



Hazard Mitigation Strategy

FEMA-4326-DR-MI

Declared August 2, 2017

Individual Assistance in Bay, Gladwin, Isabella, and Midland Counties and the
Saginaw Chippewa Tribe within Isabella County; Hazard Mitigation statewide



FEMA



HAZARD MITIGATION STRATEGY

OBJECTIVES AND PRIORITIES

FEMA-4326-DR-MI

Declared August 2, 2017

Declaration

On August 2, 2017, President Donald Trump issued a major disaster declaration for the State of Michigan, making available federal Individual Assistance (IA) to eligible applicants in Bay, Gladwin, Isabella, and Midland counties and the Saginaw Chippewa Tribe within Isabella County due to severe storms and flood damage that occurred between June 22 and June 27, 2017. In addition, federal Hazard Mitigation Grant Program (HMGP) funding was made available statewide. On August 10, 2017, a FEMA/Michigan Joint Field Office (JFO) was established in Midland, Michigan.

Purpose

This joint Hazard Mitigation Strategy identifies action items and plans for activities following the disaster declaration for FEMA-4326-DR-MI. It provides the steps for implementing short- and long-term cost-effective solutions to reduce statewide disaster damage from future events and provides guidance to the JFO and state hazard mitigation staff. The priorities listed here are consistent with Michigan Hazard Mitigation Plan, approved by FEMA on April 23, 2014, as a Standard State Mitigation Plan under the Disaster Mitigation Act of 2000.

Background of Flooding Event

Flooding struck the counties of Bay, Gladwin, Isabella, and Midland beginning on June 22, 2017, and continuing through June 27, 2017. The flooding was caused by a storm system moving over central Michigan starting in the evening of Thursday, June 22, and continuing through the early morning of Friday, June 23. The storm produced historically heavy rainfalls of five to eight inches in parts of Bay, Gladwin, Isabella, and Midland counties in less than 12 hours, resulting in riverine flooding and sewer backups. Officials from the National Weather Service indicated that Mount Pleasant, a city within Isabella County, received 7.62 inches of rainfall from 12 AM on June 23 to 12 AM on June 24, which was the second most rain received in a 24-hour period since weather observations began in Mount Pleasant in 1895. NOAA's precipitation records show that some areas received up to 9.6 inches of rain over the incident period. The heavy rainfall was the result of rain and thunderstorms that occurred in a near-tropical environment rare to Michigan.

Midland County and Isabella County, including the Saginaw Chippewa Tribe reservation, were hit the hardest by the storm system. The National Weather Service rainfall totals show that by 10 AM

on June 23, Midland County received 7.31 inches, Isabella County received 6.7 inches, Bay County received 6.28 inches, and Gladwin County received 3.2 inches. The bulk of the rainfall in all four counties was received in a six- to nine- hour period from late hours on June 22 through early morning on June 23.

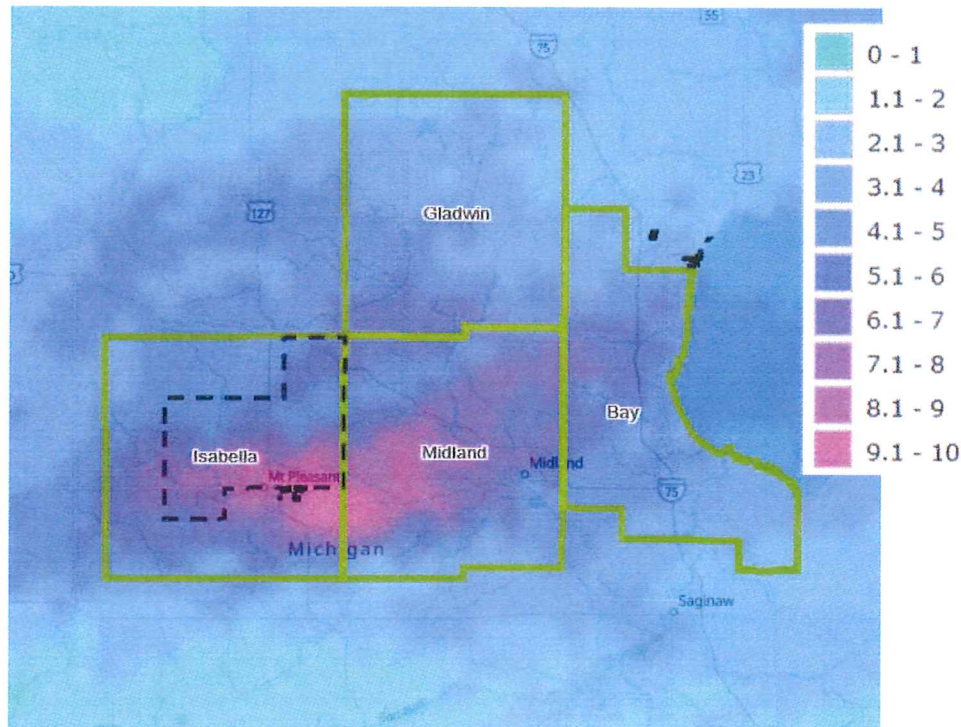


Fig. 1 NOAA's National Weather Service precipitation values in inches from June 22-27, 2017

Across the affected area, the heavy rainfall overwhelmed rivers, creeks and tributaries. The Chippewa River and Tittabawassee River reached Major Flood Stage. The Tittabawassee River, after not cresting until June 24, was the last river to fall under flood stage on June 27, five days after the initial rainfall. The Tittabawassee River crested at 32.15 feet—1.74 feet below the historic crest on September 13, 1986, which resulted in both a Governor's Declaration of a Disaster and Presidential Declaration of a Major Disaster (DR-774). During this same event, the Chippewa River also experienced its second highest crest in history at 14.77 feet, which is .81 feet below the historic crest on September 12, 1986.

The rain also affected municipal and county storm drains; caused flash flooding and sewer backups that flooded thousands of homes and businesses; stranded motorists on flooded roads; and forced the closure of major sections of area railways and state and interstate highways for several days.

Damage to flooded homes and businesses was particularly severe. The damage typically was the result of a few inches to several feet of water in basements, but some floodwaters reached the first finished floor, causing significant damage to foundations and other structural elements. In

addition, water on the first finished floor damaged interior construction and personal property. Many homes incurred substantial damage to the foundation walls and footings, electrical and mechanical systems, finished living spaces, and personal property. Preliminary Damage Assessments determined that 318 homes were destroyed or sustained major damage, and 367 homes sustained minor damage.

There was a uniform lack of insurance for flood hazards in the affected areas. Michigan's initial assessments, confirmed later by PDA teams, show that an average of 70 percent of the affected households do not have flood insurance or sewer backup insurance policies that would have covered the damage most commonly incurred in this disaster, that being: structural damage to walls and foundations, damage to electrical and mechanical systems, damage to home furnishings, wall treatments, and flooring, loss of appliances such as washers and dryers, and loss of televisions, computers, clothing, and other personal property. Major components of homes—water heaters and furnaces—were destroyed.

Additionally, flood damage caused by sewer backups into basements is not covered under a standard flood insurance policy; rather, a separate sewer backup rider must be purchased (where available) as part of a homeowners insurance policy. Unfortunately, damage surveys indicate that an average of 70 percent of the households from all four affected counties do not have such coverage and therefore are left to absorb whatever losses they incurred out-of-pocket. For most affected households, sewer backups resulting from the extensive rainfall caused the majority of the flood damage to their homes. Although some households may potentially be eligible for limited financial compensation for sewer backup damage under Michigan's Governmental Liability for Negligence Act (1964 Public Act 170, as amended, MCL 691.1401 to 691.1419), the amount received, in most cases, will not cover the entirety of their losses.

Numerous local jurisdictions were severely impacted by the flooding, and over 1,021 homes, businesses and non-profits were damaged or affected significantly. Damages were particularly concentrated in the Saginaw Chippewa Isabella reservation, City of Midland, City of Mount Pleasant, City of Pinconning, Union Township, Homer Township, Lee Township, and Greendale Township. These areas had particularly notable concentrations of public and private damage. For example, a heavily populated portion of the Saginaw Chippewa Isabella reservation had major roads impassable and dozens of damaged and affected structures, including a hospital and mental health facility, in neighborhoods where poverty rates are more than double the state and national averages, and have unusually high percentages of renter-occupied households.

The concentration of damage within these small geographic areas magnifies the impact of this disaster faced by the affected communities, including the tribe and the four counties as a whole. Assessments of private damage conducted by county and local assessors exceeded \$118 million.

Joint Preliminary Damage Assessments for Individual Assistance and Public Assistance were conducted from July 5 through July 8, 2017 in the four counties. On July 21, 2017, Governor Rick Snyder requested that Individual Assistance be activated for the designated communities, and the

Hazard Mitigation Grant Program statewide. On August 2, 2017, the major disaster declaration was issued (Appendix 1).

Strategic Goals

Goals, objectives and tasks have been established for this disaster for the FEMA Hazard Mitigation Branch: Floodplain Management and Insurance (Goal 1); Grants and Planning (Goal 2); Community Education and Outreach (Goal 3); and Hazards and Performance Analysis (Goal 4).

The goals of the FEMA Hazard Mitigation Branch are based on the current State Hazard Mitigation Plan, the conditions in the State and the priorities of the Federal Coordinating Officer (FCO), and are as follows:

- GOAL 1: FEMA will provide technical assistance to the State of Michigan and communities for post-disaster NFIP compliance and insurance issues and outreach opportunities
- GOAL 2: FEMA will partner with the State of Michigan to assist communities in the development of hazard mitigation plans and projects
- GOAL 3: FEMA will promote effective hazard mitigation through community education, outreach, training and coordination with individuals, communities, and non-governmental organizations
- GOAL 4: FEMA will provide engineering and technical data to enable communities affected by this disaster to become less vulnerable to future events

HAZARD MITIGATION BRANCH MANAGEMENT

FEMA Hazard Mitigation Branch Management advises the FCO on all hazard mitigation issues, manages the Hazard Mitigation Branch operation in the JFO, provides Federal leadership by forging partnerships to provide effective planning and recovery strategies at the State, Tribal and local levels, and assures the public gets timely and effective information to mitigate the effects of future hazard events.

I. FLOODPLAIN MANAGEMENT AND INSURANCE

Long-term mitigation can best be achieved through consistent enforcement of comprehensive local floodplain management regulations. In support of local officials' important work, the Michigan Department of Environmental Quality (MDEQ) and FEMA will provide technical assistance and training to affected communities in meeting NFIP requirements. FEMA targeted outreach will be conducted to reduce myths about flood insurance availability and coverage. FEMA will reach out to educate insurance agents about basement flooding and provide information about the differences in coverage between flood insurance, homeowners insurance and sewer backup insurance.

GOAL 1: FEMA will provide technical assistance to the State of Michigan and communities for post-disaster NFIP compliance and insurance issues and outreach opportunities

Objective 1.1 - FEMA will assist state and local efforts regarding post-disaster NFIP compliance.

- FEMA will conduct NFIP outreach to non-participating communities, including the Saginaw Chippewa Tribe.
- FEMA and MDEQ will provide Michigan-specific floodplain management training for State and local officials. This activity will occur sometime in 2018.
- FEMA and MDEQ will provide technical assistance to communities for NFIP substantial damage requirements. A Community Assistance Contact will be conducted with the City of Midland as part of this effort.

Objective 1.2 - FEMA will target insurance outreach to the needs of affected individuals, insurance agents, and communities in the affected area.

- The FEMA Region V Flood Insurance Liaison and Michigan NFIP State Coordinator will contact the Michigan State Insurance Commissioner's office to discuss identified insurance trends from this event and to develop a coordinated Federal/State agent outreach plan for flood insurance in Michigan.
- FEMA will assist the State in providing targeted outreach to insurance agents and the public in the designated area. This activity will include messaging on flood insurance availability, Preferred Risk Policies, and basement coverage.
- FEMA will provide insurance data and analysis, as requested, to state, local and tribal agencies.
- FEMA will support a September 2017 Emergency Preparedness Month outreach event to encourage the purchase of flood insurance in Midland County.

II. GRANTS AND PLANNING

Michigan has an approved Standard State Mitigation Plan (approved on April 23, 2014) as outlined in Section 322 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (the Stafford Act). Per the guidelines established under Section 404 of the Stafford Act, the State is eligible to receive funding under the Hazard Mitigation Grant Program (HMGP). This funding is based on 15 percent of the total estimated federal disaster assistance and is available to all eligible applicants statewide. All submitted project applications will be rated and ranked by the State based on the State's funding priorities.

GOAL 2: FEMA will partner with the State of Michigan to assist communities in the development of hazard mitigation plans and projects

Objective 2.1 - FEMA will implement the HMGP with the Michigan State Police/Emergency Management and Homeland Security Division (MSP/EMHSD).

State Responsibilities:

- Submit the HMGP Administrative Plan*
- Provide technical assistance on HMGP for local officials using the 2015 Hazard Mitigation Assistance Guidance
- Perform the initial review of the HMGP applications to ensure that all information and documentation is provided
- Submit SF 424 and Assurances for the Disaster*

*Needs to be submitted/approved before any obligations occur

FEMA Responsibilities:

- Review and approve the HMGP Administrative Plan
- Provide technical assistance to the State, as necessary
- Provide State with 30-day and 6-month estimate, and 1-year lock-in amounts
- Review and approve eligible and complete applications submitted by the State



Fig. 2 Success Story: Photograph of Hazard Mitigation Assistance (HMA) buy-outs in Midland, MI

Objective 2.2 - FEMA will assist the State in solicitation of quality Hazard Mitigation Assistance applications from eligible communities by conducting training and providing technical assistance.

- FEMA will provide the initial estimate of State Management Costs to MSP/EMHSD, who will submit a request for State Management Costs in accordance with 44 CFR Section 207.
- At the request of the State of Michigan, FEMA will coordinate the delivery of the full suite of available Hazard Mitigation Assistance (HMA) Grants Management training, post JFO, to allow for more complete HMA applications to be submitted to the State.
- FEMA will meet with the Michigan Citizen-Community Emergency Response Coordinating Council (MCCERCC) to discuss hazard mitigation and HMA applications, which is aligned with their mission to “reduce, prevent, and prepare for emergencies or disasters.”
- FEMA will pilot an analysis of repetitive loss and severe repetitive loss data within the designated counties for MSP/EMHSD’s use in planning for and prioritizing Hazard Mitigation Assistance applications. The small scale of the event lends itself to this opportunity.
- MSP/EMHSD will solicit Notices of Intent (to Apply) from eligible applicants. MSP/EMHSD will review HMGP Notices of Intent.

- FEMA will provide support to MSP/EMHSD in establishing processes and procedures for soliciting interest from eligible sub-applicants to apply for HMGP and other HMA funds.
- FEMA and MSP/EMHSD will coordinate efforts to ensure potential HMA subapplicants are able to take advantage of both pre- and post- disaster grant programs wherever possible in an organized fashion that maximizes mitigation opportunities.
- FEMA staff will assist MSP/EMHSD with limited on-site assessments of potential HMA projects.
- FEMA will provide assistance to MSP/EMHSD with the application process from development through submission.

Objective 2.3 - FEMA will assist the State in prioritizing planning projects and supporting local hazard mitigation plan development.

- MSP/EMHSD will contact counties statewide that currently lack a mitigation plan, or will have a plan expire in the next two years, to provide HMA application information on planning grants to finance mitigation plan development.
- FEMA and MSP/EMHSD will provide technical assistance to counties developing mitigation plans as needed (may include in-person training, webinars, and/or guidance).
- FEMA will provide support and technical assistance to MSP/EMHSD as needed for update of the State Hazard Mitigation Plan that will expire in April 2019.

Objective 2.4 - FEMA will provide nation-to-nation technical assistance to the Saginaw Chippewa Tribe with respect to hazard mitigation planning and projects.

- FEMA will assist the Saginaw Chippewa Tribe in scoping the possibilities for a hazard mitigation plan.
- FEMA will provide HMA application information to the Saginaw Chippewa Tribe on planning grants to finance mitigation plan development.
- FEMA will provide technical assistance to the Saginaw Chippewa Tribe and guidance on 44 CFR 201.7 tribal planning regulations.
- FEMA will provide information and outreach on opportunities for hazard mitigation projects and application development.

III. COMMUNITY EDUCATION AND OUTREACH (CEO)

Individuals and communities must understand the hazards that pose a risk to them and the options for reducing those risks in order to make informed decisions not only about mitigation but also about where to live or purchase property. Individuals are often unaware of the risks they face.

When disasters occur, local jurisdictions face numerous challenges. One of these challenges is creating an awareness of how to properly recover from and mitigate against future disaster events. The FEMA Hazard Mitigation CEO team can assist communities with this challenge by designing and implementing an intensive public awareness and education campaign geared toward disaster-specific issues.

GOAL 3: FEMA will promote effective hazard mitigation through community education, outreach, training and coordination with individuals, communities, and non-governmental organizations

Objective 3.1 - FEMA will assist the State in the creation of products to deliver the mitigation message to the citizens of Michigan.

- FEMA and MSP/EMHSD will capture and develop Best Practice and Success Stories including a Bay County detention basin and a Midland County acquisition and demolition—both HMA projects implemented in the designated areas that performed well in DR-4326.
- FEMA and MSP/EMHSD will disseminate Best Practices through the FEMA and MSP/EMHSD websites, Michigan Hazard Mitigation Success Stories (Publication 106a), and/or direct transmission to potential HMA subapplicants.
- FEMA, in coordination with MSP/EMHSD, will create a document for residents on HMA grants with county-level points of contact (Appendix 4).

Objective 3.2 - FEMA will offer direct outreach and education on insurance and mitigation measures that may be taken to minimize damage from future disasters.

- FEMA will develop and implement a plan to staff mitigation tables at six home improvement stores across the disaster area, focusing on the areas hit hardest by the storm, to make additional contact with residents in impacted areas (Appendix 5).
- FEMA Hazard Mitigation will coordinate with FEMA External Affairs to disseminate information on flood insurance to the public in the designated area.
- FEMA will provide staffing and resources to deliver information on hazard mitigation topics relevant in DR-4326, such as the installation of sewer backflow valves, NFIP (and Preferred Risk) flood insurance policies, sewer backup insurance riders, and the elevation of basement utilities to visitors at the following sites:

Site	Address	City	County
Disaster Recovery Center 1	1407 West Carpenter Street	Midland	Midland
Disaster Recovery Center 2	4855 East Blue Grass Street	Mount Pleasant	Isabella
Disaster Recovery Center 3	4101 Wilder Road	Bay City	Bay
Disaster Recovery Center 4	555 West Cedar Road	Gladwin	Gladwin
Midland County Fair	6905 Eastman Avenue	Midland	Midland
Home Improvement Store 1	3128 Jefferson	Midland	Midland
Home Improvement Store 2	4615 Encore Drive	Mt. Pleasant	Isabella
Home Improvement Store 3	2864 East Wilder Road	Bay City	Bay
Home Improvement Store 4	630 North Silverleaf Street	Gladwin	Gladwin
Home Improvement Store 5	1100 Joe Mann	Midland	Midland
Home Improvement Store 6	5650 East Prickard Road	Mt. Pleasant	Isabella
Business Recovery Center*	220 West Main Street	Midland	Midland

Objective 3.3 - FEMA will conduct training and informational sessions on pressing mitigation issues to JFO staff.

- FEMA Hazard Mitigation will conduct training to Individual Assistance staff in the JFO on the role of mitigation in a disaster, placing emphasis on the connections between Individual Assistance and Hazard Mitigation.
- FEMA Hazard Mitigation will coordinate with FEMA Individual Assistance to provide a briefing to Michigan Voluntary Organizations Active in Disasters to incorporate mitigation methods and techniques in rebuilding and repair of damaged structures.
- FEMA Hazard Mitigation will offer an informational session to JFO Leadership on NFIP Community status definitions and Hazard Mitigation planning deadlines and important disaster-related implications.

IV. HAZARD PERFORMANCE ANALYSIS (HPA)

The FEMA HPA Section provides engineering, economic and scientific analysis in support of hazard mitigation programs. It is the focal point for data collection and analysis in support of hazard mitigation initiatives for all disaster services.

GOAL 4: FEMA will provide engineering and technical data to enable communities affected by this disaster to become less vulnerable to future events

Objective 4.1 - FEMA will develop a *Best Available Flood Hazard Data Executive Summary* to specifically identify and describe all available flood hazard mapping products in the designated counties.

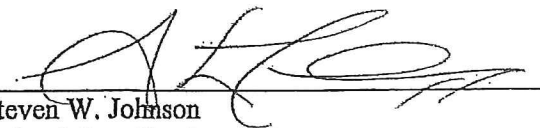
- HPA will create a *Best Available Flood Hazard Data Executive Summary* as soon as possible and provide it to the State of Michigan, local jurisdictions, and all other federal recovery programs (Appendix 6). This summary will enable stakeholders to make informed rebuilding decisions during the recovery process.

Best Available Flood Hazard Data


Bay County			
Community	Effective FIRM Date	Preliminary FIRM Date	Ongoing Study
Bay Countywide	9/17/2010		
Bay City LOMR	3/10/2017		
Coastal Communities		TBD	Lake Huron Coastal Project; Draft Workmaps Planned for May 2018
Gladwin County			
Community	Effective FIRM Date	Preliminary FIRM Date	Ongoing Study
Gladwin Countywide	6/20/2018 (Projected)	3/27/2015	90 Day Appeals Period for Revised Preliminary FIRM held July – October 2016
Hay Township	9/22/1999		
Isabella County			
Community	Effective FIRM Date	Preliminary FIRM Date	Ongoing Study
Isabella Countywide	5/4/2009		None
Midland County			
Community	Effective FIRM Date	Preliminary FIRM Date	Ongoing Study
Midland Countywide	5/4/2009		None
Multi-panel Revision	1/6/2013		
City of Midland Revision	2/4/2014		

SUMMARY

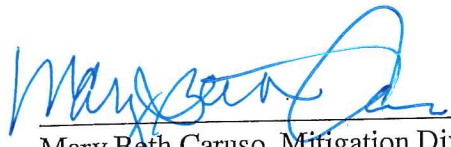
The mitigation objectives and activities identified in this Hazard Mitigation strategy will be implemented through a strong FEMA/State partnership dedicated to preventing loss of life and property to the citizens of Michigan. The FEMA-4326-DR-MI JFO staff will provide a smooth transition to Region V office personnel at the point when coordination with the State is optimal.


Steven W. Johnson
Federal Coordinating Officer
FEMA-4326-DR-MI

9-8-17
Date

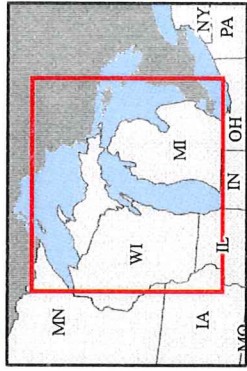

Captain Chris A. Kelenske
State Coordinating Officer
FEMA-4326-DR-MI

9/8/17
Date


Mary Beth Caruso, Mitigation Division Director
U.S. Department of Homeland Security
FEMA Region V

9/8/17
Date

FEMA-4326-DR, Michigan Disaster Declaration as of 08/02/2017



Data Layer/Map Description:
The types of assistance that have been designated for selected areas in the State of Michigan.

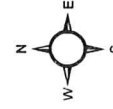
All areas in the State of Michigan are eligible for assistance under the Hazard Mitigation Grant Program.

Designated Tribe

The Saginaw Chippewa Tribe within Isabella County.

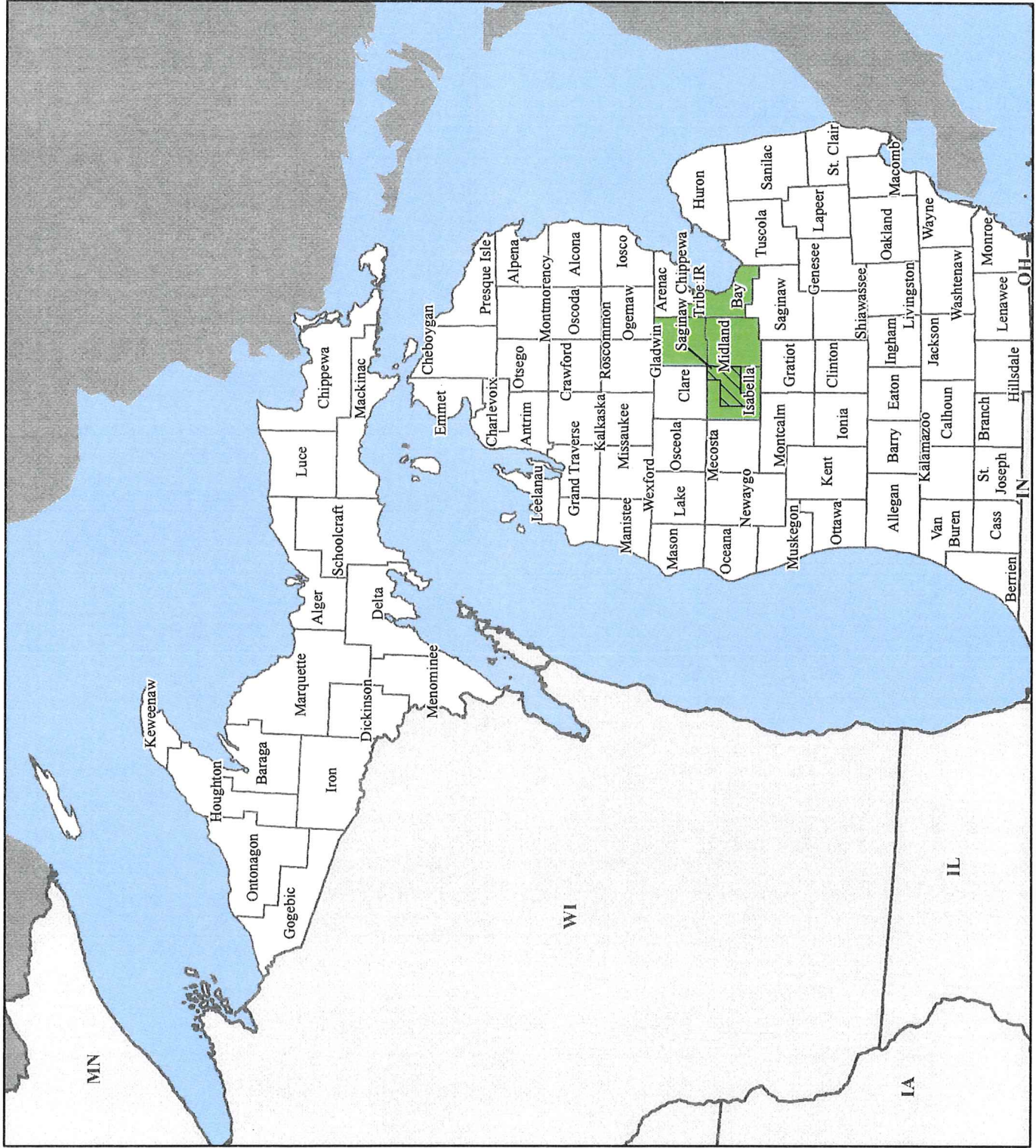


Designated Counties



Data Sources:

FEMA, ESRI;
Initial Declaration: 08/02/2017
Disaster Federal Registry Notice: 08/02/2017
Datum: North American 1983
Projection: Lambert Conformal Conic



APPENDIX 2

Sanctioned Communities in the Designated Area

Community Name	County	Current Effective Map	Sanction Date
Larkin, Township of	Midland	1/16/2013	05/04/2010
Lincoln, Township of	Isabella	02/05/2014	01/07/1999
Mount Forest, Township of	Bay	9/17/2010	6/18/1997

APPENDIX 3

Hazard Mitigation Plan Status in the Designated Area

Plan Title	Plan Status	Expiration Date
State of Michigan	Approved	04/23/2019
Bay County	Expired	03/09/2016
Gladwin County	Approved	09/29/2021
Isabella County	Approved	09/29/2021
Midland County	Approved	01/20/2019
Saginaw Chippewa Tribe	No Plan	N/A

HAZARD MITIGATION ASSISTANCE GRANTS

FEMA's Hazard Mitigation Grant Program, Pre-Disaster Mitigation grant program, and Flood Mitigation Assistance grant program can provide assistance to communities for the purpose of preventing future damages from natural disasters. Some examples of grants available include:

- **purchase of homes in Special Flood Hazard Area (and clearing the land for future open space uses)**
- **elevation of flood prone homes**
- **community flood mitigation projects**

Please note that the community applies for the grant, not individuals.

If you have questions or interest, please contact your county office below.

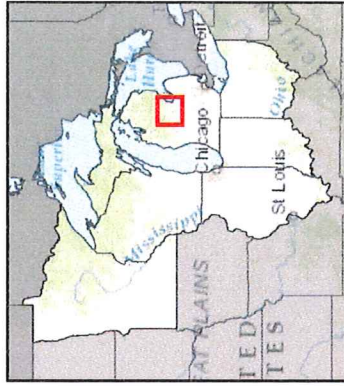
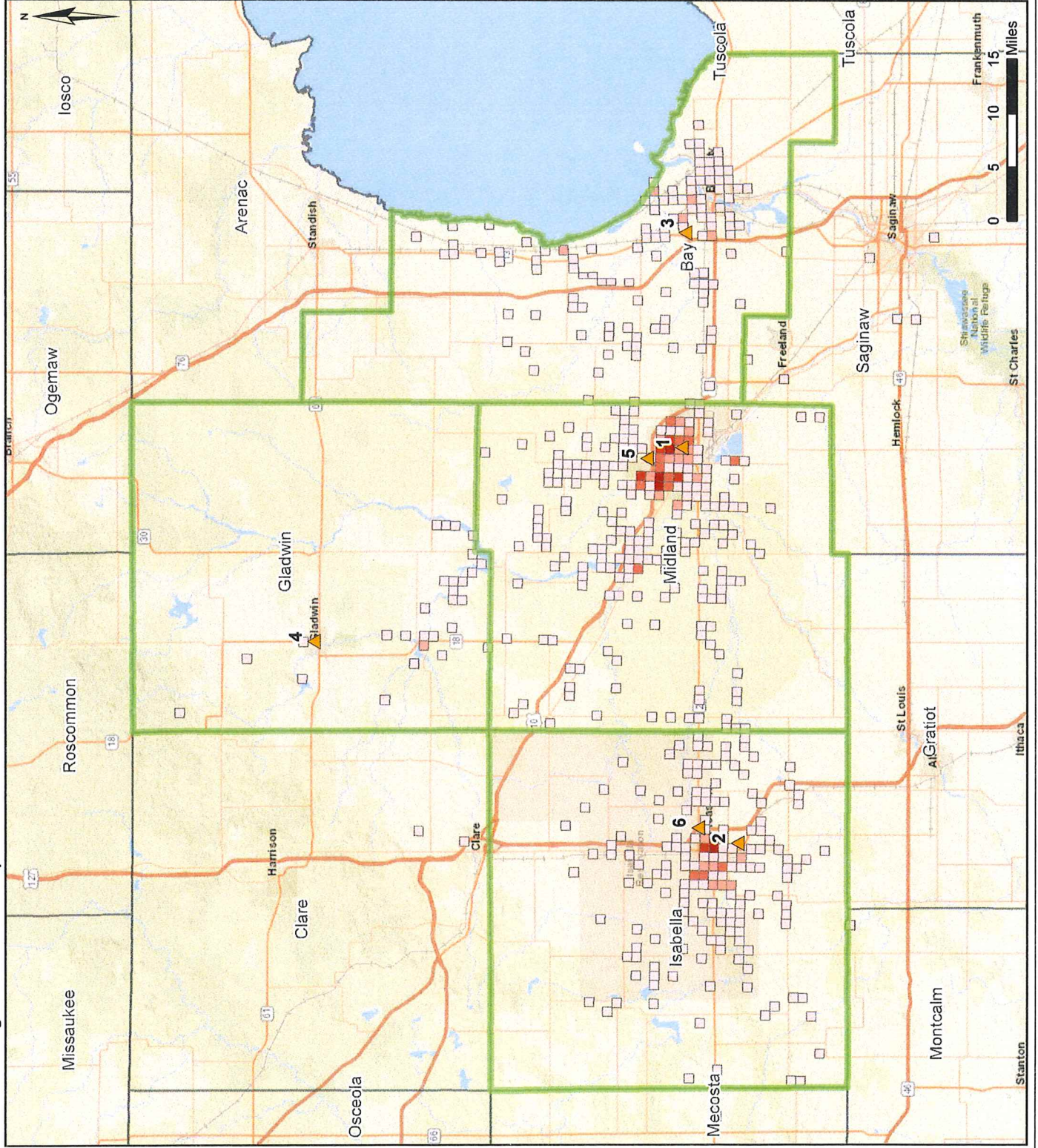
**Bay County Office of Emergency Management
Phone Number: 989-895-4112**

**Gladwin County Office of Emergency Management
Phone Number: 989-426-6871**

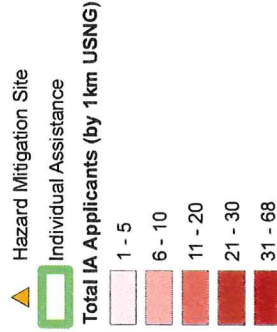
**Isabella County Office of Community Development
Phone Number: 989-317-4061**

**Midland County Office of Emergency Management
Phone Number: 989-832-6750**

FEMA-4326-DR-MI - Severe Storms and Flooding **Hazard Mitigation Home Improvement Store Outreach Locations**



Data Layer/Map Description:
 Individual Assistance has been designated for Bay, Gladwin, Isabella and Midland Counties and the Saginaw Chippewa Tribe within Isabella County.



Site #	Week of Visit Date
1	21-Aug
2	28-Aug
3	3-Sep
4	11-Sep
5	18-Sep
6	26-Sep

Map Notes:
 Map Scale 1:800,000
 Version: 1. 8/18/2017
 Data Sources: ESRI, FEMA, HIFLD Open
 Coordinate System:
 WGS 1984 World Mercator
 Projection: Mercator
 Datum: WGS 1984



APPENDIX 6

U.S. Department of Homeland Security
FEMA Region V
536 South Clark Street, 6th Floor
Chicago, IL 60605



DATE: August 23, 2017

MEMORANDUM FOR: Steven W. Johnson, Federal Coordinating Officer

FROM: Duane Castaldi, FEMA-4326-DR-MI, Hazard Mitigation Group Supervisor

Best Available Flood Hazard Data Executive Summary: FEMA-4326-DR-MI

FEMA has the responsibility to help ensure that communities affected by the disaster become less vulnerable to the loss of life and property from future disasters and in doing so is committed to provide best available flood hazard information to foster better risk-informed decisions after this event.

The Flood Insurance Rate Map (FIRM) is a regulatory product produced by FEMA. It becomes effective and is adopted by the community in order to participate in the National Flood Insurance Program (NFIP). The mapping process includes multiple phases and the development of a FIRM spans multiple years. It should be understood that data changes over time and best available data may change over the course of recovery. To be consistent with 44 CFR 9.11(d)(6), no project shall be built to a floodplain management standard that is inconsistent with the NFIP or less restrictive community floodplain management regulations.

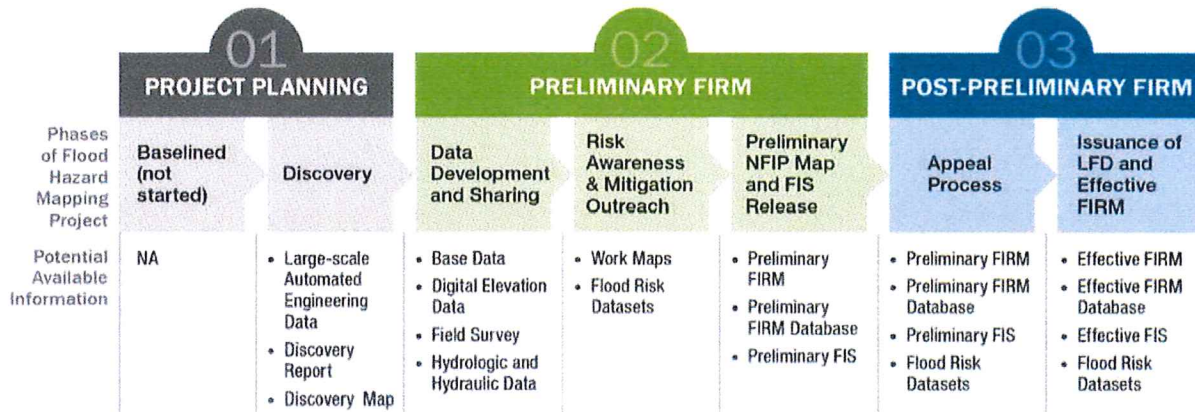
When an effective FIRM or Flood Insurance Study (FIS) is revised, FEMA draft work maps and preliminary FIRMs and FISs are developed during a study. The information from a draft map or preliminary FIRM and FIS may serve as best-available information if a site previously located outside the floodplain is now designated to be in the floodplain or that the existing FEMA BFE at the site has increased. If the preliminary study shows that the FEMA BFE has decreased, it is recommended that agencies wait until a Letter of Final Determination (LFD) has been issued to use the new, lower FEMA BFE as best-available information.

Available FIRMs and more detailed information on specific panels can be obtained at FEMA's website: www.msc.fema.gov. Modeling and other data used to create maps can be ordered from the FEMA Engineering Library: www.fema.gov/engineering-library.

APPENDIX 6

U.S. Department of Homeland Security
FEMA Region V
536 South Clark Street, 6th Floor
Chicago, IL 60605

The phases of a FEMA Flood Hazard Mapping project are shown below:



The status of the effective FIRM, FIS and active or completed Letters of Map Revision (LOMR), and available preliminary FEMA flood hazard information for Bay, Gladwin, Isabella, and Midland Counties in Michigan are identified below:

Bay County			
Community	Effective FIRM Date	Preliminary FIRM Date	Ongoing Study
Bay Countywide	9/17/2010		
Bay City LOMR	3/10/2017		
Coastal Communities		TBD	Lake Huron Coastal Project; Draft Workmaps Planned for May 2018
Gladwin County			
Community	Effective FIRM Date	Preliminary FIRM Date	Ongoing Study
Gladwin Countywide	6/20/2018 (Projected)	3/27/2015	90 Day Appeals Period for Revised Preliminary FIRM held July – October 2016
Hay Township	9/22/1999		
Isabella County			
Community	Effective FIRM Date	Preliminary FIRM Date	Ongoing Study
Isabella Countywide	5/4/2009		None
Midland County			
Community	Effective FIRM Date	Preliminary FIRM Date	Ongoing Study
Midland Countywide	5/4/2009		None
Multi-panel Revision	1/6/2013		
City of Midland Revision	2/4/2014		

Floodplain Management

In order to minimize future flood damages, communities participating in the NFIP should use work maps, Preliminary or Effective FIRMs and FISs. Currently, as noted in the Table there are several ongoing mapping efforts that would impact the BFE on the Effective FIRMs and FISs in the affected counties in Michigan. Communities are required to use the best information available, defined as the source which provides the most restrictive flood hazard zone, the highest BFE and/or the greatest discharge. As FIRMS and FISs are updated, effective BFE and floodway information will be required for regulating floodplain development in accordance with 44 CFR 60.3(b)(4).

The best available information is the source which provides the most restrictive flood hazard zone, the highest BFE and/or the greatest discharge. Projects funded by FEMA, such as those receiving provisions through a HM-406 or HM-404 grant, must be designed to the best flood risk information available and State or local floodplain management standards, whichever is more restrictive. FEMA has provided this Memo detailing available flood study information to be assessed and incorporated into mitigation and recovery decisions in areas impacted by severe storms and flooding

Floodplain Management Definitions

Floodplain Management: The operation of an overall program of corrective and preventive measures for reducing flood damage, including but not limited to, emergency preparedness plans, flood-control works and floodplain management regulations.

Flood Insurance Rate Map: Official map of a community on which FEMA has delineated the Special Flood Hazard Areas (SFHAs), the Base Flood Elevations (BFEs) and the risk premium zones applicable to the community.

Flood Insurance Study: A compilation and presentation of flood risk data for specific watercourses, lakes, and coastal flood hazard areas within a community. When a flood study is completed for the NFIP, the information and maps are assembled into an FIS. The FIS report contains detailed flood elevation data in flood profiles and data tables.

Letter of Map Revision: An official amendment to the currently effective FEMA map. It is issued by FEMA and changes flood zones, delineations and elevations.