cost analysis, they depend on information in the subapplication provided by the community. To help communities develop mitigation projects that are as cost-effective as possible, and that have a benefit of at least one dollar for each dollar of cost, the mitigation staff developed Checklists and Property Data Worksheets for both acquisition/demolition and elevation projects. In addition, application Tips and Checklists have been developed for safe rooms and localized flood control projects as well as a Checklist for generator projects. The use of the Checklists has resulted in more complete and accurate applications. The information requested on the worksheets provides staff with the data necessary for an accurate and complete benefit-cost analysis. (The worksheets can be found in Appendix D, Administrative Plan for the HMGP, Attachment D.) WEM also has hosted BCA Workshops in October 2007, June 2009, and June 2011 for local officials to understand the software and the type of data required. The State Hazard Mitigation Officers from Wisconsin and Minnesota presented a short BCA training session at the Minnesota Association of Floodplain Managers and the Wisconsin Association for Floodplain, Stormwater, and Coastal Management Combined Annual Conference in October 2009. WEM has worked with the Cooperative Network discussing mitigation activities related to the Rural Electric Cooperatives. As a result of the collaboration, WEM hosted a BCA Workshop for the Rural Electric Cooperatives in May 2015. The workshops were all very well attended. The training provided a clear understanding to the attendees of the required documentation for the BCA and why the information was needed.

WEM Mitigation staff uses the FEMA-approved benefit-cost modules in performing benefit-cost analyses for proposed mitigation projects, which are based on criteria established in OMB Circular A-94, Guidelines and Discount Rates for Benefit-Cost Analysis of Federal Programs. (See the following section for more information regarding benefit-cost analyses.)

Although the results of the benefit-cost analysis are a factor in determining project eligibility, it is not the only factor considered. Again, the project needs to meet federal and state priorities and criteria. Funding availability is also a consideration.

6.4 Program Management Capability

October 2000 through February 2006, a Memorandum of Understanding existed between FEMA and WEM recognizing the state as a Hazard Mitigation Grant Program Managing State. The

MOU was developed to build a FEMA-State collaborative partnership for the implementation of the HMGP. The agreement defined the roles and responsibilities of each agency. Under the arrangement, responsibility for eligibility reviews for each project application was shifted to WEM with FEMA reviewing the project summaries provided by WEM for compliance with program requirements. In addition, FEMA would conclude the environmental review. The changes in the roles and responsibilities resulted in a faster approval of projects, in most cases less than 30 days after submittal from the state to FEMA. Per the MOU WEM agreed to

- Perform eligibility reviews for full project applications;
- Apply streamlined procedures for certain project types as identified in the MOU;
- Determine cost-effectiveness for all projects using standard benefit-cost methodology and provide documentation;
- Undertake environmental review tasks and complete the Record of Environmental Review (RER) for FEMA's signature; and
- Provide complete project applications to FEMA within 18 months (now one year) for each project that WEM selects for funding and submit through NEMIS.

The MOU was terminated in a letter from FEMA, Region V, dated February 15, 2006, as 44 CFR 201 states; "Management State means a State to which FEMA has delegated the authority to administer and manage the HMGP under the criteria established by FEMA. . . ." Since FEMA had not yet developed the "managing state" criteria, the MOU was terminated by the Region. However, WEM continued to perform the state's roles and responsibilities identified in the MOU.

As a result of the Sandy Recovery Improvement Act of 2013, Program Administration by States (PAS) was established to create a more streamlined subgrant approval process allowing communities to get the hazard mitigation funds they need faster. States may participate in the PAS initiative and be delegated additional defined responsibilities by FEMA based on an analysis of state staffing plan, award management and hazard mitigation experience, and demonstrated past performance. In return for assuming additional responsibilities, the state will have increased control and oversight in implementing the HMGP. If the Region determines the state meets the criteria, they will work with the state on drafting an operational agreement. The operational agreement outlines the agreed-upon delegations.

As a result of declaration 4141-DR declared August 8, 2013, the state entered into a PAS Operational Agreement for the HMGP to implement the pilot program. Under the agreement WEM was delegated the following activities:

1. Review and approve HMGP subapplicant application requests submitted prior to expiration of the application period, by using expedited application approval process and project summaries for FEMA's use in obligating funds. (The expedited application approval process would be the submission of a completed eligibility and completeness checklist with an attached project summary. Once FEMA receives these completed items, FEMA would award and obligate funds.)

   a. Project Applications and Amendments limited to Acquisitions, Elevations, and Safe Room Projects
   b. Planning Applications
2. Approve Period of Performance extensions for subgrants with no impact to the grant Period of Performance. The state would submit an updated Eligibility and Completeness Checklist and Project Summary. The changes would be documented in the quarterly report.
3. Approve post-award scope of work modifications with no change to the project activity and no resulting need for additional federal funds.
   a. Without prior approval from FEMA, approve demolition time limit extension requests with no impact to the grant Period of Performance. The changes would be documented in the quarterly report.
4. Without prior approval from FEMA, approve post-award budget revisions using funds available as a result of cost underruns from other approved subgrants. These funds can be moved to approve subgrants with cost overruns. Funds will only be used within the same HMGP grant.

Updated operational agreements will be developed for each declared disaster after which the state requests delegation of some elements of HMGP administration. In addition, the state will update the HMGP Administrative Plan to including an addendum outlining the components the state will administer for each disaster.

The Mitigation staff's ability to manage hazard mitigation programs effectively is demonstrated by their success in the nationally competitive Pre-Disaster Mitigation program. Since the inception of the program in 2002 through 2015, the state has submitted 144 applications with 129 of the grants approved and funded. That is a 90% success rate.

However, the state Mitigation staff's greatest test (in the ability to manage the program) was the administration of HMGP from the 2008 June floods. The state's HMGP allocation was nearly $30.8 million for FEMA-1768-DR-WI declared on June 14, 2008. DR-1768 is by far the largest disaster Wisconsin has faced. The HMGP was the largest in state history; double the previous amount from the 1993 Midwest Floods. With the state's priority of acquisition and demolition of substantially damaged properties, 195 properties were acquired and demolished.

Many of the communities that acquired properties after the 2008 floods were impacted again by substantial flooding most recently on September 21-22 with a federal declaration issued October 20, 2016. With this flooding, the success of the past efforts is demonstrated. The reduction in damages in several communities is obvious as officials and staff toured the flooded areas. Success stories will be developed and completed for several communities.

One of the requirements for acquisition projects is three-year open space monitoring to ensure that the properties are being maintained as open space. The state has taken this requirement seriously and completed its fourth three-year certification. The FEMA records did not match the

state's records for a variety of reasons. State Mitigation staff worked with FEMA Region V in 2016 on a project to correct the data so that FEMA's databases matched the state's. The project was successful and one of the state Mitigation Planners presented the state's process at the FEMA Region V Fall Conference in October 2015. In addition, the Section Supervisor presented on the topic at the national Annual Hazard Mitigation Stakeholders Workshop in July 2016.

The State Administrative Plan for the Hazard Mitigation Grant Program (Appendix F) details how state Mitigation staff administers the HMGP. Although there is not a specific administrative plan for the Flood Mitigation Assistance and Pre-Disaster Mitigation programs, the same basic procedures are used for these programs as for the HMGP. How the Mitigation staff handles the notification of hazard mitigation grant funding availability and the application process are summarized below from the administrative plan:

- As soon as possible following the notice from FEMA on the availability of mitigation funds, the state solicits applications statewide. Included is information on funding availability, eligibility criteria, state priorities, application deadlines, and other pertinent information. At a minimum, application notices are distributed to all the County Emergency Management offices statewide, the Regional Planning Commissions, tribal government organizations, and, if post-disaster, to all of the Public Assistance applicants in the declared area, communities with ongoing mitigation funding needs, as well as the Wisconsin Silver Jackets Hazard Mitigation Team and the state's Rural Electric Cooperatives. The Mitigation staff maintains an ongoing list of communities interested in applying for mitigation funds as they come available. Contacts on this list are also sent information on the application process and information is posted to WEM's website. In the post-disaster situation, applications are also mailed to potential applicants outside of the disaster area.
- Other potential applicants are identified through information gathered in the Preliminary Damage Assessment, community site visits, through communication with the WSJHMT, and information provided by the Public Assistance Officer through contacts in that program.
- In the post-disaster situation, a detailed overview of the HMGP is presented at the Applicants Briefings for the Public Assistance program.
- In the post-disaster situation, an overview of the mitigation programs and planning requirements is also presented at Substantial Damage Determination Workshops, if held.
- Pre-applications are solicited for the HMGP. Each pre-application is reviewed, scored, and ranked. Based on the ranking, state priorities, and funding availability, full application packets are sent to selected communities. The full application can be found in Appendix F, Attachment D.
- For all three federal Hazard Mitigation Assistance programs, subapplicants are required to provide extensive information on proposed projects:
  - Name of the subapplicant and its assigned FIPS code and DUNS number
  - Primary and secondary contact persons for the project
  - Detailed project cost estimate with supporting documentation

  - Identification of source for local match requirements
  - Project title and description
  - Project location (including maps)
  - Detailed scope of work for the project
  - Pictures of the project site
  - Work schedule with key milestones including time needed to meet any EHP conditions
  - Considered alternatives (at least two besides the proposed project)
  - Information on direct and indirect damages and other impacts. This information supports the benefit-cost analysis (see section below for more details on preparing and submitting accurate BCAs).
  - Required future maintenance for the project
  - Environmental considerations (see section below for more details on preparing and submitting accurate environmental reviews)
  - Local or tribal mitigation plan compliance
  - NFIP status
  - Assurances for construction and non-construction projects
- Additional requirements for acquisition projects:
  - Statement of Assurances for Property Acquisition projects with attached warranty deed restrictions
  - Signed Notice of Voluntary Interest Form
  - Property Data Worksheet(s)
  - Signed FEMA Form 009-0-3, Declaration and Release, if needed
  - Consultation with the Department of Transportation and the US Army Corps of Engineers
  - Signed Acknowledgement of Conditions of Projects in a Special Flood Hazard Area, if applicable
- State Mitigation staff provides technical assistance and guidance to subapplicants in completing subapplications. In addition, staff will conduct workshops for communities interested in the acquisition/demolition of flood-damaged structures, developing a good subapplication, benefit-cost analysis, and safe room projects.
- Once received, Mitigation staff reviews each application for completeness and ensures that adequate information has been provided and that the project meets minimum eligibility requirements. Staff will contact the applicant to obtain additional information as necessary and involve appropriate members of the WSJHMT in the review process.
- If the application is complete and the project meets eligibility requirements, mitigation staff will perform a BCA for the proposed project.
- Mitigation staff will complete the required environmental review process on eligible projects with a positive BCA.
- For the HMGP, based on funding availability the SHMO will make a recommendation to the WEM Administrator who will make the final decision regarding the selection of

projects to forward to FEMA for final approval. Applications will be submitted to FEMA as soon as possible after the disaster but no later than 12 months after the declaration (or 18 months with approved extensions).

- For the HMA program, complete applications that meet the minimum program requirements will be prioritized and forwarded to FEMA for funding consideration. Complete applications that exceed available funding are submitted as backup applications in the event additional funds do become available. WEM will submit the application and subapplications within the allotted timeframe established by FEMA.

6.4.1 Preparing and Submitting Accurate Benefit-Cost Analyses

As previously stated projects must be cost-effective. Only projects with a benefit-cost ratio of at least 1:1 are forwarded to FEMA for approval. WEM Mitigation staff has been performing and completing benefit-cost analyses since 1997 for the federal Hazard Mitigation Assistance programs, and have developed expertise in performing this function.

To help communities develop mitigation projects that are as cost-effective as possible, and that have a benefit of at least one dollar for each dollar of cost, the Mitigation staff developed Checklists and Property Data Worksheets for both acquisition/demolition and elevation projects. In addition, application Tips and Checklists have been developed for safe rooms and localized flood control projects as well as a Checklist for generator projects. The use of the Checklists has resulted in more complete and accurate applications. The information requested on the worksheets provides staff with the data necessary for an accurate and complete benefit-cost analysis. (The worksheets can be found in Appendix D, Administrative Plan for the HMGP, Attachment D.)

Mitigation staff uses the FEMA-approved benefit-cost module (Version 5.2.1) in performing benefit-cost analyses for proposed mitigation projects, which are based on criteria established in OMB Circular A-94, Guidelines and Discount Rates for Benefit-Cost Analysis of Federal Programs. In addition, the FEMA Mitigation BCA Toolkit and additional guidance is extensively utilized in documenting eligible costs for completing an accurate BCA. The type of project and information provided in the application, will determine which benefit-cost analysis module will be used to determine the project's cost-effectiveness.

WEM hosted Benefit-Cost Analysis Workshops in October 2007, June 2009, and June 2011 for local officials to understand the software and the type of data required. WEM hopes to host future classes. The State Hazard Mitigation Officers from Wisconsin and Minnesota presented a short BCA training session at the Minnesota Association of Floodplain Managers and the Wisconsin Association for Floodplain, Stormwater, and Coastal Management Combined Annual Conference in October 2009. WEM has worked with the Cooperative Network discussing mitigation activities related to the Rural Electric Cooperatives. As a result of the collaboration, WEM hosted a BCA workshop for the Rural Electric Cooperatives in May 2015. The training provided a clear understanding to the attendees of the required documentation for the BCA and why the information was needed.

State Mitigation staff attends training on BCA including attending FEMA's Emergency Management Institute. Staff participated in a BCA webinar sponsored by the Region in June 2012, and BCA for Drought and Ecosystem Services in May 2015. They also sat in on a webinar about completing BCAs for the new Climate Resilient Mitigation Activities in June 2016.

Although the results of the benefit-cost analysis are a factor in determining project eligibility, it is not the only factor considered. Again, the project needs to meet federal and state priorities and criteria as previously identified in this plan. Funding availability is also a major consideration.

Benefit-cost analysis is used for all projects to determine cost-effectiveness. The BCA determines whether the cost of investing in a project today, will result in sufficiently reduced damages in the future to justify spending the money on the project. If the benefit is greater than the cost, then the project is cost-effective. The BCA for each project is basically the same, the difference is the type of data used in the calculations.

1. Cost-effectiveness is determined by comparing the project cost to the value of damages prevented after the mitigation measure.
2. If the dollar value of the benefits exceeds the cost of funding the project, the project is cost-effective. To arrive at a ratio, the benefits are divided by the costs, resulting in a benefit-cost ratio (BCR). The BCR simply states whether the benefits exceed the project costs, and by how much.
3. To arrive at a BCR, divide the benefits by the cost. If the result is 1.0 or greater, then the project is cost-effective. If it is less than 1.0, it is not cost-effective.
4. The acquisition of structures that are declared substantially damaged (from any origin) and located in a riverine SFHA on a preliminary or effective FIRM is considered cost-effective.
5. The acquisition of structures located in an SFHA on the FIRM where the total project cost averages $276,000 or less per structure is considered cost-effective.
6. The elevation of structures located in an SFHA on the FIRM where the total project cost averages $175,000 or less per structure is considered cost-effective.
7. Acquisition projects with a BCR of 0.75 are allowed to incorporate environmental benefits. FEMA has developed and incorporated economic values for green open space and riparian areas into the BCA toolkit for acquisition projects.
8. 5% Initiative projects, with a narrative that indicates there is a reasonable expectation that future damage or loss of life or injury will be reduced or prevented by the activity, are considered cost effective.

FEMA is encouraging communities to incorporate methods to mitigate the impacts of climate change into eligible HMA activities and in 2016 provided guidance on Climate Resilient Mitigation Activities (CRMAs) including green infrastructure methods, expanded ecosystem service benefits, and three flood reduction and drought mitigation activities: Aquifer Storage and Recovery (ASR), Floodplain and Stream Restoration (FSR) and Flood Diversion and Storage

(FDS). Guidance has included Fact Sheets and Job Aids with checklists for complete application along with information on how to utilize the FEMA BCA modules in calculating benefits of such projects. WEM will encourage and work with communities interested in pursuing CRMA projects.

WEM:

1. Determines cost-effectiveness of projects using standard benefit-cost methodology. (Version 5.2.1 of FEMA's BCA software is recommended, however, WEM may use any standard methodology including narrative mutually agreed to by FEMA and WEM.) WEM has the option of six FEMA computer BCA modules based on the type of project and availability of appropriate and accurate data:
    - Flood
    - Hurricane Wind
    - Tornado Safe Room
    - Earthquake
    - Wildfire
    - Damage Frequency Assessment
2. Documents the BCA fully, including explanations of assumptions, data derivations, and analytical techniques.
3. Attaches the BCA report along with supporting documentation and Data Documentation Templates to project application packages for FEMA review.
4. Utilizes a technical contractor if the need arises.

FEMA:

1. Provides BCA module software, accompanying technical manuals, and training.
2. Reviews benefit-cost analysis and data documentation before approving projects.
3. If the BCA is determined to be unacceptable, provides a written explanation of the problems and (where possible) proposes solutions to those problems.

A narrative analysis is used when the benefits of a project cannot be easily quantified into specific categories and do not conform to any of the modules or formats. This analysis allows for a subjective, broad-based approach to quantify the benefits of a project so that all benefits of the project can be recorded and the project objectively assessed. This type of analysis is normally used in the state's HMGP 5% Initiative projects.

The results of the BCA will determine if the project is cost-effective. If the project is cost-effective, it is still under consideration by WEM for further funding. At this step in the review process, WEM would start the environmental review process for the project. If the project was not cost-effective, mitigation staff would attempt to obtain additional information from the applicant to arrive at a positive BCR. If there is no additional credible data available or all available data has been utilized, and the project is still not cost-effective, the project is rejected.

6.4.2 Preparing and Submitting Accurate Environmental Reviews

WEM:

1. Coordinates with the FEMA Regional Environmental Officer (REO), Project Officer and other state and federal agencies during the project development process to address environmental issues.
2. Completes formal consultation required specifically of federal agencies under federal environmental laws and NEPA (National Environmental Protection Act).
3. Undertakes environmental review tasks (including tasks related to the National Historic Preservation Act); gathers necessary environmental data through the applicant, past studies, and informal consultation with state and other federal agencies; recommends level of review under the NEPA.
4. Completes and submits the Record of Environmental Consideration (REC) and all supporting documentation with submission of the project application.
5. Ensures that the required public notices are completed.

FEMA:

1. Provides WEM with the current REC.
2. Reviews WEM's REC, supporting documentation and recommendation for level of review and makes a final decision on level of NEPA review.
3. Coordinates with WEM to complete the preparation of an Environmental Assessment (EA) or Environmental Impact Statement (EIS) for projects that do not clearly fall under the categorical exclusion (CATEX) category.
4. Prepares and/or reviews appropriate NEPA and other environmental documents. Approve or request additional information with 30 business days of receipt of a project summary from WEM.
5. Coordinates with WEM if there is a need to utilize a technical contractor.

Below is a list of regulations that WEM reviews to ensure compliance with applicable historic and environmental protections laws and regulations:

- Historic and Archaeological Resources (PL 96-515, Section 106)
- Floodplain Management - Presidential Executive Order 11988 (44 CFR Part 9)
- Protection of Wetlands – Executive Order 11990 (44 CFR Part 9)
- Environmental Justice - Presidential Executive Order 12898 (59 Fed.Reg. 7629-7633)
- Endangered Species Act (16 USC Section 1531)
- Fish and Wildlife Coordination Act (16 USC Section 661)
- Wild and Scenic Rivers Act (16 USC Section 271)

- Rivers and Harbors Act (Section 10)
- Wilderness Act (16 USC)
- Farmlands Protection Policy Act (16 USC)
- Coastal Zone Management Act (16 USC, Section 1451)
- Coastal Barrier Resources Act (16 USC)
- Clean Air Act (16 USC)
- Clean Water Act (Section 404) (16 USC)
- Hazardous Material and Hazardous Waste (determine if project site involved is a Superfund site, has above or underground storage tanks, or other potential contaminants)

Appendix F, Administrative Plan for the HMGP, page 11 and Attachment E, includes the procedures for preparing and completing accurate environmental reviews. The same procedures apply for the other HMA programs.

State Mitigation staff attends EHP training when it is offered. In addition, state Mitigation staff attends the annual State Archeological Consultants Workshop sponsored by the State Historical Society.

WEM is participating with FEMA Region V and other stakeholders in the development of a Programmatic Agreement Governing Section 106 Review. The first conference call was held on March 31, 2016. As of October 1, 2016, the agreement is approximately half completed. Once the agreement is completed, it will define responsibilities in the review process and streamline the review of certain activities with little potential to affect historic properties.

6.4.3 Submitting Complete and Accurate Quarterly Progress and Financial Reports

WEM Mitigation staff has an excellent record of submitting timely, complete, accurate, and comprehensive quarterly progress and financial reports for the HMA programs. The following summarizes the process that the Mitigation staff follows in meeting quarterly reporting requirements. This information can also be found in the HMGP Administrative Plan, Appendix F. (WEM does not have a separate administrative plan for the non-disaster HMA programs, though the same procedures as for the HMGP are adhered to.)

Upon project approval, a State/Local Hazard Mitigation Assistance Agreement is signed by both WEM and the subrecipient. The agreement requires the subrecipient to submit quarterly status reports within 15 days of the end of the quarter. Due dates are January 15, April 15, July 15, and October 15. Quarterly reports contain information such as project identification information and project number, subrecipient, project type, significant activities and developments since the previous report including a comparison of accomplishments against the work schedule; percent

completion and whether the project is on schedule; a discussion of any problems, delays, or adverse conditions that impair the ability to meet the scheduled completion date; status of costs and amount disbursed; whether an extension to the performance period is anticipated; incremental funding amounts (SFM), if any; and for acquisition projects the number of properties acquired that quarter, demolished that quarter, and the number of anticipated acquisitions and demolitions to be completed the following quarter. (See Appendix F, Attachments J and K.) Approximately two weeks before the end of the quarter, WEM sends out a reminder to all subrecipients that the quarterly report is due on the 15th of the following month. Second and third reminders are sent prior to the due date. If no report is submitted a notice is sent advising the subrecipient that the quarterly report is overdue, that per the Agreement they are required to submit a quarterly report, and that their funding may be jeopardized if they fail to submit a report.

Using the subrecipient quarterly reports, WEM Mitigation staff prepares its quarterly report for the mitigation programs. The quarterly report consists of a letter with narrative information regarding each open disaster declaration, open non-disaster grants, as well as information on other activities that the Mitigation staff has been involved with for the quarter. In addition, a spreadsheet is completed for each program and each grant (see Appendix F, Attachment K). Information included on the spreadsheet includes the following:

- Project number and subrecipient name
- Type of project
- Grant approval date
- Grant performance period and any approved extensions
- Significant activities and developments since last report
- Percent of work completed
- Whether the project is on schedule
- Discussion of any problems, delays, or adverse conditions
- Federal, state, and local shares
- Grant amount including management costs dispersed to date and amount remaining
- General comments
- For acquisition projects, the number of acquisitions and demolitions completed overall and completed that quarter

For the HMGP grants, FEMA requires states to enter quarterly report information into NEMIS. Because WEM Mitigation staff cannot access the necessary functionality (verified by FEMA Region V staff), instead WEM Mitigation staff complete additional spreadsheets for each disaster with a line for each subaward. FEMA Region V staff then uploads the spreadsheets into NEMIS. After upload, FEMA Headquarters scores the spreadsheet looking at factors like change in percent of work complete since the last quarter and how long it's been since a payment was

made. Unfortunately, the narrative portion of the quarterly reports, which may explain any apparent discrepancies, is not taken into account in the scoring.

The WEM Financial Management Officer (FMO) prepares and submits timely, accurate financial reports. Both the financial and progress reports are submitted within 30 days of the end of the quarter (January 30, April 30, July 30, October 30). On rare occasions, an extension may be requested in submitting the reports due to extensive workload and/or disaster operations, and the reports are always submitted within two weeks of the due date. WEM Mitigation staff has been praised by FEMA Region V for their comprehensive quarterly reports.

6.4.4 Completing Projects

WEM Mitigation staff has a very good record of closing out hazard mitigation grants and HMGP programs within required timeframes. The following summarizes the process that the Mitigation staff follows in monitoring approved grants, and completing project and declaration closeouts within established performance periods including financial reconciliation. This information can also be found in the HMGP Administrative Plan, Appendix F. (WEM does not have a separate administrative plan for the non-disaster HMA programs though the same procedures as for the HMGP are adhered to.)

The State/Local Hazard Mitigation Assistance Agreement that is signed by both WEM and the subrecipient and requires the subrecipient to begin the project within 90 days of subaward approval and complete the project per the schedule submitted with the subapplication (not to exceed three years from project obligation date). In addition, they are required to submit a final report covering all aspects of the project within 30 days after project completion. If the subrecipient cannot complete the project within the identified performance period per the grant agreement, a request for a time extension must be submitted to WEM 60 days prior to the end of the performance period. Requests for time extensions needs to explain why the completion date cannot be met, how much of the project work remains, and a revised work schedule. If an extension request for any project means that the activity period will go beyond the state's performance period (or close date for disasters), the SHMO will request up to a one-year time performance extension. This request will be submitted to the Region 60 days prior to the end of the performance period.

Upon completion of all work on a project, the SHMO will certify to FEMA that costs incurred in the performance of eligible work are allowable, that the approved work was completed, and that the mitigation measure is in compliance with the Federal-State Agreement (for the HMGP) and the State/Local Assistance Agreement. WEM Mitigation staff will prepare a project closeout worksheet providing a complete assessment of the project, which is submitted to FEMA Region V along with a request to close the grant (see Appendix F, Attachment L). The Environmental Closeout Declaration (Appendix F, Attachment E, page E-14) is included with the project closeout worksheet.

When all projects are completed within the disaster declaration, the SHMO will prepare the Declaration Closeout Letter and Worksheet for the HMGP and forward to FEMA along with the

request to close the declaration (see Appendix F, Attachment M). The FMO will close out the HMGP financially by submitting a final SF-425, certifying project completion. All valid expenditures for the declaration will be liquidated within 90 days of the end of the performance period. There are cases where unspent funds from one project will need to be deobligated so they can be reobligated to another project with a cost overrun. In some cases this causes the declaration closeout to go beyond the 90 days. However, state staff works closely with FEMA Region V staff to close the declarations as soon as possible. The SHMO also prepares a final report for completed projects for the FMA and PDM program and submits to FEMA along with a request to close the project. Again, the FMO is responsible for submitting the final financial reports. All expenditures are liquidated within 90 days of the end of the performance periods for each program. Appendix C includes a listing of completed mitigation projects.

The subrecipient and recipient closeout reports are valuable for not only historical purposes and in monitoring projects for adherence to certain grant agreements such as open space deed restrictions, but they are also valuable in documenting loss avoidance and developing success stories. The closeout reports including any properties that have been acquired are shared with the Department of Natural Resources Floodplain Management staff. This information is useful for floodplain management staff during community assistance contacts and visits. In addition, during these visits floodplain management staff can monitor the acquired sites to ensure that the subgrants have adhered to the required deed restrictions.

As of September 1, 2016, the State has closed the HMGP for 21 of 27 disasters since 1990 for which it received grant funding. Two declarations, 1933-DR and 1966-DR, are under a time extension until March 21, 2017, and March 18, 2017, respectively. The remaining four open declarations (4076-DR, 4141-DR, 4276-DR, and 4288-DR) are still within their original performance periods. The FMA programs have all been closed except for federal fiscal years 2014 and 2015 which are still within the original performance periods. For the PDM, fiscal years 2002, 2003, 2004-05, 2006, 2007, 2008, 2008-LPDM, 2009, 2009-LPDM, 2010, and 2011 are all closed. Fiscal years 2013 and 2014 have one-year time extensions and 2015 and 2016 are under the original performance periods. Closeouts on subawards are done upon project completion.

6.5 Measuring Success: Loss Avoidance

An important component of mitigation is to celebrate our successes. IN 2005, the Institute of Building Sciences calculated that for every $1 spent on mitigation, $4 is saved in future disaster losses ($5 for flood disaster losses). Over time, the return on investment for long-term mitigation measures will continue to increase. To demonstrate this, WEM Mitigation staff document the success and economic benefits of the mitigation measures implemented through the mitigation programs.

Since 1990, $94 million in HMGP funds have been or are currently being administered in Wisconsin. In addition to the HMGP, FMA funds of $2.6 million and PDM funds of $13.8 million have been or are currently being administered. That totals more than $110 million in mitigation funds awarded to the state for mitigation activities. The funding for each grant program is

broken down by project in Appendix C.

As stated previously, the priority for mitigation is acquisition and demolition, relocation and elevation of hazard-prone structures. Through the HMGP, FMA, and PDM programs 633 structures have been acquired and demolished. (See Appendix C for project descriptions by grant program and community.)

Loss avoidance studies are one type of activity that WEM and FEMA undertake to document their successes and quantify the economic benefits of mitigation measures implemented through the mitigation programs. These studies use a methodology developed by FEMA to quantitatively evaluate the effectiveness of mitigation projects using actual post-mitigation hazard events in the calculation. The loss avoidance studies can be found on the WEM website at http://emergencymanagement.wi.gov/mitigation/stories.asp.

Kenosha, Jefferson, and Crawford Counties

In 2009 the Loss Avoidance Study: Wisconsin Property Acquisition and Structure Demolition was completed for three frequently flooded rivers in Wisconsin: the Fox River in Kenosha County, the Rock River in Jefferson County, and the Kickapoo River in Crawford County. Each county had acquired flood-prone structures after previous significant flood events. To calculate losses avoided through mitigation actions, a formula was used based on actual flood events that occurred after the acquisitions and previous flood damages including physical losses, losses of function, and emergency management costs. The return on investment (ROI) was calculated using the losses avoided and the project costs. The results were encouraging.

The Fox River floods at least once a year and sometimes two or three times in a year. Between 1993 and 2003, five local emergency declarations were issued for the Fox River floodplain. With the emergency declaration of May 2004, when the Fox River again overflowed its banks, many fewer homes and residents were at risk because over that ten year period, 56 property owners had participated in the Fox River Flood Mitigation Program, administered by the Kenosha County Housing Authority, with staff support provided by the Southeastern Wisconsin Regional Planning Commission. Damages were averted where mitigation measures had been undertaken. By 2008, 75 flood-prone properties had been acquired along the Fox River using HMGP, FMA, PDM, and CDBG funds. Between 1996 and 2009, the ROI for the acquisitions was 102%.

Blackhawk Island, at the mouth of the Rock River, in Jefferson County is another area that is plagued with annual flooding. The Island is a peninsula surrounded on either side by Lake Koshkonong and Mud Lake. When the lakes swell, the two bodies of water merge into one, covering the low-lying areas of the peninsula. The road on the Island becomes submerged, and as the water rises it flows into homes. After the Great Flood of 1993, the County applied for and received HMGP funds to implement their Flood Mitigation Buyout Program. Along with HMGP, the County has utilized FMA funds, CDBG funds, and grant funds from the Department of Natural Resources to continue to acquire structures on and near Blackhawk Island. By 2008, 35 properties had been acquired and demolished. Between 1993 and 2009, the ROI for Jefferson County's program was 107%. Since the area experiences flooding annually, the ROI has certainly increased since 2008 and will continue to do so in the future.

Crawford County has also been active in flood mitigation. The Kickapoo River floods regularly and has caused damage to numerous buildings in several Crawford County villages. Of particular concern to County officials was the Crawford County Highway Shop. Whenever the Shop flooded, the staff could not access equipment. This was a significant problem because the staff performs many duties during flood events including the following: floodwater rescues, closing roads, building temporary dikes, and constructing safety devices. In 2002, Crawford County utilized HMGP funds to relocate the facility to higher ground. Although it was an expensive project, the ROI was calculated to be 592% after only two flood events (2007 and 2008). This mitigation project can certainly be considered a success.

Milwaukee County

In 2010, a loss avoidance study of acquisition projects in Milwaukee County was compiled titled Evaluating Losses Avoided through Acquisition Projects. WEM requested a report with a methodology that could easily be replicated. The study included properties mitigated in Wauwatosa, Milwaukee, Brown Deer, and Oak Creek. FEMA used their Hazus and BCA[2] software programs to determine losses avoided due to mitigation actions.

In 1998 and 1999, the City of Wauwatosa, using HMGP and CDBG funds, acquired and demolished 23 floodway structures in the Valley Park area along the Menomonee River. Calculated for individual properties, the ROIs ranged from 35% to 143% with an average of 77%. This may seem low, but the computations were done for only one potential flood event. The Menomonee River at Wauwatosa has experienced five historic crests since August 1998. Clearly, considerable losses have been avoided as a result of this project.

The Lincoln Creek area in the City of Milwaukee experienced over 4,000 flood events between 1960 and 1997. It was targeted for mitigation activity prior to the June 1997 flood. Using HMGP funds from the 1997 flood, WEM and the City of Milwaukee worked together to acquire and demolish 21 properties. The Milwaukee Metropolitan Sewerage District (MMSD) also completed a flood mitigation project in the area involving two detention basins and channel modifications. The area was remapped after the MMSD project, so only six of the mitigated properties remained in the floodplain. The ROIs for these six properties ranged from 28.7% to 35.0% with an average of 31.7%. These figures were again calculated for only one potential flood event.

After Root River flooding in May and July 2000, a repetitive loss property in the City of Oak Creek was determined to be uninhabitable. Without mitigation, the property would continue to incur damages and have flood insurance claims paid. WEM and the City used HMGP funds to purchase and demolish the structure. The ROI calculated by FEMA for one potential flood event was 61%.

After devastating floods in 1997 and 1998, the Village of Brown Deer initiated an acquisition and demolition project for nine repetitive loss properties along South Branch Creek using HMGP and CDBG funds. The ROIs for the properties ranged from 42.0% to 52.4% with an average of 45.8%. Again, the ROIs were calculated for only one flood event and would be much greater if several events occurred. After the project was completed, MMSD used the acquired properties to create a detention basin along the South Branch Creek which has helped mitigate flood damage in much of the County. The benefits from the detention basin are not included in the loss avoidance calculation.

Evaluation of the benefits of a mitigation project really cannot be documented until the area of the project is impacted by another similar disaster. The following method will be used after an event has occurred:

[2] Hazus is a GIS-based program developed by FEMA for estimating losses from natural hazards; BCA stands for Benefit-Cost Analysis.

- Identify whether a previous mitigation project has been implemented in the affected area. This could include mitigation measures such as acquisition and demolition, elevation, floodproofing, reinforcement of structures, safe room construction, protection of utilities, retention and detention ponds, stormwater projects, or other structural measures to protect property and infrastructure.
- If so, contact local officials to solicit information about the effectiveness of the mitigation measures and the impact of the event in the project area.
- Identify what data is available to support a loss avoidance study or best practices story. This could include pictures, newspaper articles, flood levels, damages to mitigated and unmitigated structures, etc.
- Using the above documentation as well as information on mitigated properties such as past damages and benefit-cost analysis inputs, begin to identify if there is sufficient data to complete a loss avoidance study.

For acquisition projects the following is one method that can be utilized to document loss avoidance if there is adequate data available:

Phase 1: Data Collection

- Evaluate available data for inclusion in the study.
  - Address
  - Structure and content values
  - Project costs
  - FIS reports – specific event data
  - Acquisition date
  - Stream gauge data – depth and/or stream flow
  - Insurance payout data

Phase 2: Analysis

- Establish the values of structure and contents potentially at risk during an event.
- Establish which event(s) occurring after the completion of an acquisition project would have affected the acquisition properties.
- Establish the level of damages associated with the event(s) above.
- HAZUS analysis: Used in the event of incomplete or inadequate data for either the events or property. Using the current state provided flood boundary, a HAZUS model can be run for a typical 100-year flood event. This process will produce an estimated damage projection for each property.

Phase 3: Reporting

- The reporting phase involves taking the damage curves established in the analysis phase and applying them to the potential loss values established.

- The results would then be applied to the cost of the acquisition to determine a return on investment.
- Additional reporting on the presence of location maps for properties and stream gauges if available offers background to support conclusions.

If there is not sufficient data to support a loss avoidance study, best practices or success stories could be developed that would encourage communities and individuals to develop hazard mitigation strategies and implement mitigation measures to reduce or eliminate future disaster losses.

6.5.1 Other Mitigation Successes

Many mitigation projects in Wisconsin have been profiled by FEMA as "best practices." Below are descriptions of recent best practices projects that represent a variety of mitigation action types. Following the descriptions in Figure 6.5.2-1 is a table of other mitigation best practices projects in Wisconsin. The full-length best practices articles can be found on WEM's website at http://emergencymanagement.wi.gov/mitigation/stories.asp or on FEMA's website at https://www.fema.gov/best-practices-stories. Success stories will continue to be developed for future events to demonstrate the success and economic benefits of effective mitigation measures.

Town of Lakeside

A couple purchased a home in 1991 next to a small stream. In 2000 there was a tremendous amount of snow and the in-laws mentioned the potential for spring flooding. The couple purchased flood insurance which included an ICC (Increase of Compliance) clause that could provide up to $30,000 to bring structures into compliance with local floodplain regulations in the event the structure was substantially damaged from a flood. Only months later the Amnicon River did exceed its banks backing up the small stream where they lived causing substantial damage to the structure. Since the damage exceeded 50% of the equalized assessed value, the home was considered substantially damaged and the ICC clause went into effect. Since the structure was located in the floodway, the only option was to demolish the structure. Douglas County applied to WEM for a grant through the Hazard Mitigation Grant Program to acquire and demolish the structure. ICC provided the cost for demolition, reducing the County's local share for the grant. If the property owners had not participated in the buyout program, their former home would have been flooded again in 2012 when three severe floods occurred in the area between May and June.

Village of Oliver

In August 2002 several homes in the Village of Oliver was experiencing earth mass-movement referred to as a "slump", which is common in the area, put several structures in imminent danger. The ground failure was due in part of an underlay of red clay, which contains significant amount of mineral, smectite. Smectite absorbs water and expands to many ties it original

volume, shrinking back again when it dries. This contributes to the instability of the red clay especially when saturated. The spring and summer of 2012 the area received a lot of rain which added to the weight. The water also acted as a lubricant which facilitated down-slope movement. Through WEM, the Village received funds through the Hazard Mitigation Grant Program to acquire and demolish three structures that were in imminent danger from ground failure. In June 2012 a severe storm occurred in Oliver which caused extensive flooding throughout the rea and led to a federal disaster declaration. The same three properties purchased by mitigation funds experienced further slumping. By previously acquiring the three properties, additional losses were avoided.

City of Superior

In 1999, a 100-year storm inundated the city with more than five inches of rain in two hours and caused extensive damages. The City received a Hazard Mitigation Program grant to construct a stormwater detention basin and a 7,000 foot storm water interceptor sewer to connect to the existing storm sewer system. HMGP funded the storm sewer interceptor sewer. The project was determined a success after significant flooding occurred in October 2005. Officials estimated that 284 structures, both residential and commercial benefited from the project with an estimated $1.42 million in damages avoided. In 2009 the City constructed a 3,000 foot storm water inceptor sewer t connect to the previous project with funds provided by the American Recovery and Reinvestment Act. The mitigation efforts were again tested in June 2012 when a severe thunderstorm dropped 8 to 10 inches of rain over the Superior area resulting in flash flooding. Public Works officials estimated that prior to the completion of the project, a storm of that magnitude would have yielded about 150 calls, but they only received 15 reports of flooded basements.

Town of Clover

The Town of Clover is located near Lake Superior in Northern Wisconsin, and experiences periods of seasonal flooding each year, particularly on Nicoletti Road, a town roadway located on an unnamed perennial tributary to Lake Superior, locally referred to as "Horseshoe Creek." Clay soil near Lake Superior limits infiltration, resulting in large volumes of stormwater runoff during heavy rain events. This runoff, as well as snow melt in the spring, regularly flooded the wetlands and waterways near Nicoletti Road, rendering it and other area roads impassable during any rain event of 2 inches or greater (approximately a 1-year storm). The section of the roadway near the Horseshoe Creek culvert was particularly prone to washing out, requiring repeated annual repairs. Because the culvert was not large enough to allow the flow from a 1-year storm to pass through, the wetland area upstream would overfill and inundate nearby Bark Bay Road as well. Flooded roads routinely presented public safety threats by endangering drivers and creating obstacles to EMS and fire response in the area. Washouts also carried gravel and sediment from the roadways to the wetlands, estuary, and lake within the Bark Bay Slough Natural Area. In 2013, the Town of Clover applied for funding under FEMA's Hazard Mitigation Grant Program (HMGP) to install a large culvert in Horseshoe Creek at Nicoletti Road. The grant was awarded in 2014, and the project was completed in October 2015. During the July 11-12, 2016, storms, three to four inches of rain fell on the Town of Clover in a 24-hour period

(approximately a 5- or 10-year storm). Many roads and culverts in the area washed out, including part of Nicoletti Road to the east of the culvert mitigation project. At this point of the road, 11 streams from the hills to the south drain into a ditch on the south side of the roadway. During the storms, this ditch filled beyond its capacity and overtopped Nicoletti Road, resulting in a quarter mile of roadbed erosion and subsequent closure of the road. However, the road damage stopped short of the culvert mitigation project; the upsized culvert was able to handle the runoff from this event, and Nicoletti Road at Horseshoe Creek held.

Bayfield County

Bayfield County, Wisconsin is located on the shores of Lake Superior in Northwestern Wisconsin. A 65-person staff provides services to the County's 15,000 residents from the Bayfield County Courthouse in the City of Washburn. In the past, the courthouse experienced power outages at least five times each year, ranging in duration from a few minutes to several hours on average. Originally, the sole back-up power source was the Uninterruptible Power Supply (UPS), which only provided short-term back-up power to individual electronics. This left the HVAC system and power to the county offices, county telephone system, county vehicle fueling station, and cooling system for phone and computer equipment unprotected in the event of an outage. In 2013, Bayfield County submitted an application for funding for a 200 kW generator under the Hazard Mitigation Grant Program. The grant was awarded in August 2013, and the generator installation was completed in October 2014. On July 11-12, 2016 northwestern Wisconsin was ravaged by multiple rounds of severe thunderstorms, including heavy rains, high winds, and extensive flooding. While County and local first responders worked to cope with damage to roads, harbors, homes, and businesses, another round of storms on July 21 caused thousands of power outages across Bayfield County and the surrounding area, including the County courthouse and jail. The outages also coincided with one of the hottest days of the year, with temperatures reaching over 90°F. Although the courthouse lost power, the generator provided back-up power until electricity was restored on the 22nd. This allowed County staff to continue providing essential emergency response services during the outage, including using the courthouse as a cooling and equipment charging center for Bayfield County residents without power.

Figure 6.5.1-1: Wisconsin Mitigation Best Practices Articles

Year	Project Type	Municipality	County	Title
1978-1983	Flood control; Floodproofing; Relocation	Soldiers Grove, Village	Crawford	Village Locals Reflect: Moving Was Best Flood Protection
1978-1983	Flood Control; Floodproofing; Relocation	Soldiers Grove, Village	Crawford	Small Wisconsin Village Leads the Nation: Rebuilds Above Floodwaters
1993-ongoing	Acquisition/Buyouts; Flood Control; Retrofitting, Structural	Darlington, City	Lafayette	Multiple Mitigation Measures Give Darlington and Elevating Experience

Year	Project Type	Municipality	County	Title
1994-97	Acquisition/Buyouts; Elevation, Structural; Flood Control	Black River Falls, City	Jackson	Freeboard Saves Town from Additional Flood Losses
1993-ongoing	Floodproofing	Darlington, City of	Lafayette	Mitigation Leads to Preservation and Economic Recovery for One Community
1994-98	Acquisition/Buyouts	Eau Claire, City	Eau Claire	City of Eau Claire: Acquisition
1994-ongoing	Acquisition/Buyouts; Building Codes	Kenosha County	Kenosha	Moving People Out of Harm's Way
1994-ongoing	Acquisition/Buyouts	Kenosha County	Kenosha	Fighting Floods, Saving Property and Protecting Lives in Kenosha
1994-ongoing	Acquisition/Buyouts	Jefferson County	Jefferson	Program Cooperation Alleviates Repetitive Flooding Burden
1994-1997	Acquisition/Buyouts	Trenton Island	Pierce	Mitigation Success, Trenton Island
1996-97	Acquisition/Buyouts	Trenton Island	Pierce	Floodways and Wetlands of the Mighty Mississippi: Trenton Island, Wisconsin
1996-97	Education/Outreach/ Public Awareness; Land Use/Planning	Wisconsin State	All	Wisconsin Mitigation Video: An Education and Training Tool
1996-98	Acquisition/Buyouts	Oakfield, Village	Fond du Lac	New School Building Hardened Against the Wind
1997-ongoing	Education/Outreach/ Public Awareness	Milwaukee County	Milwaukee	The Dry Facts: Protecting Homes From Damage
1997-ongoing	Acquisition/Buyouts; Floodproofing; Land Use/Planning	Darlington, City	Lafayette	City of Darlington Honored: Acquisition and Floodproofing
1998-2001	Acquisition/Buyouts; Flood Control	Brown Deer, Village	Milwaukee	Detention Ponds, Not Homes, Played Host to Recent Flood Event
1998-2001	Acquisition/Buyouts	Wauwatosa, City	Milwaukee	Acquisition Project Proves Beneficial as Safety Measure and Recreational Avenue
1999-2006	Acquisition/Buyouts; Elevation, Structural; Flood Control	Elm Grove, Village	Waukesha	Small Village Executes Large Mitigation Project
2001	Education/Outreach/ Public Awareness	Milwaukee County	Milwaukee	Community Outreach: Milwaukee County at the Wisconsin State Fair
2001-03	Flood Control; Floodproofing; Relocation	Crawford County	Crawford	Moving Highway Shop Improves Disaster Response

Year	Project Type	Municipality	County	Title
2003	Warning Systems	Portage County	Portage	Enabling Residents to Hear and Heed Severe Weather Warnings
2004	Storm Shelters	Juneau County	Juneau	Providing Shelter from the Storm
2005	Flood Control	Cambria, Village	Columbia	Mitigation Project Reunites a Town Divided
2005-ongoing	Flood Control	Monroe, City	Green	Pulling the Plug on Monroe's Water Problems
2005-ongoing	HAZUS	Wisconsin State	All	Wisconsin Emergency Management-HAZUS Used to Evaluate Flood Risk and Losses
2006-10	Flood Control	Thiensville, Village	Ozaukee	Village of Thiensville Channelization Project
2007-08	Elevation, Structural	Gays Mills, Village	Crawford	Higher and Drier in Wisconsin
2008-10	Mitigation Planning	Clark County	Clark	Teamwork Gives Rise to a Comprehensive All-hazards mitigation Plan
2012	Acquisition/Buyouts	Lakeside	Douglas	When a Homeowner's Dream Becomes a Flooding Nightmare … Flood Insurance Comes to the Rescue
2012	Acquisition/Buyouts	Oliver	Douglas	Slump Forces Owners out of Home
2012	Flood Control	Superior	Douglas	Improved Sewer System Prevents Damages
2012-2016	Generator	Bayfield County	Bayfield	Generator Keeps the Lights on at the Bayfield County Courthouse
2012-2016	Culvert	Clover	Bayfield	Mitigation Prevents Road Damage in the Town of Clover

At the time this plan was updated, there was significant flooding that occurred September 21-22 in the southwest and west central portions of the state. The Governor's request for a federal declaration was issued on October 20, 2016. Several of the communities impacted by the most recent flooding have implemented mitigation projects through acquisition, demolition, and elevation. This provides an opportunity for WEM to potentially complete additional loss avoidance studies and success stories. The effectiveness of the completed mitigation measures was obvious during the Preliminary Damage Assessment and fly-overs of the flooded areas.

In a large event or an event where there could be many potential success stories, based on present staffing, WEM may request the assistance of FEMA in documenting and completing success stories.

6.6 Mitigation Efforts of Other Agencies

The totals in the table above do not reflect the mitigation efforts undertaken by other agencies and local governments. The Department of Commerce (now the Department of Administration) through Community Development Block Grant (CDBG) funds has provided mitigation assistance to many communities by acquiring and demolishing numerous floodplain properties (see Appendix C). Notable mitigation successes using this funding strategy include Kenosha and Jefferson counties, the villages of Gays Mills and Rock Springs, and the Town of Spring Green.

Kenosha County has purchased or is in the process of purchasing 108 properties along the Fox River in the towns of Salem and Wheatland and in the Village of Silver Lake. These acquisitions were made using CDBG funds as well as HMGP, FMA, and PDM funds. The County's mitigation goal is to acquire and demolish up to 160 flood-prone properties, as funds become available.

Another example of successful flood mitigation is the Rock River/Lake Koshkonong area in Jefferson County. In addition to CDBG, HMGP, and FMA funds, the county received Urban Rivers Grant Program funds through the Department of Natural Resources. These funds combined have enabled the county to purchase 115 properties, many of which were in the floodway. Both counties continue to apply for funding to reach their mitigation goals.

There are also mitigation projects occurring in Wisconsin through local initiatives using mostly local funding. The Milwaukee Metropolitan Sewerage District (MMSD) has been implementing a floodplain and stormwater management strategy for over fifteen years. Their strategy involves engineered flood management structures and acquisition to protect structures that are vulnerable to a 1% probability flood according to flood hazard models. Through their Flood Management Program they have completed several projects including the County Grounds ($90 million,) Hart Park ($48 million,) Kinnickinnic River, Valley Park ($12 million) and Lincoln Creek ($120 million) with two more projects underway; Menomonee Concrete Removal ($5.4 million) and Western Milwaukee (http://www.mmsd.com/floodmanagement/). The projects have reduced flood damages to thousands of homes and to public infrastructure as well as provided environmental and recreational benefits. MMSD's Greenseams program helps prevent future flooding and water pollution. Greenseams is an innovative flood management program that permanently protects key lands contains water-absorbing soils. The program makes voluntary purchases of undeveloped privately-owned properties in areas expected to have major growth in the next 20 years and open space along streams, shorelines, and wetlands. All land acquired will remain undeveloped. Wetland maintenance and restoration at these sites will provide further water storage. Another benefit of the program is that it also preserves wildlife habitat and creates recreational opportunities for the people living in the area.

One of the more well-known mitigation projects was the relocation of Soldiers Grove. The Village experienced flooding in 1907, 1912, 1917, 1935, 1951, the "big one" in 1978, and lesser floods after that. The August 2007 and June 2008 floods were some of the biggest floods to hit the Village. The Village began to debate about what to do about the flooding in the mid-60's when the construction of a dam was considered. In 1975 a relocation coordinator was hired, and

in 1976 the Village passed a resolution that supported relocation to avoid future flood damages. After the 1978 flood Village officials convinced state and federal officials that moving the town was the best floodproofing. By 1983 the project costing $6 million in public funds was completed. The Soldiers Grove central riverside municipal park and campgrounds stand where the downtown once stood. The park received little damage in 2007, however, was substantially damaged in the 2008 event. It is not hard to imagine the devastation that would have occurred if the downtown had not relocated. The Solar Village uphill was unscathed. At the time of the Soldiers Grove relocation, there were no FEMA mitigation programs available. The relocation was completed through various funding sources and from several state and federal agencies all working together in a partnership over a period of years. As a result of the 2007 disaster, the Village received HMGP funds to elevate four structures and acquire another.

The Village of Gays Mills is the next town downstream of Soldiers Grove. Like Soldiers Grove it has experienced the same flooding over the years. However, unlike Soldiers Grove the Village had not relocated to higher ground. The Village was struck by back-to-back floods in August 2007 and June 2008, both greater than 500-year flood events which resulted in substantial losses within the Village. As a result of the federal declaration in 2008, the Long-Term Community Recovery (LTCR) was activated, which integrated assistance from state and federal partners to address recovery needs for the Village. Through many community meetings a Long Term Recovery Plan was completed. The Village considered several alternatives and partial relocation was selected.

The Village developed two sites north of downtown as relocation sites. The site known as North Mills contains both commercial and residential uses. The Village constructed a mercantile center for business relocation as well as a new Community Commerce Center that houses the village hall, library and community center with a commercial community kitchen. Single and multiple family housing were also constructed at the site as well as other commercial properties. A second site north of North Mills was developed and the EMS and Public Works Department relocated to that site. The Village would like to build a new fire department at the location and hopes to attract additional businesses.

The Wisconsin Hazard Mitigation Team through the Wisconsin Recovery Task Force worked together to assist the Village in reaching its goals. Multiple agencies and funding sources were utilized in the Village's recovery efforts. Funding was provided through the HMGP for acquisition/demolition and elevation. The Economic Development Administration provided funding for the infrastructure in the commercial area. Community Development Block Grant (CDBG) funding was provided by the state Department of Commerce (now provided by the Department of Administration) for the local match to the HMGP and for the Community Commerce Center. The state Department of Transportation provided funding for highway improvements at the relocation site. Coulee CAP (Community Action Program) provided financing and sponsorship of the multi-family housing units, and USDA Rural Development assisted low-income and elderly population with housing needs. The state Department of Health Services provided Social Service Block Grant (SSBG) to assist homeowners whose income exceeded the LMI requirements of the CDBG program, and funded a Flood Recovery

Coordinator. In addition, there were private investments. The Kickapoo River in the Village once again exceeded its bank from rains that occurred on September 21-22, 2016. Flood damages were significantly reduced by the mitigation actions implemented after 2008.

The Community Development Block Grant-Emergency Assistance Program (CDBG-EAP) is administered by the Wisconsin Department of Administration. CDBG-EAP funds are used to assist local units of government in addressing emergency housing, public facility, infrastructure, and business assistance needs that occur as a result of natural or manmade disasters. Such assistance may include, but is not limited to, housing rehabilitation, acquisition/demolition, housing replacement, road repairs, stormwater drainage, and public facilities. A local unit of government interested in applying for CDBG-EAP funds must do so within 90 days of the disaster event.

CDBG-EAP funds may be used to address damage caused by the disaster, including repair of disaster-related damage to the dwelling unit, including repair or replacement of plumbing, heating, and electrical systems; acquisition and demolition of dwellings unable to be repaired; down payment and closing cost assistance for the purchase of replacement dwellings (assistance is limited to 50% of the pre-disaster equalized assessed value); publicly-owned utility system repairs; streets and sidewalks; and community centers.

The DOA is a major partner to WEM after disaster events. The CDBG-EAP programs can assist in mitigating damages after a disaster, and staff works closely with WEM through the WSJHMT as well as the WRTF. The funds can be used to acquire and demolish or elevate structures damaged by floods. CDBG has provided the local match on many HMA projects. Without those funds, communities would not have been able to implement their mitigation projects. After the 2008 floods, CDBG-EAP funds provided the local match on all of the HMGP grants, and provided additional funds to assist communities in their recovery efforts. They are especially instrumental in non-declared events, as they may be the only source of funding for recovery activities after an event. WEM coordinated with DOA in developing proposals for the HUD National Disaster Resiliency Competition. Appendix C identifies projects completed with CDBG-EAP funding.

As a part of the state hazard mitigation effort, WEM maintains close coordination with the Department of Natural Resources (DNR). The DNR, as the state's lead floodplain management agency, plays a key role in providing technical assistance for mitigation programs and in developing the hazard mitigation action plan in flood disasters. The DNR administers the Municipal Flood Control program as defined by Ch. NR 199, Wisconsin Administrative Code. The program helps local governments minimize flooding and flood-related damages through various types of projects. Projects shall minimize harm to existing beneficial functions of water bodies and wetlands, maintain natural aquatic and riparian environments, use stormwater detention and retention structures and natural storage to the greatest extent possible, and provide opportunities for public access to water bodies and to the floodplain. The program provides grants to cities, villages, towns, tribes, and metropolitan sewerage districts for projects such as property acquisition and removal of structures for permanent open space or flood water storage; acquisition of vacant land or flood water flowage easement to facilitate more efficient flood flows to the water body; floodproofing and flood elevation of public and private

structures; flood water control detention ponds; riparian restoration project on a watercourse; and flood mapping. The grants are offered every other year with the application date usually in the spring of even years. The state share may not be greater than 50% of the eligible project cost and no single recipient can receive more than 20% of the funding available. Since the goals of the program are very similar to the HMA programs, DNR and WEM work closely in funding mitigation projects particularly acquisition and demolition of floodplain properties. Since the program is state funds, it can be used as local match to the HMA programs, and vice versa. The two agencies coordinate together to stretch the limited available dollars to fund as many eligible projects as possible. Appendix C identifies projects funded and completed through the DNR Municipal Flood Control program.

The Disaster Damage Aids (DDA) program provides financial assistance to local governments to repair any highway under its jurisdiction which is not part of the State Trunk Highway system and that has had significant damage caused by a disaster event. The program is governed by §86.34, Wisconsin Statutes. Funds may be used to repair a highway to match its pre-disaster condition (replacement) and to make changes to a highway, its drainage facilities, etc., to prevent similar damage from occurring in the future (improvements). The applicant pays a share of these replacement and improvement costs. DDA is a biennial program with annual appropriation levels. It is categorized as a sum sufficient appropriation which means if further funding is needed it can be allocated in the amounts necessary. The DDA becomes the primary source of funding for road repairs and improvements (mitigation) after a disaster when there is no federal declaration.

In a federal declaration, the FEMA Public Assistance program provides financial assistance to state, tribal, and local governments, and certain private non-profit organizations (PNPs). Through the PA program, FEMA provides supplemental federal disaster grant assistance for debris removal, emergency protective measures, and the repair, replacement, or restoration of disaster-damaged, publicly-owned facilities and the facilities of certain PNPs. The PA program also encourages protection of these damaged facilities from future events by providing assistance for hazard mitigation measures during the recovery process (Section 406). The WEM Mitigation staff works closely with the state PA staff and State Coordinating Officer in identifying and pursuing mitigation opportunities through Section 406 of the PA Program. The federal share of assistance is not less than 75% of the eligible cost for emergency measures and permanent restoration. The state through WEM will provide up to 12.5% of the local match.

At a WHMT meeting on December 4, 2012, USGS made a presentation on Flood Inundation Mapping. The USGS gauges and NWS flood warning locations in AHPS play a critical role in development of the product. Inundation maps translate flood data (flood gauge information) into operational data (inundation maps) that can communicate risk and consequences of forecasted flooding. Utilizing stream gauge information, hydraulic modeling is conducted which is then intersected with LiDAR elevation information to create the map library. You can then combine the map library with the USGS streamflow data and NWS flood forecast information to create a flood inundation map. The product does not show the FEMA floodplain map as that is a regulatory product and USGS is a non-regulatory agency. It can be a great tool for not only

emergency preparedness and response, but also communicating risk to the public. WEM looked at funding this type of project through the HMGP after the 2008 floods, but was advised that it was not an eligible activity. Identifying funding was an issue.

After that WHMT meeting, WEM, DNR, and USGS met to discuss the possibility of trying to fund a pilot study in Wisconsin. Due to flood risk, LiDAR, flood modeling and past mitigation activities, the group selected the Rock River for a potential pilot project. In February 2013, the USACE put a call out for proposals for the Flood Risk Management program with the proposals due in April. A proposal developed by WEM, DNR, USGS, USACE, and NWS for flood inundation mapping for five stretches consisting of 38 miles on the Rock River was submitted. The proposal was shared with all of the stakeholders at a meeting in April 2013. Stakeholders consisted of officials from Dodge, Jefferson, and Rock counties; Department of Transportation; Department of Administration; Wisconsin Economic Development Corporation; US Army Corps of Engineers; National Weather Service; Association of State Floodplain Managers; FEMA; USGS; DNR; and WEM. The state was notified in April 2014 that the project was selected.

The majority of the work was completed by the DNR and USACE. The maps were completed and went live on the NWS website in August 2015. The final product was presented to the stakeholders. In addition, a press release was issued and the DNR developed a tutorial video. The counties put a link to the maps on their webpages. In addition, the product was presented at several forums including the Wetlands, Wildlife Habitat and Flood Hazards in the Rock River Basin webinar series; Wisconsin Association for Floodplain, Stormwater and Coastal Management annual conference; WEM's annual All-Hands Meeting with all of the county and tribal emergency management directors in the state; and the Annual Governor's Conference on Emergency Management and Homeland Security. The promotion of the maps has generated a great deal of interest.

As a result of the effort, the DNR is presently developing flood inundation maps for the Upper Fox River in Racine and Kenosha Counties. WEM and the DNR will be developing a strategy for developing additional flood inundation maps throughout the state.

With the success of obtaining funding through the USACE Flood Risk Management program, WEM, DNR, USACE, and Columbia County developed and submitted a proposal in April 2014 to develop a floodplain structure inventory on the Wisconsin River in Columbia County. The state was notified in December 2014 that the project had been selected. A meeting was held with WEM, DNR, USACE, and Columbia County in February 2015 to discuss the scope of the project. That meeting was followed by a meeting with the local stakeholders in March. A Fact Sheet and Press Release were developed for the project. The USACE completed the field work over the summer and presented a draft report in December 2015. The USACE provided a presentation and the final report at a meeting in August 2016. Due to funds remaining in the project, the group has requested additional work on the project, in addition to completing a flood inundation map for the river gauge in the City of Portage.

6.7 Effective Use of Available Mitigation Funding

The State of Wisconsin continues to effectively implement mitigation programs towards achieving its goals as identified in this plan:

1. Minimize human, economic, and environmental disruption from natural, technological, and manmade hazards.
2. Enhance public education about disaster preparedness and resistance, and expand public awareness of natural, technological, and manmade hazards.
3. Encourage hazard mitigation planning.
4. Support intergovernmental coordination and cooperation among federal, state, and local authorities regarding hazard mitigation activities.
5. Improve the disaster resistance of buildings, structures, and infrastructure whether new construction, expansion, or renovation.

The mitigation programs utilized in implementing mitigation measures throughout the state are primarily federally funded, however, are state administered. These include the HMA programs (HMGP, FMA, and PDM). The projects that have been approved and funded through these programs support the state's hazard mitigation goals as well as meet the priorities and criteria as outlined in Section 7.3. This section describes the history of the State's mitigation programs and demonstrates the state's ability to effectively use and administer all available mitigation funding through both federal and state mitigation programs. Appendix B provides information on the history of the state's federal declarations including the HMGP. Appendix C identifies mitigation projects funded and completed to date throughout the state.

In addition to the three HMA programs, there are several programs at the state level that support the goals and are utilized in advancing mitigation statewide:

- NR 116 Local and State Floodplain Standards prohibits construction in floodways and requires elevation and dry-land access in flood fringe areas. Limits improvements to non-conforming structures and requires compensatory storage in flood storage areas.
- Comprehensive Planning requires local governments to have a comprehensive plan for making good land use decisions. It is a synergetic companion to mitigation planning and has added momentum to the mitigation movement by incorporating mitigation into the comprehensive plans.
- The Home Safety Act requires the state's Uniform Dwelling Code (UDC) be enforced throughout the state. This includes the necessity to have all new construction inspected for compliance with the UDC. The law will improve the construction of homes, by requiring implementation of safety standards. The effect is a reduction in loss of property and injury from all types of natural hazards.

- NR 199 the Municipal Flood Control and Riparian Restoration program provides grants for the mitigation of flood-prone property, restoration of riparian areas, and the construction of flood control projects.
- Community Development Block Grant, Housing and Public Facilities programs can provide grants to communities for implementing mitigation activities such as acquisition, demolition, relocation, and elevation.
- The Disaster Damage Aids (DDA) program provides financial assistance to local governments to repair any highway under its jurisdiction which is not part of the State Trunk Highway system and that has had significant damage caused by a disaster event including making changes to prevent similar damage from occurring in the future.

These programs as well as others are described and evaluated in Section 3.2 and Figure 3.2.1-1.

Since 1990, $94 million in HMGP funds has been administered in the state. Based on the Preliminary Damage Assessments, the estimate for FEMA-4276-DR-WI is $5 million and $2.2 million for FEMA-4288-DR. This will bring the total for HMGP funds to $101.2 million in the state for the history of the program. FMA funds in the amount of $2.6 million have been administered, and PDM funds in the amount of $13.8 million. Between the three programs over $110 million in funds has been provided to communities for mitigation planning and project implementation. To date the number of structures that have been mitigated through the HMGP, and FMA and PDM programs by acquisition/demolition is 633 with more in process. Additionally, WEM has provided support to local governments in the development of all-hazards mitigation plans through the issuance of guidance, education through planning workshops, and planning grants.

As stated in Section 6.4, a Memorandum of Understanding had existed between FEMA and WEM recognizing the state as a Hazard Mitigation Grant Program Managing State, but since has been rescinded. Although the MOU was no longer in place, WEM continued with the roles and responsibilities identified in the MOU.

The state's allocation for declaration 1768-DR declared June 14, 2008, was $30,875,884 ($23,156,913 federal share) and is by far the worst disaster Wisconsin has experienced. The HMGP was and is the largest in state history. The state's priority was acquisition and demolition of substantially damaged properties. Seventeen communities received project grant funds for acquisition/demolition with another ten receiving planning grants totally obligating the allocation. Due to deductions for duplication of benefits (the total of which was unknown at the time of approval) the actual amount spent on all of the grants was $23,350,412.26 ($17,512,809.24 federal share) resulting in a deobligation of $7,525,471.74 ($5,644,103.81 in federal funds.) Duplication of benefits included funds received through flood insurance claims, FEMA Individual Assistance, as well as other assistance. Through the HMGP, 195 properties were acquired and demolished with nearly all of them identified as substantially damaged.

State Mitigation staff makes every attempt to fully utilize all available funding in the mitigation programs. For HMGP, unspent funds in projects are reobligated to projects that have cost overruns. In addition, eligible projects above the allocation are submitted in the event funds

become available. The goal is to spend as much of the available funds as possible and return as little as possible at the end of the performance period. Unfortunately it is not always possible to utilize all of the available funding.

The state was allocated $21,338,532 ($16,003,899 federal share) in HMGP after declaration 1933-DR declared August 11, 2011. The state received applications totaling over $34 million, however, there was great difficulty for some of the projects to pass the benefit-cost analysis. The state submitted 40 applications (18 planning and 22 project grants) for a total of $13,366,830.69 ($10,025,123.02 federal share.) One project was determined ineligible and two withdrew as there were issues with the benefit-cost analysis. The state solicited applications a second time in an attempt to utilize all of the available funding. This was the first time that the state was unable to submit enough eligible projects for the total allocated funds for the declaration.

In July 2015 FEMA announced the HMGP Pilot Closeout for Uncommitted Open Disasters from 2010 through 2013. This provided states with uncommitted funds a chance to fund additional projects. The requirements were the declaration had to be open and uncommitted funds could only be used to amend applications submitted within the original application period. It allowed for expanded scopes of works. The only Wisconsin declaration with uncommitted funds was 1933-DR. All funds in the other four open declarations were obligated. The state reached out to the original subapplicants and submitted amendments to three grants to acquire and demolish an additional eight properties. Additional funds were obligated in the amount of $1,381,492 ($1,036,113 federal share).

The mitigation staff has successfully administered over 270 hazard mitigation grants, identified in Appendix C, and effectively managed the HMGP for over 26 years. These activities as well as those described above and throughout the plan demonstrate that Wisconsin effectively uses existing mitigation programs to achieve its mitigation goals.

6.8 State Commitment to a Comprehensive Mitigation Program

WEM is the lead agency for the development of and promotion of a statewide comprehensive mitigation program. In doing so, WEM works with other state, federal, and local agencies and other organizations in implementing the goals and mitigation strategy of the State of Wisconsin Hazard Mitigation Plan. The Wisconsin Silver Jackets Hazard Mitigation Team (WSJHMT) led by WEM is made up of representatives from state and federal agencies, as well as several other interested groups. Key elements of the state's comprehensive mitigation program include the development of the State of Wisconsin Hazard Mitigation Plan, financial and technical assistance to local governments as they develop their hazard mitigation plans, implementation of mitigation measures, and conducting trainings and workshops for state and local officials. The following provides examples of the state's ongoing commitment to a comprehensive mitigation program.

6.8.1 Local Mitigation Planning Support

Both FEMA and the state agree that in order to be truly effective in mitigation at the local level, there needs to be a local mitigation planning process. The previous challenge for the state was convincing communities at risk from natural hazards to complete the mitigation planning process. The challenge now is convincing the communities the need for maintaining those plans. Before 2002, the only federal mitigation planning grant funds available were for flood mitigation planning through the FMA program. The all-hazards mitigation planning requirements proved difficult for local governments to meet, particularly small communities with limited or no staff. Most of the communities that developed mitigation plans contracted with their local Regional Planning Commission or hired a private consultant.

As a result of the HMGP and PDM programs 48 all-hazards mitigation plans are currently approved and not yet in the update phase (35 counties, six municipalities, five tribes, and two universities), 22 plans are currently approved and updating (20 counties, one tribe, and the City of Milwaukee), and 17 plans have expired and are being updated (15 counties and two tribes). Four communities are developing their first plan (two counties, and two tribes). No countywide plans have expired that are not being updated. All 72 counties and ten of the 11 federally-recognized tribes in the state have current plans or are developing or updating plans. The federal, state, local, and tribal investment in this planning effort is over $7.3 million. Several countywide, local, and tribal plans have been developed or updated without HMA funding. WEM still provides the same level of technical assistance. Local plans are required to be updated every five years. For more information about local hazard mitigation planning efforts in Wisconsin, see Section 4.

Local hazard mitigation plans are required to be updated and reapproved by FEMA every five years in order for the community to remain eligible for FEMA mitigation funds. If a community's plan lapses, they are no longer eligible for mitigation funds until the plan is updated and approved by FEMA. This presents another challenge for state Mitigation staff. The majority of approved plans statewide are countywide, multi-jurisdictional plans. To ensure that plans do not expire, state Mitigation staff have closely monitored expiration dates of local mitigation plans and notify the counties with plans due to expire within two years of the requirement to update the plan and inform them of the availability of planning grant funds.

The WEM Mitigation staff has worked with counties and local jurisdictions to encourage and support hazard mitigation planning prior to and since publication of the federal planning regulations. (Section 4 describes in more detail the coordination of local mitigation planning.) Some of the activities that support mitigation planning are summarized below.

- Prior to federal planning requirements, WEM required subgrantees of HMGP to develop a mitigation plan and encouraged development of Flood Mitigations Plans.
- In 1995, the DNR developed the *Wisconsin Community Flood Mitigation Planning Guidebook*. WEM developed additional planning guidance to meet FMA planning

requirements. WEM and DNR conducted several flood mitigation planning workshops throughout the state.

- WEM contracted with the Council of Regional Planning Organizations (now the Association of Wisconsin Regional Planning Commissions) to develop planning guidance for meeting the requirements of 44 CFR Part 201. The result was the *Resource Guide to All Hazards Mitigation Planning in Wisconsin*.
- Wisconsin's Comprehensive Planning and Smart Growth legislation require all local governments to develop and adopt a comprehensive land-use plan by 2010. A list of the nine planning elements and some ideas on how to integrate all-hazards mitigation planning concepts into them are included in the *Resource Guide to All Hazards Mitigation Planning in Wisconsin*. In addition, where to integrate the comprehensive planning elements into all-hazards mitigation plans are described in the guidance.
- To date WEM Mitigation staff has conducted twenty All-Hazards Mitigation Planning Workshops to communities and consultants developing hazard mitigation plans as well as for those interested in finding out more regarding the overall planning process. A workshop was held in the fall of 2004 for the Great Lakes Inter-Tribal Council which consists of representation from the eleven recognized tribal governments in the state. Five workshops were presented during this plan update including a workshop for the Northeast Regional Emergency Management Directors. At a minimum, one planning workshop is held annually in the spring. Information presented and distributed at the workshops is put on a CD and is provided to each individual attending the training. The *Resource Guide to All Hazards Mitigation Planning*; FEMA's Local Mitigation Plan Review Guide and Tool dated October 2011; FEMA's Local Mitigation Planning Handbook dated March 2013; and FEMA's Tribal Mitigation Plan Review Crosswalk and Tribal Multi-Hazard Mitigation Planning Guidance dated March 2010 are included on the CD as well as other materials.
- Conducts the G393-Introduction to Hazard Mitigation for Emergency Managers twice a year. The G-393 was held in 2011; twice in 2013, 2014, and 2015; and once in 2016. The three-day class is well-attended and well-received.
- Provide technical assistance through reviewing sections of plans under development and providing feedback.
- Identifying information sources with web links available through state and federal agencies, locally and nationally.
- Providing information via WEM's website. The website provides a "Local Hazard Mitigation Planning" link where local governments can find the resource guides and tools for developing local all-hazards mitigation plans. In addition there is a link to the State Hazard Mitigation Plan
- WEM hosted a four-day HAZUS class in 2006 conducted by FEMA contractors.
- As part of the 2008 update to the State Plan, WEM completed a statewide HAZUS flood risk assessment with support from the University of Indiana Purdue-POLIS Center, the

University of Wisconsin-Land Information and Computer Graphics Facility (LICGF). The County Assessments were provided to the counties to assist them in development or update of their county all-hazards mitigation plans.

- One of the Disaster Response and Recovery Planners in the WEM Mitigation Section taken the HAZUS and HAZUS for Flood courses at the Emergency Management Institute and provides support to counties and other agencies interested in utilizing HAZUS. She will run reports for counties if requested.
- Provides information on SRL and RL properties and NFIP claim information as well as other disaster payments to those developing and/or updating their local plans.
- Developed a Household Natural Hazards Preparedness Questionnaire that local governments could utilize and/or modify to fit their needs. The survey was utilized in two updates of the plan (2005 and 2008).
- Reviews draft plans utilizing the FEMA Local Mitigation Plan Review Tool/FEMA Tribal Mitigation Plan Review Crosswalk, and provides comments on required and recommended revisions. Submits final plans to FEMA for review and approval.
- Information on all-hazards mitigation planning is provided at other WEM training such as the Introduction to Emergency Management (twice a year), Disaster Response and Recovery Operations Workshop (annually), Public Assistance Applicant Briefings, Substantial Damage Workshops, and other workshops when the opportunity presents itself.
- Information on the all-hazards mitigation program and planning is provided to the Wisconsin Association of Floodplain, Stormwater, and Coastal Management through their newsletter and annual conference.
- The All-Hazards Mitigation Planning Workshop and the G-393-Introduction to Hazard Mitigation for Emergency Managers are part of WEM's Certified Emergency Manager (CEM) Program.

6.8.2 State Legislation Supporting Mitigation

A statewide hazard mitigation program is under development, which will include legislative initiatives, formation of new and continuation of existing partnerships, and other executive actions that promote hazard mitigation.

Wisconsin has numerous legislative rules, administrative codes, and executive orders that support the mitigation process statewide. Below is a list of key legislation which is covered in more detail in Section 4, Mitigation Strategy.

Chapter 323, Emergency Management

Wisconsin Uniform Commercial Building Code, 2013 Wisconsin Act 270, SPS 361-366

Wisconsin Uniform Dwelling Code, SPS 320 - 360

2007 Wisconsin Act 63, Regulation of Electricians, Electrical Contractors, and Electrical Inspectors

and Electrical Wiring

2007 Wisconsin Act 205, Installation of Carbon Monoxide Detectors

Administrative Code NR 116, Floodplain Management

Administrative Code NR 115, Shoreland Protection Program

Administrative Code NR 117, Shoreland-Wetland Protection

Administrative Code NR 199, Municipal Flood Control and Riparian Restoration Program

Administrative Code NR 335, Dam Safety

Administrative Code NR 333, Large Dam Standards and Emergency Action Plans

Executive Order 67, State must follow wetland, floodplain, erosion and shoreland standards.

Executive Order 73, Flood mitigation for state-owned facilities

Chapter 30, Standards for Navigable Waters

Chapter 917, 1997 Wisconsin Act 27, Fire Protection Grant Program

Wisconsin Acts 16, 33, 233, 307, Wisconsin Comprehensive Planning Law

Chapter 92, ATCP 50, Soil and Water Resources Management

Chapter 88, ATCP 48, Operation and Maintenance of Drainage Districts

Chapter 86.34, Disaster Damage Aids Program

Chapter 84.18, Trans 213 Local Bridge Improvement Assistance Program

Chapter 85.026, Transportation Enhancement Program

6.8.3 Wisconsin Silver Jackets Hazard Mitigation Team

A significant development for the state following the record-breaking 1993 floods was the creation of Wisconsin's Interagency Disaster Recovery Group (IDRG). The mission of the IDRG was "to develop a cooperative federal and state disaster recovery effort that can assist communities and regional agencies in utilizing all available funding sources to recover from and mitigate the future effects associated with the damages from natural hazards."

The success of the IDRG during the recovery from the Great Flood of 1993 demonstrated the value of the group to communities around the state. Therefore, the IDRG remained in place to coordinate long-term recovery efforts following every disaster declaration. In 2003, the IDRG merged with the State Hazard Mitigation Team to form the Wisconsin Hazard Mitigation Team.

Agencies with responsibilities in the areas of natural resources, environmental regulation, planning and zoning, building codes, infrastructure regulation and construction, insurance, public information/education, economic development, and historic preservation were included on the State Hazard Mitigation Team (SHMT). Several agencies that had multiple facets that needed to be included in the plan had more than one representative on the Team. Many of the

members of the IDRG were also members of the SHMT.

In December 2003, the IDRG and the SHMT merged to form the Wisconsin Hazard Mitigation Team (WHMT). Additional members from state agencies were added to the team. The WHMT played an integral role in establishing the Wisconsin Recovery Task Force after the devastating floods of 2008. Appendix E includes the members of the team. The team consists of 52 members representing 12 state agencies and 8 federal agencies along with WAFSCM, Association of Wisconsin Regional Planning Commissions, WEMA, Cooperative Network, and VOAD.

In January 2016, the Wisconsin Silver Jackets Hazard Mitigation Team Charter was signed by core agencies of the Wisconsin Hazard Mitigation Team. The core agencies are:

- U. S. Army Corps of Engineers
- Federal Emergency Management Agency
- Wisconsin Emergency Management
- Wisconsin Department of Natural Resources
- US Geological Survey
- National Weather Service

The Charter also identifies the rest of the Team members as supporting agencies. The Charter does not change how the WHMT operates as a team, but formalizes what the team had been doing for the past fifteen plus years. As a result of the Charter, the state team changed its name to the Wisconsin Silver Jackets Hazard Mitigation Team (WSJHMT).

The WHMT is active in updating the State Plan, but also assists in disaster recovery activities.

The WHMT has established a set of five State Hazard Mitigation Goals which were revised in 2016 for this plan update:

1. Minimize human, economic, and environmental disruption and reduce the potential for injury and loss of life from natural, technological, and manmade hazards.
2. Enhance public education about disaster preparedness and resilience, and expand public awareness of natural, technological, and manmade hazards.
3. Encourage and promote continued comprehensive hazard mitigation planning and implementation of the plan.
4. Support coordination and collaboration among federal, state, and local authorities, and non-governmental organizations regarding hazard mitigation activities.
5. Improve the disaster resistance of buildings, structures, and infrastructure whether new construction, expansion, or renovation.

6.8.4 Wisconsin Recovery Task Force

It was obvious early in the administration of the 2008 flood declaration that additional outside resources would be required to assist the state and its communities in the recovery. Upon direction of Governor Doyle, WEM created the Wisconsin Recovery Task Force (WRTF) to assist individuals, businesses, and communities to recover quickly, safely, and with more resilience from future disasters. Six subcommittees were formed with a focus on mitigation, agriculture, business, housing, human needs, and infrastructure. The WRTF was comprised of many state and federal agencies. The primary goal of the WRTF was to identify the unmet needs of the communities and citizens of Wisconsin. The WRTF met bi-weekly. One of the outcomes from the report submitted to the Governor was that the WRTF be a standing task force and meet semi-annually to ensure preparedness and facilitate effective operational readiness following a disaster.

The Wisconsin Hazard Mitigation Team (WHMT) played an integral part in identifying the key players that comprise the WRTF. Many of the WHMT members actively participated in and led WRTF subgroups. Without the WHMT, it is very likely that the WRTF would not have been created and activated as quickly as it was.

The State Hazard Mitigation Officer was assigned to chair the Mitigation Subcommittee. The Subcommittee consisted of 11 state agencies (all which were members of the WHMT); seven federal agencies (five of which were members of the WHMT); and five other organizations (four of which were members of the WHMT). The mission of the committee was to "[a]ssist communities during the recovery process to make their communities more disaster resistant." The goals of the committee were based on the goals of the State of Wisconsin Hazard Mitigation Plan and were identified as:

1. Minimize human, economic, and environmental disruption from natural hazards.
2. Improve the disaster resistance of buildings, structures, and infrastructure, whether new construction, expansion, or renovation.
3. Support and assist the intergovernmental coordination and cooperation among the federal, state, and local agencies regarding hazard mitigation activities.

The Subcommittee identified challenges, issues, and roadblocks that the State and communities faced during the recovery process. They included:

1. Communities lack capability (resources and staff) to develop and implement long-term mitigation solutions to reduce future flooding.
2. NFIP sanctioned and non-participating communities are not eligible for FEMA mitigation funding.
3. Lack of funding to complete identified mitigation and recovery needs, particularly the lack of funds for local match required for various grants.

4. Lack of resources to develop good, well-thought out project applications to obtain federal and state funding to implement viable and necessary mitigation and recovery projects.
5. Potential contamination of project sites could delay the actual implementation and funding of projects.

In addition, FEMA activated Emergency Support Function (ESF) 14 for the declaration. ESF 14 provided support for to the state for long-term recovery by assisting the WRTF, and in developing a Long Term Recovery Plan for the Village of Gays Mills. In addition, they worked with the Village of Rock Springs and developed the Rock Springs Flood Recovery Report to address recovery issues in that community. The information gathered from these planning efforts also assisted with the recovery in other impacted communities.

Two additional reports were completed (Hydrogeological and NFIP Interpretations of Terrace Flooding Northwest of Spring Green, Wisconsin and Possible Mitigation; and Flooding Conditions at Clark Creek and Possible Mitigation) were completed to address flooding in the towns of Spring Green and Greenfield in Sauk County.

The US Geological Survey developed flood-peak inundation maps and water-surface profiles for nine communities along the Baraboo, Kickapoo, Crawfish, and Rock Rivers in GIS by combining flood high-water marks with available 1-10-meter resolution digital elevation model data. The high-water marks were those surveyed during the flood by communities, counties, and federal agencies and hundreds of additional marks surveyed by the USGS. The flood maps and profiles outline the extent and depth of flooding through the communities and are being used in recovery efforts. The information also provides documentation for future loss avoidance studies in Gays Mills and Jefferson County.

The Subcommittee worked together to identify needs and match the needs with the appropriate agency and funding source(s). In addition, members worked together to try and package funding where possible. As a result of this Subcommittee and the Wisconsin Hazard Mitigation Team, the Department of Commerce committed Community Development Block Grant funds to cover the 12.5% local match to the Hazard Mitigation Grant Program subgrants. This provided 100% funding to those communities implementing buyout and elevation projects.

One of the goals of the Short- and Long-Term Recovery Committee of the Comprehensive Response Work Group was to reconvene the WRTF as a standing task force as identified in the 2008 WRTF report. Based on the National Disaster Recovery Framework, the subcommittees of the original WRTF were realigned to more closely match those in the national Recovery Support Functions (RSF). The six RSF Subcommittees are identified as: Economic, Health and Social Services, Housing, Infrastructure, Agriculture, and Mitigation. Due to the unique recovery issues associated with a radiological incident at the nuclear power plants, a Radiological Emergency Preparedness (REP) Recovery Ad Hoc Working Group was established under the Agriculture RSF Subcommittee. Chairs were identified for the RSF Subcommittees and a meeting was held in February 2015. The Chairs identified members for their subcommittees and a WTRF meeting was

held in April 2015. The SHMO chairs the RSF Mitigation Subcommittee with membership consisting of the WSJHMT. Two of the several tasks identified for the WRTF were 1) to develop a State Recovery Plan; and 2) to develop Rapid Assessment Strike Teams (RASTs). The individual RSF Subcommittees met throughout the past year and are still identifying mission, goals and objectives.

Staff from the WEM Mitigation and Recovery Sections began to develop a State Recovery Plan in June 2015, which was finalized in May 2016.

WEM has been working with the Wisconsin Chapter of the American Institute of Architects (AIA) since 2014 in development of rapid damage assessment teams that would assist local governments during a disaster to assess the damages to structures during a disaster. WEM staff attended Disaster Assistance: Building Evaluator Training sponsored by AIA in July 2014 and 2015. The training provided is based on the California Safety Assessment Program (SAP). The program utilizes volunteers and mutual aid resources to provide professional engineers, architects, and certified building inspectors to assist local governments in safety evaluation of their built environment in the aftermath of a disaster. The workshop taught participants on how to conduct rapid damage assessments of structures, and discussed the appropriate protocol for coordination with emergency managers. The Wisconsin AIA Chapter's goal is to develop teams for each of the six regions in the state. In turn the RASTs would be a resource to the state in times of disaster. A second training was held in July 2016 where the draft Wisconsin Disaster Assessment Plan developed by WEM and AIA was presented. The Plan discusses the process and procedures for deploying the RASTs. An MOU between WEM and AIA Wisconsin was signed in April 2016. WEM and AIA continue to work together to finalize procedures, develop regional teams of volunteers, and credential team members. WEM is also working with the Code Officials Alliance in developing a Building Inspectors Mutual Assistance Agreement. Once an agreement is worked out, local building inspectors would provide mutual aid and assist other communities in the inspection of buildings damaged in a disaster. The same training and procedures used for AIA would be utilized with the municipal building inspectors.

WEM convened the RSF Subcommittee Chairs in July and August 2016 in response to flooding in northwest part of the state that resulted in a federal declaration for eight counties. Priorities for short- and long-term recovery were identified for the RSF Subcommittees. The entire WRTF met in September to address recovery needs not only for the counties included in the declaration, but also subsequent flooding that occurred in Buffalo and Trempealeau counties in August, and the ongoing bluff erosion in Racine and Kenosha counties. The WRTF will continue to meet to address recovery needs in declared and non-declared events in the state and ongoing recovery planning.

6.8.5 State Hazard Mitigation Staff

In addition to forming the IDRG, WEM realized that they would benefit from hiring a full-time State Hazard Mitigation Officer (SHMO). The SHMO was hired in August 1994. An Assistant SHMO was added in 1998, and a Disaster Response and Recovery Planner in 2003. In 2007, a

second Disaster Response and Recovery Planner was added, increasing the WEM hazard mitigation staff to four full-time employees. The Mitigation Section was created in 2012 and consists of the Section Supervisor, SHMO, and the two planners. Additional temporary staff is utilized when the need dictates. The SHMO is a Certified Floodplain Manager (CFM).

To maintain program proficiency and improve the program, mitigation staff avail themselves of training opportunities. This includes in-person training as well as webinars offered by FEMA at the national and regional level and other agencies in the area of environmental and historic preservation, benefit-cost analysis, grants management, HAZUS, mitigation planning, eGrants, climate change, and other topics. Staff participated in every national evaluation for the PDM program until it was suspended and have attended the annual hazard mitigation summits when held. Since June 2011 mitigation staff has participated in over 32 training offerings including attending classes at the FEMA Emergency Management Institute. This training increases the state's capability to develop and implement a comprehensive mitigation program.

Due to the efforts that the Mitigation staff has undertaken in the three-year open space monitoring requirement for acquired properties, one of the Disaster Response and Recovery Planners presented the state's process at the FEMA Region V Fall Conference in October 2015. The Section Supervisor presented on the topic at the Annual Hazard Mitigation Stakeholders Workshop in July 2016 at the Emergency Management Institute.

Through an EMAC request, in June 2014 the Section Supervisor assisted the State of Colorado in developing a methodology for reviewing, ranking, and selecting proposed HMGP projects.

The Supervisor and SHMO attended Emergency Management Accreditation Program (EMAP) training in October 2015, and participated in the subsequent assessment in August 2016. The WEM Administrator announced on October 14, 2016, that the state achieved accreditation.

6.8.6 Municipal Flood Control Program

The DNR administers the Municipal Flood Control program as defined by Ch. NR 199, Wisconsin Administrative Code. The program helps local governments minimize flooding and flood-related damages through various types of projects. Projects shall minimize harm to existing beneficial functions of water bodies and wetlands, maintain natural aquatic and riparian environments, use stormwater detention and retention structures and natural storage to the greatest extent possible, and provide opportunities for public access to water bodies and to the floodplain. The program provides grants to cities, villages, towns, tribes and metropolitan sewerage districts for projects such as property acquisition and removal of structures for permanent open space or flood water storage; acquisition of vacant land or flood water flowage easements to facilitate more efficient flood flows to the water body; floodproofing and elevation of public and private structures; flood water control detention ponds; riparian restoration projects on a watercourse; and flood mapping. The grants are offered every other year with the application date usually in the spring of even years. The state share may not be greater than 50% of the eligible project cost and no single recipient can receive more than 20% of the funding available.

The program priorities are:

1. Acquisition and removal of structures which, due to zoning restrictions, cannot be rebuilt or repaired.
2. Acquisition and removal of structures in the 100-year floodplain.
3. Acquisition and removal of repetitive loss or substantially damaged structures.
4. Acquisition and removal of other flood damaged structures.
5. Floodproofing and elevation of structures.
6. Riparian restoration projects, including removal of dams and artificial obstructions, restoration of fish and native plan habitat, erosion control and stream bank restoration projects.
7. Acquisition of vacant land, or perpetual conservation or flowage easements to provide additional flood storage or to facilitate natural or more efficient flood flows.
8. Construction of structures for the collection, detention, retention, storage and transmission of stormwater and groundwater for flood control and riparian restoration projects.
9. Preparation of flood insurance studies and other flood mapping projects.

Similar to the HMA acquisition/demolition requirements, the Municipal Flood Control grant program requires the removal of a structure on the property to be acquired for the development of permanent open space for flood storage or flood water flowage to a watercourse. Since the goals of the program are very similar to the HMA programs, DNR and WEM work closely together in funding mitigation projects, particularly acquisition and demolition of floodplain properties. Since the program is state funds, it can be used as local match to the HMA programs, and vice versa. The two agencies coordinate together to stretch the limited available dollars to fund as many eligible projects as possible.

6.8.7 Community Development Block Grant-Emergency Assistance Program

The Community Development Block Grant-Emergency Assistance Program (CDBG-EAP) is administered by the Wisconsin Department of Administration. CDBG-EAP funds are used to assist local units of government in addressing emergency housing, public facility, infrastructure, and business assistance needs that occur as a result of natural or manmade disasters. Such assistance may include, but is not limited to, housing rehabilitation, acquisition/demolition, housing replacement, road repairs, stormwater drainage, and public facilities. A local unit of government interested in applying for CDBG-EAP funds must do so within 90 days of the disaster event.

CDBG-EAP funds may be used to address damage caused by the disaster, including repair of disaster-related damage to the dwelling unit, including repair or replacement of plumbing,

heating, and electrical systems; acquisition and demolition of dwellings unable to be repaired; down payment and closing cost assistance for the purchase of replacement dwellings (assistance is limited to 50% of the pre-disaster equalized assessed value); publicly-owned utility system repairs; streets and sidewalks; and community centers.

The CDBG-EAP programs can assist in mitigating damages after a disaster, and work closely with WEM through the WSJHMT and the WRTF. The funds can be used to acquire and demolish damaged structures as well as elevate those that have been damaged by floods. CDBG has provided the local match on many HMA projects. Without those funds, communities would not have been able to implement their mitigation projects. After the 2008 floods, CDBG-EAP funds provided the local match on all of the HMGP grants, and provided additional funds to assist communities in their recovery efforts. They are especially instrumental in non-declared events, as they may be the only source of funding for recovery activities after an event.

6.8.8 Disaster Damage Aids Program

The Department of Transportation's Disaster Damage Aids (DDA) program provides financial assistance to local governments to repair any highway under its jurisdiction which is not part of the State Trunk Highway system and that has had significant damage caused by a disaster event. The program is governed by §86.34, Wisconsin Statutes. Funds may be used to repair a highway to match its pre-disaster condition (replacement) and to make changes to a highway, its drainage facilities, etc., to prevent similar damage from occurring in the future (improvements). The applicant pays a share of these replacement and improvement costs. DDA is a biennial program with annual appropriation levels. It is categorized as a sum-sufficient appropriation which means if further funding is needed it can be allocated in the amounts necessary. The DDA becomes the primary source of funding for road repair improvements (mitigation) after a disaster when there is no federal declaration.

6.8.9 EDA Disaster Recovery Collaboration

As discussed in 6.1.2, as a result of the 2008 flood disaster, the Economic Development Administration (EDA) provided grants to the Regional Planning Commissions in the disaster area for the development of Flood Recovery Strategies. To accomplish the tasks assigned, the Department of Commerce took the lead to coordinate the effort that was referred to as the EDA Disaster Recovery Collaboration. This group met monthly up through August 2011. WEM Mitigation staff participated in the collaboration by attending meetings and providing input. One of the outcomes of the group, again with the Department of Commerce as the lead, was the development of a Community Economic Recovery Guidebook to assist economic development organizations, businesses, and community leaders in preparation of economic recovery from a disaster. EDA is a member of the WSJHMT as well as the WRTF RSF Mitigation Subcommittee.

6.8.10 Wisconsin Coastal Management Program

Housed within the Department of Administration, the Wisconsin Coastal Management Program (WCMP) provides technical assistance and coordinates state resources to support the management of Wisconsin's Great Lakes coasts. The WCMP's duties include administering the Coastal Grant Program, which provides grants to communities for coastal resource protection, and overseeing initiatives on beach management, marina pollution reduction, and coastal natural hazards.

Three of the WCMP's main objectives are to provide technical assistance, support education and public outreach, and foster coordination between local governments and state agencies with respect to coastal issues. The Coastal Hazards Strategy, part of the WCMP's larger Wisconsin 2016-2020 Needs Assessment and Strategy, focuses on developing and/or enhancing government hazard policies through targeted outreach and technical assistance. Implementing this strategy includes reviewing and revising regulations and guidance relevant to coastal hazards at the state, regional, and local level, including state statutes, zoning ordinances, comprehensive plans, and informational documents. The WCMP also helps with the development and expansion of technical tools, including mapping and other visualization tools, to further support decision making and policy development.

WEM participates on the Coastal Hazards Work Group (CHWG) chaired by the WCMP. This group was formed to provide a forum for sharing information and opportunities related to coastal hazards. Members of the group work to formulate goals, strategies, and policies for managing coastal hazards, in addition to furthering the WCMP's goals of providing technical expertise, education and outreach, and planning support to Wisconsin's coastal communities. The CHWG meets bimonthly or as needed. The group also meets with representatives of the three coastal regional planning commissions and representatives of local governments as needed.

Examples of technical projects completed by CHWG members:

- The CHWG has helped to develop a number of online resources to help communities understand coastal processes. For example, CHWG partners used WCMP funds to collect oblique photographs of the Great Lakes shoreline in 1976 and 2007, which were then assembled into the Wisconsin Shoreline Inventory and Oblique Photo Viewer, an interactive web-based map.
- The WCMP funded a 2016 study on changes in bluff profiles conducted by UW-Madison researchers. The study compared 2012 LiDAR data to manual measurements taken in the 1970s in order to characterize changes over time.
- Beginning in 2016, the WCMP and the UW Sea Grant Institute are hosting a Coastal Fellow who will review and revise the *Coastal Processes Manual*, a document that provides important information and recommendations for coastal engineering.

Examples of education and outreach provided by CHWG members:

- The WCMP and ASFPM published three reports in 2016 featuring contributions from CHWG members: *Managing Coastal Hazard Risks on Wisconsin's Dynamic Great Lakes Shoreline*, *Coastal Ordinance Provisions in Wisconsin Communities*, and *Modern Studies of Coastal Erosion in Wisconsin*.
- The WCMP worked with WEM staff and other members of the Coastal Hazards Work Group to organize and hold Great Lakes Coastal Processes and Best Management Practices workshops in 2011-2012.
- CHWG members provided input to the Wisconsin Initiative on Climate Change Impacts (WICCI) Coastal Communities Working Group, leading to the development of the 2010 report *Climate Change and Wisconsin's Great Lakes Coastal Communities*.

Examples of CHWG coordination with municipalities and governmental agencies:

- CHWG members are currently supporting the local response to severe Lake Michigan bluff erosion in the Village of Mount Pleasant (Racine County) by providing technical advice, program coordination, information on funding opportunities, and outreach to coastal property owners.
- Members of the CHWG are contributing to the University of Michigan-funded *Integrated Assessment for Water Level Variability and Coastal Bluff Erosion in Northern Milwaukee County and Southern Ozaukee County*, led by the UW Sea Grant Institute. The study area ranges from the Shorewood/Milwaukee area (Milwaukee County) to Port Washington (Ozaukee County), including Whitefish Bay, Bayside, Mequon, and Grafton. Results of this interdisciplinary project will be combined with those of other teams working on the same issues in different areas (Michigan, Canada, etc.), with final deliverables anticipated in April 2017.
- CHWG members have been working to develop guidance for coastal communities impacted by recent changes to statewide shoreland zoning regulations. As part of this effort, a CHWG member recently updated a document titled *Managing Coastal Hazard Risks on Wisconsin's Dynamic Great Lakes Shoreline*, as well as supporting documents such as *Coastal Ordinance Provisions in Wisconsin Communities* and the *Coastal Erosion Model Ordinance*.

Agencies represented on the group include UW-Madison, UW Sea Grant Institute, the DNR, the WCMP, and WEM. The WCMP representative also serves on the Wisconsin Silver Jackets Hazard Mitigation Team. A link to the WEM Hazard Mitigation website is provided on the Wisconsin Coastal Management Program website.

6.8.11 State Agency Resource Working Group

The State Agency Resource Working Group (SARWG) was a statutory funded group of the Wisconsin Land Council administered through the Department of Administration, Division of Intergovernmental Relations. The Division is responsible for administering the Comprehensive Planning Grant Program for the state. Representatives from various state agencies participated

in promoting and cooperating on land use issues. As a mitigation action, WEM participated on the group to promote mitigation planning as part of the comprehensive planning process. The DOA representative on the SARWG also participates on the WSJHMT. With the sunset of the Wisconsin Land Council there is no statutory requirement or funding for the group. However, members continue to communicate and share information via email to promote comprehensive and mitigation planning.

6.8.12 Building Resilience Against Climate Effects (BRACE)

The BRACE Workgroup was formed in 2012 and is located in the Wisconsin Department of Health Services, Bureau of Environmental and Occupational Health (BEOH). The Wisconsin BRACE program studies and prepares for anticipated climatic effects on the public's health. The BRACE program seeks to expand partnerships, provide expertise, foster collaboration, and develop strategies that will address health risk factors related to severe weather event indicators. The BRACE program aims to develop climate adaptation strategies based on best practices and scientific knowledge to address health risks related to potential severe weather and climate-driven events.

The SHMO participates on the BRACE Workgroup and provided input into the BRACE Strategic Adaptation Plan. Staff from the BRACE project presented at the WHMT meeting December 2015 and discussed the Strategic Adaptation Plan. Climate and Health Toolkits were developed for Severe Thunderstorms and Tornados, Flood, Winter Weather, Extreme Heat, Drought, Wildfire, Harmful Algal Blooms, and Chemical Release and are posted on the DHS and the Ready Wisconsin websites.

The BRACE program conducted also a geo-spatial analysis of heat-related morbidity and mortality of the state and the greater Milwaukee urban area. This analysis resulted in a heat vulnerability index (HVI) based on existing population and census data, GIS environmental data layers, climate and weather data, and disease prevalence rates to identify areas of greatest risk for negative health impacts due to extreme heat. The countywide and tribal HVIs were shared with the counties and tribes to include in their preparedness and mitigation planning efforts.

In partnership with the UW Solid Waste and Hazardous Waste Education Center, and the Space Science and Engineering Center, BRACE developed a report on reducing risk of environmental impact from releases of hazardous materials from manufacturing facilities during extreme floods. They utilized several databases to identify manufacturing facilities located in 100-year floodplains; identified facilities likely to have hazardous materials or waste onsite; and provided targeted technical assistance to those companies at risk from spills or discharge from extreme flood events. They also developed guidance for manufacturing facilities, “Managing the Risk of Chemical Spills from Flooding: A Guide for Wisconsin Manufacturers.” This information was shared with county and tribal emergency managers to include in their preparedness and mitigation planning efforts. The Wisconsin Climate and Health Profile Report (PDF, 1.4 MB) summarizes the Wisconsin Building Resilience Against Climate Effects (BRACE) CDC grant project, Wisconsin’s climate and associated health impacts, and identifies which populations in

Wisconsin are most vulnerable to extreme weather events and climate impact.

6.8.13 Homeland Security Council

In March 2003, the Wisconsin Homeland Security Council was created by executive order to address the state's ability to prepare for and respond to threats to Wisconsin's homeland security. Every non-statutory committee or council created by executive order of the governor expires at the end of each gubernatorial term of office unless the new governor, by executive order, provides for its continued existence. Thus, the Wisconsin Homeland Security Council was re-created by Governor Scott Walker's Executive Order #6 in January 2011. New members were appointed to fill vacancies; however, the structure – consisting of 13 members and chaired by the Wisconsin Homeland Security Adviser – remains the same. In May 2013, Governor Walker expanded the membership of the Wisconsin Homeland Security Council to 16 members with Executive Order #101 to better protect the citizens and critical infrastructure of the state.

Major General Donald Dunbar, Adjutant General of the Wisconsin National Guard, is the Governor's Homeland Security Adviser. The Adviser and sixteen-member council is responsible for advising the Governor, coordinating state and local prevention and response efforts and producing periodic reports on the state of homeland security in Wisconsin. The Council works with local, state, federal, and tribal agencies; non-governmental organizations; and private industry to improve citizen and community preparedness. Other agencies on the Council are WEM; Department of Justice, Division of Criminal Investigation; Department of Health Services, Division of Public Health; Department of Administration, Divisions of Enterprise Technology and Capitol Police; Wisconsin Chiefs of Police Association; Badger State Sheriffs Association; DNR; Department of Agriculture, Trade and Consumer Protection; Department of Corrections; Public Service Commission of Wisconsin; City of Milwaukee Police Department; Wisconsin State Fire Chiefs Association; Department of Transportation, Wisconsin State Patrol; and the Wisconsin Chapter of the American Public Works Association. There are nine working groups.

The Interagency Working Group is chaired by WEM and comprised of representatives of the Departments of Administration; Agriculture, Trade and Consumer Protection; Corrections; Health Services; Children and Families; Justice; Natural Resources; and Transportation; the National Guard; and the UW Police. The Group was formed in the late 90's with its original focus on terrorism preparedness. Since that time, its mission has evolved to cover all hazards and all phases of emergency management. The Group meets monthly or more often if dictated by current events and acts as a support group to the Governor's Homeland Security Council.

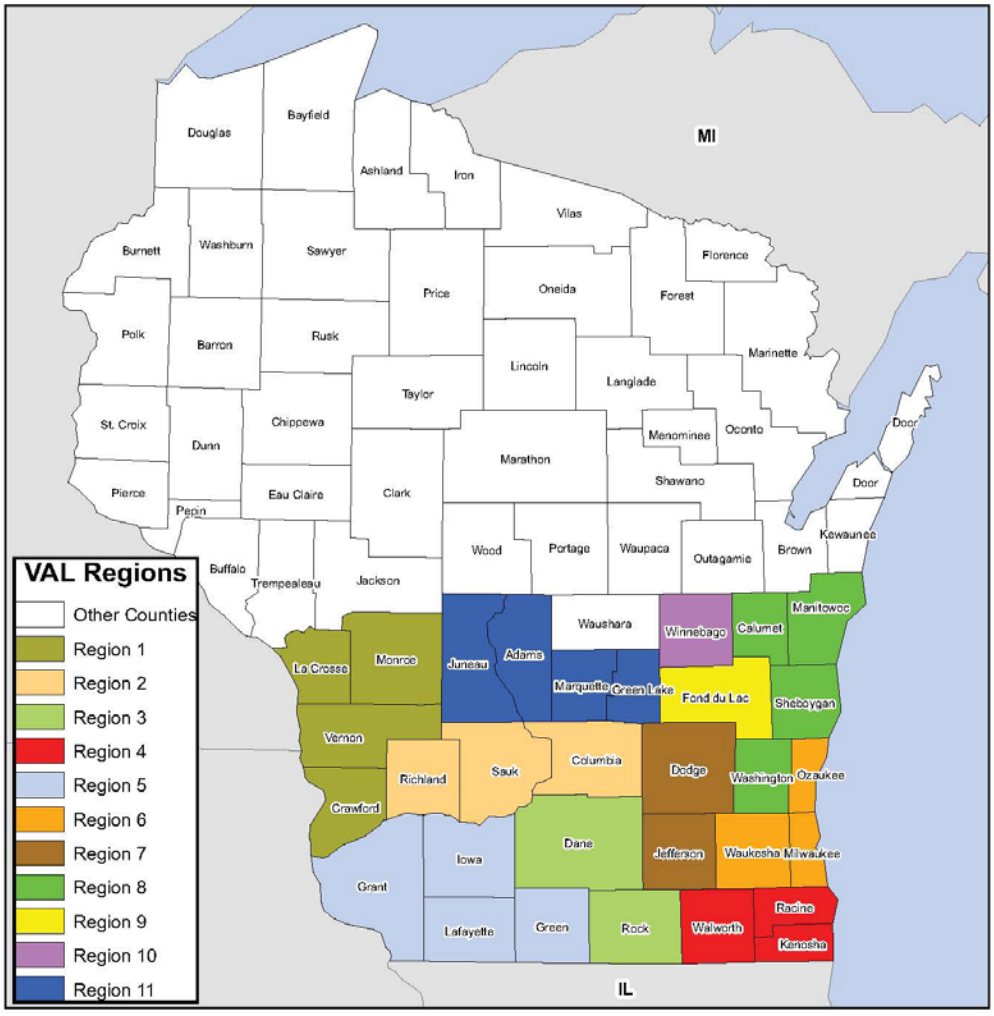
6.8.14 Wisconsin Voluntary Organizations Active in Disasters

Wisconsin Voluntary Organizations Active in Disasters (WIVOAD) is a humanitarian association of independent voluntary organizations who may be active in all phases of disaster. Its mission is to foster efficient, streamlined service delivery to people affected by disaster, while eliminating unnecessary duplication of effort, through cooperation in the four phases of disaster: preparation, response, recovery, and mitigation. Staff from WEM provides coordination and

assistance to WIVOAD members. WIVOAD has taken a lead role in long-term recovery and sponsors Long-Term Recovery Committees. These committees, using WIVOAD's 501(c)(3) tax exempt status, focus on fundraising, reaching out to individuals and families with unmet disaster needs, and providing services to them through a uniform case management process.

As a result of the floods of 2008, 11 Long Term Recovery Committees were created to assist in the flood recovery efforts addressing unmet needs of flood victims. WIVOAD has worked tirelessly to assist flood victims in their complex recovery issues. WEM Mitigation staff has also worked with the Long Term Recovery Committees in meeting unmet needs of those impacted by disasters particularly in those communities where HMGP buyout programs were implemented. Figure 6.1.4-1 shows the 11 Long-Term Recovery Committees from the 2008 Floods. The committees have continued to provide recovery assistance in events that have occurred since 2008.

Figure 6.8.14-1: WIVOAD Long-Term Recovery Communities



Source: Wisconsin Recovery Task Force, June 2008 Severe Storms, Tornadoes and Flooding, FEMA-1768-DR-WI, November 2008 Report to the Governor.

6.8.15 Public-Private Partnerships

In addition to working with the agencies on the WSJHMT, for the past several years WEM staff provided information on hazard mitigation programs and the planning process to groups and individuals through a variety of means. The previous plan update dated 2011 identified that WEM staff made presentations to the following groups: Wisconsin Emergency Management Association, Wisconsin Manufactured Housing Association, Wisconsin Land Information Association, American Planning Association, Wisconsin Utilities Association, the State Bar of Wisconsin, Association of Wisconsin Regional Planning Commissions, Great Lakes Inter-Tribal Council, Wisconsin Claims Council, University of Wisconsin-Madison Student Planning Association, Wisconsin Chapter of the Public Risk Managers Association, Wisconsin Association for Floodplain, Stormwater, and Coastal Managers, the LaFollette School of Public Affairs, and Southwest Building Inspectors Group. In addition, information was provided to communities receiving Community Development Block Grants on how they can incorporate mitigation into rehabilitation of housing stock. Presentations on hazard mitigation planning and its link to comprehensive planning and smart growth were made to the State Agency Resource Working Group of the Wisconsin Land Council, at a workshop for local officials on Complying with Comprehensive Planning and State Agency Resources.

WEM Mitigation staff continues its efforts to partner with and educate a variety of organizations.

WEM has been working with the Wisconsin Chapter of the American Institute of Architects (AIA) since 2014 in development of rapid damage assessment teams that would assist local governments assess the damages to structures during a disaster. WEM Mitigation and Recovery have participated in training sponsored by AIA in July 2014 and 2015. The training provided is based on the California Safety Assessment Program (SAP). The program utilizes volunteers and mutual aid resources to provide professional engineers, architects, and certified building inspectors to assist local governments in safety evaluation of their built environment in the aftermath of a disaster. The Wisconsin AIA Chapter is working with WEM to develop teams for each of the six regions in the state. In turn the Rapid Assessment Strike Teams (RASTs) would be a resource to the state in times of disaster. The Wisconsin AIA Chapter and WEM developed the draft Wisconsin Disaster Assessment Plan that discusses the process and procedures for deploying the RASTs. An MOU between WEM and AIA Wisconsin was signed in April 2016. WEM and AIA continue to work together to finalize procedures, develop regional teams of volunteers, and credential team members. WEM is also working with the Code Officials Alliance in developing a Building Inspectors Mutual Assistance Agreement. Once an agreement is worked out, local building inspectors would provide mutual aid and assist other communities in the inspection of buildings damaged in a disaster. The same training and procedures used for AIA would be utilized with the municipal building inspectors.

WEM is also a member of the national Association of State Floodplain Managers (ASFPM). The Mitigation staff participates in the quarterly mitigation calls and attends the annual conference where staff has presented on numerous occasions. In addition, they provide input on positons papers when requested. Staff has participated in several efforts since the last plan update. In

2014 staff participated in a study that ASFPM and the McKnight Foundation were developing looking at environmental benefits in the Rock River Watershed. Information and data were provided on cost-effective projects as well as those that were deemed not cost-effective in the watershed looking at how incorporating additional environmental benefits could have benefited the unfunded projects. The SHMO participates in the Planning Information Exchange regarding mitigation planning that ASFPM and the American Planning Association (APA) sponsors.

Mitigation staff has provided support to the Wisconsin Association for Floodplain, Stormwater, and Coastal Management (WAFSCM) since its inception in 2000. The SHMO in partner with a representative from the Milwaukee Metropolitan Sewage District were instrumental in the formation of the WAFSCM. In 2004, WAFSCM became a Chapter of ASFPM. The 2005 ASFPM annual conference was held in Madison where WAFSCM was the state sponsor. Mitigation staff was heavily involved in the national conference including the planning and preparedness activities. In addition, WEM coordinated a field trip to the City of Darlington to highlight the mitigation efforts of that community. Mitigation staff supports the association by participating in board calls and on several committees. In the past the SHMO has served in positions as Treasurer, Secretary, and Chair of the Membership Committee, as well as coordinated and published the newsletter. Presently the Section Supervisor chairs the Scholarship Committee, and several other staff members participate on the Conference Committee. Staff attends the annual conference providing support and equipment, and making presentations. WAFSCM sponsors training throughout the year. Most recently WAFSCM, in partner with ASFPM, sponsored E-273 Managing Floodplain Development through the NFIP, a four-day class. The Section Supervisor has received two awards for her efforts in supporting the organization including Chapter Service Award and Lifetime Achievement Award. In 2009 the SHMO nominated Donna Haugom, Jefferson County Emergency Management Director, and she received the Local Award for Excellence for her efforts in implementing mitigation in her county. In addition, Meg Galloway and Bill Sturtevant along with the DNR Dam Safety and Floodplain Management Section received the Excellence in Project Design and Implementation for their efforts in reconstructing Highway A in Wisconsin Dells after it failed in the 2008 flood. WEM nominated the City of Oshkosh received a 2016 award for Excellence in Project Design and Implementation. The project was construction of a detention pond that was funded through the HMGP. WAFSCM promotes the common interests in floodplain, stormwater, and coastal management to enhance cooperation between the various related private, local, regional, state, and federal agencies; and encourages and ensures effective, new, and innovate approaches to managing the state's floodplain, stormwater, and coastal systems.

The Regional Planning Commissions are one of WEM's strongest partners in mitigation planning. The RPCs have provided planning services to many of the counties in the development and update of all-hazards mitigation plans. In addition, the RPCs prepare grant applications for local governments to obtain federal and state assistance for many types of activities including mitigation grant applications for both planning and projects. After the 2008 floods, RPCs located in the southern part of the state worked with their respective local jurisdictions to assist in the completion of additional grant applications for recovery assistance. With the involvement of the RPCs in the state and local planning process, they are knowledgeable on both state and local

mitigation priorities and program requirements. Therefore, they are able to develop comprehensive project grant applications. Since there is a close relationship between the RPCs and the local governments, and a link between comprehensive and hazard mitigation planning, a representative from the Association of Wisconsin Regional Planning Commissions (AWRPC; formerly Council of Regional Planning Organizations) joined the Wisconsin Silver Jackets Hazard Mitigation Team (WSJHMT; formerly Wisconsin Hazard Mitigation Team) in 2003. This member serves as a conduit between the RPCs and the WHMT. Having an AWRPC member participate on the WSJHMT helps the state share resources, combine planning requirements, avoid duplication, and provide additional local and regional assistance to communities that choose to plan. This individual is also a member of the WRTF RSF Mitigation Subcommittee. The SHMO attended and presented information on mitigation planning at two AWRPC meetings, one in May 2012 and one in September 2015.

The Natural Resources Defense Council (NRDC) reached out to WEM Mitigation staff in the summer of 2015 to provide assistance in addressing changing future conditions in the 2016 update of the State Hazard Mitigation Plan. Throughout the past year, the council has worked with staff and provided guidance and assistance. After reviewing the existing State Plan and consulting with state staff, they provided two documents. The first provided ideas on how to incorporate projections of changing future conditions into hazard mitigation actions, regulations, and policies. The second contained recommendations for incorporating long-term costs and benefits of projects that build resilience to changing future conditions into FEMA BCA. Both documents will assist the state staff and the WSJHMT as they move forward in developing future mitigation strategies and form projects to reduce the impacts from changing future conditions. Several recommendations were considered and have been incorporated into the plan update.

WEM and DNR staff were contacted in early 2011 by the Environmental Law Institute (ELI) and the University of North Carolina (UNC) at Chapel Hill regarding collaborating together on a workshop on Wetlands, Wildlife Habitat, and Flood Hazards in the Rock River Basin. The workshop was held May 13, 2011, and was designed to facilitate a greater collaboration between emergency managers and wetland and wildlife conservation managers to strengthen protection of vital wetlands and floodplains. Wisconsin Wetlands Association was a sponsor in addition to the ELI and UNC. The workshop explored how different agencies and organizations can work together to meet multiple goals and identify the information needed and funding sources available for joint projects. Both WEM and the DNR made presentations at the workshop. Based on the workshop results the ELI and UNC developed a guidebook, Improving Community Resilience to Flooding in the Upper Midwest through Inter-Agency Collaboration, in 2014. Since the workshop held 2011, WEM Mitigation staff has continued to partner with the ELI, UNC, and the Wisconsin Wetlands Association by participating in their annual Wetlands, Wildlife Habitat, and Flood Hazards in the Rock River Basin webinar series. Staff participated in the webinar series and presented information in webinars on the hazard mitigation programs in October and November 2012; hazard mitigation assistance in buyout programs in August 2013; hazard mitigation programs in November 2014; and Rock River Flood Inundation Mapping Project in September 2015.

WEM Mitigation Section Supervisor participated on the Natural Hazards, Community Resilience, and Habitat Connectivity Advisory Committee in July 2015 and worked on a project to help communities leverage the potential value of properties acquired under federal hazard mitigation and other grant programs to achieve habitat benefits, connect fragmented habitats, and improve community resilience while engaging local residents and underserved communities. The project included the development of in-depth case studies of potential habitat and flood mitigation benefits of acquired properties in communities in four states including Wisconsin. As part of the committee, the Mitigation Section Supervisor identified communities for the case study, helped identify data to be used in the analysis, and will review the case studies, articles, and action guide and assist with outreach and dissemination of the final products.

Rural Electric Cooperatives (RECs) are integral to the State of Wisconsin and its communities. The first REC in Wisconsin energized its system in the spring of 1937 and the last REC energized its system in 1945. Today, there are 25 RECs in Wisconsin that generate, transmit and distribute electric power. Initial discussions of development of a REC Annex to the State of Wisconsin Hazard Mitigation Plan began in late 2007. Several RECs in the state had been recipients of hazard mitigation funding. WEM approached the Cooperative Network (at that time Wisconsin Federation of Cooperatives) to gauge the interest of the state's RECs in developing a REC Annex to the State of Wisconsin Hazard Mitigation Plan. The 2011 Plan included a REC Annex. In the 2015 HMA Guidance the requirement that RECs must participate in a mitigation plan to be eligible for project grants was removed. Because the state strongly believes in pre-disaster mitigation planning, whether required or not, we will continue to work with the electric cooperatives to update the REC Annex, although it may be completed at a later date than the main body of the State of Wisconsin Hazard Mitigation Plan.

In working with the RECs throughout the state, WEM staff learned that the RECs felt the biggest barrier to implementing mitigation projects through the HMA programs was passing the benefit-cost analysis (BCA). To address this issue, in 2015, WEM and FEMA staff jointly held a REC BCA Workshop in Black River Falls. Additionally, in early 2016, WEM staff, a Wisconsin Electric Cooperative Association representative, and a REC representative held a call with a FEMA BCA expert and worked through the BCA for a potential project using future damage probability instead of recorded past damages. This work will facilitate the implementation of REC mitigation projects. A representative of the Cooperative Network is a member of the WSJHMT as well as the RSF Mitigation and Infrastructure Subcommittees of the WRTF.

6.8.16 Public Education and Outreach

One of the challenges that WEM has faced has been keeping citizens, local officials, and emergency management staff informed about the importance of and need for hazard mitigation. Educating the public and local governments on topics like household preparedness, flood insurance, and federal assistance opportunities is an ongoing process. Since the Midwest Flood of 1993 and the 2008 floods, officials in the state have become much more alert to the probability of disaster striking and the need for mitigation to reduce future loss of life and economic damages.

WEM uses numerous strategies to disseminate mitigation information:

- Incorporating mitigation information in annual winter weather, tornado and severe weather, and flood awareness campaigns
- Publishing mitigation information on the WEM website
- Including mitigation articles in the DNR and WAFSCM newsletters
- Integrating mitigation elements in all county-level Damage Assessment Workshops as well as the Introduction to Emergency Management, and the Disaster Response and Recovery Operations Workshop. The last two are part of Wisconsin's Certified Emergency Manager program.
- Conducting an All-Hazards Mitigation Planning Workshop annually to educate local officials, emergency management staff, planners, consultants, and others about the mitigation planning process and plan components. The workshop again is part of Wisconsin's Certified Emergency Manager program.
- Conducting G-393, Introduction to Mitigation for Emergency Managers, twice a year to educate local officials, emergency management staff, planners, consultants, and others about developing mitigation programs at the local level. The workshop again is part of Wisconsin's Certified Emergency Manager program.
- Sponsoring training such as Benefit-Cost Analysis, HAZUS, Buyout Workshops, and Safe Room Workshops
- Creating timely workshops, such as Project Application Development, Buyout Workshops, BCA for Rural Electric Cooperatives, and Safe Room Workshops, and others for communities in need of training following a disaster event
- Participating in Risk MAP discovery, open houses, community outreach, and resilience meetings

In addition, when a disaster strikes, WEM educates local governments and the public about their options and what help is being offered by different agencies, including FEMA. Mitigation staff attends the Public Assistance Applicant Briefings and presents information regarding mitigation opportunities and funding. WEM participates in Substantial Damage Workshops conducted by FEMA and DNR providing information on the mitigation programs and how they can provide assistance to property owners whose properties are determined substantially damaged. Both WEM and DNR staff attend community meetings throughout the declared area. Their focus is to discuss the National Floodplain Insurance Program (NFIP), the Hazard Mitigation Grant Program (HMGP) and other recovery issues.

State Mitigation staff takes every opportunity given to spread the word about mitigation and disaster resilience. This is demonstrated by some of the numerous outreach activities identified below for this five-year plan update.

- April 2011: FEMA Region V webinar - Village of Gays Mills Recovery and Mitigation

- May 2011: Wetlands, Wildlife Habitat, and Flood Hazards in the Rock River Basin Workshop
- October 2011: Yahara Lakes Watershed Advisory Group
- March 2012: County Code Administrators Conference
- May 2012: Climate Change Workshop at the State Capitol
- May 2012: Regional Planning Commission Council
- June 2012: Coastal Hazards Process and Best Management Practices – Milwaukee
- August 2012: Coastal Hazards Process and Best Management Practices – Ashland
- October and November 2012: Wetlands, Wildlife Habitat, and Flood Hazards in the Rock River Basin webinar series
- April 2013: Completed an interview for the WEM website
- April 2013: Brief the Homeland Security Council on BW-12
- July 2013: Wisconsin Public Radio interview on flooding and mitigation in the southwest part of the state
- September 2013: Upper Mississippi River Conference, Davenport, Iowa
- August 2013: Wetlands, Wildlife Habitat, and Flood Hazards in the Rock River Basin webinar series
- October 2013: Annual WAFSCM Conference presentation on the disaster declaration process
- November 2013: Interview for video with Wisconsin Geological and Natural History Survey on groundwater monitoring and the Spring Green mitigation project
- March 2014: Governor's Conference on Emergency Management presentation on BW-12, GW Act, and the SRIA; and Damage Assessment
- October 2014: Annual WAFSCM Conference on a mitigation panel with Jefferson County and the DNR
- March 2015: Safe Room Workshop (presented twice in Dodgeville)
- May 2015: Safe Room Workshop in the West Central Region
- May 2015: BCA for Rural Electric Cooperatives, Black River Falls
- July 2015: University of Wisconsin-Green Bay, Master Academy for Civic and Public Affairs, City of Darlington's Recovery and Mitigation: Experiences and Successes
- July 2015: Planning for Integrated Assessment of Water Level Variability and Coastal Bluff in Northern Milwaukee County and Southern Ozaukee County
- September 2015: Safe Room Workshop in the Southwest Region
- September 2015: Association of Regional Planning Commissions

- September 2015: Wetlands, Wildlife Habitat, and Flood Hazards in the Rock River Basin webinar series on the Rock River Flood Inundation Mapping Project
- October 2015: WEM All-Hands Meeting presentation on the Rock River Flood Inundation Mapping Project
- November 2015: WAFSCM Annual Conference presentation on the Rock River Flood Inundation Mapping Project
- March 2016: Annual Governor's Conference presentation on the Rock River Flood Inundation Mapping Project
- April 2016: University of Wisconsin-Madison presentation on natural hazard resilience and planning
- September 2016: E-273 Managing Floodplain Development in the NFIP, Waukesha

In the development of the first State of Wisconsin Hazard Mitigation Plan and the subsequent three-year update, Mitigation staff utilized a Household Natural Hazards Preparedness Questionnaire. The questionnaire was developed from a survey developed by the Oregon Natural Hazards Workgroup at the University of Oregon's Community Service Center. The questionnaire included the State Plan's mitigation goals and asked the individual completing the questionnaire to provide their opinion of the importance of the goals. The questionnaire had general questions designed to help gauge household preparedness and the individual's knowledge of mitigation tools that may be available. The questionnaire was interactive and could be completed on WEM's website. In addition, the survey was distributed at various WEM training sessions, speaking engagements that Mitigation staff attended, and the Annual Governor's Conference on Emergency Management.

6.8.17 Non-Federal Match for HMGP

The FEMA mitigation programs require a 75/25 cost-share with a few of exceptions. Since 1990 the state has provided half of the non-federal match for the HMGP grants. The federal, state, and local mitigation dollars listed below show the commitment to the HMGP. Through the coordination with the WSJHMT, other state agencies funded the local match requirements for many projects, particularly when they involved acquisition and demolition, or funded projects in their entirety. After the 2008 floods, the Department of Commerce, Division of Housing (now in the Department of Administration) committed Community Development Block Grants to fund the entire local match for the HMGP grants that involved acquisition and demolition and/or elevation.

Figure 6.8.17-1: Hazard Mitigation Grant Program Funding History 1991-2016

Disaster	Federal Share	State Share	Local Share	Total
*912-DR-WI	$54,342	$27,171	$27,171	$108,684
*959-DR-WI	$19,434	$9,717	$9,717	$38,868
*963-DR-WI	$188,187	$94,093	$94,093	$376,373

Disaster	Federal Share	State Share	Local Share	Total
*964-DR-WI	$195,537	$97,768	$97,768	$391,073
994-DR-WI	$10,503,364	$1,750,559	$1,750,559	$14,004,482
1131-DR-WI	$258,395	$43,066	$43,066	$344,527
1180-DR-WI	$4,516,254	$752,709	$752,709	$6,021,672
1236-DR-WI	$1,325,761	$220,960	$220,960	$1,767,681
1238-DR-WI	$3,294,156	$549,025	$549,025	$4,392,206
1284-DR-WI	$604,500	$100,750	$100,750	$806,000
1332-DR-WI	$3,034,202	$505,698	$505,698	$4,045,598
1369-DR-WI	$2,994,056	$499,009	$499,009	$3,992,074
1429-DR-WI	$455,707	$75,951	$75,951	$607,609
1432-DR-WI	$568,297	$94,714	$94,714	$757,725
**1526-DR-WI	$1,224,548	$204,087	$204,087	$1,632,722
1719-DR-WI	$3,033,568	$505,595	$505,595	$4,044,758
1768-DR-WI	$17,512,811	$2,918,800	$2,918,800	$23,350,411
1933-DR-WI	$10,944,078	$1,824,012	$1,824,012	$14,592,102
1944-DR-W	$611,926	$101,988	$101,988	$815,901
1966-DR-WI	$1,626,806	$271,134	$271,134	$2,169,074
4076-DR-WI	$1,570,599	$261,767	$261,767	$2,094,133
4141-DR-WI	$994,261	$165,710	$165,710	$1,325,681
***4276-DR-WI	$3,750,000	$625,000	$625,000	$5,000,000
***4288-DR-WI	$1,650,000	$275,000	$275,000	$2,200,000
Total	**$70,930,789.00**	**$11,974,283**	**$11,974,283**	**$94,879,354**
Average	**$2,955,450**	**$498,928**	**$498,928**	**$3,953,306**

(Does not include Administrative or State Management Costs)
* Cost share was 50% federal/25% state/25% local. HMGP was 10% of Public Assistance permanent repairs only.
** HMPG was based on 7.5% of Individual and Public Assistance programs.
*** Based on Preliminary Damage Assessment.

6.8.18 Construction Standards

Wisconsin has adopted commercial building codes. The Wisconsin Commercial Building Code includes SPS 361-366 and the adopted provisions of the 2009 International Code Council codes: International Building Code, International Energy Conservation Code, International Mechanical Code, International Fuel Gas Code, and International Existing Building Code. The Commercial Code protects the health, safety, and welfare of the public and employees by establishing

minimum standards for the design, construction, maintenance, and inspection of public buildings, including multi-family dwellings and places of employment.

In addition to the Commercial Codes, Wisconsin has adopted the Uniform Dwelling Code (UDC) for one- and two-family dwellings SPS 320-360. The UDC provides construction and remodeling requirements for work done after June 1, 1980. Beginning January 1, 2005, all municipalities are required to enforce the Code. Enforcement involves submitting building plans to obtain a building permit, and having electrical, construction, plumbing, and HVAC inspections during construction.

The state Department of Safety and Professional Services (DSPS) reviews plans prior to construction for compliance with state statutes and building codes. The DSPS administers and issues certification licenses and registrations for approximately 44,000 individuals in 64 categories for specific trades. Annual continuing education classes are conducted for building codes used for design, construction, and inspection.

6.8.19 State Facilities, Infrastructure, and Critical Facilities

A key component of this Plan is the identification of those state-owned or -operated critical facilities that are vulnerable to various types of hazards. This information can be used to guide the development and implementation of cost-effective mitigation measures. These measures will help to reduce or eliminate identified vulnerabilities to the most critical assets of state government. Ideally this will help ensure that these state assets remain operational in times of disaster or emergency to provide for the continuation of emergency operations, continuity of government, critical public safety, health care, transportation, and educational functions, and the provision of other essential services to the public.

The Wisconsin Department of Administration (DOA) is the best available source of information on state-owned and -operated assets. DOA provided WEM an inventory including assets ranging from small storage sheds to large multi-story office buildings. The inventory totals 6,579 critical and non-critical state-owned and -operated buildings, infrastructure, and facilities. WEM reviewed all 6,579 records. During the review, assets were categorized as critical or non-critical.

Critical facilities were defined as state-owned or -operated facilities deemed essential due to their function, size, service area, uniqueness, delivery of vital services, and for the protection of the health and safety of citizens including buildings and infrastructure that meet characteristics such as the following:

- Communications facilities;
- Correctional facilities and other custodial facilities, including facility utility services;
- Utility services, including: electrical power generation, heating, wastewater treatment, water treatment, etc.;

- Hospitals and other medical facilities, including: group homes, shelters, mental health facilities, etc.;
- Major state government facilities that house key state operations;
- Critical military facilities; and
- Emergency response facilities, including: law enforcement, security, fire, etc.

Approximately 16.5%, or 1086, of the total assets are designated as critical facilities. The largest percentage 35.9%, or 390, of the critical facilities are identified with the Department of Corrections. The total replacement cost of critical facilities is approximately $5.56 billion dollars. Over 90% of this amount is comprised of assets from four agencies: Department of Corrections at 31.1%, or $1.7 billion; University of Wisconsin System at 25.2%, or $1.4 billion; Department of Administration at 21.2%, or $1.2 billion; and Department of Health Services at 13.4%, or $745 million.

The THIRA (see Appendix A) includes an analysis of vulnerability and loss estimation to state-owned and -operated critical facilities. The analysis included reviewing the state inventory and, where possible, correcting incorrect or adding missing information. If a critical asset could be reasonably identified on aerials photographs, the latitude and longitude was added. Information was included on the number of critical facilities, replacement cost, and average replacement cost by county. Critical facilities located in a FEMA Special Flood Hazard Area were identified.

To get a more accurate risk assessment there needs to be site-specific information. The information in the State Facility Database is a good start, but additional information is required to determine hazard vulnerability for each building and to further develop a strategy to mitigate the losses from identified hazards.

6.8.20 Post-Disaster Recovery Operations

Hazard mitigation is an integral part of Wisconsin's post-disaster recovery operations. WEM Mitigation staff participates in the Preliminary Damage Assessment process to identify potential mitigation opportunities. In addition, staff assists in the preparation of documentation for the Governor's request letter for a federal disaster declaration. State Mitigation staff coordinates with the state and federal agencies on the Wisconsin Silver Jackets Hazard Mitigation Team and the Wisconsin Recovery Task Force that may have technical or funding assistance available to communities during the recovery process. State Mitigation staff co-locates with federal Mitigation and NFIP staff at the Joint Field Office as soon as it opens. State and federal Mitigation and NFIP staff work cooperatively to develop a post-event Mitigation Strategy. The Strategy identifies mitigation activities such as community mitigation education and outreach, coordination with other disaster assistance programs, mitigation project development, and National Flood Insurance Program mitigation opportunities and promotion. State Mitigation staff attends and participates in the Public Assistance Applicants Briefings and provides information regarding hazard mitigation programs including hazard mitigation opportunities through the Public Assistance program (Section 406). State Mitigation staff also attends and

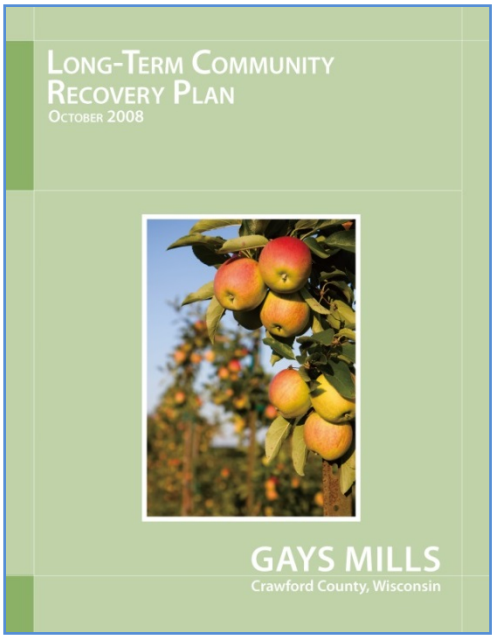
participates in any Substantial Damage Determination training workshops for zoning and local officials and provides information regarding mitigation opportunities for properties determined to be substantially damaged. State Mitigation staff works closely with Public Assistance staff to ensure that all possible 406 hazard mitigation opportunities are pursued and funded. State Mitigation staff provides technical assistance to all respective grant applicants on project development techniques and proper documentation for environmental and cost effectiveness reviews. (See Section 7.4.1 and 7.4.2, and Appendix F, State Administrative Plan for HMGP.)

The State Hazard Mitigation Officer chairs the RSF Mitigation Subcommittee on the Wisconsin Recovery Task Force. The RSF Mitigation Subcommittee is made up of members of the WSJHMT. The Subcommittee works closely with the other five RSF Subcommittees to assist local governments during the recovery phase in declared and non-declared disasters.

6.8.21 Gays Mills Recovery Efforts

In August 2007 and June 2008, the Village of Gays Mills was struck with two back-to-back floods. Both events were greater than the 500-year flood event and caused substantial damage to the Village's residential and business districts. The Village of Gays Mills resides in a valley surrounded by steep bluffs and hills. The Village is located within the unglaciated region of southwest Wisconsin and the Kickapoo River winds through the valley.

After the first flood hit in 2007, WEM worked with the community to help them in the recovery process. 1719-DR was declared. The Village was unsure if it should consider relocation of the town at that time. The Village did decide to proceed with the acquisition and demolition of those structures closest to the river and most severely damaged, and elevation of other substantially damaged structures. The State Hazard Mitigation Officer attended many community meetings to discuss the HMGP and other grant funding opportunities.



The Village did not have time to catch its breath before the next flood came in June 2008, less than 10 months from the previous flood. The HMGP projects of acquisition/demolition and elevation had not commenced and the structures were again flooded. In addition to those homes and business that were flooded in 2007, additional structures were affected in 2008. Many homeowners that were considering elevations decided they did not want to go through another flood in their present location and instead switched to acquisition/demolition, which required the 1719-DR HMGP application to be amended.

The Village also had several other hard choices to make after the 2008 flood. The 2008 flood forced village officials and citizens to seriously consider relocation of their town. The state requested FEMA assistance through

ESF-14: Long Term Community Recovery. The Long Term Community Recovery team developed a Long Term Flood Recovery Plan for the Village.

Gays Mills Conceptual Design

The Recovery Plan process involved a series of meetings and workshops for the community. It was incredibly important for state and federal partners to attend the recovery events because ultimately, it is the responsibility of the state, with the help of the federal and other agencies, to assist in the implementation of the plan. Two planning charrettes were held on August 20 and 21, 2008 and WEM Mitigation staff along with representatives from USDA-Rural Development and the Mississippi River Regional Planning Commission attended the two-day session. On September 18 and 19, 2008 a community meeting and design charrette were held, respectively. The State Hazard Mitigation Officer attended the meeting and the charrette along with representatives from USDA-Rural Development and FEMA. On October 20, 2008, the ESF-14 team made a presentation of the draft plan to the community. At that meeting, priorities were discussed and representatives from WEM, the Mississippi River Regional Planning Commission, USDA-Rural Development were present. The final plan was presented to the community on October 31, 2008.

However, the interagency cooperation and effort did not end when the ESF-14 Team left. WEM coordinated two strategy meetings on November 19, 2008, and December 2, 2008, with several members of the WHMT/WRTF. The Department of Commerce, USDA-Rural Development, the Mississippi River Regional Planning Commission, FEMA, EDA, HUD, WHEDA, Coulee CAP, and WEM attended the meeting and reviewed all of the projects identified in the Flood Recovery Plan. Through discussion, the agencies identified which projects were possibly fundable by their programs and which were not. Ultimately, the task of the group was to package funding to assist in as many projects as possible.

On December 15, 2008, all of the agencies met with the Gays Mills Long Range Planning Committee and other interested citizens to discuss the funding options available. The State Hazard Mitigation Officer led the meeting and discussed which agencies could potentially fund which projects. It was a very productive meeting which provided direction and hope for the community.

Two relocation sites just north of the existing downtown were purchased by the Village. The site known as North Mills was for mixed use of residential housing and businesses. Originally two five-unit townhouses were constructed. They were so successful that two more multi-family housing units were constructed. In additional, property owners who participated in the buyout program rebuilt in the site.

Gays Mills Mercantile Center

The Village completed construction of a mercantile center to house relocated businesses, and the Community Commerce Center that houses the new Village Hall, library, and a community center with a community kitchen. Sustainability was one of the Village's goals. With that in mind the new Community Commerce Center includes energy efficient systems including geo-thermal heating and cooling. In addition, the grocery store, gas station, and funeral home have all relocated to the new site. The EMS building which was substantially damaged in 2007 relocated to the second site known as Dudgeon north of the Community Commerce Center along with a new public works building. In the future the Village would like to see a small health clinic and assisted living facility along with additional businesses at the second site. The Village also wants to construct a new Fire Station. Through the HMGP, 29 residential and three commercial properties were acquired and demolished and an additional five properties were elevated at a cost of $1,573,482.

Approximately $18 million was provided to assist the Village in its recovery from the devastating floods of 2007 and 2008. FEMA, WEM, EDA, USDA-Rural Development, Wisconsin Department of Commerce, Department of Natural Resources, Wisconsin Department of Transportation, Department of Health Services, as well as private investors have all provided funding.

Gays Mills is an excellent example of the State of Wisconsin's commitment to a comprehensive mitigation program but not the only community that the state is working to assist in flood recovery. Throughout the recovery process, the state and federal agencies have coordinated and integrated mitigation into operations.

Gays Mills September 2016 Flooding: Elevated Structures Near Previous Buyouts

As this Plan is being updated, the Kickapoo River in the Village rose above flood stage from rains that occurred on September 21-22, 2016. A federal declaration was granted on October 20 for ten

counties including Crawford. Most of the Village was under water, but losses were significantly reduced due to past mitigation. Houses elevated remained dry while neighboring properties where past buyouts occurred were inundated with floodwaters. A success story will be produced featuring this mitigation effort.

6.8.22 National Efforts

State Mitigation staff provides input and participates on panels, workgroups, and committees as requested by FEMA Regional or Headquarters Offices. Staff participated on FEMA's HMA National Evaluation every year until it was suspended. Mitigation staff also attends and participates in the FEMA Region V Spring and Fall Workshops as well as any annual HMA summits and workshops held. Staff participated in the following FEMA-sponsored activities:

- PPD-8 Mitigation Stakeholder Engagement webinar, December 2011, January 2012, and March 2012
- FEMA Think Tank Conference in Milwaukee, January 2012
- FEMA Region V RISC Meeting, September 2014
- FEMA Grants Modernization Workshop, January 2016

Due to the efforts that the Mitigation staff has undertaken to meet the three-year open space monitoring requirement for acquired properties, one of the Disaster Response and Recovery Planners presented the state's process at the FEMA Region V Fall Conference in October 2015. The Section Supervisor presented on the topic at the Annual Hazard Mitigation Stakeholders Workshop in July 2016 at the Emergency Management Institute.

The SHMO participated on the Enhanced Plan Review Procedures Work Group and the External Stakeholder Work Group for Mitigation Plan Review Process from 2011 to 2013. In addition, the Mitigation Section Supervisor participated on the Recovery Pre-Disaster Planning Guidance for States, Tribes, and Territories Workgroup in December 2013 and January 2014.

The SHMO participated on the National Review Panel for the State of Maryland, Washington, and Florida to review their first enhanced plans. In addition, another Mitigation staff member sat on the panel that reviewed the second update of the State of Washington's enhanced plan.

Staff participates in National HAZUS calls as well as the Central HAZUS Users Group (CHUG).

Staff participated in the HUD National Disaster Resiliency program call and webinar in November 2015. In addition, staff participated in a Co-Mentoring across Resilient Communities through HHMA Resilient Neighbors Network webinar in February 2013; and a Whole Community Sheltering Planning Conference in January 2014.

Staff also participates in webinars and workshops sponsored by the US Army Corps of Engineers. This includes:

- Flood Risk Management Team Webinar, November 2011

- Silver Jackets Webinar Week, August 2013
- Regional Flood Risk Management Flood Preparedness Workshop, February 2014
- Flood Risk Management Workshop in Massachusetts, August 2014 and December 2015

Through an EMAC request, in June 2014 the Section Supervisor assisted the State of Colorado in developing a methodology for reviewing, ranking, and selecting proposed HMGP projects.

Wisconsin is committed to working with FEMA in the future to improve and streamline programs, policies, and procedures.