PROPOSED AGENDA
REGULAR MEETING OF THE CHARLOTTE CITY COUNCIL
111 E. Lawrence Ave, Charlotte, MI 48813 (517) 543-2750
7:00 P.M. Monday, June 23, 2025

Interested persons can participate in-person or via Zoom
Connect to Zoom from your computer, tablet, or smartphone
Website: https://us02web.zoom.us/j/87979143970
One tap mobile: +16465588656,,87979143970#
Telephone: (312) 626-6799 Webinar ID:879 7914 3970

1. **Call to Order**

2. **Roll Call**

3. **Invocation – Andy Shaver - Real Life Church**

4. **Pledge of Allegiance**

5. **Approval of Minutes**
   a. June 09, 2025 Regular Council Meeting Minutes

6. **Absence of Council Members**

7. **Public Hearing**
   a. Ordinance 2025-05 Mobile Food Vending

8. **Public Comment -** Limit presentation to five (5) minutes. Attendees desiring to address council who are participating with ZOOM may raise your hand now or if attending via a phone call, press *9 (star nine) on your keypad

9. **Approval of Agenda**

10. **Communications and Committee Reports**
    a. City Attorney Report
    b. City Staff Reports
    c. Councilmember Committee Reports

11. **Consent Agenda**
    a. Approval of Claims and Expenditures totaling $1,244,976.93

12. Business Agenda

a. Second reading and consider approval of ordinance 2025-05 Mobile Food Vending
b. Consider approval of Resolution 2025-29 Fee Schedule effective July 13, 2025
c. Consider approval of two (2) 2025 Chevrolet Police Tahoe's through Berger Chevrolet, in the amount of $107,742.00
d. Consider approval of transition from BS&A.NET Version to BS&A Cloud Platform, in the amount of $118,300
e. Resolution 2025-30 To authorize the acceptance and adoption of the Multi-Hazard Mitigation Plan (MHMP) update
f. Consider approval of LOU - Update to SEIU Union Appendix A: Service Truck Operator Premium
g. Consider approval of LOU – Update to SEIU Union Appendix A: Environmental Services Coordinator

13. Public Comment - Limit presentation to five (5) minutes. Attendees desiring to address council who are participating with ZOOM may raise your hand now or if attending via a phone call, press *9 (star nine) on your keypad

14. Staff Comments

15. Mayor and Council Comments

16. Recess to Closed Session

a. Pursuant to MCL 15.268(a) of the Michigan Open Meetings Act (PA 267 of 1976, as amended), for the purpose of conducting a periodic personnel evaluation of the City Manager, as requested by the City Manager.

17. Reconvene Open Session

18. Adjourn

~Mary LaRocque, City Clerk

ADDRESSING THE CITY COUNCIL

Comments shall be made only during times set aside for that purpose.
Each citizen may speak for up to 5 minutes during each public hearing and comments period.
Comments made during public hearings shall be relevant to the subject of the public hearing.
Comments shall be made from the podium unless otherwise directed by the Mayor.
Comments shall be directed to the Mayor and Council members.
Speakers shall begin by stating their name and indicate if they are a resident or non-resident of the City.
Speakers shall refrain from using vulgarity, hate speech or "fighting words."

CITY OF CHARLOTTE COUNCIL PROCEEDINGS
111 E. Lawrence Ave., Charlotte, MI 48813 (517) 543-2750
Regular Council Meeting 7:00 p.m.
June 09, 2025

CALL TO ORDER:

By Mayor Lewis on Monday, June 09, 2025 at 7:00 p.m.

ROLL CALL:

Mayor Lewis, Mayor Pro-Tem Duweck, Council members, Fullerton, Christensen, Rodriguez, Scott and Chin. A quorum was met

City staff in attendance; City Clerk LaRocque, City Attorney Revore, and City Manager Hillard. In the audience were DPW Director Whitney, Assistant Fire Chief Fullerton, Fire Inspector/Captain Daly, Community Development Director Benavidez and Finance Director/Treasurer Horton.

INVOCATION:

Chuck Jenson – West Carmel Church, absent

PLEDGE OF ALLEGIANCE:

Led by Lewis

APPROVAL OF MINUTES:

a. May 23, 2025 Regular Council Meeting Minutes

b. May 27, 2025 Regular Council Meeting Minutes

Motion by Chin supported by Scott to approve May 23, 2025 Regular Council Meeting Minutes, as amended. Carried; Yea 7; Nay 0; Absent 0

Motion by Chin supported by Scott to approve May 27, 2025 Regular Council Meeting Minutes as amended. Carried; Yea 7; Nay 0; Absent 0

ABSENCE OF COUNCIL MEMBERS:

All present

PUBLIC COMMENT:

The following residents spoke in support of the revision of the domestic fowl ordinance; Shane Olney, Amandy Lipsey, Jordan Schilling, and Zach Whitacre. Jodee Pruden was neutral on the domestic fowl ordinance and not in favor of the mobile food vending ordinance.

APPROVAL OF AGENDA:

Motion by Duweck supported by Chin to approve the agenda as printed. Carried; Yea 7; Nay 0; Absent 0

COMMUNICATIONS AND COMMITTEE REPORTS:

a. Manager Report

The City Manager's report was received. Councilmember Duweck commended Finance Director/Treasurer Horton for her reporting and overall performance. Community Development Director Benavides provided an update on the CHILL grant program:

- Two applicants recently attended the CHILL grant in-service session.
- Three applicants are fully approved, and eight applications were processed within the past month.
- A letter of intent has been submitted to secure funding for an additional 24 projects. An award of approximately $300,000 in additional funding is anticipated.

- Director Benavides also provided an overview of the CHILL grant, explaining its purpose and the support her office offers to applicants.
- Applications are due by the end of June, with all grant funds expected to be spent by the end of November.

b. Council member committee reports

Christensen – Announced that the next Planning Commission meeting is scheduled for June 16 at 7:00 p.m. Additionally, there will be a Camp Frances gathering tomorrow at 6:30 p.m. at the cabin.

Duweck – Reported that the Housing Committee is meeting bi-weekly. Recent discussions have included Brownfield recertification, CHILL grants, and coordination between the Housing and Zoning Committees. Outreach efforts are underway with developers, the land bank, and other relevant partners. A Housing Forum is currently in the early planning stages and is anticipated for September.

Chin – Noted the upcoming EATRAN meeting on Wednesday. Also noted he is serving on EATRAN's Personnel Committee and Policy Committees.

Scott – Shared that CARC is working closely with the aquatic center director to strengthen partnerships with the schools and to assist with the transportation needs of homeless children in the community to the various aquatic center activities.

Rodriguez – Expressed appreciation to Councilmember Duweck for his leadership and ongoing work with the Housing Committee.

CONSENT AGENDA:

a. Approval of Claims and Expenditures totaling $680,797.72

b. Approval of Resolution 2025-25 Oddities Festival/Needful Things street closure additions

c. Approval of Mayoral Appointments

d. Approval of Detroit Salt purchase order change

Motion by Duweck supported by Scott to approve Consent Agenda items a through d. Carried; Yea 7; Nay 0; Absent 0

BUSINESS AGENDA:

a. Consider approval of Resolution 2025-26 to approve the budget that begins July 1, 2025, to set rates of taxation, and to authorize other related actions.

Motion by Scott supported by Duweck to approve Resolution 2025-26 to approve the budget that begins July 1, 2025, to set rates of taxation, and to authorize other related actions. Carried by roll call vote; Yea 7 Lewis, Chin, Fullerton, Rodriguez, Christensen, Scott Duweck; Nay 0; Absent 0

b. First reading and consider approval of Resolution 2025-27 to schedule a public hearing and second reading of ordinance 2025-05 Mobile Food Vending

Motion by Fullerton supported by Christensen to amend proposed ordinance 2025-05 Mobile Food Vending, by noting that mobile food vending shall not be permitted nor located in the 100 block or 200 block of S. Cochran Road. Carried by roll

call vote; Yea 7 Lewis, Chin, Fullerton, Rodriguez, Christensen, Scott, Duweck; Nay 0; Absent 0

Motion by Scott supported by Fullerton to approve Resolution 2025-27 to schedule a public hearing and second reading of ordinance 2025-05 (as amended) Mobile Food Vending. Carried by roll call vote; Yea 6 Lewis, Chin, Fullerton, Rodriguez, Scott, Duweck; Nay 1 Christensen; Absent 0

c. Discussion on Domestic Fowl ordinance

The Council directed administration to draft an updated domestic fowl ordinance, with particular focus on increasing the number of permits allowed within the city.

d. Consider approval to re-establish the Brownfield Redevelopment Authority

Motion by Fullerton supported by Scott to approve to re-establish the Brownfield Redevelopment Authority. Carried; Yea 7; Nay 0; Absent 0

e. Consider approval to authorize the application for MDOT Category B funding

Motion by Scott supported by Chin to authorize the application for MDOT Category B funding. Carried; Yea 7; Nay 0; Absent 0

PUBLIC COMMENT:

Zach Whitacre (Resident) – Thanked the Council for considering an increase to the permit limit under the domestic fowl ordinance. Shared concerns regarding avian influenza (Bird Flu) and to address restrictions on the potential of other farm animals, he recommended including references to the Generally Accepted Agricultural and Management Practices (GAAMPS) in the updated ordinance. He also suggested implementing an online reporting system to aid with ordinance compliance and public safety.

John Laupp, (Resident) – Commended the Council for its thoughtful discussion on the proposed ordinances related to domestic fowl and food vending trucks, as well as the Special Assessment District (SAD). Also praised DPW Director Whitney for her work on Washington Street, noting the crew's professionalism, and his enjoyment of the new surface.

Amanda Lipsey (Resident) – Expressed support for raising the permit limit for domestic fowl and voiced additional support for food vendor trucks in the city.

Jodee Pruden (Resident, via Zoom) – Commented on the implications of expanding the domestic fowl ordinance, noting that without the support of Eaton County animal control, enforcement would fall solely to the city. She raised concerns about the potential noise from food truck generators, especially in the parks, and suggested this be addressed in the ordinance.

Laurence Green (Resident) – Identified as a former animal control officer. Advocated that enforcement of non-compliance with the domestic fowl ordinance be addressed through fines.

Michelle Fox (Resident) – A current chicken permit holder, she spoke in favor of updating the domestic fowl ordinance. She expressed confidence that future permit holders will be responsible and does not foresee significant issues arising from the proposed changes.

STAFF COMMENTS:

No comments

MAYOR AND COUNCIL COMMENTS:

Scott – Thanked all attendees for their participation. Announced he will be holding office hours tomorrow from 10:00 a.m. to noon at Faye's.

Chin – Shared updates from the recent Michigan Municipal League (MML) meeting, including comparisons with Holland, MI, regarding capital improvement planning and projected revenues. Expressed interest in revitalizing the city's ice-skating rink. Noted that changes to Open Meetings Act (OMA) closed session rules are under discussion. Also scrutinized a recent city contract totaling $19,999.96, suggesting it falls just below the threshold for placing an item out to bid.

Rodriguez – Thanked John Laupp for his comments. Reflected on the recent county millage vote, noting it underscored the financial strain residents are facing and renewed attention on the Special Assessment District (SAD). Acknowledged that while Council had expressed concerns with the SAD, it failed to clearly communicate its position to the City Manager. Voiced support for gradually phasing out the SAD over time.

Christensen – Thanked both in-person and virtual attendees. Stated his firm belief that the SAD issue should be decided by voters via a ballot measure. Reminded residents that CHILL grant work must be completed by a licensed and approved contractor. Emphasized the importance of food trucks supporting the local community and noted that he is engaging with businesses in D-1 regarding food vendor operations. Encouraged residents to attend "Celebrate Charlotte" this weekend, highlighting 80's Night at Beech Market on Friday. Suggested exploring the installation of heated sidewalks and streets downtown to improve snow removal efficiency and cost savings.

Fullerton – Voiced agreement with John Laupp on the excitement of the street improvements. Commended (DPW Director) Stephanie (Whitney) for her strong leadership and accomplishments in her first six months, particularly in delivering street improvements from planning to execution.

Lewis – Praised the Council for making steady progress on key issues and commended the city's administrative team for their recent accomplishments. Thanked all attendees for their continued engagement.

ADJOURN:

Motion by Christensen supported by Scott to adjourn the meeting at 9:29 p.m. Carried; Yea 7; Nay 0; Absent 0

Respectfully submitted,
Mary LaRocque MiPMC, CMC
City Clerk

Introduced: June 9, 2025
Adopted: June 23, 2025
Effective: July 13, 2025

CITY OF CHARLOTTE

EATON COUNTY, MICHIGAN

ORDINANCE NO. 2025-05

AN ORDINANCE TO AMEND CITY CODE CHAPTER 15 TO ESTABLISH ARTICLE V "MOBILE FOOD VENDING" AND SECTIONS 15-103 TO 15-112, AND TO PROVIDE AN EFFECTIVE DATE HEREOF.

Councilmember _____ moved the following:

THE CITY OF CHARLOTTE ORDAINS:

Section 1. Tile and Purpose. The title of this ordinance shall be the *"City of Charlotte Mobile Food Vending Ordinance*". The purpose of the ordinance is to regulate the operation of mobile food vending units engaging in mobile food vending within the City of Charlotte, and to provide for the public health, safety, and welfare of the City and persons who patronize mobile food vendors.

Section 2. Amendment To City Code Chapter 15, to add Article V, "Mobile Food Vending" Sections 15-103 Through 15-112. Amendments shall be and are hereby established as follows:

§ 15-103. Definitions.

The following words, terms, and phrases, when used in this article, shall have the meanings ascribed to them in this subsection, except where the context of their usage clearly indicates a different meaning:

(a) *Mobile food vending* shall mean vending, serving, or offering for sale food and/or beverages from a mobile food vending unit which meets the definition of a food service establishment under Public Act 92 of 2000, which may include the ancillary sales of branded items consistent with the food; for example, a t-shirt that bears the name of the organization engaged in mobile food vending.

(c) *Mobile food vending unit(s)* (MFVU) shall mean any motorized or non-motorized vehicle, trailer, or other means of conveyance designed to be portable and not permanently affixed to the ground from which food is prepared, served, and/or offered for sale.

(d) *Operate* shall mean all activities associated with the conduct of business, including but not limited to, setup and takedown, and/or time periods when the mobile food vending unit is open for business.

(f) *Vendor(s)* shall mean any individual or legal entity engaged in the business of mobile food vending.

§15-104. Permit required.

No person or vendor shall engage in mobile food vending without a permit from the City of Charlotte, except where exempted by this article or any other City ordinance. The City shall prescribe the form of and application for the MFVU permit. All permits shall be prominently displayed on the mobile food vending unit and visible to the public. Permits are non-transferable. A permit shall not be required for any vendor engaged by a private individual to serve guests at a private event, such as a birthday or graduation party,

Once approved, a permit is valid for the calendar year in which it is issued (January 1 to midnight of December 31). Applicants may also apply for a single day or a 15-day permit.

§15-105. Fees.

A fee shall accompany an application for an MFVU permit, as established by City of Charlotte resolution fee schedule. No fee shall be charged for a permit issued to a business on the City of Charlotte's tax rolls and whose normal business operations include the sale of food and/or beverages. No one shall hire or subcontract such vendors in an attempt to evade the provisions of this article.

§15-106. Requirements.

(a) Applications for a mobile food vending permit shall demonstrate compliance with all applicable federal, state, and county laws and regulations, as well as all applicable City codes and ordinances.

(b) Hours of operation:

(1) Vendors may only operate between the hours of 9:00 a.m. and 9:00 p.m. Sunday through Thursday, and 9:00 a.m. until 10:00 p.m. on Friday and Saturday.

(2) Within commercial areas, vendors may only operate between the hours of 6:00 a.m. and 11:00 p.m.

(3) Operating outside of the hours outlined in this section shall be subject to approval from the City of Charlotte Council.

(4) No mobile food vending unit may be left unattended for more than two hours; and any mobile food vending unit not in operation shall be removed from the permitted site between the hours of 11:00 p.m. and 7:00 a.m. except that this subsection shall not apply to City-authorized events.

(c) Lighting and noise:

(1) Vendors shall not use any flashing, blinking, or strobe lights; and all exterior lights over 60 watts shall contain opaque hood shields directing the

illumination downward while operating at a private event in a residential area.

(2) Vendors shall not use loud music, horns, amplification devices, "crying out," or any other audible means of gaining attention which causes a nuisance or safety hazard, as determined under the City noise ordinance per the Charlotte Police Department.

(3) Special Events approved by the City of Charlotte Council shall be exempt from the lighting and noise requirements within this ordinance.

(d) Locations:

(1) Mobile food vending shall be permitted on public property when authorized by the City.

(2) Mobile food vending shall be permitted on private property when authorized by the property owner.

(3) Vendors shall not operate on public property within 500 feet of any City-approved street fair, public festival, farmers market, or other event being conducted without the prior written authorization of the event sponsor(s); such setback distance shall be measured horizontally in a straight line between the nearest border of the event and the middle point of the mobile food vending unit's primary service window.

(4) Mobile food vending must maintain at least a 15 feet setback from a fire hydrant; the Fire Chief or their designee may require a greater distance.

(5) Mobile food vending units shall be located and maintained on a dust-free surface and shall not be placed on existing landscaped areas.

(6) MFVU shall not be located in sensitive environmental areas such as wetlands or floodways.

(7) Location of the MFVU on a lot must be situated to minimize adverse impacts to adjacent properties. Operations shall not obstruct the visibility of motorists, parking lot circulation, emergency access, access to or along a public street, alley, sidewalk, or trail. Customer queuing may be allowed on a public sidewalk provided a minimum of 6 feet of unobstructed sidewalk around the line of customers is maintained.

(8) MFVU shall not be permitted nor located in the 100 block or 200 block of S. Cochran Road.

(e) Mobile food vending unit configuration:

(1) There shall be a minimum of seven feet of vertical clearance between the ground level and lowest point of any awning structure.

(f) Parking:

(1) If parked on public property, mobile food vendors shall comply with all applicable parking regulations.

(2) If located within a public parking lot within a commercial area, the area(s) used for mobile food vending unit operations shall not reduce the required parking for the property.

(g) Pedestrian and vehicular circulation. A vendor shall not disrupt pedestrian or vehicular circulation on the permitted property.

(i) Service.

(1) No food shall be prepared, sold, or displayed outside of the mobile food vending unit.

(2) No outdoor cooking facilities, including but not limited to, grills and other heating elements, or outdoor refrigeration or storage units which are not contained in the mobile food vending unit are permitted.

(3) All materials and supplies, including but not limited to plates, cups, napkins, eating or serving utensils, and condiments must be stored in the mobile food vending unit, except for the waste receptacle required under this section.

(4) Food and beverage service shall be provided only on the non-driving lane side of the mobile food vending unit.

(j) Signs.

(1) In addition to signs placed on the mobile food vending unit itself, vendors may have one portable sign not greater than six square feet, with no dimension greater than three feet, and no height (with legs) greater than four feet, located within five feet of the unit; and under no circumstances shall such a sign be placed upon a sidewalk or roadway or impede pedestrian and/or vehicular traffic;

(k) Utilities.

(1) No utilities shall be drawn from a public right-of-way.

(2) Vendors shall not utilize any electricity or other utilities without the prior written authorization of the utility customer(s), and no power cable or similar device shall be extended at or across any street, alley, sidewalk, or path so as to cause a safety hazard, as determined by the City of Charlotte Code Official or their designee.

(l) Trash and upkeep.

(1) MFVU and the area upon which they are temporarily located shall be kept in good repair and free of refuse and debris. A trash receptacle shall be provided by the mobile food unit and emptied daily, or more frequently to meet demand. The trash or recycling receptacle must be removed from the site when the mobile food unit departs. Use of City-owned or City-controlled refuse containers is prohibited.

(2) Any garbage, waste, or spills shall be immediately cleaned up by the vendor.

(3) The dumping of garbage, refuse, graywater, grease, or food waste is prohibited.

§18-107. Application requirements.

The applicant shall truthfully provide, in full, all information requested by the City of Charlotte. The applicant shall submit all of the following with the completed and signed permit application form:

(a) A copy of the Driver's License(s) of the individual identified as being the driver/operator of the mobile food vending unit.

(b) A copy of a valid vehicle registration and vehicle identification numbers for the mobile food vending unit, including trailers, if a separate registration is required.

(c) A copy of proof of valid auto insurance for the mobile food vending unit, including trailers, if applicable.

(d) A copy of valid commercial liability insurance with minimum liability coverage of 1 million dollars. The City must be named as an additional insured.

(e) A copy of all required permits and/or licenses issued by the Eaton County Health Department or other licensing agency, as applicable.

(f) A brief written description of the mobile food vending unit, which shall include the following information:

(1) The length and width in feet of the mobile food vending unit to be operated, including trailers, if applicable.

(2) The height from ground level to the lowest point of any awnings attached to the mobile food vending unit to be operated, if applicable.

(3) A description of how electricity will be provided for the mobile food vending unit.

(g) Written permission from the private property owner(s), event sponsor(s), or utility customer(s), as applicable.

(h) Any other information requested by the City clerk or their designee to determine compliance with this chapter, and all applicable City codes and ordinances.

(i) Applications must be submitted 30 calendar days prior to the date planned for vendor operation, except for operations within a city approved special event.

§18-108. Review.

The application shall be submitted to the Charlotte Fire Department, which shall review the application and all material submitted under the requirements of this article of City code or ordinance. The fire department shall make contact with the applicant to schedule a fire inspection of the MFVU. An application shall be approved, denied, or requires more information, within 15 business days of being submitted to the City and after a fire inspection has been scheduled.

§18-109. Impoundment.

Any equipment associated with mobile food vending left on public property after the term of an approved permit may be impounded at the owner's expense.

§18-110. Other licenses.

A permit obtained under this ordinance shall not relieve the vendor of the responsibility for obtaining any other license, permit, or any other authorization required by any other City ordinance, resolution, statute, or administrative rule.

§18-111. Fire Inspections.

(a) All MFVU shall comply with the City of Charlotte adopted fire code.

(b) MFVU shall be inspected on an annual basis. All inspections completed shall expire on the same date of the expiration of the permit approved by the City of Charlotte.

(c) The City of Charlotte Code Official may make frequent inspections throughout the year.

§18-112. Violations; Civil infraction; Suspension or Revocation of Permit.

A vendor who violates this article is responsible for a municipal civil infraction or district court civil infraction citation and shall be subject to a civil fine subject to City resolution, or as provided herein. Municipal civil infraction violations are made payable at the City Municipal ordinance violation bureau. Repeat violations are determined based on the date of the commission of the violation. Each day that a violation continues beyond the time specified for compliance shall be deemed to be a separate offense. If the notice or civil infraction is not complied with, City officials may institute the appropriate proceeding at law or in equity to restrain, correct or abate such violation, or to require the removal of the MFVU in violation of the provisions of this ordinance or article or of the order or direction made pursuant thereto. Such legal or court action shall serve as notice.

Jurisdiction for district court citations and legal action as necessary to enforce City ordinance, this ordinance, and state law, vest in the state courts of Eaton County.

Once a permit is issued, it may be suspended for a time as noticed or revoked at any time for failure to comply with this ordinance or article. Appeals of suspension or revocation shall be heard by the City Manager within a reasonable time.

Section 13. Savings Clause. All proceedings pending and all rights and liabilities existing or incurred at the time this amendatory Ordinance takes effect are saved and may be consummated according to the law enforced when they were commenced. This Ordinance shall not be construed to affect any prosecution pending or initiated before the effective date of this amendatory Ordinance for an offense committed before that date.

Section 14. Conflicting Ordinances Repealed. Except as to prosecution and legal actions pending and saved pursuant to Section 13, any City Ordinances or parts of Ordinances in conflict with or inconsistent with any of the provisions of this Ordinance are repealed.

Section 15. Severability. The provisions of this ordinance are severable, and if any section, sub-section, paragraph, sentence, clause, phrase, or portion of this ordinance is, for any reason, held invalid or unconstitutional by a court of competent jurisdiction, such decision shall not affect the validity of all remaining sections, sub-sections, paragraphs, sentences, clauses, phrases, or portions of this ordinance.

Section 16. Section Headings. The section headings used in this ordinance are for convenience only and are not a part of this ordinance.

Section 17. Code Edits. The editors of the Charlotte City Code are hereby authorized, subject to approval of the City Manager, or designee, to update and revise code section numbers to effectuate the provisions of this Ordinance and Code.

Section 18. Effective Date. This ordinance shall take effect twenty days after it has been adopted by the City Council.

Introduced by the Charlotte City Council this 9th day of June, 2025.

Motion by Scott

Second by Fullerton

Ayes: Lewis, Chin, Fullerton, Scott, Rodriguez, Duweck

Nays: Christensen

Absent: 0

Adopted by the Charlotte City Council this 23rd day of June, 2025.

Motion by

Second by

Ayes:

Nays:

Absent:

Approved:

_____

Timothy Lewis, Mayor

I, Mary LaRocque, City Clerk, certify this is Ordinance No. 2025-05 adopted by the Charlotte City Council at a meeting held on the 23rd day of June, 2025, a meeting held according to the Open Meetings Act, Public Act No. 267 of 1976, as amended. I further certify Ordinance No. 2025-05 was published in The County Journal a newspaper of general circulation in the City of Charlotte, the 28th day of June, 2025, subsequent to its adoption.

Mary LaRocque, City Clerk

Introduced:	June 9, 2025
Public Hearing:	June 23, 2025
Adopted:	June 23, 2025
Published:	June 28, 2025
Effective:	July 13, 2025

THE CITY OF CHARLOTTE MICHIGAN

Mary LaRocque <mlarocque@charlottemi.org>

AN ORDINANCE TO AMEND CITY CODE CHAPTER 15 TO ESTABLISH ARTICLE V “MOBILE FOOD VENDING” Ordinance 2025 - 05

1 message

Richard Deer <richdeer@att.net> Sat, Jun 14, 2025 at 10:15 AM
To: Mary LaRocque <mlarocque@charlottemi.org>

For The Charlotte City Council,

I am in favor of allowing mobile food vending in the city of Charlotte. I believe this will encourage more attendance and participation by citizens/customers wherever they may operate.

Up to now I have been disappointed that "food trucks" such as described in the ordinance have not been allowed as I have seen similar usage in other cities with positive results.

My only concern is the language of the ordinance appears to have some discouraging conditions that may prevent vendors from wanting to participate. I would hope that the city council has received feedback to alleviate those concerns.

For your consideration.

Richard Deer
resident
richdeer@att.net

McGinty, Hitch, Person, Anderson & Revore, P.C.
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3410 BELLE CHASE WAY, SUITE 600
LANSING, MICHIGAN 48911
TELEPHONE (517) 351-0280
FAX (517) 351-3583
www.mcgintylaw.com

MEMORANDUM

TO: Charlotte City Council

FROM: David M. Revore and Thomas M. Hitch, City Attorneys

RE: CITY ATTORNEY REPORT – May 9 through June 20, 2025

DATE: June 20, 2025

The following serves as our report to the City Council on issues in which our office has been engaged since the last report:

1. Ordinance Updates and Review.
   a. Mobile Food Vending Ordinance.
   b. City Code § 10-4 Domestic Animals and Fowl
   c. Animal Control Ordinance
   d. Fire Prevention Code to adopt 2021 International Fire Code to coordinate with the City's adoption of the 2021 International Property Maintenance Code.

2. Camp Frances. Articles and related documents review. Meetings with directors regarding same.

3. District Court. Prosecute misdemeanor offenses.

4. Code Enforcement/Fire Department. Work with Tyger Fullerton and Dan Daly regarding Code Enforcement. Rural Fire Association Agreement Review.

5. Markdom. Prepare revised IFT documents.

6. Downtown Development Authority. Document review.

7. Personnel Policy & Work Rules. Policy review.

8. Labor & Employment. Review payment / benefit issues and personnel matters.

9. Tax Tribunal. *Ilie Popa v. County of Eaton*, No. 25-000557-TT. File with Tax Tribunal City Attorney Appearance and Answer to Petition.

10. Communications. Mayor, City Manager, Finance, Police, Clerk and Fire Department officials.

DMR:cf

To: City Manager Hillard; Honorable Mayor Lewis; City Council
From: Mary LaRocque, City Clerk
Date: June 23, 2025
Re: City Clerk Department

Clerk – Framework

- Council Chamber Communication Equipment
- Employee Policy Manual Review
- Health Care Savings Policy Review
- Employee Funded Retirement Program Review
- City Funded Retirement Program Review
- Health Insurance Review
- Travel Policy Review

My team continues to manage the day-to-day responsibilities of the office, including:

- Processing public records requests
- Supporting council meeting preparations and documentation
- Maintaining city records
- Assisting the public with routine inquiries and services
- Cross training Clerk and Treasurer employees
- Creating SOP's and improving internal processes of the departments

We remain committed to providing efficient and transparent service to both internal and external customers. Please do not hesitate to reach out should you need anything specific from our office.

CHARLOTTE POLICE DEPARTMENT ACTIVITY SUMMARY 2023

-1

UCR TITLE	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	TOTAL	2024	%	WARRANTS	ARRESTS
STATE CRIMES																	
SOVEREIGNTY													0	0	0%		
MILITARY													0	0	0%		
IMMIGRATION													0	0	0%		
Part I Crimes													0				
CRIMES AGAINST PERSONS																	
HOMICIDE-MURDER(ATTEMPT)													0	0	0%		
NEGLIGENT HOMICIDE													0	0	0%		
KIDNAPPING													0	1	-100%		
PARENTAL KIDNAPPING													0	0	0%		
SEX. ASSAULT-ALL	3	2	6	1	1								13	7	86%		1
ROBBERY				1									1	3	-200%		
NON-AGG ASSAULT	4	10	7	14	9								44	71	-38%		15
AGGRAVATED ASSAULT	1	2	3	2	2								10	8	25%		2
INTIMIDATION/STALKING	14	20	12	17	14								77	56	38%		7
PROPERTY CRIMES																	
ARSON													0	0	0%		
EXTORTION				1									1	3	-67%		
BURGLARY-FORCED	1				2								3	8	-63%		2
BURGLARY-W/O FORCE													0	0	0%		
BURGLARY-ILLEGAL ENTRY	1			1	1								3	7	-57%		
POSS BURGLARY TOOLS	1												1	0	100%		
LARCENY	5	3	6	7	5								26	65	-60%		1
MOTOR VEHICLE THEFT		1	1	1	3								6	8	-25%		
Part II Crimes																	
STOLEN PROPERTY-MOTOR VEHICLE				1									1	2	-50%		
FORGERY/COUNTERFEIT-ING				1									1	4	-75%		
FRAUDULENT ACTIVITY	3	6	7	10	8								34	36	-6%		1
EMBEZZLEMENT													0	1	-100%		
REC/CONCEALING STOLEN PROPERTY	1	1		3	9								14	2	600%		2
DESTRUCTION OF PROPERTY	2	3	4	2	5								16	29	-45%		2
RETAIL FRAUD-ALL	5	10	9	7	12								43	52	-17%		3
UCR TITLE	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	TOTAL	LAST YEAR	%	WARRANTS	ARRESTS
MORALS/DECENCY CRIMES																	
V.C.S.A.	1	1	1	6	5								14	22	-36%		7

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UCR TITLE	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	TOTAL	2024	%	WARRANTS	ARRESTS
SEX OFFENSE	1	1	2	3	2								9	6	50%		
OBSCENITY	1												1	0	100%		
FAMILY ABUSE/NEGLECT	2	5	9	7	7								30	19	58%		1
FAMILY-NON SUPPORT													0	0	0%		
FAMILY-OTHER													0	0	0%		
GAMBLING													0	0	0%		
COMMERCIALIZED SEX OFFENSE													0	0	0%		
LIQUOR LICENSE VIOLATION													0	1	-100%		
LIQUOR LAW VIOLATION				1	1								2	5	-60%		
PUBLIC ORDER CRIMES																	
OBSTRUCTING POLICE	2	1	2	1	1								7	8	-13%		4
ESCAPE-CORRECTIONAL INSTITUTION													0	0	0%		
ESCAPE-MENTAL INST.													0	0	0%		
ESCAPE/FLIGHT													0	0	0%		
OBSTRUCTING JUSTICE	3	2	3	5	3								16	8	100%		39
BRIBERY													0	0	0%		
WEAPONS-CONCEALED					1								1	3	-67%		1
WEAPONS-EXPLOSIVE													0	0	0%		
WEAPONS-OTHER	1			1	3								5	3	67%		
PUBLIC PEACE	6	8	10	17	26								67	97	-31%		1
TRAFFIC-HIT AND RUN	2	5	4	1	6								18	23	-22%		
TRAFFIC-O.U.I.L./O.U.I.D	5	4	3	6									18	12	50%		3
TRAFFIC-MISD	1	3		7	3								14	16	-13%		4
HEALTH/SAFETY VIOLATION	1	2	5	4	12								24	21	14%		
CIVIL RIGHTS													0	0	0%		
TRESPASS/PRIVACY		4	10	7	3								24	33	-27%		1
SMUGGLING													0	0	0%		
ELECTION LAWS													0	0	0%		
ANTI-TRUST													0	0	0%		
TAX REVENUE													0	0	0%		
CONSERVATION	1	2		2									5	5	0%		
VAGRANCY		3	3	4	1								11	8	38%		
MISC. CRIMINAL OFFENSE													0	0	0%		
GRAND JURY INVESTIGATION													0	0	0%		
CONSPIRACY													0	0	0%		

End of Part II Crimes

CHARLOTTE POLICE DEPARTMENT ACTIVITY SUMMARY 2023

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UCR TITLE	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	TOTAL	2024	%	WARRANTS	ARRESTS
UCR TITLE	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	TOTAL	LAST YEAR	%	WARRANTS	ARRESTS
JUVENILE MINOR																	
DELINQUENT MINOR	5	4	7	5	7								**28**	59	**-53%**		
RUNAWAY		5	5		3								**13**	21	**-38%**		
CIVIL-NON CRIMINAL																	
DIVORCE/SUPPORT													**0**	0	**0%**		
INCAPACITATION	1	1	2										**4**	2	**100%**		
INSANITY	15	12	15	8	13								**63**	71	**-11%**		
TRAFFIC																	
CRASH-PD-PUBLIC ST.	14	17	13	13	23								**80**	82	**-2%**		
CRASH-PI-PUBLIC ST	4		2	4	3								**13**	12	**8%**		
CRASH-FATAL-PUBLIC ST													**0**	0	**0%**		
CRASH-PD-PRIVATE	3	3	6	4	7								**23**	14	**64%**		
CRASH-PI-PRIVATE		2		1									**3**	0	**300%**		
CRASH-FATAL-PRIVATE PROPERTY													**0**	0	**0%**		
CIVIL INFRACTION	30	20	25	23	18								**116**	164	**-29%**		
PARKING VIOLATION	4	2	2	4	6								**18**	17	**6%**		
Park. Tickets- 524-2021, 356-2023	48	59	48	2	1								**158**	69	**129%**		
ABANDONED VEHICLE	1	3	2	5	2								**13**	19	**-32%**		
TRAFFIC HAZARD INVES	9	5	5	3	10								**32**	47	**-32%**		
TRAFFIC DIRECTION	4		4	2	7								**17**	18	**-6%**		
TRAFFIC SAFETY PUBLIC APPEARANCE			3										**3**	0	**300%**		
BREATHALYSER TEST-													**0**	0	**0%**		
OTHER POLICE													**0**	0	**0%**		
ALARMS																	
ALARM-POLICE RESPONSE	14	12	9	3	14								**52**	76	**-32%**		
ALARM-MALFUNCTION													**0**	3	**-300%**		
ALARM-TEST	3		4										**7**	2	**250%**		
ALARM-WATER & SEWER													**0**	0	**0%**		
FIRE																	
ACCIDENT-FIRE													**0**	0	**0%**		
ACCIDENT-EXPLOSION													**0**	0	**0%**		
ACCIDENT-CHEMICAL													**0**	0	**0%**		
HAZARDOUS FIRE COND.	1				1								**2**	2	**0%**	Fireworks	
FIRE REQULATION VIOL													**0**	0	**0%**		
ASSIST BUILDING DEPT	3			3									**6**	1	**500%**		

CHARLOTTE POLICE DEPARTMENT ACTIVITY SUMMARY 2023

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UCR TITLE	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	TOTAL	2024	%	WARRANTS	ARRESTS
ASSIST C.F.D.		3	3										6	6	0%		
UCR TITLE	**JAN**	**FEB**	**MAR**	**APR**	**MAY**	**JUNE**	**JULY**	**AUG**	**SEPT**	**OCT**	**NOV**	**DEC**	**TOTAL**	**LAST YEAR**	**%**	**WARRANTS**	**ARRESTS**
ACCIDENTS																	
ACCIDENT-AIRCRAFT													0	0	0%		
ACCIDENT-HUNTING													0	0	0%		
ACCIDENT-SHOOTING													0	0	0%		
ACCIDENT-BOATING													0	0	0%		
ACCIDENT-WATER													0	0	0%		
ACCIDENT-OTHER													0	0	0%		
INSPECTIONS-INVESTIGATIONS																	
INSPECT-BOAT													0	0	0%		
INSPECT-MOTOR VEHICLE		1	1	4	1								7	14	-50%		
INSPECT-TRAFFIC CITATION													0	0	0%		
INSPECT-BUSINESS	18	18	10	14	12								72	132	-45%		
INSPECT-RESIDENCE	16	15	20	11	5								67	52	29%		
INSPECT-HANDGUN	18	12	14	18	20								82	67	22%		
INSPECT LIQUOR LICENSE	7	2	1										10	8	25%		
INSPECT-OTHER/SOR CHECK	9	8	9	13	8								47	51	-8%		
INSPECT-CCW APPLIC													0	0	0%		
DOMESTIC DISPUTES	9	8	17	19	20								73	88	-17%		
CIVIL DISPUTE	13	8	10	15	7								53	77	-31%		
SUSPICIOUS SITUATION	74	59	86	66	95								380	440	-14%		
FIELD INTERROGATION CARD													0	0	0%		
HAZARDOUS SITUATION													0	0	0%		
SUSPECTED NARCOTIC ACTIVITY	1	1	2	1	2								7	15	-53%		
ABANDONED/RECOVERED PROPERTY	5	2	6	6	9								28	29	-3%		
DRUG OVERDOSE	1	1	1	2	1								6	6	0%		
BOMB THREAT													0	0	0%		
MISC. INCIDENTS																	
MISC/P.B.T.													0	0	0%		
SUICIDE													0	3	-300%		
SUICIDE ATTEMPT	5	3	2	6	6								22	22	0%		
DEATH-NATURAL		1	4	6	2								13	7	86%		
DEATH-UNDETERMINED													0	0	0%		
MISSING PERSON			2	3	4								9	9	0%		

CHARLOTTE POLICE DEPARTMENT ACTIVITY SUMMARY 2023

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UCR TITLE	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	TOTAL	2024	%	WARRANTS	ARRESTS
NATURAL DISASTER													0	0	0%		
PUBLIC RELATIONS ACTIVITY				3									3	0	300%		
PATROL INFORMATION			1										1	2	-50%		
UCR TITLE	**JAN**	**FEB**	**MAR**	**APR**	**MAY**	**JUNE**	**JULY**	**AUG**	**SEPT**	**OCT**	**NOV**	**DEC**	**TOTAL**	**LAST YEAR**	**%**	**WARRANTS**	**ARRESTS**
GENERAL ASSISTANCE																	
ASSIST CITIZEN	49	46	62	55	60								272	271	0%		
ASSIST MOTORIST	5	1	7	17									30	30	0%		
ASSIST POLICE AGENCY	15	14	10	16	11								66	58	14%		
ASSIST OTHER AGENCY	8	11	4	1	7								31	48	-35%		
ASSIST D.P.W.	1	5											6	6	0%		
ESCORT-FUNERAL													0	0	0%		
ESCORT-MONEY													0	0	0%		
ESCORT-OTHER													0	0	0%		
TRANSPORT-PRISONER	19	16	7	12	15								69	81	-15%		
TRANSPORT-PAPERWORK	1	7	8	5	1								22	17	29%		
TRANSPORT-OTHER													0	0	0%		
LOCKOUT		1	1		1								3	10	-700%		
SUBPOENA SERVICE	7	3	1	9	1								21	17	24%		
PERMISSION TO PARK	5	1	5	3	4								18	12	50%		
PATROL-FOUND DOOR OPEN	2	3	2	5	9								21	24	-13%		
PATROL-FOUND OPEN WINDOW													0	0	0%		
PATROL-FOUND B&E													0	0	0%		
ASSIST E.C.S.D.-	7	6	13	13	5								44	36	22%		
GENERAL NON CRIMINAL																	
JUVENILE SAFETY VIOL													0	0	0%		
ANIMAL CONTROL	4	4		6	16								30	48	-38%		
ZONING ORD VIOLATION			4		1								5	2	150%		
TOTALS	**526**	**504**	**572**	**550**	**583**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2735**	3020	**-9%**		
TRAFFIC STOPS	117	74	95	78	65								429	473	-10%		
OFFICER TRAINING HOURS	98.5	185	50	132.5	153								619	425	46%		
COMMUNITY HOURS	18.5	60	2.5	9	3.5								93.5	96.5	-3%		
PAPERWORK HOURS	422	395.5	344.5	380.5	326.5								1869	1891	-1%		

SRO STATS

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UCR TITLE	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	TOTAL	2024	%	WARRANTS	ARRESTS

The School Resource Officer handled 28 calls for service for the Charlotte Public Schools in May.

The SRO's calls include:1- Non-Agg Assualt, 5- Intimidation/Threats, 2-VCSA, 1- Sex Offense, 1-Obstructing Police 3- Public Peace,

2- Health and Safety, 2- Delinquent MInor, 1 Runaway, 2- Private Property Crash, 3-Suspicious Situation

3- Assist Citizen, 1- Assist Other Agency, 1- Transport Prisoner

VCSA STATS

During the month of May, the Charlotte Police Department dealt with 8 VCSA incidents. They are the follows:

2-Meth, 1-Pills, 1-Heroin, 1-Cocaine, 3- Marijuana

(This includes the VCSA, Suspected Narcotics Activity, and Drug Overdose Categories)

Charlotte Police Department

111. E. Lawrence Ave., Charlotte, MI 48813
Phone: 517-543-1552 Fax: 517-543-8396
Paul Brentar, Chief of Police

May 2025 Monthly Report

Monthly Statistics:

- See attached report.

Training:

- Officers continued with online training through Virtual Academy.
- Officers completed their spring firearms qualification and training.
- Officers continued their online driving training with On Q Safety.
- Officer Carroll attended Comprehensive Sexual Assault training.
- Officers Everts and Leach attended Leadership training.
- Sgt. Slaughter attended LEIN TAC training.

Staffing:

- Our one opening has been put on pause by the City Manager.

Operational Highlights:

- On 05-05, officers responded to a larceny complaint where 2-wheel covers were stolen off of a vehicle. The investigation is on-going.
- On 05-05, officers located a student who walked away from the Middle School. The student was then turned over to her grandparents.
- On 05-05, officers responded to Oak Park for a malicious destruction of property complaint. A juvenile suspect was located and confessed to spray painting the gazebo. The juvenile was then turned over to her guardian. Charges will be sought through the juvenile court.
- On 05-05, officers located a stolen vehicle at Speedway after a Flock hit. The vehicle was turned over to the Michigan State Police as it was reported to them as stolen.
- On 05-07, officers took a report of a stolen vehicle at the courthouse after a subject was taken into custody at the court.
- On 05-09, officers responded to a personal injury crash at Henry/Johnson. Only minor injuries were received by the drivers.
- On 05-10, an officer conducted a traffic stop where a large quantity of methamphetamine was located. The driver was arrested for possession with intent to deliver and was also lodged on multiple warrants.
- On 05-11, officers located a vehicle, with a stolen plate out of Indiana, at Meijer after a Flock notification. The plate was confiscated and the investigation is on-going.

- On 05-11, officers responded to a personal injury crash at Cochran/Shepherd. The at fault driver was distracted causing the crash. Only minor injuries were received.
- On 05-11, officers assisted the Michigan State Police with an uncooperative subject at Sparrow Eaton.
- On 05-12, officers responded to an assault and malicious destruction of property complaint at Camp Frances. The investigation is on-going.
- On 05-15, officers took a report of a stolen vehicle from one of the downtown parking lots. This investigation is on-going.
- On 05-15, officers assisted the Michigan State Police with a personal injury crash near Lansing/Otto. Officers provided traffic control.
- On 05-17, an officer recovered a stolen scooter from several years ago. The owner was able to identify it and it was returned to the owner. This investigation is on-going.
- On 05-22, officers responded to a personal injury crash at State/Mikesell. Both drivers refused EMS treatment.
- On 05-22, officers assisted the Eaton County Sheriff's Office with searching the Flock system for an elderly missing man. The vehicle was observed in the City of Lansing 9 minutes prior. The elderly man was located shortly after.
- On 05-23, officers assisted the Stanton Police Department with attempting to locate a subject who failed to have a tether put on. The officers were unable to locate the subject.
- On 05-24, an officer took a report of a stolen 3-wheeler. This investigation is on-going.
- On 05-27, officers assisted the Michigan State Police by locating a juvenile runaway at the Skate Park.

Outreach/Public Events:

- Officer provided traffic control and led the Memorial Day Parade.
- The department was presented shadow boxes in recognition of our assistance with the Francis Flaherty funeral. They are on display outside of the police department window.

Respectfully,

Chief of Police

City of Charlotte

Department of Public Works

Monthly Summary – May 2025

Submitted by: Stephanie Whitney, Director of Public Works

Overview

The Department of Public Works had a productive and diverse month, focusing on infrastructure improvements, seasonal maintenance, emergency storm response, and utility system planning. Work across the Public Works, Water, and Wastewater divisions supported city-wide quality of life, regulatory compliance, and readiness for the busy summer season.

Highlights by Division

Public Works

- Street Projects:
  - Mill & Fill: Washington Street (Hall to Seminary), Stoddard Street (Oliver to Cochran)
  - Crush & Shape: Oliver Street (Hall to Lawrence)
- Parks:
  - Welcomed Park Ranger Rebecca; park conditions have already improved
  - Power washed playground equipment, added mulch, and began restoring drinking fountains
  - Graded road and added gravel at Camp Frances
- Storm Response:
  - Overnight storm cleanup following May 16 storm event
  - City-wide tree and debris removal completed
- Sidewalk & Tree Work:
  - Replaced heaved sidewalk panels due to tree roots and lead service line replacement
  - Completed multiple stump removals
- Brush/Leaf Pickup:
  - Two full rounds of citywide pickup
  - Began chipping brush in-house using existing equipment to reduce contractor costs
- Memorial Day Parade:
  - Provided barricades and no-parking signage; retrieved all traffic control devices afterward

Water Department

- Maintained normal well operations and completed May meter reads
- Collected weekly water quality samples
- Continued door-to-door Lead Service Line Inventory outreach and inspections
- Conducted ROV inspection on North Water Tower and warranty check on South Tower

- Held meetings with ETNA Supply and Badger Meter to evaluate meter reading/billing system upgrades

Wastewater Department (WWTP)

- Continued normal operations and lab activities
- Performed annual maintenance on clarifiers and tertiary systems
- Completed weekly inspections at all lift stations
- Conducted stormwater inspections at the WWTP and airport
- Coordinated with EGLE on Michigan Can Lines permit to discharge
- Managed critical tertiary flow meter failure; interim fix in place, permanent replacement underway
- Worked on Annual Asset Management Plan required by EGLE

Conclusion

May was marked by excellent teamwork, effective emergency response, and strong momentum on infrastructure and system upgrades. The department remains focused on efficiency, public safety, and preparedness as we transition into the summer season.

THE CITY OF CHARLOTTE MICHIGAN

Memo

To: Honorable Mayor Lewis; City Council
From: Mary LaRocque, City Clerk
Date: June 18, 2025
Re: Claims and Expenditures for Council approval on June 23, 2025

Background

Section 7.7(B) of the City Charter requires Council approval for the expenditure of city funds.

Recommendation

A report of claims is provided to council for review on the Wednesday preceding a council meeting at which the claims are approved. Questions about these claims should be directed to the Finance Director/Treasurer and answers resolved by the Friday preceding said council meeting. Claims and expenditures are budgeted items and/or larger purchases pre-approved by Council. While review is recommended, approval should not be hindered.

Answers to Council inquiries, if any, are included in the meeting packet.

Financial Impacts

HRA Insurance claims week of June 09, 2025	$ 1,053.99
HRA Insurance claims week of June 16, 2025	$ 2,927.09
Payroll paid Friday June 13, 2025	$ 285,894.20
Invoiced claims as of June 18, 2025	$ 955,101.65
Total	**$1,244,976.93**

Suggested Motion

Motion to approve Claims and Expenditures in the amount of **$1,244,976.93**

INVOICE APPROVAL BY INVOICE REPORT FOR CITY OF CHARLOTTE
INVOICE ENTRY DATES 06/05/2025 - 06/18/2025
BOTH JOURNALIZED AND UNJOURNALIZED OPEN AND PAID
BANK CODE: POOL

Vendor Code	Vendor Name / Invoice	Description	Amount
01683	ACD.NET		
	81518-295	JUNE 2025	699.00
	91177-147	JUNE 2025 (WASTE WATER)	565.84
TOTAL FOR: ACD.NET			1,264.84
02015	ADVANTAGE FLEET, LLC		
	RA101004932:01	NFPA ANNUAL PUMP TEST, PREVENTATIVE MAINTENANCE (TRUCK 314)	340.92
	RA101004934:01	NFPA ANNUAL PUMP TEST, PREVENTATIVE MAINTENANCE (TRUCK 315)	340.92
	RA101004935:01	NFPA ANNUAL PUMP TEST, PREVENTATIVE MAINTENANCE FOR TRUCK (317)	760.92
	RA101004936:01	NFPA ANNUAL PUMP TEST, PREVENTATIVE MAINTENANCE FOR TRUCK (316)	340.92
	RA-101004937:01	NFPA ANNUAL PUMP TEST, PREVENTATIVE MAINTENANCE (TRUCK #313)	340.92
TOTAL FOR: ADVANTAGE FLEET, LLC			2,124.60
01673	ALEXANDER CHEMICAL CO		
	95857	FERRIC CHLORIDE	10,705.50
TOTAL FOR: ALEXANDER CHEMICAL CO			10,705.50
01667	ALTOGAS		
	874606	PROPANE REFILL	26.40
TOTAL FOR: ALTOGAS			26.40
01764	AMAZON CAPITAL SERVICES		
	17PF-4RDJ-9FRW	ACCOUNT # A264N6SLCWDWHU (DPW) GREASE GUN AND HYDRAULIC HOSE	237.49
	1TXF-WC17-WP1F	ACCOUNT # A264N6SLCWDWHU (FIRE) HEAVY DUTY TV MOUNT	37.99
	1VN3-G9DV-6CTF	ACCOUNT # A264N6SLCWDWHU (DPW) GREASE FITTING CLEANING TOOL AND CLEANER	82.52
	1WVX-R46F-MR47	ACCOUNT # A264N6SLCWDWHU (FIRE) STYLUS PEN	31.96
	1WXY-TFDR-W143	ACCOUNT # A264N6SLCWDWHU (FIRE) WELLS COMPUTER MONITOR	149.99
	1X3T-TTLF-PLKG	ACCOUNT # A264N6SLCWDWHU (FIRE) HEAVY DUTY TABLET MOUNT	89.50
	1XHJ-3G6C-F76R	ACCOUNT # A264N6SLCWDWHU (FIRE) CONTRACTOR TRASH BAGS	40.49
TOTAL FOR: AMAZON CAPITAL SERVICES			669.94
02036	AMAZON CAPITAL SERVICES		
	117-G3DH-C6P1	ACCT # A1K517P63NLQUT(POLICE) PRINTER WITH SCANNER, COPIER, ADF AND ETHERNET	348.94
	1CHN-DH46-94VT	ACCT # A1K517P63NLQUT(POLICE) BATTERIES	37.28
TOTAL FOR: AMAZON CAPITAL SERVICES			386.22
01632	AT&T		
	287354111767X060	AIRPORT LINE,PUMP HOUSE LINE	417.04
	5478306014	PUMPHOUSE	121.72
TOTAL FOR: AT&T			538.76
01635	AT&T LONG DISTANCE		
	MAY 27 - JUN 26	AIRPORT INTERNET	51.38
TOTAL FOR: AT&T LONG DISTANCE			51.38

Vendor Code	Vendor Name / Invoice	Description	Amount
01629	AVERY OIL & PROPANE, INC		
	1109087	AIRPORT- ACCOUNT #12290746	1,084.55
TOTAL FOR: AVERY OIL & PROPANE, INC			1,084.55
01602	BEAVER RESEARCH COMPANY		
	0383964-IN	LUBRICAN, BOLT BUSTER RELEASING AGENT	748.88
TOTAL FOR: BEAVER RESEARCH COMPANY			748.88
01578	BOBCAT OF LANSING		
	P75305	LEVERS AND BUSHINGS	465.68
TOTAL FOR: BOBCAT OF LANSING			465.68
01576	BOUND TREE		
	85804171	MEDICAL SUPPLIES	262.03
TOTAL FOR: BOUND TREE			262.03
02199	BRITTANY SIPLE		
	06.18.2025	MILEAGE REIMBURSEMENT FOR MMTA BASIC INSTITUTE 04.27.2025 THRU 0502.2025	125.44
TOTAL FOR: BRITTANY SIPLE			125.44
01555	BYRUM ACE HARDWARE		
	442182	(DPW) SPRAYPAINT	23.97
	442190	(DPW) LOCK, CLEANING SUPPLIES	79.33
	451589	MAINTENANCE ITEMS	63.75
	451977	(FIRE) SUPPLIES FOR NEW TRUCK	470.00
	452228	(FIRE) RETURN 3 DRAWER TOOLBOX FOR NEW TRUCK 314	(179.00)
	452230	(FIRE) SUPPLIES FOR NEW TRUCK #314	371.90
	453241	(WWTP) CLARIFIER BLEACH REPAINT	33.95
	453256	(FIRE) FASTENERS, NEW HOOKS FOR TRUCK #314	45.94
	453340	(WWTP) BUILDING MAINTENANCE SUPPLIES	15.17
	453344	(DPW) WINDOW BRUSH, OTHER CLEANING SUPPLIES	35.97
	453854	(FIRE) SUPPLIES FOR TRUCK #314	77.97
	454028	(DPW AD) LANDSCAPE FABRIC, ANCHORING SPIKES	63.16
TOTAL FOR: BYRUM ACE HARDWARE			1,102.11
01522	CHARLOTTE AIR SERVICES LLC		
	6/10/2025	MAY 2025 AIRPORT HANGAR MANAGEMENT, FUEL SALES MANAGEMENT	503.25
TOTAL FOR: CHARLOTTE AIR SERVICES LLC			503.25
02200	CHRISTINA HORTON		
	06.18.2025	MILEAGE REIMBURSEMENT FOR MMTA BASIC INSTITUTE	125.44
TOTAL FOR: CHRISTINA HORTON			125.44
01918	COLBY MARTIN		
	105135/36	BOOT ALLOWANCE PR SEIU CONTRACT	110.23
TOTAL FOR: COLBY MARTIN			110.23

Vendor Code	Vendor Name / Invoice	Description	Amount
01471	CONSUMERS ENERGY		
	201809914494	1225 S COCHRAN AVE	68.92
	202076923610	076 - 12 TRAFFIC LIGHTS	471.13
	202076923611	AREA LIGHTING	583.18
	202076923612	076 - 2 TRAFFIC LIGHTS	3.14
	202076923613	065 & 068 -460 STREETLIGHTS	4,400.21
	202076923614	TULLY BROWN DR (AREA LIGHTING)	131.14
	202521849374	1152 S COCHRAN AVE CAMP FRANCIS	100.89
	202610849968	1213 S COCHRAN AVE	65.69
	202610849969	1216 S COCHRAN AVE	185.09
	202610849970	1216 1/2 S COCHRAN AVE	18.00
	202610849971	1216 S COCHRAN AVE	168.59
	202699821592	1005 PAINE DR. FRNT GEN CHARLOTTE	27.32
	202788799251	301 TIRRELL RD	305.82
	202788799252	301 TIRRELL RD R2	860.60
	202788799253	301 TIRRELL RD MAINTENANCE	479.46
	203055788031	245 S COCHRAN AVE	21.48
	203411770324	911 W SHEPHERD ST FIRE DEPT 2	3,293.41
	203589738888	103 VAN LIEU ST	43.23
	203678746441	526 W STODDARD ST	32.56
	203767701514	1310 S COCHRAN AVE	2,308.26
	204301663253	619 W SHEPHERD ST	196.72
	204301663254	620 W SHEPHERD ST	106.41
	204390655224	108 E LAWRENCE AVE	55.87
	204390655225	108 E LAWRENCE AVE	106.61
	204390656173	1227 S COCHRAN AVE	5,249.83
	204568618026	1325 ISLAND HWY GATE-AIRPORT	35.49
	204657601319	1167 E CLINTON TRAIL	90.73
	204657601613	508 N. SHELDON ST.	102.04
	204746586964	700 LANSING RD	32.72
	205280485105	1064 NORTHWAY	47.92
	205458466929	1800 PACKARD HWY	42.75
	205725423081	811 CHADS WAY	147.11
	205814386756	203 HALL ST	119.15
	205814387276	1325 ISLAND HWY #C	206.09
	206081339978	112 1/2 S COCHRAN	28.69
	206348119869	201 HALL ST	90.14
	206348120021	1325 ISLAND HWY	582.98
	206348120022	1329 1/2 ISLAND HWY	41.94
	206437066721	201 HALL ST (AREA LIGHTING)	98.34
	206615016476	1005 PAINE DR	269.61
	206792885642	620 W SHEPHERD ST	53.95
	206881772688	111 E LAWRENCE AVE	1,902.29
	206970657574	811 CHADS WAY	20.91
	207059457303	1104 MIKESELL ST	252.66
	207059457307	544 LANSING ST/WWTP LIFT STATION	86.00
	207059457308	544 LANSING ST	743.25
	207059457309	700 E. SHEPHERD ST.	175.80
	207059457314	1075 INDEPENDENCE BLVD	292.03
	207059457317	1305 S COCHRAN AVE	242.41
	207059457345	1216 S COCHRAN AVE	2,327.09
	207059457376	111 E LAWRENCE AVE	3,099.99
	207059466890	1005 PAINE DR	11,683.52
TOTAL FOR: CONSUMERS ENERGY			42,099.16

Vendor Code	Vendor Name / Invoice	Description	Amount
01465	COUNTY JOURNAL, THE		
	290916	HEARING NOTICE MAY 12,2025- PROPOSED ORDINANCE 2025- 06	118.70
	290917	HEARING NOTICE MAY 12, 2025 PROPOSED ORDINANCE 2025-04	99.50
	290918	ORDINANCE ADOPTION- ORDINANCE 2025 -03	80.30
	291649	NOTICE 25/26 FISCAL YEAR BUDGET	80.30
	291650	ORDINANCE ADOPTION, ORDINANCE 2025-06	99.50
	291651	ORDINANCE ADOPTION 2025-04	80.30
	291652	JOB OPENING DPW MECHANIC	77.80
	291653	JOB OPENING DPW MECHANIC	77.80
	291654	JOB OPENING DPW MECHANIC	77.80
	291716	SCIENCE ADVENTURE CAMP	145.00
	291825	STORM DEBRIS CLEAN UP	99.50
	291927	PLANNING COMMISSION HEARING NOTICE, SITE PLAN REVIEW 400 PARKLAND DR.	109.10
	291928	PLANNING COMMISSION HEARING NOTICE, TEMPORARY USE PERMIT	99.50
TOTAL FOR: COUNTY JOURNAL, THE			1,245.10
02193	CREATIVE DISPLAYS, INC		
	6796	HOLIDAY DECOR	8,106.65
	6797	HOLIDAY DECOR	3,889.52
TOTAL FOR: CREATIVE DISPLAYS, INC			11,996.17
01838	CULLIGAN WATER CONDITIONING		
	33919TO	WEST SIDE SALT DELIVERY 05/14/25 AND 05/28/25	55.12
TOTAL FOR: CULLIGAN WATER CONDITIONING			55.12
01448	CUSTOM HOME INTERIORS		
	CG501130.2	CARPET INSTALL CITY HALL SECOND FLOOR	6,256.95
	CG501357	TRIM DOWN 2 DOORWAYS AT CITY HALL ACCOMMODATE ADA COMPLIANT DOORWAY THRESHHOLDS	130.00
TOTAL FOR: CUSTOM HOME INTERIORS			6,386.95
01884	DAN DALY		
	06.13.2025	REIMBURSEMENT FOR CONFERENCE	120.06
TOTAL FOR: DAN DALY			120.06
01429	DELAU FIRE & SAFETY INC		
	380529	ANNUAL INSPECTION OF 9 HAND HELD PORTABLE FORE EXTINGUISHER (POLICE DEPARTMENT)	101.00
TOTAL FOR: DELAU FIRE & SAFETY INC			101.00
01396	EATON CO. DRAIN COMMISSIONER		
	FY-2024	DRAIN ASSESSMENT LEVIES - 2024	38,961.36
TOTAL FOR: EATON CO. DRAIN COMMISSIONER			38,961.36
01398	EATON COUNTY-TREASURER		
	06.12.2025	DUE TO COUNTY LAND BANK	28.14
TOTAL FOR: EATON COUNTY-TREASURER			28.14
01957	EGANIX		
	24099	F.O.G. TREATMENT	2,370.00
TOTAL FOR: EGANIX			2,370.00

Vendor Code	Vendor Name / Invoice	Description	Amount
02178	ENG. INC		
	0019003	PROJECT 25019.00 WALNUT STREET RESURFACING	1,065.00
	0019006	PROJECT 25021.00 LOCAL STREET IMPROVEMENT N. OLIVER & WASHINGTON	3,420.00
	0019013	PROJECT 25019.00 WALNUT STREET RESURFACING	2,121.70
	0019014	PROJET 25021.00 LOCAL STREET IMPROVEMENTS- N. OLIVER STREET & WASHINGTON	5,331.20
TOTAL FOR: ENG. INC			11,937.90
01365	ETNA SUPPLY		
	S106316679.001	BIOLER REPAIR, NAT. GAS	333.00
TOTAL FOR: ETNA SUPPLY			333.00
01358	FAMILY FARM & HOME		
	002005/C	KENTUCKY GRASS SEED	139.98
TOTAL FOR: FAMILY FARM & HOME			139.98
01438	HASSEL FREE FUELS		
	CFSI-12144	ACCOUNT # 010109 (FIRE) FUEL	989.25
TOTAL FOR: HASSEL FREE FUELS			989.25
01970	HOPKINS MECHANICAL SERVICES, LLC		
	H25270	CITY HALL AIR CONDITIONING STARTUP	1,988.00
	H25302	HVAC PREVENATIVE MAINTENANCE	987.00
TOTAL FOR: HOPKINS MECHANICAL SERVICES, LLC			2,975.00
01252	INDEPENDENT BANK		
	5867-05.14.2025	MAY 2025	10,443.30
TOTAL FOR: INDEPENDENT BANK			10,443.30
01250	INSTY PRINTS		
	98552	BUISNESS CARDS (B. SIPLE- UTILITY BILLING)	114.80
TOTAL FOR: INSTY PRINTS			114.80
01883	KENYON AND SONS LLC		
	#07-06/07/2025	MOWING - 06/01 TO 06/07	4,500.00
	#08-06/14/2025	MOWING- 06/08/25 TO 06/14/2025	4,380.00
	05/2025	MOWING - FOREST GARDEN MAY 15 AND MAY 29	720.00
TOTAL FOR: KENYON AND SONS LLC			9,600.00
01182	LANSING UNIFORM CO.		
	106626-A	UNIFORM COAT, ALTERATIONS, RANK STRIPES	244.95
	106670-A	UNIFORM SHIRT AND ALTERATIONS	65.00
	106946-A	SAFETY BOOTS	309.90
	107315-A	POLICE UNIFORMS AND ALTERATIONS	3,728.40
TOTAL FOR: LANSING UNIFORM CO.			4,348.25
01684	LEXISNEXIS RISK SOLUTIONS		
	1100149880	MAY 2025	200.00
TOTAL FOR: LEXISNEXIS RISK SOLUTIONS			200.00
02196	M.M.R.M.A		
	4303	(C. MCDANIEL) FORCE ENCOUNTERS TRAINING CLASS	495.00
TOTAL FOR: M.M.R.M.A			495.00

Vendor Code	Vendor Name / Invoice	Description	Amount
01958	MARY LAROCQUE		
	06/09/2025	MEALS AND LODGING FOR MAMC SUMMER CONFERENCE (JUNE 4,5,6 2025)	199.35
TOTAL FOR: MARY LAROCQUE			199.35
01137	MCGINTY, HITCH, PERSON, ANDE., P.C.		
	MAY 31,2025	FY25 ATTORNEY SERVICES	12,952.70
TOTAL FOR: MCGINTY, HITCH, PERSON, ANDE., P.C.			12,952.70
02195	MICHIGAN PAVING & MATERIALS COMPANY		
	90053P-1	STREET IMPROVEMENTS: OLIVER/WASHINGTON & STODDARD	331,959.54
TOTAL FOR: MICHIGAN PAVING & MATERIALS COMPANY			331,959.54
02146	MICROTECH SERVICES, INC		
	36439	WEBSITE SWITCHOVER, SCOTT BROOKS PRINTER NOT WORKING,	325.00
	36469	MONTHLY MANAGEMENT SERVICES	5,041.75
	36473	ONSITE LABOR- UPDATE DNS RECORDS FOR CHARLOTTEMI.GOV	100.00
	36474	RED PHONE NOT WORKING, RESET CABLE CONNECTIONS AND TESTED FOR DIAL TONE	100.00
	36476	PARKS CAMERA PROJECT	4,759.48
TOTAL FOR: MICROTECH SERVICES, INC			10,326.23
01070	MMTA		
	12239	REGISTRATION FEE (HORTON) T2T JUNE 11,2025	15.00
TOTAL FOR: MMTA			15.00
01058	MORRISON INDUSTRIAL EQUIP		
	C03008746	BACK REST FOR TRUCK	981.75
TOTAL FOR: MORRISON INDUSTRIAL EQUIP			981.75
02192	MOTIS BRANDS		
	130043	STEEL PORTABLE YARD RAMP	15,706.99
TOTAL FOR: MOTIS BRANDS			15,706.99
02103	MUNIVATE LLC		
	1213	DOCUMENT CREATION FOR ZONING AND CODE FORMS	1,731.25
TOTAL FOR: MUNIVATE LLC			1,731.25
01536	NAPA AUTO PARTS		
	171293	TAP TO CLEAN ON FILTER ARMS	14.83
	171296	RETURN TAX ON INVOICE 171293	(0.84)
TOTAL FOR: NAPA AUTO PARTS			13.99
01001	OVERHEAD DOOR CO. OF LANSING		
	574570	PARTS FOR AIRPORT, REPLAED ALL 4 CABLES	619.60
TOTAL FOR: OVERHEAD DOOR CO. OF LANSING			619.60
00972	PRO-TECH SECURITY SALES		
	INV5100	UNIFORM CLOTHES	6,654.00
TOTAL FOR: PRO-TECH SECURITY SALES			6,654.00

Vendor Code	Vendor Name / Invoice	Description	Amount
02129	RICOH USA, INC		
	109227209	60 MONTH LEASE AUGUST 2024 TO JULY 2029	207.82
TOTAL FOR: RICOH USA, INC			207.82
02197	ROSS CUPP		
	INV0343	DEAN PARK- SOFFIT AND GUTTERS RELACED	6,114.72
TOTAL FOR: ROSS CUPP			6,114.72
01006	SANDRA OSBORN		
	JUNE 11, 2025	REIMBURSEMENT - CONTINUING EDUCATION- 3 CLASSES (POVERTY EXEMPTIONS,18 MILLS CLASS)	153.75
TOTAL FOR: SANDRA OSBORN			153.75
00904	SERVPRO OF EATON COUNTY		
	18477	CLEAN UP POLICE ROOM IN BASEMENT	281.36
TOTAL FOR: SERVPRO OF EATON COUNTY			281.36
02198	SHILA KIANDER		
	06.13.2025	PRINCIPAL RESIDENCE EXEMPTION CLASS	45.00
TOTAL FOR: SHILA KIANDER			45.00
00887	SILK SCREEN STUFF PLUS		
	2542	UNIFORM SHIRTS (PARK RANGER)	102.00
TOTAL FOR: SILK SCREEN STUFF PLUS			102.00
02135	SPALDING DEDECKER ASSOCIATES, INC.		
	00103833	WALNUT STREET PAVING FROM SHEPHERD ST. TO L LINCOLN ST.	7,905.00
TOTAL FOR: SPALDING DEDECKER ASSOCIATES, INC.			7,905.00
00865	SPENCER MANUFACTURING INC		
	19396	RESCUE / PUMPER REPLACEMENT FOR 314	380,816.00
	19423	BLACK DRI DEK FOR NEW TRUCK 314	810.00
TOTAL FOR: SPENCER MANUFACTURING INC			381,626.00
01181	STATE OF MICHIGAN		
	BLR504786	BOILER CERTIFICATION	75.00
TOTAL FOR: STATE OF MICHIGAN			75.00
00847	SWANSON ELECTRIC		
	1548.59	INSTALLED REPLACEMENT LAMPS FOR AIRPORT RUNWAY	1,010.45
	1548.60	ELECTRICAL REPAIR AT CUNTY LIFT STATION	1,267.00
	1548.61	TROUBLESHOT AN EXTERIOR RECEPTACLE WITHOUT POWER	355.00
TOTAL FOR: SWANSON ELECTRIC			2,632.45
01466	TODD COTTER		
	6/10/2025	AIRPORT MANAGEMENT MAY 2025	833.33
TOTAL FOR: TODD COTTER			833.33
00808	TSC TRACTOR SUPPLY		
	735065	AIR BAG REPAIRS FOR TRUCK #313	41.98
TOTAL FOR: TSC TRACTOR SUPPLY			41.98

Vendor Code	Vendor Name / Invoice	Description	Amount
MISC	TYLER MCCALL		
	06.12.2025	RETURN OF DEPOSIT FOR CAMP FRANCES RENTAL 10/14/2023	100.00
TOTAL FOR: TYLER MCCALL			100.00
MISC	UNEMPLOYMENT INSURANCE AGENCY		
	06.13.2025	EMPLOYERS QUARTERLY TAX PAYMENT	60.00
TOTAL FOR: UNEMPLOYMENT INSURANCE AGENCY			60.00
00785	VERIZON WIRELESS		
	6114964444	MAY 2 - JUN 1, 2025	1,380.67
TOTAL FOR: VERIZON WIRELESS			1,380.67
02194	VERLINDE EXCAVATING & TRUCKING		
	5576	REPAIR BLOCKS AND BRICK ON CATCH BASIN ON WASHINGTON STPER PROPOSAL DATED MAY 23	800.00
TOTAL FOR: VERLINDE EXCAVATING & TRUCKING			800.00
02149	VITAL RECORDS CONTROL		
	5140441	64 GALLON BIN	25.00
TOTAL FOR: VITAL RECORDS CONTROL			25.00
00774	WASTE MANAGEMENT OF MICHIGAN, INC		
	8519675-1710-9	REFUSE PICKUP- SERVICE PERIOD 06/01/2025 THRU 06/31/2025	1,682.49
TOTAL FOR: WASTE MANAGEMENT OF MICHIGAN, INC			1,682.49
00758	WINDEMULLER		
	24366443	ANNUAL FLOW METER CALIBRATION	3,704.89
TOTAL FOR: WINDEMULLER			3,704.89
00752	WOLVERINE POWER SYSTEMS		
	0293022-IN	GENERATOR MAINTENANCE	935.00
TOTAL FOR: WOLVERINE POWER SYSTEMS			935.00
TOTAL - ALL VENDORS			955,101.65

PAYMENT TYPE TOTAL

Paper Check	902,507.81
EFT Transfer	52,593.84

COMMERCIAL CREDIT CARD STATEMENT

May, 2025

	DATE	VENDOR	DESCRIPTION	ACCOUNT #	AMOUNT	
Griffith, M	05/01/2025	Michigan Rural Water	Kevin Maxon Training	510-562.000-965.000	$ 205.00	
	05/02/2025	WM Supercenter	Office Supplies	510-550.000-731.000	$ 25.93	
	5/5/2025	Michigan Water Environ	MWEA Membership	510-537.000-960.000	$ 100.00	
	5/6/2025	WEF Main	WEF- Annual Membership (M. Mitschke)	510-537.000-960.000	$ 177.00	
				Subtotal	**$507.93**	
Antcliff, R	5/13/2025	Chick-Fil-A Cafe	Carrol & Leach Meals for Taining	101-301.000-965.000	$ 27.02	
				Subtotal	**$ 27.02**	
Brentar, P	4/16/2025	DRI Print Place	Badge Stickers	101-301.000-900.000	$ 165.59	
	4/28/2025	Jen Gusey Photography	Police Dept. Photo's	101-301.000-731.000	$ 117.91	
				Subtotal	**$ 283.50**	
Perry, S	4/25/2025	Western Safety Product	Air tube for Fresh Air Fan	510-550.000-731.000	$ 583.29	
	4/28/2025	Michigan Water Environ	MWEA Annual Conference	510-537.000-965.000	$ 715.00	
	4/28/2025	Boyne Mountain Lodge	Hotel Stay for Conference	510-537.000-965.000	$ 362.97	
	5/1/2025	WEF Main	MWEA & WEF Membership	510-537.000-960.000	$ 244.00	
				Subtotal	**$ 1,905.26**	
Fullerton,T	4/16/2025	MACEO	J. Jenson Membership (1 year)	101-703.000-960.000	$ 75.00	
	5/2/2025	MACEO	Code Enf. Officers Conference	101-703.000-965.000	$ 40.00	
	5/13/2025	National Registry EMT	B. Stark National EMT Test	206-336.000-960.000	$ 104.00	
				Subtotal	**$ 219.00**	
Christiansen, K	4/21/2025	Amazon Marketplace	Net with built in Posts	206-336.000-963.000	$ 142.04	
	4/22/2024	Amazon Marketplace	Cleaning Kit	206-336.000-963.000	$ 16.91	
				Subtotal	**$ 158.95**	
Larocque,M	4/22/2025	Kent Communications	Special Assessment Letter & Postage	101-215.000-732.000	$ 1,984.36	
	4/23/2025	WM Supercenter	May 2025 Election Supplies	101-262-000-731.000	$ 79.37	
	5/1/2025	Google G Suite	GSuite monthly subscription	666-228.000-810.000	$ 1,139.96	**monthly**
	5/6/2025	North End Party Store	Food for May 2025 Election Workers	101-262.000-731.000	$ 131.80	
	5/6/2025	Quality Dairy	Food for May 2025 Election Workers	101-262.000-731.000	$ 67.96	
	5/6/2025	Subway	Food for May 2025 Election Workers	101-262.000-731.000	$ 54.00	
				Subtotal	**$ 3,457.45**	
Horton, C	4/14/2025	MMTA	MMTA Basic Conference (Siple)	101-253.000-965.000	$ 599.00	
	4/27/2025	Comfort Inn	Lodging for MMTA Basic Conference (Horton	101-253.000-965.000	$ 462.00	
	4/27/2025	Comfort Inn	Lodging for MMTA Basic Conference (Horton	101-253.000-965.000	$ 115.50	
	5/2/2025	FairField Inn	Lodging for MMTA Basic Conference (Siple)	101-253.000-965.000	$ 403.20	
	5/2/2025	Fairfield Inn	Lodging for MMTA Basic Conference (Siple)	101-253.000-965.000	$ 100.80	
	5/5/2025	Kent Communications	Postage for Summer Tax Bills	101-253.000-732.000	$ 2,029.72	
				Subtotal	**$ 3,710.22**	
Whitney, S	5/5/2025	Meijer Store	Water for Office	101-441.000-731.000	$ 23.97	
	5/8/2025	WWW.APWA.NET	inter Maintenance Supervisor Ticket	202-520.000-965.000	$ 150.00	
				Subtotal	**$ 173.97**	
				Total	**$10,443.30**	

CHARLOTTE FIRE DEPARTMENT & RURAL FIRE ASSOCIATION
Fire Chief – Kevin Christiansen
111 E. Lawrence Ave., Charlotte MI 48813
Ph. 517-543-0241

To: Mayor Timothy Lewis, City Council,
Mr. Hillard, City Manager

From: Dan Daly, Captain, and Tyger Fullerton, Asst. Fire Chief

Re: City of Charlotte Fee Schedule Update

In coordination with Ordinance 2025-05, regarding regulating mobile food vending within the City of Charlotte, staff is proposing an update to the City's fee schedule to appropriately capture the costs associated with the mobile food vending permitting process.

The current fee structure does not properly reflect the administrative resources and costs required to process mobile food vending applications. The permitting process includes direct coordination with the applicant, a physical inspection of the mobile food vending unit, and the entry and tracking of all documentation in the City's BS&A software. Upon completion of the review, approved applicants are mailed or emailed a formal permit, which includes the expiration date and other relevant details.

To ensure that the City can continue to efficiently manage this process and recover associated costs, we recommend updating the fee schedule accordingly. Additionally, we have recently had issues with property owners not showing up for scheduled rental inspections. Included in this updated fee schedule is an addition for a "no-show inspection fee". This fee will cover the cost of the employee, fuel, mileage, and coordination with the owner to schedule an additional inspection.

Additional fees added to the fee schedule include a fee for processing commercial firework shows, and also requiring a life safety inspection for firework shows.

Respectfully,

Dan Daly, Captain / Fire Inspector
Charlotte Fire Department

CITY OF CHARLOTTE
RESOLUTION NO. 2025-29

TO ESTABLISH FEES FOR MUNICIPAL SERVICES AND DEPARTMENTS
EFFECTIVE JULY 13, 2025

WHEREAS, pursuant to the City of Charlotte Charter and applicable provisions of the City Code, the City Council is authorized to establish fees for municipal services to recover costs, promote compliance, and provide for the public health, safety, and welfare; and

WHEREAS, the City provides a range of services through its departments—including but not limited to planning, zoning, fire, police, code enforcement, public works, and administration—for which fees are necessary to offset associated expenses; and

WHEREAS, the City Council finds it appropriate and necessary to adopt a comprehensive schedule of fees related to:

- Development reviews, zoning actions, and board applications;
- Public safety services, including fire and police responses, inspections, and permits;
- Public works activities, such as water service, street and sidewalk work, and equipment use;
- Rental registration and inspection;
- Administrative functions including FOIA, notary, and document requests;
- Code enforcement and municipal civil infractions;
- Commercial cannabis licensing and regulation; and

WHEREAS, periodic review and adjustment of these fees ensures they reflect the actual cost of services rendered and the City's regulatory responsibilities.

NOW, THEREFORE, BE IT RESOLVED, that the City Council hereby adopts the schedule of fees for municipal services, to be maintained on file with the City Clerk and posted on the City's website for public inspection;

PLANNING AND ZONING	
Zoning Approval:	40.00
Residential Fence / Deck / Shed under 200 Sqft	50.00
Residential 1 or 2 family Structure or Accessory building	50.00
Chicken Permit (2 year) – Zoning Approval	50.00

Residential Temporary Carport (2 year permit)	50.00
Commercial Shed under 120Sqft	75.00
Commercial Accessory Building	100.00
Commercial Signage:	
Temporary	50.00
Permanent Wall/ground/freestanding (per type)	100.00
Replacement of sign face – no dimensional change	50.00
Comprehensive sign plan review (addition to permanent sign fee)	100.00
Commercial Plan Review – Administrative	150.00
Commercial Plan Review – Planning Commission	250.00
Commercial Temporary use permit	100.00
Zoning Verification Letter (non-FOIA)	50.00
Commercial Cannabis license	5,000.00
Commercial Cannabis license - Annual renewal	5,000.00
Act 425 agreement	1,000.00
Rezoning	500.00
Master Plan Change	500.00
Board of Appeals hearing	400.00
Site plans, including planned development districts	200.00
Planning Commission - Condition Use Permit	400.00
Outdoor Café Permit	150.00
DEPARTMENT OF PUBLIC WORKS - WATER/SEWER/STREETS/SIDEWALKS	

Normal Business Hours M-F 7:30am-4:00pm	
Late Payments Fees of water/sewer bills is calculated at 10% of the unpaid balance	0.10
Water:	
Water Turn On/Off (Seasonal)	40.00
After Hours – Water Turn On/Off (Seasonal)	100.00
Non-payment shut off	80.00
Water Turn On/Off	50.00
After Hours Water Turn On/Off	100.00
Usage Investigation = per visit	50.00
Meter Check:	
Meter to be found in error – none	-
Meter not found to be in error - varies	varies
Water Meter Rental	
Meter Deposit (refundable, less any unpaid charges)	500.00
0 To 5,000 gallons (minimum fee)	50.00
Over 5,000 gallons	100.00
Water billed at 2x usage rate	varies
Frozen Meter Replacements (labor, meter & amp; copper horn) - $50.00 +	
meter/copper horn (varies)	varies
Frozen Meter in Pit - Cost of meter (varies)	varies
Frozen Water Service (labor, equipment, material) – Varies	varies
Sprinkler Meter (labor, meter, copper horn) - $50.00 + meter/copper horn (varies)	varies
Water Permit	100.00
Water Inspection	100.00
System Equity Charge = Varies based on size of connection	varies
Water Tap Fee (residential) = Time & Materials (varies based on size of service	varies
Administration Tap Fee = 10% of water tap fee	varies
Sanitary Sewer:	

Sanitary Sewer Permit	100.00
Sewer Inspection	100.00
Sanitary Sewer Connection (residential/commercial) = varies	varies
Right of Way:	
Permit (any work done in the ROW)	200.00
Dumpster Permit (annually)	50.00
Parking Lot Storage:	
Deposit (cleanup/damages)	200.00
Storage Permit	25.00
Weekly Rent (per space)	50.00
Sidewalk:	
Permit & Inspection	60.00
Curb Cut:	
Permit & Inspection	110.00
Replace or Repair = $100.00 per Linear Ft.	100.00
Driveway Approach: (including sidewalk)	
Permit & Inspection	110.00
Street Cut permit:	
Permit & Inspection	110.00
Repair = Time & Materials	varies
Lane Closures - traffic control plan required for ALL closures	
Application Fee - local street	25.00
Daily Fee - local street	50.00
Application Fee - major street	50.00
Daily Fee - major street	100.00
Cleanup Service Charges:	

Brush cleanup (labor, equipment, contractual services) minimum -	200.00
Trash cleanup (labor, equipment, contractual services) minimum -	250.00
RENTAL REGISTRATION & INSPECTION	
Registration application fees:	
Single family home	100.00
Multi-family home (2-7 dwelling units in one structure):	
First unit	100.00
Units 2-7 (per unit)	50.00
Apartment complex:	
First unit of each building	100.00
Units 2 and above (per unit)	50.00
Mobile home park registration application fee:	
First unit	100.00
Units 2 and above (per unit)	50.00
Re-inspection fee for any unit (per unit)	50.00
No show Inspection Fee	100.00
POLICE DEPARTMENT	
Emergency response incidents involving DUI Varies	varies
False alarm response:	
Residential	100.00
Commercial	200.00
Gun Permit (Notary fee)	10.00
Downtown overnight parking permit (6-month, residents only)	30.00
Police report (copy fees are calculated using FOIA itemization) Varies	varies
Preliminary breath testing - court ordered, city residents	5.00

(conducted only on weekends and holidays at 6:00 a.m.)	
Vehicle crash reports - order online (https://policereports.lexisnexis.com) $ -	online only
FIRE DEPARTMENT	
Certificate of Occupancy:	100.00
Building/structure fire $ 500.00	500.00
False alarms:	
Residential	100.00
Commercial	200.00
Vehicle accident	200.00
Vehicle accident with extrication	500.00
Vehicle fire	500.00
Power line hazard / Gas Leak Standby	
First hour	250.00
Each additional hour (or fraction thereof)	50.00
Fire department standby (per hour)	100.00
Fire report (non FOIA)	25.00
Mobile Food Vending Permit	
Annual (Expires December 31st)	250.00
15 Day	100.00
Daily	50.00
Fire Inspection Fees (based on square footage):	
0 - 4,999	150.00
5,000 - 9,999	200.00
10,000 - 14,999	250.00

15,000 - 24,999	300.00
25,000 - 49,999	350.00
50,000 - 99,999	400.00
100,000 and above	450.00
Fire re-inspection fees:	
2nd re-inspection No charge	-
3rd re-inspection	100.00
4th re-inspection	150.00
5th and subsequent re-inspections - per day (in addition to a citation $ 200.00	200.00
per item, per day)	
Plan review fees:	
Fire safety plan (plus an additional .01 for every square ft. over 2,000)	50.00
Fire suppression plan	200.00
Fire alarm system plan	200.00
Special Events:	
Special events (Over 1,000 People)	25.00
Life Safety Inspection (Required for special events and firework shows)	150.00
Membrane structure, tents, and canopies permit	25.00
Mobile Food Vending Units Part of Special Event	10.00 EA
Fireworks Application	25.00
ADMINISTRATION	
Copies (per page)	0.25
Notary services (per document)	10.00

Freedom of Information Act Request (FOIA) per quarter hour, may incur other fees	9.84
NSF returned check fee	30.00
CODE ENFORCEMENT	
Weed / Tall Grass Cutting Contract Fee plus $25 administrative fee	Varies
Sidewalk Snow Removal Contract Fee plus $25 administrative fee	Varies
MUNICIPAL CIVIL INFRACTIONS	
1 st offense	100.00
2 nd Offense	200.00
3 rd offense	300.00
4 th Offense	500.00

BE IT FURTHER RESOLVED, that this resolution shall supersede all prior fee resolutions in conflict herewith and shall take effect July 13, 2025.

The foregoing resolution was presented by and supported by for approval. Carried; Yea ; Nay ; Absent

CERTIFICATION

I, Mary LaRocque, City Clerk for the City of Charlotte, County of Eaton, State of Michigan, do hereby certify that the foregoing is a true and complete copy of a resolution duly adopted by the City Council of the City of Charlotte during its regular meeting held on June 23, 2025, and that said meeting was conducted and public notice of said meeting was given pursuant to and in full compliance with the Open Meetings Act, being 1976 P.A. 267, and that the minutes of said meeting were kept and will be or have been made available as required by said Act.

_____

Mary LaRocque, City Clerk

THE CITY OF CHARLOTTE MICHIGAN

Memo

To: Honorable Mayor Lewis; City Council
From: Paul Brentar, Chief of Police
Date: 06-03-2025
Re: Staff report on Police Vehicle Purchases

Background
As you recall during the budget discussions for FY 25-26, the City Manger's budget approved replacing two of our patrol vehicles. In preparation for the purchasing of these vehicles I have found that the dealership with the State of Michigan bid does have the ability to order 2 of these vehicles (model year 2025) that meets our specifications.

The bid is from Berger Chevrolet in the amount of $53,871.00 for each vehicle (model year 2025). These vehicles are built from orders for police use and have added features (better suspensions, brakes, etc.) as compared to civilian models. These vehicles are set to be built in July sometime with delivery expected to be taken mid to late September. If we don't order these vehicles now, every other municipality that is in the market is going to be placing orders, after July 1st, and there stands a good chance that we may not be able to find vehicles anywhere to purchase.

Also, if we don't order soon, we would then be looking at having to buy model year 2026 vehicles which will be more expensive. The dealership for Ford that has the state contract cannot give me an accurate price as the deadline for ordering 2025 Ford's has passed and Ford has not released their 2026 pricing yet. Furthermore, switching models will also have additional costs associated with doing so and less expensive vehicles may not save much money overall. A very limited amount of equipment may be able to be reused in a different model vehicle but the more expensive equipment (light bars, consoles, cages, push bumpers, MCT mounts, etc.) will still need to be purchased.

I understand that you have placed a temporary pause on Capital Purchases but if these vehicles aren't ordered soon, we may not be able to replace vehicles at 2025 prices.

Failing to replace police vehicles can hamper our ability to respond to emergencies and will likely drive our maintenance costs up and will take vehicles out of service for longer periods of time for repair. It would also increase the risks to our officer's safety with increased demands on vehicles that should be replaced. Both Union contracts have clauses that state that "the City shall use best efforts to secure automobiles and equipment of quality, design, and construction commensurate with the function and responsibility to be performed and reasonably related to the safety of the Officer involved." We want our officers to be able to respond quickly and efficiently to emergencies with vehicles that are dependable and reliable.

I have looked back at records to show how many vehicles have been purchased over the years. They are as follows:

2009- 2
2010- 2
2011- 2
2012- 1
2013- 2
2014- 1
2015- 2
2016- 0
2017- 0
2018- 2
2019- 2
2020- 2
2021- 1
2022- 2
2023- 2
2024- 2

I have highlighted below some examples of repairs that have had to be done recently to our fleet:

Unit #409 (2022)- Fuel pump, water pump, alternator, blower motor, alternator, transmission.

Units #410 & #411 (2023)- Engine lifters replaced, batteries and wiring replaced after major electrical issue.

Over 3 months of out-of-service time for these repairs alone, not counting other minor/routine repairs. At one point this year we were down to only 2 patrol cars on the road; the rest were in for repairs.

When it comes to the lifecycle of patrol cars, you cannot just look at the mileage alone, you have to consider the number of hours on the engine (just like heavy equipment does). Additionally, these vehicles are driven by numerous officers who all drive differently which wears out the cars faster than a personal vehicle. Below are the engine hours for our current patrol fleet, by model year, as of 06-01-2025. After researching engine hours equivalent to miles, I have found that you need to multiply engine hours by 27.5 on the low end to 60 on the high end. I have done the calculations and put those in red as a comparison.

	Approx. Mileage- Hours x 27.5	Hours x 60
Unit #409 (2022)- 10,348 hrs. (current mileage- 28,798)	284,570	620,880
Unit #410 (2023)- 7496 hrs. (current mileage- 22,512)	206,140	449,760
Unit #411 (2023)- 8758 hrs. (current mileage- 25,640)	240,845	525,480
Unit #412 (2024)- 2243 hrs. (current mileage- 4927)	61,682	134,580
Unit #413 (2024)- 1546 hrs. (current mileage- 4412)	42,515	92,760

As far as which vehicles get replaced, we look at the engine hours, mileage, repairs that have been made along with problems we have had with each of the vehicles. Once all of those are looked at, we make the best determination as to which vehicles to keep and which ones to replace. The vehicles go through a rotation of being the main patrol vehicles, to secondary ones, to the school resource officer's use, to finally utility (trailer pulling & special events). Recently, the vehicles that we have removed from our fleet have been given to Code Enforcement and then trickled down to Wastewater and City Hall for their use. Normally, these vehicles are sold at auction with the proceeds being put back in the General Fund. This has not occurred for the past 2 years as we have assisted other departments with their needs.

Recommendation
I am recommending that City Council consider removing the temporary freeze on Capital Outlay purchases and approve the purchase of these patrol vehicles. Not only is this important for us to deliver emergency services in the most efficient way possible but long term I believe this will be less expensive for the city.

Financial Impacts
These vehicles have been budgeted in FY 25-26 in the police department's budget. Some emergency equipment (lights, siren, cages, etc.) may still need to be purchased and installed and are budgeted for as well.

Suggested Motion
City Council approves the purchase of two (2) Chevrolet Police Tahoe's (model year 2025) in the amount of $107,742.00 from Berger Chevrolet with funds available in Capital Outlay- Motor Vehicles, 101-301.000-973.000.

THE CITY OF
CHARLOTTE
MICHIGAN

Memo

To: Honorable Mayor Lewis; City Council
From: Finance Director/Treasurer, Christina Horton
Date: June 18, 2025
Subject: Transition from BS&A .NET Version to BS&A Cloud Platform

Background:
The City of Charlotte currently utilizes BS&A's on-premises .NET platform to support core administrative functions including finance, tax, utility billing, payroll, and community development. While the .NET version has been a dependable tool, it is increasingly constrained by its reliance on local servers, manual updates, and limited remote accessibility.

In addition, the .NET version is built on Microsoft technologies that are actively being phased out. Microsoft ended support for .NET 6 in November 2024 and for .NET 7 in May 2024. BS&A has indicated that they will be phasing out support for their .NET platform at an undisclosed future date, aligning with Microsoft's lifecycle. Once unsupported, the software will no longer receive updates, security patches, or customer service—posing operational and cybersecurity risks for the City.

BS&A strongly recommends migration to its Cloud-based platform, which is hosted on Microsoft Azure. The Cloud version offers continuous vendor support, robust data security, automatic updates, and significantly improved access for remote and field-based users.

Recommendation:
Staff recommends transitioning from the current BS&A .NET platform to the BS&A Cloud platform. The migration will be managed directly by BS&A, ensuring continuity of operations with minimal disruption. The Cloud version will position the City for improved accessibility, cybersecurity, operational resilience, and long-term cost-efficiency.

Financial Impacts:
The cost of migrating to the BS&A Cloud platform is included in the recently adopted 2025 budget in the Information Technology Pool Fund under contractual services. The cost of the implementation is $71,205 with an annual fee of $47,175. Future savings are anticipated through reduced IT maintenance, server infrastructure needs, and improved staff productivity.

Suggested Motion:

"I move to authorize City administration to proceed with the transition from the BS&A .NET platform to the BS&A Cloud platform, as outlined in the adopted 2025 fiscal year budget. I further move to approve a purchase order to be opened in the amount of$118,300. "

CHARLOTTE FIRE DEPARTMENT & RURAL FIRE ASSOCIATION
Fire Chief – Kevin Christiansen
111 E. Lawrence Ave., Charlotte MI 48813
Ph. 517-543-0241

TO: City Manager Hillard
FROM: Assistant Fire Chief Tyger Fullerton
DATE: 6/18/2025
SUBJECT: Recommendation for Approval- Eaton County Multi-Hazard Mitigation Plan (MHMP)

The Eaton County Multi-Hazard Mitigation Plan (MHMP) has been developed to identify and address potential natural, technological, and human-caused hazards that could affect our community. This comprehensive plan outlines both short- and long-term strategies aimed at reducing risks and safeguarding people, property, and critical infrastructure.

The MHMP is a requirement of the Federal Emergency Management Agency (FEMA) for jurisdictions to remain eligible for certain federal mitigation funding opportunities. By adopting this plan, our community will be better positioned to prioritize risk-reduction efforts, enhance resilience, and mitigate the impacts of future disasters.

Members of the Fire and Police Departments participated in the development of this plan by contributing information and input as stakeholders in collaboration with Eaton County Emergency Management. We appreciate the opportunity to have been included in this important process.

After reviewing the final draft of the MHMP, we are in agreement with its findings and proposed actions. As such, we respectfully recommend approval of the plan.

Please note that Eaton County Emergency Manager Wilkinson will be present during the first public comment portion of the upcoming meeting to address any specific questions.

Respectfully,
Tyger Fullerton
Assistant Fire Chief
Charlotte Fire Department

CITY OF CHARLOTTE
RESOLUTION 2025-30

TO AUTHORIZE THE ACCEPTANCE AND ADOPTION OF THE MULTI-HAZARD MITIGATION PLAN (MHMP) UPDATE

WHEREAS, Eaton County and the townships, cities, and villages with the county have gathered information and prepared an update to the 2023 Tri-County Hazard Mitigation Plan; and

WHEREAS, the Multi-Hazard Mitigation Plan (MHMP) has been prepared in accordance with the Disaster Mitigation Act of 2000 and Title 44 Code of Federal Regulations (CFR), Part 201; and

WHEREAS, Title 44 CFR, Chapter 1, Part 201.6(c)(5) requires each local government participating in the preparation of a Plan Update to accept and adopt such plan; and

WHEREAS, The City of Charlotte has reviewed the MHMP update, has found the document to be acceptable, and as a local unit of government, has afforded its citizens an opportunity to comment and provide input regarding the Plan Update and the actions included in the Plan; and

WHEREAS, The City of Charlotte will consider the MHMP update during the implementation and updating of local planning mechanisms, and will incorporate the hazard assessment data, hazard vulnerabilities, and mitigation actions in these mechanisms, where applicable;

NOW THEREFORE, BE IT RESOLVED, that The City of Charlotte, as a participating jurisdiction, adopts the MHMP Update.

The foregoing resolution was presented by and supported by for approval. Carried; Yea ; Nay ; Absent

CERTIFICATION

I, Mary LaRocque, City Clerk for the City of Charlotte, County of Eaton, State of Michigan, do hereby certify that the foregoing is a true and complete copy of a resolution duly adopted by the City Council of the City of Charlotte during its regular meeting held on June 23, 2025, and that said meeting was conducted and public notice of said meeting was given pursuant to and in full compliance with the Open Meetings Act, being 1976 P.A. 267, and that the minutes of said meeting were kept and will be or have been made available as required by said Act.

_____

Mary LaRocque, City Clerk

U.S. Department of Homeland Security
FEMA Region 5
536 S Clark St
Chicago, IL 60605

FEMA

May 21, 2025

Mr. Matt Schnepp
State Hazard Mitigation Officer
Michigan State Police
Emergency Management and Homeland Security Division
P.O. Box 30634
Lansing, MI 48909

Reference: Adoption Needed to Finish Local Hazard Mitigation Plan Process

Dear Mr. Schnepp:

The Risk Analysis Branch of FEMA Region 5 Mitigation Division has determined the local mitigation plan meets all applicable FEMA mitigation planning requirements except its adoption by the participating jurisdictions of the Eaton County Hazard Mitigation Plan 2025.

Mitigation plans may include additional content to meet Element H: Additional State Requirements or content the local government included beyond applicable FEMA mitigation planning requirements. Determination that the plan is Approvable Pending Adoption does not include the review or approval of content that exceeds these applicable FEMA mitigation planning requirements.

An approved local mitigation plan, including adoption by the local government, is one of the conditions for applying for and/or receiving FEMA mitigation grants from the following programs:

- Hazard Mitigation Grant Program (HMGP)
- HMGP Post-Fire
- Building Resilient Infrastructure and Communities
- Flood Mitigation Assistance
- Safeguarding Tomorrow Revolving Loan Fund

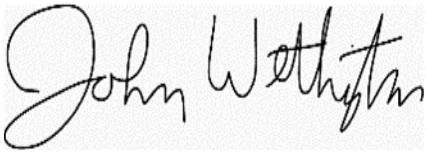
Participating jurisdictions that adopt the plan more than one year after APA status has been issued must either:

- Validate that their information in the plan remainds current with respect to both the risk assessment (no recent hazard events, no changes in developtment) and their mitigation strategy (no changes necessary); or
- Make necessary updates before submitting the adoption resolution to FEMA.

Robert T. Stafford Disaster Relief and Emergency Assistance Act, as amended; the National Flood Insurance Act of 1968, as amended; and National Dam Safety Program Act, as amended; 44 CFR Part 201, Mitigation Planning; and Local Mitigation Planning Policy Guide (FP-206-21-0002)

We look forward to receiving the adoption resolution(s) and discussing options for implementing this mitigation plan. If there are any questions from either you or the communities, please contact Cindy Thomack at (312) 408-5326 or cindy.thomack@fema.dhs.gov .

Sincerely,



John Wethington
Chief, Risk Analysis Branch
Mitigation Division

Enclosures: Plan Participants Status List and Local Plan Review Tool

Enclosure: Plan Participant Status List

Below is the list of the approvable pending adoption jurisdictions in the referenced hazard mitigation plan. Please submit an adoption resolution for each jurisdiction to be included as an approved participant of the plan.

	Community Name	Jurisdiction Status
1)	Bellevue township	APA
2)	Bellevue village	APA
3)	Benton township	APA
4)	Charlotte city	APA
5)	Eaton County	APA
6)	Eaton Rapids city	APA
7)	Eaton township	APA
8)	Grand Ledge city	APA
9)	Olivet city	APA
10)	Potterville city	APA

Multi-Hazard Mitigation Plan (MHMP)

Promulgated 2025

Cover Photo: Stock Image from Canva

Promulgation Statement

As the Chairperson of the Eaton County Board of Commissioners, I am proud to present the *Multi-Hazard Mitigation Plan (MHMP)*. This comprehensive plan represents our commitment to reducing the risks and impacts of natural, technological, and human-caused hazards on our community. It outlines our strategic approach to identifying hazards, assessing vulnerabilities, and implementing mitigation strategies to protect our residents, property, and infrastructure.

The development of this plan has involved extensive collaboration among local government agencies, community organizations, businesses, and the public. Through this cooperative effort, we have established a robust framework to enhance our resilience and readiness for potential hazards, including severe weather events, train derailments, and active violence incidents, among others.

The *MHMP* is not a static document; it is a dynamic roadmap that will be regularly reviewed and updated to reflect new information, emerging threats, and evolving community needs. By adopting and implementing this plan, Eaton County is taking proactive steps to safeguard our community and promote a culture of safety and readiness.

On behalf of the Eaton County Board of Commissioners, I endorse and formally adopt the *MHMP*. I urge all community members to familiarize themselves with this plan and to actively participate in our ongoing efforts to enhance the safety and resilience of Eaton County.

Signed,

Eaton County Board of Commissioners

Board Chairperson

June 18, 2025

Approval and Implementation

Introduction

The *Multi-Hazard Mitigation Plan (MHMP)* purpose is to understand risks from natural, technological, and human-caused hazards and to develop short- and long-term strategies that are designed to reduce death, injuries, and property losses.

Applicability

The provisions of this *MHMP* apply to all county departments, agencies, and partner organizations involved in mitigation projects.

Supersession

This plan hereby supersedes and replaces all previous hazard mitigation plans previously adopted by Eaton County.

Delegation of Authority

To maintain the plan's relevance and effectiveness, authority is hereby delegated to the Eaton County Emergency Manager to make specific modifications to the plan. These modifications may include updates to minor procedural adjustments, and other non-substantive changes that do not alter the overall intent or scope of the plan. Any such modifications are made by the Emergency Manager do not require the signature of the Board Chairperson.

Board of Commissioners Approval

Significant changes to the plan, including those affecting its scope, hazard profiles, or mitigation strategy, must be approved by the Board of Commissioners of Eaton County. These changes will be documented and signed by the Board Chairperson to ensure clarity and authority.

This plan is effective immediately upon the signature of the Board Chairperson listed below and will remain in effect until superseded by a new plan.

This plan is hereby approved and implemented on June 18, 2025.

Signed,

Eaton County Board of Commissioners

Board Chairperson

County Resolution

RESOLUTION TO AUTHORIZE THE ACCEPTANCE AND ADOPTION OF THE MULTI-HAZARD MITIGATION PLAN (MHMP) UPDATE

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WHEREAS, Eaton County has reviewed the MHMP update, has found the document to be acceptable, and as a local unit of government, has afforded its citizens an opportunity to comment and provide input regarding the Plan Update and the actions included in the Plan; and

WHEREAS, Eaton County will consider the MHMP update during the implementation and updating of local planning mechanisms, and will incorporate the hazard assessment data, hazard vulnerabilities, and mitigation actions in these mechanisms, where applicable;

NOW THEREFORE, BE IT RESOLVED, that Eaton County, as a participating jurisdiction, adopts the MHMP Update.

This resolution was thereupon declared duly adopted on June 18, 2025.

FEMA Approval

U.S. Department of Homeland Security
FEMA Region 5
536 S Clark St
Chicago, IL 60605

FEMA

May 21, 2025

Mr. Matt Schnepp
State Hazard Mitigation Officer
Michigan State Police
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Chief, Risk Analysis Branch
Mitigation Division

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4)	Charlotte city	APA
5)	Eaton County	APA
6)	Eaton Rapids city	APA
7)	Eaton township	APA
8)	Grand Ledge city	APA
9)	Olivet city	APA
10)	Potterville city	APA

Record of Changes

Each revision or correction to this *Multi-Hazard Mitigation Plan (MHMP)* must be recorded using PowerDMS. PowerDMS offers robust version control features to effectively manage document changes or corrections throughout their lifecycle. Once published in PowerDMS, any subsequent changes or corrections are tracked meticulously. Each version maintains its own set of data, including change or correction history, ensuring a comprehensive audit trail. This structured approach not only facilitates efficient collaboration but also ensures access to the most current and approved versions of documents, thereby reducing the risk of inconsistencies and enhancing organizational compliance.

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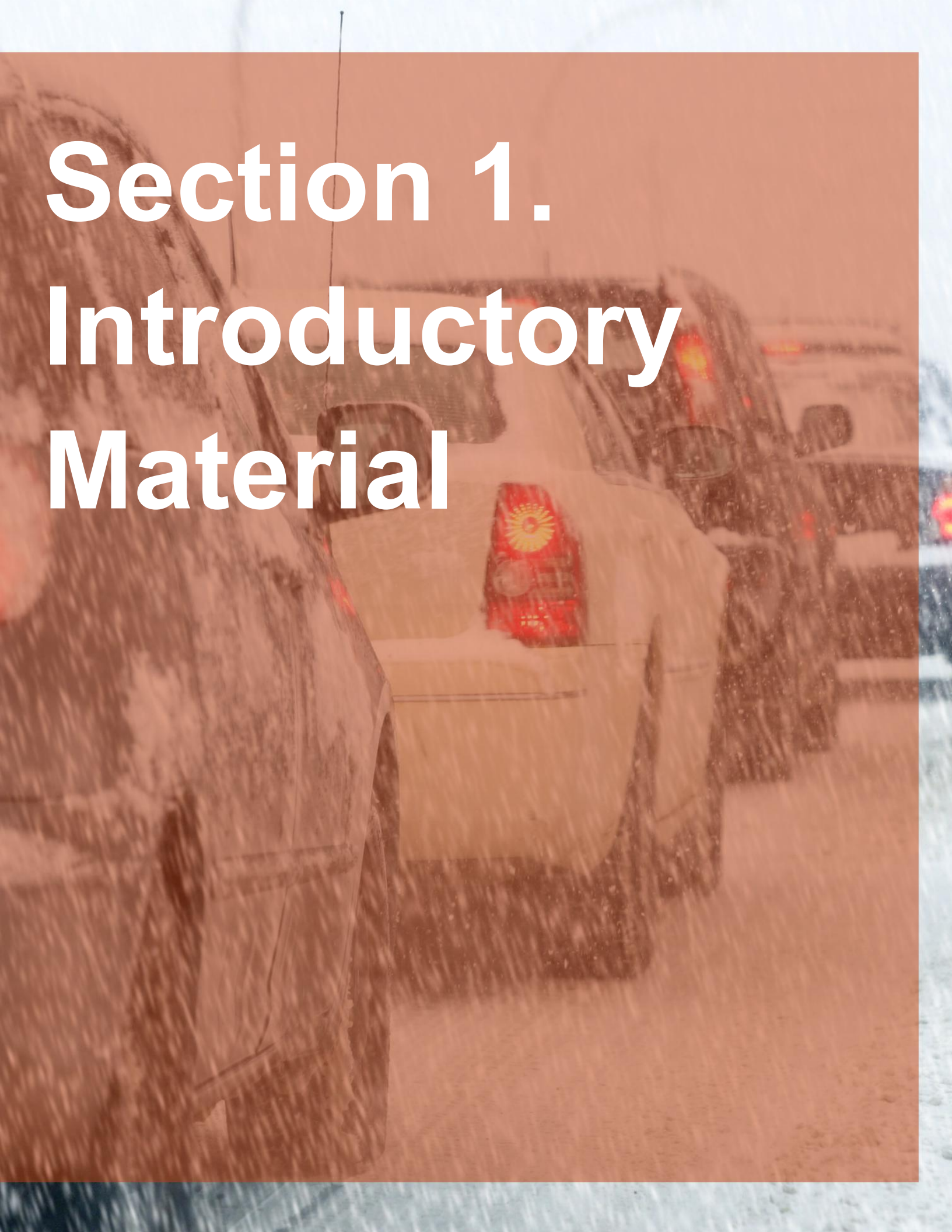


Section 1. Introductory Material

1.1 What is the Multi-Hazard Mitigation Plan (MHMP)?

The *Multi-Hazard Mitigation Plan (MHMP)* is designed to reduce death, injuries, and property losses caused by natural, technological, and human-caused hazards in Eaton County.

The plan identifies hazards based on the history of disasters within the county and lists goals, objectives, strategies, and actions for reducing future losses. Implementation of planned, pre-identified, and cost-effective mitigation measures not only helps reduce loss to life, property, and the environment, but also streamlines the disaster recovery process. Hazard mitigation is most effective when based on an inclusive, comprehensive, long-term plan that is developed before an emergency or disaster occurs. The *MHMP* serves several purposes, including providing an explanation of how Eaton County government departments, offices, and other stakeholders implement an effective comprehensive countywide multi-hazard mitigation plan. Plans are coordinated through appropriate local, and regional agencies, as well as non-governmental interest groups. This 2025 update, and its future revisions, will provide guidance in merging the planning efforts of all local governments, the private sector, and non-profit organizations into one viable and comprehensive mitigation program.

The scope of the *MHMP* is broad. The plan explains how mitigation programs are administered within the county, both within county government and externally with other local agencies and organizations. As required by statute, the Hazard Identification and Risk Assessment (HIRA) section of the *MHMP* identifies natural hazards. In addition, the *MHMP* identifies technological and human-caused hazards. The HIRA section analyzes vulnerability and potential consequences of hazards to Eaton County.

1.2 What is Hazard Mitigation?

For this *MHMP*, hazard mitigation is defined as any action taken to reduce or eliminate the long-term risk to human life and property from natural, technological, and human-caused hazards. A hazard is any event or condition with the potential to cause fatalities, injuries, property damage, infrastructure damage, agricultural loss, environmental damage, business interruption, or other structural or financial loss.

Hazard mitigation aims to make human development and the natural environment safer and more resilient. Hazard mitigation generally involves enhancing the built environment to significantly reduce risks and vulnerability to hazards. Mitigation can also include removing the built environment from disaster prone areas and maintaining natural mitigating features, such as wetlands or floodplains. Hazard mitigation makes it easier and less expensive to respond to and recover from disasters by breaking the damage and repair cycle.

The following list shows examples of hazard mitigation measures:

1. Development of mitigation standards, regulations, policies, and programs for natural, technological, and human-caused hazards.
2. Land use/zoning policies.
3. Strong statewide building code and floodplain management regulations.

4. Dam safety program.
5. Acquisition of flood prone and environmentally sensitive lands.
6. Retrofitting, hardening, or elevating structures and critical facilities.
7. Relocation of structures, infrastructure, and facilities out of vulnerable areas.
8. Public information and education campaigns.
9. Improvement of alert, warning, and notification, and evacuation systems.

Benefits of hazard mitigation include, but are not limited to, the following:

1. Saving lives and protecting public health.
2. Preventing or minimizing property damage.
3. Minimizing social dislocation and stress.
4. Reducing economic losses.
5. Protecting and preserving infrastructure.
6. Reducing legal liability of government and public officials.
7. Less expenditures on response and recovery efforts.

1.3 Plan Requirements

1.3.1 Disaster Mitigation Act (DMA) of 2000

The federal Disaster Mitigation Act (DMA) of 2000 (Public Law 106-390) required state and local governments to develop hazard mitigation plans as a condition for federal disaster grant assistance. Prior to 2000, federal disaster funding focused on disaster relief and recovery, with limited funding for hazard mitigation planning. The DMA increased the emphasis on planning for disasters before they occur.

The planning requirements for local entities are identified in their appropriate sections throughout this Plan. FEMA's October 31, 2007, changes to 44 CFR Part 201 combined and expanded flood mitigation planning requirements with local mitigation plans (44 CFR §201.6). It also required participating National Flood Insurance Program (NFIP) communities' risk assessments and mitigation strategies to identify and address properties repetitively damaged by flood. Appendix A includes a completed FEMA plan review tool, which is an official report card used by FEMA reviewers for local hazard mitigation plans documenting compliance with 44 CFR§201.6.

1.3.2 Emergency Management Accreditation Program (EMAP)

In addition to FEMA requirements, Eaton County Emergency Management is working towards program accreditation through the EMAP by complying with the updated 2022 Emergency Management Standards set forth by the EMAP program. The following EMAP Standards are addressed through this Plan:

1. 4.1 Hazard Identification, Risk Assessment and Consequence Analysis

2. 4.2 Hazard Mitigation

Specific requirements for these EMAP Standards are identified in Section 1. Introductory Material, Section 3. Hazard Identification and Risk Assessment, Section 4. Natural Hazard Profiles, Section 6. Human-caused Hazard Profiles, and Section 7. Hazard Mitigation Strategy.

1.4 Grant Programs Requiring Hazard Mitigation Plans

Table 1 outlines potential funding sources available to local jurisdictions with a FEMA-approved hazard mitigation plan.

Table 1. Grant Programs Requiring Hazard Mitigation Plans

Enabling Legislation	FEMA Assistance Program	Is a Mitigation Plan Required?	
		State Applicant	Local Sub-Applicant
Stafford Act	Individual Assistance (IA)	No	No
	Public Assistance (PA) Categories C though G (e.g., repairs to damaged infrastructure, publicly owned buildings	No	No
	Fire Mitigation Assistance Grants (FMAG)	Yes	No
	Hazard Mitigation Assistance Grants - Planning	Yes	No
	Hazard Mitigation Assistance Grants - Projects	Yes	Yes
	Building Resilient Infrastructure and Communities (BRIC)	Yes	No
National Flood Insurance Act	Flood Mitigation Assistance (FMA) - Planning	Yes	No

	Flood Mitigation Assistance (FMA) - Projects	Yes	Yes

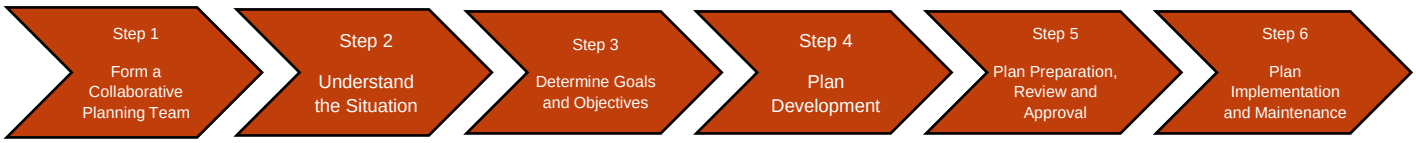
1.5 Planning Process

Plan Requirement
FEMA Requirements Requirement §201.6(c)(1): The plan shall document the planning process used to develop the plan, including how it was prepared, who was involved in the process and how the public was involved. Requirement §201.6(b): An open public involvement process is essential to the development of an effective plan. In order to develop a more comprehensive approach to reducing the effects of natural disasters, the planning process, include: (1) An opportunity for the public to comment on the plan during the drafting stage and prior to plan approval; (2) An opportunity for neighboring communities, local and regional agencies involved in hazard mitigation activities, and agencies that have the authority to regulate development, as well as businesses, academia and other private a non-profit interests to be involved in the planning process; and (3) Review and incorporation, if appropriate, of existing plans, studies, reports, and technical information. **EMAP Standards (2022)** 4.2.1 The Emergency Management Program has a plan to implement mitigation projects and sets priorities based upon loss reduction. The plan: 1) is based on the natural and human-caused hazards identified in Standard 4.1.1 and the risk and consequences of those hazards; (2) is developed through formal planning processes involving Emergency Management Program stakeholders; and (3) establishes short and long-term strategies, actions, goals, and objectives.

Applicable Internal and external stakeholders are included at the beginning of this planning process to capture their understanding of the policy environment and planning priorities while also ensuring their support of the planning process and plan development. If planning time is constrained, Eaton County Emergency Management may compress planning steps or conduct some steps simultaneously to accelerate the process based on identified planning needs or gaps.

The planning process is illustrated in Figure 1 and further detailed below.

Figure 1: Planning Process



1.5.1 Step 1: Form a Collaborative Planning Team

For effective hazard mitigation planning, involving all local jurisdictions and other internal and external stakeholders leads to an informed, shared understanding of risks, needs, and capabilities. This collaborative approach enhances capabilities by empowering local jurisdictions and stakeholders, ultimately fostering a prepared, responsive, and resilient Eaton County. A diverse and integrated planning team prepares the most realistic and complete plans. Obtaining a clear understanding of leadership intent and their participation in the planning effort ensures the necessary level of support and involvement needed from the whole community.

The Collaborative Planning Team for the MHMP was composed of invited township, city, and village representatives.

Table 2. Collaborative Planning Team - Jurisdictions

County	Townships	Cities	Villages
Eaton	Bellevue Township*	Charlotte*	Bellevue*
	Benton Township*	Eaton Rapids*	Dimondale
	Brookfield Township	Grand Ledge*	Mulliken
	Carmel Township	Olivet*	Sunfield
	Chester Township	Potterville*	Vermontville
	Delta Township		
	Eaton Township*		
	Eaton Rapids Township		
	Hamlin Township		
	Kalamo Township		
	Oneida Township		
	Roxand Township		
	Sunfield Township		
	Vermontville Township		
	Walton Township		
	Windsor Township		

Legend		
Continuing Participant	* = New Plan Participant	Invited, but did not meet plan participation requirements

For a jurisdiction to be considered a participant in the plan, the following requirements had to be met:

1. Each of the 26 political subdivisions must meet either in-person or virtually with Eaton County Emergency Management representatives to discuss community capabilities, vulnerabilities, threats, and overall risks, plan elements, and plan drafts. Several meetings were made available to the local jurisdictions, and participation in all meetings, but at least one, was welcomed.
2. The jurisdiction completed a capability assessment survey.
3. The jurisdiction is given an opportunity to provide input on the *Hazard Identification and Risk Assessment (HIRA)*.
4. The jurisdiction provided at least one (1) short-term or long-term hazard mitigation action.

Per the Michigan State Police, Emergency Management and Homeland Security Division, any additional jurisdiction that participated in some form in the planning process as defined in this section but did not submit a hazard mitigation action may adopt the plan if they contribute a new hazard mitigation action or agree to complete at last one mitigation action within their adoption documentation.

1.5.1.1 General Meeting Agenda

The general agenda for meeting with the invited 26 political subdivisions in Eaton County was as follows:

1. Welcome and Introductions
2. Review of the Plan Purpose and Process
3. Review the Hazard Identification and Risk Assessment (HIRA)
4. Review of a Potential Hazard Mitigation Goal, Objective, Action, and Prioritization
5. Plan Implementation and Maintenance
6. Completion of capability assessment (if not completed independently)
7. Questions

Multi-Hazard Mitigation Plan (MHMP)

General Meeting Agenda for Collaborative Planning Team - Jurisdictions

1. Welcome and Introductions
2. Review of the Overall Plan Purpose and Process
3. Review the Hazard Identification and Risk Assessment (HIRA)
4. Review of an EXAMPLE Potential Hazard Mitigation Goal, Objective, Action, and Prioritization.
   a. **Goal**: Improve public information and education on hazard mitigation.
   b. **Objective:** Enhance public information and education efforts to ensure that both internal and external stakeholders understand their risks and can take appropriate mitigation actions.
   c. **Action**: Promote the importance of having multiple ways to receive alerts, warnings, and notifications to both internal and external stakeholders. This action enhances the likelihood of protective action taking and reduces milling time when individuals are at risk.
   d. **Prioritization (STAPLEE Method)**: Medium
5. Plan Implementation and Maintenance
6. Completion of capability assessments
7. Questions

1.5.1.2 Key Internal and External Stakeholder Participation

Additionally, key internal and external stakeholders were invited to provide insight and expertise as the plan was being developed. The list of stakeholders that were invited to provide input into the planning process is included in the table below. Internal and external stakeholder participation opportunities and feedback received is included in *Appendix B. Planning Process Documentation*.

Table 3. Collaborative Planning Team – Key Internal and External Stakeholders

Key Internal and External Stakeholders
Citizens and visitors to include those with access and functional needs
Businesses
Community Groups
Airgas, Inc.
American Red Cross – Mid-Michigan Chapter
Barry County Emergency Management
Barry-Eaton District Health Department
Calhoun County Emergency Management
Capital Region International Airport
Charlotte Police Department
City of Lansing Office of Emergency Management
Clinton County Emergency Management
Consumers Energy
Delhi Township
District One Regional Medical Response Coalition
EATRAN
Eaton County Central Dispatch
Eaton County Community Development
Eaton County Department of Construction Codes & Planning and Zoning
Eaton County Drain Commissioner
Eaton County Fire Chiefs Association
Eaton RESA
Eaton County Road Commission
Eaton County Technology Services
Eaton Rapids Medical Center
Eaton Rapids Police Department
General Motors

Gratiot County Emergency Management
HomeWorks Tri County Electric Cooperative
Ingham County Emergency Management
Ionia County Emergency Management
Jackson County Emergency Management
Lansing Board of Water and Light
Lansing Community College
Lenawee County Emergency Management
Livingston County Emergency Management
Michigan State Police, Emergency Management and Homeland Security Division
Michigan State University
National Weather Service
SEMCO Energy
Shiawassee County Emergency Management
University of Olivet
21st Century Plastics Corp.

1.5.1.3 Create an Outreach Strategy for Public Participation

Outreach to and involvement of the public in the hazard mitigation planning process is a key component of the effectiveness of the final plan. Public outreach was accomplished both at the beginning and the end of the planning process. The plan was advertised by Eaton County Emergency Management and jurisdictions within. A full accounting of advertising for the public survey is included in *Appendix B. Planning Process Documentation* to this plan.

1.5.2 Step 2: Understand the Situation

1.5.2.1 Hazard Identification and Risk Assessment

Planning is fundamentally a method to manage risk. The *Hazard Identification and Risk Assessment (HIRA)* identifies and evaluates our risks, vulnerabilities, and potential consequences from natural, technological, and human-caused hazards. This enables us to better analyze, decide, implement, and evaluate courses of action to manage these hazards and identified risks, vulnerabilities, and potential consequences, thereby building, sustaining, and delivering the necessary capabilities.

1.5.2.2 Incorporation of Other Plans and Studies

To fully understand the situation and prepare the plan, we reviewed existing plans, studies, reports, technical information, and other relevant documents to ensure they were properly incorporated. These documents include:

1. Barry-Eaton District Health Department plans
2. Eaton County Drain Commissioner Annual Report (2023)
3. Emergency Operations Plan (EOP)
4. *Hazard Identification and Risk Assessment (HIRA)*
5. Eaton County Master Plan (2024-2044)
6. Eaton County GIS
    a. Eaton County Demographics
    b. Flood Risk Viewer
    c. Hydrology Viewer
7. Delta Township Emergency Operations Plan (EOP)
8. Local by-laws, building codes, and zoning ordinances
9. Michigan Hazard Analysis (Natural Hazards) (MSP/EMHSD Pub.103 2024 V1 Edition)
10. Michigan Hazard Mitigation Plan (MSP/EMHSD Pub. 106 April 2024)
11. Michigan Hazard Mitigation Success Stories (MSP/EMHSD Pub. 106a October 2020)
12. Tri-County Regional Hazard Mitigation Plan (2023)

1.5.3 Step 3: Determine Goal(s) and Objective(s)

The collaborative planning team should determine goal(s) and objective(s) of the plan. Goals are broad, general statements that indicate the intended methods for achieving the mission. Objectives are more specific and identifiable actions carried out during the operation. Clear definition of goals and objectives enables unity of effort and consistency of purpose among the multiple groups and activities involved in executing the plan.

The broad desired outcome of the *MHMP* is to reduce the loss of life and property, minimize economic disruption, and enhance the overall resilience of a community to various hazards.

The actionable steps taken to achieve the broader goal of the *MHMP* are:

1. Conduct comprehensive assessments to identify potential natural, technological, and human-caused hazards that may impact the community. Evaluate the likelihood, frequency, and severity of these hazards to understand the risks and vulnerabilities within the community.
2. Develop and prioritize specific mitigation actions and projects aimed at reducing the impact of identified hazards.

3. Foster a culture of readiness and resilience within the community by promoting public awareness, education, and involvement.

1.5.4 Step 4: Plan Development

When developing the plan, courses of action for achieving the goals and objectives have been identified:

1. **Course of Action #1 –** Conduct a plan review with the Michigan State Police, Emergency Management and Homeland Security Division Hazard Mitigation Unit.
2. **Course of Action #2** – Review and ensure the plan aligns with FEMA requirements and United States Code of Federal Regulations.
3. **Course of Action #3 -** Review and ensure the plan aligns with all applicable Emergency Management Accreditation Program (EMAP) Standards.

1.5.4 Step 5: Plan Preparation, Review, and Approval

Step 5 turns any developed courses of action under Step 4 into a plan. A rough draft of the plan is developed, including any relevant and meaningful annexes. The final draft and is circulated amongst the collaborative planning team for comment as they will be responsible for implementing the plan. The team should check the written plan for conformity to applicable legal requirements and standards and for its usefulness in practice.

1.5.4.1 Outreach Strategy for Public Participation Continued

Once the initial draft of the plan was completed, it was released for public review. The review period ran from October 21, 2024, through October 31, 2024, following all applicable county requirements for public input. The plan was posted for online access, and a survey was developed to collect comments. Proofs of publication are in the *Appendix B. Planning Process Documentation*. Received comments were reviewed and incorporated into the document as appropriate.

1.5.4.2 Plan Approval

The plan is then presented to the Public Safety Committee for approval. The Public Safety Committee will recommend the approval of the plan by resolution to the Board of Commissioners.

Once approved by resolution from the Board of Commissioners, the Board Chairperson will sign the “Promulgation Statement” and the “Approval and Implementation” page of this plan.

1.5.5 Step 6: Method and Schedule for Evaluation, Maintenance, and Revision

Plan Requirement
FEMA Requirements 44 CFR Requirement §201.6(c)(4): The plan maintenance process shall include a section describing the method and schedule of monitoring, evaluating, and updating the mitigation plan within a five-year cycle.

44 CFR Requirement §201.6(c)(4)(iii): The plan maintenance process shall include a discussion on how the community will continue public participation in the plan maintenance process.

EMAP Standards (2022)

Standard 4.1.3: The Emergency Management Program has a maintenance process for its Hazard Identification and Risk Assessment identified in Standard 4.1.1 and the Consequence Analysis identified in Standard 4.1.2, which includes a method and schedule for evaluation and revision.

Standard 4.2.3: The Emergency Management Program has a process to monitor overall progress of the mitigation activities and documents completed initiatives and their resulting reduction or limitation of hazard impact on the jurisdiction

The *MHMP* is open for informal public review on the county emergency management website, where the public is encouraged to provide feedback by responding to a set of open-ended questions in the accompanying survey.

The *MHMP* will be reviewed using this planning process in accordance with the Eaton County Emergency Management policy *411- Plans Maintenance*. This plan will be reviewed and updated every five years to ensure compliance with federal regulations and maintain program eligibility.

1.5.5.1 Plan Revisions

Plan refinement may also be triggered through the evaluation and identification of corrective actions from an exercise or real-world incident; changes in risk posture; or changes in law, policy, or doctrine

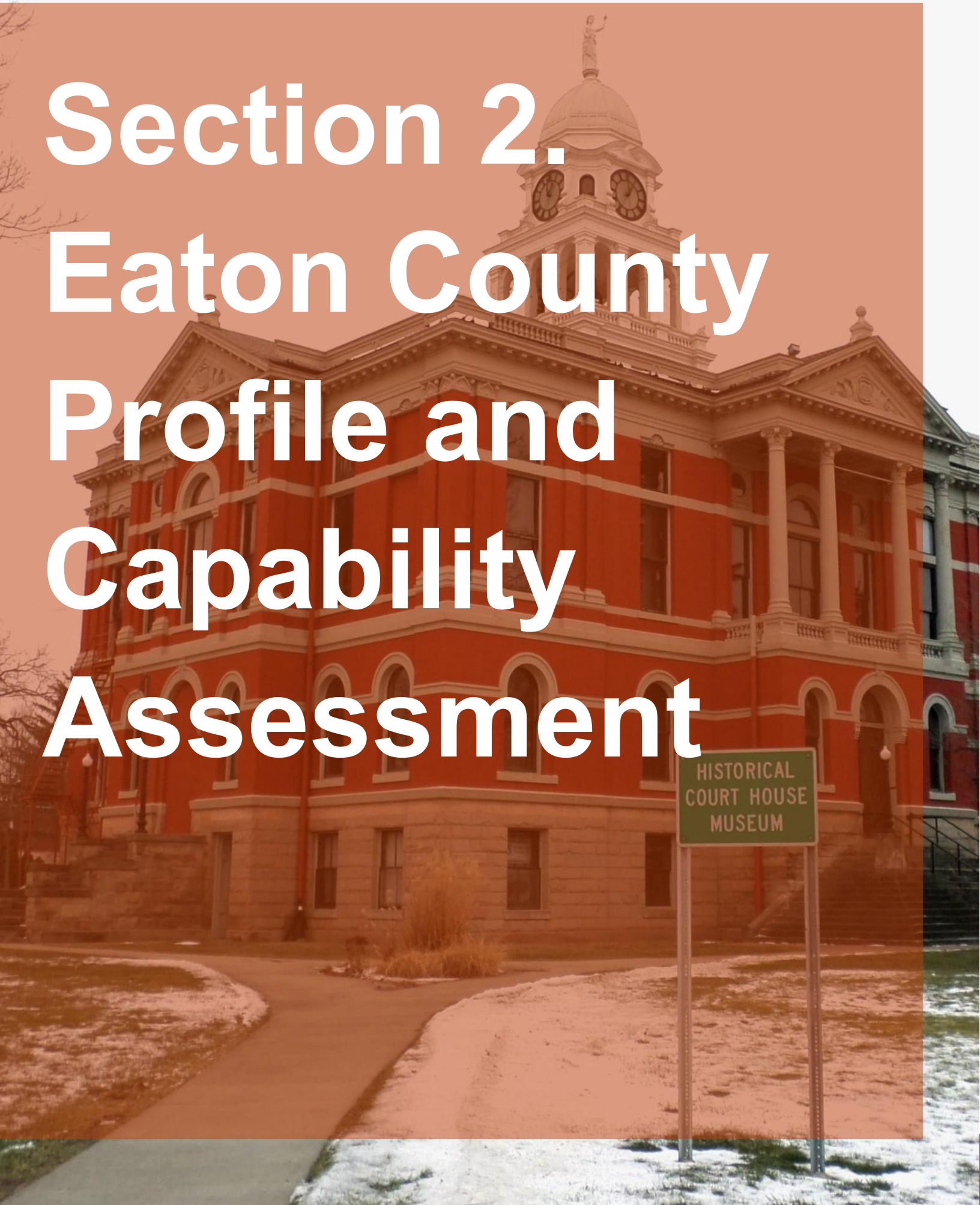
Emergency Management is authorized to make minor changes to the *MHMP* on an as-needed basis. Minor changes (e.g., spelling, personnel title changes, updates to critical systems and resources) will not require re-promulgation and approval. Major changes, such as those that would alter or establish new policy, will require the plan to be re-promulgated and approved by the Board of Commissioners.

1.5.5.2 Monitoring and Maintenance Evaluation Criteria

When monitoring and reviewing the *MHMP* using this planning process, consider whether there have been any changes to:

1. Goals and objectives of the plan
2. Updates to data based on any emergencies or disasters that have occurred since the last update.
3. Changes to risk, vulnerability, and consequence
4. Changes to funding
5. Progress on mitigation actions
6. Any codes, ordinances, or statutes that have been changed or modified
7. Identification of new natural, technological, or human-caused hazards

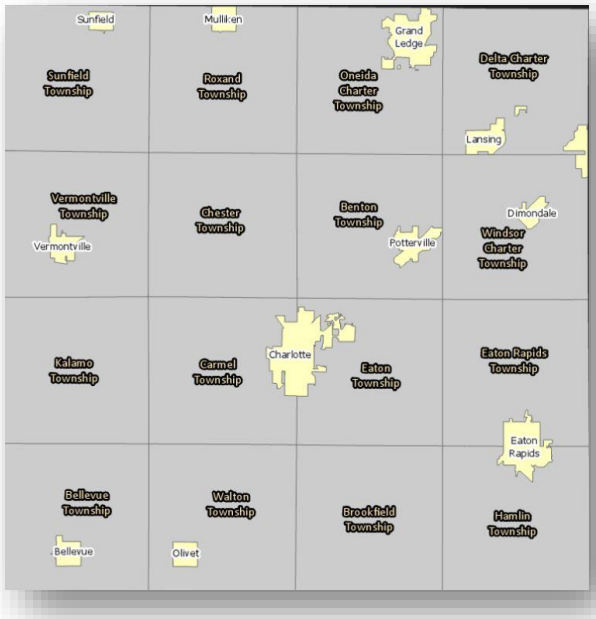
Section 2. Eaton County Profile and Capability Assessment



2.1 Eaton County Profile

Eaton County is a county in the U.S. state of Michigan. The county seat is Charlotte. Eaton County is a mostly rural county near larger urban centers such as the City of Lansing (State Capital), Battle Creek, and Grand Rapids. The county encompasses sixteen townships, five cities, five villages, and a census designated place.

Figure 2. Map of Townships, Cities, and Villages



2.1.1 Geography

According to the US Census Bureau, Eaton County has a total area of 579 square miles, of which 575 square miles (99.3%) is land and 4.3 square miles (0.7%) is water.

2.1.2 Demographics

According to the US Census Bureau, there are 108,820 individuals and 47,647 housing units in Eaton County. Eaton County is 86.6% white, 7.4% black, 0.6% American Indian and Alaskan Native, 2.5% Asian, 0.1% Native American and Other Pacific Islander, 2.9% two or more races and 6.1% Hispanic or Latino. In 2020, 5.1% of the population was under 5 years of age and 20.3% were 65 years and older.

2.1.3 Economy

According to the US Census Bureau, the median household income in Eaton County is $77,158. 9.0% of the population lives below poverty level.

2.1.4 Infrastructure

Infrastructure is comprised of the basic facilities and services needed for a community. Eaton County's public infrastructure, excluding transportation features, is limited to population centers where sewer and water services are provided by the local municipality. The most comprehensive systems (sewer/water) are in place to serve residents in urbanized areas in Metropolitan Lansing and all charter townships, including Grand Ledge, Charlotte, and Eaton Rapids. Eaton County still maintains a significant number of residents and businesses outside of public water and sewer service. There are rural individual structures and small residential and commercial developments throughout Eaton County still only served by groundwater wells and individual or small shared septic systems. Municipal level public works services of sewer and water exist at some level in incorporated cities and villages. Municipalities with services include the larger communities such as the cities of Charlotte, Eaton Rapids, and Grand Ledge, and Delta Charter Township. A variety of communities in the urbanized core area of Delta Township have water and/or sewer services provided through contracts and joint services agreements with the Lansing Board of Water and Light. Partial services of water or

sewer are common in the study area's smaller villages and towns such as Sunfield, Olivet, and Vermontville.

2.1.5 Critical Facilities

The Federal Emergency Management Agency (FEMA) defines critical facilities as those structures from which essential services and functions for victim survival, continuation of public safety actions, and disaster recovery are performed or provided.

2.1.5.1 Utilities

Consumers Energy, Lansing Board of Water and Light, HomeWorks Tri-County Electric Cooperative, and SEMCO Energy provide power and natural gas to residents and businesses in Eaton County. The City of Eaton Rapids also has an electric department that serves approximately serves approximately 2,500 customers. Natural gas is the most common form of heating fuel type for households, and the communities in the urbanized portions of the county are mostly served by traditional gas utility lines. Bottled, tank or LP gas provides a large portion of the heat fuel to homes and businesses in the more rural areas. Some older areas still rely on oil fuel. There has been a growing trend to use wood-burning furnaces located outside the home. Fuel cost increases over the past few years caused a spike in the number of fuel-efficient burners that use corn or wood pellets.

2.1.5.2 Public Safety

Eaton County, Michigan, is well-equipped with public safety facilities that ensure the safety and security of its residents. The county is served by the Eaton County Sheriff's Office, which operates the county law enforcement facility and county jail in Charlotte. In addition to the Sheriff's Office, there are six local police departments that provide law enforcement services throughout the county. Additionally, the Michigan State Police First District Headquarters and Headquarters is situated in Eaton County, along with Lansing Post No. 11 which covers the counties of Ingham, Clinton, and Eaton. Fire protection and emergency medical services are delivered by 13 fire departments and one private EMS agency, which are strategically located to provide rapid response across their coverage areas. These facilities work collaboratively to maintain a high standard of public safety, ensuring that Eaton County remains a secure and resilient community.

2.1.5.3 Emergency Operations Center (EOC)

The primary EOC is located at 911 Courthouse Dr., Charlotte, Michigan. The primary facility is a secure, fully equipped center designed to efficiently coordinate and sustain response and recovery operations, with emergency power reliably provided by an on-site generator.

In the event the primary county EOC, located at 911 Courthouse Dr., Charlotte, Michigan space becomes damaged, not usable, or is located within a direct hazard area and staffing a physical EOC is required, personnel and necessary equipment, supplies, and materials will be relocated to the Delta Township EOC located at the Delta Township Central Fire Station, 811 N. Canal Rd., Lansing, Michigan 48917. Suitable protected space is available in this facility.

The alternate facility is a secure, fully equipped center designed to efficiently coordinate and sustain response and recovery operations, with emergency power reliably provided by an on-site generator.

Eaton County Emergency Management, in coordination with the Delta Township Fire Department maintains a memorandum of understanding to set forth the terms and understanding between the Delta Township Fire Department and Eaton County Emergency Management to be alternate EOC locations for one another in the event a primary EOC space becomes damaged, not usable, or is located within a direct hazard area and staffing a physical EOC is required.

2.1.5.4 Healthcare Facilities

Eaton County is home to a variety of healthcare facilities that provide comprehensive medical services to its residents. These facilities include hospitals, such as the Eaton Rapids Medical Center and Sparrow Eaton Hospital, which offer emergency care, surgical services, and inpatient care. Additionally, there are numerous clinics and primary care offices family medicine, pediatrics, and specialized outpatient services. The county also hosts several long-term care and rehabilitation centers, as well as adult foster care facilities ensuring support for elderly and recovering patients. Mental health services are available through organizations like Community Mental Health Authority of Clinton, Eaton, and Ingham, which offer counseling and psychiatric care. Overall, Eaton County's healthcare facilities are equipped to meet the diverse needs of the community, ensuring accessible and quality care for all residents.

2.1.6 Cultural and Historic Resources

Historic resources and structures provide an irreplaceable link to the cultural history of Eaton County. Historic properties may also be valuable economic assets that attract business and tourism. Historic structures may be more vulnerable to certain hazards since they have fewer safety measures installed. Table 4 provides information on registered historic places in Eaton County according to the National Register of Historic Places.

Table 4. Cultural and Historic Resources

Name on the Register	Date Listed	Location	Township, City, or Village
Bellevue Mill	March 4, 1975	218 E. Mill St.	Bellevue
Charlotte Central Historic District	October 16, 2020	Cochran Ave. and adjacent streets; West McClure St. To south of Henry St.	Charlotte
Eaton County Courthouse	April 2, 1972	W. Lawrence Ave. at Cochran and Bostwick St.; also 100 W.	Charlotte

		Lawrence and 120 N. Bostwick	
First Congregational Church	September 3, 1971	341 S. Main St.	Vermontville
First Congregational Church	August 26, 1993	106 S. Bostwick St.	Charlotte
Grand Ledge Chair Company Plant	November 3, 1987	101 Perry St.	Grand Ledge
Hance House	August 21, 1972	217 Yale St.	Olivet
Island City Historic District	August 28, 2012	N. and S. Main, E. and W. Hamlin, E. and W. Knight King, Hall, and Spicer St.	Eaton Rapids
Michigan Central Railroad Charlotte Depot	March 15, 2000	430 N. Cochran Ave.	Charlotte
Powers Highway-Battle Creek Bridge	January 7, 2000	Powers Highway over Battle Creek	Brookfield Township
Residential Drive-Townline Brook Bridge	January 7, 2000	Residential Drive over Townline Bridge	Walton Township
Isaac N. Reynolds House	July 18, 1974	123 N. East St.	Eaton Rapids

2.1.7 Natural Environment

Environmental assets and natural resources are important to the identity and quality of life for Eaton County and support the economy through agriculture, recreation, and a variety of other ecosystem services, such as clean air and water. The natural environment also provides protective functions that reduce hazard impacts and increase resiliency. For instance, wetlands and riparian areas help absorb floodwaters; soils and landscaping contribute to stormwater management, and vegetation provides erosion control and reduces runoff. Conservation of environmental assets may present opportunities to meet mitigation and other community objectives, such as protecting sensitive habitats, developing parks and trails, or contributing to the economy.

Eaton County is part of three separate watersheds. The Upper Grand River watershed covers approximately 34% (or 128,000 acres) of the county. The Thornapple River watershed is a sub-watershed of the Lower Grand River watershed and covers approximately 44% (or 163,000 acres) of

the county. The Battle Creek watershed, a sub-watershed of the Kalamazoo River watershed, covers approximately 21% (or 79,000 acres) of the county.

2.1.8 Development Patterns

An effective way that Eaton County can reduce future losses is to avoid development in areas with known hazards. Even though there is the potential for additional development across the county, growth should only occur when municipal or county services have the capacity to absorb the growth and there is a fiscal ability and community agreement to the expanded infrastructure required for growth. The area's vulnerability to natural hazards specifically is not expected to change dramatically over the next five (5) years due to increased development as many portions of the county are built out. Enforcement and strengthening of current building codes will ensure that development will be stronger and more resilient than some of the older structures across the county. Table 4 represents the change in housing units between the decennial censuses. In the future, Eaton County should attempt to provide an assortment of housing options for all segments of the population to supply adequate housing for the growing population.

Table 5: Change in Housing Units Between the Decennial Censuses

Housing Units (2010)	Housing Units (2020)	Percent Change
47,050	47,497	1.0%

Table 6: Change in Population of Participating Jurisdictions

Jurisdiction	Population (2010)	Population (2020)	Percent Change
Eaton County	107,759	109,175	1.3%
Bellevue Township	3,150	3,202	1.7%
Benton Township	2,796	2,766	-1.0%
Delta Township	32,408	33,119	2.2%
Eaton Township	4,072	4,007	-1.6%
City of Charlotte	9,074	9,299	2.5%
City of Eaton Rapids	5,214	5,210	No change
City of Grand Ledge	7,786	7,784	No change
City of Olivet	1,605	1,517	-5.5%
City of Potterville	2,617	3,055	16.7%
Village of Bellevue	1,282	1,308	2.0%

Source: Census Bureau Data

2.1.9 Governor's Declarations

There are two (2) types of emergency declarations that can be proclaimed by the Governor. A disaster declaration is when conditions exceed the control of local government and require state assistance. It is a request for the state to help manage emergency response and recovery efforts. A state of emergency is when conditions exceed the control of local government and require state assistance. It is a request for state resources to assist with local emergency response and recovery efforts.

Between 1977 and 2024, Eaton County has received six (6) state of disaster declarations and four (4) state of emergency declarations. The causes for these declarations included tornadoes, severe summer storms, severe winter storms and freezing, and flooding. Additionally, Eaton County received a declaration for the national activities to support evacuation from Hurricane Katrina in 2005 and the national response to COVID-19 in 2020.

Table 7: Governor's Declarations in Eaton County 1977 - 2024

Date of Incident	Type of Incident	Type of Declaration
1/18/1977	Blizzard	Disaster
4/6/1977	Tornado, Severe Winds	Disaster
1/26/1978	Blizzard, Snowstorm	Disaster
1/15/1985	Ice Storm	Disaster
9/4/2005	Hurricane Evacuation	Disaster
6/13/2008	Thunderstorms	Emergency
2/19/2018	Flooding	Disaster
1/29/2019	Extreme Cold	Emergency
3/10/2020	Pandemic (COVID-19)	Emergency
***8/23/2023	Severe Wind, Tornadoes, Flooding	Emergency

Source: Michigan State Police, Emergency Management and Homeland Security Division *** = major incident since 2023 plan update

2.1.10 Federal Disaster Declarations

There are two (2) types of disaster declarations provided for in the Stafford Act – emergency declarations and major disaster declarations. Both declaration types authorize the president of the United States to provide supplemental federal disaster assistance; however, the event related to the disaster declaration and type and amount of assistance may differ.

An emergency declaration can be declared for any occasion or instance when the president determines federal assistance is needed. Emergency declarations supplement state and local efforts in providing emergency services, such as the protection of lives, property, public health, and safety, or to lessen or avert the threat of a catastrophe in any part of the United States.

A major disaster declaration can be declared for any natural event, or regardless of cause, that the president believes has caused damage of such severity that it is beyond the combined capabilities of state and local governments to respond. A major disaster declaration provides a wide range of federal assistance programs for individuals and public infrastructure, including funds for both emergency and permanent work.

Between 1965 and 2024, Eaton County has received 12 separate emergency and disaster declarations. The causes for these declarations included tornadoes, severe summer storms, severe winter storms and freezing, flooding, and power outages. Additionally, Eaton County received a declaration for the national activities to support evacuation from Hurricane Katrina in 2005 and the national response to COVID-19 in 2020.

Table 8: Federal Disaster Declarations in Eaton County 1965 - 2024

Declaration Number	Year	Declaration Title
DR-190-MI	1965	Tornadoes and Severe Storms
DR-330-MI	1972	Severe Storms and Freezing
DR-465-MI	1975	Severe Storms, High Winds, and Flooding
EM-3030-MI	1977	Snowstorms
EM-3057-MI	1978	Blizzards and Snowstorms
EM-3160-MI	2001	Snow
EM-3189-MI	2003	Power Outage
DR-1527-MI	2004	Severe Storms, Tornadoes, and Flooding
EM-3225-MI	2005	Hurricane Katrina Evacuation
DR-1777-MI	2008	Severe Storms, Tornadoes, and Flooding
EM-3455-MI	2020	COVID-19

***DR-4757-MI	2023	Severe Storms, Tornadoes, and Flooding

Source: Federal Emergency Management Agency (FEMA) *** = major incident since 2023 plan update

2.1.11 StormReady Certification

The Governor and Presidential Declarations, as highlighted in subsections 2.1.9 and 2.1.10, clearly emphasize that natural hazards pose the greatest risks to Eaton County. In response, Eaton County collaborated with the National Weather Service to achieve the StormReady certification.

The StormReady program provides a framework for communities to adopt comprehensive standards and protocols to enhance preparedness for hazardous weather events. These standards include:

1. Maintaining diverse and reliable sources for receiving hazardous weather information.
2. Establishing multiple methods to monitor evolving hazardous weather conditions.
3. Developing effective communication systems to disseminate critical weather information to the entire county population.

Additionally, the StormReady program requires communities to implement detailed hazardous weather plans, conduct exercises to practice responding to various weather-related scenarios, and provide training for internal and external stakeholders to ensure a coordinated response.

While StormReady does not guarantee immunity from severe weather, it signifies that a community has taken significant steps to ready for and mitigate the impacts of hazardous weather events. By adhering to these standards, Eaton County has enhanced its readiness and resilience.

Eaton County proudly achieved its StormReady certification in November 2024, demonstrating its commitment to the safety and well-being of its residents and visitors.

2.2 Capability Assessment

This capability assessment examines the existing studies, plans, programs, and policies that have incorporated hazard mitigation and other proactive measures into processes at the local and county levels. The purpose of the capability assessment is to highlight successes, identify shortcomings, and lay the groundwork for possible improvement. The adopting jurisdictions recognize that the inclusion of mitigation initiatives not only benefits the community by reducing human suffering, damages, and the costs of recovery but also helps build and maintain sustainability and economic health across the region.

To understand what capabilities are in place in each of the participating jurisdictions, a capabilities assessment was conducted with each jurisdiction. The assessment focused on those capabilities that can be used in tandem with the Plan update to build resilience within and across each participating jurisdiction. The capabilities assessment focused on the following key areas:

1. Planning and Regulatory
2. Administrative and Technical
3. Financial
4. Public Information and Education

2.1.2 Planning and Regulatory Capabilities

Planning and regulatory capabilities are based on the implementation of local ordinances, policies, plans, and programs that relate to guiding and managing growth and development. Table 7 provides a summary of the relevant plans, ordinances, and programs already in place across the Eaton based on capability assessment responses.

2.2.2 Administrative and Technical Capabilities

Administrative and technical capabilities refer to the jurisdiction's staff and their skills and tools that can be used for mitigation planning and to implement specific mitigation actions. It also refers to the ability to access and coordinate these resources effectively. Table 8 provides a summary of the types of personnel employed by the jurisdiction, the resources available to implement mitigation actions, and the level of knowledge and/or technical expertise.

2.2.3 Financial Capabilities

Financial capabilities are the resources that a jurisdiction has access to or is eligible to use to fund mitigation actions. Table 9 provides a summary of what funding sources a community may have access to. It is understood that some governments have access to recurring sources of revenue beyond property, sales, and incomes taxes, such a stormwater utility or development impact fees.

The primary funding mechanisms used to implement hazard mitigation projects are FEMA's three Hazard Mitigation Assistance (HMA) programs. The grant program includes Hazard Mitigation Grant Program (HMGP), Building Resilient Infrastructure and Communities (BRIC), Flood Mitigation Assistance (FMA). These competitive grant programs are intended to provide funding for eligible mitigation measures that reduce loss. Adoption of this plan will increase participants' eligibility for federal grants to develop hazard mitigation plans and execute hazard mitigation projects, reducing the risks from disasters and natural hazards. According to the National Institute of Building Sciences findings (2019), every $1 spent on mitigation funding can save $6 in future disaster costs.

In addition to the federal opportunities, Michigan does have a Disaster and Emergency Contingency Fund because of amendments to Public Act 390, which requires the legislature to annually appropriate sufficient funds to maintain the fund at a level between $2.5 million and $10 million. The governor authorizes these funds to provide to state assistance to counties and municipalities when federal assistance is not available.

2.2.4 Public Education and Information Capabilities

This type of capability refers to education and outreach programs and methods already in place that could be used to aid a jurisdiction in implementing mitigation activities and communicating hazard-

related information. Table 10 provides a summary of what types of activities or communications are available to improve a jurisdiction's awareness of hazards and risks.

Table 9. Planning and Regulatory Capabilities

✓ = Yes X = No - = did not participate and therefore unknown

Jurisdiction	Jurisdiction Type	Emergency Operations Plan	Support Emergency Operations Plan	Recovery Plan	Continuity of Government Plan	Departmental Continuity of Operations Plans	Master Plan	Capital Improvements Plan/Program	Economic Development Plan	Stormwater Management Plan	Transportation Plan	Floodplain Ordinance	Flood Insurance Rate Maps	Zoning Ordinance	Community Wildfire Protection Plan	Acquisition of Land for Open Space and Public Recreation	Subdivision Ordinance
Eaton	County	✓	X	✓	✓	✓	✓	✓	X	✓	✓	X	X	X	X	X	X
Bellevue	Township	✓	X	✓	X	X	✓	X	X	X	X	✓	✓	✓	X	X	✓
Benton	Township	✓	X	✓	X	X	X	X	X	X	X	✓	✓	✓	X	X	X
Brookfield	Township	✓	X	✓	X	X	-	-	-	-	-	-	-	-	-	-	-
Carmel	Township	✓	X	✓	X	X	-	-	-	-	-	-	-	-	-	-	-
Chester	Township	✓	X	✓	X	X	-	-	-	-	-	-	-	-	-	-	-
Delta	Township	✓	X	✓	X	X	✓	✓	✓	✓	✓	✓	✓	✓	X	-	✓
Eaton	Township	✓	X	✓	X	X	✓	X	✓	✓	X	X	X	✓	X	✓	✓
Eaton Rapids	Township	✓	X	✓	X	X	-	-	-	-	-	-	-	-	-	-	-
Hamlin	Township	✓	X	✓	X	X	-	-	-	-	-	-	-	-	-	-	-
Kalamo	Township	✓	X	✓	X	X	-	-	-	-	-	-	-	-	-	-	-
Oneida	Township	✓	X	✓	X	X	-	-	-	-	-	-	-	-	-	-	-
Roxand	Township	✓	X	✓	X	X	-	-	-	-	-	-	-	-	-	-	-
Sunfield	Township	✓	X	✓	X	X	-	-	-	-	-	-	-	-	-	-	-
Vermontville	Township	✓	X	✓	X	X	-	-	-	-	-	-	-	-	-	-	-

Walton	Township	✓	X	✓	X	X	-	-	-	-	-	-	-	-	-	-	-
Windsor	Township	✓	X	✓	X	X	✓	-	-	-	-	-	-	-	-	-	-
Charlotte	City	✓	X	✓	X	X	✓	✓	✓	✓	X	X	X	✓	X	✓	✓
Eaton Rapids	City	✓	X	✓	X	X	✓	✓	✓	X	✓	X	✓	✓	X	X	✓
Grand Ledge	City	✓	X	✓	X	X	✓	✓	✓	✓	✓	✓	✓	✓	X	✓	✓
Olivet	City	✓	X	✓	X	X	✓	✓	X	X	X	X	X	✓	X	X	X
Potterville	City	✓	X	✓	X	X	✓	✓	X	✓	✓	X	✓	✓	X	✓	✓
Bellevue	Village	✓	✓	✓	X	X	✓	✓	X	X	X	✓	✓	✓	X	X	X
Dimondale	Village	✓	X	✓	-	-	-	-	-	-	-	-	-	-	-	-	-
Mulliken	Village	✓	X	✓	-	-	-	-	-	-	-	-	-	-	-	-	-
Sunfield	Village	✓	X	✓	-	-	-	-	-	-	-	-	-	-	-	-	-
Vermontville	Village	✓	X	✓	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 10. Administrative and Technical Capabilities Summary

✓ = Yes X = No - = did not participate and therefore unknown

Jurisdiction	Jurisdiction Type	Mitigation Collaborative Planning Team	Planning Commission	Maintenance Programs to Reduce Risk	Mutual Aid Agreements	Chief Building Official	Floodplain Administrator	Emergency Manager	Community Planner	Civil Engineer	GIS Administrator	Building Code	Fire Department ISO Rating	Site Plan Review Requirement	Alerts, Warnings, and Notification Systems	Hazard Data and Information	Grant Writing
Eaton	County	✓	✓	X	✓	✓	X	✓	X	X	✓	✓	X	X	✓	✓	✓
Bellevue	Township	✓	✓	X	✓	✓	X	✓	X	X	✓	✓	✓	✓	✓	✓	✓
Benton	Township	✓	X	X	✓	X	✓	✓	X	X	✓	✓	✓	✓	✓	✓	✓
Brookfield	Township	-	-	-	✓	-	-	✓	-	-	-	-	✓	-	✓	✓	-
Carmel	Township	-	-	-	✓	-	-	✓	-	-	-	-	✓	-	✓	✓	-
Chester	Township	-	-	-	✓	-	-	✓	-	-	-	-	✓	-	✓	✓	-
Delta	Township	✓	✓	✓	✓	✓	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Eaton	Township	✓	✓	✓	✓	✓	X	✓	X	✓	✓	✓	✓	✓	✓	✓	✓
Eaton Rapids	Township	-	-	-	✓	-	-	✓	-	-	-	-	✓	-	✓	✓	-
Hamlin	Township	-	-	-	✓	-	-	✓	-	-	-	-	✓	-	✓	✓	-
Kalamo	Township	-	-	-	✓	-	-	✓	-	-	-	-	✓	-	✓	✓	-
Oneida	Township	-	-	-	✓	-	-	✓	-	-	-	-	✓	-	✓	✓	-
Roxand	Township	-	-	-	✓	-	-	✓	-	-	-	-	✓	-	✓	✓	-
Sunfield	Township	-	-	-	✓	-	-	✓	-	-	-	-	✓	-	✓	✓	-
Vermontville	Township	-	-	-	✓	-	-	✓	-	-	-	-	✓	-	✓	✓	-

Walton	Township	-	-	-	✓	-	-	✓	-	-	-	-	✓	-	✓	✓	-
Windsor	Township	-	-	-	✓	-	-	✓	-	-	-	-	✓	-	✓	✓	-
Charlotte	City	✓	✓	✓	✓	✓	X	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Eaton Rapids	City	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Grand Ledge	City	✓	✓	X	✓	✓	X	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Olivet	City	✓	✓	X	✓	X	X	✓	X	X	X	X	✓	X	✓	✓	✓
Potterville	City	✓	✓	X	✓	✓	X	✓	X	✓	✓	✓	✓	✓	✓	✓	✓
Bellevue	Village	✓	✓	X	✓	X	X	✓	X	X	✓	X	✓	✓	✓	✓	✓
Dimondale	Village	-	-	-	✓	-	-	✓	-	-	-	-	✓	-	✓	✓	✓
Mulliken	Village	-	-	-	✓	-	-	✓	-	-	-	-	✓	-	✓	✓	-
Sunfield	Village	-	-	-	✓	-	-	✓	-	-	-	-	✓	-	✓	✓	-
Vermontville	Village	-	-	-	✓	-	-	✓	-	-	-	-	✓	-	✓	✓	✓

Table 11. Financial Capabilities Summary

✓ = Yes X = No - = did not participate and therefore unknown

Jurisdiction	Jurisdiction Type	Capital improvements Project Funding	Authority to Levy Taxes for Specific Purposes	Fees for Water, Sewer, Gas, or Electric Services	Impact Fees for New Development	Storm Water Utility Fee	Incur Debt Through Private Entities	Incur Debt Through General Obligation bonds	Incur Debt Through Special Tax Bonds	Community Development Block Grant	Other Federal Funding Programs	State Funding Programs					
Eaton	County	✓	✓	X	✓	X	X	✓	X	✓	✓	✓					
Bellevue	Township	X	✓	X	X	X	X	X	X	X	✓	✓					
Benton	Township	X	✓	X	X	X	X	✓	✓	X	✓	✓					
Brookfield	Township	-	-	-	-	-	-	-	-	-	-	-					
Carmel	Township	-	-	-	-	-	-	-	-	-	-	-					
Chester	Township	-	-	-	-	-	-	-	-	-	-	-					
Delta	Township	✓	✓	✓	✓	✓	-	-	-	-	✓	✓					
Eaton	Township	✓	✓	X	X	X	X	X	X	X	X	X					
Eaton Rapids	Township	-	-	-	-	-	-	-	-	-	-	-					
Hamlin	Township	-	-	-	-	-	-	-	-	-	-	-					
Kalamo	Township	-	-	-	-	-	-	-	-	-	-	-					
Oneida	Township	-	-	-	-	-	-	-	-	-	-	-					
Roxand	Township	-	-	-	-	-	-	-	-	-	-	-					
Sunfield	Township	-	-	-	-	-	-	-	-	-	-	-					
Vermontville	Township	-	-	-	-	-	-	-	-	-	-	-					

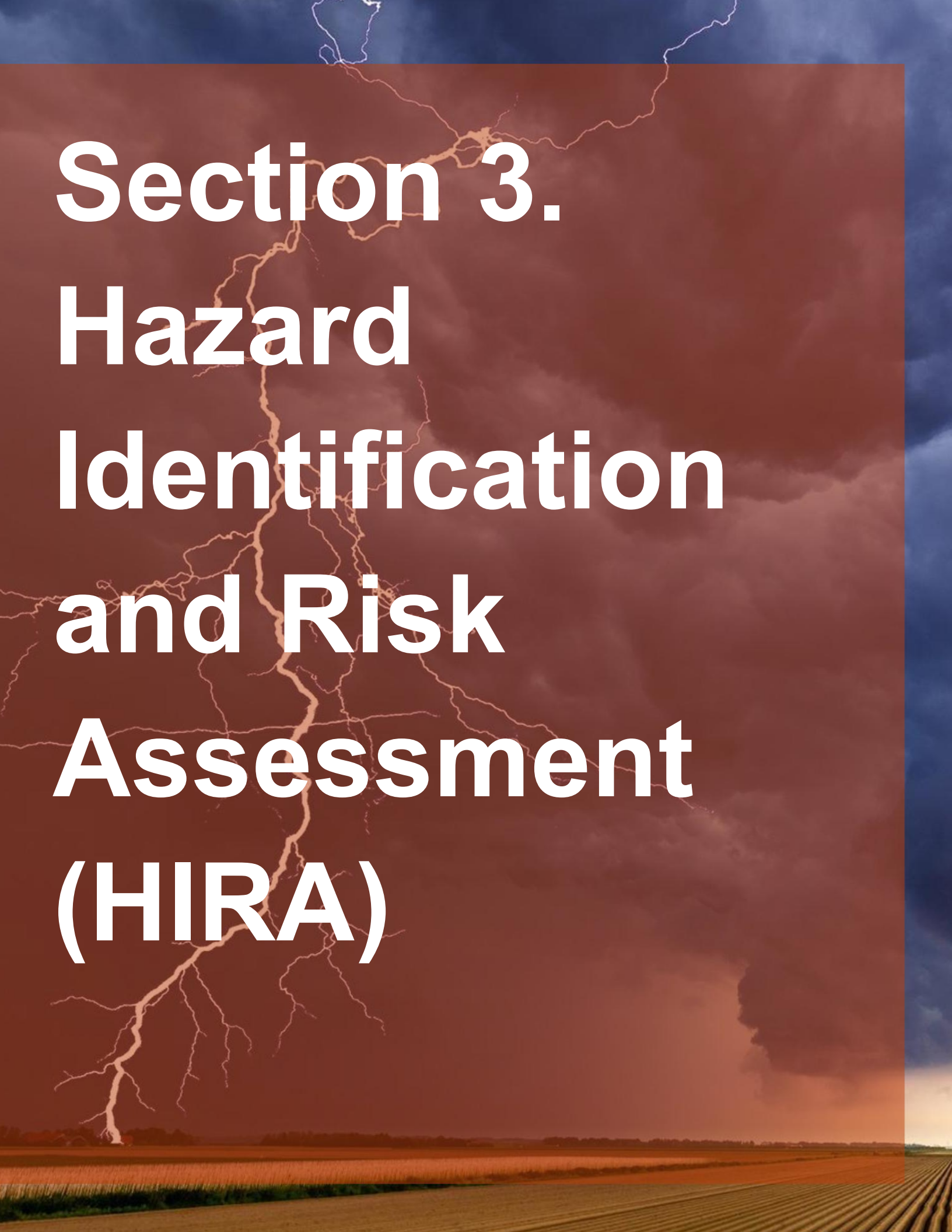
Walton	Township	-	-	-	-	-	-	-	-	-	-	-					
Windsor	Township	-	-	-	-	-	-	-	-	-	-	-					
Charlotte	City	✓	✓	✓	✓	✓	X	✓	X	✓	✓	✓					
Eaton Rapids	City	✓	✓	✓	✓	X	X	✓	✓	✓	✓	✓					
Grand Ledge	City	✓	✓	✓	✓	X	X	✓	✓	✓	✓	✓					
Olivet	City	✓	✓	✓	X	X	X	X	X	✓	✓	X					
Potterville	City	✓	✓	✓	X	X	✓	✓	✓	X	✓	✓					
Bellevue	Village	✓	✓	✓	X	X	X	✓	✓	X	✓	✓					
Dimondale	Village	-	-	-	-	-	-	-	-	-	-	-					
Mulliken	Village	-	-	-	-	-	-	-	-	-	-	-					
Sunfield	Village	-	-	-	-	-	-	-	-	-	-	-					
Vermontville	Village	-	-	-	-	-	-	-	-	-	-	-					

Table 12. Public Education and Information Capabilities Summary

✓ = Yes X = No - = did not participate and therefore unknown

Jurisdiction	Jurisdiction Type	Social media	Local Citizen Groups or Non-Profit Organizations	Ongoing public education or Information Program	School programs related to emergencies, disasters, or safety	StormReady Certification	Firewise Communities Certification	Public/Private partnership initiatives addressing disaster-related issues									
Eaton	County	✓	✓	✓	✓	✓	X	✓									
Bellevue	Township	X	X	X	✓	X	X	X									
Benton	Township	X	✓	X	✓	X	X	X									
Brookfield	Township	-	-	-	-	X	-	-									
Carmel	Township	-	-	-	-	X	-	-									
Chester	Township	-	-	-	-	X	-	-									
Delta	Township	✓	✓	✓	✓	X	X	✓									
Eaton	Township	✓	X	X	X	X	X	X									
Eaton Rapids	Township	-	-	-	-	X	-	-									
Hamlin	Township	-	-	-	-	X	-	-									
Kalamo	Township	-	-	-	-	X	-	-									
Oneida	Township	-	-	-	-	X	-	-									
Roxand	Township	-	-	-	-	X	-	-									
Sunfield	Township	-	-	-	-	X	-	-									
Vermontville	Township	-	-	-	-	X	-	-									

Walton	Township	-	-	-	-	X	-	-									
Windsor	Township	-	-	-	-	X	-	-									
Charlotte	City	✓	✓	✓	✓	X	X	X									
Eaton Rapids	City	✓	✓	✓	✓	X	X	✓									
Grand Ledge	City	✓	✓	✓	✓	X	X	X									
Olivet	City	✓	✓	✓	✓	X	X	X									
Potterville	City	✓	✓	✓	✓	X	X	✓									
Bellevue	Village	✓	✓	✓	✓	X	X	X									
Dimondale	Village	✓	-	-	✓	X	-	-									
Mulliken	Village	-	-	-	-	X	-	-									
Sunfield	Village	-	-	-	-	X	-	-									
Vermontville	Village	-	-	-	-	X	-	-									



Section 3. Hazard Identification and Risk Assessment (HIRA)

Plan Requirement
FEMA Requirements Requirement §201.6(c)(2)(i): [The risk assessment shall include a] description of the type, location and extent of all natural hazards that affect the jurisdiction. The plan shall include information on previous occurrences of hazard events and the probability of future hazard events. Requirement §201.6(c)(2)(ii): [The risk assessment shall include a] description of the jurisdiction's vulnerability to the hazards described in paragraph (c)(2)(i) of this section. This description shall include an overall summary of each hazard and its impact on the community. All plans approved after October 1, 2008, must also address NFIP insured structures that have been repetitively damaged by floods. Requirement §201.6(c)(2)(ii)(A): [The plan should describe vulnerability in terms of] the types and numbers of existing and future buildings, infrastructure, and critical facilities located in the identified hazard area. Requirement §201.6(c)(2)(ii)(B): [The plan should describe vulnerability in terms of] an estimate of the potential dollar losses to vulnerable structures identified in paragraph (c)(2)(i)(A) of this section. Requirement §201.6(c)(2)(ii)(C): [The plan should describe vulnerability in terms of] providing a general description of land uses and development trends within the community so that mitigation options can be considered in future land use decisions. Requirement §201.6(c)(2)(iii): For multi-jurisdictional plans, the risk assessment section must assess each jurisdiction's risks where they vary from the risks facing the entire planning area. **EMAP Standards (2022)** Standard 4.1.1: The Emergency Management Program identifies the natural and human-caused hazards that potentially impact the jurisdiction using multiple sources. The Emergency Management Program assesses the risk and vulnerability of people, property, the environment, and its own operations from these hazards. Standard 4.1.2: The Emergency Management Program conducts a consequence analysis for the hazards identified in standard 4.1.1 to consider the impact on the public; responders; continuity of operations including continued delivery of services; property, facilities, and infrastructure; the environment; the economic condition of the jurisdiction and public confidence in the jurisdiction's governance.

The Hazard Identification and Risk Assessment (HIRA) serves as a valuable resource for local emergency management officials and partners in assessing risks, evaluating vulnerabilities, and forecasting potential impacts of identified hazards within Eaton County. This mitigation plan is based on the natural, technological, and human-caused hazards identified in the HIRA, to include the risks, vulnerabilities, and consequences. It is essential to note that the HIRA does not offer specific policy directives or action-based recommendations for emergency management.

Instead, this document forms a crucial component within a broader framework of a comprehensive emergency management program. This encompassing program integrates mitigation, preparedness, response, and recovery strategies. The HIRA works in conjunction with other critical elements such as the Eaton County Emergency Operations Plan (EOP) and standard operating procedures, collectively forming a robust program aimed at effectively managing hazards.

The HIRA, Tri-County Hazard Mitigation Plan, and the Threat and Hazard Identification and Risk Assessment (THIRA) all involve the identification of hazards, but each document serves a different purpose. The HIRA identifies and ranks hazards to serve as a toolkit for partners to use in their planning efforts. This Multi-Hazard Mitigation Plan (MHMP) outlines potential actions partners may take to mitigate the risk and effects of hazards on the county, and there are specific hazards that are reflected in both the HIRA and the MHMP. The THIRA outlines impacts and establishes capability targets to aid communities in identifying capability gaps that should be addressed. The THIRA is also a good indicator of how to utilize funding sources for building and sustaining capabilities. In Eaton County, the HIRA is published online and is openly available to the public, while the THIRA is maintained internally due to containing sensitive information.

3.1.1 Hazard Ranking and Total Risk Values

The following table lists all 16 identified hazards, in categorical order, based upon the calculated total risk value.

Rank	Hazard Category	Hazard	RVC Factor
1	Natural	Tornado	60%
2	Human-caused	Active Violence Incident	57%
3	Technological	Hazardous Materials Incident	56%
4	Natural	Public Health Emergency	55%
5	Natural	Drought	50%
6	Natural	Severe Wind	49%
7	Technological	Industrial/Manufacturing Property Fire	48%
8	Technological	Water Supply Failure	47%
9	Technological	Transportation Incident/Accident	47%
10	Human-caused	Cyber Incident	46%
11	Natural	Severe Winter Weather	45%
12	Natural	Flood	45%
13	Natural	Extreme Temperatures	41%
14	Natural	Animal Disease	40%

15	Technological	Dam Failure	39%
16	Natural	Wildfire	31%

3.2.2 Hazard Categories

Hazards identified within the HIRA fall within the hazard categories of natural, technological, and human-caused. The three categories are defined as follows:

1. **Natural**: Result by acts of nature.
2. **Technological**: Result from accidents or system and structure failure.
3. **Human-Caused**: Result from intentional actions of an adversary.

It is recognized that certain hazards can be neatly categorized into one specific classification while several identified hazards exhibit complexity that could span multiple categories. This complexity arises from the presence of multiple causative factors and variables contributing to a singular hazard outcome. For example, a cyber incident can be grouped as falling within the technological and human-caused categories. An unintentional error in computer coding may result in the loss of access to a cyber program creating a technological cyber incident, just as a hacker may install ransomware in a cyber network creating a human-caused cyber incident.

For this HIRA and the generated hazard profiles, each hazard is assigned only one hazard category in alignment with the sample planning scenarios.

3.3.3 Risk Assessment: Analyzing and Scoring

3.3.3.1 Methodology

A HIRA consists of an analysis of quantitative and qualitative information obtained throughout the hazard identification process.

Information obtained from historical and statistical data, and/or internal discussions amongst local emergency management officials and partners formed the baseline values of the identified hazards. Consultations were held with subject matter experts representing various disciplines to revise and confirm the baseline values to become the official risk values used in calculating the risk of the hazards.

Risk values are categized into three categories:

1. Risk factors,
2. vulnerability, and
3. consequence analysis.

Each category is broken down into their own set of factors that are defined and numerically coded to create the value. The following sub-sections are broken down by category, with each section

illustrating their set of factors by means of a series of charts, how each factor is defined, and how each factor is coded to create the numerical data necessary for the formula calculations.

3.3.3.2 Factors for Hazard Profiles

Frequency. *A key factor in the risk of a particular hazard is the frequency with which it occurs. Some hazards have been relatively frequent in Eaton County while others were only sporadic. For this hazard analysis, the frequency with which an event occurs is based on historical reports and query of subject matter experts from various state and local authorities as well as the number of Gubernatorial Declarations associated with the hazard agent. Using these criteria provides a wider variety of hazards than utilizing presidential declarations alone. State declaration records date back to 1977.*		
4	Highly Likely	Near 100% probability in next year. Many state declarations have occurred.
3	Likely	Between 10 and 100% probability in next year, or at least one chance in 10 years. Some state declarations have occurred.
2	Possible	Between 1 to 10% probability in the next year, or at least 1 in the next 100 years. Very few state declarations have occurred.
1	Unlikely	<1% probability in the next 100 years. No state declarations are likely.

Duration *may be defined as "time on the ground" or the time-period of response to a hazard or event. Transportation accidents may last a few hours whereas flooding may last several weeks. Duration, therefore, may not always be indicative of the degree of damage, but it remains an important planning factor.*		
4	Excessive	More than 30 days
3	Long	7 to 30 days
2	Medium	1 to 7 days
1	Short	12 to 24 hours

Speed of Onset *may affect all other factors due to lack of warning or time to prepare for impact. The lead-time required protecting lives and property varies greatly with each event. For instance, a slow-rising river flood may allow time to evacuate residents and begin flood fight measures, but flash floods can occur with little warning.*		
4	Short-None	Minimal to no warning
3	Short	6 to 12 hours
2	Medium	12 to 24 hours

1	Extended	More than 24 hours

Magnitude *is the geographic dispersion of the hazard. For instance, comparing the number of jurisdictions impacted by a straight-line wind event versus a transportation accident involving hazardous materials.*		
4	Catastrophic	The entire county is impacted
3	Critical	Half of the county is impacted
2	Limited	A quarter of the county is impacted
1	Localized	A single jurisdiction is impacted

3.3.3.3 Total Risk (%)

Risk (%) = (Frequency / 4) x (Duration + Speed of Onset + Magnitude) / 12					
Hazard	**Frequency**	**Duration**	**Speed of Onset**	**Magnitude**	**Total**
Severe Winter Weather	3.2	2.2	1.2	4	49%
Extreme Temperatures	3.2	2	1.2	4	48%
Transportation Incident/Accident	3	2.2	3.2	1.8	45%
Water Supply Failure	3	2.2	4	1	45%
Severe Wind	3.2	2.2	1.6	2.4	41%
Active Violence Incident	2.4	1.6	4	2.4	40%
Tornado	2.2	3.2	3.8	1.6	39%
Public Health Emergency	2.2	3.6	1	3.8	39%
Animal Disease	2.6	3	2.6	1.6	39%
Industrial/Manufacturing Property Fire	2.2	2.2	4	2	38%
Drought	2.2	3.2	1	3.6	36%
Cyber Incident	2	2.2	3.4	2.6	34%
Hazardous Materials Incident	1.8	2.6	4	2.2	33%
Flood	2.2	2.4	1.8	2	28%
Wildfire	1.6	1.4	4	1.6	23%
Dam Failure	1.4	2.6	2.8	1.4	20%

3.3.3.4 Factors for Vulnerability

Impact on Business *refers to enduring economic impact of the hazard on the community by an event.*		
4	High	Complete shutdown of critical facilities for 30 days or more.
3	Medium	Complete shutdown of critical facilities for at least two weeks
2	Low	Complete shutdown of critical facilities for one week
1	Minimum	Shutdown of critical facilities for less than 24 hours

Impact on Humans. *This factor relates to the number of lives potentially lost to a particular hazard.*		
4	High	Multiple deaths
3	Medium	Multiple severe injuries
2	Low	Some injuries
1	Minimum	Minor injuries

Impact on Property. *This factor relates to the amount of property potentially lost to a particular hazard agent. This factor can vary between jurisdictions based on economics, geographic amount owned, and demographics of the populations.*		
4	High	More than 50% of property severely damaged
3	Medium	More than 25% of property severely damaged
2	Low	More than 10% of property severely damaged
1	Minimum	Less than 10% of property severely damaged

Impact on Environment. *This factor considers the impacts from the hazard event to the air, water, land, and biota.*		
4	High	Catastrophic impacts to the environment because of the event and/or cascading effects. Environmental impacts would have immediate and long-term health effects to people. Significant resources required for remediation.
3	Medium	Localized and temporary impacts to the environment because of the event and/or cascading effects. No immediate health threat to people and environmental remediation would restore the environment to acceptable limits.

2	Low	Impact to the environment could be minimal and only require a local response.
1	Minimum	Impact to the environment would not require remediation.

3.3.3.5 Total Vulnerability (%)

Vulnerability Score (%) = (Impact on Business + Impact on Humans + Impact on Property + Impact on Environment) / 16					
Hazard	**Impact on Business**	**Impact on Humans**	**Impact on Property**	**Impact on Environment**	**Total**
Tornado	2	3	2	3	63%
Active Violence Incident	3.2	4	1.2	1.2	60%
Drought	1.6	1.2	3.4	3	58%
Hazardous Materials Incident	2	2.2	1.2	3.6	56%
Public Health Emergency	2.2	3.8	1	1.2	51%
Industrial/Manufacturing Property Fire	2.8	1.6	1	2.8	51%
Flood	1.8	1.4	2	2.6	49%
Severe Wind	1.4	2.2	1.8	2	46%
Transportation Incident/Accident	1	3.4	1	2	46%
Water Supply Failure	1.8	1.6	1.2	2.4	44%
Dam Failure	1.2	1.6	1.2	2.6	41%
Cyber Incident	2.4	1.2	1	1.4	38%
Severe Winter Weather	1.6	1.6	1.4	1.2	36%
Extreme Temperatures	1	2.2	1	1.4	35%
Animal Disease	1.2	1.2	1.2	1.4	31%
Wildfire	1	1.4	1.2	1.4	31%

3.3.3.6 Factors for Consequence Analysis

Public. *This category considers the overall impact to the citizens of the county caused by the hazard. The short- and long-term impacts caused by the hazard were considered in addition to efforts at the local level to mitigate, prepare for, respond to, and recover from the event. The ranking is a general reflection of the County's resilience to the hazard being evaluated.*		
3	High	Impacts to the public would likely exceed local resources and necessitate state assistance. Impacts could include multiple casualties.
2	Medium	Impacts to the public would likely not exceed local or mutual aid resources. Some casualties and injuries could occur.
1	Low	Impacts to the public could be managed at the local level.

First Responders. *This category considers the impact of the hazard event to police, fire, EMTs, emergency management and other local officials that respond to the hazard. The threats to the health and safety of first responders posed by the hazard were considered in addition to staffing, training, and overall preparedness of first responders.*		
3	High	Extreme threat posed to first responders, which would likely exceed local resources and necessitate state assistance.
2	Medium	Significant threat posed to first responders but would likely not exceed local resources.
1	Low	Threat posed by hazard could be managed at the local level.

Continuity of Operations. *This category considers the impact of the hazard event to County government's ability to continue or reestablish essential services.*		
3	High	Impacts to essential functions because of the hazard event and/or cascading effects could be catastrophic. This failure would have an immediate cascading effect to public health and safety.
2	Medium	Impacts to essential functions as the result of the hazard event and/or cascading effects could be significant, but localized and temporary. This impact would create delayed response to public health and safety, but no immediate concerns.
1	Low	Impact to essential functions could be minimal and only require a local response.

Facilities/Infrastructure (i.e., Property). *This category considers impacts of the hazard to the built environment.*		
3	High	The hazard event would result in catastrophic damages to the built environment. Damage to the built environment would have cascading and long-term effects. Impacts would strain state resources and require extensive long-term recovery efforts.
2	Medium	The hazard event would result in significant damages to the built environment and likely require the need for state resources to effectively recover.
1	Low	Effects to the built environment could be limited and likely not exceed the response and recovery efforts at the local level.

Economy. *This category considers the impact to the local economy from the hazard.*		
3	High	Cost to respond and recover from the event would quickly exceed the amount budgeted in the Disaster and Emergency Contingency Fund requiring federal resources.
2	Medium	Cost to respond and recover from the event would likely not exceed the amount budgeted in the Disaster and Emergency Contingency Fund.
1	Low	Cost to respond and recover from the event would likely not exceed local resources.

Environment (est. remediation). *This category considers the overall impact to the citizens of the county caused by the hazard. The short- and long-term impacts caused by the hazard were considered in addition to efforts at the state and local level to mitigate, prepare for, respond to, and recover from the event. The ranking is a general reflection of the county's resilience to the hazard being evaluated.*		
3	High	Impacts to the environment as the result of the hazard and/or cascading effects could be catastrophic. Environmental impacts would have immediate and long-term health effects to people. Significant resources could be required for environmental remediation.
2	Medium	Impacts to the environment as the result of the hazard and/or cascading effects could be localized and temporary. There would be no immediate health threat to people and environmental remediation would restore the environment to acceptable limits.

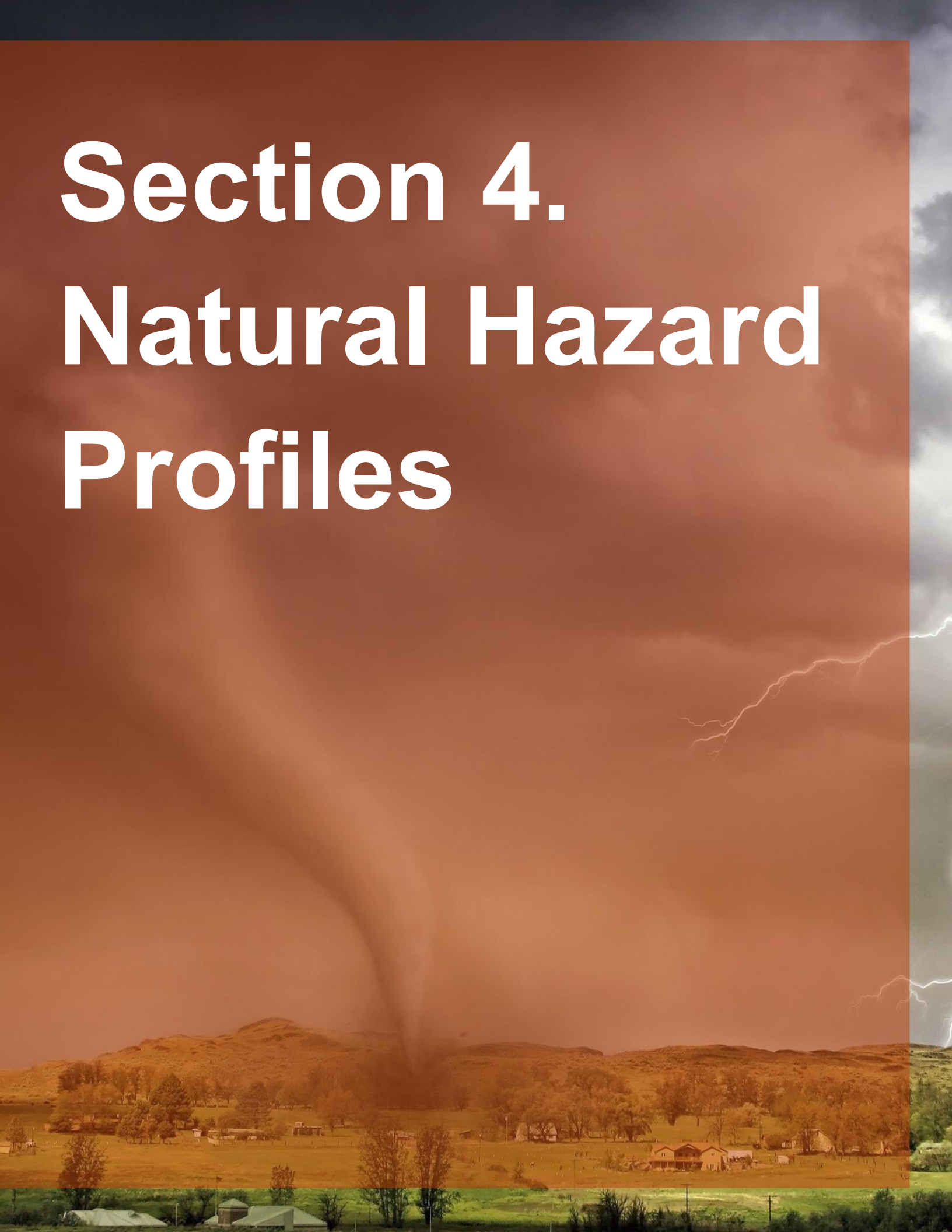
1	Low	Impact to the environment could be minimal and only require a local response.

Public Confidence. *This category considers the impact a hazard event of each type could have on the public's confidence in the government and emergency management community.*		
3	High	Significant negative impact. Downturn in public trust for the government's ability to respond to or recover from disaster.
2	Medium	Some negative impact. Public trust is eroded but recoverable as the recovery ensues.
1	Low	Little or no impact on the public trust.

3.3.3.7 Total Consequence Analysis (%)

Consequence Analysis (%) = (Public + First Responders + COOP + Facilities and Infrastructure + Economy + Environment + Public Confidence) / 21								
Hazard	**Public**	**First Responders**	**COOP**	**Facilities and Infrastructure**	**Economy**	**Environment**	**Public Confidence**	**Total**
Hazardous Materials Incident	2.6	3	2	1.6	2.8	2.6	2.2	80%
Tornado	3	2.4	2	2.6	2.6	2.2	1.8	79%
Public Health Emergency	2.8	2.8	2.4	1	2.6	1.2	3	75%
Active Violence Incident	2.6	3	2	2	2	1.2	2.2	71%
Cyber Incident	1.8	2.4	2.6	1.6	2.2	1.2	2.2	67%
Severe Wind	2.2	1.6	2	1.6	2.2	1.6	1.2	59%
Drought	2	1.2	1.2	1.8	2.4	2.4	1.2	58%
Flood	1.8	1.2	1.6	1.8	2	2	1.6	57%
Industrial/Manufacturing Property Fire	1.8	2	1.2	1.2	2	2.2	1.4	56%
Dam Failure	2	1.6	1.2	1.6	1.8	1.8	1.8	56%
Water Supply Failure	1.8	1.4	1.4	1.2	1.8	1.4	1.8	51%
Severe Winter Weather	2	1.8	1.8	1	1.6	1	1.4	50%
Animal Disease	2.4	1.4	1.2	1	1.8	1.4	1.4	50%
Transportation Incident/Accident	2	2	1.2	1.2	1.4	1.2	1.2	49%
Extreme Temperatures	1.2	1.4	1	1	1.2	1.4	1	39%
Wildfire	1.2	1.6	1	1	1	1.2	1	38%

Section 4. Natural Hazard Profiles



4.1 Tornado

The National Oceanic and Atmospheric Administration (NOAA) National Severe Storms Laboratory defines a tornado as a “narrow, violently rotating column of air that extends from a thunderstorm to the ground”. When we see a tornado, we are not seeing the invisible, rotating wind but its visible result. We are seeing a wind funnel made of water, dust, and debris picked up by the wind in its wake. Tornadoes are generally formed out of severe thunderstorms. They require warm, moist, rising air, a source of lift, and wind shear. Tornadoes are considered the most violent of all the severe weather storms we experience.

The updraft of a tornado (the force that lifts upward inside a funnel cloud, able to lift and move vehicles, houses, trees, and other large objects) is extremely dangerous, but it is the flying debris caught within that updraft that experts consider to be the most dangerous aspect of a tornado. Objects caught within those high-speed winds can be as large as a car or even a structure or as small as shards of broken glass or nails. These items become lethal airborne missiles and pose the greatest threat to living creatures caught in a tornado.

About 1,200 tornadoes hit the United States each year, resulting in approximately $400 million in damages and killing 56 people on average (mostly from flying debris). The extreme winds obliterate homes, devastate businesses, destroy bridges and other infrastructure, hurl cars and trucks through the air, and ravage the landscape by shredding the bark from trees and siphoning water from riverbeds. The spring of 2011 was one of the deadliest and costliest tornado seasons on record. Between April and June 2011, tornadoes killed more than 580 people and caused more than $21 billion in economic damages. The high death toll was partially attributed to a lack of adequate storm shelters and people who did not seek shelter in time.

Winds of a tornado may reach 300 mph and can strike with little to no warning time (the current average lead-time for tornado warnings is 15-18 minutes). Damage paths can be more than one mile wide and 50 miles long. The tornado outbreak of December 10, 2021, spawned a reported 44 tornadoes across nine states including Missouri, Illinois, Arkansas, Kentucky, Tennessee, Mississippi, Alabama, Indiana, and Ohio. One tornado in this storm tore a continuous path across 128 miles in Kentucky. Another was on the ground for at least 71.6 miles across northwest Tennessee and was more than half a mile wide at times. With a death toll of 90, this tornado outbreak broke the death toll of the Joplin tornado.

4.1.1 Area of Impact

Tornado season in Michigan is typically from April to August, with June being the peak of the tornado season in the state, but tornadoes can occur during any time of the year and have been recorded in Michigan in every month. And while some regions of the U.S. are more prone to tornadoes than others (Oklahoma and Texas have the highest number per year per 10,000 square miles), tornadoes have been documented in every U.S. state, including Michigan.

Since 1970, the NOAA National Centers for Environmental Information (NCEI) reports more than 500 tornadic events in the state. The Flint-Beecher tornado of 1953 ranks among the deadliest tornadoes in U.S. history. An F5 tornado on June 8 of that year was produced by a larger outbreak of severe

weather that began in Nebraska before moving across the Great Lakes states and then into New York and New England. Michigan was also hit by several other tornadoes that same day ranging from F0–F4. At 116 fatalities, the Flint-Beecher F5 produced the last 100+ death toll for a single tornado in U.S. history until the 2011 Joplin tornado.

Most tornadoes are found in the Great Plains of the central U.S. Cold, dry air moving south from Canada meets warm, moist air moving north from the Gulf of Mexico, creating the perfect unstable environment for the development of severe thunderstorms and the formation of tornadoes. Violent tornadoes have formed over rivers and lakes and have been known to cross the Mississippi River. Strong tornadoes have been known to cross the Detroit River and St. Clair River separating southeast Michigan and southwest Ontario. Tornadoes can strike in both rural areas and urban. More than 100 tornadoes have been reported to strike downtown areas of large cities.

Tornadoes are more likely to cause damage in landscape transition zones, where the terrain shifts from urban to rural or from forest to farmland. Tornadoes cover relatively small areas when compared to blizzards or hurricanes, but the damage is often more severe, causing deaths and damage to property and the natural landscape.

4.1.2 Extent

The Enhanced Fujita Scale (EF Scale) became operational on February 1, 2007, and is used to assign each tornado a rating based on estimated wind speeds and related damage. When tornado-related damage is surveyed, it is compared to a list of damage indicators and degrees of damage, which help estimate a better range of wind speeds likely produced by the tornado. The EF Scale revised the original Fujita Scale to better reflect tornado damage surveys and align to wind speeds more closely associated with storm damage. The National Weather Service (NWS) is the only federal agency with the authority to provide “official” tornado EF Scale ratings. The table below shows the Enhanced Fujita Scale.

Enhanced Fujita Scale		
EF Rating	**3-Second Wind Gust**	**Expected Damage**
0	65–85 mph	Minor damage. Shingles blown off or parts of a roof peeled off, damage to gutters/siding, branches broken off trees, shallow-rooted trees toppled
1	86–110 mph	Moderate Damage. More significant roof damage, windows broken, exterior doors damaged or lost, mobile homes overturned or badly damaged
2	111–135 mph	Considerable Damage. Roofs torn off well-constructed homes, homes shifted from foundations, mobile homes destroyed, large trees snapped or uprooted, cars can be tossed
3	136–165 mph	Severe Damage. Entire stories of well-constructed homes destroyed, significant damage done to large

		buildings, homes with weak foundations blown away, trees begin to lose their bark
4	166–200 mph	Extreme Damage. Well-constructed homes leveled, cars are thrown significant distances, top story exterior walls on masonry buildings likely to collapse
5	Over 200 mph	Massive/Incredible Damage. Well-constructed homes swept away, steel-reinforced concrete structures critically damaged, high-rise buildings sustain severe structural damage, trees are usually completely de-barked, stripped of branches and snapped

Source: National Weather Service

Tornadoes and associated tornado strength are unpredictable. Eaton County is susceptible to tornadoes of any strength on the EF Scale.

4.1.3 Previous Occurrences

Tornados have occurred in Eaton County. Between January 1, 1970, and January 1, 2024, the National Centers for Environmental Information (NCEI) Storm Events Database includes reports of 17 tornados, as described in the below table. Of note, tornadoes occurring prior to February 2007 are only rated based on the Fujita (F) Scale instead of the Enhanced Fujita (EF) Scale.

Location	Date	Time	Magnitude	Number of Deaths	Number of Injuries	Property Damage	Crop Damage
Eaton	4/29/1970	19:10	F1	0	0	$25.00K	$0.00K
Eaton	4/30/1970	17:23	F1	0	0	$25.00K	$0.00K
Eaton	5/15/1972	11:45	F0	0	0	$0.00K	$0.00K
Eaton	7/4/1974	11:08	F1	0	1	$250.00K	$0.00K
Eaton	3/20/1976	15:50	F1	0	0	$250.00K	$0.00K
Eaton	6/18/1976	17:10	F1	0	0	$25.00K	$0.00K
Eaton	4/2/1977	14:06	F4	1	44	$2.500M	$$0.00K
Eaton	5/18/1984	18:50	F0	0	0	0.25K	$0.00K
Eaton	8/26/1986	16:30	F2	0	0	$250.00K	$0.00K
Eaton Rapids	6/24/1998	16:25	F0	0	0	$5.00K	$0.00K
Chester Twp.	5/21/2001	13:15	F0	0	0	$300.00K	$100.00K
Potterville	9/9/2001	17:34	F1	0	1	$10.00M	$100.00K

Mulliken	6/8/2003	17:45	F0	0	0	$2.00K	$0.00K
Vermontville	8/25/2004	16:53	F0	0	0	$50.00K	$25.00K
Charlotte	6/8/2008	15:25	EF3	0	5	$40.000M	$0.00K
Needmore	6/8/2008	14:45	EF1	1	0	$0.00K	$0.00K
Brookfield Twp.	9/13/2008	17:00	EF0	0	0	$0.00K	$0.00K

Source: Storm Events Database - Search Results | National Centers for Environmental Information

Eaton County has been part of a single presidential disaster declaration related to tornadoes since 1970, which encompassed nine counties. It is noteworthy that no tornado touched down in Eaton County during this incident. Instead, Eaton County experienced a significant severe wind event, while an EF2 tornado struck neighboring Ingham County. A notable tornado event that last occurred in Eaton County is described below.

August 24, 2007 — Eaton County was the victim of a line of thunderstorms that culminated in an EF3 tornado with winds estimated at 140 mph. The tornado had a path of 200–300 yards wide and six and one-half miles long. Fifteen homes were seriously damaged, most beyond repair, including a single-story home that literally lost its roof and garage (they were never found) as well as its windward-facing walls. Five injuries were reported, and damages totaled more than $40M.

4.1.4 Frequency

A key factor in the risk of a particular hazard is the frequency with which it occurs. Some hazards have been relatively frequent in Eaton County while others were only sporadic or have never occurred. For this hazard analysis, the frequency with which an event occurs is based on historical reports and query of subject matter experts from various state and local authorities as well as the number of Gubernatorial Declarations associated with the hazard agent. Using these criteria provides a wider variety of hazards than utilizing presidential declarations alone. State declaration records date back to 1977.

The *Hazard Identification and Risk Assessment (HIRA)* rates the frequency of the hazard as **possible**, meaning that there is **between 1 to 10% probability in the next year, or at least 1 in the next 100 years. Very few state declarations have occurred.**

4.1.5 Vulnerability

1. **Impact on Business** refers to enduring economic impact of the hazard on the community by an event. The HIRA rates the **impact on business** as **low**, meaning that there could be a **complete shutdown of critical facilities for one week** because of a tornado.

2. **Impact on Humans** relates to the number of lives potentially lost to a particular hazard. The HIRA rates the **impact on humans** as **medium**, meaning that there could be **multiple severe injuries** because of a tornado.

Timely alerts, warnings, and notifications (AWN) are key to mitigating the impact of tornadoes on humans. Eaton County employs a robust network of crisis communications systems for sending AWN to internal and external stakeholders. These systems are detailed in the *Support Annex – Crisis Communications*. Below is an example of an externally used alert system that is frequently promoted through public information and education channels.

3. **Impact on Property** relates to the amount of property potentially lost to a particular hazard agent. This factor can vary between jurisdictions based on economics, geographic amount owned, and demographics of the populations. The HIRA rates the **impact on property** as **low**, meaning that **more than 10% of property could be severely damaged** because of a tornado.

4. **Impact on Environment** considers the impacts from the hazard event to the air, water, land, and biota. The HIRA rates the **impact on environment** as **medium**, meaning **localized and temporary impacts to the environment because of the event and/or cascading effects. No immediate health threat to people and environmental remediation would restore the environment to acceptable limits** because of a tornado.

4.2 Public Health Emergency

A public health emergency is an occurrence or imminent threat of an illness or health condition that poses a significant risk to many people or a specific population. Such an emergency can arise from a variety of sources, including infectious diseases, bioterrorism, chemical or radiological events, and other situations that require immediate and coordinated response efforts to protect public health and safety.

Mitigation of a public health emergency involves a range of activities, including surveillance and detection, risk communication, medical countermeasures, quarantine and isolation, resource allocation, and recovery efforts to restore normalcy and prevent future occurrences.

4.2.1 Area of Impact

The area of impact for a public health emergency can be extensive and multifaceted depending on the nature of the emergency. Generally, the impact can be categorized into several key areas:

4.2.1.1 Geographic Area

1. Local: Some public health emergencies, such as a localized outbreak of a disease, may primarily affect a specific community, city, or region.
2. Regional: Events like natural disasters or regional epidemics can impact larger areas, crossing municipal and state boundaries.
3. National: Certain emergencies, such as widespread pandemics or national-scale natural disasters, can affect entire countries.
4. Global: Pandemics, like COVID-19, and other significant public health threats can have worldwide impacts, affecting multiple countries and continents.

4.2.1.2 Population

1. General Population: Many public health emergencies impact the general population, causing widespread health concerns.
2. Vulnerable Groups: Specific populations, such as the elderly, children, individuals with preexisting health conditions, and economically disadvantaged communities, may be disproportionately affected.
3. Healthcare Workers: Those on the frontline, including doctors, nurses, and emergency responders, face higher risks of exposure and psychological stress.

4.2.1.3 Health System and Services

1. Healthcare Facilities: Hospitals, clinics, and other healthcare providers may be overwhelmed, leading to shortages of medical supplies, staff, and resources.
2. Public Health Infrastructure: Systems for disease surveillance, testing, vaccination, and public health communication can be strained or disrupted.

4.2.1.4 Economy

1. Business and Employment: Public health emergencies can lead to business closures, job losses, and economic downturns, affecting livelihoods and economic stability.
2. Supply Chains: Disruptions in transportation and supply chains can lead to shortages of essential goods, including food, medicine, and personal protective equipment.

4.2.1.5 Social and Psychological

1. Community and Family Life: Disruptions to daily life, including school closures, social distancing measures, and restrictions on gatherings, can impact social interactions and family dynamics.
2. Mental Health: The stress and uncertainty associated with public health emergencies can lead to increased levels of anxiety, depression, and other mental health issues.

4.2.2 Extent

A public health emergency can vary significantly in scope and severity, impacting the community on multiple levels. The extent of such an emergency depends on the nature of the health threat, which could include infectious disease outbreaks, bioterrorism events, or widespread exposure to environmental toxins.

In the case of an infectious disease outbreak, the extent is determined by factors such as transmission rates, population density, and the availability of medical countermeasures. High transmission rates can lead to rapid spread, overwhelming healthcare systems, and causing significant morbidity and mortality.

Bioterrorism events, involving the deliberate release of harmful biological agents, can have extensive impacts, depending on the type and quantity of the agent used, the mode of dissemination, and the level of preparedness and response capabilities.

Exposure to environmental toxins, such as chemical spills or air pollution, can also cause widespread health effects, ranging from acute symptoms to long-term chronic illnesses. The extent of such an emergency is influenced by the concentration and distribution of the toxin, as well as the duration of exposure.

Picture 1: Delta Township Fire Department Conducts COVID-19 Decontamination Procedures After an EMS Call for Service in March 2020.

4.2.3 Previous Occurrences

The coronavirus that was first detected in 2019 (COVID-19) had significant impacts across the world. In Michigan, the governor declared a state of emergency in March 2020. Shortly after the declaration, schools suspended classes or closed, businesses and restaurants closed, and residents were told to stay home. The COVID-19 pandemic resulted in over 3.1 million total cases in the state, with an estimated 39,189 Michigan residents dying because of the virus (as of November 21, 2023).

The first wave of the opioid epidemic occurred in the 1990s and was declared a public health emergency in 2017. The public health emergency was most recently renewed in December 2023.

4.2.4 Frequency

A key factor in the risk of a particular hazard is the frequency with which it occurs. Some hazards have been relatively frequent in Eaton County while others were only sporadic. For this hazard analysis, the frequency with which an event occurs is based on historical reports and query of subject matter experts from various state and local authorities as well as the number of Gubernatorial Declarations associated with the hazard agent. Using these criteria provides a wider variety of hazards than utilizing presidential declarations alone. State declaration records date back to 1977.

The *Hazard Identification and Risk Assessment (HIRA)* rates the frequency of the hazard as **possible**, meaning that there is **between 1 to 10% probability in the next year, or at least 1 in the next 100 years. Very few state declarations have occurred.**

4.2.5 Vulnerability

1. **Impact on Business** refers to enduring economic impact of the hazard on the community by an event. The HIRA rates the **impact on business** as **low**, meaning that there could be a **complete shutdown of critical facilities for one week** because of a public health emergency.
2. **Impact on Humans** relates to the number of lives potentially lost to a particular hazard. The HIRA rates the **impact on humans** as **high**, meaning that there could be **multiple deaths** because of a public health emergency.
3. **Impact on Property** relates to the amount of property potentially lost to a particular hazard agent. This factor can vary between jurisdictions based on economics, geographic amount owned, and demographics of the populations. The HIRA rates the **impact on property** as **minimum**, meaning that **less than 10% of property could be severely damaged** because of a public health emergency.
4. **Impact on Environment** considers the impacts from the hazard event to the air, water, land, and biota. The HIRA rates the **impact on environment** as **minimum**, meaning **impact to the environment would not require remediation** because of a public health emergency.

4.3 Drought

A drought is a period of unusually persistent dry weather that persists long enough to cause deficiencies in the water supply, (surface or underground). The National Oceanic and Atmospheric Administration (NOAA) defines drought as “a deficiency of precipitation over an extended period of time (usually a season or more), resulting in a water shortage”.

Droughts come on slowly but can build to create severe effects on agriculture, transportation, public health, ecosystems, and water quality. In addition, high temperatures, wind, and low humidity can increase drought and subsequently the risk and intensity of other hazards, such as wildfires. Drought can be categorized as meteorological, hydrological, agricultural, socioeconomic, or ecological as detailed in the table below.

Types of Droughts	
Category	**Description**
Meteorological Drought	Dry Weather patterns dominate an area.
Hydrological Drought	Low water supply becomes evident in the water system.
Agricultural Drought	Crops become affects by drought.
Socioeconomic Drought	Supply and demand of various commodities are affected by drought.
Ecological Drought	Natural ecosystems are affected by drought.

Source: www.drought.gov

4.3.1 Area of Impact

Any land mass can be vulnerable to drought, including the State of Michigan and Eaton County. Drought impacts tend to be regional and not necessarily confined to a specific locality; however, the extent of drought may vary throughout the region.

4.3.2 Extent

Droughts are categorized from D1 to D4. In addition, category D0 indicates an area that is going into or coming out of a drought. Eaton County is susceptible to droughts ranging from D0–D4. Eaton County has a history of D3 and D4 droughts; however, they are not as common as D0–D2 conditions. The table below shows the different categories of drought.

Drought Classification		
Category	**Description**	**Possible Impacts**
D0	Abnormally Dry	**Going into Drought:** 1. Short-term dryness slowing planting, and growth of crops or pastures

		Coming out of Drought: 2. Some lingering water deficits 3. Pastures or crops not fully recovered
D1	Moderate Drought	1. Some damage to crops, pastures 2. Streams, reservoirs, or wells low, some water shortages developing or imminent 3. Voluntary water-use restrictions requested
D2	Severe Drought	1. Crop or pasture losses likely 2. Water shortages common 3. Water restrictions imposed
D3	Extreme Drought	1. Major crop/pasture losses likely 2. Widespread water shortages or restrictions
D4	Exceptional Drought	1. Exceptional and widespread crop/pasture losses 2. Shortages of water in reservoirs, streams, and wells creating water emergencies

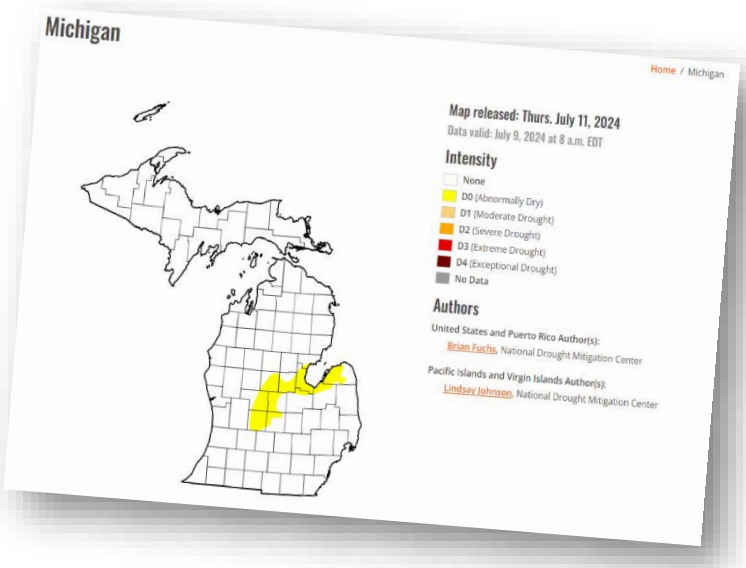
Source: U.S. Drought Monitor

4.3.3 Previous Occurrences

The State of Michigan and Eaton County have experienced drought periods throughout recorded history. Perhaps the most significant drought was in the 1930s. The drought, caused by lack of rain and land misuse, spanned a period from 1929–1937, the worst of these conditions occurring between 1929 and 1931. Farmland was greatly impacted, turning into dirt and sand, forcing farmers to relocate.

In more recent years, Eaton County experienced extreme drought (D3) and exceptional dry (D4) conditions in 2003 and 2005, with severe drought (D2) conditions in 2003, 2012, and 2021, however, Eaton County spent less time in drought than it did in times of precipitation.

Figure 3: U.S. Drought Monitor July 11, 2024



4.3.4 Frequency

A key factor in the risk of a particular hazard is the frequency with which it occurs. Some hazards have been relatively frequent in Eaton County while others were only sporadic or have never occurred. For this hazard analysis, the frequency with which an event occurs is based on historical reports and query of subject matter experts from various state and local authorities as well as the number of Gubernatorial Declarations associated with the hazard agent. Using these criteria provides a wider variety of hazards than utilizing presidential declarations alone. State declaration records date back to 1977.

The *Hazard Identification and Risk Assessment (HIRA)* rates the frequency of the hazard as **possible**, meaning that there is **between 1 to 10% probability in the next year, or at least 1 in the next 100 years. Very few state declarations have occurred.**

4.3.5 Vulnerability

1. **Impact on Business** refers to enduring economic impact of the hazard on the community by an event. The HIRA rates the **impact on business** as **low**, meaning that there could be a **complete shutdown of critical facilities for one week** because of a drought.
2. **Impact on Humans** relates to the number of lives potentially lost to a particular hazard. The HIRA rates the **impact on humans** as **minimum**, meaning that there could be **minor injuries** because of a drought.

Drought Impacts January 1, 2014 – July 1, 2024	
Impact Type	**Eaton County**
Agriculture	13
Fire	3
Plants and Wildlife	8
Relief, Response, and Restrictions	3
Society and Public Health	1
Tourism and Recreation	0
Water Supply and Quality	1

Source: Drought Impact Reporter

1. **Impact on Property** relates to the amount of property potentially lost to a particular hazard agent. This factor can vary between jurisdictions based on economics, geographic amount owned, and demographics of the populations. The HIRA rates the **impact on property** as **medium**, meaning that **more than 25% of property could be severely damaged** because of a drought.
2. **Impact on Environment** considers the impacts from the hazard event to the air, water, land, and biota. The HIRA rates the **impact on environment** as **medium**, meaning **localized and**

temporary impacts to the environment because of the event and/or cascading effects. No immediate health threat to people and environmental remediation would restore the environment to acceptable limits because of a drought.

4.4 Severe Wind

Damaging winds are often called “straight-line” winds to differentiate the damage they cause from tornado damage. Most severe winds that cause ground-level damage are a result of outflow generated by a thunderstorm downdraft. Damaging winds are classified as those exceeding 50-60 mph.

Damage from severe thunderstorm winds accounts for half of all severe reports in the lower 48 states and is more common than damage from tornadoes. Wind speeds can reach up to 100 mph and can produce a damage path that extends for hundreds of miles.

Types of severe wind include the following:

Straight-line wind. Any thunderstorm wind that is not associated with rotation and is used mainly to differentiate from tornadic winds.

Downburst. The general term used to broadly describe macro and microbursts. Downburst is the general term for all localized severe wind events that are caused by a strong downdraft within a thunderstorm, while microburst simply refers to an especially small downburst that is less than 4 km across.

Macroburst. An outward burst of strong winds at or near the surface with horizontal dimensions larger than 4 km (2.5 mi) and occurs when a strong downdraft reaches the surface. To visualize this process, imagine the way water domes out of a faucet and hits the bottom of a sink. The column of water is the downdraft, and the outward spray at the bottom of the sink is the macroburst. Macroburst winds may begin over a smaller area and then spread out over a wider area, sometimes producing damage like that of a tornado. Although usually associated with thunderstorms, macrobursts can occur with showers too weak to produce thunder.

Microburst. A small, concentrated downburst that produces an outward burst of strong winds at or near the surface. Microbursts are small — less than 4 km across — and short-lived, lasting only 5–20 minutes, with maximum windspeeds that sometimes exceed 100 mph. There are two kinds of microbursts: wet and dry (heavy precipitation or non-precipitation).

Gust front. The leading edge of rain-cooled air that clashes with warmer thunderstorm inflow, characterized by a wind shift, temperature drop, and gusty winds out ahead of a thunderstorm.

Derecho. A widespread, long-lived windstorm that is associated with a band of rapidly moving showers or thunderstorms. A typical derecho consists of numerous microbursts, downbursts, and downburst clusters. The swath of wind damage extends more than 240 miles and includes wind gusts of at least 58 mph along most of its length.

The National Weather Service issues High Wind Watches, High Wind Warnings, and Wind Advisories to the public.

1. A High Wind Watch is issued when there is the potential for the development of high wind speeds that may pose a hazard or are life-threatening.

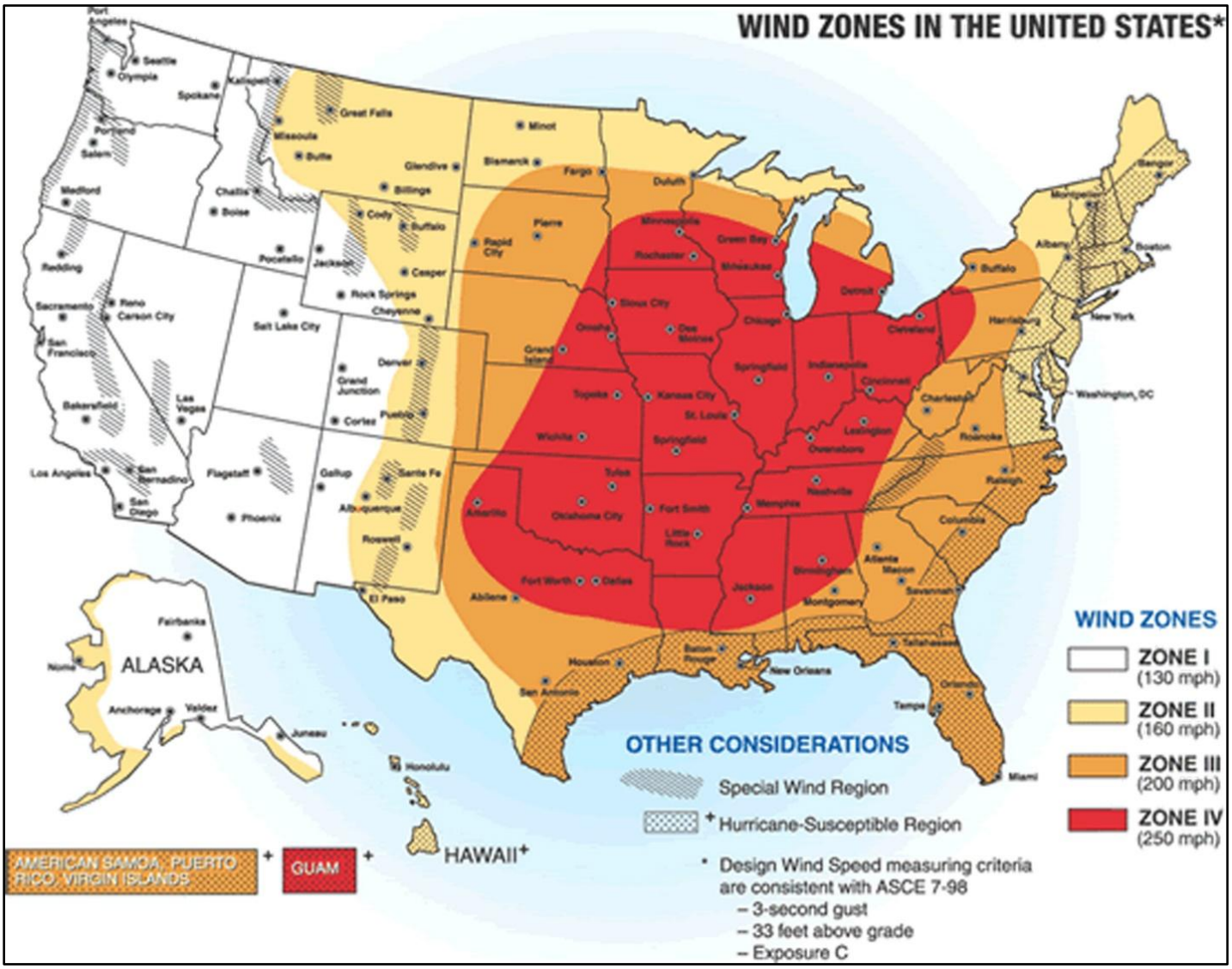
2. A High Wind Warning is issued when one-minute surface winds of 36 kts (40 mph) or greater lasting for one hour or longer, or winds gusting to 50 kts (58 mph) or greater, regardless of duration, are either expected or observed over land.
3. A High Wind Advisory is issued when sustained high wind speeds of 20–39 mph and/or gusts to 57 mph may pose a hazard

4.4.1 Area of Impact

Eaton County is located within Zone IV, where winds can be expected to reach up to 250 mph. Winds are not limited to a single geographical area and can impact anywhere in the planning area; when a severe wind event does occur, it can cause impacts across wide areas of land.

4.4.2 Extent

Severe winds can occur year-round throughout Eaton County. Most of Michigan falls in Zones III and IV, which could result in winds up to 200 and 250 mph, respectively.



Source: Taking Shelter from the Storm: Building a Safe Room Inside Your House, FEMA Publication 320, March 2021 Fifth Edition

Below is the Beaufort Wind Force Scale. The scale estimates wind speeds and their effects via visual observations. The scale begins with 0 and goes to a force of 12.

The Beaufort Wind Force Scale				
#	MPH	Knots	Description	Specifications
0	<1	<1	Calm	Smoke rises vertically.
1	1-3	1-3	Light Air	Direction of wind shown by smoke drift by not by wind vanes.
2	4-7	4-6	Light Breeze	Wind felt on face; Leaves rustle; Wind canes moved by wind
3	8-12	7-10	Gentle Breeze	Leaves and small twigs in constant motion; Winds extend light flags.
4	13-18	11-16	Moderate	Raises dust, loose paper, small branches move.
5	19-24	17-21	Fresh	Small trees begin to sway; Crested wavelets form on inland waters.
6	25-31	22-27	Strong	Large branches in motion; Whistling heard in telephone wires; Umbrellas used with difficulty.
7	32-38	28-33	Near Gale	Whole trees in motion; Inconvenience felt walking against the wind.
8	39-46	34-40	Gale	Twigs break off trees; Wind generally impedes progress; Mobile homes may shake.
9	47-54	41-47	Strong Gale	Slight structural damage occurs; Mobile homes, sheds, roofs, lanais, and RV's suffer minor damage.
10	55-63	48-55	Storm	Small trees uprooted; Moderate damage occurs to mobile homes and RV's; Brick and wood frame houses receive minor structural and roof damage; Some signs blown down.
11	64-73	56-63	Violent Storm	Moderate-sized trees uprooted; Large branches snapped off trees; Chimneys and road signs toppled; Significant mobile home damage; Power Lines downed.

12	74-94	64-83	Hurricane Category 1	Mobile homes overturned; Large trees and branches downed; Moderate roof damage to wood and brick homes; Minor pier damage.

Source: National Weather Service

4.4.3 Previous Occurrences

Within Eaton County between January 1, 1970, and January 1, 2024, the NCEI Storm Events Database includes reports of 96 severe wind events for Eaton County.

Location	Number of Tornadoes	Magnitude Range	Number of Deaths	Number of Injuries	Property Damage	Crop Damage
Eaton	96	0-100 mph	0	0	$22.982M	$180.00K

Source: NOAA National Center for Environmental Information Storm Events Database

Severe Wind Event Types for Eaton County (1970-2024)					
Event Type	**Number of Days with Event**	**Number of Deaths**	**Number of Injuries**	**Property Damage**	**Crop Damage**
High Wind	9	0	0	$13.170M	$0
Strong Wind	1	0	0	$1.00K	$0
Thunderstorm Wind	86	0	0	$9.811M	$180.00K

Source: NOAA National Center for Environmental Information Storm Events Database

From 1970 to January 1, 2024, the following presidential disasters involving wind (not including tornadoes) in Eaton County were declared:

1. Severe Storms, High Winds, Flooding, DR-465-MI, April 26, 1975
2. Severe Storms, Tornadoes, Flooding, DR-1527-MI, May 20 – June 8, 2004
3. Severe Storms, Tornadoes, Flooding, DR-4757-MI, August 24 – 26, 2023

Notable wind events include a windstorm on March 8, 2017, that impacted all three counties. Widespread non-thunderstorm wind gusts of 60–70 mph on a sunny day caused hundreds of thousands of people to lose power. At one point, slightly over one million people were without power in Michigan. The winds caused numerous trees and tree limbs to fall, downing thousands of power lines, and several semis were flipped. The winds also caused damage to many homes, with numerous homes incurring significant roof damage; the NCEI recorded $10 million in property damages across Eaton County.

On February 24, 2019, NCEI recorded a high wind event that caused $3 million in property damage to the region. Wind gusts of 55-65 mph resulted in the loss of power to around a million people on February 24 and 25, downing tree limbs and power lines.

A review of incidents recorded by NCEI shows that normal impacts of high winds include broken tree branches, broken power lines, and loss of power.

4.4.4 Frequency

A key factor in the risk of a particular hazard is the frequency with which it occurs. Some hazards have been relatively frequent in Eaton County while others were only sporadic or have never occurred. For this hazard analysis, the frequency with which an event occurs is based on historical reports and query of subject matter experts from various state and local authorities as well as the number of Gubernatorial Declarations associated with the hazard agent. Using these criteria provides a wider variety of hazards than utilizing presidential declarations alone. State declaration records date back to 1977.

The *Hazard Identification and Risk Assessment (HIRA)* rates the frequency of the hazard as **likely**, meaning that there is **between 10 and 100% probability in the next year, or at least one chance in the next 10 years. Some state declarations have occurred.**

4.4.5 Vulnerability

1. **Impact on Business** refers to enduring economic impact of the hazard on the community by an event. The HIRA rates the **impact on business** as **minimum**, meaning that there could be a **complete shutdown of critical facilities for less than 24 hours** because of a severe wind event.
2. **Impact on Humans** relates to the number of lives potentially lost to a particular hazard. The HIRA rates the **impact on humans** as **low**, meaning that there could be **some injuries** because of a severe wind event.
3. **Impact on Property** relates to the amount of property potentially lost to a particular hazard agent. This factor can vary between jurisdictions based on economics, geographic amount owned, and demographics of the populations. The HIRA rates the **impact on property** as **low**, meaning that **more than 10% of property could be severely damaged** because of a severe wind event.
4. **Impact on Environment** considers the impacts from the hazard event to the air, water, land, and biota. The HIRA rates the **impact on environment** as **low**, meaning **impact to the environment could be minimal and only require a local response** because of a severe wind event.

4.5 Severe Winter Weather

Severe winter weather is an annual occurrence in Michigan. Severe winter weather can produce a combination of freezing rain, sleet, heavy snow, blowing snow, ice storms, and sometimes dangerous wind chills. Severe winter weather is life-threatening. Most deaths from winter storms are not directly related to the storm itself but to traffic accidents on icy roads, hypothermia from prolonged exposure to extreme cold, and heart attacks while shoveling snow.

Eaton County experiences severe winter weather on a regular basis. The National Weather Service describes the varying types of severe winter weather events as follows:

4.5.1.1 Winter Storms

Blizzard. A blizzard is a dangerous winter storm that is a combination of blowing snow and wind resulting in very low visibilities. The main types of precipitation are snow, sleet, or freezing rain. While heavy snowfalls and severe cold often accompany blizzards, they are not required. Sometimes strong winds pick up snow that has already fallen, creating a ground blizzard. A blizzard carries winds over 35 mph with snow and blowing snow and reduces visibility to one fourth mile or less for at least three hours.

Ice storm. An ice storm is a storm which results in the accumulation of at least .25” of ice on exposed surfaces. An ice storm creates hazardous driving and walking conditions. Even a small amount of ice can be extremely dangerous to drivers and pedestrians, but large accumulations of ice can cause tree branches to break and powerlines to easily snap under the weight. Ice storms can cause massive power outages that can disrupt entire communities for weeks at a time.

Lake effect storm. As a cold, dry air mass moves over the Great Lakes regions, the air picks up a lot of moisture from the Great Lakes. This air, now full of water, dumps the water as snow in areas generally to the south and east of the lakes.

4.5.1.2 Snow

Precipitation falls as snow when air temperature remains at or below freezing from the cloud base to the ground.

Snow flurries. Light snow falling for short periods. Little accumulation is expected.

Snow showers. Occur when snow falls at varying intensities. Some accumulation is possible.

Snow squall. A brief, intense snow shower accompanied by strong, gusty winds. Accumulation may be significant. Snow squalls are best known in the Great Lakes region.

4.5.1.3 Sleet

There is a difference between sleet and freezing rain. Sleet occurs when snowflakes only partially melt when they fall through a shallow layer of warm air and become slushy. They refreeze as they fall through a deep layer of freezing air above the surface and eventually reach the ground as frozen rain drops that bounce on impact.

4.5.1.4 Freezing Rain

Freezing rain occurs when snowflakes descend into a warmer layer of air and melt completely. When they fall through another thin layer of freezing air just above the surface, they do not have enough time to refreeze before reaching the ground. They instantly refreeze upon contact with anything that is at or below freezing, creating a glaze of ice on the ground, trees, power lines, and even cars that are currently traveling. Freezing rain in light amounts can be dangerous for travel. In heavier amounts, it becomes an ice storm and can cause significant damage to trees and power lines.

4.5.1 Area of Impact

Winter storms have a large footprint and tend to impact entire regions at once. The risk of this hazard is uniform throughout Eaton County.

4.5.2 Extent

Winter weather in Eaton County generally runs from October/November to April, with the first snowfall usually arriving in November (sometimes as early as October) and the last snowfall arriving in April.

Since 1972, Eaton County has experienced five severe winter weather events that have resulted in a governor's declaration of disaster or state of emergency. Total seasonal snowfall for Eaton County averages around 43 inches, compared to the U.S. average of 28 inches and the Michigan state average of 61 inches. The greatest annual snowfall recorded in the state came in the winter of 1979–1980 at a whopping 355.90 inches. The greatest cumulative snowfall for Lansing was 86.3 inches and occurred during the year that ended December 31, 2008.

The **Sperry-Piltz Ice Accumulation Index**, or **SPIA**, is an ice accumulation and ice damage prediction tool that predicts potential damage from approaching ice storms. The SPIA is to ice storms what the Enhanced Fujita Scale is to tornadoes. It helps communities better prepare days in advance for the damaging impacts of ice storms. The SPIA forecasted the January 2009 ice storm that produced up to 1.5 inches accumulation from the Ozarks to the Ohio Valley as a level 5 storm 2–3 days in advance. The more time a utility must prepare, the more time there is to acquire the resources necessary to restore power as expeditiously as possible. Using the SPIA, an ice storm's intensity and duration can be predicted 72–96 hours, or 3–4 days in advance.

The Sperry-Piltz Ice Accumulation Index, or "SPIA Index" – Copyright, February, 2009

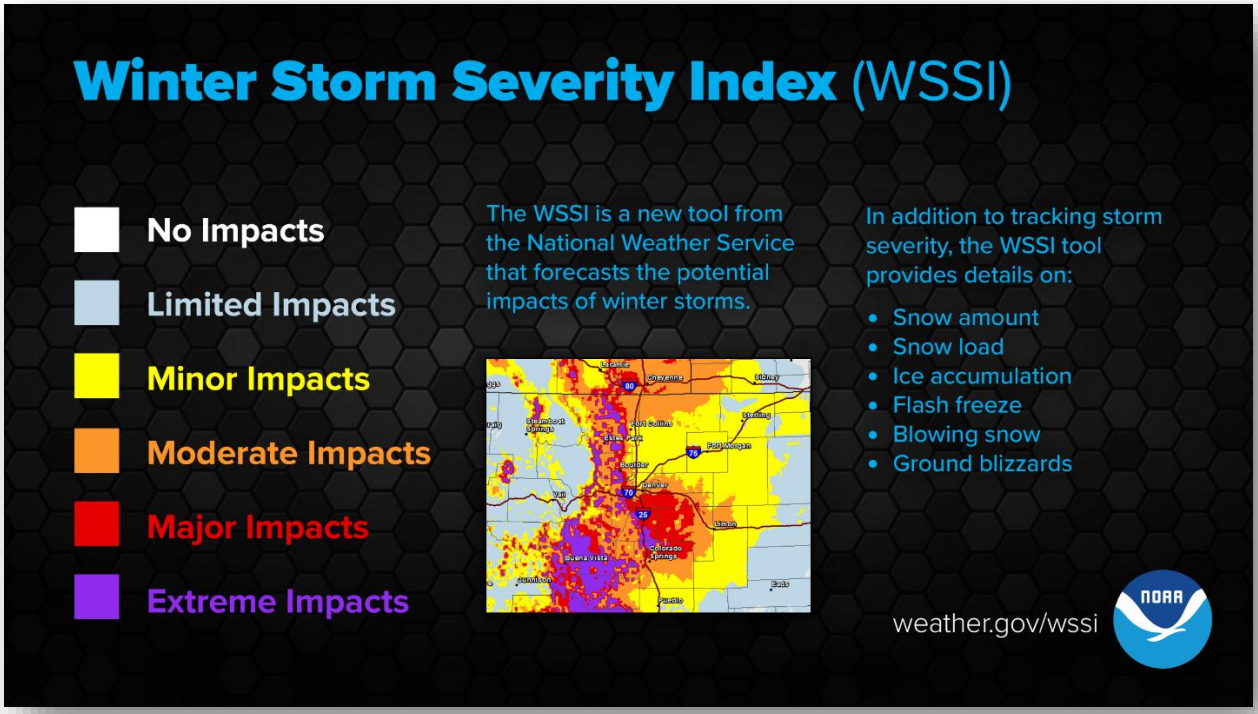
ICE DAMAGE INDEX	DAMAGE AND IMPACT DESCRIPTIONS
0	Minimal risk of damage to exposed utility systems; no alerts or advisories needed for crews, few outages.
1	Some isolated or localized utility interruptions are possible, typically lasting only a few hours. Roads and bridges may become slick and hazardous.
2	Scattered utility interruptions expected, typically lasting 12 to 24 hours. Roads and travel conditions may be extremely hazardous due to ice accumulation.
3	Numerous utility interruptions with some damage to main feeder lines and equipment expected. Tree limb damage is excessive. Outages lasting 1 – 5 days.
4	Prolonged & widespread utility interruptions with extensive damage to main distribution feeder lines & some high voltage transmission lines/structures. Outages lasting 5 – 10 days.
5	Catastrophic damage to entire exposed utility systems, including both distribution and transmission networks. Outages could last several weeks in some areas. Shelters needed.

(Categories of damage are based upon combinations of precipitation totals, temperatures and wind speeds/directions.)

Figure 4: Source: www.spia-index.com

The **Winter Storm Severity Index (WSSI)** is a spatial assessment of the societal impacts of winter storms. It highlights regions and localities with

the forecasted potential of damaging and life-threatening effects brought on by winter weather, including tree and powerline damage, school closures, and transportation issues such as traffic accidents, road closures, and flight cancellations. The WSSI allows forecasters, emergency management, and the public to make informed decisions about the potential for significant weather-related impacts.



A winter storm warning is issued by NOAA to Lansing and lower mid-Michigan when hazardous winter weather is occurring, imminent, or highly likely over part or all the warning forecast area. Winter storm warnings are usually issued 12–24 hours in advance and occasionally as much as 36 hours before the storm moves into the region. A major winter storm can last for several days.

4.5.3 Previous Occurrences

In 2003, a major ice storm in southern lower Michigan caused hundreds of thousands of people to lose power. The weight of the ice brought down thousands of trees and limbs and hundreds of power lines. Many people throughout Eaton County lost power for several days and some for up to a week. The ice storm resulted in nearly $1 million throughout the Tri-County region. Up to an inch of ice was received in some areas. This was one of the biggest ice storms to affect lower Michigan in the previous 50 years. Most counties throughout central and lower Michigan received at least half an inch of ice with total accumulations.

In December 2013, an ice storm affected portions of southern lower Michigan. Ice accumulations of one half to three-quarters of an inch occurred across much of Eaton, Clinton, and Ingham counties as well as surrounding counties. This resulted in a very prolonged power outage that affected hundreds of thousands of residents across lower Michigan; many people in the Tri-County region waited 4–6

days before power was restored. At one point, over 15,000 people in Eaton County were without power. Widespread impacts included downed tree limbs and downed trees across the area. NCEI records $11 million in property damages in the Tri-County region because of this storm. Across the larger area of Michigan, over $60 million in property damage was recorded.

Within Eaton County between January 1, 1970, and January 1, 2024, the NCEI Storm Events Database includes reports of 63 severe winter weather events, including blizzards, heavy snow, ice storms, lake effect snow, sleet, winter storms, and winter weather. **Error! Reference source not found.** table below includes a summary of severe winter weather events in Eaton County.

Location	Number of Tornadoes	Number of Deaths	Number of Injuries	Property Damage	Crop Damage
Eaton	63	0	0	$6.675M	$0

Severe Winter Weather Event Types for Eaton County (19070-2024)					
Event Type	**Number of Events**	**Number of Deaths**	**Number of Injuries**	**Property Damage**	**Crop Damage**
Blizzard	2	0	0	$0	$0
Heavy Snow	14	0	0	$0	$0
Ice Storm	5	0	0	$5.525M	$0
Lake Effect Snow	4	0	0	$0	$0
Sleet	1	0	0	$0	$0
Winter Storm	30	0	0	$1.150M	$0
Winter Weather	7	0	0	$0	$0
Totals	**63**	**0**	**0**	**$6.675M**	**$0**

Source: NOAA National Centers for Environmental Information Storm Events Database

From 1970 to January 1, 2024, the following presidential disasters involving severe winter weather in Eaton County were declared according to FEMA Disaster Declarations for States and Counties:

1. Severe Storm, Freezing, DR-330-MI, April 5, 1972

2. Snowstorm, EM-3030-MI, February 5, 1977
3. Blizzard, Snowstorm, EM-3057-MI, January 27, 1978
4. Snowstorm, EM-3160-MI, December 11 – December 31, 2000

Notable events include the 1978 Blizzard. According to the National Weather Service in Detroit/Pontiac, the winter of 1977-78 had been one of the coldest on record in many areas from the Rockies to the Appalachians. This monster winter storm made its power felt in record breaking lower pressure readings in Cincinnati, Rochester, Toronto, and Wilmington, NC, with damaging winds reaching Boston and Tallahassee, FL. The headline of the 8:00 AM EST Special Weather Statement issued by the NWS Forecast Office in Ann Arbor on January 26 read “A Great Storm is Upon Michigan”.

“Heavy snow and blizzard conditions were extensive as wind gusts more than 35 mph whipped the snow into huge drifts across much of southeast lower Michigan. Other areas of eastern Michigan, Indiana, and Ohio reported near hurricane-force winds, heavy snow, and temperatures hovering between zero and 10 above, resulting in extreme blizzard conditions. These conditions later expanded further east into Pennsylvania and West Virginia and prevailed into the night (26-27th) across much of the eastern Great Lakes, southern Ontario, and the Upper Ohio Valley. With the storm generating copious amounts of snow and very strong winds, whiteout conditions were widespread. All land and air traffic came to a standstill in the affected regions. Several major roads were closed for at least two to three days, if not longer, while clean up got underway. Numerous NWS employees were stranded at work, home, or on the road somewhere between the two. Several employees worked double shifts into at least Friday (some longer) because of the impassable roads with others simply unable to get to work”.

Record 24-hour snowfall totals from the storm included 16.1 inches at Grand Rapids, 15.4 inches at Houghton Lake, and 12.2 in Dayton, Ohio. Snowfalls for the entire storm (January 25-27) included 30.0 inches at Muskegon, 19.3 at Lansing, and 19.2 at Grand Rapids.

Twenty people died in Michigan as a direct or indirect result of the storm, most due to heart attacks or traffic accidents. Many from homes that lost power and heat were hospitalized for exposure. The Tri-County region did not suffer any deaths or injuries.

4.5.4 Frequency

A key factor in the risk of a particular hazard is the frequency with which it occurs. Some hazards have been relatively frequent in Eaton County while others were only sporadic or have never occurred. For this hazard analysis, the frequency with which an event occurs is based on historical reports and query of subject matter experts from various state and local authorities as well as the number of Gubernatorial Declarations associated with the hazard agent. Using these criteria provides a wider variety of hazards than utilizing presidential declarations alone. State declaration records date back to 1977.

The *Hazard Identification and Risk Assessment (HIRA)* rates the frequency of the hazard as **likely**, meaning that there is **between 1 to 10% probability in the next year, or at least 1 in the next 10 years. Some state declarations have occurred.**

4.5.5 Vulnerability

1. **Impact on Business** refers to enduring economic impact of the hazard on the community by an event. The HIRA rates the **impact on business** as **low**, meaning that there could be a **complete shutdown of critical facilities for one week** because of severe winter weather.
2. **Impact on Humans** relates to the number of lives potentially lost to a particular hazard. The HIRA rates the **impact on humans** as **low**, meaning that there could be some **injuries** because of severe winter weather.
3. **Impact on Property** relates to the amount of property potentially lost to a particular hazard agent. This factor can vary between jurisdictions based on economics, geographic amount owned, and demographics of the populations. The HIRA rates the **impact on property** as **low**, meaning that **more than 10% of property could be severely damaged** because of a severe winter weather.
4. **Impact on Environment** considers the impacts from the hazard event to the air, water, land, and biota. The HIRA rates the **impact on environment** as **low**, meaning **impact to the environment would not require remediation** because of severe winter weather.

4.6 Flood

Floods are considered the most common hazard in the United States. Most flood events in the U.S. involve inundation of floodplains associated with rivers and streams or shoreline inundation along lakes and coastlines. This type of flooding, referred to as “riverine” flooding, typically results from large-scale weather systems generating prolonged rainfall or from locally intense storms. Riverine flooding is characterized by a gradual and predictable rise in a river or stream due to persistent precipitation.

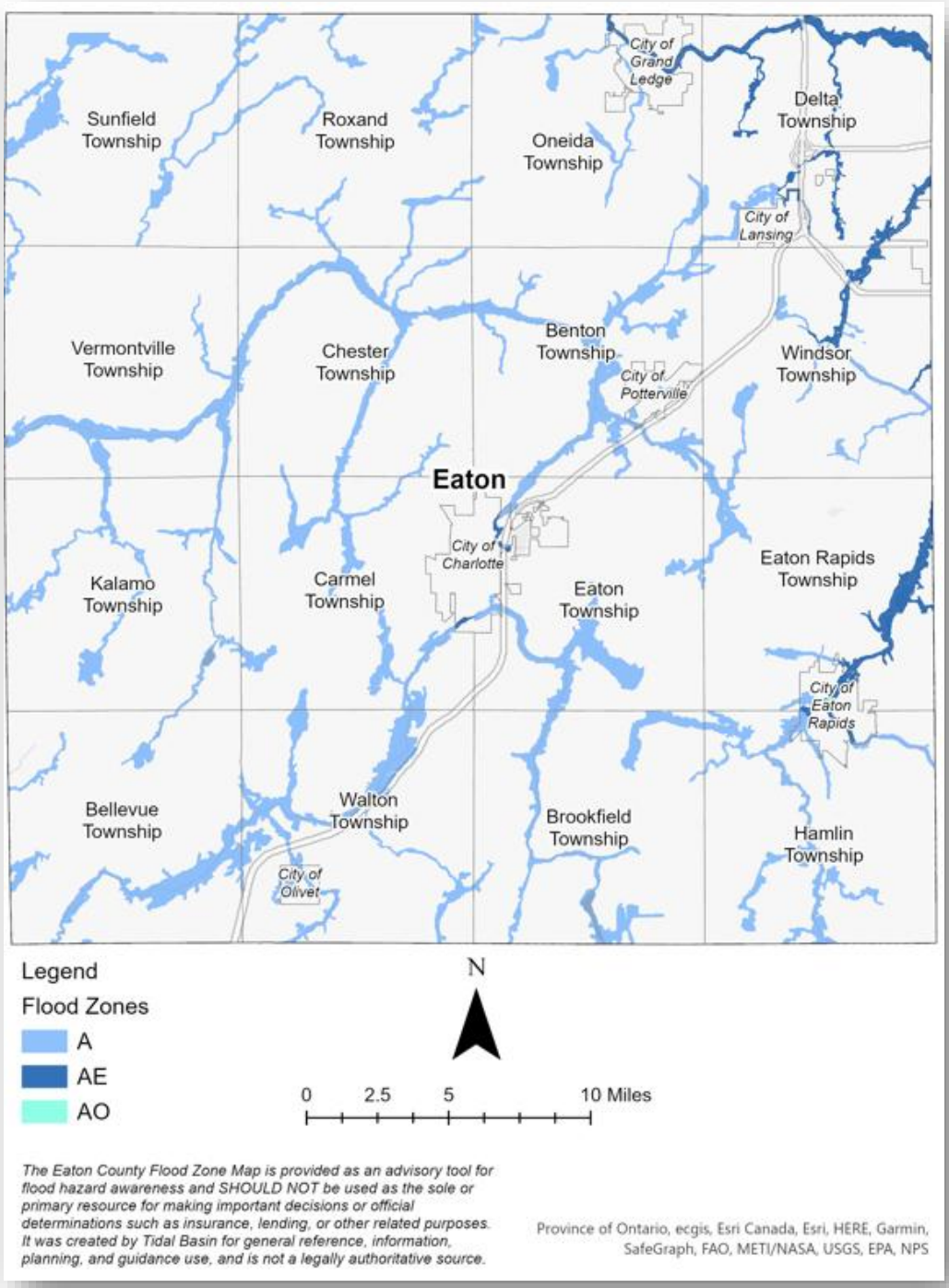
A flood is a natural event for rivers and streams. Excess water from snowmelt, rainfall, or storm surge accumulates and flows over the stream or riverbank into the adjacent floodplain – low-lying lands adjacent to rivers, lakes and oceans that are subject to recurring inundation. Heavy rains that fall in a short period of time during intense thunderstorms can lead to high-velocity flows that overflow the normal river channel, causing extensive damage to nearby residences and businesses. These events are called “flash floods”. Most coastal flood events are characterized by slowly rising and falling floodwaters. Floods can be exacerbated by changing development patterns. In rapidly urbanizing areas, the increased amount of pavement and other impervious surfaces can exacerbate the potential or intensity of flooding events.

Most riverine flooding occurs in early spring and is the result of excessive rainfall and/or the combination of rainfall and snowmelt. Ice jams also cause flooding in winter and early spring. Severe thunderstorms may cause flooding during the summer or fall, although these are usually localized and have more impact on watercourses with smaller drainage areas. Oftentimes, flooding may not necessarily be directly attributable to a river, stream, or lake overflowing its banks. Rather, it may simply be the combination of excessive rainfall and/or snowmelt, saturated ground, and inadequate drainage. With no place to go, the water will find the lowest elevations – areas that are often not in a designated floodplain. That type of flooding is becoming increasingly prevalent in Michigan, as development outstrips the ability of the drainage infrastructure to properly carry and disburse the water flow.

Flooding also occurs due to combined storm and sanitary sewers that cannot handle the tremendous flow of water that often accompanies storm events. Typically, the result is water backing into basements, which damages mechanical systems and can create serious public health and safety concerns.

4.6.1 Area of Impact

Where data is available, flood zones are mappable. The map below shows the Special Flood Hazard Areas with a 1% annual chance of flooding in Eaton County.



4.6.2 National Flood Insurance Program (NFIP)

Eaton County has communities that are mapped for participation in the National Flood Insurance Program (NFIP). The table below presents an overview of plan participants and their enrollment status in the NFIP.

Community	Curr. Eff. Map Date	Reg-Emer Date	Participating Community
Bellevue Township	11/26/2010	2/22/2011	Yes
Delta Township	11/26/2010	11/8/1979	Yes
City of Charlotte	11/26/2010	7/2/1981	Yes
City of Eaton Rapids	11/26/2010	10/15/1982	Yes
City of Grand Ledge	5/3/2011	1/2/1981	Yes
City of Olivet	11/26/2010	11/9/1979	Yes
City of Potterville	11/26/2010	9/28/1979	Yes
Village of Bellevue	11/26/2010	7/3/1986	Yes

Source: Community Status Book | FEMA.gov

Of the *MHMP* participating jurisdictions, Benton Township and Eaton Township are the only jurisidictions not listed in the Community Status Book. Reasons for this may include low flood risk, regulatory and administrative burden, cost concerns, minimal benefit or even lack of awareness.

4.6.3 Repetitive Loss Properties

The following information comes from the FEMA's 2024 Repetitive Property Data.

The National Flood Insurance Program (NFIP) maintains a list of "repetitive loss properties" that have suffered from multiple costly incidents of flood damage. Special funds can be obtained through the Repetitive Flood Claims program to achieve flood mitigation objectives for these structures at a reduced non-federal cost share (10% rather than 25%). Although detailed insurance information must be kept confidential, it is necessary for this plan to include a consideration of these high-priority properties that are vulnerable to regular flooding. Within each county, the following repetitive loss properties should be prioritized for flood mitigation activities, due to their demonstrated recent need.

Eaton County has a total of fourteen repetitive loss properties listed in the official NFIP database. Two are in Delta Township—a single-family home that has suffered an average of $4,263 per flooding event during two events in the 1980s, and a non-residential structure that has seen an average of $20,861 in damage during each of its three reported events since 1980. One property was noted within the City of Eaton Rapids, a single-family home with two flood events since 1999, which averaged $2,498 in damage per event. Eaton Rapids Township also has a vulnerable single-family home that saw three damaging flood events starting in 2008, causing an average of $5,287 in damage each time. Finally, Windsor Township has eight single-family homes on the official list, three of which are located on the same street. All eight of these homes have a history of two reported flood events, mostly during the 1980s but a quarter of the events have occurred since 2004. The average damage per event for each home was $5,740.

4.6.4 Extent

Magnitude and severity can be described or evaluated in terms of a combination of the different levels of impact that a community sustains from a hazard event. Specific examples of negative impacts from flooding in Eaton County span a comprehensive range and are summarized as follows:

1. Floods cause damage to private property that often creates financial hardship for individuals and families.
2. Floods cause damage to public infrastructure, resulting in increased public expenditures and demand for tax dollars.
3. Floods cause loss of personal income for agricultural producers that experience flood damages.
4. Floods cause emotional distress on individuals and families.
5. Floods can cause injury and death.

Floods present a risk to life and property, including buildings, their contents, and their use. Floods can affect crops and livestock. Floods can also affect lifeline utilities (e.g., water, sewerage, power), transportation, jobs, tourism, the environment, and the local and regional economies. The impact of a flood event can vary based on geographic location to waterways, soil content and ground cover, and construction. The extent of the damage of flooding ranges from very narrow to widespread based on the type of flooding and other circumstances, such as previous rainfall, rate of precipitation accumulation, current conditions in the infrastructure and landscapes, the time of year, and emergency response preparedness.

The magnitude and severity of the flood hazard is usually determined by the extent of impact it has on the overall geographic area and by identifying the most catastrophic event in the previous flood history (as an example of the losses that could be incurred during such an event). Sometimes this “example” of a catastrophic event is referred to as the “event of record”. The flood of record is almost always correlated to a peak discharge at a gage, because it usually also comes with the worst impacts in terms of property damage, loss of life, etc. The most damaging event across the region is used to set the “event of record” in terms of injuries/deaths and/or property/agricultural damages.

According to NCEI, the flood of record occurred in April 2013. The storm caused $3 million in property damages in Eaton County. No recorded flooding events included injuries or fatalities. The flood of May 2004 caused $200,000 in crop damages in Eaton County.

4.6.5 Previous Occurrences

The NCEI records flooding event statistics starting in 1997 and includes twelve distinct flooding incidents between January 1, 1970, and January 1, 2024, across Eaton County. These incidents caused a combined $5.985 million in property damage and $725,000 in crop damage. The tables below show a summary of these incidents according to the data gathered by NCEI.

Location	Number of Flooding Incidents	Number of Deaths	Number of Injuries	Property Damage	Crop Damage

Eaton	12	0	0	$5.985M	$725.00K

Source: NOAA National Centers for Environmental Information (NCEI) Storm Events Database

Flood Event Types for Eaton County (1970-2024)					
Event Type	**Number of Days with Event**	**Number of Deaths**	**Number of Injuries**	**Property Damage**	**Crop Damage**
Flash Flood	8	0	0	$1.875M	$525.00K
Flood	4	0	0	$4.110M	$200.00K

Source: NOAA National Centers for Environmental Information (NCEI) Storm Events Database

Eaton County experienced a flood event caused by locally heavy rainfall on February 24, 2001, which caused roughly $10,000 in property damage, no crop damage, and no loss of life or injuries. Several area rivers crested slightly above flood stage, but otherwise, the storm had very little impact.

Additionally, Eaton County was impacted by flooding beginning May 21, 2004. This event caused a record $1 million in property damages and $200,000 in crop damages in Eaton County. Numerous thunderstorms and periods of heavy rainfall developed repeatedly across southern lower Michigan. The prolonged precipitation in mid-May 2004 resulted in elevated river levels and significant ground saturation. Reports indicated multiple washed-out roads in Eaton County. There was no recorded loss of life or injuries due to this event.

Record flooding occurred during the month of April 2013. Across Michigan, hundreds of homes were flooded, over 300 roads were closed, and preliminary damage estimates were more than $32 million. Heavy rainfall caused significant flooding in rivers and streams across Eaton County. NCEI records $3 million in property damages in Eaton County. No damages to crops were recorded and no recorded loss of life or injuries due to this event.

4.6.6 Frequency

A key factor in the risk of a particular hazard is the frequency with which it occurs. Some hazards have been relatively frequent in Eaton County while others were only sporadic or have never occurred. For this hazard analysis, the frequency with which an event occurs is based on historical reports and query of subject matter experts from various state and local authorities as well as the number of Gubernatorial Declarations associated with the hazard agent. Using these criteria provides a wider variety of hazards than utilizing presidential declarations alone. State declaration records date back to 1977.

The *Hazard Identification and Risk Assessment (HIRA)* rates the frequency of the hazard as **possible**, meaning that there is **between 1 to 10% probability in the next year, or at least 1 in the next 100 years. Very few state declarations have occurred.**

4.6.7 Vulnerability

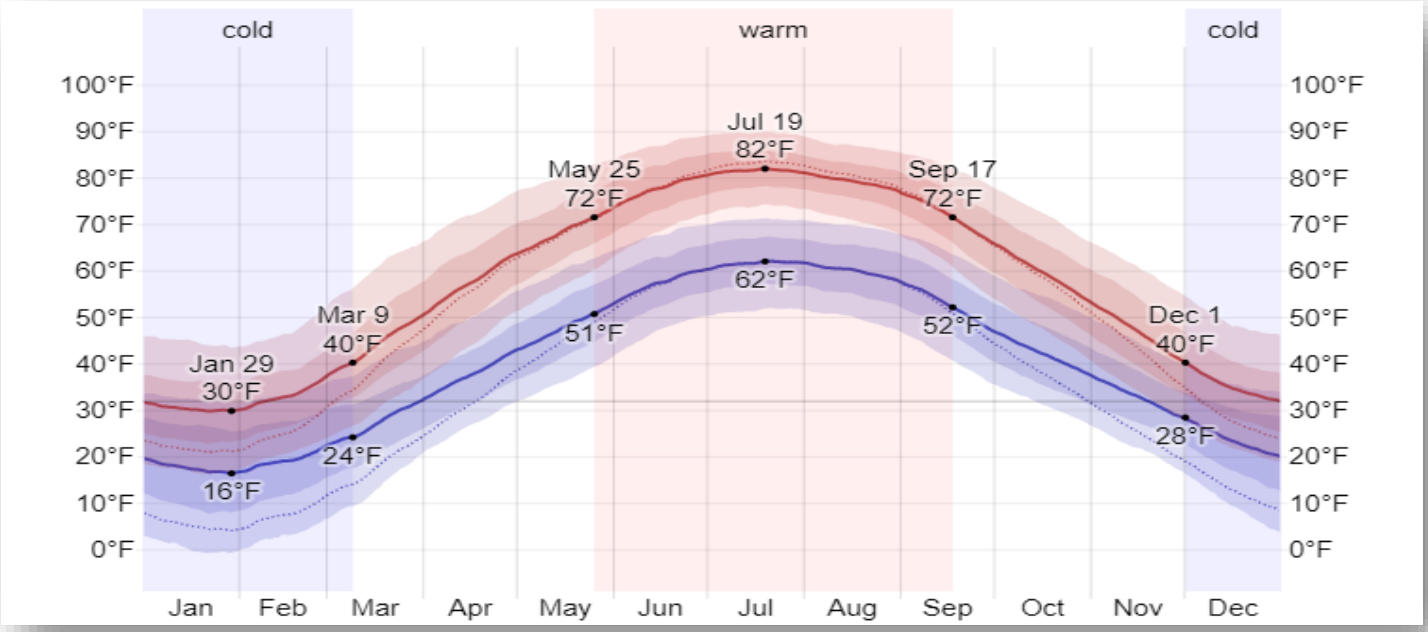
1. **Impact on Business** refers to enduring economic impact of the hazard on the community by an event. The HIRA rates the **impact on business** as **low**, meaning that there could be a **complete shutdown of critical facilities for one week** because of a flood.

2. **Impact on Humans** relates to the number of lives potentially lost to a particular hazard. The HIRA rates the **impact on humans** as **minimum**, meaning that there could be **minor injuries** because of a flood.
3. **Impact on Property** relates to the amount of property potentially lost to a particular hazard agent. This factor can vary between jurisdictions based on economics, geographic amount owned, and demographics of the populations. The HIRA rates the **impact on property** as **low**, meaning that **more than 10% of property could be severely damaged** because of a flood.
4. **Impact on Environment** considers the impacts from the hazard event to the air, water, land, and biota. The HIRA rates the **impact on environment** as **medium**, meaning **localized and temporary impacts to the environment because of the event and/or cascading effects. No immediate health threat to people and environmental remediation would restore the environment to acceptable limits** because of a flood.

4.7 Extreme Temperatures

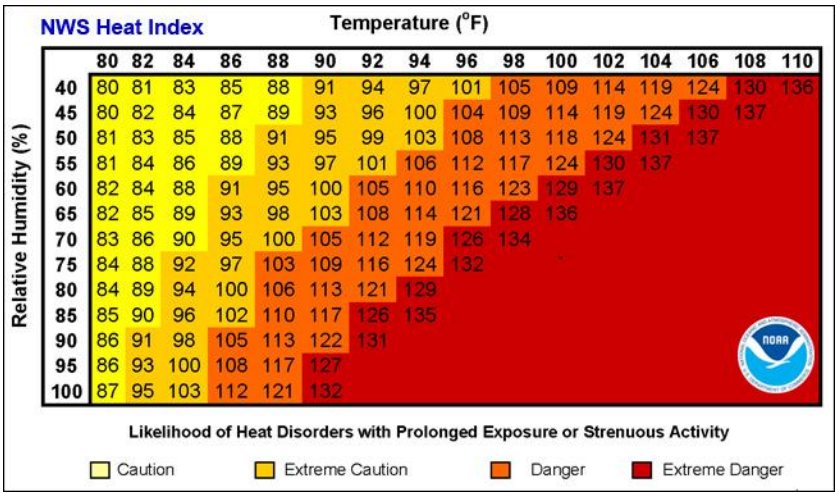
Extreme temperatures in Michigan can include both extreme heat and cold. Extreme temperatures are typically identified by unusually high or low temperatures over a period, typically two days or longer. Extreme temperatures have the greatest effects on the very young, elderly, and other vulnerable populations.

The National Weather Service (NWS) classifies an extreme heat or cold event based on numerous factors, including the departure from normal temperatures. In Lansing, MI, the average high/low temperatures in January are 30°F and 16°F, respectively; in July they are 82°F and 62°F, as shown below.



Source: weatherspark.com

Extreme Heat. Is not categorized by one factor, such as temperature, but as a combination of impacts that increase the threat of heat. Extreme heat is based more on potential or actual impact than weather conditions alone. The amount of sunlight, humidity levels, and wind conditions can increase or decrease the effects of high temperatures increasing or decreasing the threat.



NWS Heat Index — Temperature (°F)

Relative Humidity (%)	80	82	84	86	88	90	92	94	96	98	100	102	104	106	108	110
40	80	81	83	85	88	91	94	97	101	105	109	114	119	124	130	136
45	80	82	84	87	89	93	96	100	104	109	114	119	124	130	137	
50	81	83	85	88	91	95	99	103	108	113	118	124	131	137		
55	81	84	86	89	93	97	101	106	112	117	124	130	137			
60	82	84	88	91	95	100	105	110	116	123	129	137				
65	82	85	89	93	98	103	108	114	121	128	136					
70	83	86	90	95	100	105	112	119	126	134						
75	84	88	92	97	103	109	116	124	132							
80	84	89	94	100	106	113	121	129								
85	85	90	96	102	110	117	126	135								
90	86	91	98	105	113	122	131									
95	86	93	100	108	117	127										
100	87	95	103	112	121	132										

Likelihood of Heat Disorders with Prolonged Exposure or Strenuous Activity

Caution — Extreme Caution — Danger — Extreme Danger

Source: National Weather Service

Other environmental factors can influence the impact of heat as well. High nighttime temperatures reduce the ability of homes and other buildings to cool overnight, increasing

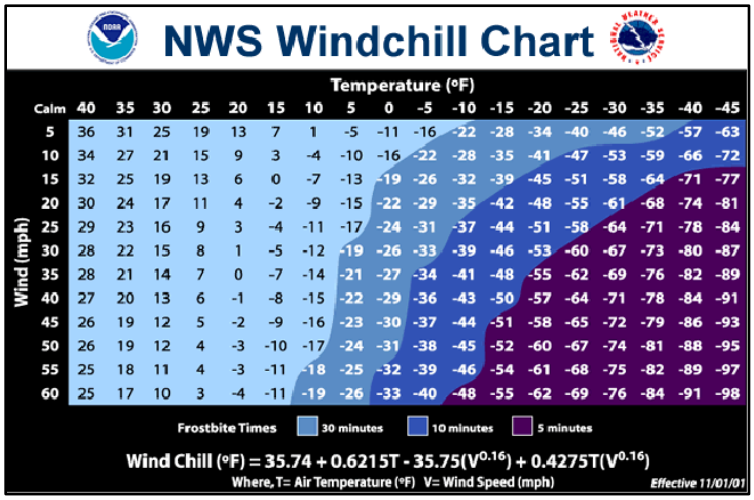
the risk during the daytime hours. The duration of the heat event will also create cumulative effects.

The National Weather Service (NWS) issues alerts, warnings, and notifications (AWN) for three categories of extreme heat. AWN are issued based on the impact of the heat rather than a specific temperature. AWN thresholds vary based on geographic location as well. **Error! Reference source n ot found.** table below shows general parameters for different NWS heat-related alerts.

National Weather Service Heat-Related AWN	
AWN	**Explanation**
Excessive Heat Outlook	Excessive Heat Outlooks are issued when the potential exists for an excessive heat event in the next 3–7 days. An Outlook provides information to those who need considerable lead time to prepare for an event.
Heat Advisory	A Heat Advisory is issued within 12 hours of the onset of extremely dangerous heat conditions. The general rule of thumb for an Advisory is when the maximum heat index temperature is expected to be 100°F or higher for at least 48 hours, and nighttime temperatures are not expected to drop below 75°F, though these criteria vary across the country.
Excessive Heat Watch	Heat Watches are issued when conditions are favorable for an excessive heat event in the next 24–72 hours. A Watch is used when the risk of a heat wave has increased, but its occurrence and timing are still uncertain.
Excessive Heat Warning	An Excessive Heat Warning is issued within 12 hours of the onset of extremely dangerous heat conditions. The general rule of thumb for a Warning is when the maximum heat index temperature is expected to be 105°F or higher for at least 48 hours, and nighttime air temperatures are not expected to drop below 75°F, though these criteria vary across the country.

Source: National Weather Service

Extreme Cold. Like extreme heat, extreme cold is classified based on multiple factors as opposed to temperature alone. Humidity and sunshine have effects on the cold; however, the greatest influence is wind. Cold is often measured by windchill temperatures as opposed to the base temperature. Windchill temperatures can often be 10–20 degrees lower than the ambient temperature as reflected below.



NWS Windchill Chart

Wind (mph) \ Temperature (°F)	Calm	40	35	30	25	20	15	10	5	0	-5	-10	-15	-20	-25	-30	-35	-40	-45
5		36	31	25	19	13	7	1	-5	-11	-16	-22	-28	-34	-40	-46	-52	-57	-63
10		34	27	21	15	9	3	-4	-10	-16	-22	-28	-35	-41	-47	-53	-59	-66	-72
15		32	25	19	13	6	0	-7	-13	-19	-26	-32	-39	-45	-51	-58	-64	-71	-77
20		30	24	17	11	4	-2	-9	-15	-22	-29	-35	-42	-48	-55	-61	-68	-74	-81
25		29	23	16	9	3	-4	-11	-17	-24	-31	-37	-44	-51	-58	-64	-71	-78	-84
30		28	22	15	8	1	-5	-12	-19	-26	-33	-39	-46	-53	-60	-67	-73	-80	-87
35		28	21	14	7	0	-7	-14	-21	-27	-34	-41	-48	-55	-62	-69	-76	-82	-89
40		27	20	13	6	-1	-8	-15	-22	-29	-36	-43	-50	-57	-64	-71	-78	-84	-91
45		26	19	12	5	-2	-9	-16	-23	-30	-37	-44	-51	-58	-65	-72	-79	-86	-93
50		26	19	12	4	-3	-10	-17	-24	-31	-38	-45	-52	-60	-67	-74	-81	-88	-95
55		25	18	11	4	-3	-11	-18	-25	-32	-39	-46	-54	-61	-68	-75	-82	-89	-97
60		25	17	10	3	-4	-11	-19	-26	-33	-40	-48	-55	-62	-69	-76	-84	-91	-98

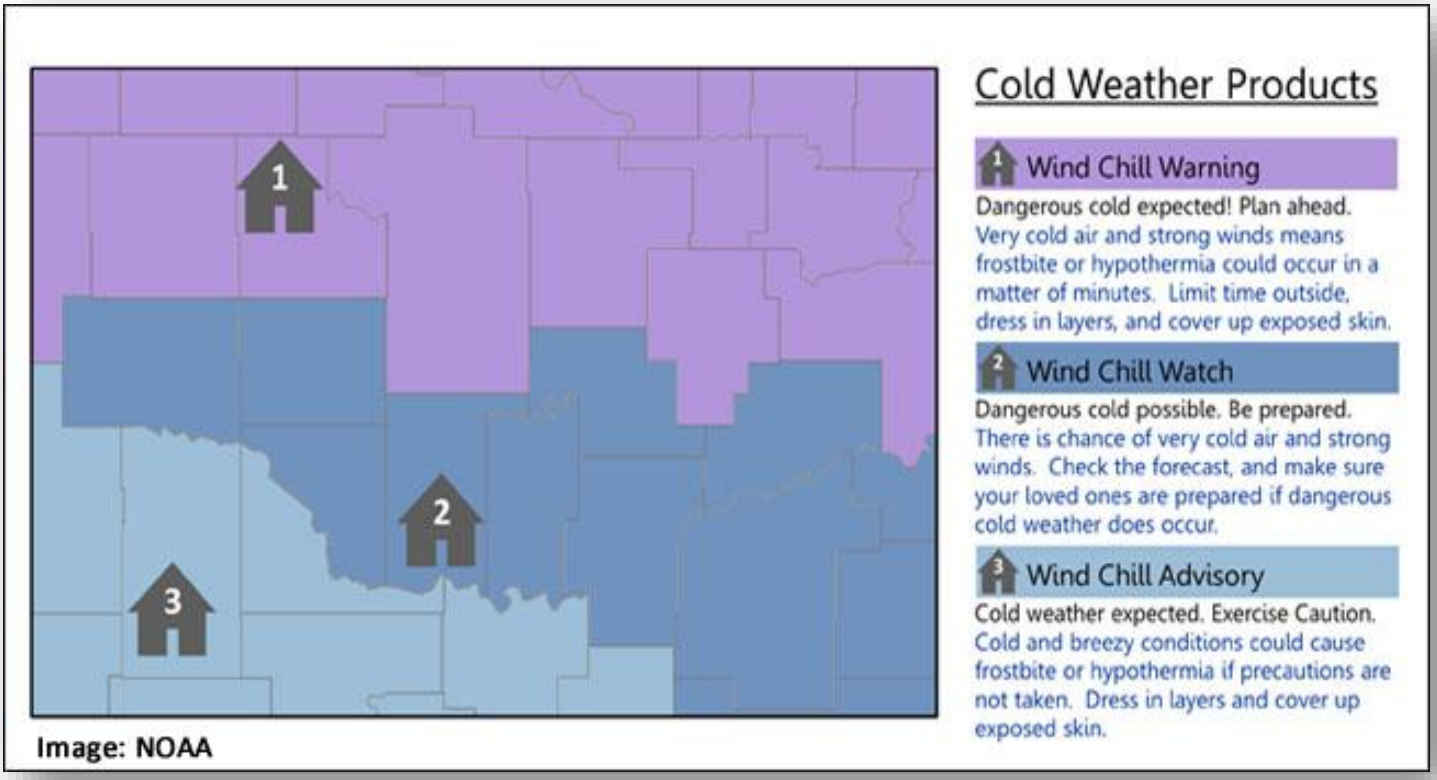
Frostbite Times: 30 minutes, 10 minutes, 5 minutes

$$\text{Wind Chill (°F)} = 35.74 + 0.6215T - 35.75(V^{0.16}) + 0.4275T(V^{0.16})$$

Where, T= Air Temperature (°F) V= Wind Speed (mph) Effective 11/01/01

Source: National Weather Service

NWS AWN are often issued based on windchill temperatures. The NWS may also issue AWN based on freezing temperatures; however, these are typically more focused on impacts from freezing temperatures on plants, pets, and households. The figure below shows an example of an NWS weather AWN for cold weather incidents.



Source: National Weather Service

One of the most significant causes of extreme cold is the Polar Vortex. The Polar Vortex is a low-pressure area with very cold air in the North Pole. There is also a similar vortex in the South Pole. At times, the vortex will expand, sending cold air south along the jet stream. When this occurs, areas of

the northern United States, including Michigan, can receive exceptionally cold air far below normal or average winter temperatures.

4.7.1 Area of Impact

All areas of Michigan can experience extreme temperatures, including Eaton County. Extreme temperature impacts tend to be regional and not necessarily confined to a specific locality.

4.7.2 Extent

Due to the somewhat ambiguous nature of extreme temperature events, it is challenging to measure the extent of extreme heat or cold. However, the record high temperature in Eaton County was recorded at 106°F in 1936, with a record low of -31°F in 1912.

4.7.3 Previous Occurrences

Eaton County has experienced numerous extreme heat and cold events; however, a search of the NCEI database did not show a sustained history of extreme heat or cold events. Some of the more exceptional events have been captured below.

1. **July 1936 Extreme Heat.** Temperatures above 100°F for up to seven days resulted in death and foodborne illness due to melted iceboxes.
2. **August 2001 Extreme Heat.** Temperatures above 100°F and high humidity for seven days. Heat indices of 105–110°F in some areas.
3. **June 2018 Extreme Heat.** High temperatures reached the lower to middle 90s with heat indices at or above 105°F.
4. **January 29–31, 2019 Extreme Cold.** Artic cold brought in by a Polar Vortex entered lower Michigan for three days with extreme cold and over a foot of snow. Ambient temperatures ranged from -5°F to -20°F while windchills throughout lower Michigan fell to -20°F to -40°F.

Location	Date of Record High	Record High	Number of days > 90°F	Probability of Occurrence
Eaton	7/14/1936	106°F	7.5	2.1%
Location	**Date of Record Low**	**Record Low**	**Number of days > 0°F**	**Probability of Occurrence**
Eaton	2/10/1912	-31°F	13.5	3.7%

Source: 2023 Hazard Mitigation Plan

4.7.4 Frequency

A key factor in the risk of a particular hazard is the frequency with which it occurs. Some hazards have been relatively frequent in Eaton County while others were only sporadic or have never occurred. For this hazard analysis, the frequency with which an event occurs is based on historical

reports and query of subject matter experts from various state and local authorities as well as the number of Gubernatorial Declarations associated with the hazard agent. Using these criteria provides a wider variety of hazards than utilizing presidential declarations alone. State declaration records date back to 1977.

The *Hazard Identification and Risk Assessment (HIRA)* rates the frequency of the hazard as **likely**, meaning that there is **between 10 and 100% probability in the next year, or at least one chance in 10 years. Some state declarations have occurred.**

4.7.5 Vulnerability

1. **Impact on Business** refers to enduring economic impact of the hazard on the community by an event. The HIRA rates the **impact on business** as **minimum**, meaning that there could be a **shutdown of critical facilities for less than 24 hours** because of extreme temperatures.
2. **Impact on Humans** relates to the number of lives potentially lost to a particular hazard. The HIRA rates the **impact on humans** as **low**, meaning that there could be **some injuries** because of extreme temperatures.
3. **Impact on Property** relates to the amount of property potentially lost to a particular hazard agent. This factor can vary between jurisdictions based on economics, geographic amount owned, and demographics of the populations. The HIRA rates the **impact on property** as **minimum**, meaning that **less than 10% of property could be severely damaged** because of extreme temperatures.
4. **Impact on Environment** considers the impacts from the hazard event to the air, water, land, and biota. The HIRA rates the **impact on environment** as **minimum**, meaning **impact to the environment would not require remediation** because of extreme temperatures.

4.8 Animal Disease

The United States Department of Agriculture (USDA) Animal and Plant Health Inspection Service (APHIS) states that they “protect against [animal] diseases that could harm the health, quality, or marketability of our Nation’s agriculture animals. With a vast network of partners, our Veterinary Services team helps U.S. producers prevent, control, and when possible, eliminate these diseases from our country”. Animal diseases, ranging from viral and bacterial infections to parasitic infestations, pose significant threats to the livestock and poultry industries. These diseases can affect the health and productivity of animals, disrupt trade, and cause economic losses.

Animal diseases can spread through various means, including direct contact with infected animals, contaminated feed and water, vectors such as insects, and through the air. Some diseases, like avian influenza and African swine fever, can spread rapidly and have severe consequences if not controlled promptly. The USDA APHIS works diligently to prevent the introduction and spread of such diseases through comprehensive surveillance, quarantine measures, and rapid response strategies.

The USDA APHIS collaborates with the National Animal Disease Preparedness and Response Program (NADPRP) which strengthens our country’s ability to combat animal disease outbreaks. Through this program, APHIS provides funding to states, producer organizations, universities, and others to carry out high-value projects that help our Nation prepare for the most critical animal health threats facing U.S. livestock industries today. The funded projects address high-priority topics in controlling animal disease outbreaks, such as developing response plans, training first responders, and increasing producer use of biosecurity measures. This work is vital for protecting animal health, public health, and our Nation’s food supply.

When outbreaks do occur, the USDA APHIS employs a coordinated response to control and eradicate the disease. This may involve quarantine zones, culling infected and exposed animals, and disinfecting affected areas. Communication with the public and stakeholders is critical during these times to ensure transparency and cooperation.

Zoonotic diseases, which can be transmitted from animals to humans, are another area of concern. Diseases like rabies, brucellosis, and zoonotic influenza can pose public health risks. The USDA APHIS, in conjunction with the Centers for Disease Control and Prevention (CDC), monitors and manages these diseases to protect both animal and human health.

4.8.1 Area of Impact

Animal diseases can occur at any time of the year and have been recorded across all regions of the United States. While some states may experience higher incidences of specific diseases due to local environmental conditions or livestock density, no state is entirely free from the threat of animal diseases. For instance, states with large agricultural sectors, such as Texas and California, frequently report higher numbers of livestock diseases. In addition to affecting agricultural animals, zoonotic diseases, which can be transmitted from animals to humans, are a significant concern. Rabies, West Nile virus, and various strains of influenza are examples of zoonotic diseases that have required coordinated efforts between animal health and public health agencies. The CDC and USDA APHIS work together to monitor and manage these diseases to protect both animal and human health.

Since the early 20th century, the USDA APHIS has monitored and managed numerous outbreaks of animal diseases in the U.S. Notably, Highly Pathogenic Avian Influenza (HPAI) remains a top concern for USDA APHIS. Caused by influenza virus A, avian influenza viruses are classified as either HPAI or Low Pathogenic Avian Influenza (LPAI) based on their genetic features and disease severity in poultry. Most avian influenza viruses are LPAI and do not cause high mortality in birds. However, HPAI can result in morbidity and mortality rates up to 100%. The 2014–2015 HPAI outbreak led to the loss of about 50 million birds in the U.S.

During the 2014–2015 U.S. outbreak, H5N2 was the most common HPAI subtype, followed by H5N8. In 2016, the outbreak involved an H7N8 virus, and in 2017, an H7N9 virus (unrelated to the Asian H7N9). No human cases were reported during these outbreaks.

However, certain AI viruses circulating in poultry, such as H5N13, H5N6, and the Asian H7N9, pose significant public health concerns. Most human infections occur through close contact with infected birds or their secretions, and while rare, these infections can have high mortality rates. Thus, agricultural, and public health agencies must coordinate responses to HPAI.

Animal diseases are influenced by various factors, including climate, animal movement, and human activity. For example, tick-borne diseases such as Lyme disease and anaplasmosis are more prevalent in areas with dense deer populations and suitable tick habitats, like the northeastern and upper midwestern United States. Similarly, the spread of diseases such as Bovine Spongiform Encephalopathy (BSE) or "mad cow disease" is heavily influenced by practices in the livestock industry, such as feed and animal husbandry methods.

Biosecurity measures are essential in preventing the spread of animal diseases. These measures include controlling animal movements, maintaining proper hygiene in animal housing, and implementing vaccination programs. Education and outreach to farmers and veterinarians are also critical components of effective disease prevention and control

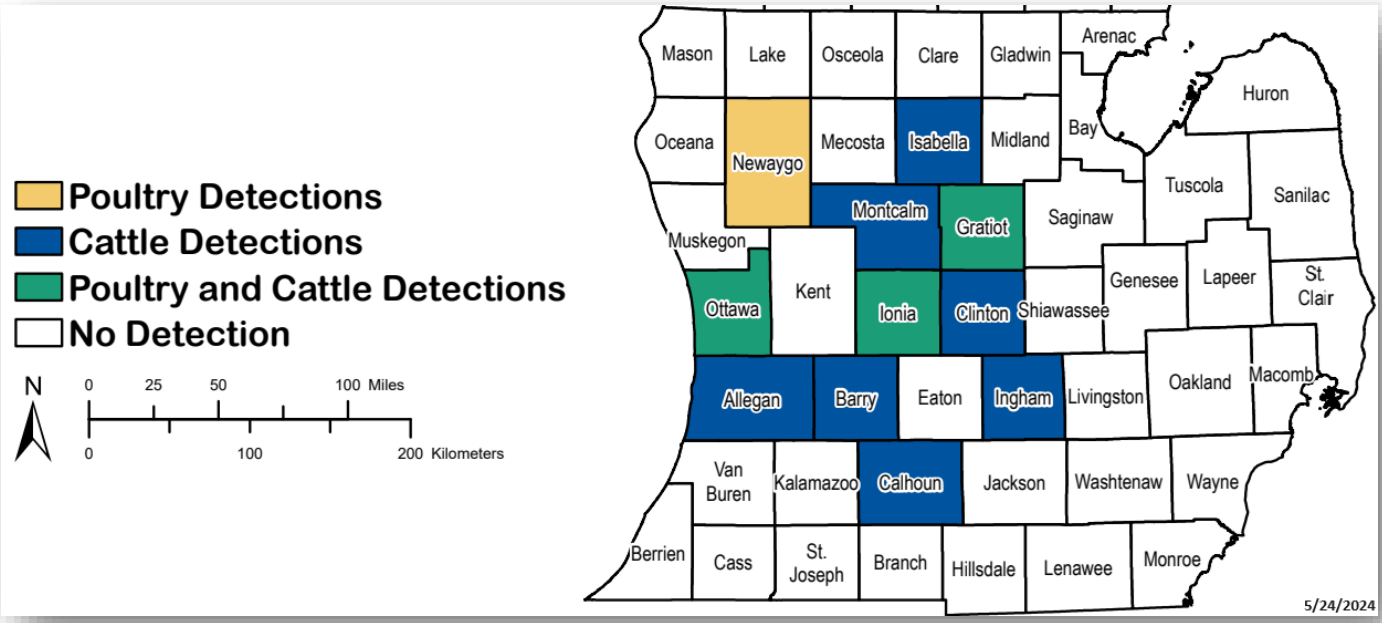
4.8.2 Extent

In a recent study completed in 2023 by Researchers at Harvard Law School and New York University, it was found that animal industries in the United States pose a serious risk of future pandemics, and the U.S. government lacks a comprehensive strategy to address these threats. This report is the first comprehensive analysis of the animal commerce networks driving zoonotic risk in the United States, covering 36 distinct animal industries such as fur farming, the exotic pet trade, and industrial animal agriculture. The United States currently lacks a cohesive strategy to address zoonotic risk, with an incomplete and fragmented regulatory system that leaves significant gaps through which pathogens can spread. Animal use in the U.S. is often poorly regulated, focusing little on disease prevention, even though approximately 75% of emerging infectious diseases originate from animals. The immense scale of animal use and consumption in the U.S., being the world's largest importer of both domestic animals and wildlife and producing over 10 billion animals for food in 2022, heightens the risk of zoonotic diseases. Furthermore, U.S. consumer demand influences dangerous human-animal interactions globally, exacerbating zoonotic risks. The report highlights the urgent need for more data and better monitoring across various animal industries, noting that public health officials are sometimes unaware of entire industries until disease outbreaks occur. While risk

cannot be eliminated, it can be reduced through improved laws and policies, requiring documentation, and understanding of the problem followed by informed discussions on the public health risks posed by different practices.

4.8.3 Previous Occurrences

Several animal diseases have occurred in Eaton County throughout the years. As HPAI continues to be detected across Michigan, it remains crucial for producers to protect their animals. The disease has been found in wild birds, mammals, and recently in dairy cattle within the state. Since the outbreak began in February 2022, HPAI has affected domestic birds in numerous counties, including Bay, Branch, Cass, Eaton, Genesee, and more. Since April 2024, it has also been detected in dairy cattle in counties like Allegan, Barry, Calhoun, Clinton, and others. The Michigan Department of Agriculture and Rural Development (MDARD) is working with local, state, and federal partners to respond to reports of sick animals and provide updated information to producers and stakeholders. The map below highlights the 2024 HPAI detections across the state of Michigan as of May 24, 2024.



Source: Michigan Department of Agriculture and Rural Development (MDARD)

As of March 2024, Chronic Wasting Disease has been reported in 32 states in the United States, including Eaton County, Michigan. Cases have occurred in all four regions of the country (West, Midwest, South, Northeast). Animals affected include free-ranging deer, elk, reindeer, and moose.

Eaton County has not been part of a presidential disaster declaration related to animal disease

4.8.4 Frequency

A key factor in the risk of a particular hazard is the frequency with which it occurs. Some hazards have been relatively frequent in Eaton County while others were only sporadic or have never occurred. For this hazard analysis, the frequency with which an event occurs is based on historical

reports and query of subject matter experts from various state and local authorities as well as the number of Gubernatorial Declarations associated with the hazard agent. Using these criteria provides a wider variety of hazards than utilizing presidential declarations alone. State declaration records date back to 1977.

The *Hazard Identification and Risk Assessment (HIRA)* rates the frequency of the hazard as **likely**, meaning that there is **between 1 to 10% probability in the next year, or at least 1 in the next 10 years. Some state declarations have occurred.**

4.8.5 Vulnerability

1. **Impact on Business** refers to enduring economic impact of the hazard on the community by an event. The HIRA rates the **impact on business** as **minimum**, meaning that there could be a **shutdown of critical facilities for less than 24 hours** because of animal disease.
2. **Impact on Humans** relates to the number of lives potentially lost to a particular hazard. The HIRA rates the **impact on humans** as **minimum**, meaning that there could be **minor injuries** because of animal disease.
3. **Impact on Property** relates to the amount of property potentially lost to a particular hazard agent. This factor can vary between jurisdictions based on economics, geographic amount owned, and demographics of the populations. The HIRA rates the **impact on property** as **minimum**, meaning that **less than 10% of property could be severely damaged** because of animal disease.
4. **Impact on Environment** considers the impacts from the hazard event to the air, water, land, and biota. The HIRA rates the **impact on environment** as **minimum**, meaning **impact to the environment would not require remediation** because of animal disease.

4.9 Wildfire

A wildfire is considered any unplanned fire that occurs in a wildland area, such as a grassland, forest, or brush-filled area, regardless of cause. Wildfires are an integral part of the natural management of forest ecosystems; naturally occurring wildfires are most frequently caused by lightning strikes. Humans can also cause wildfires; common causes include campfires, discarded cigarettes, prescribed burns that get out of control, arson, or illegal burning, sparking equipment, and power lines and utilities. Nationally, over 80% of forest fires are started by negligent human behavior, such as discarding cigarettes in wooded areas or improperly extinguishing campfires. The second-most common cause for wildfire is lightning.

There are three classes of wildland fires – surface fire, ground fire and crown fire. A surface fire is the most common and burns along the floor of a forest, moving slowly and killing or damaging trees. A ground fire is usually started by lightning or human carelessness and burns on or below the forest floor. Crown fires spread rapidly by wind and move quickly by jumping along the tops of trees. Wildland fires are usually signaled by dense smoke that fills the area for miles around. The strength and behavior of wildfire is influenced by three factors — fuel type and availability, surrounding weather, and topography of the area.

4.9.1 Area of Impact

The entirety of Eaton County is susceptible to wildfire, though certain areas are more at risk than others.

The Wildland-Urban Interface (WUI) is the zone of transition between unoccupied land and human development. It is the line, area, or zone where structures and other human development meet or intermingle with undeveloped wildland or vegetative fuels. While wildfires are generally thought of as a problem more attuned to the western states, more than 46 million residences in 70,000 communities in the United States live in an area at risk for fires in the WUI. According to the USFA, between 2002 and 2016, an average of over 3,000 structures per year were lost to WUI fires in the U.S.

The Federal Register definition splits the WUI into two categories based on vegetation density:

1. Intermix WUI, or lands that contain at least one housing unit per 40 acres in which vegetation occupies more than 50% of terrestrial area; a heavily vegetated intermix WUI is as an area in which vegetation occupies over 75% of a 5 square kilometer terrestrial area.
2. Interface WUI, or lands that contain at least one housing unit per 40 acres in which vegetation occupies less than 50% of terrestrial area.

4.9.2 Extent

Wildfire extent can be described in terms of size and type of fire. According to the National Wildfire Coordinating Group, there are seven classes of wildfire sizes, categorized from A–G.

1. Class A — one-fourth acre or less
2. Class B — more than one-fourth acre but less than 10 acres

3. Class C — 10 acres or more but less than 100 acres
4. Class D — 100 acres or more but less than 300 acres
5. Class E — 300 acres or more but less than 1,000 acres
6. Class F — 1,000 acres or more but less than 5,000 acres
7. Class G — 5,000 acres or more

Different types of fires demonstrate different characteristics that impact how a fire spreads. A surface fire burns along the floor of a forest; a ground fire burns on or below the forest floor, and crown fires spread rapidly by wind and move quickly by jumping along the tops of trees.

4.9.3 Previous Occurrences

The 2023 Tri-County Hazard Mitigation Plan noted no historical occurrences of large-scale wildfires in Eaton County. For the plan update, multiple sources were reviewed to catalogue previous wildfire occurrences. According to the 2019 Michigan State Hazard Mitigation Plan, the State of Michigan averages less than one wildfire incident per year. Most fires occur in the more wooded areas of the Upper Peninsula of the state. A search was also run in the National Interagency Fire Center database; while the database noted fires across the state, none were listed for Eaton County. A review of Fire Management Assistance Grants (FMAG) and Fire Suppression declarations showed none for Eaton County.

4.9.4 Frequency

A key factor in the risk of a particular hazard is the frequency with which it occurs. Some hazards have been relatively frequent in Eaton County while others were only sporadic or have never occurred. For this hazard analysis, the frequency with which an event occurs is based on historical reports and query of subject matter experts from various state and local authorities as well as the number of Gubernatorial Declarations associated with the hazard agent. Using these criteria provides a wider variety of hazards than utilizing presidential declarations alone. State declaration records date back to 1977.

The *Hazard Identification and Risk Assessment (HIRA)* rates the frequency of the hazard as **possible**, meaning that there is **between 1 to 10% probability in the next year, or at least 1 in the next 100 years. Very few state declarations have occurred.**

4.9.5 Vulnerability

1. **Impact on Business** refers to enduring economic impact of the hazard on the community by an event. The HIRA rates the **impact on business** as **minimum**, meaning that there could be a **shutdown of critical facilities for less than 24 hours** because of a wildfire.
2. **Impact on Humans** relates to the number of lives potentially lost to a particular hazard. The HIRA rates the **impact on humans** as **minimum**, meaning that there could be **minor injuries** because of a wildfire.
3. **Impact on Property** relates to the amount of property potentially lost to a particular hazard agent. This factor can vary between jurisdictions based on economics, geographic amount

owned, and demographics of the populations. The HIRA rates the **impact on property** as **minimum**, meaning that **less than 10% of property could be severely damaged** because of a wildfire.

4. **Impact on Environment** considers the impacts from the hazard event to the air, water, land, and biota. The HIRA rates the **impact on environment** as **minimum**, meaning **impact to the environment would not require remediation** because of a wildfire.

Section 5. Technological Hazard Profiles

5.1 Hazardous Materials Incident

A hazardous material incident is defined as any occurrence, event, or disaster by which a material that is identified as being hazardous by a regulatory and/or governmental entity is released in such a manner that adversely affects the health and safety of the environment, animals, and humans. Hazardous materials, also known as HAZMAT, include chemicals, radioactive materials, biological agents, and other substances that are dangerous in certain conditions. These incidents can occur during the production, storage, transportation, use, or disposal of hazardous materials.

When a hazardous materials incident occurs, the immediate danger may not be visible. While some incidents may involve obvious signs like fire, smoke, or chemical spills, others may involve invisible threats such as toxic gases or radiation. The effects of these substances can be devastating, impacting air quality, water sources, soil, and living organisms.

The release of hazardous materials can occur in various ways, including industrial accidents, transportation accidents, natural disasters, or intentional acts of terrorism. The severity of these incidents depends on factors such as the type and quantity of the material released, the location of the release, and the weather conditions at the time.

The Environmental Protection Agency (EPA) states that the most dangerous aspect of a hazardous materials incident is the potential for exposure to toxic substances. These substances can cause acute health effects, such as respiratory distress, skin burns, and poisoning, as well as long-term effects like cancer, organ damage, and genetic mutations. Emergency responders must wear specialized protective gear to shield themselves from exposure and use advanced equipment to detect and identify hazardous substances.

Hazardous materials incidents require a coordinated response from multiple agencies, including local fire departments, hazardous materials teams, public health departments, and environmental protection agencies. These responders follow strict protocols to contain and mitigate the release, decontaminate affected areas, and protect public health and safety.

5.1.1 Area of Impact

A hazardous materials incident can have profound and far-reaching impacts across various sectors. Agriculture and the environment are vulnerable to contamination from spills, leading to crop damage, soil degradation, and disruption of ecosystems that support wildlife and vegetation. Property damage is often significant, with explosions, fires, or chemical releases causing structural harm to buildings, infrastructure, and personal belongings, resulting in substantial financial losses for individuals and businesses alike. Contamination of water sources threatens public health and agricultural productivity, necessitating alternative supply measures and posing risks to food safety through the contamination of agricultural products and livestock.

Transportation networks face disruptions from road closures due to accidents or hazmat spills, affecting traffic flow and logistics, especially for hazardous materials shipments. Health impacts are a major concern, ranging from acute illnesses and injuries among responders and nearby populations to long-term health effects from chronic exposure to toxic substances. Airborne release of gases and

vapors compromises air quality, triggering respiratory issues and potentially necessitating evacuations or shelter-in-place orders for communities at risk.

Responders face heightened demands, requiring swift and coordinated efforts across multiple agencies to manage the incident effectively and safeguard public safety. This includes deploying specialized equipment and following strict safety protocols to mitigate exposure risks. Medical services must be prepared to handle increased demand, providing emergency care and decontamination procedures for those affected by hazardous materials exposure. The comprehensive understanding of these impacts underscores the critical importance of preparedness, rapid response, and collaborative efforts in mitigating and recovering from hazardous materials incidents.

5.1.2 Extent

Every day, hazardous materials and dangerous goods are transported across the United States. To ensure public safety, the U.S. Department of Transportation (DOT) rigorously regulates their packaging, labeling, and transportation methods, tailored to each material's specific risks and the conditions under which they pose a danger. Different Organizations have different ways of classifying hazardous materials. The Department of Transportation (DOT) uses a 9-system classification method.

DOT Hazardous Materials Classifications	
Class Number	**Hazardous Material**
Class 1	Explosives
Class 2	Gases
Class 3	Flammable Liquid and Combustible Liquid
Class 4	Flammable Solid, Spontaneously Combustible, & Dangerous When Wet
Class 5	Oxidizer and Organic Peroxide
Class 6	Poison (Toxic) and Poison Inhalation Hazard
Class 7	Radioactive
Class 8	Corrosive
Class 9	Miscellaneous

Source: Occupational Safety and Health Administration (OSHA)

These materials are categorized into distinct DOT hazard classes, each reflecting the degree of hazard they present. Awareness of these hazard classes is essential for all involved in commercial transportation via road, rail, air, marine, or pipeline, as it is crucial for accident prevention and ensuring compliance with safety standards.

5.1.3 Previous Occurrences

In May 2002, Potterville experienced a significant incident when a Canadian National train derailment resulted in leaking propane from tanker cars. The incident was serious enough to prompt the evacuation of the entire city, a precaution that lasted nearly five days.

Picture 2: Potterville Train Derailment, Potterville, MI May 2002

Another hazardous materials incident occurred on August 31st, 2023, when Michigan State Police responded to a collision involving three semi-trucks on Eastbound I-94 near Emmett Township in Calhoun County. One of the semis was transporting hazardous materials that spilled onto the roadway, requiring immediate response to mitigate the potential risks posed by the spilled substances.

More recently, on September 19, 2023, a tanker carrying sulfuric acid overturned on US-23 in Livingston County. Michigan State Police took action to evacuate residents along Runyon Lake Road in Tyrone Township, ensuring their safety and minimizing exposure to the hazardous substance. These incidents underscore the critical importance of swift and coordinated emergency responses to mitigate the impacts of hazardous materials incidents on communities and the environment.

5.1.4 Frequency

A key factor in the risk of a particular hazard is the frequency with which it occurs. Some hazards have been relatively frequent in Eaton County while others were only sporadic or have never occurred. For this hazard analysis, the frequency with which an event occurs is based on historical reports and query of subject matter experts from various state and local authorities as well as the number of Gubernatorial Declarations associated with the hazard agent. Using these criteria provides a wider variety of hazards than utilizing presidential declarations alone. State declaration records date back to 1977.

The *Hazard Identification and Risk Assessment (HIRA)* rates the frequency of the hazard as **possible**, meaning that there is **between 1 to 10% probability in the next year, or at least 1 in the next 100 years. Very few state declarations have occurred.**

5.1.5 Vulnerability

1. **Impact on Business** refers to enduring economic impact of the hazard on the community by an event. The HIRA rates the **impact on business** as **low**, meaning that there could be a **complete shutdown of critical facilities for one week** because of a hazardous materials incident.
2. **Impact on Humans** relates to the number of lives potentially lost to a particular hazard. The HIRA rates the **impact on humans** as **low**, meaning that there could be **some injuries** because of a hazardous materials incident.

3. **Impact on Property** relates to the amount of property potentially lost to a particular hazard agent. This factor can vary between jurisdictions based on economics, geographic amount owned, and demographics of the populations. The HIRA rates the **impact on property** as **minimum**, meaning that **less than 10% of property could be severely damaged** because of a hazardous materials incident.
4. **Impact on Environment** considers the impacts from the hazard event to the air, water, land, and biota. The HIRA rates the **impact on environment** as **high**, meaning **catastrophic impacts to the environment because of the event and/or cascading effects. Environmental impacts would have immediate and long-term health effects to people. Significant resources required for remediation** because of a hazardous materials incident.

5.2 Industrial/Manufacturing Property Fire

The National Fire Protection Association (NFPA) found that between 2011 and 2015, municipal fire departments in the U.S. responded to an estimated average of 37,910 fires at industrial or manufacturing properties each year, with annual losses from these fires estimated at 16 civilian deaths, 273 civilian injures, and $1.2 billion in direct property damage. Electrical distribution and lighting equipment was the leading cause of structure fires in industrial properties, accounting for 24% of the total, while heating was the leading cause of structure fires in manufacturing facilities, accounting for 15% of the total. Most fires (71%) in industrial and manufacturing properties were outside or unclassified fires, which accounted for an estimated average of 3 civilian deaths, 38 civilian injuries, and $265 million in direct property damage each year.

From 2017 to 2021, fire departments across the United States responded to an average of 36,784 fires annually at industrial and manufacturing properties, encompassing utility, defense, agriculture, and mining facilities. These incidents resulted in significant losses, including an average of 22 civilian deaths, 211 civilian injuries, and approximately $1.5 billion in direct property damage each year. Most of these fires, about 68 percent, were classified as outside or unclassified fires, while 22 percent were structure fires and 10 percent were vehicle fires. Structure fires were more prevalent in manufacturing or processing facilities (63 percent) compared to industrial properties (37 percent), accounting for the highest shares of civilian injuries (73 percent) and property damage (66 percent). Equipment or heat source failures were frequent causes of structure fires, particularly in industrial settings, with electrical distribution, lighting, and power transfer equipment identified as primary ignition sources. Vehicle fires, more common in industrial properties, were notably prevalent in agricultural facilities, especially during the fall months, likely due to heightened harvesting activities. A significant percentage of civilian deaths, approximately 48 percent, occurred in vehicle fires, underscoring the severity of these incidents. Intentional fires accounted for a minority of incidents but were present in both industrial and manufacturing property categories, highlighting the diverse factors contributing to fire incidents in these sectors.

5.2.1 Area of Impact

An industrial or manufacturing property fire can have wide-ranging impacts across several critical areas. Firstly, production disruption is a concern, as fires can halt manufacturing processes, leading to delays in product delivery, financial losses, and potential reputational damage for the company. Environmental loss is another significant consequence, with fires releasing pollutants into the air, soil, and water, potentially harming ecosystems, and nearby communities. Economic losses can be substantial, affecting not only the business directly impacted by the fire but also suppliers, customers, and the local economy.

The health impacts are profound, with the potential for illness, injury, or even fatalities among workers, emergency responders, and nearby residents due to fire-related hazards such as smoke inhalation, burns, and structural collapses. Ensuring the health and safety of first responders and healthcare workers is paramount, requiring proper training, protective gear, and medical support to manage the risks associated with toxic airborne gases and other hazards released during the fire. The demands on first responders are immense, requiring a coordinated effort to contain the fire,

evacuate affected individuals, and provide emergency medical care while mitigating further environmental and health risks. Rapid and effective response strategies are crucial to minimizing the overall impact of industrial and manufacturing property fires on both human health and the environment.

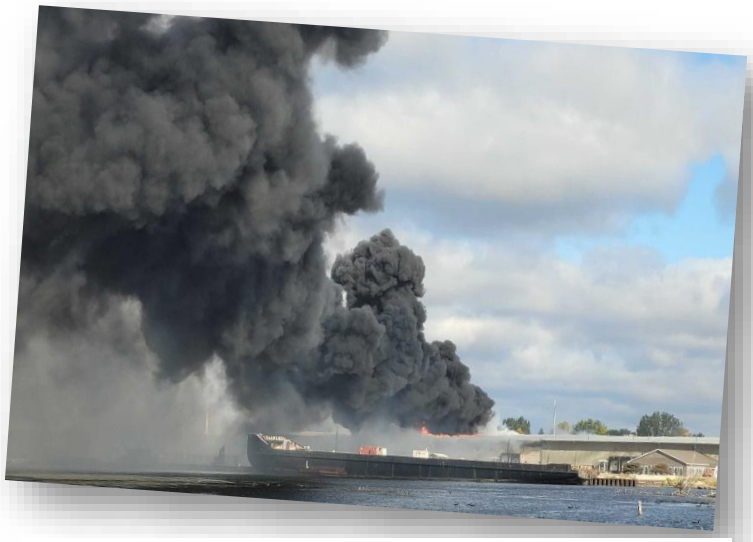
5.2.2 Extent

The NFPA provides comprehensive data and analysis on industrial and manufacturing property fires in the United States. According to NFPA's research and reports, industrial and manufacturing property fires account for a significant number of incidents annually, with a notable impact on civilian safety, property damage, and economic loss. These fires vary in cause and severity, often involving equipment failures, heat sources, and sometimes intentional acts. The NFPA highlights the importance of fire prevention measures, proper equipment maintenance, and emergency preparedness in mitigating risks and ensuring the safety of occupants and responders alike.

5.2.3 Previous Occurrences

The Tissue Depot, a historic paper mill located at the southern entrance to downtown Cheboygan, Michigan, experienced a devastating fire on September 13, 2023, starting at approximately 11:30 am. Residents within a one-mile radius of the mill were instructed to shelter in place until 1:30 p.m. the following day when the U.S. Environmental Protection Agency conducted air quality tests and determined it was safe to lift the order.

In a separate incident on October 6, 2022, at around 11:00 pm, a fire ignited at the Resolute Forest Products paper mill in Menominee, Michigan. This facility, which annually produced 171,000 metric tons of recycled bleach kraft (RBK) pulp, became the focus of a large-scale emergency response involving 68 fire departments from Michigan and Wisconsin over a 16-day period. Concerns arose among environmental agencies in both states regarding elevated levels of PFAS chemicals detected in the Menominee River because of runoff from the fire, posing potential risks to drinking water supplies for the nearby cities of Menominee, Michigan, and Marinette, Wisconsin.



Picture 3: Resolute Products Paper Mill Fire, Cheboygan, MI October 2022

5.2.4 Frequency

A key factor in the risk of a particular hazard is the frequency with which it occurs. Some hazards have been relatively frequent in Eaton County while others were only sporadic or have never occurred. For this hazard analysis, the frequency with which an event occurs is based on historical reports and query of subject matter experts from various state and local authorities as well as the

number of Gubernatorial Declarations associated with the hazard agent. Using these criteria provides a wider variety of hazards than utilizing presidential declarations alone. State declaration records date back to 1977.

The *Hazard Identification and Risk Assessment (HIRA)* rates the frequency of the hazard as **possible**, meaning that there is **between 1 to 10% probability in the next year, or at least 1 in the next 100 years. Very few state declarations have occurred.**

5.2.5 Vulnerability

1. **Impact on Business** refers to enduring economic impact of the hazard on the community by an event. The HIRA rates the **impact on business** as **medium**, meaning that there could be a **complete shutdown of critical facilities for at least two weeks** because of an industrial or manufacturing property fire.
2. **Impact on Humans** relates to the number of lives potentially lost to a particular hazard. The HIRA rates the **impact on humans** as **low**, meaning that there could be **some injuries** because of an industrial or manufacturing property fire.
3. **Impact on Property** relates to the amount of property potentially lost to a particular hazard agent. This factor can vary between jurisdictions based on economics, geographic amount owned, and demographics of the populations. The HIRA rates the **impact on property** as **minimum**, meaning that **less than 10% of property could be severely damaged** because of an industrial or manufacturing property fire.
4. **Impact on Environment** considers the impacts from the hazard event to the air, water, land, and biota. The HIRA rates the **impact on environment** as **medium**, meaning **localized and temporary impacts to the environment because of the event and/or cascading effects. No immediate health threat to people and environmental remediation would restore the environment to acceptable limits** because of an industrial or manufacturing property fire.

5.3 Water Supply Failure

Water supply failure is any disruption to water systems used in the collection, transportation, and distribution of water that adversely affects any living or non-living entities or structures that utilize water. When we experience a water supply failure, we do not see the actual disruption within the water infrastructure, but rather its visible consequences. We see empty reservoirs, dry taps, and parched landscapes, which signify the breakdown in the delivery of this essential resource. Water supply failures can be caused by a variety of factors including natural disasters, infrastructure damage, contamination, and resource depletion.

One of the primary concerns during a water supply failure is the impact on public health. Without a reliable source of clean water, communities are at risk of dehydration, poor sanitation, and the spread of waterborne diseases. Additionally, the agricultural sector suffers tremendously, as crops and livestock depend on consistent water supplies for survival. Industrial operations also face shutdowns or reduced output when water supplies are compromised, leading to economic losses and potential job reductions.

One significant event was the 2014 Flint water crisis in Michigan, where a change in the water source led to lead contamination, impacting thousands of residents. The crisis highlighted the dire consequences of poor water management and infrastructure negligence, resulting in long-term health effects for the community and substantial costs for remediation and public health interventions.

Water supply failures can also occur suddenly due to natural disasters such as earthquakes, hurricanes, or floods. For instance, Hurricane Maria in 2017 severely damaged Puerto Rico's water infrastructure, leaving millions without access to clean water for months. The immediate aftermath saw an increase in waterborne illnesses, highlighting the vulnerability of water systems to extreme weather events.

Efforts to mitigate the impact of water supply failures include investing in resilient infrastructure, developing alternative water sources such as desalination and water recycling, and implementing conservation measures. Emergency response plans and public education on water conservation and safety are also crucial in managing and reducing the risks associated with water supply disruptions.

5.3.1 Area of Impact

Water supply failures can occur throughout the year, although they are more common during the summer months when demand is higher due to agricultural irrigation and increased domestic use. However, disruptions can happen at any time. Water supply failures disrupt daily life, affecting households, businesses, and essential services. Without reliable water access, communities struggle with hygiene, sanitation, and basic needs.

Most water supply issues in Michigan arise from a combination of aging infrastructure, industrial pollution, and agricultural runoff. The state is bordered by four of the five Great Lakes, making it a critical area for water resources. However, this proximity also means that water systems are vulnerable to contamination from various sources. Aging pipes, treatment plants, and distribution systems can lead to leaks, bursts, and contamination. Infrastructure failures strain emergency resources and hinder rapid response.

Water supply failures can impact both urban and rural areas, affecting not only human populations but also agricultural activities and natural ecosystems. Contaminated water harms aquatic ecosystems, wildlife, and vegetation. Toxic substances can enter rivers, lakes, and groundwater, impacting biodiversity. Agriculture depends on water for irrigation, and crop failure due to water shortages affects food supply chains and livelihoods.

Water treatment facilities rely on electricity for pumping, filtration, and distribution. When water utilities lose power, it can lead to inoperable pumps, pressure loss, and even contamination of the drinking water distribution system. For wastewater utilities, power loss may result in direct discharge of untreated sewage or sewage backup into homes and businesses. Contaminated water exposes residents to health risks, and waterborne diseases can spread. In extreme cases, water supply failures lead to fatalities. Vulnerable populations, including the elderly and infants, are at higher risk.

Efforts to mitigate the impact of water supply failures in Michigan include investing in modernizing water infrastructure, implementing stricter water quality monitoring and controls, and developing emergency response plans to quickly address any disruptions. Public education on water conservation and safety is also crucial in managing and reducing the risks associated with water supply failures.

5.3.2 Extent

Water supply failures can have a wide range of impacts, depending on the severity and duration of the disruption. When assessing the extent of a water supply failure, it is important to consider factors such as the affected population, duration of the outage, and the specific causes of the disruption.

5.3.3 Previous Occurrences

The Michigan Department of Environment, Great Lakes, and Energy (EGLE) has reported numerous significant water supply disruptions in the state, several within the last few years.

The water crisis in Flint, Michigan, began in 2014 when the city switched its drinking water supply from Detroit's system to the Flint River in a cost-saving move. Inadequate treatment and testing of the water resulted in a series of major water quality and health issues for Flint residents—issues that were chronically ignored, overlooked, and discounted by government officials even as complaints mounted that the foul-smelling, discolored, and off-tasting water piped into Flint homes for 18 months was causing skin rashes, hair loss, and itchy skin.

Picture 4: Grand Rapids Water Distribution Point-of-Distribution (POD), March 2024

On Sunday, March 17, 2024, the City of Grand Rapids issued a boil water advisory due to a major water main break that resulted in a substantial decrease in pressure. This pressure loss creates the risk of bacterial contamination in the drinking water. The advisory was put in place to mitigate the potential bacterial threat, and it remained

active for 3-4 days while the system was flushed, and water samples were taken per State and Federal protocols. The City of Grand Rapids was able to set up Water Bottle Distribution Events to aid the affected residents during this multi-day advisory.

5.3.4 Frequency

A key factor in the risk of a particular hazard is the frequency with which it occurs. Some hazards have been relatively frequent in Eaton County while others were only sporadic or have never occurred. For this hazard analysis, the frequency with which an event occurs is based on historical reports and query of subject matter experts from various state and local authorities as well as the number of Gubernatorial Declarations associated with the hazard agent. Using these criteria provides a wider variety of hazards than utilizing presidential declarations alone. State declaration records date back to 1977.

The *Hazard Identification and Risk Assessment (HIRA)* rates the frequency of the hazard as **likely**, meaning that there is **between 1 to 10% probability in the next year, or at least 1 in the next 10 years. Some state declarations have occurred.**

5.3.5 Vulnerability

1. **Impact on Business** refers to enduring economic impact of the hazard on the community by an event. The HIRA rates the **impact on business** as **low**, meaning that there could be a **complete shutdown of critical facilities for one week** because of water supply failure.
2. **Impact on Humans** relates to the number of lives potentially lost to a particular hazard. The HIRA rates the **impact on humans** as **low**, meaning that there could be **some injuries** because of water supply failure.
3. **Impact on Property** relates to the amount of property potentially lost to a particular hazard agent. This factor can vary between jurisdictions based on economics, geographic amount owned, and demographics of the populations. The HIRA rates the **impact on property** as **minimum**, meaning that **less than 10% of property could be severely damaged** because of water supply failure.
4. **Impact on Environment** considers the impacts from the hazard event to the air, water, land, and biota. The HIRA rates the **impact on environment** as **low**, meaning **impact to the environment could be minimal and only require local response** because of water supply failure.

5.4 Transportation Incident/Accident

A transportation incident/accident involves any mode of transportation, which includes but is not limited to, motor vehicles, rail, and aircraft, that is involved in an incident/accident and may be classified as natural, technological, or human-caused. Events classified as transportation incidents/accidents do not necessarily have to result in casualties or fatalities; the primary criterion is damage to or destruction of the mode of transportation due to the incident/accident.

When we witness a transportation incident/accident, we are witnessing the immediate aftermath of an event that can range from minor mechanical failures to catastrophic collisions or derailments. These incidents often have far-reaching consequences, affecting not only the passengers and crew directly involved but also communities, infrastructure, and the environment. Transportation systems are vital for commerce, travel, and everyday life, yet accidents can disrupt these networks, leading to significant economic losses, environmental impacts, and, in severe cases, loss of life.

The aftermath of transportation incidents/accidents can involve widespread damage and disruption. For instance, major highway collisions can result in extensive property damage, traffic delays, and the need for emergency response to address injuries and clear debris. Train derailments may spill hazardous materials, necessitating evacuations and environmental cleanup efforts. Aircraft accidents can lead to tragic loss of life and rigorous investigations to determine the causes and prevent future occurrences

Each year, transportation incidents/accidents occur across the United States, varying in scale and impact. These events highlight the critical need for safety protocols, regulatory oversight, and emergency preparedness to minimize risks and ensure the safety of travelers, responders, and communities alike.

5.4.1 Area of Impact

Transportation incidents and accidents can have significant impacts across various critical areas. Firstly, traffic disruption is a common consequence, affecting not only the immediate vicinity of the incident but also causing ripple effects throughout transportation networks. Major accidents on highways or railways can lead to road closures, diversions, and significant delays, disrupting daily commutes, freight transportation schedules, and emergency response routes.

Impeded emergency response is another critical concern. Accidents may block access for emergency vehicles trying to reach the scene, delaying medical assistance and rescue operations. This delay can exacerbate injuries and increase the severity of outcomes for those involved in the incident.

Stranded persons and vehicles are often a direct consequence of transportation accidents. Road closures or train derailments can leave passengers and drivers stranded without immediate access to transportation or basic amenities. These situations require coordination to provide support, shelter, and alternative transportation options to those affected.

Injury and death are perhaps the most tragic impacts of transportation accidents. Accidents can result in a range of injuries, from minor to severe, and tragically, fatalities may occur. The physical and emotional toll on individuals and families affected by such incidents underscores the importance of

stringent safety measures, effective emergency response protocols, and ongoing efforts to improve transportation infrastructure and safety standards.

5.4.2 Extent

Transportation incidents and accidents encompass a wide range of events across various modes of transportation, including motor vehicles, railways, aircraft, and maritime vessels. These incidents can vary from minor collisions and mechanical failures to catastrophic accidents resulting in significant property damage, injuries, and fatalities.

In the United States, statistics from organizations like the National Highway Traffic Safety Administration (NHTSA), Federal Railroad Administration (FRA), Federal Aviation Administration (FAA), and National Transportation Safety Board (NTSB) provide insights into the frequency and impact of transportation incidents. For instance, in 2023, NHTSA reported over 40,000 fatalities resulting from motor vehicle crashes, highlighting the severe consequences of roadway accidents.

Railway incidents, such as derailments or collisions, can disrupt freight and passenger services, leading to environmental hazards and economic impacts. Aviation accidents, though relatively rare, receive extensive scrutiny due to their potential for catastrophic loss of life and the complexities involved in air travel safety.

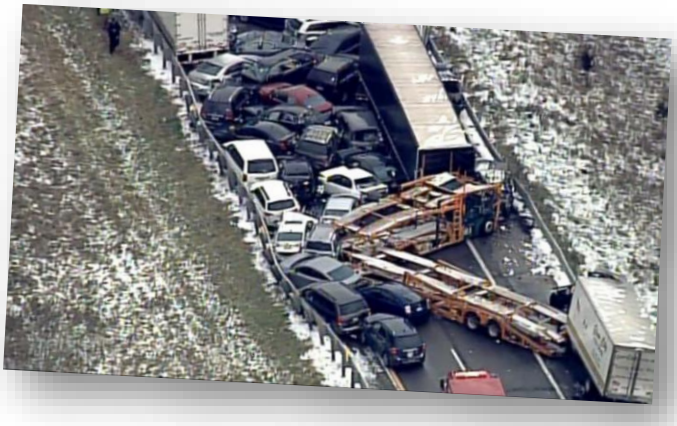
Maritime incidents also pose risks, from shipwrecks to oil spills, impacting ecosystems and maritime industries. Each mode of transportation faces unique challenges and safety considerations, necessitating continuous improvements in technology, infrastructure, and regulatory oversight to mitigate risks and enhance safety for passengers, workers, and communities affected by transportation incidents.

5.4.3 Previous Occurrences

Historical data provides insight into the severity and impact of transportation incidents.

On December 8, 2016, winter weather conditions contributed to a 53-car pileup on Interstate 96 near Fowlerville, Michigan. This massive collision involved jackknifed semis, cars, and trucks, tragically resulting in the deaths of three people. The incident highlights the potential for extreme weather to exacerbate transportation hazards, leading to significant loss of life and extensive property damage.

Figure 5: Chain of Car Crashes on Icy I-96 in Livingston County Kills 3, December 8, 2016



Four people were killed and 17 others injured in a fiery crash on I-96 in Ingham County on Saturday, November 2, 2024. The collision took place around 11:42 p.m. near M-52 in the Webberville area. Michigan State Police reported that westbound I-96 near M-52 had been closed to allow a DTE Energy crew to string power lines across the expressway. The investigation indicates that the driver of a semi-truck failed to see the traffic backup in time and was unable to stop, causing a collision that ignited the semi-truck and several other vehicles. Portions of both westbound and eastbound I-96, along with northbound and southbound M-52, remained closed for nearly 24 hours to allow for investigations and to enable the Michigan Department of Transportation (MDOT) to examine the structural integrity of the M-52/I-96 overpass.

Figure 6: Investigations after the I-96 crash near M-52

5.4.4 Frequency

A key factor in the risk of a particular hazard is the frequency with which it occurs. Some hazards have been relatively frequent in Eaton County while others were only sporadic or have never occurred. For this hazard analysis, the frequency with which an event occurs is based on historical reports and query of subject matter experts from various state and local authorities as well as the number of Gubernatorial Declarations associated with the hazard agent. Using these criteria provides a wider variety of hazards than utilizing presidential declarations alone. State declaration records date back to 1977.

The *Hazard Identification and Risk Assessment (HIRA)* rates the frequency of the hazard as **likely**, meaning that there is **between 10 to 100% probability in the next year, or at least 1 in the next 10 years. Some state declarations have occurred.**

5.4.5 Vulnerability

1. **Impact on Business** refers to enduring economic impact of the hazard on the community by an event. The HIRA rates the **impact on business** as **minimum**, meaning that there could be a **shutdown of critical facilities for less than 24 hours** because of a transportation incident/accident.
2. **Impact on Humans** relates to the number of lives potentially lost to a particular hazard. The HIRA rates the **impact on humans** as **medium**, meaning that there could be **multiple severe injuries** because of a transportation incident/accident.
3. **Impact on Property** relates to the amount of property potentially lost to a particular hazard agent. This factor can vary between jurisdictions based on economics, geographic amount owned, and demographics of the populations. The HIRA rates the **impact on property** as **minimum**, meaning that **less than 10% of property could be severely damaged** because of a transportation incident/accident.

4. **Impact on Environment** considers the impacts from the hazard event to the air, water, land, and biota. The HIRA rates the **impact on environment** as **low**, meaning **impact to the environment could be minimal and only require a local response** because of a transportation incident/accident.

5.5 Dam Failure

Dams are structures built across a river or stream to hold back water in artificial lakes called reservoirs. Reservoirs can be used to store water for farming, industry, or household use; they can also be used for recreational activities such as fishing or boating. People have used dams for many centuries to help prevent flooding.

In the United States, a common practice among federal and state dam safety officials is to classify dams according to the potential impact a dam failure or breach would have on upstream or downstream areas or locations remote from the dam. Three classification levels are used: Low, Significant, and High.

Dam hazard Potential Classification System			
Downstream Hazard Potential	**Summary**	**Potential Loss of Life**	**Economic, Environmental, Lifeline Losses**
Low	Dams assigned the low hazard potential classification are those where failure or mis-operation results in no probable loss of human life and low economic and/or environmental losses. Losses are principally limited to the owner's property.	None expected	Low; generally limited to owner
Significant	Dams assigned the Significant Hazard potential classification are those dams where failure or mis-operation results in no probable loss of human life but can cause economic loss, environmental damage, disruption of lifeline facilities, or can impact other concerns. Significant Hazard potential classification dams are often located in predominantly rural or agricultural areas but could be in areas with population and significant infrastructure.	None expected	Yes
High	Dams assigned the High Hazard potential classification are those where failure or mis-operation will probably cause loss of human life.	Probable; one or more expected	Yes, not necessary for this classification

Source: FEMA Federal Guidelines for Dam Safety, 2004

Any owner of a dam with a hazard potential classification of High is required to develop an emergency action plan (EAP). An EAP is a formal document that identifies potential emergency conditions at a dam and specifies pre-planned actions to be followed to minimize potential property

damage and loss of life. Every EAP must be tailored to site-specific conditions but generally contains six basic elements:

1. Notification flowchart
2. Emergency detection, evaluation, and classification
3. Roles and responsibilities
4. Preparedness activities
5. Inundation maps
6. Appendices

5.5.1 Area of Impact

According to data in the Michigan Department of Environment, Great Lakes, and Energy (EGLE) Dam Inventory, there are 26 dams located within Eaton County. Of these, three are rated High, one is rated Significant, and 23 are rated Low. All dams rated High have approved EAPs. The tables below provide a summary of dams and their classifications across Eaton County.

Dams and Classification for Eaton County				
Location	**Total Dams**	**High**	**Significant**	**Low**
Eaton County	26	2	1	23

Source: EGLE Michigan Dam Inventory

Dams in Eaton County						
Dam Name	**City or Township**	**River or Stream Name**	**Dam Type**	**Downstream Hazard Potential**	**EAP Prepared**	**Last EAP Revision**
Carrier Creek Structure A	Delta Township	Carrier Creek	Earth	High	Yes	3/4/11
Carrier Creek Structure B	Delta Township	Carrier Creek	Earth	High	Yes	3/4/11
Mix	Eaton Rapids	Grand River	Gravity	Low	Not Required	12/30/19
Bellevue Mill Dam	Bellevue	Battle Creek	Earth	Low	Not Required	12/31/15
Smithville	Eaton Rapids	Grand River	Gravity	Low	Not Required	12/30/19
Cheney Lake Dam	Bellevue	Tributary Battle	Earth	Low	Not Required	N/A

		Creek River				
Carrier Creek Structure F	Delta Township	Carrier Creek	Earth	Low	Not Required	N/A
Grand Ledge Dam	Grand Ledge	Grand River	Gravity	Low	Not Required	N/A
Dills Dam	Vermont	Tributary to Thornapple River	Earth	Low	Not Required	N/A
Giesler Dam	Bellevue	Tributary to Battle Creek River	Earth	Low	Not Required	N/A
Narrow Lake Level Control Structure	Brookfield Township	Narrow Lake	Gravity	Low	Not Required	N/A
Wonster Dam	Roxand Township	Tributary to Sebewa Creek		Low	Not Required	N/A
Erickson Dam	Delta Township			Low	Not Required	N/A
Johnson's Dam	Chester Township	Tributary to Thornapple River	Earth	Low	Not Required	N/A
Wilmore Dam	Chester Township	Little Thornapple River	Earth	Low	Not Required	N/A
Hulsebos Dam	Kalamo Township	Tributary to Shanty Brook		Low	Not Required	N/A
Lacey Lake Dam	Kalamo Township	Lacey Creek	Gravity	Low	Not Required	N/A
Charlotte City Dam	Charlotte	Battle Creek River	Earth	Low	Not Required	N/A

Twork Dam	Eaton Rapids Township	Tributary to Gruesbeck Drain		Low	Not Required	N/A
Haas Dam	Eaton Rapids Township	Tributary to Thornapple River	Earth	Low	Not Required	N/A
Van Aken Dam	Eaton Rapids Township	Tributary to Grand River	Earth	Low	Not Required	N/A
Hall Dam	Hamlin Township	Tributary to Spring Brook	Earth	Low	Not Required	N/A
Sanitation Dam	Eaton Rapids	Grand River	Gravity	Low	Not Required	N/A
Fisher's Dam	Walton Township	Tributary to Battle Creek River	Earth	Low	Not Required	N/A
Zindler Dam	Bellevue Township	Wabascon Creek	Gravity	Low	Not Required	N/A

Source: EGLE Michigan Dam Inventory

5.5.2 Extent

Depending on the location and population density around a dammed area, a dam failure may cause loss of life in addition to economic impact from damage caused by a dam failure. The magnitude of flooding would be dependent on a dam's classification, type of failure, and location. The area downstream of a failed dam that would be filled with water is called the inundation area. High Hazard and Significant-Hazard dams are required to complete Dam EAPs; these EAPs include the specific inundation areas and analyses for each dam.

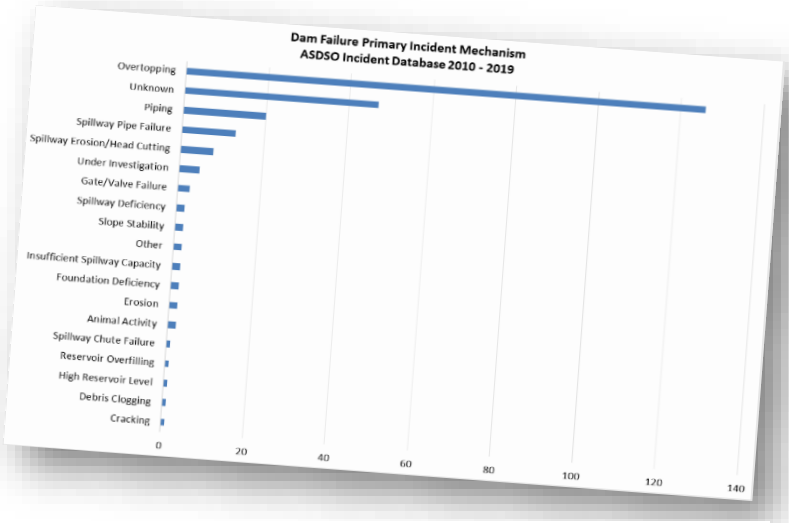
5.5.3 Previous Occurrences

According to www.damsafety.org, hundreds of dam failures have occurred throughout U.S. history. The failures have caused immense property and environmental damages as well as injuries and fatalities. As dams across the nation age and populations grow, the potential for deadly dam failures grows along with it. Dam failures are most likely to happen for at least one of the following reasons:

1. Overtopping caused by water spilling over the top of a dam
2. Foundation defects, including settlement and slope instability
3. Cracking caused by movements like the natural settling of a dam

4. Inadequate maintenance and upkeep
5. Piping, or when seepage through a dam is not properly filtered and soil particles continue to progress and form sinkholes in a dam

According to records kept by the Association of State Dam Safety Officials, between 2010 and 2019, overtopping was by far the largest cause of dam failure.



Source: www.damsafety.org

While not comprehensive, the website damsafety.org provides a historical perspective on dam failures throughout the United States. While none of these dam failures have occurred in Eaton County, the State of Michigan is represented with three separate incidents.

EGLE has tracked numerous dam failures in the state. While the exact total number of failures over the years is not specified in a single source, the state has experienced significant events that highlight the ongoing challenges.

The most recent dam failure recorded in Michigan was the failure of the Edenville Dam at the Confluence of the Tittabawassee River and the Tobacco River, impacting Gladwin and Midland counties. The dam was part of a four-dam system and was used for hydroelectric power and flood control. In May 2020, an extended rain event produced as much as eight inches of rain in 24 hours, causing the dam to breach and the Sanford Dam downstream to overflow. While no injuries or fatalities were reported, over 10,000 residents in Midland County were evacuated due to major flooding. Severe damages were recorded in the village of Sanford and the city of Midland, estimated at approximately $250 million.

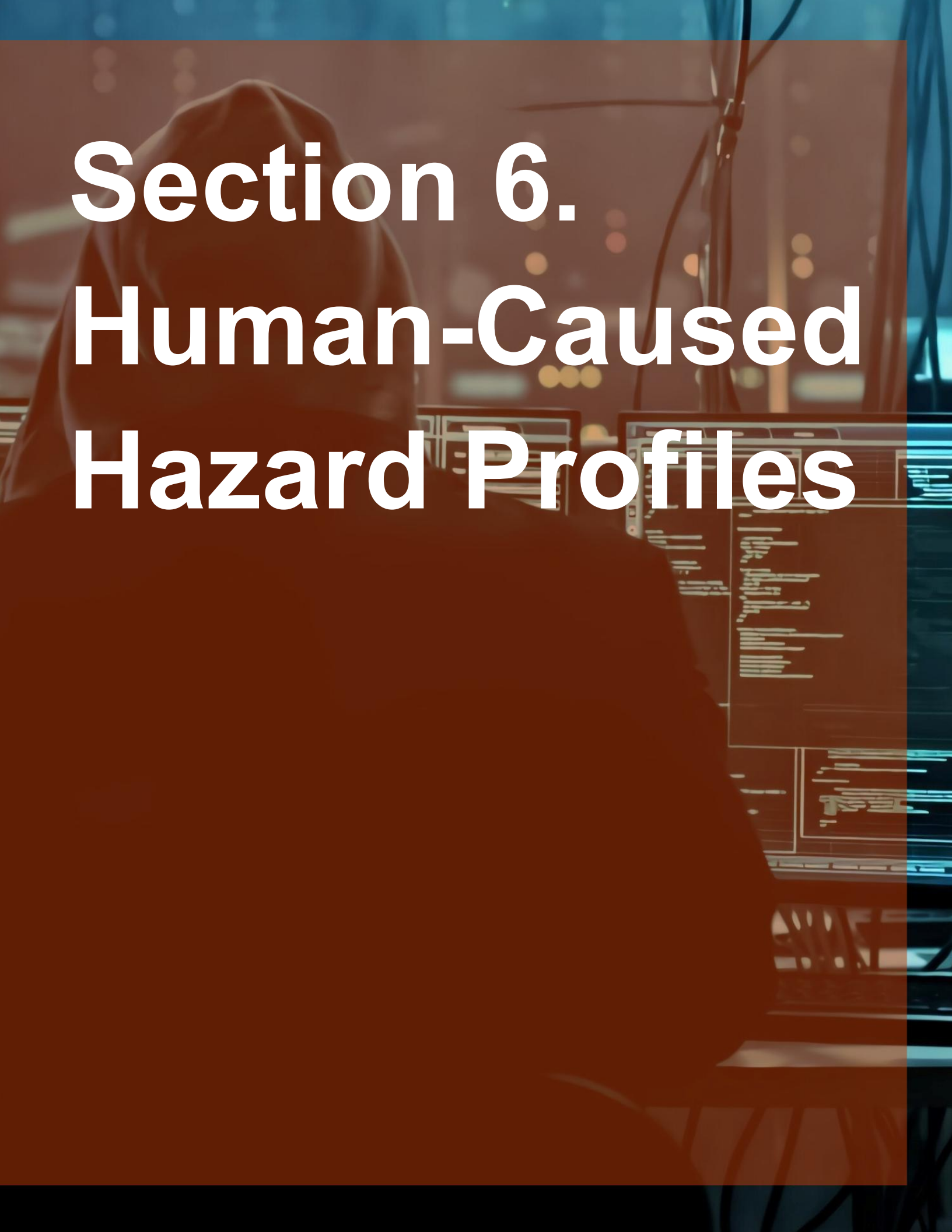
5.5.4 Frequency

A key factor in the risk of a particular hazard is the frequency with which it occurs. Some hazards have been relatively frequent in Eaton County while others were only sporadic or have never occurred. For this hazard analysis, the frequency with which an event occurs is based on historical reports and query of subject matter experts from various state and local authorities as well as the number of Gubernatorial Declarations associated with the hazard agent. Using these criteria provides a wider variety of hazards than utilizing presidential declarations alone. State declaration records date back to 1977.

The *Hazard Identification and Risk Assessment (HIRA)* rates the frequency of the hazard as **unlikely**, meaning that there is **between <1% probability in the 100 years. No state declarations are likely**

5.5.5 Vulnerability

1. **Impact on Business** refers to enduring economic impact of the hazard on the community by an event. The HIRA rates the **impact on business** as **minimum**, meaning that there could be a **shutdown of critical facilities for less than 24 hours** because of a dam failure.
2. **Impact on Humans** relates to the number of lives potentially lost to a particular hazard. The HIRA rates the **impact on humans** as **low**, meaning that there could be **some injuries** because of a dam failure.
3. **Impact on Property** relates to the amount of property potentially lost to a particular hazard agent. This factor can vary between jurisdictions based on economics, geographic amount owned, and demographics of the populations. The HIRA rates the **impact on property** as **minimum**, meaning that **less than 10% of property could be severely damaged** because of a dam failure.
4. **Impact on Environment** considers the impacts from the hazard event to the air, water, land, and biota. The HIRA rates the **impact on environment** as **medium**, meaning **localized and temporary impacts to the environment because of the event and/or cascading effects. No immediate health threat to people and environmental remediation would restore the environment to acceptable limits** because of a dam failure.



Section 6. Human-Caused Hazard Profiles

6.1 Active Violence Incident (AVI)

An active violence incident (AVI) involves an individual actively engaged in killing or attempting to kill people in a confined and populated area. The individual may be armed with a firearm or bladed weapon or may in engage in other violent acts such as driving a vehicle into a crowd. There may or may not be a pattern or method to their selection of victims.

6.1.1 Area of Impact

The area of impact of an AVI can vary significantly depending on several factors, including the location, the type of environment (e.g., school, workplace, public area), and the response time of law enforcement and emergency medical services. However, there are general aspects to consider when defining the area of impact:

Figure 7: Law Enforcement and Fire/EMS Partners Participate in an Operations-Based AVI Exercise at Grand Ledge High School in August 2022.

1. **Immediate Vicinity**: The primary area where the incident is occurring. This includes the room, building, or specific location where the active violence incident is occurring. This is the most critical zone for immediate response and intervention.
2. **Adjacent Areas**: Rooms, buildings, or areas directly adjacent to the immediate vicinity. These areas are at high risk and require rapid evacuation or lockdown procedures.
3. **Wider Perimeter**: A broader area that includes multiple buildings or sections of a campus, complex, or neighborhood. Law enforcement typically establishes a perimeter around this area to control access, facilitate evacuations, and manage the situation.
4. **Affected Community**: The broader community impact includes psychological, emotional, and social effects on individuals who were present, their families, and the community at large.

6.1.2 Extent

The extent of an AVI is determined by several factors, including the nature of the attack, the location, the number of perpetrators, and the readiness of the community. This section outlines the potential scope and scale of active violence incidents within the context of this Multi-Hazard Mitigation Plan.

6.1.2.1 Geographic Extent

Active violence incidents can occur in a variety of settings, including but not limited to:

1. **Urban Areas:** High population density increases the potential for mass casualties and can complicate emergency response efforts.
2. **Schools and Universities:** Educational institutions are particularly vulnerable due to the presence of large numbers of students and staff in concentrated areas.

3. **Workplaces:** Offices, manufacturing facilities, and other places of employment can be targets, especially those with limited security measures.
4. **Public Spaces:** Parks, shopping malls, entertainment venues, and transportation hubs are frequent targets due to the high volume of foot traffic.
5. **Government Buildings:** These locations may be targeted due to their symbolic significance or perceived political value.

6.1.2.2 Temporal Extent

An AVI can vary significantly in duration:

1. **Immediate Duration:** Incidents that are resolved within minutes, typically due to rapid law enforcement intervention.
2. **Extended Duration:** Situations that last several hours, often involving hostages or complex tactical responses.
3. **Protracted Duration:** Incidents that extend over days, such as coordinated attacks across multiple locations.

6.1.2.3 Intensity

The intensity of an AVI can be gauged by:

1. **Casualty Rates:** The number of injuries and fatalities, which can range from single digits to hundreds, depending on the nature of the attack.
2. **Psychological Impact:** The trauma inflicted on survivors, witnesses, and the broader community, which can have long-lasting community impacts.
3. **Economic Impact:** The cost of emergency response, medical care, business interruption, and short- and long-term recovery efforts.
4. **Infrastructure Damage:** The extent of physical damage to buildings, utilities, and other critical infrastructure.

6.1.2 Previous Occurrences

Eaton County has not experienced an AVI. However, here are some examples of previous occurrences in other parts of the State of Michigan.

1. **Bath School Disaster (May 18, 1927)**: A series of violent attacks perpetrated upon the Bath Consolidated School in Bath Charter Township on May 18, 1927. The attacks killed 38 children and 6 adults and injured at least 58 other people.
2. **Kalamazoo Shootings (February 20, 2016)**: On the night of February 20, 2016, a spree shooting took place at an apartment complex, a Kia car dealership, and outside a Cracker Barrel restaurant in Kalamazoo County. Six people were killed, and two others were injured.

3. **Oxford High School Shooting (November 20, 2021)**: On November 30, 2021, a mass shooting occurred at Oxford High School in the Detroit exurb of Oxford Township. Four students were murdered and seven others, including a teacher, were injured.
4. **Michigan State University Shooting (February 13, 2023)**: A mass shooting occurred in two buildings on the campus of Michigan State University (MSU) in East Lansing. Three students were killed and five others injured.
5. **Rochester Hills Shooting (June 15, 2024)**: Nine people, including two children, were shot at the Brooklands Plaza Splash Pad in Rochester Hills.

6.1.3 Frequency

A key factor in the risk of a particular hazard is the frequency with which it occurs. Some hazards have been relatively frequent in Eaton County while others were only sporadic or have never occurred with significant disruption to essential functions. For this hazard analysis, the frequency with which an event occurs is based on historical reports and query of subject matter experts from various state and local authorities as well as the number of Gubernatorial Declarations associated with the hazard agent. Using these criteria provides a wider variety of hazards than utilizing presidential declarations alone. State declaration records date back to 1977.

The *Hazard Identification and Risk Assessment (HIRA)* rates the frequency of the hazard as **possible**, meaning that there is **between 1 to 10% probability in the next year, or at least 1 in the next 100 years. Very few state declarations have occurred.**

6.1.4 Vulnerability

1. **Impact on Business** refers to enduring economic impact of the hazard on the community by an event. The HIRA rates the **impact on business** as **medium**, meaning that there could be a **complete shutdown of critical facilities for at least two weeks** because of an AVI.
2. **Impact on Humans** relates to the number of lives potentially lost to a particular hazard. The HIRA rates the **impact on humans** as **high**, meaning that there could be **multiple deaths** because of an AVI.
3. **Impact on Property** relates to the amount of property potentially lost to a particular hazard agent. This factor can vary between jurisdictions based on economics, geographic amount owned, and demographics of the populations. The HIRA rates the **impact on property** as **minimum**, meaning that **less than 10% of property could be severely damaged** because of an AVI.
4. **Impact on Environment** considers the impacts from the hazard event to the air, water, land, and biota. The HIRA rates the **impact on environment** as **minimum**, meaning the **impact to the environment would not require remediation** because of an AVI.

6.2 Cyber Incident

A cyber incident is an event occurring on or conducted through a computer network that actually or imminently jeopardizes the confidentiality, integrity, or availability of computers, information, or communications systems or networks, physical or virtual infrastructure controlled by computers or information systems, or information resident thereon. A cyber incident may include a vulnerability in an information system, system security procedures, internal controls, or implementation that could be exploited by a threat source

A significant cyber incident that is (or group of related cyber incidents that together are) likely to result in demonstrable harm to the national security interests, foreign relations, or economy of the United States or to the public confidence, civil liberties, or public health and safety of the American people.

Identifying the type of cyber incident is important to determine how to respond properly. The size and scope of the incident is essential to determine who to contact.

6.2.1 Area of Impact

The area of impact of a cyber incident can be broad and multifaceted, affecting various aspects of an organization or society. The table below indicates types of cyber incidents, a description of the incident, and examples of what could cause such an incident.

Incident	Description	Example
System Fault	A failure or reduced functionality of a single system because of hardware or software failure. System faults are usually trivial if backups are in place. A system fault may be an accidental incident affecting a single system	1. Hard drive failure 2. Power surge 3. Failed software update or patch 4. Critical software error
Accident	A chance disruption of a network. While an accident may impact multiple systems and result in severe loss of function, these are usually intermittent, quickly remedied, and tend to be handled by the entity that controls the affected network.	1. Cut network cable 2. Spill onto network hardware
Emergency or Disaster	A natural, technological, or human-caused incident requiring substantial recovery resources. A disaster is often more serious in terms of physical impacts, but they can also have extremely costly and potentially long-lasting cyber impacts. Disasters may also present serious vulnerability, potentially increasing the likelihood of or amplifying other cyber incidents,	1. Tornado 2. Severe Wind

	including providing a window of opportunity for cyber terrorism or computer crime.	
Cyber Vandalism	Willful acts of crime generally meant to satisfy a personal vendetta, to amuse the attacker, or to gain respect in hacker communities. These tend to be short-term attacks that cease either when the unauthorized access is cut off, or the attacker loses interest.	1. Distributed Denial of Service (DDoS) 2. Website defacement 3. Insider attack from a disgruntled employee
Computer Crime	Willful acts of crime generally motivated by profit. These can be very long-term campaigns and are often difficult to identify, often with a moderate to high cost to affected organizations or their associated entities. Cyber espionage where certain groups or nations go to significant effort to steal sensitive information and intellectual property from organizations in the United States is a major type of computer crime that can go undetected.	1. Data breach 2. Card skimming 3. Phishing 4. Ransomware
Hacktivism	Willful acts of crime generally characterized by threatening or intimidating individuals or organizations. These are usually large, highly visible attacks which may be ongoing, and which may have devastating effects on the affected entities. Hacktivism is distinct in that it is often politically motivated computer crime that does not usually threaten public safety.	1. Web defacement 2. DDoS
Cyber Terrorism	Willful acts of crime committed with the intention of destroying or disrupting government or society. Successful cyber terrorism attacks are very serious, with a potential for loss of life. The key aspect of cyber terrorism is that it poses a legitimate and serious threat to public safety.	1. Disabling electricity for a hospital 2. Disrupting traffic control systems 3. DDoS of critical infrastructure
Acts of War	A cyber-attack made during or in preparation for armed conflict – large scale disruption of government networks, military systems, or critical infrastructure. These are rare, but extremely serious.	1. Disruption of communication lines 2. Causing smaller incidents to distract and divide resources 3. Wide-scale energy grid disruption

6.2.2 Extent

The extent of a cyber incident hazard encompasses a wide range of potential impacts on a community's infrastructure, economy, and public safety. The severity and reach of these impacts can vary significantly depending on the nature of the attack, the targets involved, and the readiness and resilience of the affected systems.

6.2.2.1 Geographic Extent

Cyber incidents are not confined by geographic boundaries. A single incident can affect multiple locations simultaneously, particularly if it targets widely used digital infrastructure such as cloud services, communication networks, or interconnected systems like the power grid. This can lead to a cascading effect where multiple jurisdictions experience disruptions at the same time.

6.2.2.2 Temporal Extent

The temporal extent of cyber incidents varies widely:

1. **Immediate Impact:** Some attacks, such as DoS or ransomware, have immediate and visible impacts on operations and services.
2. **Long-Term Consequences:** Data breaches could have long-term implications, including extended periods of vulnerability, ongoing remediation efforts, and persistent reputational damage.

6.2.3 Previous Occurrences

Two regional incidents had significant critical infrastructure and financial impacts to local jurisdictions:

1. During the weekend of November 12-13, 2022, Jackson County Intermediate School District and Hillsdale school officials took network systems offline after technology staff determined suspicious activity to be the result of a “ransomware incident”. Public school districts in both counties canceled classes Monday, November 14, Tuesday, November 15, and Wednesday November 16, with the system outage impacting a wide range of building operations including but not limited to heating, telephones, and classroom technology.
2. In 2018, an official in Shiawassee County resigned after being tricked into wiring $50,000 to an overseas bank account. Shiawassee County apparently was the victim of a phishing scam. The financial administrator who fell for the phishing scam believed that they were replying to an email from another county official about paying a bill.

6.2.4 Frequency

A key factor in the risk of a particular hazard is the frequency with which it occurs. Some hazards have been relatively frequent in Eaton County while others were only sporadic or have never occurred with significant disruption to essential functions. For this hazard analysis, the frequency with which an event occurs is based on historical reports and query of subject matter experts from various state and local authorities as well as the number of Gubernatorial Declarations associated with the hazard agent. Using these criteria provides a wider variety of hazards than utilizing presidential declarations alone. State declaration records date back to 1977.

The *Hazard Identification and Risk Assessment (HIRA)* rates the frequency of the hazard as **possible**, meaning that there is **between 1 to 10% probability in the next year, or at least 1 in the next 100 years. Very few state declarations have occurred.**

6.2.5 Vulnerability

1. **Impact on Business** refers to enduring economic impact of the hazard on the community by an event. The HIRA rates the **impact on business** as **low**, meaning that there could be a **complete shutdown of critical facilities for one week** because of a cyber incident.
2. **Impact on Humans** relates to the number of lives potentially lost to a particular hazard. The HIRA rates the **impact on humans** as **minimum**, meaning that there could be **minor injuries** or **some injuries** because of a cyber incident
3. **Impact on Property** relates to the amount of property potentially lost to a particular hazard agent. This factor can vary between jurisdictions based on economics, geographic amount owned, and demographics of the populations. The HIRA rates the **impact on property** as **minimum**, meaning that **less than 10% of property could be severely damaged** because of a cyber incident.
4. **Impact on Environment** considers the impacts from the hazard event to the air, water, land, and biota. The HIRA rates the **impact on environment** as **minimum**, meaning the **impact to the environment would not require remediation** because of a cyber incident.

Section 7. Hazard Mitigation Strategy

7.1 Introduction

This section identifies the goals, objectives, and tasks Eaton County has identified to buy down the risks associated with the natural, technological, and human-caused hazards identified in the Hazard Identification and Risk Assessment (HIRA).

Plan Requirement
FEMA Requirements 44 CFR Requirement §201.6(c)(3): The plan shall include a mitigation strategy that provides the jurisdiction's blueprint for reducing the potential losses identified in the risk assessment, based on existing authorities, policies, programs and resources, and its ability to expand on and improve these existing tools. 44 CFR Requirement §201.6(c)(3)(i): The mitigation strategy shall include a description of mitigation goals to reduce or avoid long-term vulnerabilities to the identified hazards. 44 CFR Requirement §201.6(c)(3)(ii): The mitigation strategy shall include a section that identifies and analyzes a comprehensive range of specific mitigation actions and projects being considered to reduce the effects of each hazard, with particular emphasis on new and existing buildings and infrastructure. The mitigation strategy must also address the jurisdictions' participation in the National Flood Insurance Program (NFIP), and continued compliance with NFIP requirements, as appropriate. 44 CFR Requirement §201.6(c)(3)(iii): The mitigation strategy shall include an action strategy describing how the actions identified in paragraph (c)(2)(ii) will be prioritized, implemented, and administered by the local jurisdiction. Prioritization shall include a special emphasis on the extent to which benefits are maximized according to a cost benefits review of the proposed projects and their associated costs. **EMAP Standards (2022)** Standard 4.2.1: The Emergency Management Program has a plan to implement mitigation projects and sets priorities based upon loss reduction. The plan: (1) is based on the natural and human-caused hazards identified in Standard 4.1.1 and the risk and consequences of those hazards; (2) is developed through formal planning processes involving Emergency Management Program stakeholders; and (3) establishes short and long-term strategies, actions, goals, and objectives. Standard 4.2.2: The Emergency Management Program documents project ranking based upon the greatest opportunity for loss reduction and documents how specific mitigation actions contribute to overall risk reduction. Standard 4.2.4: The Emergency Management Program, consistent with the scope of the mitigation program, does the following: (1) identifies ongoing mitigation opportunities and tracks repetitive loss; (2) provides technical assistance in implementing mitigation codes and ordinances; and (3) participates in jurisdictional and multi-jurisdictional mitigation efforts.

To initiate the hazard mitigation strategy development process, the planning team reviewed the plan requirements and identified potential short-term and long-term goals, objectives, and actions. The overall hazard mitigation strategy encompassing the short and long-term involves the following key steps:

1. **Identify Hazards:** Assess potential natural, human-caused, and technological hazards that are reasonably likely to affect Eaton County using the Hazard Identification and Risk Assessment (HIRA).
2. **Assess Risks:** Evaluate the likelihood of each hazard occurring and the potential consequences for people, property, and infrastructure.
3. **Set Priorities:** Determine which hazards pose the greatest risk and prioritize mitigation efforts based on impact and resources available.
4. **Develop Solutions:** Identify and implement short- and long-term actions to reduce or eliminate the risks.
5. **Engage Stakeholders:** Involve community members, local governments, and other key internal and external stakeholders in planning and decision-making to ensure broad support and input.
6. **Monitor and Update:** Regularly review and update the strategy as new risks emerge or as mitigation efforts are completed, ensuring this plan stays relevant and effective.

Eaton County has agreed to the following broad statements of short-term and long-term goals and objectives.

7.2 Short-term Goals and Objectives

Short-term Goal 1
Ensure comprehensive hazard identification and risk assessment to enhance understanding and management of potential hazards.
Short-term Objective 1.1
Maintain a robust, publicly accessible hazard identification and risk assessment framework to identify and prioritize potential hazards, providing internal and external stakeholders with clear insights into their risks, vulnerabilities, and consequences.

Short-term Goal 2
Strengthen readiness and resilience by addressing the immediate impacts of identified hazards.
Short-term Objective 2.1
Implement and maintain comprehensive plans, policies, and guidelines to effectively mitigate the immediate impacts of identified hazards.

Short-term Goal 3
Improve public information and education on hazard mitigation.
Short-term Objective 3.1
Enhance public information and education efforts to ensure that both internal and external stakeholders understand their risks and can take appropriate mitigation actions.

7.3 Long-term Goals and Objectives

Long-term Goal 1
Ensure long-term resilience and sustainability through effective hazard mitigation.
Long-term Objective 1.1
Establish ongoing monitoring and evaluation mechanisms to assess the effectiveness of mitigation measures, track changes in hazard risk over time, and adapt strategies as needed.
Long-term Goal 2
Promote resilient development and reduce hazard exposure.
Long-term Objective 2.1
Integrate hazard mitigation considerations into critical infrastructure, key resources, land use planning, and development decisions. This includes revising zoning regulations, building codes, retrofits, and development standards to minimize hazard exposure and enhance resilient mitigation practices.

7.4 Hazard Mitigation Action Development

Using the updated goals as a planning tool to guide mitigation planning efforts, the planning team collaborated to identify a 2025 hazard mitigation actions that are relevant, achievable, and meaningful for Eaton County.

Hazard mitigation actions from the previous plan were reviewed and reported on with the status of specific hazard mitigation actions. In the previous plan, it was determined that each action could be classified into one of three categories. The same categories apply for this plan update.

1. **Completed** - Actions that have been implemented over the life of the previous plan.
2. **Cancelled** – Actions that were reviewed and removed for the new hazard mitigation strategy.
3. **New/Continued** – Actions that have either not been started yet or are recurring mitigation actions.

As a result of this exercise, the planning team decided to utilize the same action prioritization criterion from the 2022 plan. This approach was taken to allow all plan participants to understand the benefits

associated with each project as well as opportunities to accomplish these efforts by the proposed completion date.

7.5 Hazard Mitigation Action Prioritization

To assist in the prioritization process for the plan update and provide a starting point, each mitigation action was reviewed and scored on a scale of 1-3 points based on metrics including the action's impact on life safety, critical infrastructure protection, potential reduction of response actions, and the Social, Technological, Administrative, Political, Legal, Economic, and Environmental (STAPLEE) method. The scores were then tabulated to provide an initial prioritization of high, medium, and low actions. The following table provides an overview of mitigation action scoring. Section 4.8 includes the scoring for each specific action.

Criterion	Score	Explanation
Lives Saved	0	Little to no impact on potential lives saved.
	1	Some potential for lives saved.
	2	High likelihood of lives saved.
Reduced Property Damages	0	Little to no impact on potential reductions in property damage
	1	Some potential for reductions in property damage
	2	High likelihood of reductions in property damage.
Reduced Response Actions	0	Little to no impact on the potential need for response actions.
	1	Some potential for reduced response actions.
	2	High likelihood for reduced response actions.
Benefits Exceed Costs	0	Benefits do not exceed costs.
	1	Benefits and costs are equal.
	2	Benefits exceed costs.
Social Acceptability	0	Project not socially acceptable.
	1	Social support is neutral for project.
	2	Strong social support for project.
Technical Feasibility	0	Project is not technically feasible.
	1	Project is partially technically feasible.
	2	Project is technically feasible.
Administrative Capability	0	There is no administrative capability to manage the project.
	1	There is some administrative capability to manage the project.

	2	The administrative capability is in place to manage the project.
Political Desirability	0	No political desirability for project.
	1	Minor political desirability for project.
	2	Major political desirability for project.
Legal Authority	0	There is no legal authority to implement the project.
	1	Possible legal authority to implement the project.
	2	The legal authority exists to implement the project.
Economic Benefits	0	No economic benefits projected from the project.
	1	Minor economic benefits projected from the project.
	2	Major economic benefits projected from the project.
Environmental Benefits	0	No environmental benefits projected from project.
	1	Minor environmental benefits projected from project.
	2	Major environmental benefits projected for project.
Hazard Impact	0	Low
	1	Medium
	2	High
Number of Hazards Addressed	0	One hazard addressed.
	1	Two hazards addressed.
	2	More than two hazards addressed.

Each hazard mitigation action could score up to 26 points. To begin prioritization, scores corresponded to the following priority levels:

Score	Priority
0-8	Low Priority
9-18	Medium Priority
19 and above	High Priority

Once the initial scores were tallied and actions prioritized, they were presented to participants of the Collaborative Planning Team for review. The group reviewed the scores and corresponding initial prioritization and elected to accept the data. Collaborative Planning Team members were invited to

review the scoring further during the final plan review period and provide any additional comments or concerns on action prioritization; no further comments were received.

7.6 2023 Completed Hazard Mitigation Actions

Eaton County completed the following 2023 hazard mitigation actions.

2023 Action ID	2023 Hazard Mitigation Action	Explanation
1.11	Perform regular drainage system maintenance	The Eaton County Drain Commissioner conducts regular drainage system maintenance. Information about drainage system maintenance can be found in the Drain Commissioner's Annual Reports.
3.1	Develop drought communication plan to facilitate timely communication of relevant information to officials, decision makers, emergency managers, and the public.	Eaton County Emergency Management has developed and promulgated a Drought Hazard-Specific Annex as a part of the Emergency Operations Plan. This annex includes guidelines for communication including alignment with our *Support Annex – Public Information and Education* and the *Support Annex – Crisis Communications*, ensuring effective communication during a drought.
3.2	Educate residents about tornado safety.	Annually, Eaton County is an active participant in Severe Weather Awareness Week which typically runs mid-late March. Eaton County participates in the following ways: 1. Posting on social media during Severe Weather Awareness Week promoting the voluntary statewide tornado drill and highlighting participation. 2. Issuing a news release to media partners about participation. 3. Conducting interviews with media partners if requested. 4. Outdoor warning siren activation for all community in Eaton County as a part of the voluntary statewide tornado drill.

		5. Testing of the countywide opt-in alert system (text/phone/email) as a part of the voluntary statewide tornado drill. 6. Encourage schools, businesses, the county complex, and more to participate in the voluntary statewide tornado drill.
3.4	Educate residents about good burning practices and burn bans, mitigating the risk of starting wildfires.	April 12, 2023 - Red Flag Warning issued by the National Weather Service. Shared increased fire danger information on social media (Facebook & Twitter). April 13, 2023 - Red Flag Warning issued by the National Weather Service. Share "What is it?" NWS graphic and what it means for the public. April 16, 2024 – Red Flag Warning issued by the National Weather Service. Shared increased fire danger information on social media (Facebook & X) graphic. Post included impacts and "Be careful with any activities that could potentially lead to wildfire. Activities highlighted included camping, outdoor grilling, smoking, chainsaw use, and all-terrain vehicle use. April 22, 2024 – Red Flag Warning issued by the National Weather Service. Shared increased fire danger information on social media (Facebook & X) graphic. Post included impacts and "Be careful with any activities that could potentially lead to wildfire. Activities highlighted included camping, outdoor grilling, smoking, chainsaw use, and all-terrain vehicle use.
3.28	Develop a public awareness campaign for personal preparedness, with emphasis on personal actions residents can take to mitigate vulnerabilities to hazards in their homes and property.	June 2024 – *Hazard Identification and Risk Assessment (HIRA)* was released to the public. The HIRA is a web-based, publicly accessible "document" that identifies and ranks hazards, serving as a fundamental toolkit in planning efforts for internal and external stakeholders to "know your risk". The HIRA is updated

		every 5 years in accordance with the Eaton County Emergency Management *Plans Maintenance* policy.
3.29	Develop public awareness campaigns around freezing pipes and insulation techniques.	April 24, 2024 – Freeze Warning issued by the National Weather Service. Information posted to social media (Facebook & X) including taking steps to avoid impacts such as damage to unprotected outdoor plumbing. April 25, 2024 - April 24, 2024 – Freeze Warning issued by the National Weather Service. Information posted to social media (Facebook & X) including taking steps to avoid impacts such as damage to unprotected outdoor plumbing.
3.31	Educate citizens about flood risks, flood conditions, and safe conduct during an event.	June 20, 2024 – Flood Advisory issued by the National Weather Service. Information posted to social media (Facebook & X) including what, where, when, impacts, and additional details about the Advisory. Also included to “turn around and don’t drown when encountering flood roads. Most flood deaths occur in vehicles”. June 29, 2024 – Flood Advisory issued by the National Weather Service. Information posted to social media (Facebook & X) including what, where, when, impacts, and additional details about the Advisory. Also included to “turn around and don’t drown when encountering flood roads. Most flood deaths occur in vehicles”. July 9, 2024 – Flood Advisory issued by the National Weather Service (remnants from Hurricane Beryl). Information posted to social media (Facebook & X) including what, where, when, impacts, and additional details about the Advisory. Also included to “turn around and don’t drown when encountering flood roads. Most flood deaths occur in vehicles”.

3.35	Integrate the hazard mitigation plan with other community planning initiatives.	2023 - Integrated a HIRA information into Emergency Operations Plan updates for Grand Ledge Public Schools and Bellevue Community Schools. 2024 – Forwarded new web-based HIRA to the Administrative Assistant for Centrica Care Navigators for the evaluation of their emergency preparedness and readiness. This is a requirement for every county they have staff working in.

7.7 2023 Canceled Hazard Mitigation Actions

Eaton County cancelled the following 2023 hazard mitigation actions.

2023 Action ID	2023 Hazard Mitigation Action	Explanation
1.13	Create defensible space around structures and infrastructure in the Wildland-Urban Interface (WUI).	Wildfire has been assessed as a low risk, with minimal vulnerability and potential consequences for the area. As a result, the resources and efforts originally allocated for this action will be redirected to address higher priority risks within the county.
1.14	Replace existing sandbag wall around Eaton Rapids business district with more permanent solution to protect against flooding.	Coordinating and implementing such a solution is not realistic or achievable for our emergency management program currently. Consequently, we will focus on alternative measures and allocate resources to more feasible and immediate priorities.
1.15	Identify infrastructure across the county and in communities that needs to be restored, rehabilitated, or removed.	Minimal infrastructure that needs to be restored, rehabilitated, or removed exist that justify the time and effort required for this action at this time. Therefore, we will prioritize other actions that have a more significant impact on our community's safety and resilience.
1.16	Inventory critical structures at risk of flood inundation.	Minimal critical structures at risk of flood inundation exist that justify the time and effort required for this action at this time. Therefore, we will prioritize other actions that have a more significant impact on our community's safety and resilience.
1.17	Inventory and mitigate utilities in the floodplain.	We will rely on these providers to manage and address the risks associated with utilities in the floodplain, allowing our emergency management program to focus on other critical areas.
2.9	Electronic infrastructure surge protection.	Coordinating and implementing such a solution is not realistic or achievable for our emergency management program currently. Consequently, we will focus on alternative measures and allocate resources to more feasible and immediate priorities.

2.11	Retrofit critical structures to increase resistance to storm hazards and promote hazard-resistant construction.	Minimal critical structures that require retrofitting exist that justify the time and effort required for this action at this time. Therefore, we will prioritize other actions that have a more significant impact on our community's safety and resilience.
3.5	Encourage citizens to take water-related measures such as installing low-flow toilets and showerheads, adjusting sprinklers to water the law instead of the sidewalk, and other water conservation methods.	Coordinating and implementing such a solution is not realistic or achievable for our emergency management program currently. Consequently, we will focus on alternative measures and allocate resources to more feasible and immediate priorities.
3.3	Develop public awareness around encouraging residents to relocate utilities and water heaters above base flood elevation and using tank-less heaters in limited spaces.	Coordinating and implementing such a solution is not realistic or achievable for our emergency management program currently. Consequently, we will focus on alternative measures and allocate resources to more feasible and immediate priorities.

7.8 New/Continued Hazard Mitigation Actions – Short-term Goals, Objectives, and Actions

The following 2025 hazard mitigation actions are new/ongoing by Eaton County. All hazard mitigation actions identified as continuing from the 2023 plan are still in progress. These projects remain active, and no changes in priority have been made between the previous plan and the current plan.

* = new project since the 2023 update

Short-term Goal 1				
Maintain a comprehensive hazard identification and risk assessment to enhance understanding and management of potential hazards.				
Short-term Objective 1.1				
Maintain a robust, publicly accessible hazard identification and risk assessment framework to identify and prioritize potential hazards, providing internal and external stakeholders with clear insights into their risks, vulnerabilities, and consequences.				
Action ID	**Short-term Action (STA)**	**Jurisdiction(s)**	**Project Benefits and Justification**	**Hazard(s) Addressed**
STA* 1.1.1	Conduct regular updates and reviews of the county's hazard identification and risk assessment (HIRA). This includes integrating new data, technologies, and methodologies to identify emerging hazards and reassess existing risks. Engage stakeholders from various sectors, including public safety, health, infrastructure, and community organizations, to gather diverse insights and ensure a comprehensive understanding of potential hazards. The updated HIRA will guide decision-making,	Eaton County	Conducting regular updates and reviews of the county's Hazard Identification and Risk Assessment (HIRA) offers substantial benefits for hazard mitigation. By integrating new data, technologies, and methodologies, the county can identify emerging hazards and reassess existing risks more accurately. Engaging stakeholders from various sectors, including public safety, health, infrastructure, and community organizations,	All 16 Hazards Identified in the HIRA

	prioritize mitigation efforts, and enhance the county's capacity to manage and reduce the impacts of potential hazards effectively.		ensures a comprehensive understanding of potential hazards through diverse insights. The updated HIRA will provide a solid foundation for informed decision-making and prioritizing mitigation efforts. This proactive approach enhances the county's capacity to manage and reduce the impacts of potential hazards effectively, leading to improved public safety, reduced economic losses, and increased community resilience. Overall, regular HIRA updates and reviews contribute to a safer, ready, and resilient county.	

Short-term Goal 2				
Strengthen readiness and resilience by addressing the immediate impacts of identified hazards.				
Short-term Objective 2.1				
Implement and maintain comprehensive plans, policies, and guidelines to effectively mitigate the immediate impacts of identified hazards.				
Action ID	**Mitigation Action**	**Jurisdiction(s)**	**Project Benefits and Justification**	**Hazard(s) Addressed**
STA 2.1.1	Execute spray programs after significant maintenance projects on public storm drains to control weeds and trees and prevent obstruction of county drains.	Eaton County	This action helps control weeds and trees, preventing obstructions in county drains and ensuring efficient water flow. By maintaining clear drainage systems, the county can reduce the risk of flooding, minimize water damage to properties, and enhance overall stormwater management. Additionally, this proactive approach extends the lifespan of drainage infrastructure, reduces maintenance costs, and supports environmental health by preventing blockages that can lead to water stagnation and pollution.	Flood
STA 2.1.2	Continue to implement and remain in good standing with the National Flood Insurance Program (NFIP)	Bellevue Township, Delta Township, City of Charlotte, City of Eaton Rapids, City of Grand Ledge, City of Olivet, City of Potterville,	Continuing to implement and remain in good standing with the National Flood Insurance Program (NFIP) offers significant benefits for hazard mitigation. Participation in the NFIP provides property owners with access to affordable flood insurance, reducing the financial impact of flood events on individuals and communities. It also promotes the adoption of floodplain management practices that mitigate future flood risks, enhancing overall community resilience. By adhering to NFIP standards, jurisdictions can ensure safer development in flood-prone areas, protect lives and property, and receive federal assistance for flood-related disasters. Overall, maintaining	Flood

		Village of Bellevue	good standing with the NFIP contributes to a more resilient and prepared community, capable of effectively managing and mitigating flood hazards.	

Short-term Goal 3				
Improve public information and education on hazard mitigation.				
Short-term Objective 3.1				
Enhance public information and education efforts to ensure that both internal and external stakeholders understand their risks and can take appropriate mitigation actions.				
Action ID	**Mitigation Action**	**Jurisdiction(s)**	**Project Benefits and Justification**	**Hazard(s) Addressed**
STA 3.1.1	Promote the importance of having multiple ways to receive alerts, warnings, and notifications to both internal and external stakeholders. This action enhances the likelihood of protective action taking and reduces milling time when individuals are at risk.	Eaton County, Bellevue Township, Benton Township, Delta Township, Eaton Township, City of Charlotte, City of Eaton Rapids, City of Grand Ledge, City of Olivet, City of Potterville, Village of Bellevue	This action enhances the likelihood of timely and protective responses, reducing the time individuals spend seeking additional information (milling time) when at risk. By ensuring that stakeholders are well-informed through various communication methods, the county can improve public safety, minimize potential harm, and increase overall community resilience.	All 16 Hazards Identified in the HIRA
STA 3.1.2	Promote the adoption and use of Smart911 among residents to	Eaton County, Bellevue Township,	This action involves conducting awareness campaigns, providing information on the benefits of Smart911, and helping with registration. By encouraging widespread use	All 16 Hazards Identified in the HIRA

	enhance emergency response capabilities.	Benton Township, Delta Township, Eaton Township, City of Charlotte, City of Eaton Rapids, City of Grand Ledge, City of Olivet, City of Potterville, Village of Bellevue	of this service, the county can ensure that emergency responders have critical information readily available during emergencies or disasters, improving response times and outcomes, especially for those with access and functional needs.	
STA 3.1.3	Continue the implementation and regular use of the Rave Panic Button system in K-12 schools countywide. This action includes ongoing training for staff, periodic system testing, and updating emergency operations plans to integrate the Rave Panic Button protocols. By maintaining this system, the county ensures	Eaton County	Continuing the implementation and regular use of the Rave Panic Button system in all schools provides critical benefits for hazard mitigation. This system enables rapid communication with emergency responders during a crisis, significantly improving response times. Ongoing training for staff ensures that everyone is prepared to use the system effectively, enhancing overall readiness and safety. Periodic system testing and updates to emergency response plans ensure the Rave Panic Button protocols are seamlessly integrated into school safety procedures. By maintaining this system, the county strengthens its ability to protect students and staff, reduce potential harm, and foster a secure learning environment. Overall, the continued use of the Rave Panic Button system	All 16 Hazards Identified in the HIRA

	rapid communication with emergency responders during a crisis, improving response times and enhancing the safety and security of students and staff.		enhances the county's emergency response capabilities and contributes to a safer school community.	
STA 3.1.4	Participation in Michigan's Severe Weather Awareness Week held annually in March.	Eaton County	This action raises public awareness about severe weather risks, educates residents on protective action measures, and promotes community readiness. By engaging in this statewide event, Eaton County can enhance its resilience to severe weather events, reduce potential damage and loss, and foster a culture of preparedness among citizens and visitors. Additionally, it provides an opportunity for local authorities to collaborate with the whole community, share valuable resources, and update plans, policies, and procedures. Overall, participation in Severe Weather Awareness Week strengthens the county's ability to mitigate the impacts of severe weather and protect its communities.	Tornado
STA 3.1.5	Educate individuals about potentially dangerous fire weather conditions, burn restrictions that are in effect, and activities that could potentially lead to a wildfire.	Eaton County, Bellevue Township, Benton Township, Delta Township, Eaton Township, City	This action raises awareness about fire risks and promotes safe behaviors, significantly reducing the likelihood of accidental wildfires. By informing the public about current burn restrictions and hazardous weather conditions, the county can prevent fire incidents, protect natural resources, and enhance community safety. This educational effort also supports a culture of vigilance and responsibility, empowering residents to take proactive measures in safeguarding their environment.	Wildfire

		of Charlotte, City of Eaton Rapids, City of Grand Ledge, City of Olivet, City of Potterville, Village of Bellevue		
STA 3.1.6	Participation in Michigan's Winter Hazards Awareness Week held annually in November.	Eaton County	This action educates the public on the risks associated with winter weather, such as severe cold, snow, ice, and winter storms, and promotes safety measures to mitigate these risks. By engaging in this awareness campaign, the county can enhance community readiness, encourage the adoption of protective actions, and reduce the potential for injury, property damage, and disruption caused by winter hazards. Furthermore, it offers an opportunity for local authorities to collaborate with the whole community, share critical information, and update plans, policies, and procedures to reflect best practices for winter weather preparedness.	Severe Winter Weather
STA* 3.1.7	Continue an employee cybersecurity training and awareness program.	Eaton County	This action educates county government personnel on best practices for identifying and responding to cyber threats, reducing the risk of data breaches, cyber-attacks, and other security incidents. By fostering a culture of cybersecurity awareness, the county can protect sensitive information, maintain the integrity of its IT systems, and ensure the continuity of essential services.	Cyber Incident

STA* 3.1.8	Conduct regular system patching and software updates.	Eaton County	This action ensures that all software and systems are protected against known vulnerabilities, reducing the risk of cyber-attacks, data breaches, and other security threats. By maintaining up-to-date systems, the county can prevent disruptions to essential services, protect sensitive information, and enhance overall cybersecurity. Regular updates also improve system performance, reliability, and compatibility with new technologies, contributing to a more resilient and efficient IT infrastructure.	Cyber Incident

7.9 Short-term Action (STA) Potential Funding Sources

Action ID	Potential Funding Sources	Lead Agency/Agencies	Estimated Cost	Completion Timeline
STA 1.1.1	☐ Building Resilient Infrastructure and Communities (BRIC) ☐ Hazard Mitigation Grant Program (HMGP) ☐ Flood Mitigation Assistance Grant Program (FMA) ☐ Homeland Security Grant Program (HSGP) ☒ Local Funding ☐ Private Funding ☐ State Funding	Eaton County Emergency Management	☒ Less than $10,000 ☐ Less than $100,000 ☐ Less than $500,000 ☐ Less than $1,000,000 ☐ Greater than $1,000,000	☐ 2025 ☐ 2026 ☐ 2027 ☐ 2028 ☒ 2029
STA 2.1.1	☐ Building Resilient Infrastructure and Communities (BRIC) ☐ Hazard Mitigation Grant Program (HMGP) ☐ Flood Mitigation Assistance Grant Program (FMA) ☐ Homeland Security Grant Program (HSGP) ☒ Local Funding ☐ Private Funding ☐ State Funding	Eaton County Drain Office	☐ Less than $10,000 ☒ Less than $100,000 ☐ Less than $500,000 ☐ Less than $1,000,000 ☐ Greater than $1,000,000	☒ 2025 ☒ 2026 ☒ 2027 ☒ 2028 ☒ 2029

STA 2.1.2	☐ Building Resilient Infrastructure and Communities (BRIC) ☐ Hazard Mitigation Grant Program (HMGP) ☐ Flood Mitigation Assistance Grant Program (FMA) ☐ Homeland Security Grant Program (HSGP) ☒ Local Funding ☐ Private Funding ☐ State Funding	All townships, cities, and villages	☒ Less than $10,000 ☐ Less than $100,000 ☐ Less than $500,000 ☐ Less than $1,000,000 ☐ Greater than $1,000,000	☒ 2025 ☒ 2026 ☒ 2027 ☒ 2028 ☒ 2029
STA 3.1.1	☐ Building Resilient Infrastructure and Communities (BRIC) ☐ Hazard Mitigation Grant Program (HMGP) ☐ Flood Mitigation Assistance Grant Program (FMA) ☐ Homeland Security Grant Program (HSGP) ☒ Local Funding ☐ Private Funding ☐ State Funding	Eaton County Central Dispatch and Eaton County Emergency Management	☒ Less than $10,000 ☐ Less than $100,000 ☐ Less than $500,000 ☐ Less than $1,000,000 ☐ Greater than $1,000,000	☒ 2025 ☒ 2026 ☒ 2027 ☒ 2028 ☒ 2029
STA 3.1.2	☐ Building Resilient Infrastructure and Communities (BRIC) ☐ Hazard Mitigation Grant Program (HMGP)	Eaton County Central Dispatch and Eaton County Emergency Management	☐ Less than $10,000 ☒ Less than $100,000 ☐ Less than $500,000 ☐ Less than $1,000,000	☒ 2025 ☒ 2026 ☒ 2027 ☒ 2028

	☐ Flood Mitigation Assistance Grant Program (FMA) ☐ Homeland Security Grant Program (HSGP) ☒ Local Funding ☐ Private Funding ☐ State Funding		☐ Greater than $1,000,000	☒ 2029
STA 3.1.3	☐ Building Resilient Infrastructure and Communities (BRIC) ☐ Hazard Mitigation Grant Program (HMGP) ☐ Flood Mitigation Assistance Grant Program (FMA) ☐ Homeland Security Grant Program (HSGP) ☒ Local Funding ☐ Private Funding ☒ State Funding	Eaton County Central Dispatch and Eaton County Emergency Management	☐ Less than $10,000 ☒ Less than $100,000 ☐ Less than $500,000 ☐ Less than $1,000,000 ☐ Greater than $1,000,000	☒ 2025 ☐ 2026 ☐ 2027 ☐ 2028 ☐ 2029
STA 3.1.4	☐ Building Resilient Infrastructure and Communities (BRIC) ☐ Hazard Mitigation Grant Program (HMGP) ☐ Flood Mitigation Assistance Grant Program (FMA) ☐ Homeland Security Grant Program (HSGP) ☒ Local Funding	Eaton County Central Dispatch and Eaton County Emergency Management	☒ Less than $10,000 ☐ Less than $100,000 ☐ Less than $500,000 ☐ Less than $1,000,000 ☐ Greater than $1,000,000	☒ 2025 ☒ 2026 ☒ 2027 ☒ 2028 ☒ 2029

	☐ Private Funding ☐ State Funding			
STA 3.1.5	☐ Building Resilient Infrastructure and Communities (BRIC) ☐ Hazard Mitigation Grant Program (HMGP) ☐ Flood Mitigation Assistance Grant Program (FMA) ☐ Homeland Security Grant Program (HSGP) ☒ Local Funding ☐ Private Funding ☐ State Funding	Eaton County Emergency Management	☒ Less than $10,000 ☐ Less than $100,000 ☐ Less than $500,000 ☐ Less than $1,000,000 ☐ Greater than $1,000,000	☒ 2025 ☒ 2026 ☒ 2027 ☒ 2028 ☒ 2029
STA 3.1.6	☐ Building Resilient Infrastructure and Communities (BRIC) ☐ Hazard Mitigation Grant Program (HMGP) ☐ Flood Mitigation Assistance Grant Program (FMA) ☐ Homeland Security Grant Program (HSGP) ☒ Local Funding ☐ Private Funding ☐ State Funding	Eaton County Emergency Management	☒ Less than $10,000 ☐ Less than $100,000 ☐ Less than $500,000 ☐ Less than $1,000,000 ☐ Greater than $1,000,000	☒ 2025 ☒ 2026 ☒ 2027 ☒ 2028 ☒ 2029
STA 3.1.7	☐ Building Resilient Infrastructure and Communities (BRIC)	Eaton County Technology Services	☐ Less than $10,000 ☒ Less than $100,000	☒ 2025 ☒ 2026

	☐ Hazard Mitigation Grant Program (HMGP) ☐ Flood Mitigation Assistance Grant Program (FMA) ☐ Homeland Security Grant Program (HSGP) ☒ Michigan Municipal Risk Management Authority (MMRMA) Risk Avoidance Program (RAP) Grant ☒ Local Funding ☐ Private Funding ☐ State Funding		☐ Less than $500,000 ☐ Less than $1,000,000 ☐ Greater than $1,000,000	☒ 2027 ☒ 2028 ☒ 2029
STA 3.1.8	☐ Building Resilient Infrastructure and Communities (BRIC) ☐ Hazard Mitigation Grant Program (HMGP) ☐ Flood Mitigation Assistance Grant Program (FMA) ☐ Homeland Security Grant Program (HSGP) ☒ Local Funding ☐ Private Funding ☐ State Funding	Eaton County Technology Services	☒ Less than $10,000 ☐ Less than $100,000 ☐ Less than $500,000 ☐ Less than $1,000,000 ☐ Greater than $1,000,000	☒ 2025 ☒ 2026 ☒ 2027 ☒ 2028 ☒ 2029

7.10 Short-term Action (STA) Scoring Tool

Action ID	Lives Saved	Reduced Property Damages	Reduced Response Actions	Benefits Exceed Costs	Social Acceptability	Technical Feasibility	Administrative Capability	Political Desirability	Legal Authority	Economic Benefits	Environmental Benefits	Hazard Impacts	Numbers of Hazards Addressed	TOTAL	PRIORITY
STA 1.1.1	1	1	1	0	2	2	2	1	2	1	0	0	2	15	Medium
STA 2.1.1	0	2	0	1	1	1	1	1	1	0	1	0	0	9	Medium
STA 2.1.2	0	2	2	2	2	2	2	2	2	2	2	2	1	23	High
STA 3.1.1	2	1	1	0	2	2	2	2	0	0	0	1	2	15	Medium
STA 3.1.2	2	1	1	0	2	2	2	2	0	0	0	2	2	17	Medium
STA 3.1.3	2	1	2	0	2	2	2	2	0	0	0	2	2	17	Medium
STA 3.1.4	1	1	1	0	2	2	2	1	0	0	0	2	0	12	Medium
STA 3.1.5	1	2	2	0	2	2	2	1	0	0	0	2	0	14	Medium

STA 3.1.6	1	1	1	0	2	2	2	1	0	0	0	2	0	12	Medium
STA 3.1.7	0	0	1	2	1	2	2	1	1	2	0	2	0	14	Medium
STA 3.1.8	0	0	1	2	1	2	2	1	1	2	0	2	0	14	Medium

7.11 New/Continued Hazard Mitigation Actions – Long-term Goals, Objectives, and Actions

The following 2025 hazard mitigation actions are new/ongoing by Eaton County.

* = new project since the 2023 update

Long-term Goal 1				
Ensure long-term resilience and sustainability through effective hazard mitigation.				
Long-term Objective 1.1				
Develop and implement comprehensive education programs for community groups that inform residents about various natural, technological, and human-made hazards, their potential impacts, and practical mitigation measures they can adopt to enhance their safety and resilience.				
Action ID	**Long-term Action (LTA)**	**Jurisdiction(s)**	**Project Benefits and Justification**	**Hazard(s) Addressed**
LTA 1.1.1	Develop and expand on integrated education programs that teach residents about multiple hazards, their impacts, and practical mitigation measures they can take.	Eaton County	These programs will empower residents with the knowledge and skills needed to protect themselves, their families, and their property from a range of potential hazards. By increasing public awareness and understanding of hazards, the programs will foster a culture of preparedness and proactive risk management. This, in turn, can lead to first responders responding less, allowing them to focus their attention on more critical issues, reduced casualties, minimized property damage, and quicker recovery times during and after disasters. Furthermore, well-informed residents are more likely to participate in community-wide mitigation efforts, strengthening overall community resilience and cohesion. Ultimately, these education programs contribute to a safer, more informed, and resilient community capable of	All 16 Hazards Identified in the HIRA

			effectively responding to and recovering from various hazards.	

Long-term Goal 2				
Promote resilient development and reduce hazard exposure.				
Long-term Objective 2.1				
Integrate hazard mitigation considerations and actions into critical infrastructure, key resources, land use planning, and development decisions.				
Action ID	**Long-term Action (LTA)**	**Jurisdiction(s)**	**Project Benefits and Justification**	**Hazard(s) Addressed**
LTA 2.1.1	Engage with local governments, private sector partners, developers, community organizations, and other stakeholders maintain, promote, and/or revise zoning regulations, building codes, retrofits, target hardening, and development standards to minimize hazard exposure and enhance resilient mitigation practices.	Eaton County, Bellevue Township, Benton Township, Delta Township, Eaton Township, City of Charlotte, City of Eaton Rapids, City of Grand Ledge, City of Olivet, City of Potterville, Village of Bellevue	Engaging with local governments, private sector partners, developers, community organizations, and other stakeholders to maintain, promote, and revise zoning regulations, building codes, retrofits, and development standards offers numerous benefits for hazard mitigation. This collaborative approach ensures that diverse perspectives and expertise are integrated into the planning process, leading to more comprehensive and effective mitigation strategies. By updating and enforcing regulations, we can significantly reduce hazard exposure, protect property, and enhance community resilience. Improved building codes and development standards will ensure that new constructions are better equipped to withstand natural disasters, while retrofitting existing structures will reduce their vulnerability. Additionally, this engagement fosters a culture of safety and preparedness within the community, encouraging proactive risk management and strengthening overall disaster resilience.	All 16 Hazards Identified in the HIRA

LTA* 2.1.2	Increase capacity in the Bank Intercounty Drain to reduce the frequency, depth, and duration of flooding along the drain in Delta and Lansing Townships.	Eaton County, Delta Township, Ingham County (Lansing Township)	The Bank Intercounty Drain provides a stormwater outlet for a large, urbanized area. The project improvements will provide a reduction in the flooding of roadways and private properties. The Drain's useful life will be extended far into the future and generally provide benefits to local and state highways, and to the public health, convenience, and welfare. The project will be permitted by the Michigan Department of Environment, Great Lakes, and Energy, the Michigan Department of Transportation, the Eaton County Road Commission, and the Ingham County Road Department.	Flood

7.12 Long-term Action (LTA) Potential Funding Sources

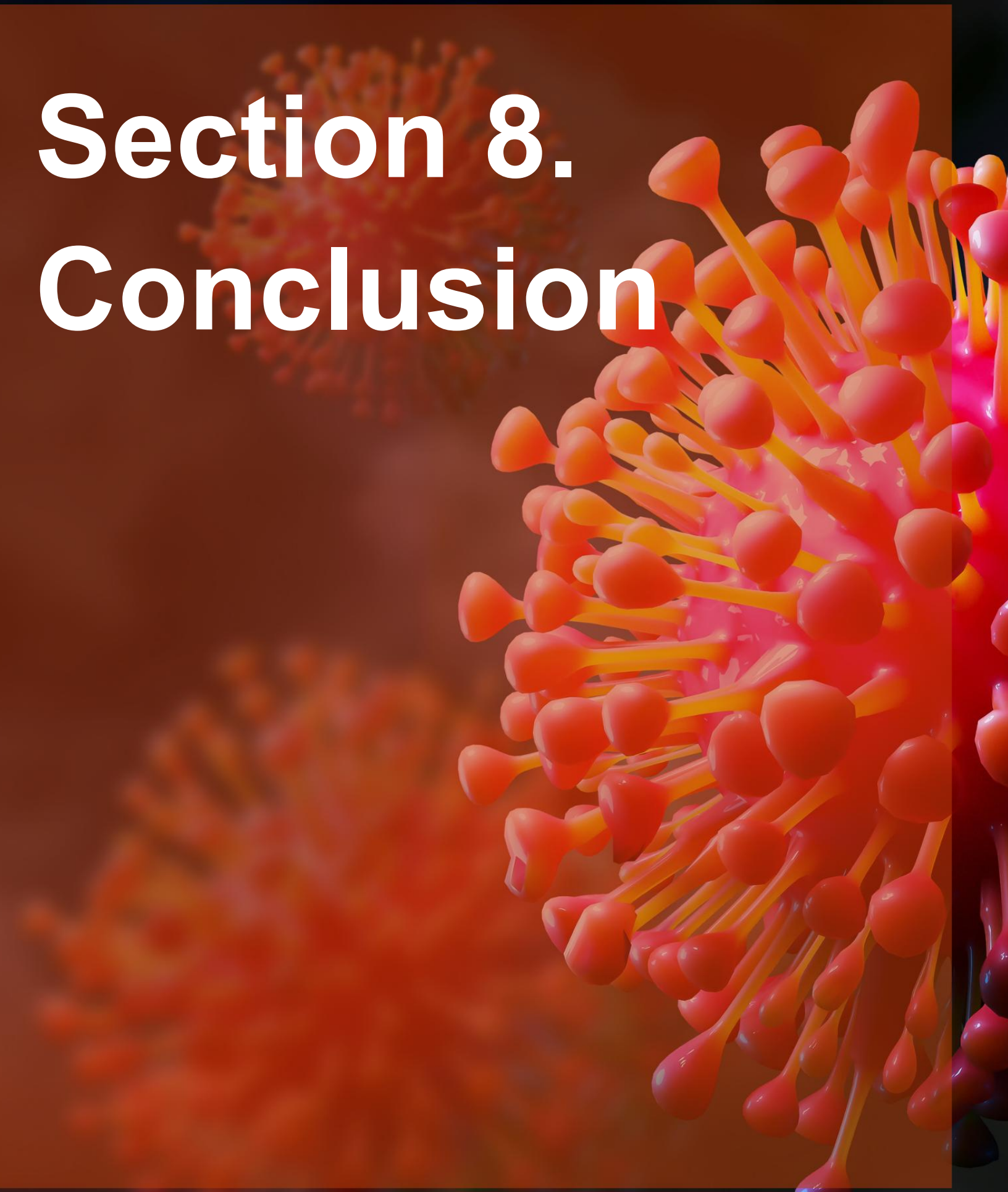
Action ID	Potential Funding Sources	Lead Agency/Agencies	Estimated Cost	Completion Timeline
LTA 1.1.1	☐ Building Resilient Infrastructure and Communities (BRIC) ☐ Hazard Mitigation Grant Program (HMGP) ☐ Flood Mitigation Assistance Grant Program (FMA) ☐ Homeland Security Grant Program (HSGP) ☒ Local Funding ☐ Private Funding ☐ State Funding	Eaton County Emergency Management	☒ Less than $10,000 ☐ Less than $100,000 ☐ Less than $500,000 ☐ Less than $1,000,000 ☐ Greater than $1,000,000	☐ 2025 ☐ 2026 ☐ 2027 ☒ 2028 ☐ 2029
LTA 2.1.1	☐ Building Resilient Infrastructure and Communities (BRIC) ☐ Hazard Mitigation Grant Program (HMGP) ☐ Flood Mitigation Assistance Grant Program (FMA) ☐ Homeland Security Grant Program (HSGP) ☒ Local Funding ☐ Private Funding ☐ State Funding	Eaton County Emergency Management	☒ Less than $10,000 ☐ Less than $100,000 ☐ Less than $500,000 ☐ Less than $1,000,000 ☐ Greater than $1,000,000	☒ 2025 ☒ 2026 ☒ 2027 ☒ 2028 ☒ 2029

LTA 2.1.2	☐ Building Resilient Infrastructure and Communities (BRIC) ☐ Hazard Mitigation Grant Program (HMGP) ☐ Flood Mitigation Assistance Grant Program (FMA) ☐ Homeland Security Grant Program (HSGP) ☒ Local Funding ☐ Private Funding ☒ Assessment Roll ☒ State Funding ☒ Federal Funding (Appropriation)	Eaton County Drain Commission	☐ Less than $10,000 ☐ Less than $100,000 ☐ Less than $500,000 ☐ Less than $1,000,000 ☒ Greater than $1,000,000	☐ 2025 ☐ 2026 ☐ 2027 ☒ 2028 ☐ 2029

7.13 Long-term Action (LTA) Scoring Tool

Action ID	Lives Saved	Reduced Property Damages	Reduced Response Actions	Benefits Exceed Costs	Social Acceptability	Technical Feasibility	Administrative Capability	Political Desirability	Legal Authority	Economic Benefits	Environmental Benefits	Hazard Impacts	Numbers of Hazards Addressed	TOTAL	PRIORITY
LTA 1.1.1	1	1	1	1	1	1	1	1	1	1	1	1	2	14	Medium
LTA 2.1.1	2	1	1	1	1	1	1	1	1	1	1	2	2	16	Medium
LTA 2.1.2	0	2	1	2	1	2	2	1	1	1	1	1	0	15	Medium

Section 8. Conclusion



8.1 Authorities and References

8.1.1 Authorities

8.1.1.1 Federal

1. Robert T. Stafford Disaster Relief and Emergency Assistance Act (Stafford Act) – 42 U.S.C. §§ 5121-5207
    a. The Stafford Act provides the legal basis for the Federal Emergency Management Agency (FEMA) to provide disaster response and assistance, including hazard mitigation efforts. Section 322 specifically requires states and local governments to develop hazard mitigation plans to be eligible for certain types of federal disaster assistance.
2. Disaster Mitigation Act of 2000 (DMA 2000)
    a. Amends the Stafford Act, requiring local governments to develop and submit hazard mitigation plans to qualify for pre-disaster and post-disaster federal mitigation grants. DMA 2000 also emphasizes pre-disaster planning to reduce risks.
3. Code of Federal Regulations (CFR) Title 44, Part 201 (44 CFR Part 201)
    a. Establishes the regulations for implementing hazard mitigation planning requirements under the Stafford Act. Specifically, 44 CFR Part 201 requires local governments to develop and maintain an approved hazard mitigation plan as a condition for receiving certain types of non-emergency disaster assistance, including funding for mitigation projects.
4. National Flood Insurance Act of 1968 (NFIA)
    a. Requires local communities to participate in the National Flood Insurance Program (NFIP) by adopting and enforcing floodplain management regulations aimed at reducing future flood risks. Hazard mitigation plans often include flood mitigation measures in accordance with NFIA.
5. National Response Framework (NRF)
    a. Provides a nationwide template for responding to all types of disasters and emergencies, including mitigation and preparedness efforts at the local level.
6. National Incident Management System (NIMS)
    a. Ensures a standardized approach to incident management and coordination across all levels of government, which can be incorporated into hazard mitigation planning efforts.
7. FEMA Hazard Mitigation Assistance (HMA) Guidance
    a. Provides specific guidance for federal mitigation programs like the Hazard Mitigation Grant Program (HMGP), Pre-Disaster Mitigation (PDM) program, and the Flood Mitigation Assistance (FMA) program.

8. National Environmental Policy Act (NEPA)
    a. Requires federal agencies, including FEMA, to assess the environmental impacts of their actions, including hazard mitigation projects, ensuring that these efforts do not adversely affect the environment.
9. Endangered Species Act (ESA)
    a. Ensures that mitigation projects do not negatively impact protected species or their habitats.
10. National Historic Preservation Act (NHPA)
    a. Requires that mitigation projects protect historic properties, and consultation is often needed when mitigation efforts may affect historic or cultural resources.

8.1.1.2 State

1. Michigan Legislature. (1976). Emergency Management Act, Act 390 of 1976. Retrieved from https://www.legislature.mi.gov.
2. Michigan Department of State Police, Emergency Management and Homeland Security Division. (2019). Michigan Hazard Mitigation Plan. Retrieved from https://www.michigan.gov/msp

8.1.1.3 Local

1. Local Ordinances and Building Codes
    a. Local governments often have their own building codes, zoning laws, and ordinances aimed at reducing risks from specific hazards, such as floodplain regulations, fire codes, or stormwater management requirements. These are essential components of hazard mitigation planning.
2. Comprehensive Land Use Plans
    a. Local hazard mitigation plans are often integrated with or support the community's comprehensive land use or development plans, which help guide decisions on growth and development in hazard-prone areas.

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15. *U.S. Climate Resilience Toolkit*. Climate Change Impacts in the United States: The Third National Climate Assessment | U.S. Climate Resilience Toolkit. (2014). https://toolkit.climate.gov/reports/national-climate-assesment
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8.2 Definitions and Acronyms

8.2.1 Definitions

Active Violence Incident - an individual actively engaged in killing or attempting to kill people in a confined and populated area.

Acts of War - A cyber-attack made during or in preparation for armed conflict – large scale disruption of government networks, military systems, or critical infrastructure. These are rare, but extremely serious.

Agency - a government entity with specific functions or responsibilities, particularly in the context of emergency management. Agencies operate at federal, state, local, tribal, or territorial levels and are often involved in providing services, enforcing regulations, or carrying out specific tasks related to emergency preparedness, response, recovery, and mitigation.

Blizzard - A blizzard is a dangerous winter storm that is a combination of blowing snow and wind resulting in very low visibilities.

Cyber Incident - an event occurring on or conducted through a computer network that actually or imminently jeopardizes the confidentiality, integrity, or availability (CIA) of computers, information, or communications systems or networks, physical or virtual infrastructure controlled by computers or information systems, or information resident thereon. A cyber incident may include a vulnerability in an information system, system security procedures, internal controls, or implementation that could be exploited by a threat source.

Computer Crime - Willful acts of crime generally motivated by profit. These can be very long-term campaigns and are often difficult to identify, often with a moderate to high cost to affected organizations or their associated entities. Cyber espionage where certain groups or nations go to significant effort to steal sensitive information and intellectual property from organizations in the United States is a major type of computer crime that can go undetected.

Cyber Terrorism - Willful acts of crime committed with the intention of destroying or disrupting government or society. Successful cyber terrorism attacks are very serious, with a potential for loss of life. The key aspect of cyber terrorism is that it poses a legitimate and serious threat to public safety.

Cyber Vandalism - Willful acts of crime generally meant to satisfy a personal vendetta, to amuse the attacker, or to gain respect in hacker communities. These tend to be short-term attacks that cease either when the unauthorized access is cut off, or the attacker loses interest.

Department - a larger organizational unit within the government that oversees a range of functions or services, often encompassing multiple agencies. Departments are responsible for broad areas of public policy and administration.

Derecho - A widespread, long-lived windstorm that is associated with a band of rapidly moving showers or thunderstorms. A typical derecho consists of numerous microbursts, downbursts, and

downburst clusters. The swath of wind damage extends more than 240 miles and includes wind gusts of at least 58 mph along most of its length.

Disaster - a more severe and widespread event that causes significant disruption to a community, region, or country, often overwhelming the ability of local, state, or tribal governments to respond effectively. Disasters typically result in substantial damage, loss of life, and long-term impacts on infrastructure, the environment, and the economy.

Downburst - The general term used to broadly describe macro and microbursts.

Drought - a period of unusually persistent dry weather that persists long enough to cause deficiencies in the water supply, (surface or underground).

Emergency - any incident, whether natural, technological, or human-caused, that requires immediate response actions to protect life, property, or the environment. Emergencies are often of limited scope and duration, and they can usually be managed with local resources.

Enhanced Fujita Scale – used to assign a tornado a 'rating' based on estimated wind speeds and related damage.

Epidemic - a widespread occurrence of an infectious disease in a community at a particular time.

Gust front - The leading edge of rain-cooled air that clashes with warmer thunderstorm inflow, characterized by a wind shift, temperature drop, and gusty winds out ahead of a thunderstorm.

Hacktivism - Willful acts of crime generally characterized by threatening or intimidating individuals or organizations. These are usually large, highly visible attacks which may be ongoing, and which may have devastating effects on the affected entities. Hacktivism is distinct in that it is often politically motivated computer crime that does not usually threaten public safety.

Hazard - A potential source of harm or adverse effects on people, property, or the environment, resulting from natural, technological, or human-caused events.

Hazard Mitigation - any action taken to reduce or eliminate the long-term risk to human life and property from natural, technological, or human-caused hazards.

Freezing Rain - occurs when snowflakes descend into a warmer layer of air and melt completely.

Ice storm - An ice storm is a storm which results in the accumulation of at least .25" of ice on exposed surfaces.

Lake effect storm. As a cold, dry air mass moves over the Great Lakes regions, the air picks up a lot of moisture from the Great Lakes. This air, now full of water, dumps the water as snow in areas generally to the south and east of the lakes.

Livestock – Those domesticated species of animals used for human food or fiber, or those species of animals used for service to humans. This may include equine and poultry species.

Macroburst - An outward burst of strong winds at or near the surface with horizontal dimensions larger than 4 km (2.5 mi) and occurs when a strong downdraft reaches the surface.

Microburst - A small, concentrated downburst that produces an outward burst of strong winds at or near the surface.

Organization - any group or structure, whether governmental, non-governmental, private sector, or voluntary, that is involved in emergency management activities. Organizations can include public and private entities, nonprofits, and community-based groups that collaborate to prepare for, respond to, recover from, and mitigate emergencies and disasters.

Pandemic - a widespread occurrence of an infectious disease over a whole country or the world at a particular time.

Resilience - The ability of a community, infrastructure, or organization to anticipate, resist, absorb, and recover from a hazardous event.

Risk - The combination of the likelihood of a hazardous event and its potential consequences.

Significant Cyber Incident – A group of related cyber incidents that together are likely to result in demonstrable harm to the national security interests, foreign relations, or economy of the United States or to the public confidence, civil liberties, or public health and safety of the American people.

Snow flurries - Light snow falling for short periods. Little accumulation is expected.

Snow showers - Occur when snow falls at varying intensities. Some accumulation is possible.

Snow squall - A brief, intense snow shower accompanied by strong, gusty winds. Accumulation may be significant. Snow squalls are best known in the Great Lakes region.

Sleet - occurs when snowflakes only partially melt when they fall through a shallow layer of warm air and become slushy.

Straight-line wind - Any thunderstorm wind that is not associated with rotation and is used mainly to differentiate from tornadic winds.

System Fault - A failure or reduced functionality of a single system because of hardware or software failure. System faults are usually trivial if backups are in place. A system fault may be an accidental incident affecting a single system.

Tornado - a narrow, violently rotating column of air that extends from a thunderstorm to the ground.

Vulnerability - The degree to which people, property, or environments are susceptible to harm from a hazard.

8.2.2 Acronyms

APHIS – Animal and Plant Health Inspection Service

AVI – Active Violence Incident

AWN – Alerts, Warnings, and Notifications

BRIC – Building Resilient Infrastructure and Communities

CDBG – Community Development Block Grant

CFR – Code of Federal Regulations

DDoS – Distributed Denial-of-service

DMA – Disaster Mitigation Act

EAP – Emergency Action Plan

EF – Enhanced Fujita

EGLE – Michigan Department of Environment, Great Lakes, and Energy

EMAP – Emergency Management Accreditation Program

F - Fujita

FEMA – Federal Emergency Management Agency

FMA – Flood Mitigation Assistance

HIRA – Hazard Identification and Risk Assessment

HMGP – Hazard Mitigation Grant Program

HPAI - Highly Pathogenic Avian Influenza

LPAI - Low Pathogenic Avian Influenza

LTA – Long-term Action

MHMP – Multi-Hazard Mitigation Plan

MPH – Miles Per Hour

NCEI – National Centers for Environmental Information

NFIP – National Flood Insurance Program

NHTSA - National Highway Traffic Safety Administration

STA – Short-term Action

STAPLEE - Social, Technological, Administrative, Political, Legal, Economic, and Environmental

THIRA – Threat and Hazard Identification and Risk Assessment

USDA – United States Department of Agriculture

WUI - Wildland Urban Interface

Appendices

Appendix A: Multi-Hazard Mitigation (MHMP) Plan Review Tool

The Local Mitigation Plan Review Tool demonstrates how the *MHMP* meets the regulation in 44 CFR §201.6 and offers States and FEMA Mitigation Planners an opportunity to provide feedback.

1. The Jurisdiction Summary Sheet is a worksheet that can be used to document how each jurisdiction met the requirements in alignment with the *Subsection 1.5 Planning Process*.
2. The Regulation Checklist provides a summary of FEMA's evaluation of whether the MHMP has addressed all requirements.
3. The Plan Assessment identifies the plan's strengths as well as documents areas for future improvement.
4. The Proof of Compliance provides a summary of relevant EMAP standards compliance.

Jurisdiction	Title of Plan	Date of Plan
Eaton	*Multi-Hazard Mitigation Plan (MHMP)*	2025
Local Point of Contact Information		
Ryan Wilkinson Emergency Manager, Eaton County Emergency Management 911 Courthouse Dr., Charlotte, Michigan 48813 Phone: 517-543-5341 Email: rwilkinson@eatoncounty.org		
State Reviewer	**Title**	**Date of Review**
Mike Sobocinski	Hazard Mitigation Planning Analyst	March 25, 2025
FEMA Reviewer	**Title**	**Date of Review**
John Wethington	Chief, Risk Analysis Branch	May 21, 2025
Date Received in FEMA Region 5	March 25, 2025	
Plan Not Approved	N/A	
Plan Approval Pending Adoption	May 21, 2025	
Plan Adopted		

Jurisdiction Summary Sheet

Jurisdiction Summary Sheet								
Jurisdiction Name	Jurisdiction Type	Jurisdiction Contact	Email	Requirements Met Yes(Y)/No(N)				
				Meeting Attendance	Capability Assessment	HIRA Input	Hazard Mitigation Action	Resolution
Eaton	County	Ryan Wilkinson (Emergency Manager) Ella Gardner (Emergency Management Specialist)	rwilkinson@eatoncounty.org egardner@eatoncounty.org	Y 8/12/2024 8/29/2024 9/11/2024 9/23/2024 9/24/2024 9/25/2024 9/26/2024 9/27/2024 10/7/2024 10/15/2024	Y	Y	Y	N
Bellevue	Township	Lisa Lawitzke (Clerk)	bellevueclerk@gmail.com	Y 9/26/2024	Y	Y	Y	N
Benton	Township	Gary Suits (Supervisor)	benton_twp_super@aol.com	Y 9/26/2024	Y	Y	Y	N
Brookfield	Township	-	-	N	N	Y	Y	N

Carmel	Township	-	-	N	N	Y	Y	N
Chester	Township	-	-	N	N	Y	Y	N
Delta	Township	Brian Reed (Township Manager)	breed@deltami.gov	Y	Y	Y	Y	N
Eaton	Township	Corie Morris (Township Clerk)	clerk@eatontownship.com	Y 10/15/2024	Y	Y	Y	N
Eaton Rapids	Township	-	-	N	N	Y	Y	N
Hamlin	Township	-	-	N	N	Y	Y	N
Kalamo	Township	-	-	N	N	Y	Y	N
Oneida	Township	-	-	N	N	Y	Y	N
Roxand	Township	-	-	N	N	Y	Y	N
Sunfield	Township	-	-	N	N	Y	Y	N
Vermontville	Township	-	-	N	N	Y	Y	N
Walton	Township	-	-	N	N	Y	Y	N
Windsor	Township	-	-	N	N	Y	Y	N
Charlotte	City	Paul Brentar (Police Chief) Tyger Fullerton (FD Captain) Chris Sloan (FD Captain)	pbrentar@charlottemi.org tfullerton@charlottemi.org csloan@charlottemi.org	Y 8/29/2024	Y	Y	Y	N
Eaton Rapids	City	Yvonne Ridge (City Manager)	yridge@cityofeatonrapids.gov	Y 10/7/2024	Y	Y	Y	N

Grand Ledge	City	Adam Smith (City Manager)	asmith@cityofgrandledge.com	Y 9/11/2024	Y	Y	Y	N
Olivet	City	Amy Huepenbaker (Clerk)	clerk2018@cityofolivet.com	Y 8/12/2024	Y	Y	Y	N
Potterville	City	Aaron Sheridan (City Manager) Richard Barry (Police Chief)	manager@pottervillemi.org rbarry@pottervillemi.org	Y 9/23/2024	Y	Y	Y	N
Bellevue	Village	Nicole Roberts (Village Manager)	manager@bellevuemi.net	Y 9/23/2024	Y	Y	Y	N
Dimondale	Village	-	-	N	N	Y	Y	N
Mulliken	Village	-	-	N	N	Y	Y	N
Sunfield	Village	-	-	N	N	Y	Y	N
Vermontville	Village	-	-	N	N	Y	Y	N

Regulation Checklist

Regulation Checklist Regulation (44 CFR 201.6 Local Mitigation Plans)	Location in Plan	Met	Not Met
Hazard Identification and Risk Assessment			
Does the Plan include a description of the type, location, and extent of all natural hazards that can affect each jurisdiction(s)? (Requirement §201.6(c)(2)(i))	"Section 4. Natural Hazard Profiles" (Pages 52-93)	✓	
Does the Plan include information on previous occurrences of hazard events and on the probability of future hazard events for each jurisdiction? (Requirement §201.6(c)(2)(i))	"Section 4. Natural Hazard Profiles" "Section 5. Technological Hazard Profiles" "Section 6. Human-caused Hazard Profiles" (Pages 52-121)	✓	
Is there a description of each identified hazard's impact on the community as well as an overall summary of the community's vulnerability for each jurisdiction? (Requirement §201.6(c)(2)(ii))	"Section 4. Natural Hazard Profiles" "Section 5. Technological Hazard Profiles" "Section 6. Human-caused Hazard Profiles" (Pages 52-121)	✓	
Does the Plan address NFIP insured structures within the jurisdiction that have been repetitively damaged by floods? (Requirement §201.6(c)(2)(ii))	"Section 4. Natural Hazard Profiles" subsection "4.6 Flood" subsubsection "4.6.3 Repetitive Loss Properties" (Pages 78-79)	✓	
Mitigation Strategy			
Regulation Checklist **Regulation (44 CFR 201.6 Local Mitigation Plans)**	**Location in Plan**	**Met**	**Not Met**
Does the plan document each jurisdiction's existing authorities, policies, programs and resources and its ability to expand on and improve	"Section 2. Eaton County Profile and Capabilities Assessment"	✓	

these existing policies and programs? (Requirement §201.6(c)(3))	subsection “2.2 Capability Assessment” (pages 27-37)		
Does the Plan address each jurisdiction’s participation in the NFIP and continued compliance with NFIP requirements, as appropriate? (Requirement §201.6(c)(3)(ii))	“Section 2. Eaton County Profile and Capabilities Assessment” subsection “2.2 Capability Assessment” (pages 27-37)	✓	
Does the Plan include goals to reduce/avoid long-term vulnerabilities to the identified hazards? (Requirement §201.6(c)(3)(i))	“Section 7. Hazard Mitigation Strategy” subsection “7.3” Long-term Goals and Objectives (page 125)	✓	
Does the Plan identify and analyze a comprehensive range of specific mitigation actions and projects for each jurisdiction being considered to reduce the effects of hazards, with emphasis on new and existing buildings and infrastructure? (Requirement §201.6(c)(3)(ii))	“Section 7. Hazard Mitigation Strategy” subsection “7.8 New/Continued Hazard Mitigation Actions – Short-term Goals, Objectives, and Actions” and subsection “7.11 New/Continued Hazard Mitigation Actions – Long-term Goals, Objectives, and Actions”. Of note, one long-term action places emphasis on an existing infrastructure project (see LTA 2.1.2)	✓	
Does the Plan contain an action plan that describes how the actions identified will be prioritized (including cost benefit review), implemented, and administered by each jurisdiction? (Requirement §201.6(c)(3)(iv)); (Requirement §201.6(c)(3)(iii))	“Section 7. Hazard Mitigation Strategy” subsection “7.5 Hazard Mitigation Action Prioritization” (pages 126-128), subsection “7.9 Short-term Action (STA) Potential Funding Sources” (pages 143-147), subsection “7.10 Short-term Action (STA) Scoring Tool (pages 148-149), subsection “7.12 Long-term Action (LTA) Potential Funding Sources” (pages 153-154), and subsection “7.13 Long-term Action (LTA) Scoring Tool” (page 155)	✓	
Does the Plan describe a process by which local governments will integrate the requirements of the	This process is discussed in multiple sections of the document, including in the plan's maintenance	✓	

mitigation plan into other planning mechanisms, such as comprehensive or capital improvement plans, when appropriate? (Requirement §201.6(c)(4)(ii)	strategy and the integration of planning efforts with local jurisdictions. “Subsection 1.5 Planning Process” subsubsection “1.5.2” Incorporation of Other Plans and Studies" (pages 17-18) specifically outlines the integration of relevant existing plans, including local bylaws, building codes, zoning ordinances, and other planning documents, ensuring that the hazard mitigation strategies align with ongoing community planning efforts. Additionally, the plan requires regular review and updates, as noted in “Subsection 1.5 Planning Process” subsubsection “1.5.5 Method and Schedule for Evaluation, Maintenance, and Revision" ensures that the plan remains current and aligned with other local government planning initiatives (pages 19-20).		
Plan Maintenance			
Regulation Checklist **Regulation (44 CFR 201.6 Local Mitigation Plans)**	**Location in Plan**	**Met**	**Not Met**
Was the plan revised to reflect changes in development? (Requirement §201.6(d)(3))	“Section 1. Introductory Material”, under subsection "1.5 Planning Process." Specifically, subsubsection "1.5.5 Method and Schedule for Evaluation Maintenance and Revision" (pages 19-20) outlines that the plan will be periodically reviewed and updated every five years, including to reflect changes in local development trends. This ensures that the hazard mitigation strategies	✓	

	continue to align with current development and community growth, reducing vulnerabilities to new or altered hazards as development progresses.		
Was the plan revised to reflect progress in local mitigation efforts? (Requirement §201.6(d)(3))	"Section 7. Hazard Mitigation Strategy" subsection "7.6 2023 Completed Hazard Mitigation Actions" (pages 129-132)	✓	
Was the plan revised to reflect changes in priorities? (Requirement §201.6(d)(3))	"Section 7. Hazard Mitigation Strategy" (pages 122-154) outlines the short- and long-term goals, objectives, and actions related to hazard mitigation. It explains the criteria used to prioritize actions, such as their impact on life safety and property damage, and details how mitigation actions were reviewed and either continued, updated, or canceled based on evolving risks and priorities. For instance, subsection "7.5 Hazard Mitigation Action Prioritization" describes how projects are ranked according to their potential for risk reduction (pages 126-128).	✓	
Plan Adoption			
Regulation Checklist **Regulation (44 CFR 201.6 Local Mitigation Plans)**	**Location in Plan**	**Met**	**Not Met**
Does the Plan include documentation that the plan has been formally adopted by the governing body of the jurisdiction requesting approval? (Requirement §201.6(c)(5))	After being reviewed by state and federal partners, this plan will be presented to the Public Safety Committee for recommendation to the Eaton County Board of Commissioners for approval. Once approved, the resolution will be added to page 4.	✓	

For multi-jurisdictional plans, has each jurisdiction requesting approval of the plan documented formal plan adoption? (Requirement §201.6(c)(5))	N/A		

Plan Assessment

Insert any plan assessments received from the State of Michigan and FEMA

EMAP Standard 4.1 Proof of Compliance

EMAP Standard

An Accredited Emergency Management Program has a Hazard Identification, Risk Assessment (HIRA), and Consequence Analysis.

4.1.1 The Emergency Management Program identifies the natural and human-caused hazards that potentially impact the jurisdiction using multiple sources. The Emergency Management Program assesses the risk and vulnerability of the following:

1. people,
2. property,
3. the environment; and
4. its own operations from these hazards.

Proof Documents

1. Natural Hazards | Eaton County Emergency Management HIRA
2. Human-Caused Hazards | Eaton County Emergency Management HIRA
3. Hazard Ranking & Total Risk Values | Eaton County Emergency Management HIRA
4. Vulnerability | Eaton County Emergency Management HIRA

Location of Proofs

The Emergency Management Program identifies the natural and human-caused hazards that potentially impact the jurisdiction using multiple sources.
Location: 1. Natural Hazards | Eaton County Emergency Management HIRA 2. Human-Caused Hazards | Eaton County Emergency Management HIRA
Justification: The Emergency Management Program identifies the natural and human-caused hazards that potentially impact the jurisdiction using multiple sources through a combination of research, historical context, and emerging trends, the natural hazards identified by the Applicant Program that may potentially impact the jurisdiction include tornadoes, droughts, severe winds, floods, extreme temperatures, severe winter weather, animal diseases, public health emergencies, and wildfires. The human-caused hazards identified by the Applicant Program that may potentially impact the jurisdictions include an active violence incident (AVI) or a cyber incident. The sources for the research, historical context, and emerging trends can be found at the bottom of each hazard profile under 'References'. Example: Tornado Hazard Profile References

The Emergency Management Program assesses the risk and vulnerability of people.
Location: 1. Hazard Ranking & Total Risk Values | Eaton County Emergency Management HIRA 2. Vulnerability | Eaton County Emergency Management HIRA
Justification: The Emergency Management Program assesses the risk and vulnerability of people through a structured Hazard Identification and Risk Assessment (HIRA) process. This methodology incorporates both quantitative and qualitative data, gathered from historical and statistical research, as well as discussions among local emergency management officials and partners. The baseline values for identified hazards are established through consultations with subject matter experts across various disciplines, ensuring a comprehensive understanding of risks. The assessment categorizes risk into three main areas: Risk Factors, Vulnerability, and Consequence Analysis. Each category is detailed with defined factors that are numerically coded to facilitate calculations. Specifically, the Vulnerability category focuses on the potential impact on humans, encompassing factors such as the number of lives that could be lost to specific hazards.

The Emergency Management Program assesses the risk and vulnerability of property.
Location: 1. Hazard Ranking & Total Risk Values | Eaton County Emergency Management HIRA 2. Vulnerability | Eaton County Emergency Management HIRA
Justification: The Emergency Management Program assesses the risk and vulnerability of property through a structured Hazard Identification and Risk Assessment (HIRA) process. This methodology incorporates both quantitative and qualitative data, gathered from historical and statistical research, as well as discussions among local emergency management officials and partners. The baseline values for identified hazards are established through consultations with subject matter experts across various disciplines, ensuring a comprehensive understanding of risks. The assessment categorizes risk into three main areas: Risk Factors, Vulnerability, and Consequence Analysis. Each category is detailed with defined factors that are numerically coded to facilitate calculations. Specifically, the Vulnerability category focuses on the potential impact on property, this factor relates to the amount of property potentially lost to a particular hazard agent. This factor can vary between jurisdictions based on economics, geographic amount owned, and demographics of the populations.

The Emergency Management Program assesses the risk and vulnerability of the environment.
Location: 1. Hazard Ranking & Total Risk Values | Eaton County Emergency Management HIRA

2. Vulnerability | Eaton County Emergency Management HIRA
Justification: The Emergency Management Program assesses the risk and vulnerability of the environment through a structured Hazard Identification and Risk Assessment (HIRA) process. This methodology incorporates both quantitative and qualitative data, gathered from historical and statistical research, as well as discussions among local emergency management officials and partners. The baseline values for identified hazards are established through consultations with subject matter experts across various disciplines, ensuring a comprehensive understanding of risks. The assessment categorizes risk into three main areas: Risk Factors, Vulnerability, and Consequence Analysis. Each category is detailed with defined factors that are numerically coded to facilitate calculations. Specifically, the Vulnerability category focuses on the potential impact on the environment, this factor considers the impacts of the hazard event on the air, water, land, and biota.

The Emergency Management Program assesses the risk and vulnerability of its own operations from these hazards.
Location: 1. Hazard Ranking & Total Risk Values | Eaton County Emergency Management HIRA 2. Vulnerability | Eaton County Emergency Management HIRA
Justification: The Emergency Management Program assesses the risk and vulnerability of its own operations from these hazards through a structured Hazard Identification and Risk Assessment (HIRA) process. This methodology incorporates both quantitative and qualitative data, gathered from historical and statistical research, as well as discussions among local emergency management officials and partners. The baseline values for identified hazards are established through consultations with subject matter experts across various disciplines, ensuring a comprehensive understanding of risks. The assessment categorizes risk into three main areas: Risk Factors, Vulnerability, and Consequence Analysis. Each category is detailed with defined factors that are numerically coded to facilitate calculations. Specifically, the Vulnerability category focuses on the potential impact on the emergency management programs' own operations from these hazards, this factor refers to the enduring economic impact of the hazard on the community by an event.

4.1.2 The Emergency Management Program conducts a consequence analysis for the hazards identified in Standard 4.1.1 to consider the impact on the following:

1. public.
2. responders.
3. continuity of operations, including continued delivery services.
4. property, facilities, and infrastructure.
5. environment.

6. the economic condition of the jurisdictions.
7. and public confidence in the jurisdiction's governance.

Proof Documents

1. Hazard Ranking & Total Risk Values | Eaton County Emergency Management HIRA
2. Consequence Analysis | Eaton County Emergency Management HIRA

Location of Proofs

The Emergency Management Program conducts a consequence analysis for the hazards identified in Standard 4.1.1 to consider the impact on the public.
Location: 1. Hazard Ranking & Total Risk Values | Eaton County Emergency Management HIRA 2. Consequence Analysis | Eaton County Emergency Management HIRA
Justification: The consequence analysis evaluates how hazards impact the general population, considering both short- and long-term effects on citizens. The analysis incorporates data on past events and considers local efforts in mitigation, preparation, response, and recovery. This analysis reflects the overall resilience of the community to the specific hazard. The public impact is quantified, with higher rankings indicating the potential for significant casualties or resource strain, requiring external assistance.

The Emergency Management Program conducts a consequence analysis for the hazards identified in Standard 4.1.1 to consider the impact on the responders.
Location: 1. Hazard Ranking & Total Risk Values | Eaton County Emergency Management HIRA 2. Consequence Analysis | Eaton County Emergency Management HIRA
Justification: This analysis assesses the potential risks posed to first responders, including police, fire, EMTs, and emergency management personnel. It examines the health and safety threats they may face during a hazard event, considering their preparedness, staffing, and training levels. High-risk scenarios may lead to extreme danger and necessitate state or federal assistance to manage the situation effectively.

The Emergency Management Program conducts a consequence analysis for the hazards identified in Standard 4.1.1 to consider the impact on the continuity of operations, including continued delivery of services.
Location: 1. Hazard Ranking & Total Risk Values | Eaton County Emergency Management HIRA

2. Consequence Analysis | Eaton County Emergency Management HIRA
Justification: The analysis evaluates how hazards could affect the County government's ability to maintain or quickly restore essential services. It looks at potential disruptions and cascading effects on vital functions. Higher-risk hazards could lead to catastrophic failure of essential services, directly impacting public health and safety, while lower-risk events would result in minimal service interruptions manageable at the local level.

The Emergency Management Program conducts a consequence analysis for the hazards identified in Standard 4.1.1 to consider the impact on the property, facilities, and infrastructure.
Location: 1. Hazard Ranking & Total Risk Values | Eaton County Emergency Management HIRA 2. Consequence Analysis | Eaton County Emergency Management HIRA
Justification: This factor considers the potential damage to the built environment, including property, facilities, and critical infrastructure. The consequence analysis gauges whether a hazard event would result in catastrophic, significant, or minimal damage. High-impact hazards could cause long-term disruptions and require state-level resources for recovery, whereas low-impact hazards would likely only require local response efforts.

The Emergency Management Program conducts a consequence analysis for the hazards identified in Standard 4.1.1 to consider the impact on the environment.
Location: 1. Hazard Ranking & Total Risk Values | Eaton County Emergency Management HIRA 2. Consequence Analysis | Eaton County Emergency Management HIRA
Justification: Environmental impact is assessed by analyzing both the short- and long-term effects of a hazard on the natural surroundings. The analysis considers how much remediation will be required and whether the event will have lasting damage. Higher rankings in this category indicate significant environmental consequences that could take years to mitigate, whereas lower rankings indicate minor or no lasting damage.

The Emergency Management Program conducts a consequence analysis for the hazards identified in Standard 4.1.1 to consider the impact on the economic condition of the jurisdiction.
Location: 1. Hazard Ranking & Total Risk Values | Eaton County Emergency Management HIRA 2. Consequence Analysis | Eaton County Emergency Management HIRA

Justification: The program assesses how hazard events impact the local economy, including the costs of response and recovery. Events that severely strain local resources or exceed budgeted disaster funds would receive higher risk rankings, requiring state or federal financial assistance. Less severe hazards might be managed within local budgets without outside intervention.

The Emergency Management Program conducts a consequence analysis for the hazards identified in Standard 4.1.1 to consider the impact on the public's confidence in the jurisdiction's governance.
Location: 1. Hazard Ranking & Total Risk Values | Eaton County Emergency Management HIRA 2. Consequence Analysis | Eaton County Emergency Management HIRA
Justification: This factor examines the potential for hazard events to erode public trust in the government and emergency management's ability to effectively respond and recover. A high-ranking hazard in this category could lead to a significant downturn in public confidence, while lower-ranked hazards would have minimal to no effect on public trust.

4.1.3 The Emergency Management Program has a maintenance process for its Hazard Identification and Risk Assessment (HIRA) identified in Standard 4.1.1, and the Consequence Analysis identified in Standard 4.1.2, including a method and schedule for evaluation and revision.

Proof Documents

1. Review & Maintenance | Eaton County Emergency Management HIRA

The Emergency Management Program has a maintenance process for its Hazard Identification and Risk Assessment (HIRA) identified in Standard 4.1.1, and the Consequence Analysis identified in Standard 4.1.2, including a method and schedule for evaluation and revision.
Location: 1. Review & Maintenance | Eaton County Emergency Management HIRA
Justification: The Emergency Management Program has established a comprehensive maintenance process for its Hazard Identification and Risk Assessment (HIRA) and the associated Consequence Analysis. This process ensures ongoing evaluation and revision in accordance with Standard 4.1.1 and Standard 4.1.2. The HIRA is made accessible to the public through the county emergency management website and can be requested by interested parties, promoting transparency and community engagement. Additionally, the HIRA undergoes formal review by

planning partners with subject matter expertise, ensuring that the assessment remains relevant and effective. This version of the HIRA is integrated as Step 1 of the Threat and Hazard Identification and Risk Assessment (THIRA) process, reinforcing its foundational role in emergency management. To maintain compliance with the Emergency Management Accreditation Program (EMAP) standards, any changes or reviews will be verified against sections 4.1.1, 4.1.2, and 4.1.3. The HIRA will be formally revised as necessary, with a commitment to update it at least once every five years. Significant changes will be documented in the Record of Changes section, ensuring a systematic approach to maintaining and improving the HIRA and Consequence Analysis.

Demonstrations and Interview:

Ryan Wilkinson

Emergency Manager

Eaton County Emergency Management

911 Courthouse Dr., Charlotte, Michigan 48813

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EMAP Standard 4.2 Proof of Compliance

EMAP Standard

An Accredited Emergency Management Program has a mitigation program that regularly and systematically utilizes resources to mitigate the effects of emergencies/disasters associated with the risks and consequences identified in the Hazard Identification and Risk Assessment (HIRA).

4.2.1 The Emergency Management Program has a plan to implement mitigation projects and sets priorities based upon loss reduction. The plan:

1. is based on the natural and human-caused hazards identified in Standard 4.1.1 and the risk and consequences of those hazards.
2. is developed through formal planning processes involving Emergency Management Program stakeholders; and
3. establishes short and long-term strategies, actions, goals, and objectives.

Proof Documents

1. *Multi-Hazard Mitigation Plan (MHMP)*
    a. Link to web-based *MHMP*: Eaton County Emergency Management MHMP (arcgis.com)

Location of Proofs

The plan is based on the natural and human-caused hazards identified in Standard 4.1.1 and the risk and consequences of those hazards;
Location: 1. "Section 3. Hazard Identification and Risk Assessment" (pages 38-51P 2. "Section 4. Natural Hazard Profiles" (pages 52-93) 3. "Section 6. Human-caused Hazard Profiles" (pages 114-121)
Justification 1: The *Multi-Hazard Mitigation Plan (MHMP)* is built upon the natural and human-caused hazards identified in "Section 3. Hazard Identification and Risk Assessment (HIRA)". Additionally, the plan includes an analysis of technological hazards. "Section 3: Hazard Identification and Risk Assessment (HIRA)" (Pages 38-51) of the *MHMP* details the evaluation of risk factors, vulnerability, and overall consequences. This section provides a comprehensive Risk, Vulnerability, and Consequence (RVC) score for each hazard, offering a clear picture of the potential threats. **Justification 2:** Eaton County analyzes nine (9) natural hazards in "Section 4. Natural Hazard Profiles" (pages 52-93) that are reasonably likely to affect Eaton County. The analysis of each natural hazard includes general information, extent, previous occurrences, frequency, and vulnerability. **Justification 3:** Eaton County analyzes two (2) human-caused hazards in Section 6. Human-caused Hazards" (pages 114-121) that are reasonably likely to affect Eaton County. The analysis of

each human-caused hazard includes general information, extent, previous occurrences, frequency, and vulnerability.

The plan is developed through formal planning processes involving Emergency Management Program stakeholders; and
Location: “Section 1. Introductory Material”, Subsection “1.5 Planning Process” (pages 13-20)
Justification: “Section 1. Introductory Material”, Subsection “1.5 Planning Process”, presents an illustration of the planning process (pages 13-20) and provides a detailed explanation of the six (6) steps involved. It also highlights the contributions from emergency management program stakeholders to include local jurisdictions, the public, and other key internal and external stakeholders.

The plan establishes short and long-term strategies, actions, goals, and objectives.
Location: “Section 7. Hazard Mitigation Strategy” (pages 122-154)
Justification: "Section 7: Hazard Mitigation Strategy" (pages 122-154) outlines both the short- and long-term strategies (page 124), and the short- and long-term goals and objectives (pages 124-125). It also details the development and prioritization of the short- and long-term actions, including completed actions since 2023, cancelled actions since 2023, and new or ongoing actions for the updated *MHMP*.

4.2.2 The Emergency Management Program documents project ranking based upon the greatest opportunity for loss reduction and documents how specific mitigation actions contribute to overall risk reduction.

Proof Documents

1. *Multi-Hazard Mitigation Plan (MHMP)*
    a. Link to web-based *MHMP*: Eaton County Emergency Management MHMP (arcgis.com)

Location of Proofs

The Emergency Management Program documents project ranking based upon the greatest opportunity for loss reduction and documents how specific mitigation actions contribute to overall risk reduction.
Location: 4. “Section 7. Hazard Mitigation Strategy”, subsection “7.5 Hazard Mitigation Action Prioritization” (pages 126-129)

5. "Section 7. Hazard Mitigation Strategy", subsection "7.8 New/Continued Hazard Mitigation Actions – Short-term Goals, Objectives, and Actions" (pages 134-141) and "7.10 Short-term Action (STA) Scoring Tool" (pages 147-149) 6. "Section 7. Hazard Mitigation Strategy", subsection "7.11 New/Continued Hazard Mitigation Actions – Long-term Goals, Objectives, and Actions" (pages 149-151) and subsection "7.13 Long-term Action (LTA) Scoring Tool" (page 154)
Justification 1: "Section 7. Hazard Mitigation Strategy", Subsection "7.5 Hazard Mitigation Action Prioritization" (pages 126-129) identifies the STAPLEE method for hazard mitigation action prioritization. Thirteen (13) criteria are used. Each hazard mitigation action could score up to 26 points, leading to a project ranking of low priority, medium priority, or high priority based on total score. **Justification 2:** Subsection "7.8 New/Continued Hazard Mitigation Actions – Short-term Goals, Objectives, and Actions" (pages 134-141) describes the action ID, short-term action (STA), the jurisdiction that the action applies to, the project benefits that contribute to overall risk reduction and the hazards addressed. Subsection "7.10 Short-term Action (STA) Scoring Tool" (pages 147-149) ranks the projects using the STAPLEE method to produce an overall project priority of low priority, medium priority, or high priority based on total score. **Justification 3:** Subsection "7.11 New/Continued Hazard Mitigation Actions – Long-term Goals, Objectives, and Actions" (pages 149-151) describes the action ID, long-term action (LTA), the jurisdiction that the action applies to, the project benefits that contribute to overall risk reduction and the hazards addressed. Subsection "7.13 Long-term Action (LTA) Scoring Tool" (page 154) ranks the projects using the STAPLEE method to produce an overall project priority of low priority, medium priority, or high priority based on total score.

4.2.3 The Emergency Management Program utilizes a process to monitor the overall progress of the mitigation activities and documents completed initiatives and their resulting reduction or limitation of hazard impact on the jurisdiction.

Proof Documents

1. *Multi-Hazard Mitigation Plan (MHMP)*
    a. Link to web-based *MHMP*: Eaton County Emergency Management MHMP (arcgis.com)

Location of Proofs

The Emergency Management Program utilizes a process to monitor the overall progress of the mitigation activities and documents completed initiatives and their resulting reduction or limitation of hazard impact on the jurisdiction.
Location: "Appendix C: Plan Maintenance Forms" (page 171)
Justification: Eaton County Emergency Management is responsible for completing and submitting plan progress report forms for each short- and long-term hazard mitigation action on an annual

basis, or as projects are completed. The plan progress report form (page 171) documents the mitigation action/project progress status and provides an overall summary of action/project progress. These forms are filed away and uploaded to the web-based *MHMP* for public review.

4.2.4 The Emergency Management Program, consistent with the scope of the mitigation program, does the following:

1. identifies ongoing mitigation opportunities and tracks repetitive loss.
2. provides technical assistance in implementing mitigation codes and ordinances; and
3. participates in jurisdictional and multi-jurisdictional mitigation efforts.

Proof Documents

1. *Multi-Hazard Mitigation Plan (MHMP)*
    a. Link to web-based *MHMP*: Eaton County Emergency Management MHMP (arcgis.com)

Location of Proofs

The Emergency Management Program, consistent with the scope of the mitigation program identifies ongoing mitigation opportunities and tracks repetitive loss.
Location: 1. "Section 7. Hazard Mitigation Strategy", subsection "7.8 New/Continued Hazard Mitigation Actions – Short-term Goals, Objectives, and Actions" (pages 138-139) 2. "Section 4. Natural Hazard Profiles", subsection "4.6 Flood" subsubsection "4.6.3 Repetitive Loss Properties" (page 78-79)
Justification 1: Some mitigation opportunities are considered ongoing. For example, the short-term action (STA) 1.1.1 (page 138) of "Promote the importance of having multiple ways to receive alerts, warnings, and notifications to both internal and external stakeholders. This action enhances the likelihood of protective action taking and reduces milling time when individuals are at risk" is continuous through various means of communication, to include social media, community outreach events, etc. Additionally, STA 3.1.3 addresses the continued implementation and regular use of the Rave Panic Button system in K-12 schools (page 139). This is an ongoing opportunity. **Justification 2:** "Section 4. Natural Hazard Profiles", subsection "4.6 Flood" subsubsection "4.6.3 Repetitive Loss Properties" (page 78-79) identifies that repetitive loss properties are tracked using FEMA's 2024 Repetitive Property Data. The subsubsection (page 78-79) identifies that "Eaton County has a total of fourteen repetitive loss properties listed in the official NFIP database. Two are in Delta Township—a single-family home that has suffered an average of $4,263 per flooding event during two events in the 1980s, and a non-residential structure that has seen an average of $20,861 in damage during each of its three reported events since 1980. One property was noted within the City of Eaton Rapids, a single-family home with two flood events since 1999, which averaged $2,498 in damage per event. Eaton Rapids Township also has a vulnerable single-family

home that saw three damaging flood events starting in 2008, causing an average of $5,287 in damage each time. Finally, Windsor Township has eight single-family homes on the official list, three of which are located on the same street. All eight of these homes have a history of two reported flood events, mostly during the 1980s but a quarter of the events have occurred since 2004. The average damage per event for each home was $5,740".

The Emergency Management Program, consistent with the scope of the mitigation program provides technical assistance in implementing mitigation codes and ordinances.
Location: "Section 7. Hazard Mitigation Strategy", subsection "7.11 New/Continued Hazard Mitigation Actions – Long-term Goals, Objectives, and Actions" (page 150)
Justification: Long-term Action (LTA) 2.1.1 states to "Engage with local governments, private sector partners, developers, community organizations, and other stakeholders maintain, promote, and/or revise zoning regulations, building codes, retrofits, target hardening, and development standards to minimize hazard exposure and enhance resilient mitigation practices". It is important to note that while Eaton County Emergency Management may not have the specialized expertise to provide direct technical assistance, it can engage key stakeholders and subject matter experts who are equipped to offer the necessary technical support.

The Emergency Management Program, consistent with the scope of the mitigation program participates in jurisdictional and multi-jurisdictional mitigation efforts.
Location: 1. "Section 7. Hazard Mitigation Strategy", subsection "7.8 New/Continued Hazard Mitigation Actions – Short-term Goals, Objectives, and Actions" (pages 134-141) 2. "Section 7. Hazard Mitigation Strategy", subsection "7.11 New/Continued Hazard Mitigation Actions – Long-term Goals, Objectives, and Actions" (page 149-151)
Justification 1: Many short-term actions (STA) include jurisdictional and multi-jurisdictional mitigation efforts. For example, STA 3.1.2 assigns Eaton County and all townships, cities, and villages to "Promote the adoption and use of Smart911 among residents to enhance emergency response capabilities" (page 138). This can be done through the sharing of social media, community outreach events, etc. **Justification 2:** A long-term actions (LTA) that includes jurisdictional and multi-jurisdictional mitigation efforts includes LTA 2.1.1 which assigns Eaton County and all townships, cities, and villages to "Engage with local governments, private sector partners, developers, community organizations, and other stakeholders maintain, promote, and/or revise zoning regulations, building codes, retrofits, target hardening, and development standards to minimize hazard exposure and enhance resilient mitigation practices." (page 150). This can be done through general information sharing, jurisdictional or multi-jurisdictional meetings, etc.

4.2.5 The Emergency Management Program has a maintenance process for the plan identified in Standard 4.2.1, including a method and schedule for evaluation and revision.

Proof Documents

2. *Multi-Hazard Mitigation Plan (MHMP)*
    a. Link to web-based *MHMP*: Eaton County Emergency Management MHMP (arcgis.com)
3. *Plans Maintenance Policy*

Location of Proofs

The Emergency Management Program has a maintenance process for the plan identified in Standard 4.2.1, including a method and schedule for evaluation and revision.
Location: 3. "Section 1. Introductory Material", subsection "1.5 Planning Process", subsubsection "1.5.5 Step 6: Method and Schedule for Evaluation, Maintenance and Revision" (pages 19-20) 4. *Plans Maintenance Policy*
Justification 1: "Section 1. Introductory Material", subsection "1.5 Planning Process", subsubsection "1.5.5 Step 6: Method and Schedule for Evaluation, Maintenance and Revision" (page 19) states, "The MHMP will be reviewed using this planning process in accordance with the Eaton County Emergency Management *Plans Maintenance Policy*". Additional information includes how plan revisions occur (page 19) and maintenance evaluation criteria considerations (page 20). **Justification 2:** The *Plans Maintenance Policy* identifies that the *MHMP* will be updated using the established planning process on a 5-year cycle.

Demonstrations and Interview:

Ryan Wilkinson

Emergency Manager

Eaton County Emergency Management

911 Courthouse Dr., Charlotte, Michigan 48813

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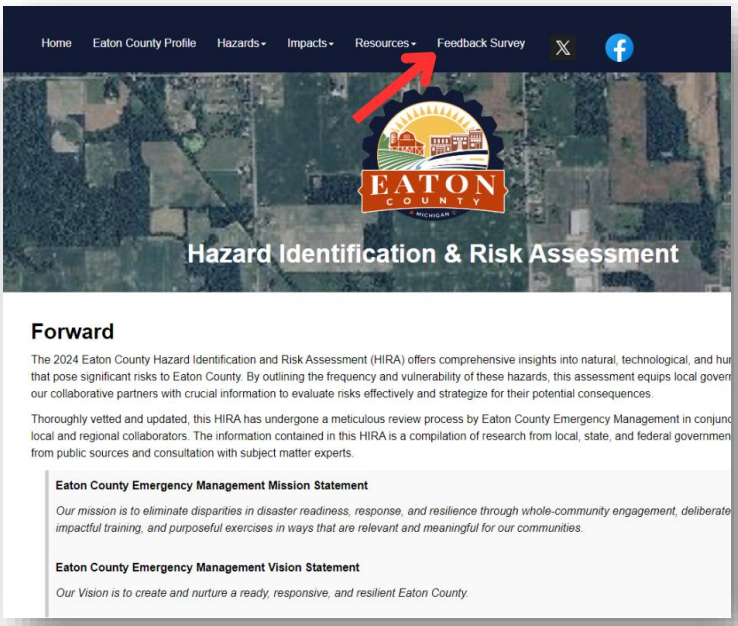
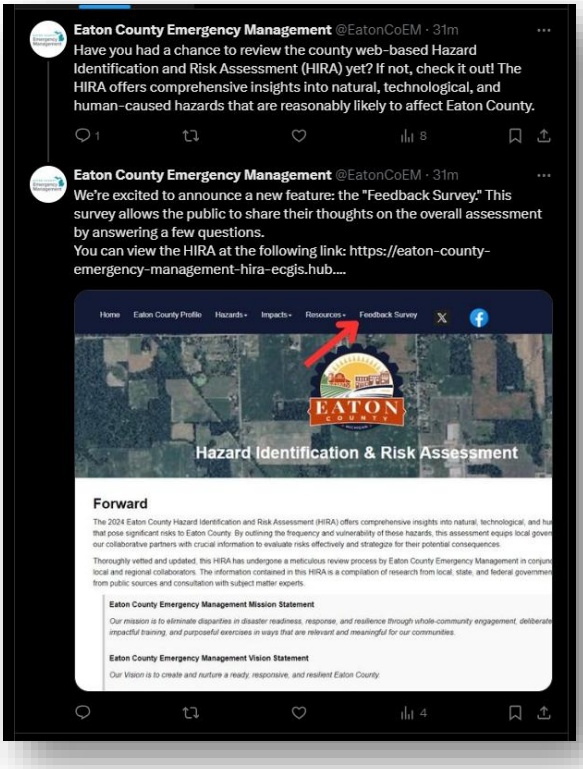
Appendix B: Planning Process Documentation

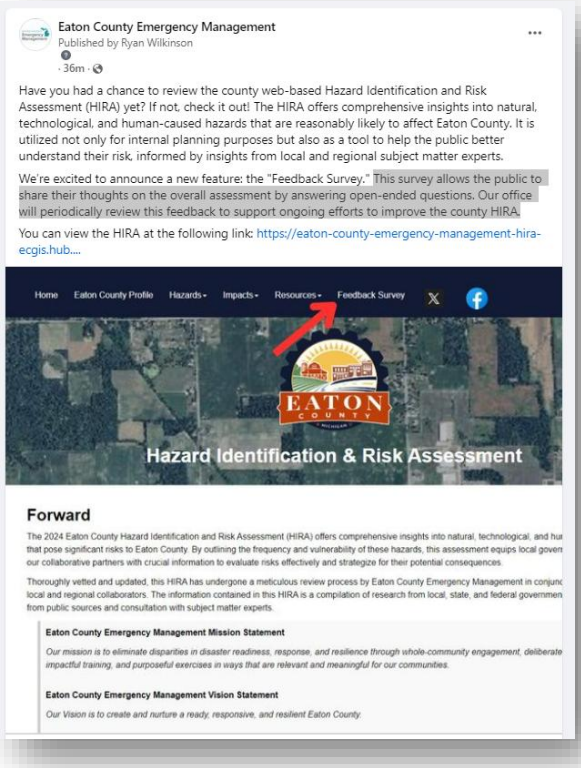
Hazard Identification and Risk Assessment (HIRA) Feedback Survey

The web-based, publicly accessible *HIRA* includes a "Feedback Survey." This survey allows the public to share their thoughts on the overall assessment by answering open-ended questions. Our office will periodically review this feedback to support ongoing efforts to improve the county *HIRA*.



Example of Social Media Postings Promoting the HIRA Feedback Survey





Collaborative Planning Team Meetings and Capabilities Assessment

Thu 9/12/2024 10:58 AM

Ryan Wilkinson

Multi-Hazard Mitigation Plan Capabilities Assessment

To Yvonne Ridg; Aaron Sherid; Denis Pri; bellevueclerk@gmail.c; benton_twp_super@aol; bentontownship.clerk@gmai; debbiegranger30@gmail; clerk@carmeltownship; froglady0816@gmail.c; Brian Ree; clerk@eatontownship.; clerkertwp@acd.; clerk@hamlintownshipmi; kt0849@yahoo.cc; jkilgore@oneidatownshi; walton.clerk@gmail.c; supervisor@windsortownshi; manager@bellevuemi; clerk@vermontville-mi.; dkepitis@hotmail.c; duitssm@yahoo.cc; jowens7540@yahoo.c; shellthekid@yahoo.c

Cc Ella Gardn

Good afternoon Township, City, and Village leaders! Our department is seeking help from your jurisdiction in order to update our county Multi-Hazard Mitigation Plan (MHMP).

Our MHMP, per United States Code, requires us to provide, "An opportunity for neighboring communities, local and regional agencies involved in hazard mitigation activities, and agencies that have the authority to regulate development, as well as businesses, academia and other private a non-profit interests to be involved in the planning process." For a jurisdiction to be considered a participant in the planning process, the following requirements must be met:

1. Each of the 26 political subdivisions must meet either in-person or virtually with Eaton County Emergency Management representatives to discuss community capabilities, vulnerabilities, threats, and overall risks, discuss plan elements, and a plan draft.
2. The jurisdiction completes a capability assessment survey outlining planning and regulatory capabilities, administrative and technical capabilities, financial capabilities, and public information and education capabilities.
3. The jurisdiction is offered an opportunity to provide input on the Hazard Identification and Risk Assessment (HIRA).
4. The jurisdiction provides at least one (1) short-term or long-term hazard mitigation action.

We believe we can address many of these requirements with a brief 30-minute Zoom meeting, preceded by an email outlining key points. Understanding that township, city, and village offices across the county have varying operating hours, we've scheduled a 30-minute Zoom session **each day during the week of September 23rd at 10:00 a.m.** to accommodate different schedules. If one of these days works with your schedule, we ask that you save the Zoom link below and mark it on your calendar to attend. If none of these days works with your schedule and you want to participate, please let me know and we'll figure out a time to meet.

We hope you'll be able to pop in to one of our virtual sessions to help us as we work to update this plan!

Zoom information for Monday (9/23), Tuesday (9/24), Wednesday (9/25), Thursday (9/26) and Friday (9/27). All meetings are at 10:00 am.
Join Zoom Meeting
https://us02web.zoom.us/j/86461643622?pwd=vcIqOtRaDK9gvRaFjbpcHZHbQKYBpl.1

Ryan Wilkinson
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County of Eaton
Emergency Management
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Fri 9/20/2024 10:58 AM

Ryan Wilkinson

Multi-Hazard Mitigation Plan Capabilities Assessment

To Yvonne Ridge; Aaron Sheridan; Denis Prisk; bellevueclerk@gmail.com; benton_twp_super@aol.com; bentontownship.clerk@gmail.com; debbiegranger30@gmail.com; clerk@carmeltownship.org; froglady0816@gmail.com; Brian Reed; clerk@eatontownship.com; clerkertwp@acd.net; clerk@hamlintownshipmi.com; kt0849@yahoo.com; jkilgore@oneidatownship.org; walton.clerk@gmail.com; supervisor@windsortownship.com; manager@bellevuemi.net; clerk@vermontville-mi.gov; dkepitis@hotmail.com; duitssm@yahoo.com; jowens7540@yahoo.com; shellthekid@yahoo.com

Cc Ella Gardner

General Meeting Agenda for Collaborative Planning Team - Jurisdictions.pdf
.pdf File

Good morning Good afternoon Township, City, and Village leaders and happy Friday!

We hope you're still planning to join us for one of the upcoming Multi-Hazard Mitigation Plan (MHMP) Capabilities Assessment virtual meetings next week. As a reminder, we will be hosting five Zoom meetings, one each day, at 10:00 AM. To actively participate in the MHMP process, each of the 26 political subdivisions must meet either in-person or virtually with Eaton County Emergency Management representatives to discuss community capabilities, vulnerabilities, threats, and overall risks, discuss plan elements, and a plan draft. We anticipate the meeting to be a half-hour or less.

I have attached a general meeting agenda. I would also encourage you to take the opportunity to review the web-based Hazard Identification and Risk Assessment (HIRA) at the following link prior to participating: Eaton County Emergency Management HIRA (arcgis.com). If you feel compelled to do so, feel free to leave feedback on the HIRA by clicking on "Feedback Survey". A Google Form with open-ended questions will pop-up, allowing you to leave feedback.

We hope you'll be able to pop in to one of our virtual sessions to help us as we work to update and compile this plan! Let us know if you have any questions. Have a great weekend.

Zoom information for Monday (9/23), Tuesday (9/24), Wednesday (9/25), Thursday (9/26) and Friday (9/27). All meetings are at 10:00 am.
Join Zoom Meeting
https://us02web.zoom.us/j/86461643622?pwd=vcIqOtRaDK9gvRaFjbpcHZHbQKYBpl.1

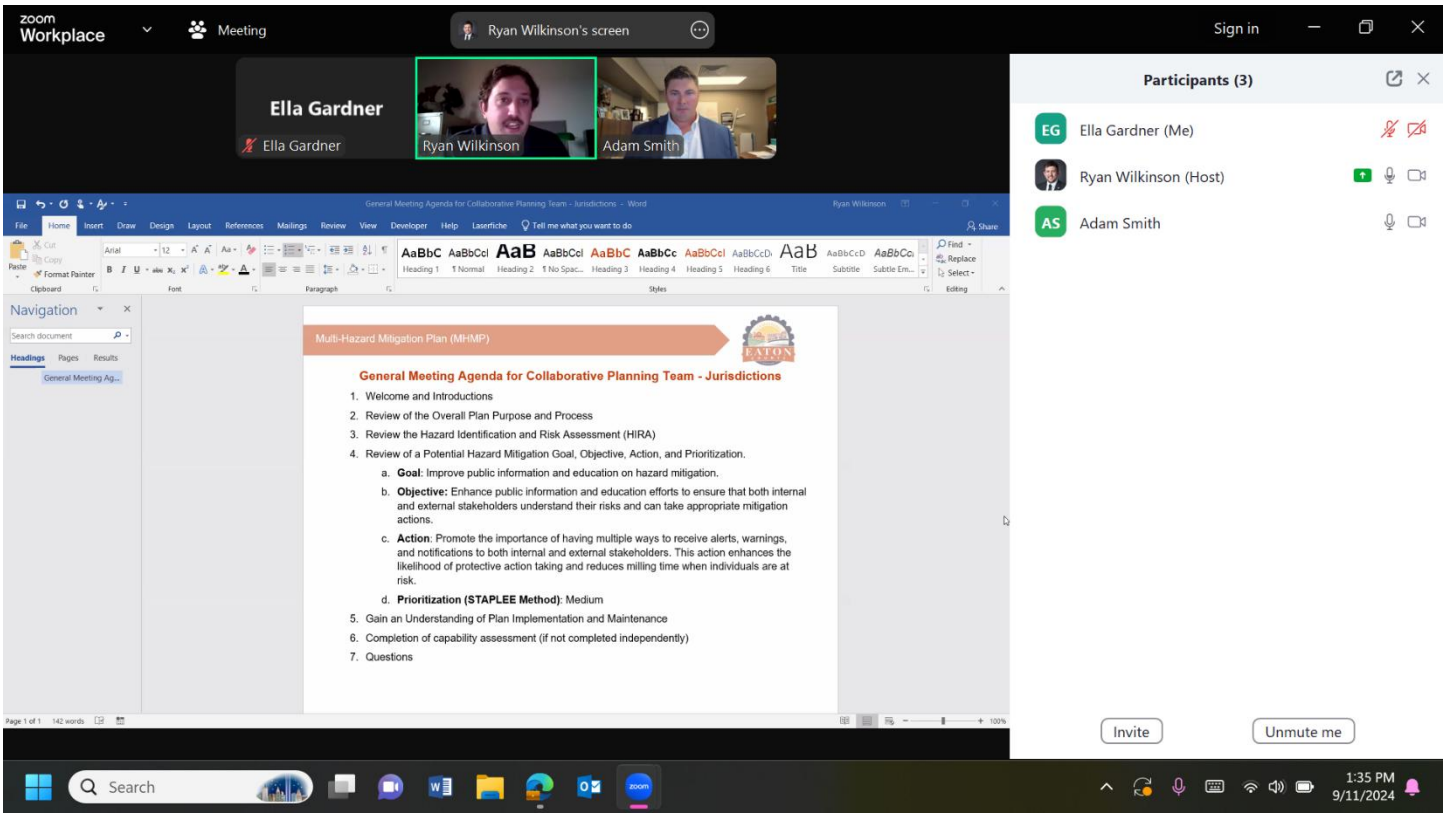
Ryan Wilkinson
Emergency Manager
County of Eaton
Emergency Management
911 Courthouse Dr., Charlotte, Michigan 48813
Desk: 517-543-5341
Cell: 517-983-4354

Jurisdictional *MHMP* Overview and Capabilities Assessment Meetings

Multi-Hazard Mitigation Plan (MHMP)

General Meeting Agenda for Collaborative Planning Team - Jurisdictions

1. Welcome and Introductions
2. Review of the Overall Plan Purpose and Process
3. Review the Hazard Identification and Risk Assessment (HIRA)
4. Review of an EXAMPLE Potential Hazard Mitigation Goal, Objective, Action, and Prioritization.
    a. **Goal**: Improve public information and education on hazard mitigation.
    b. **Objective:** Enhance public information and education efforts to ensure that both internal and external stakeholders understand their risks and can take appropriate mitigation actions.
    c. **Action**: Promote the importance of having multiple ways to receive alerts, warnings, and notifications to both internal and external stakeholders. This action enhances the likelihood of protective action taking and reduces milling time when individuals are at risk.
    d. **Prioritization (STAPLEE Method)**: Medium
5. Plan Implementation and Maintenance
6. Completion of capability assessments
7. Questions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Meeting
Ryan Wilkinson's screen
Sign in
Ella Gardner
Ella Gardner
Ryan Wilkinson
Adam Smith
Participants (3)
EG Ella Gardner (Me)
Ryan Wilkinson (Host)
AS Adam Smith
Invite
Unmute me
Multi-Hazard Mitigation Plan (MHMP)
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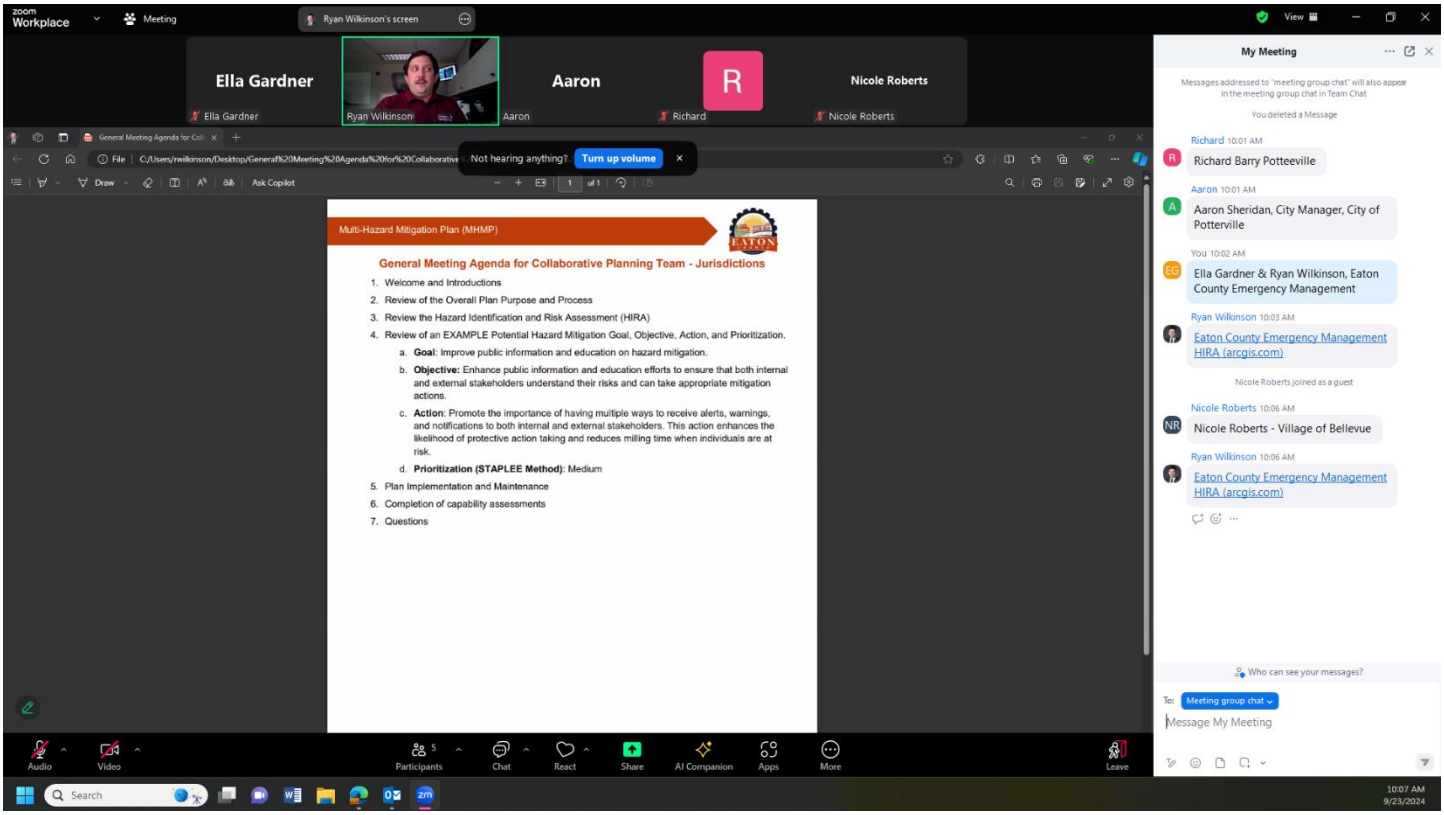
d. Prioritization (STAPLEE Method): Medium
5. Gain an Understanding of Plan Implementation and Maintenance
6. Completion of capability assessment (if not completed independently)
7. Questions
Search
1:35 PM
9/11/2024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Aaron
Aaron
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Richard
Nicole Roberts
Nicole Roberts
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Turn up volume
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7. Questions
My Meeting
Richard 10:01 AM
Richard Barry Potteeville
Aaron 10:01 AM
Aaron Sheridan, City Manager, City of Potterville
You 10:02 AM
Ella Gardner & Ryan Wilkinson, Eaton County Emergency Management
Ryan Wilkinson 10:03 AM
Eaton County Emergency Management HIRA (arcgis.com)
Nicole Roberts joined as a guest
Nicole Roberts 10:06 AM
Nicole Roberts - Village of Bellevue
Ryan Wilkinson 10:06 AM
Eaton County Emergency Management HIRA (arcgis.com)
Message My Meeting
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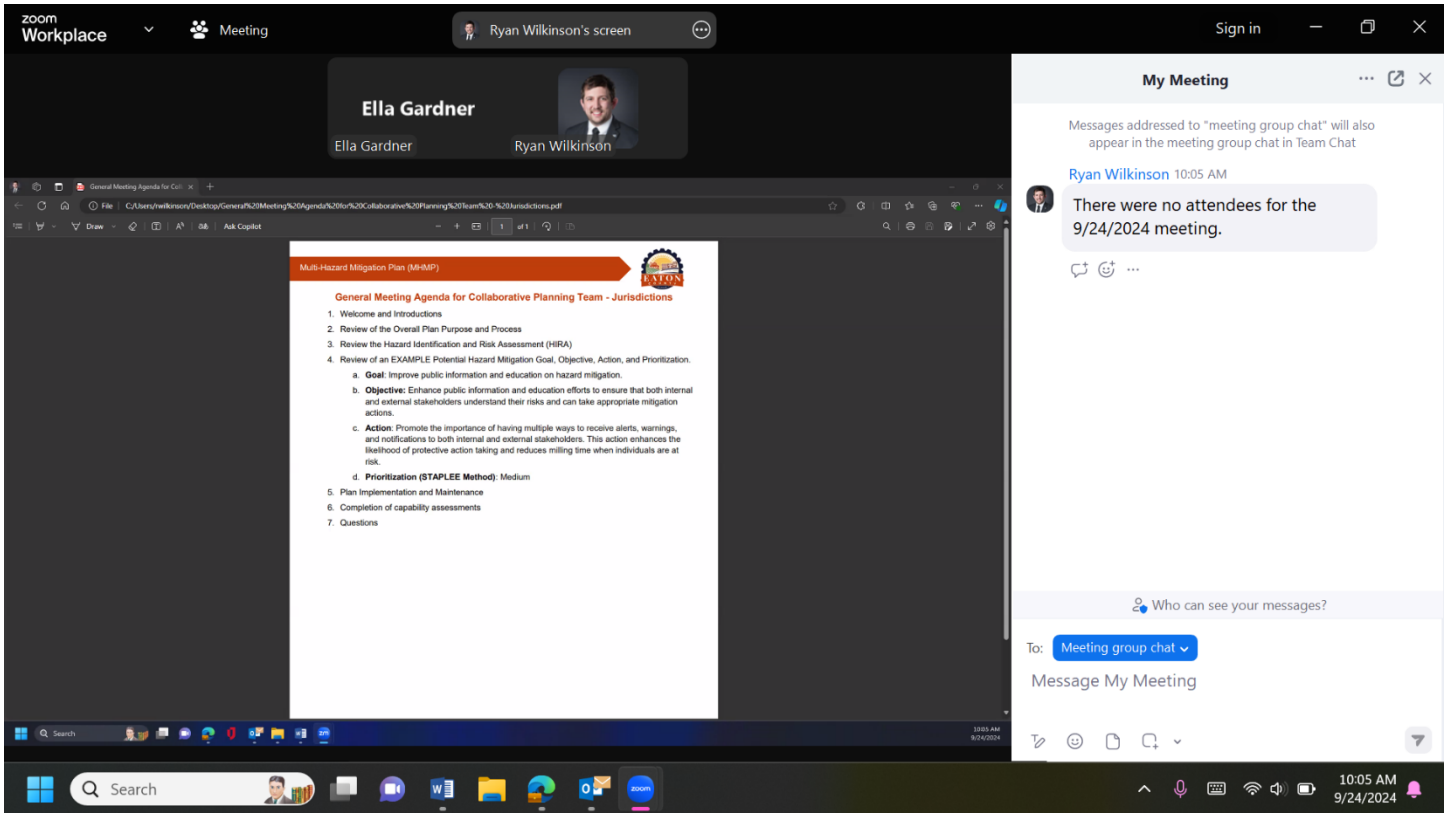
9/23/2024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7. Questions
My Meeting
Messages addressed to "meeting group chat" will also appear in the meeting group chat in Team Chat
Ryan Wilkinson 10:05 AM
There were no attendees for the 9/24/2024 meeting.
Who can see your messages?
To: Meeting group chat
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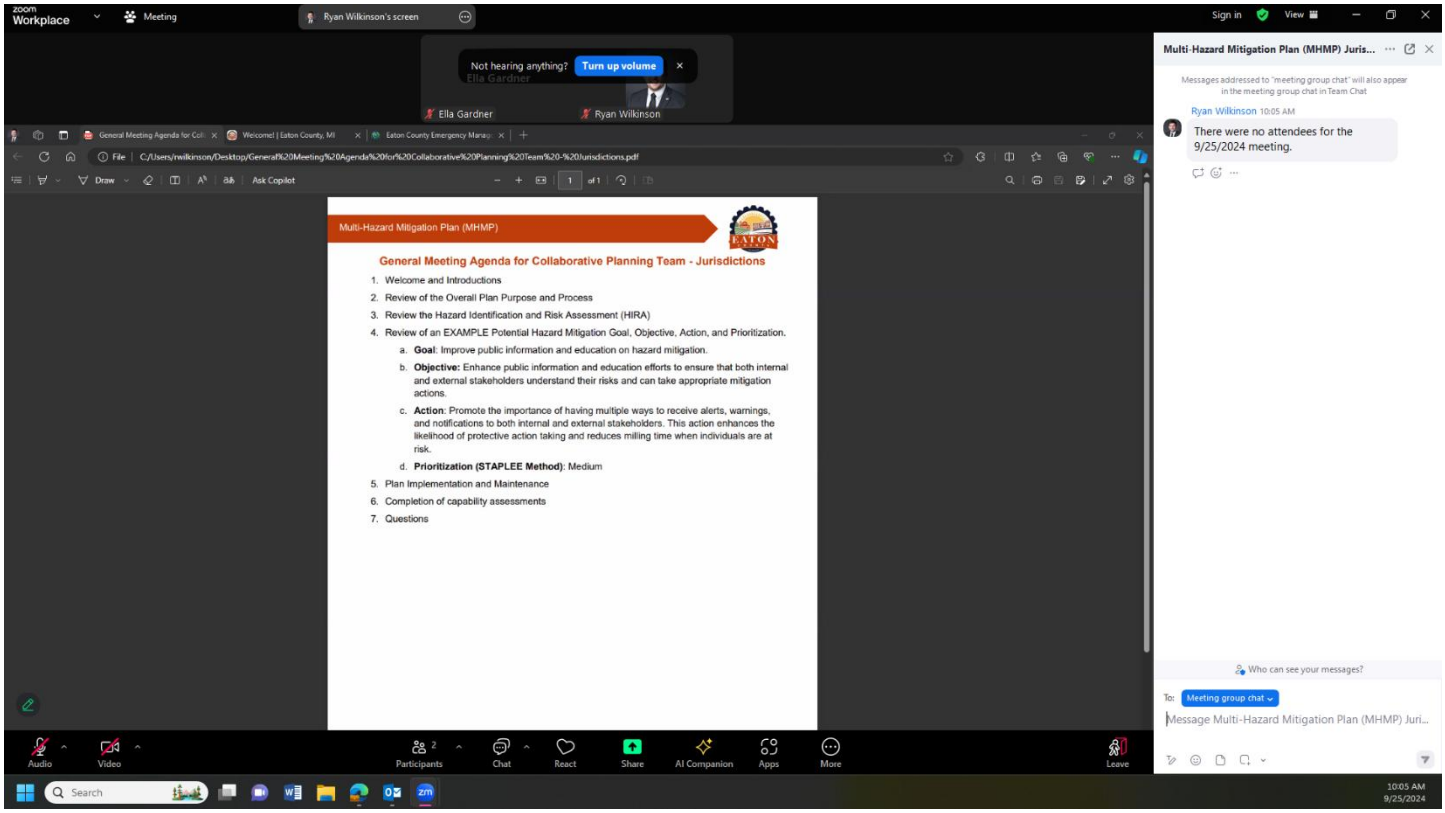
10:05 AM
9/24/2024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Not hearing anything?
Turn up volume
Ella Gardner
Ryan Wilkinson
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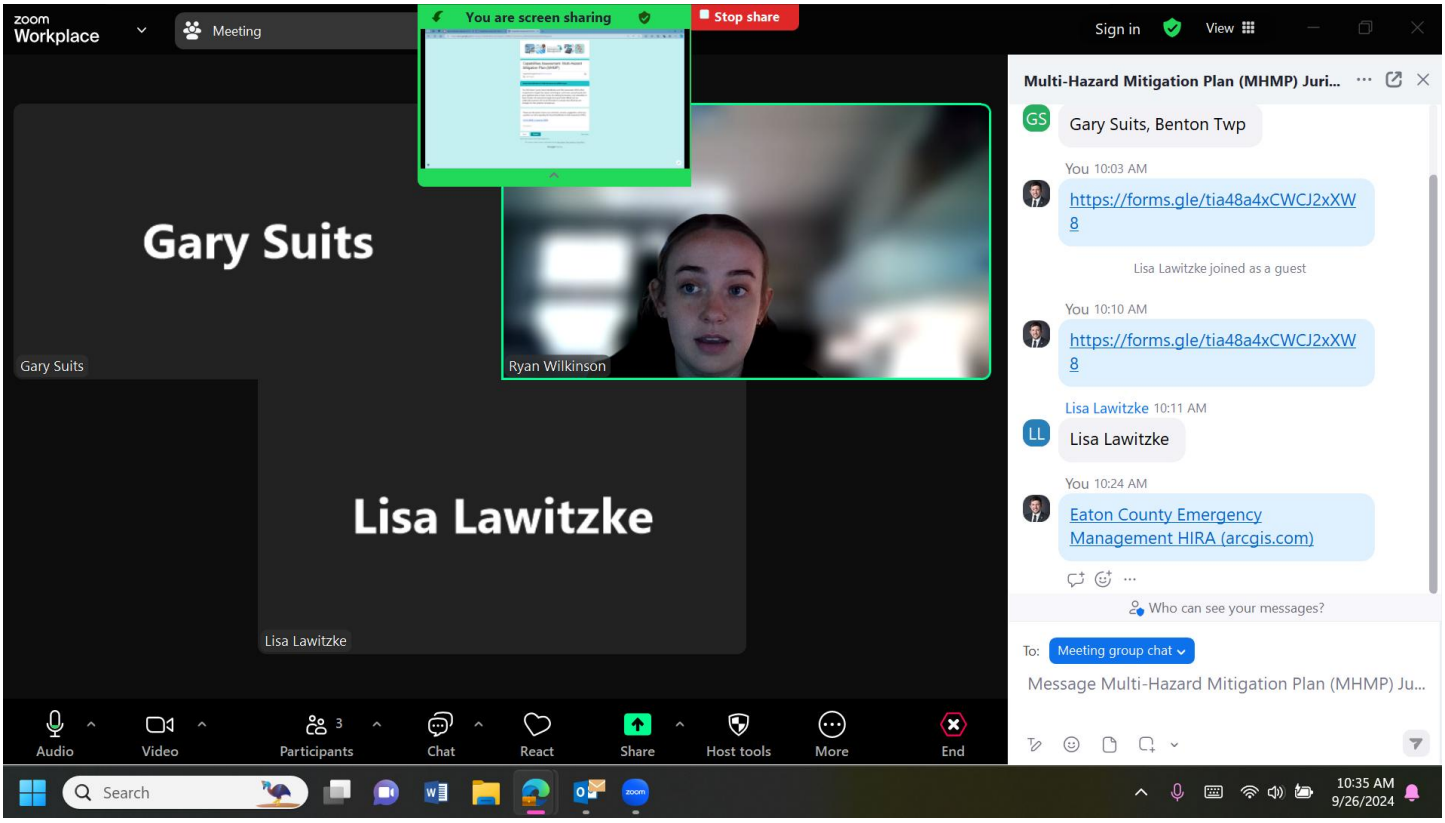
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Gary Suits
Gary Suits
Ryan Wilkinson
Lisa Lawitzke
Lisa Lawitzke
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Gary Suits, Benton Twp
You 10:03 AM
https://forms.gle/tia48a4xCWCJ2xXW8
Lisa Lawitzke joined as a guest
You 10:10 AM
https://forms.gle/tia48a4xCWCJ2xXW8
Lisa Lawitzke 10:11 AM
Lisa Lawitzke
You 10:24 AM
Eaton County Emergency Management HIRA (arcgis.com)
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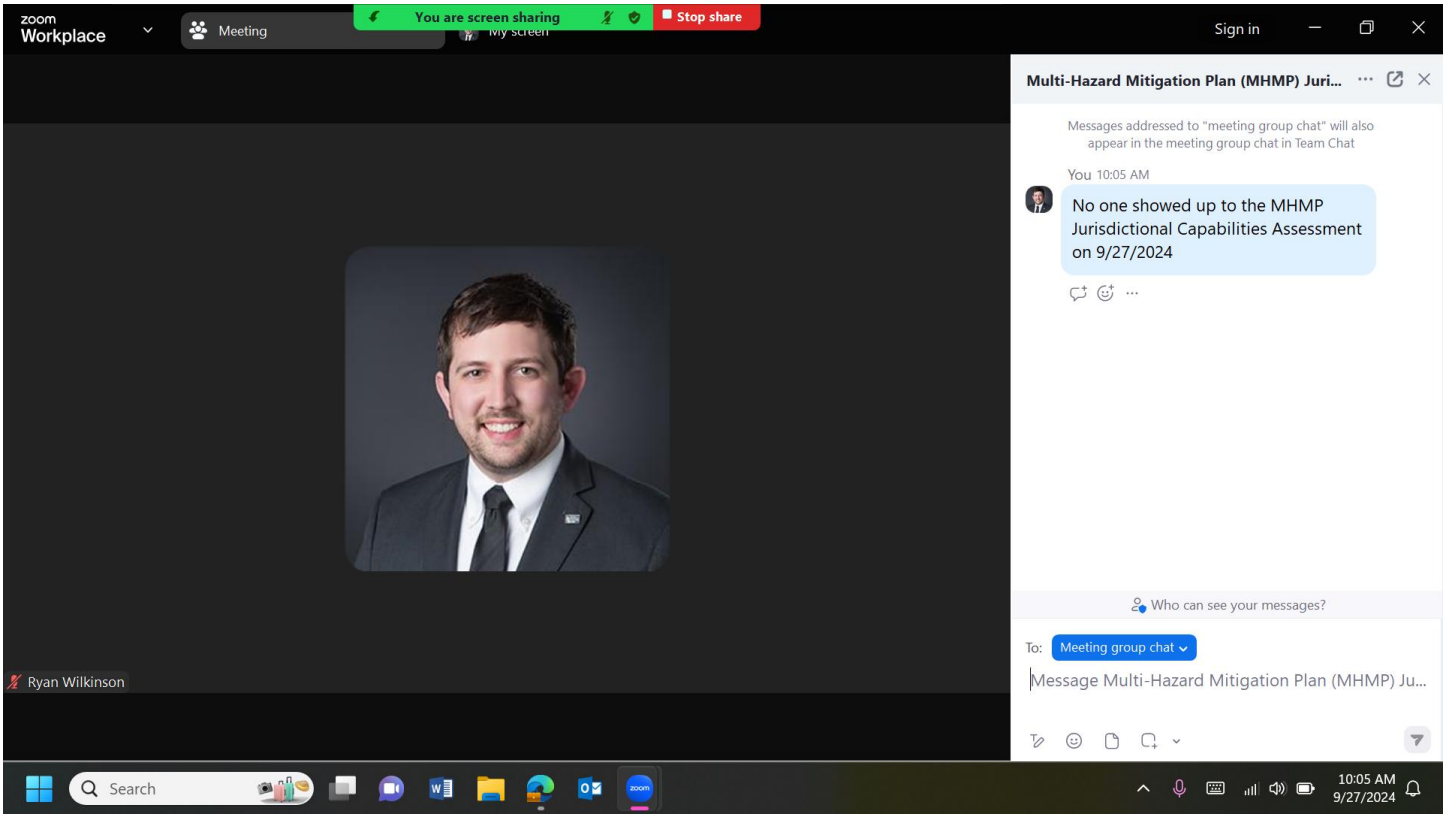
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Stop share
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Ryan Wilkinson
Multi-Hazard Mitigation Plan (MHMP) Juri...
Messages addressed to "meeting group chat" will also appear in the meeting group chat in Team Chat
You 10:05 AM
No one showed up to the MHMP Jurisdictional Capabilities Assessment on 9/27/2024
Who can see your messages?
To: Meeting group chat
Message Multi-Hazard Mitigation Plan (MHMP) Ju...
Search
10:05 AM
9/27/2024

Reply Reply All Forward

Tue 10/1/2024 6:22 AM

Ryan Wilkinson

Capabilities Assessment

To Yvonne Ridge; Aaron Sheridan; Denis Prisk; bellevueclerk@gmail.com; benton_twp_super@aol.com; bentontownship.clerk@gmail.com; debbiegranger30@gmail.com; clerk@carmeltownship.org; froglady0816@gmail.com; Brian Reed; clerk@eatontownship.com; clerkertwp@acd.net; clerk@hamlintownshipmi.com; kt0849@yahoo.com; jkilgore@oneidatownship.org; walton.clerk@gmail.com; Paul Brentar; supervisor@windsortownship.com; manager@bellevuemi.net; clerk@vermontville-mi.gov; dkepitis@hotmail.com; duitssm@yahoo.com; jowens7540@yahoo.com; shellthekid@yahoo.com; Adam Smith; Amy Huepenbecker; tfullerton@charlottemi.org; Dan Daly; elapere@deltami.gov

Cc Ella Gardner

Good morning everyone!

Thank you to those who have met with us to discuss the update to our Multi-Hazard Mitigation Plan (MHMP). The following communities have participated in a meeting, reviewed the overall plan and purpose, had an opportunity to comment on our Hazard Identification and Risk Assessment (HIRA), reviewed an example applicable hazard mitigation action for all participating communities, and completed a capability assessment:

Townships
Bellevue Township
Benton Township

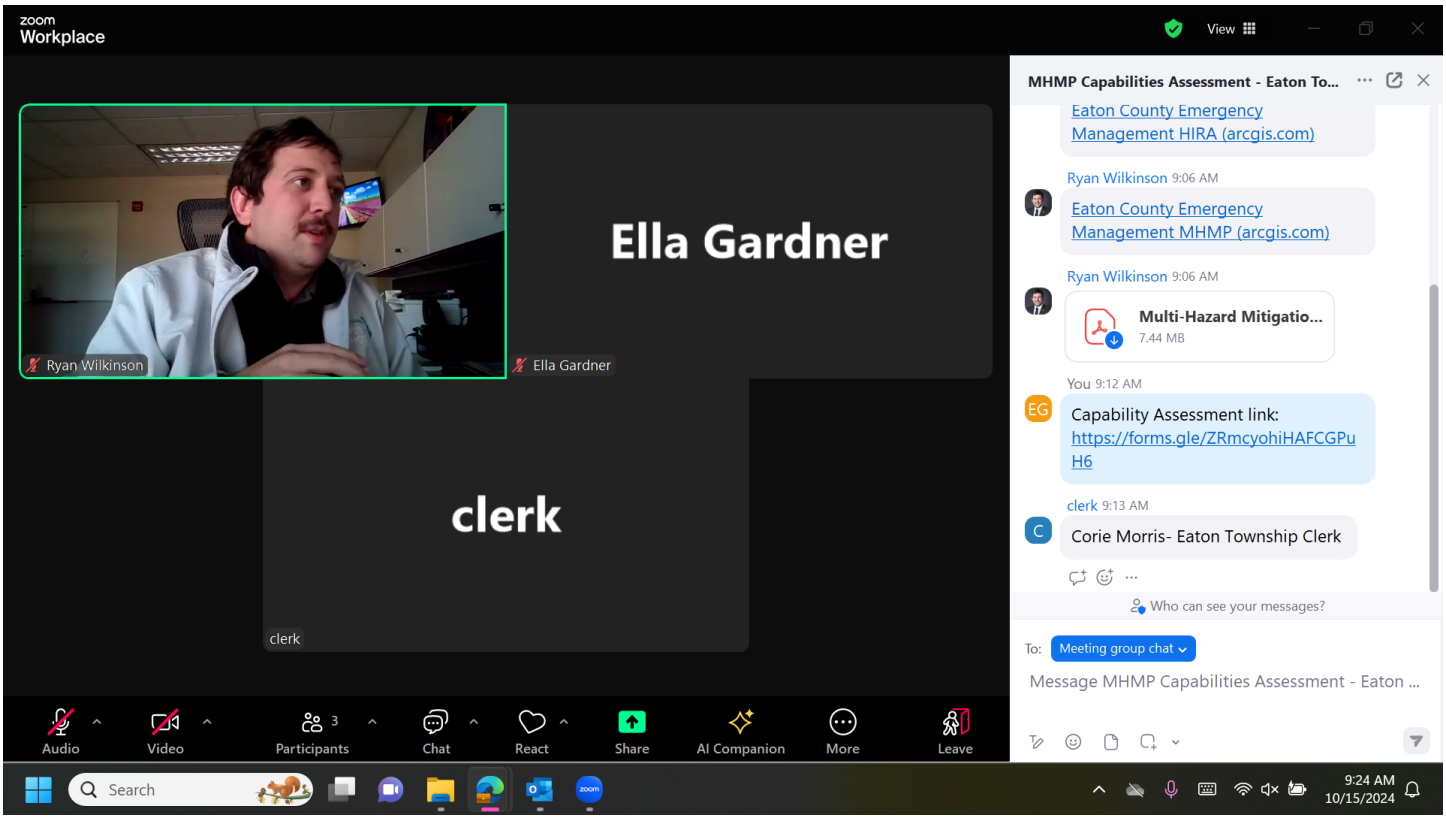
Cities
City of Charlotte
City of Grand Ledge
City of Olivet
City of Potterville

Villages
Village of Bellevue

There is still time to participate! We do not intend to submit the plan to the state and FEMA for review until the end of October, following a public comment period later this month. If you still wish to participate, lets get something on the books in the next couple/few weeks. We would love to have as much participation as possible from communities across the county. Just reach out to myself and Ella separately from this email and we'll schedule a virtual or in person meeting.

Ryan Wilkinson
Emergency Manager
County of Eaton
Emergency Management
911 Courthouse Dr., Charlotte, Michigan 48813
Desk: 517-543-5341
Cell: 517-983-4354

EATON COUNTY Emergency Management



Barry, Calhoun, and Ionia Counties (Adjacent Counties)

Multi-Hazard Mitigation Plan (MHMP) DRAFT Review

Ryan Wilkinson
To Chris Young; fstraubel@ioniacounty.org; Jim Yarger

Reply | Reply All | Forward

Wed 10/9/2024 3:50 PM

Multi-Hazard Mitigation Plan (MHMP) DRAFT.pdf
7 MB

Good afternoon neighbors in Barry, Calhoun, and Ionia Counties!

As part of our planning process and open comment period with internal and external stakeholders, we are sharing our Multi-Hazard Mitigation Plan (MHMP) with you for your review and feedback. This plan was updated back in late 2022/early 2023. This updated version is more relevant and meaningful to us and is aligned with the new and continued projects happening across Eaton County, featuring practical and achievable short- and long-term mitigation actions. Additionally, we believe this plan to be aligned to all Emergency Management Accreditation Program (EMAP) standards.

Additionally, given the amount of ongoing participation and feedback of mitigation planning per United States Code, we have created a web-based version of the plan that is also mobile friendly through ArcGIS hub. You can view the web-based that here. We are still tweaking some things on the mobile view, but it is mostly ready to go. Use the same link from your phone to view the mobile version.

We welcome your feedback in two ways:

1. Reply directly to this email with your comments.
2. Submit feedback via the "Feedback Survey" on the web-based version of the MHMP.

Any feedback received will be included under "Appendix B: Planning Process Documentation."

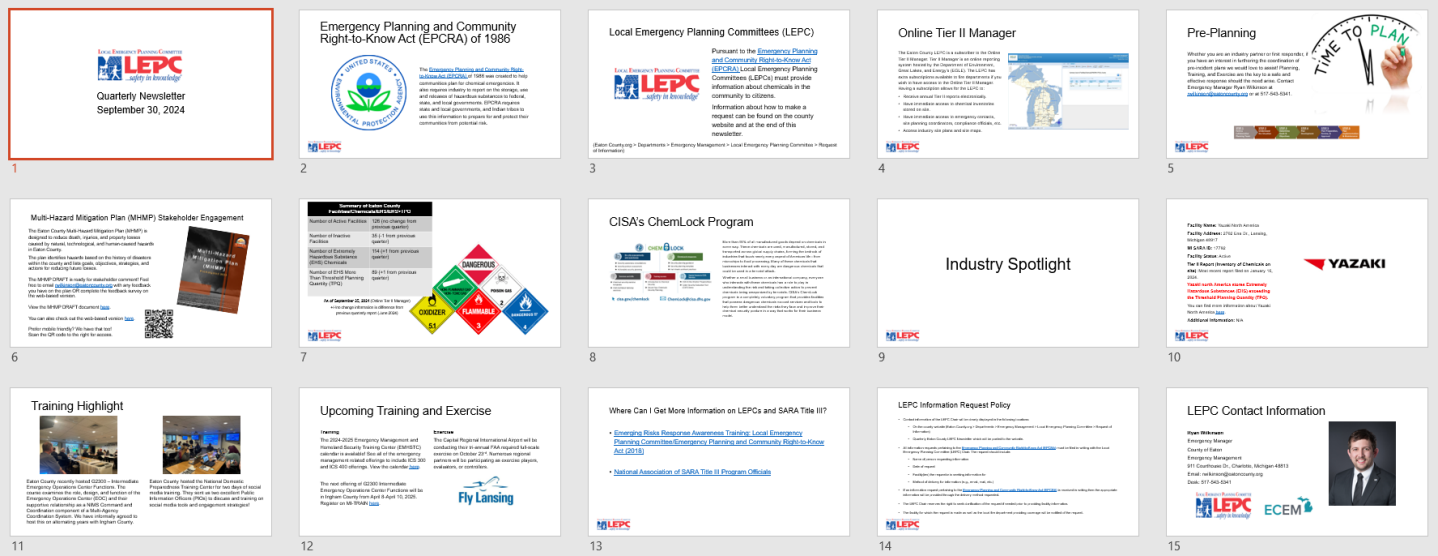
Thank you for taking the time to contribute!

Ryan Wilkinson
Emergency Manager
County of Eaton
Emergency Management
911 Courthouse Dr., Charlotte, Michigan 48813
Desk: 517-543-5341
Cell: 517-983-4354

EATON COUNTY Emergency Management

LEPC Quarterly Newsletter

The LEPC quarterly newsletter is shared with a wide audience, including internal and external stakeholders such as law enforcement, fire/EMS, emergency management, non-governmental organizations, private sector partners, and elected officials.



Region One Homeland Security Planning Board (Advisory Committee)

Multi-Hazard Mitigation Plan (MHMP) DRAFT Review

Reply | Reply All | Forward

EG Ella Gardner

To Becky Elliott; Bob Boerkoel; Brian Ball; Brian Hatfield; Carol Wolfinger; Chris Foerg; Christine Hendrickson; Corey Kubik; Craig Tanis; Dawn Carson ; Dr. Don Edwards; Elizabeth Nightingale; Ella Gardner; Fred Harris; Georgie Juday, CPT US ARMY; Greg Ginebaugh; Hillsdale County EM; Hurst, Debbie; Jacquelyn Cole; Jamil Czubenko; Jason Stevens; Jeff Weiss; Jen Brown ; Jessica Harbitz, BWL; Jim Freeman; Jim Maczko; Jodie Miller; Joe Kellam; John Kahler; Jowa Wildes; Ken High; Kimberly Churchill; Kristi Wahoski; Matt Price; Maureen Gibbons; Natisha Foster; Nicholas Buck; Paul Back; Rob Dale; Rob Wooten; Robert Benstein; Ryan Morrissey; Ryan Wilkinson; Stephanie Baker; Steve Gonzalez; Therese Cremonte; Thomas Whitaker;

Wed 10/9/2024 3:49 PM

Multi-Hazard Mitigation Plan (MHMP) DRAFT.pdf
7 MB

Good afternoon regional partners!

As part of our planning process and open comment period with internal and external stakeholders, we are sharing our Multi-Hazard Mitigation Plan (MHMP) with you for your review and feedback. This plan was updated back in late 2022/early 2023. This updated version is more relevant and meaningful to us and is aligned with the new and continued projects happening across Eaton County, featuring practical and achievable short- and long-term mitigation actions. Additionally, we believe this plan to be aligned to all Emergency Management Accreditation Program (EMAP) standards.

Additionally, given the amount of ongoing participation and feedback of mitigation planning per United States Code, we have created a web-based version of the plan that is also mobile friendly through ArcGIS hub. You can view the web-based that here. We are still tweaking some things on the mobile view, but it is mostly ready to go. Use the same link from your phone to view the mobile version.

We welcome your feedback in three ways:

1. Reply directly to this email with your comments.
2. Submit feedback via the "Feedback Survey" on the web-based version of the MHMP.
3. Share your feedback at next week's full board meeting, where it will be documented in the meeting minutes.

Any feedback received will be included under "Appendix B: Planning Process Documentation."

Thank you for taking the time to contribute!

Ella Gardner
Emergency Management Specialist
County of Eaton
Emergency Management
911 Courthouse Dr., Charlotte, Michigan 48813
Desk: 517-543-5560
Cell: 517-743-1978

EATON COUNTY Emergency Management

PLANNING BOARD MEETING MINUTES

Meeting Date: Thursday, October 17, 2024 at 1:00 pm
Ingham County Sheriff's Office, 630 N Cedar St, Mason, Michigan
Virtual: https://us02web.zoom.us/j/5176768223?pwd=UzArdDQrcDcwSUJUdjN0cWIFZG96UT09

- **Roll Call**

Board Members:

☒City of Lansing – Jason Stevens
☒Clinton County – Jowa Wildes
☒Eaton County – Ryan Wilkinson
☒Gratiot County – Fred Harris **(virtual)**
☐Hillsdale County – Thomas Whitaker
☒Ingham County – Bob Boerkoel
☒Jackson County – Corey Kubik
☐Lenawee County – Craig Tanis (V. Chair)
☒Livingston County – Kristi Wahoski
☒Shiawassee County – Trent Atkins **(virtual)**

Board Liaison Members:

☐ CRAA – Steve Gonzales
☒ Delhi Township – Becky Elliott
☐ Delta Township – Ryan Morrissey
☒ D1RMRC – Matt Price **(virtual)**
☒ LCC – Carol Wolfinger
☒ EMHSD – Lt. Bob Wolf
☒ MSU – Natisha Foster
☒ NWS – Jim Maczko **(virtual)**

Others:

Ella Gardner, Kristi Wahoski, Debbie Hurst, Bill Wright, Dawn Carson

- **Call to the Public –** *None*
- **Agenda for this Meeting**

Livingston amended the agenda to change the cost of the Ballistic Vests for FY22 will be changed to $7,325 and FY23 will be changed to $18,325.

***Motion** by Ingham to approve the agenda as amended, **support** by Jackson. Motion **Passed**.*

- **Minutes from the Previous Meeting**

***Motion** by City of Lansing to approve the minutes, **support** by Ingham. Motion **Passed**.*

- **Staff Reports –**
  - *Fiduciary Report (Bill Wright) – The FY23 reimbursement site has been set up, anything that has been submitted will be approved shortly and checks will be sent out. FY22 LETPA currently has $44,000 that has been spent and reimbursed. The FY23 sheet was sent out with all of the NPA projects please review it and let Bill know if adjustments are needed & FY21 is looking good Bill is submitting a reconciliation form and will give an update at the next meeting.*

    ***Motion** by Ingham to approve the fiduciary report, **support** by Jackson. Motion **Passed**.*
  - Regional Planner Report

    ***Motion** by City of Lansing to approve the Regional Planners Reports, **support** by Ingham. Motion **Passed**. Clinton abstained.*
- **Project Consideration**

Project	Grant	Program	Amount	Motion	Support	Rollcall
EOC Computers	FY22	Ingham	$4,000.00	Lansing	Jackson	Pass

PLANNING BOARD MEETING MINUTES

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Virtual: https://us02web.zoom.us/j/5176768223?pwd=UzArdDQrcDcwSUJUdjN0cWIFZG96UT09

UAS Batteries (LETPA)	FY22	Ingham	$5,600.00	Lansing	Livingston	Pass
NIMS Incident Command Posts	FY22	Ingham	$1,250.00	Lansing	Ingham	Pass
Facility Emergency	FY22	Lansing/Do1Thing	$3,600.00	Ingham	Livingston	Pass
Do1Thing Preparedness	FY22	Lansing/Do1Thing	$3,000.00	Ingham	Livingston	Pass
Preparedness Program (NPA)	FY22	Lansing/Do1Thing	$15,000.00	Ingham	Livingston	Pass
Ballistic Vests (LETPA)	FY22	Lansing	$7,325.00	Ingham	Jackson	Pass
Ballistic Vests (LETPA)	FY23	Lansing	$18,325.00	Livingston	Ingham	Pass
UAS Batteries	FY22	Shiawassee	$1,000.00	Lansing	Ingham	Pass
Ballistic Plates	FY22	Shiawassee	$2,000.00	Jackson	Lansing	Pass

- ***Project Discussion:***
  - **NIMS incident command post:** *Ingham will send a PDF attachment for those who are interested in them.*
  - **Do1Thing Preparedness program:** *The preparedness program AFF for $15,000 includes items that are necessary for the functions of the Do1Thing program. This includes things like the DO1Thing app development, handout materials, and other materials that may be necessary to set up booths during events.*
- **Special Presentations** – *None*
- **Old Business**
  - **Update: FY22 National Priority Area Projects** – *FY22 is looking good, assuming that the EMHSD conference gets approved as Cyber, but there is no indication that it will not. We may use FY23 money to cover "shot boxes" due to a discount from the drone vendors leaving additional funds in FY23.*
- **New Business**
  - **HSGP Cyber Review** – *The Cyber Reviews are due and an email with a link was sent out yesterday (10/16) if you do not submit the Cyber Reviews your program will not be eligible for HSGP funds. Please keep a copy of the record in case there is an audit.*
  - **Executive Board Nomination Reminder** – *The Executive Board is a year term, at the November meeting we will take nominations and then vote during the December meeting. Due to Thomas Whitaker leaving his position at the end of 2024, we will need someone to fill his position as the "At Large" for the executive board meeting.*
- **Reports to the Region**
  - ***MEMA (Jessica Harbitz)*** – *MEMA conference is 10 days away, the membership meeting will be on Monday, October 29, 2024, at 10:00 am.*
  - ***MI-MABAS (Trent Atkins)*** – *The swift water rescue team went to North Carolina for Hurricane Helene; Trent will send information out in an email or report at the November meeting.*
  - ***Do1Thing (Paul Back)*** – *Do1Thing will be having a booth at the MEMA conference, please stop by. They are also ordering printed materials for the region and will be able to have stock to hand out at events. The Do1Thing app and website are being revamped and will be distributed when the revamp is completed. Do1Thing had representation at the MSP prepared fair.*
  - ***District Coordinator (Lt. Wolf)*** – *SEOC is opening Monday-Wednesday of election week.*

PLANNING BOARD MEETING MINUTES

Meeting Date: Thursday, October 17, 2024 at 1:00 pm
Ingham County Sheriff's Office, 630 N Cedar St, Mason, Michigan
Virtual: https://us02web.zoom.us/j/5176768223?pwd=UzArdDQrcDcwSUJUdjN0cWIFZG96UT09

- ***Chairperson Report (Therese Cremonte)*** *– There is a lot of tension with the ongoing election, Livingston County has been preparing for potential issues that may arise. The Board Chair wanted to extend gratitude to those who attended today's meeting and remind everyone of the importance of attending and voting during the regional meeting.*

Voting & Board Liaison Round Table

- ***MSU (Natisha Foster)*** *– October 8 hosted a TTX with East Lansing for election security, East Lansing & MSU will be opening their EOC on election day with a Teams site that will be active until January 6, 2025, if anyone would like access to the Teams site please reach out to MSU. MSU will be getting a new chief of police who is the former chief of police for the City of Lansing, he will start at MSU on November 11, 2024. More information will be shared at the November or December meeting as there may be a reorganization.*
- ***LCC (Carol Wolfinger)*** *– LCC is in the hiring process and hoping to have a candidate selected and hired before Thanksgiving.*
- ***NWS (Jim Maczko)*** *– Eaton County Emergency Management attended the NWS all-hands meeting and was the guest speaker. They presented their Hazard Identification and Risk Assessment (HIRA) and Multi-Hazard Mitigation Plan (MHMP). The weather service has implemented new "cold weather advisories, extreme cold watches and warnings" effective October 1 which will be replacing wind chill watches, warnings, and advisories.*
- ***D1RMRC (Matt Price)*** *– The Baxter Pharmaceutical Plant that produces 60% of IV fluids factory structure has been deemed okay, and their IT infrastructure is fully operational. Mexico and Spain are now shipping to the USA for IV fluids.*
- ***BWL (Jessica Harbitz) –*** *Reach out to Scott Berg if you would like your polling locations added to a critical customer list.*
- ***Eaton County (Ryan Wilkinson)*** *– The Multi-Hazard Mitigation Plan (MHMP) is out for review please provide all feedback either by email directly to Ella or Ryan, or you can use the "Feedback Survey".*

Call to the Public - *None*

Adjournment

- *Adjourned at 1:39 PM.*

Region One

Homeland Security Planning Board Meeting

Thursday, October 17, 2024

Sign In

Name	Agency	Signature
Ryan Wilkinson	Eaton Co. EM	
Kristi Wahoski	Liv. Co. EM	
Therese Clemente	Liv Co. E.M.	
Ella Gardner	Eaton Co.	
Bob Wolf	MSP EMHSD	
Corey Kubik	Jackson Co EM	
Jon Wildes	Clinton Co	
William Engelter	City of Lansing	
Bob Boerkael	Ingham Co	
Rob Davis		
Dawn Carson	ELPO	
Becky Elliott	Delhi	
Bill Wright	Fid	
Natisha Foster	MSU	
Debbie Hurst	MSU	
Carol Wolfinger	LCC	

1

Public Participation

The following link will take you to the completed capabilities assessments and public comments from the public feedback period. There was not any substantive public feedback.
https://docs.google.com/spreadsheets/d/1LdzG_0y4ZOV1yKY02ipdW6N9mmjDi08xooiJEyG_TRU/edit?usp=sharing

Re: [EXTERNAL]Quarterly LEPC Newsletter

MS Skayhan dutra, Maureen <maureen.skayhandutr2@redcross.org>
To Ryan Wilkinson

Reply | Reply All | Forward

Wed 10/30/2024 11:18 AM

Hi Ryan,

Thank you sincerely for sharing Eaton County's Multi-Hazard Mitigation Plan. I read through the pdf first and then took a look at the website. As I am trying to get to know my counties better, this is really helpful - and interesting regarding the past emergency and disaster declarations that have been made.

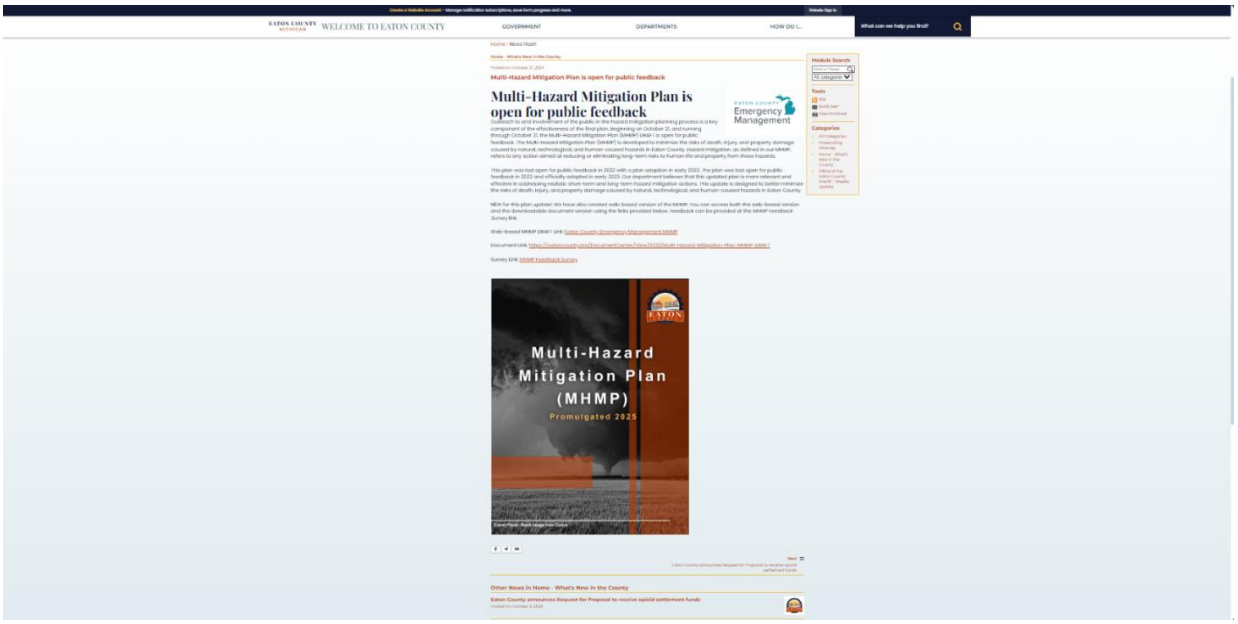
On a separate note, we have been asked to reach out to all of our emergency managers to see if there are any concerns related to the possibility of civil unrest or disturbances in Eaton County around the upcoming election.

Otherwise, hope all is well with you and Eaton County, and will hope to see you at the next DAT meeting if you can make it.

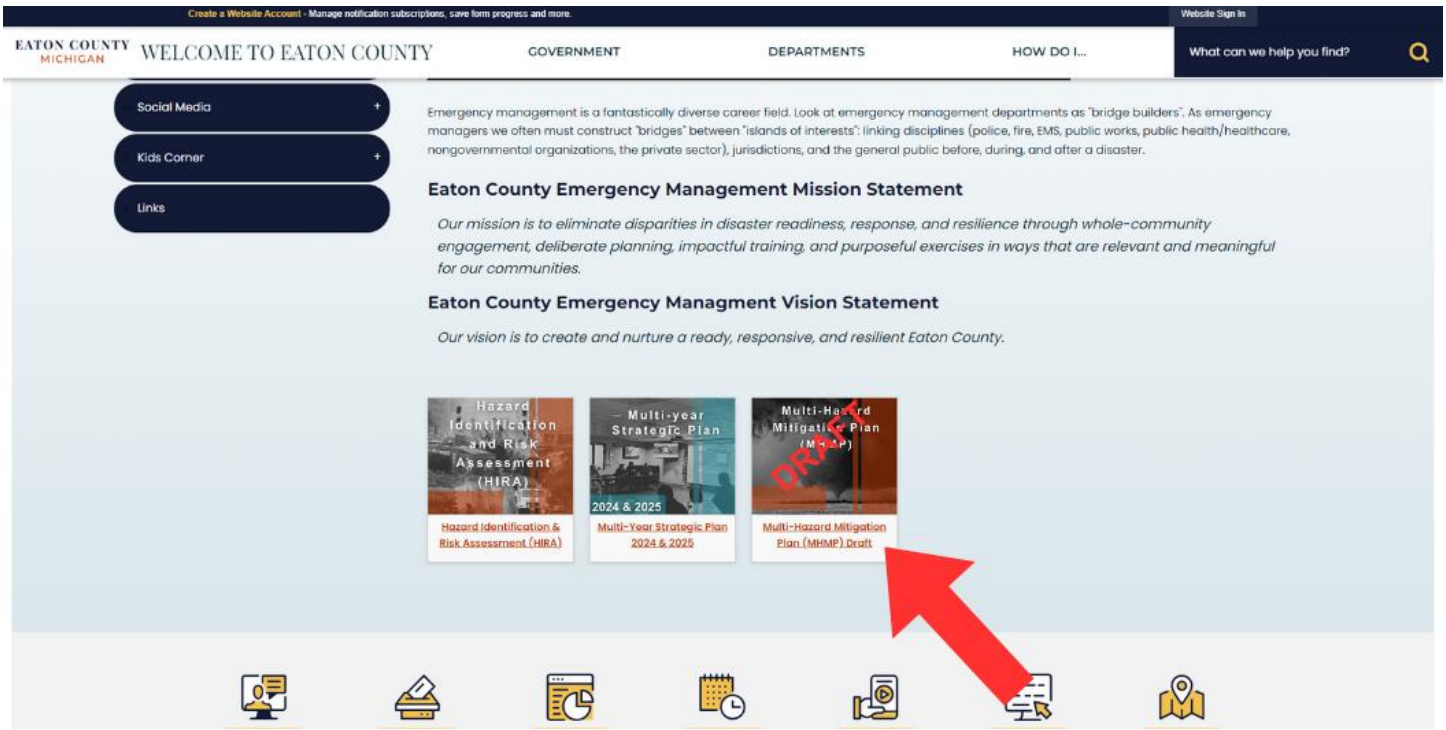
Respectfully,

Maureen Skayhan Dutra, Disaster Program Manager
Mid Michigan Chapter of the American Red Cross
1800 E. Grand River Ave, Lansing, MI 48912
Cell: 517-985-8367 | maureen.skayhandutr2@redcross.org

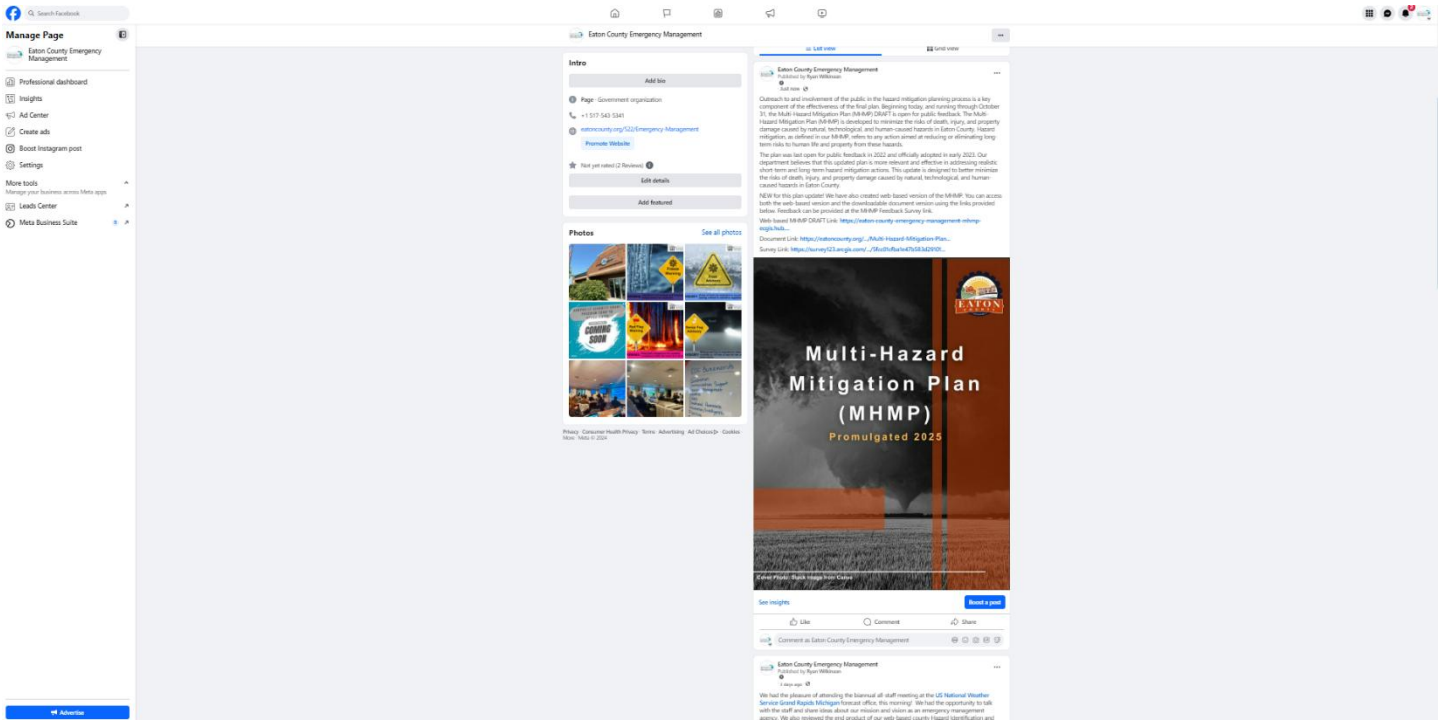
County Website (Home Page)

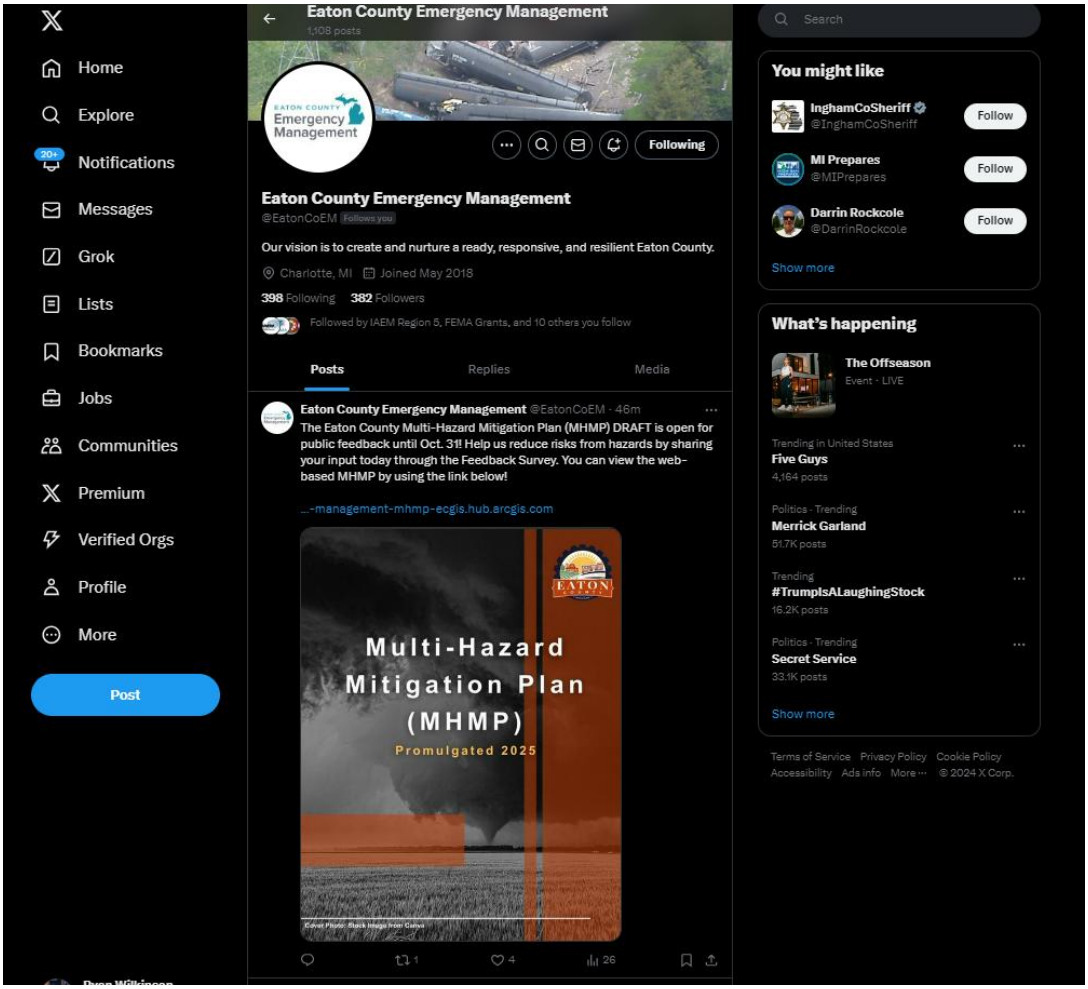


Eaton County Emergency Management Webpage

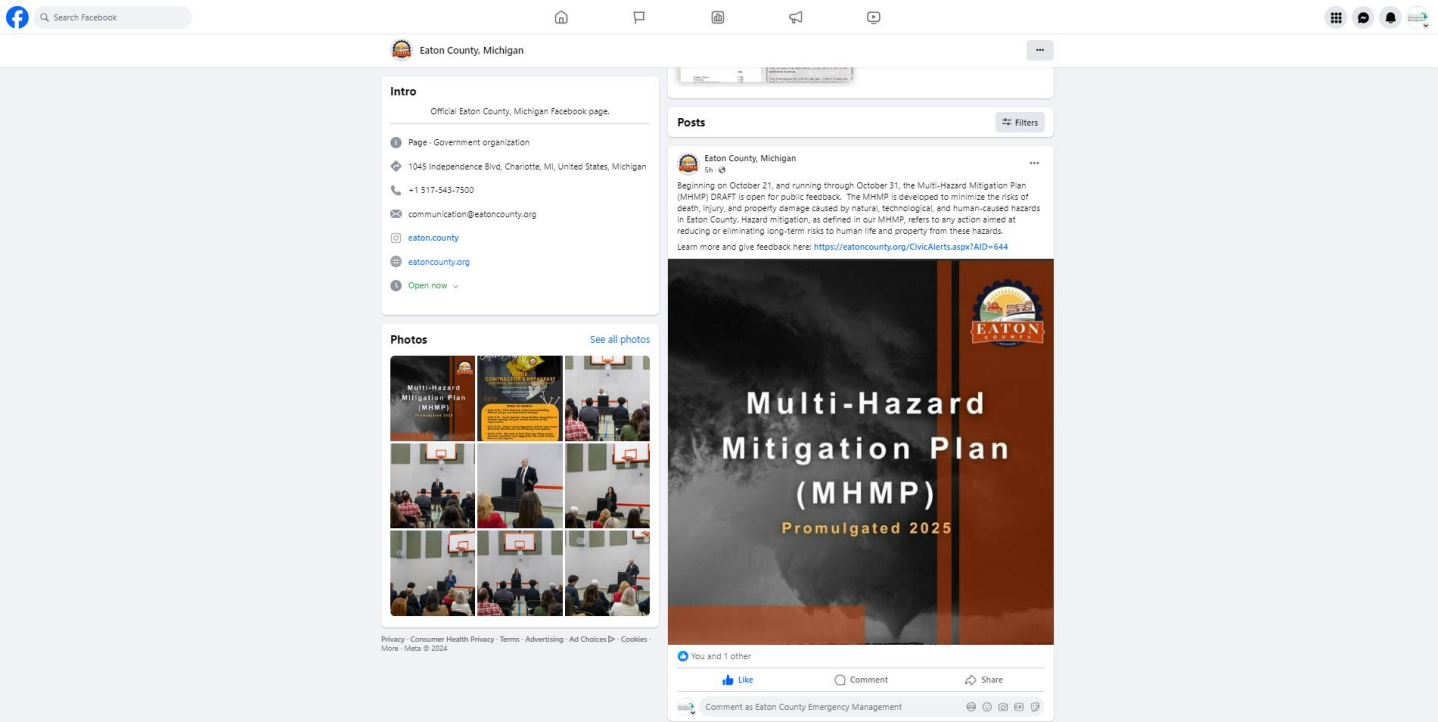


Eaton County Emergency Management Social Media



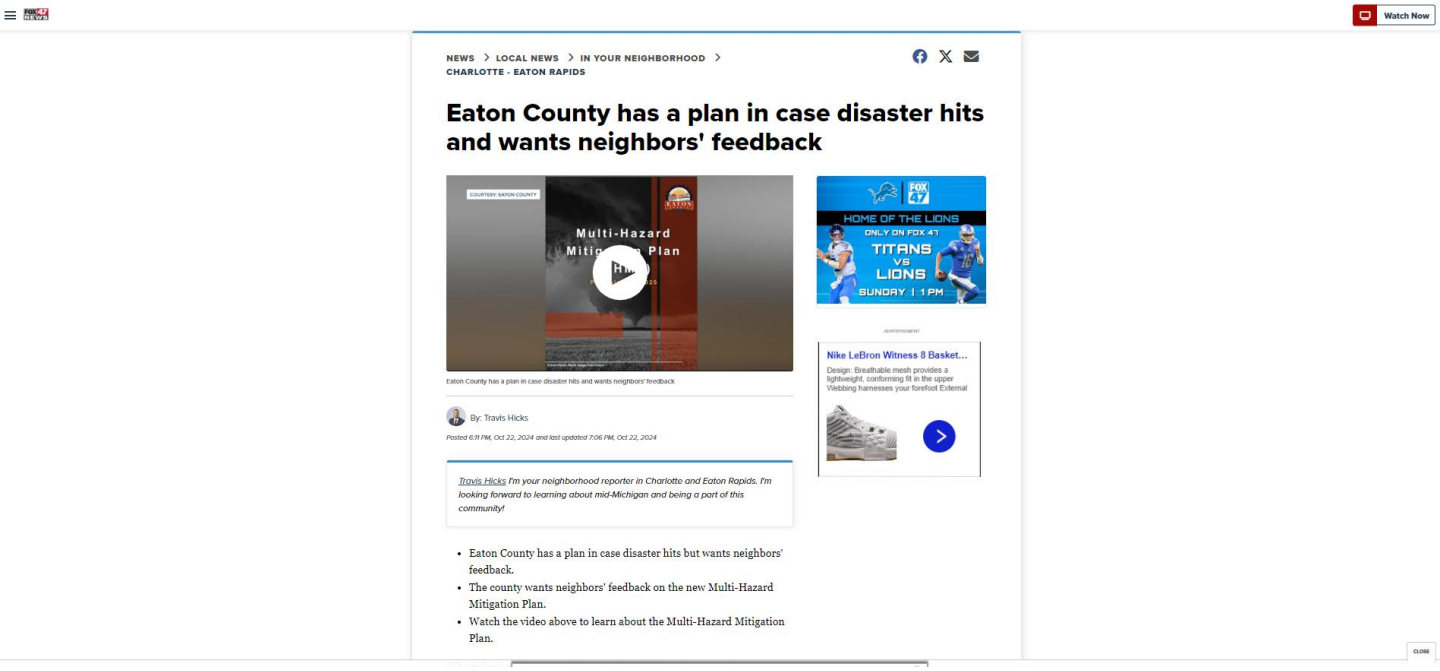


Eaton County Social Media



Fox47 News Article and Video

Link: [Eaton County has a plan in case disaster hits and wants neighbors' feedback]



NEWS > LOCAL NEWS > IN YOUR NEIGHBORHOOD > CHARLOTTE - EATON RAPIDS

Eaton County has a plan in case disaster hits and wants neighbors' feedback

Eaton County has a plan in case disaster hits and wants neighbors' feedback

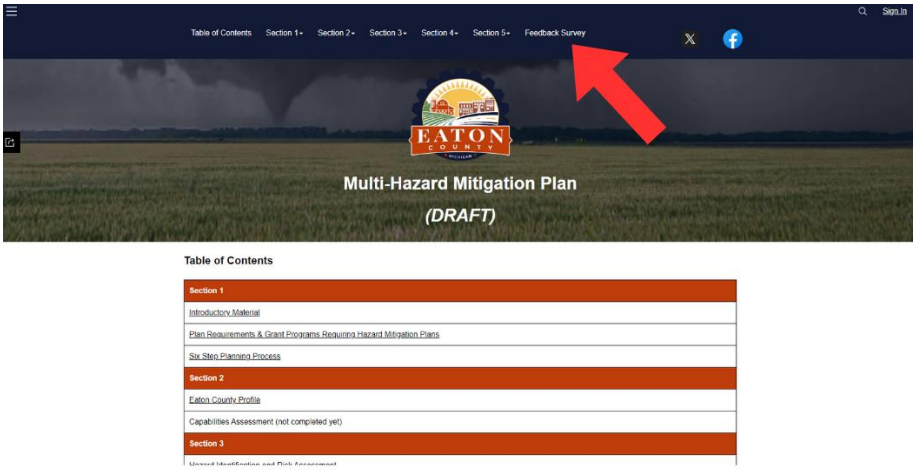
By: Travis Hicks

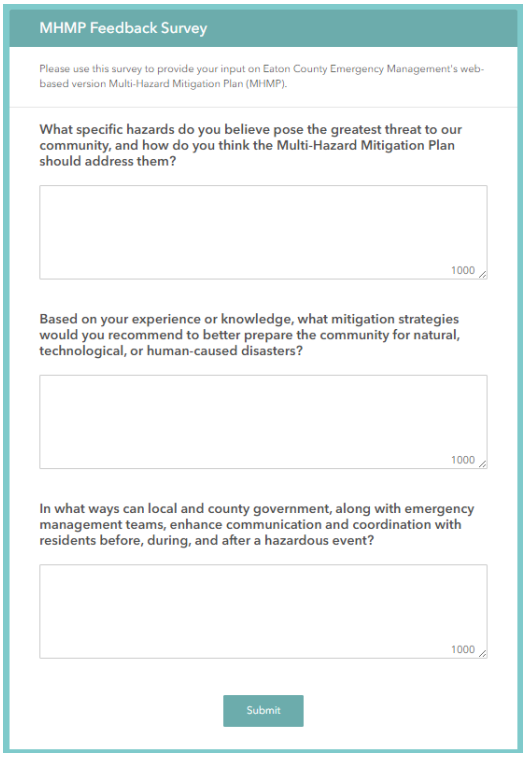
Posted 6:31 PM, Oct 22, 2024 and last updated 7:06 PM, Oct 22, 2024

Travis Hicks I'm your neighborhood reporter in Charlotte and Eaton Rapids. I'm looking forward to learning about mid-Michigan and being a part of this community!

- Eaton County has a plan in case disaster hits but wants neighbors' feedback.
- The county wants neighbors' feedback on the new Multi-Hazard Mitigation Plan.
- Watch the video above to learn about the Multi-Hazard Mitigation Plan.

Feedback Survey on the Web-based *MHMP*





Capabilities Assessment Results

View only link:
https://docs.google.com/spreadsheets/d/1LdzG_0y4ZOV1yKY02ipdW6N9mmjDi08xooiJEyG_TRU/edit?usp=sharing

Appendix C: Plan Maintenance Forms

Mitigation Plan Progress Report Form

Mitigation Action/Project Progress Report		
Progress Report Period	**From Date:**	**To Date:**
Action/Project		
Responsibility		
Contact Name		
Contact Phone/Email		
Action/Project Status	☐ Completed ☐ Canceled ☐ On schedule ☐ Ongoing ☐ On schedule **Anticipated Completion Date:** **Project Delayed:** Explanation	

Summary of Action/Project progress for this report period.	
What was accomplished for this action/project during this reporting period?	
What obstacles, problems, or delays did the project encounter?	
If uncompleted, is the project still relevant? Should the project be changed or revised?	
Other comments	Uploaded to web-based *MHMP*.

New Hazard Mitigation Action/Project

New Mitigation Action/Project	
Date	
Action/Project Name	
Responsible Agency	
Contact Name	
Contact Phone/Email	
Description	
What hazard(s) does this action/project mitigate against?	
List any supporting organizations, agencies, departments, and individuals.	
What is the anticipated timeframe for this project?	
What is the anticipated cost of this project? If exact cost is unknown, an estimate is sufficient.	

Plan Section	Considerations	Explanation
Section 3. Hazard Identification and Risk Assessment (HIRA)	Should the list of hazards addressed in the plan be modified?	
	Are there new data sources and/or additional maps and studies available? If so, what are they and what have they revealed? Should the information be incorporated into future plan updates?	
Section 2. Eaton County Profile and Capabilities Assessment	Do any new critical facilities or infrastructure need to be added to the asset lists?	
	Have any changes in development trends occurred that could create additional risks?	
Section 4. Natural Hazard Profiles - Flooding	Are there repetitive losses and/or severe repetitive losses to document?	
Section 7. Hazard Mitigation Strategy	Is the mitigation strategy being implemented as anticipated? Was the cost and timeline estimate accurate?	
	Should new mitigation actions be added to the Action Plan? Should existing mitigation actions be revised or eliminated from the plan?	
	Are there new obstacles that were not anticipated in the plan that will need to be considered in the next plan update?	
	Are there new funding sources to consider?	
	Have elements of the plan been incorporated into other planning mechanisms?	

Appendix D: Sample Adoption

Name of Jurisdiction:

RESOLUTION TO AUTHORIZE THE ACCEPTANCE AND ADOPTION OF THE MULTI-HAZARD MITIGATION PLAN (MHMP) UPDATE

WHEREAS, Eaton County and the townships, cities, and villages with the county have gathered information and prepared an update to the 2023 Tri-County Hazard Mitigation Plan; and

WHEREAS, the Multi-Hazard Mitigation Plan (MHMP) has been prepared in accordance with the Disaster Mitigation Act of 2000 and Title 44 Code of Federal Regulations (CFR), Part 201; and

WHEREAS, Title 44 CFR, Chapter 1, Part 201.6(c)(5) requires each local government participating in the preparation of a Plan Update to accept and adopt such plan; and

WHEREAS, the County/Township/City/Village of, has reviewed the MHMP update, has found the document to be acceptable, and as a local unit of government, has afforded its citizens an opportunity to comment and provide input regarding the Plan Update and the actions included in the Plan; and

WHEREAS, the County/Township/City/Village of, will consider the MHMP update during the implementation and updating of local planning mechanisms, and will incorporate the hazard assessment data, hazard vulnerabilities, and mitigation actions in these mechanisms, where applicable;

NOW THEREFORE, BE IT RESOLVED, that the County/Township/City/Village of, as a participating jurisdiction, adopts the MHMP Update.

This resolution was thereupon declared duly adopted on [date].

_____

(Board Chairperson/Supervisor/Mayor/Trustee)

_____

(Clerk)

THE CITY OF CHARLOTTE MICHIGAN

Memo

To: City Council
From: Stephanie Whitney - Director of Public Works
Date: June 18, 2025
Re: Request for Approval – Update to Union Appendix A: Service Truck Operator Premium

Dear City Council Members,

The Department of Public Works, in coordination with SEIU Local 517M, is requesting City Council approval to amend Appendix A of the current collective bargaining agreement. This amendment proposes replacing the outdated **Sweeper Shift Premium** designation with a newly defined classification titled **Service Truck Operator**, along with a premium pay adjustment.

This change reflects the operational evolution of the position and better aligns with the work currently being performed in support of the City's utility infrastructure. The Service Truck Operator plays a critical role in maintaining the municipal water system and supporting field operations. Key responsibilities include:

- Performing maintenance, repair, and construction work on water mains, service lines, and related infrastructure
- Conducting water meter installations and shut-offs
- Investigating service issues such as low pressure, leaks, and abnormal usage
- Maintaining accurate records, including service cards, meter activity logs, and histories
- Responding to **MISS DIG** locate requests in compliance with state regulations

A **Letter of Understanding (LOU)** has been prepared and shared with SEIU Local 517M outlining the reclassification. The position will carry a premium of **$0.75 per hour**, effective **June 23, 2025**, contingent upon union ratification.

The Union will be holding a vote to approve the proposed change following their internal review. We are requesting City Council support for this update in advance, contingent on ratification by SEIU Local 517M.

Requested Action:
Approval of the Letter of Understanding between the City of Charlotte and SEIU Local 517M to amend Appendix A by:

- Replacing the "Sweeper Shift Premium" with the "Service Truck Operator" classification
- Assigning a premium of $0.75/hour for all hours worked in the Service Truck Operator role, effective June 23, 2025

LETTER OF UNDERSTANDING

WHEREAS, the City of Charlotte and SEIU Local 517M are parties to a collective bargaining agreement that includes Appendix A, which outlines classifications and premium pay provisions; and

WHEREAS, the duties associated with the Sweeper Shift Premium have evolved and no longer reflect the operational needs of the Department of Public Works; and

WHEREAS, the City and SEIU Local 517M mutually agree to replace the Sweeper Shift Premium designation with a new classification titled **Service Truck Operator**, reflecting the actual work being performed; and

WHEREAS, the Service Truck Operator is responsible for performing a variety of tasks related to the maintenance, repair, and construction of the municipal water system, including work on water mains, service lines, meter installations, shut-offs, MISS DIG requests, and recordkeeping, in accordance with safety and regulatory standards; and

WHEREAS, the City and the Union have prepared a Letter of Understanding to document this amendment to Appendix A of the collective bargaining agreement, including a premium of **$0.75 per hour** for all hours worked in the Service Truck Operator role, effective **June 23, 2025**, contingent upon union ratification;

NOW, THEREFORE, BE IT RESOLVED that the City Council of the City of Charlotte hereby approves the Letter of Understanding with SEIU Local 517M to reclassify the Sweeper Shift Premium to Service Truck Operator and establish the associated premium pay, effective June 23, 2025, subject to ratification by the union.

BE IT FURTHER RESOLVED that the City Manager and/or the Director of Public Works are authorized to execute any documents necessary to implement this change.

FOR THE CITY OF CHARLOTTE
Name: _____
Title: _____
Date: _____

FOR SEIU LOCAL 517M
Name: _____
Title: _____
Date: _____

Docusign Envelope ID: D505B227-0EEA-4250-B6B5-46D16770D69F

APPENDIX A (continued)

2025-2026

Effective the First Full Payroll Period after **July 1, 2025** (5% Increase)

Classification Title					
Clerical	Start Rate	6 months	1 Year	2 Year	3 Year
Deputy Clerk	$24.99	$25.73	$26.44	$27.81	$29.63
Deputy City Treasurer	$24.99	$25.73	$26.44	$27.81	$29.63
Account Customer Service Specialist	$24.99	$25.73	$26.44	$27.81	$29.63
Police Secretary	$24.99	$25.73	$26.44	$27.81	$29.63
DPW Secretary	$24.99	$25.73	$26.44	$27.81	$29.63
Assessor Secretary	$24.99	$25.73	$26.44	$27.81	$29.63
Accounting Clerk	$24.99	$25.73	$26.44	$27.81	$29.63
Public Works					
DPW IV	$19.89	$21.03	$22.37	$23.88	$25.41
DPW III	$21.88	$22.87	$24.36	$26.43	$28.43
DPW II	$24.36	$25.90	$27.89	$29.93	$31.98
DPW 1	$24.87	$26.42	$28.43	$30.41	$32.44
Mechanic	$25.39	$25.91	$27.89	$29.93	$31.98
Sweeper Shift Premium	.75 per hour up to 4 hours a day				
DPW–Lead Worker	1.25 per hour above regular rate of pay.				

2026-2027

Effective the First Full Payroll Period after **July 1, 2026** (5% Increase)

Classification Title					
Clerical	Start Rate	6 months	1 Year	2 Year	3 Year
Deputy Clerk	$26.24	$27.01	$27.76	$29.20	$31.11
Deputy City Treasurer	$26.24	$27.01	$27.76	$29.20	$31.11
Account Customer Service Specialist	$26.24	$27.01	$27.76	$29.20	$31.11
Police Secretary	$26.24	$27.01	$27.76	$29.20	$31.11
DPW Secretary	$26.24	$27.01	$27.76	$29.20	$31.11
Assessor Secretary	$26.24	$27.01	$27.76	$29.20	$31.11
Accounting Clerk	$26.24	$27.01	$27.76	$29.20	$31.11
Public Works					
DPW IV	$20.89	$22.08	$23.49	$25.08	$26.68
DPW III	$22.97	$24.01	$25.58	$27.75	$29.85
DPW II	$25.58	$27.20	$29.28	$31.42	$33.57
DPW 1	$26.11	$27.74	$29.85	$31.93	$34.06
Mechanic	$26.66	$27.21	$29.28	$31.42	$33.57
Sweeper Shift Premium	.75 per hour up to 4 hours a day				
DPW–Lead Worker	1.25 per hour above regular rate of pay.				

THE CITY OF CHARLOTTE MICHIGAN

Memo

To: City Council
From: Stephanie Whitney - Director of Public Works
Date: June 19, 2025
Re: Request for Approval – Update to Union Appendix A: Environmental Services Coordinator

Dear City Council Members

The Department of Public Works, in collaboration with SEIU Local 517M, is requesting City Council approval of a Letter of Understanding (LOU) to amend Appendix A of the current collective bargaining agreement.

This amendment creates a new classification titled **Environmental Services Coordinator/Operator**. The position is being established to enhance environmental compliance and coordination efforts across the City's utility operations. The role will support critical tasks related to state and federal environmental regulations, including water quality, stormwater permitting, and cross-departmental tracking of compliance standards.

The position will require a **Michigan Class D Water Operator License** and **Storm Water Industrial Certification (A-1i)**. It will be placed at the **DPW II wage scale** consistent with existing classifications performing comparable technical and operational work. The position will become effective **Monday, June 23, 2025**, and will be considered a **permanent addition** to Appendix A of the bargaining agreement.

Attached is the resolution for City Council consideration, as well as the LOU that has been reviewed and agreed to by SEIU Local 517M.

Requested Action:
Approval of the attached resolution to authorize the Letter of Understanding with SEIU Local 517M and amend Appendix A to include the Environmental Services Coordinator classification.

LETTER OF UNDERSTANDING

WHEREAS, the City of Charlotte and SEIU Local 517M are parties to a collective bargaining agreement that includes Appendix A, which outlines job classifications, requirements, and wage structures for represented employees; and

WHEREAS, the city has identified the need to create a new position titled **Environmental Services Coordinator/Operator** to support environmental compliance and cross-departmental coordination in the City's utility operations; and

WHEREAS, the position will require specialized certification and licensure, including a **Michigan Class D Water Operator License** and **Storm Water Industrial Certification (A-1i)**, and will serve a critical role in managing evolving regulatory obligations; and

WHEREAS, the City and SEIU Local 517M have reached agreement to add the classification of **Environmental Services Coordinator** to Appendix A of the current collective bargaining agreement, with compensation placed at the existing **DPW II wage scale**; and

WHEREAS, the classification will take effect on **Monday, June 23, 2025**, and will be considered a permanent addition to the collective bargaining agreement;

NOW, THEREFORE, BE IT RESOLVED that the City Council of the City of Charlotte hereby approves the Letter of Understanding with SEIU Local 517M to amend Appendix A of the collective bargaining agreement by adding the classification of **Environmental Services Coordinator** under the terms outlined above.

FOR THE CITY OF CHARLOTTE
Name: _____
Title: _____
Date: _____

FOR SEIU LOCAL 517M
Name: _____
Title: _____
Date: _____

Docusign Envelope ID: D505B227-0EEA-4250-B6B5-46D16770D69F

APPENDIX A (continued)

2025-2026

Effective the First Full Payroll Period after **July 1, 2025** (5% Increase)

Classification Title					
Clerical	Start Rate	6 months	1 Year	2 Year	3 Year
Deputy Clerk	$24.99	$25.73	$26.44	$27.81	$29.63
Deputy City Treasurer	$24.99	$25.73	$26.44	$27.81	$29.63
Account Customer Service Specialist	$24.99	$25.73	$26.44	$27.81	$29.63
Police Secretary	$24.99	$25.73	$26.44	$27.81	$29.63
DPW Secretary	$24.99	$25.73	$26.44	$27.81	$29.63
Assessor Secretary	$24.99	$25.73	$26.44	$27.81	$29.63
Accounting Clerk	$24.99	$25.73	$26.44	$27.81	$29.63
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DPW 1	$24.87	$26.42	$28.43	$30.41	$32.44
Mechanic	$25.39	$25.91	$27.89	$29.93	$31.98
Sweeper Shift Premium	.75 per hour up to 4 hours a day				
DPW–Lead Worker	1.25 per hour above regular rate of pay.				

2026-2027

Effective the First Full Payroll Period after **July 1, 2026** (5% Increase)

Classification Title					
Clerical	Start Rate	6 months	1 Year	2 Year	3 Year
Deputy Clerk	$26.24	$27.01	$27.76	$29.20	$31.11
Deputy City Treasurer	$26.24	$27.01	$27.76	$29.20	$31.11
Account Customer Service Specialist	$26.24	$27.01	$27.76	$29.20	$31.11
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DPW Secretary	$26.24	$27.01	$27.76	$29.20	$31.11
Assessor Secretary	$26.24	$27.01	$27.76	$29.20	$31.11
Accounting Clerk	$26.24	$27.01	$27.76	$29.20	$31.11
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DPW 1	$26.11	$27.74	$29.85	$31.93	$34.06
Mechanic	$26.66	$27.21	$29.28	$31.42	$33.57
Sweeper Shift Premium	.75 per hour up to 4 hours a day				
DPW–Lead Worker	1.25 per hour above regular rate of pay.				

ENVIRONMENTAL SERVICES COORDINATOR/ OPERATOR WATER & WASTEWATER CITY OF CHARLOTTE, MICHIGAN

JOB PURPOSE: **MAINTAIN COMPLIANCE AND CREATE A CULTURE OF ENVIRONMENTAL STEWARDSHIP THROUGH PROACTIVE COLLABORATION IN REGULATORY OVERSIGHT AND SUPPORT, PROGRAM DEVELOPMENT AND ADMINISTRATION, AND PUBLIC OUTREACH/ EDUCATION**

By:
Performing regular site inspections for environmental compliance. Ensuring that water and wastewater departments are meeting local, state, and federal regulations. Staying current with new developments in environmental policies and regulations. Working on various teams to educate public on importance of environmental stewardship. Assist in managing the activities of the Water and Wastewater Department.

SUPERVISION RECIEVED: The work is performed under the general supervision of the Superintendent of wastewater and/or his or her assistant.

ESSENTIAL FUNCTIONS:

1. **COORDINATES INDUSTRIAL PRETREATMENT PROGRAM (IPP) ACTIVITIES.**

By:
Implements, and oversees the Industrial Pretreatment Program including: Pollution Prevention, Mercury Minimization, interjurisdictional agreements, surcharging, permitting, inspections, monitoring, sampling and analysis, upset and bypass investigations, local limits, enforcement and non-compliance issues. Inspecting, testing and monitoring of industrial and commercial discharges to the wastewater treatment facilities and identify noncompliance with any regulations. Notifying dischargers of the requirements and any violations of the regulations, and monitoring compliance activities and permit renewals. Notifying the Superintendent of any abnormal results in testing and/or operations.

2. **COORDINATES THE FATS, OIL & GREASE PROGRAM.**
By:
- Inspecting and monitoring of sources of FOG.
- Ensure proper operation and maintenance of FOG control devices.
- Recordkeeping and Documentation
- Ensure compliance with Local Ordinances

3. **PARTICIPATES IN OPERATION OF WATER TREATMENT FACILITIES.**
By:
Assist as needed with Water Department programs including but not limited to: wellhead protection, cross-connection/backflow prevention, and lead and copper programs. Assist with assure compliance of all regulations, and notifying users of any noncompliance issues; notifying Superintendent of any non-compliance or the need for further investigation.

4. **COORDINATES STORMWATER POLLUTION PREVENTION PROGRAM ACTIVITES.**
By:
Maintaining a stormwater pollution prevention program that meets the requirements of local, state and federal regulations. Inspecting and testing City stormwater outflows. Notifying superintendent of any non-compliance, or the need for further investigation.

5. **PARTICIPATES IN OPERATION OF WASTEWATER TREATMENT FACILITIES**
By:
Monitoring permit requirements and assuring compliance. Administering, maintaining and participating in programs for Fats, Oils, Greases (FOG) Ordinance, Total Daily Maximum Loading (TMDL) Program, WET testing, Mercury Minimization Program, and other activities related to the permits. Participating in operation and maintenance duties at the wastewater plant as directed by the Superintendent of Utilities. Notifying Superintendent of any abnormal conditions, or the need for further investigation.

6. **PROCESSES COMPLAINTS FROM CUSTOMERS**
By:
Meeting with water customer to investigate concerns. Performing chemistry and/or bacteriological testing when directed.

7. **PROMOTES EDUCATION AND PERSONAL DEVELOPMENT**
By:
Conducting group presentations for the public, service clubs and schools about water and wastewater related topics. Educating the public on the importance of good, sustainable water usage practices that help meet DEQ and EPA standards. Participating in training and education related to water and wastewater treatment and distribution related topics. Being involved with related professional associations.

8. **PARTICIPATES IN ADMINISTRATION OF WATER AND WASTEWATER DEPARTMENTS**
By:
Preparing reports of time, equipment and materials expenditures on assigned reports. Maintenance of departmental records and preparation of related reports. Coordination of safety program. Act administratively as the Superintendent in his/her absence. Be on call to resolve a variety of possible emergency situations.

9. **PERFORM RELATED WORK AS REQUIRED AND ASSIGNED BY THE UTILITY SUPERINTENDENT OR HIS/HER ASSISTANT.**

JOB QUALIFICATIONS:

Education/
Training/
Certifications/
Licenses - Must have a valid Michigan Driver's License
Graduation from a college or university of recognized standing with an Associate's and/or Bachelor's degree in Environmental Sciences or related field preferred.
Preference given for water, wastewater and industrial related MDEQ certifications.

OTHER QUALIFICATIONS:

Qualifications are stated in the Essential Functions of the job description. An employee must be able to accomplish the essential functions in order to be competent in the job.

Knowledge/
Skills/
Ability - Ability to work effectively with other employees and the public
Ability to communicate clearly and effectively, both verbally and in writing

Skill in operating office equipment including a personal computer and utilizing rudimentary and job specific software.
Ability to understand and follow oral and written instructions
Ability to compile information and prepare and maintain accurate records and reports; ability to make mathematical computations accurately
Knowledge of pertinent Federal, State and local laws, ordinances and regulations
Knowledge of the principals and practices of wastewater treatment
Some knowledge of public health and safety regulations relating to wastewater treatment plant operations
Some knowledge of laboratory analysis and the methods, practices and procedures related to wastewater plant operations.

Physical - Must have the ability to walk, crawl, climb and maneuver
Must have the ability to communicate effectively
Must have the ability to see and hear well
Must have the ability to lift 50 pounds

Status/Approvals:

Fair Labor Standards Act (FLSA) status: Non-Exempt

Date Written: JUNE 16, 2025