



AGENDA

CHARTER TOWNSHIP OF
MERIDIAN
TOWNSHIP BOARD
REGULAR MEETING
February 16, 2016
6:00 P.M.



1. CALL MEETING TO ORDER*
2. PLEDGE OF ALLEGIANCE/INTRODUCTIONS
3. ROLL CALL
4. PRESENTATION
5. PUBLIC REMARKS*
6. TOWNSHIP MANAGER REPORT
7. BOARD COMMENTS & REPORTS
8. APPROVAL OF AGENDA
9. CONSENT AGENDA (SALMON)
 - A. Communications
 - B. Minutes
 - (1) January 26, 2016 Regular Meeting
 - (2) February 2, 2016 Regular Meeting
 - C. Bills
10. QUESTIONS FOR THE ATTORNEY
11. HEARINGS (CANARY)
12. ACTION ITEMS (PINK)

**Public Comment

 - A. Budget Amendments
 - B. Zoning Amendment #15080 (Township Board) – Street Tree Ordinance – **Final Adoption**
13. BOARD DISCUSSION ITEMS (ORCHID)

**Public Comment

 - A. Consumers Energy Company Gas Franchise Ordinance
 - B. Special Use Permit #16011 (Marriott) – Request to Construct a 67,000 Square Foot Courtyard by Marriott
 - C. Tri-County Regional Hazard Mitigation Plan
 - D. Haslett-Okemos Rotary Club Community Room – Use Policy
14. FINAL PUBLIC REMARKS*
15. FINAL BOARD MEMBER COMMENT
16. ADJOURNMENT
17. POSTSCRIPT – ELIZABETH LEGOFF

*PUBLIC REMARKS (Any topic - 3 minutes per person)

**PUBLIC COMMENT (Agenda item specific - 3 minutes per person)

*Individuals with disabilities requiring auxiliary aids or services should contact the Meridian Township Board by writing or calling the following:
Township Manager Frank L. Walsh, 5151 Marsh Road, Okemos, MI 48864-1198 (517-853-4258) – Ten Day Notice is Required.*

Meridian Charter Township: 5151 Marsh Road, Okemos, MI 48864-1198, (517) 853-4000 Township Hall Room; www.meridian.mi.us

+ Appointment of President Pro Tem and/or Temporary Clerk if necessary

Meridian Township exists to create a sustainable community through the most effective use of available resources that achieve the highest quality of life.

TOWNSHIP BOARD REGULAR MEETING COMMUNICATIONS, FEBRUARY 16, 2016

(1) Board Information (BI)

- BI-1 Ann Alchin, 5972 Cypress, Haslett; RE: Comments she made at the January 26, 2016 Board meeting
- BI-2 Janeile Cannon, 1769 Pine Creek Circle, Haslett; RE: Support for the BRT Plans
- BI-3 Mike Ma, 1862 Grand River Avenue, Okemos; RE: BRT Project Response
- BI-4 Steve Vagnozzi, 2144 Woodfield Road, Okemos; RE: On-time Performance for Intercity Passenger Rail
- BI-5 Gordon Mackay, President, Indian Trails, Inc., and Michigan Flyer, LLC, 333 Albert Street, Suite 100, East Lansing; RE: Concerns about the direction of Lansing's airport
- BI-6 Victoria Voges, Education Director, Nokomis Native American Learning Center, 5153 Marsh Road, Okemos; RE: Email exchange with the Director of Parks and Recreation Maisner relative to the condition of the furnace at Nokomis
- BI-7 Mark Holoweiko, Stony Point Communications, 1190 Teakwood Circle, Haslett; RE: Email exchange with Director of Communications Guthrie relative to the branding and website contracts

(2) Staff Communications (SC)

- SC-1 Clerk Dreyfus; RE: Guidelines about Injunction Against PA 269 Gag Order

**CLERK'S OFFICE
BOARD COMMUNICATIONS
FEBRUARY 16, 2016**

Board Information (BI)

Sandy Otto

From: Ann <aa41@comcast.net>
Sent: Saturday, January 30, 2016 4:00 PM
To: Board
Subject: My comments

Thought the board might be interested that after my comments at your last meeting regarding Julie Brixie's behavior several people (strangers to me) in the audience thanked me and complimented me on my statement. One person known well to you actually wrote a note and passed it to me thanking me for my comments. That individual is a respected member of the community and was there in an official capacity. Just thought you should know that I am not alone in my opinion of the ridiculous behavior of Ms Brixie we must witness every two weeks. Ann Alchin 5972 Cypress Haslett 347-3087

>^..^< abwy

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Sandy Otto

From: Janeile Cannon <janeile.cannon@comcast.net>
Sent: Sunday, January 31, 2016 10:36 PM
To: Board
Subject: Please support BRT plans

Dear Trustees,

Please renew your support for the BRT as you have supported previously.

This regional project is a positive, forward project for all concerned, from business owners, to students and homeowners. In particular, it will make the Meridian Corridor safer, attractive and calming for traffic, and increase ease of use for BRT travelers especially.

Since funding is secure, the plans you liked before are still in progress, I do not fathom why such a forward seeking Board would suddenly regress in support.

Please revisit the plans and the economic efficiencies and growth potential that went into your support.

Most Sincerely,

Janeile Cannon
Meridian resident and public transportation user

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Sandy Otto

From: Mike Ma <mausa.mike@gmail.com>
Sent: Monday, February 01, 2016 5:56 PM
To: Julie Brixie
Cc: Shirley Decker; Board; grand center framers edge-leeann buckingham
Subject: Re: BRT project response

Dear everybody,

I am Mike Ma. I was at the meeting. Julie Brixie is in Rotary with me and talked to me before the meeting. I work long hours. I asked if the bus was going to be in front of my business with no left turns. Julie told me the BRT wasn't going to go past Marsh Road. I am happy about that and also Mr. Johnson from L&T Cleaners and the Mark Bailey from the Outshiner Car Wash. We didn't want medians in front of our business. We didn't want to stay at the meeting when we found out the medians didn't go that far. We are small business owners and spend a lot of time working. We don't need to sit through long meetings for no reason. I am happy that Treasurer Brixie gave us the information so we could leave.

mike ma

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Sandy Otto

From: Steve Vagnozzi <svagnozzi@comcast.net>
Sent: Thursday, February 04, 2016 4:52 PM
To: Board
Cc: Frank Walsh
Subject: RE: On-time Performance for Intercity Passenger Rail

I also encourage each of you to sign this petition that is being circulated by the Environmental Law and Policy Center and will be submitted to the official comment site of the STB:

http://elpc.convio.net/site/Advocacy?s_oo=F4dZRkS02IV5MRS-6vd67Q&id=1229

Thanks!

Steve Vagnozzi
517-349-4889

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Sandy Otto

From: sales@michiganflyer.com
Sent: Tuesday, February 02, 2016 1:27 PM
To: Board; Frank Walsh
Subject: Concerns about the direction of Lansing's airport
Attachments: Better planning for the future of Lansing's airport-FINAL.pdf

Dear Meridian Township leadership:

We are writing today to express serious concerns about the direction of Capital Region International Airport, as detailed in the attached letter. Please don't hesitate to contact us at the phone numbers or email addresses below if you would like to share your thoughts on this matter.

Sincerely,

Gordon Mackay, President, Indian Trails, Inc., and Michigan Flyer, LLC
gordmackay1@gmail.com

Chad Cushman, Vice President, Indian Trails
ccushman@indiantrails.com

Indian Trails, Inc.
109 East Comstock St.
Owosso, MI 48867
800-292-3831
www.indiantrails.com

Michigan Flyer
333 Albert Street
Suite 110
East Lansing, MI 48823
517-333-0400

WHY DRIVE? MICHIGAN FLYER - www.michiganflyer.com

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February 2016

Dear Tri-County Community Leader:

Lansing's airport has major problems. With due respect to its CEO Robert Selig, Chairman Chris Holman, and the Capital Region Airport Authority, we believe the situation is now so dire that the Tri-County community must insist on greater accountability—including involvement in a methodical process of planning for the future.

In a recent update of its "[Policy Plan for Michigan Air Service](#)"—a thoughtful analysis of contingency plan possibilities for retaining air service in smaller airport communities—the Michigan Department of Transportation says that "Lansing (LAN) may be in the most challenging air service situation in the U.S., being surrounded by low cost carrier service and one of the largest hubs in the country, all within a roughly 90-minute drive."

In a [letter](#) to the Tri-County Regional Planning Commission (TCRPC) in December, Mr. Selig reacted negatively to MDOT's suggestions for helping smaller, weaker airports. Noting that these include "the option of replacing air service with bus transportation" at a couple Upper Peninsula airports, he accused MDOT of "planning to extend its reach and subsidies within the state ... at the demise of air service to many MI communities" and with serious consequences for local economies.

Next, Mr. Selig continued his now-decade-long, blame-the-bus campaign by asserting that MDOT subsidies to Michigan Flyer are responsible for the woes of the airport he is charged with managing. However—unlike LAN—our shuttle service between East Lansing, Ann Arbor, and Detroit Metro Airport receives no local, state, or federal subsidies whatsoever. Michigan Flyer used a one-time \$600,000 federal grant in 2013 to expand roundtrips out of East Lansing from eight to 12 a day, and, as predicted, is now supported entirely by passenger fares.

Mr. Selig's tenuous grasp of relevant facts has been well documented at the TCRPC¹, so we won't belabor it here. We only suggest that the time has come for greater community involvement in developing an action plan—based on best practices—for preserving and strengthening Lansing's airport, if it is to survive.

Consider that, despite staunch support for Lansing's airport by the business community—plus a \$4.5 million annual subsidy by Ingham County taxpayers—more than 70 percent of Tri-County residents now choose to fly from other nearby airports (mainly Detroit and Grand Rapids, to a lesser extent Flint). There, they typically find lower ticket prices and greater choice of nonstop flights.

The airlines have tended to follow the passengers to the other airports once they've exhausted the temporary marketing dollars and revenue guarantees provided by LAN. In 2015, both Allegiant Airlines and Sun Country Airlines pulled out of Lansing, ending regular nonstop service to Florida and Washington, D.C., respectively. This left a \$1 million hole in the airport's budget, which has been temporarily filled by raising landing fees by \$250,000 for the remaining airlines (Delta, United, and Apple Vacations) and tapping \$750,000 in reserves.

By the airport's own estimation, these circumstances could result in the elimination of most or all of its services in five to 10 years. But even that alarming projection seems rosy in view of airline industry trends highlighted in MDOT's 2015 "Policy Plan for Michigan Air Service":

- After 9/11, a big spike in oil prices, and the economic recession of 2008, airline mergers cut the number of major carriers to four—Delta, American, United, and Southwest. They control 83 percent of the reduced

¹ If interested, [this](#) is one of many examples.

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seating capacity remaining. That has resulted in higher ticket prices and profits for the airlines, but lower passenger volumes at smaller airports like LAN.

- The airlines are fast phasing out the use of the 50-seat regional jets like those that most often fly from LAN. For example, while Delta had 570 such jets in 2008, it plans to operate only 100 of them in 2016.
- Of the Michiganders who start their air travel from Detroit Metro Airport, 26 percent now drive there from outside of the Detroit region—a trend that is increasing.
- In 2013, Congress passed a law requiring co-pilots to have 1,500 certified flight hours (compared to 250 hours previously). This has led to a severe and growing pilot shortage, especially at smaller airports such as LAN.

Indian Trails and Michigan Flyer have strongly supported the airport's campaign urging the FAA to let American Airlines take over Sun Country's former slot at Reagan Airport and resume daily Lansing-to-D.C. flights. But beyond that, LAN's public response to its predicament has not inspired confidence. The airport has:

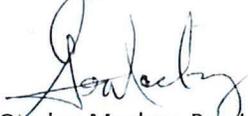
- Sought pledges from local businesses to require their employees to fly out of LAN on professional trips if the price is within \$200 of flying out of Detroit.
- Sought flight subsidies from local governments and businesses to lower ticket prices.
- Proposed a weekly direct charter flight to and from Xiamen, China.

The 2015 FAA report—[“The Effects of Airline Industry Changes on Small- and Non-Hub Airports”](#)—contains a self-assessment tool (p. 165) for airport and community leaders to use in developing strategies for maintaining air service at smaller airports like LAN (which is a non-hub Category II facility, meaning that it offers between 25-99 weekly flights).

One best practice recommended by the FAA for airports like LAN—which offer weak air service—is to partner with a private bus company to provide an important backup option for passengers whose connecting flights with a major hub like Detroit Metro Airport are often cancelled (p. 171). Back in June 2013, we presented a detailed [proposal](#) for just such collaboration with LAN. Unfortunately, we received no response from the airport at the time, or since then.

Clearly, it's past time for leaders of the Tri-County region to become more directly involved in ensuring the airport's future. For our part, we continue to extend a hand of cooperation in any such collaborative effort.

Sincerely,



Gordon Mackay, President, Indian Trails, Inc., and Michigan Flyer, LLC



Chad Cushman
Vice President, Indian Trails

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Sandy Otto

From: Victoria Voges <victoria.voges@gmail.com>
Sent: Monday, February 08, 2016 5:28 PM
To: LuAnn Maisner; Frank Walsh; Board
Subject: Re: Nokomis Furnace Completely Down: Asking for Help

We received your reply about help with the furnace, we are in the process of replacing it now . In years past, Meridian Township was partnering with Nokomis in many ways. They participated with membership on our Board and when Carlene Websters was Supervisor, payed for our utilities. I had the pleasure of meeting Carlene, as she has come into the Center in response to our new open hours and presentations. I dont know what happen to sever that partnership but hope someday it can be rebuild. Yes we are a non-profit....but we are a member of your inner community here and your very close neighbor. The Nokomis Board is a volunteer board and continues to try and hold the original purpose of the Center together despite what ever people from the past may or may not have done. We will always extend our hand to you. If ever we can help you in anyway please let us know. There is value in helping each other and being a strong community.

Blessings Always* Victoria Voges * Educational Director/ Scheduling Coordinator

On Wed, Feb 3, 2016 at 6:26 PM, LuAnn Maisner <maisner@meridian.mi.us> wrote:

Hi Victoria,

I know this is not what you want to hear but I am unclear if public funds could be utilized to support a non-profit organization. In 1989, Nokomis entered into an agreement with Meridian Township that clearly outlines responsibilities and obligations of each entity.

According to item #7 UTILITIES – Lessee (Nokomis) ... will pay all charges for sewer, usage or rental, refuse removal, and all other utilities including gas, water, heat, and electricity, consumed in or charged for the premises during the term of this Lease, or any renewal or extension hereof...; and Item 8 REPAIRS AND MAINTENANCE – All items of repair, upkeep and maintenance shall be the sole responsibility of the Lessee...

The Township is not responsible for replacing the furnace in the building while it is occupied by Nokomis. It is not until there is a default of the provision(s) of the agreement that the building reverts to the Township.

I am not sure what advice to give you at this time with regards to repairing or replacing the furnace. I believe the question needs to be directed to the Nokomis Board of Directors for their consideration and action.

Please keep me posted on this project as maintaining the condition of the building is an important lease provision.

LuAnn Maisner, CPRP

Director of Parks and Recreation

853-4604

From: Victoria Voges [mailto:victoria.voges@gmail.com]

Sent: Wednesday, February 03, 2016 3:10 PM

To: waish@meridian.mi.us; Board; Dennis Antone; LuAnn Maisner

Subject: Nokomis Furnace Completely Down: Asking for Help

Greetings and Belated New Years Greetings! I am contacting you on behalf of The Nokomis Board here in Meridian Township. The Furnace which services the left side of your building, is completely down. We have contacted Applegate heating and have been told this furnace is obsolete. It is the original one installed here back in 1988 when Nokomis was built. A new furnace must be bought. This is a very big expense for us and upon reading the lease agreement see a gray area as to what is meant by taking care of the inside of Nokomis. We attached a price quote with this letter in hopes that the Township will help install a furnace in their building which we lease. Please let us know soon as the furnace for the right side of the building is all we have running at this time. I will be sending a price quote also from another vendor, but it is higher then the one attached to this letter.

Thank you for your consideration*

Sincerely* Nokomis Board*

Victoria Voges* Educational Director****

Nokomis Native American Learning Center

5153 Marsh Rd.

Okemos , Mi 48864

517-349-5777

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Brett Dreyfus

From: Mark Holoweiko <mh@stonypoint-pr.com>
Sent: Sunday, January 31, 2016 4:00 PM
To: Board; Frank Walsh
Cc: Anne Harcus
Subject: FW: January 26, 2016 Agenda
Attachments: Stony Point Communications - Capabilities Statement.pdf

Dear Mr. Walsh and Meridian Township Board Members—

From 2001 through 2009, our firm—Stony Point Communications, based in Haslett—served as the township’s primary communications agency. We offer a full range of PR and marketing services (please see the attached capabilities statement), and exercised many of them for the township’s benefit over the years. So, we were somewhat chagrined to learn recently—and quite belatedly—that a branding and marketing RFP had been put out for bid by the township, and that a finalist had already been selected.

While that’s water under the bridge at this juncture, our effort to learn why we were not notified of the RFP on a timely basis did turn up some purchasing practices that might be improved in the future. These are detailed in the few emails below, and I’m passing them along merely for your consideration. Thank you very much for your time and attention. We have thoroughly enjoyed living and working in Meridian Township for the past 20 years.

—Mark

Mark Holoweiko, APR

Stony Point Communications
Outstanding Small Business of the Year
Lansing Regional Chamber of Commerce
1190 Teakwood Circle
Haslett, MI 48840
517-339-0123 *office*
517-881-4460 *cell*

Website www.stonypoint-pr.com
LinkedIn www.linkedin.com/in/markholoweiko
Twitter @holoweiko

From: Mark Holoweiko [mailto:mh@stonypoint-pr.com]
Sent: Tuesday, January 26, 2016 12:10 PM
To: 'Deborah Guthrie'; 'Julie Brixie'; 'Sandy Otto'
Cc: 'aeh@stonypoint-pr.com'
Subject: RE: January 26, 2016 Agenda

Hi, Deborah—

Thank you again for this information, and especially for adding us to your communications contact list. Please do include me on your press release list, too.

If I read it correctly, Meridian Township’s “formal bidding procedure” allows just about any form of RFP “publication,” ranging from simply calling favored suppliers personally to posting public notices in newspapers and trade journals. The heavy reliance on social media to solicit bids—which seems unusual for a mid-size municipality—isn’t explicitly covered

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by the policy. Similarly departing from standard practice, the evaluation criteria and selection process are not detailed in the RFP for Brand Development and Campaign.

The township's LinkedIn, Twitter, and Facebook pages reach a combined following of roughly 4,000 or one-tenth of its population—and that optimistically assumes that each and every follower happens to visit the social media sites at the time the RFP announcement is posted.

If the bid solicitation policy truly aims “to obtain the largest number of qualified offers,” you may want to consider posting future RFPs on the widely monitored Michigan Bids website (<http://www.michiganbids.net/>), which the Procurement Technical Assistance Center of South Central Michigan (<http://www.ptac-scmi.org/>) uses to help match local businesses with government contracts at the local, state, and federal levels. These services are free of charge for vendor companies.

A similar popular but subscription-based service is the Michigan Intergovernmental Trade Network (<http://www.mitn.info/>), where bids are posted by townships, cities, counties, and government departments statewide, including Lansing and East Lansing, but apparently not yet Meridian.

Anyway, best of luck with your branding project. I look forward to seeing the results!

—Mark

Mark Holoweiko, APR
Stony Point Communications
Outstanding Small Business of the Year
Lansing Regional Chamber of Commerce
1190 Teakwood Circle
Haslett, MI 48840
517-339-0123 office
517-881-4460 cell

Website www.stonypoint-pr.com
LinkedIn www.linkedin.com/in/markholoweiko
Twitter @holoweiko

From: Deborah Guthrie [<mailto:Guthrie@meridian.mi.us>]
Sent: Tuesday, January 26, 2016 8:39 AM
To: Mark Holoweiko; Julie Brixie; Sandy Otto
Cc: aeh@stonypoint-pr.com
Subject: RE: January 26, 2016 Agenda

Mark,

Thank you. My signature contains all of our connections for digital communications. Please follow us through social and share. I will have my team sign you up to receive our digital newsletter and add you to our communications contact list. Would you like to be included in our press release list as well? Please let me know.

As far as the Lansing area bidders are concerned in regards to paying taxes, to be accurate I would have to ask Julie to look that up for each company. Her office has the tax information.

Thank you for reaching out. Have a great day, Deborah

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Deborah Guthrie
 Communications Director/PIO, Meridian Township
 517.853.4380 | guthrie@meridian.mi.us | www.meridian.mi.us |
 5151 Marsh Rd. Okemos, MI. 48864



Join us at our next event: [January Happenings](#)

Subscribe for free: [Meridian Weekly Update](#)

From: Mark Holoweiko [<mailto:mh@stonypoint-pr.com>]
Sent: Monday, January 25, 2016 5:01 PM
To: Deborah Guthrie <Guthrie@meridian.mi.us>; Julie Brixie <brixie@meridian.mi.us>; Sandy Otto <otto@meridian.mi.us>
Cc: aeh@stonypoint-pr.com
Subject: RE: January 26, 2016 Agenda

Thanks, Deborah. Do any of the four Lansing–area bidders have their main office in, and pay taxes to, Meridian Township? We live and work here.

Also, could you please add Stony Point Communications to your list of potential bidders for the future, as well as add my name and email address as a subscriber to your digital newsletter? In advance, many thanks,

—Mark

Mark Holoweiko, APR
 Stony Point Communications
Outstanding Small Business of the Year
Lansing Regional Chamber of Commerce
 1190 Teakwood Circle
 Haslett, MI 48840
 517-339-0123 office
 517-881-4460 cell

Website www.stonypoint-pr.com
 LinkedIn www.linkedin.com/in/markholoweiko
 Twitter @holoweiko

From: Deborah Guthrie [<mailto:Guthrie@meridian.mi.us>]
Sent: Monday, January 25, 2016 4:29 PM
To: Julie Brixie; mh@stonypoint-pr.com; Sandy Otto
Cc: aeh@stonypoint-pr.com
Subject: RE: January 26, 2016 Agenda

Dear Mark,

Thank you for the inquiry.

Meridian Township has a formal bidding procedure under the Meridian Purchasing Policy that the branding RFP and Website RFP followed. The policy states:

Section 4 D. 3. Competitive Negotiation for Professional Services:

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c. Proposals may be solicited directly from potential offerers, or notices may be published in applicable trade journals and/or published in a local newspaper or other publications, in order to obtain the largest number of qualified offers.

We posted the information on the township website, township Facebook fanpage, township twitter, and township LinkedIn accounts, and the township's weekly digital newsletter. In addition, anyone who heard about the branding process that Meridian was undergoing and solicited Meridian about the branding RFP were sent an RFP.

We received a total of 5 bids; one bid was from a company in Canada who saw our post on Twitter. The other 4 bids came from companies in the Lansing region.

I hope I was able to answer any questions you may have. If you think of anything else let me know and I'd be glad to help. Thanks, Deborah



Deborah Guthrie

Communications Director/PIO, Meridian Township
517.853.4380 | guthrie@meridian.mi.us | www.meridian.mi.us |
5151 Marsh Rd. Okemos, MI. 48864



 Join us at our next event: [January Happenings](#)

 Subscribe for free: [Meridian Weekly Update](#)

From: Julie Brixie

Sent: Sunday, January 24, 2016 9:51 AM

To: mh@stonypoint-pr.com; Sandy Otto <otto@meridian.mi.us>

Cc: aeh@stonypoint-pr.com

Subject: RE: January 26, 2016 Agenda

Mark,

Thanks for contacting us. I'll have our communications director contact you Monday to explain the process that was followed.

Julie Brixie
Meridian Township Treasurer
5151 Marsh Rd.
Okemos, MI 48864
517-853-4144

On Sat, Jan 23, 2016 at 11:07 AM -0800, "Mark Holoweiko" <mh@stonypoint-pr.com> wrote:

Hi, Sandra and Julie—

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Noting that branding and website contracts are on the agenda, I wonder why our firm, based in Meridian Township and with longstanding ties to the board, wasn't notified of the opportunity to submit a bid. Any idea how the process was conducted? Thanks in advance,

—Mark

Mark Holoweiko, APR

Stony Point Communications

Outstanding Small Business of the Year

Lansing Regional Chamber of Commerce

1190 Teakwood Circle

Haslett, MI 48840

517-339-0123 office

517-881-4460 cell

Website www.stonypoint-pr.com

LinkedIn www.linkedin.com/in/markholoweiko

Twitter @holoweiko

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**CLERK'S OFFICE
BOARD COMMUNICATIONS
FEBRUARY 16, 2016**

Staff Communications (SC)

Sandy Otto

From: Brett Dreyfus
Sent: Friday, February 12, 2016 11:54 AM
To: Frank Walsh; Deborah Guthrie
Cc: Board; Sandy Otto
Subject: Guidelines about Injunction Against PA 269 Gag Order

This document from the Michigan Municipal League outlines what the Court did and did not do, where that leaves the statute, advises caution, and provides some helpful guidelines:

<http://www.mml.org/pdf/advocacy/PA269-SB571/MML%20Letter%20re%20PA%20269%20final%20draft.pdf>

Brett Dreyfus

Meridian Township Clerk

Charter Township of Meridian
5151 Marsh Road • Okemos, MI • 48864

DIRECT LINE: (517) 853-4324

dreyfus@meridian.mi.us • www.meridian.mi.us

*"Building an environmentally & economically
sustainable community!"*



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9B (1)

PROPOSED BOARD MINUTES

PROPOSED MOTION:

Move to approve and ratify the minutes of the January 26, 2016 Regular Meeting as submitted.

ALTERNATE MOTION:

Move to approve and ratify the minutes of the January 26, 2016 Regular Meeting with the following amendment(s): [insert amendments].

**FEBRUARY 16, 2016
REGULAR MEETING**

CHARTER TOWNSHIP OF MERIDIAN
TOWNSHIP BOARD REGULAR MEETING - DRAFT -
5151 Marsh Road, Okemos, MI 48864-1198
853-4000, Town Hall Room
TUESDAY, JANUARY 26, 2016 6:00 P.M.

PRESENT: Supervisor LeGoff, Clerk Dreyfus, Treasurer Brixie, Trustees Scales, Styka, Veenstra,
Wilson
ABSENT: None
STAFF: Township Manager Frank Walsh, Assistant Township Manager/Director of Public
Works Derek Perry, Director of Community Planning & Development Mark
Kieselbach, Fire Chief Fred Cowper

1. CALL MEETING TO ORDER

Supervisor LeGoff called the meeting to order at 6:00 P.M.

2. PLEDGE OF ALLEGIANCE/INTRODUCTIONS

Supervisor LeGoff led the Pledge of Allegiance.

3. ROLL CALL

The secretary called the roll of the Board.

4. PRESENTATION (None)

5. PUBLIC REMARKS

Supervisor LeGoff opened Public Remarks.

David VanderHaagen, 4789 Ardmore, Okemos, addressed articles in the Lansing State Journal and Towne Courier regarding mileage reimbursement payments, characterizing the articles as informative, a bit embarrassing and mildly entertaining. He suggested the Township establish a mileage reimbursement policy which excludes reimbursement for travel within the Tri-County area. Mr. VanderHaagen stated a number of area businesses have such provisions in their mileage reimbursement policies and such an exclusion would avoid "a lot of silliness" and make the policy easier to administer. He believed a policy which requires a good deal of time in order to total the relatively minor amounts, issue checks, etc. is ultimately unproductive.

Ann Alchin, 5972 Cypress, Haslett, continued to request the Board follow Robert's Rules. She asked the Board to "see to it" that either the Supervisor or the Township Manager was in charge of the meetings, and see to it the meetings conform to that procedure. Ms. Alchin did not believe such is currently happening. She spoke to Treasurer Brixie's behavior as it relates to her "hatred" for the Clerk. Ms. Alchin addressed the unprofessional, childish behavior displayed by the Board, chastising Board members who "went along" with the Treasurer. She urged this type of behavior to stop. Ms. Alchin also stated that, thanks to Treasurer Brixie "whispering in the Manager's ear", it was deemed unnecessary to discuss a bill which went \$30,000 over what it was approved for, while there was an uproar over \$4.60 in mileage reimbursement. She urged the Board to start acting in a professional manner.

Sherry Martin, 4137 Trillium Court, Okemos, requested more transparent and accurate information regarding Capital Area Transportation Authority's (CATA) Bus Rapid Transit (BRT) proposal. She lodged her formal protest against the project and offered several contradicting figures being reported. Ms. Martin spoke to the "shortfall" in excess of \$40 million per year, stating she did not believe the service provided warranted the cost to taxpayers.

Leonard Provencher, 5824 Buena Parkway, Haslett, expressed appreciation to the Assistant Township Manager and Township Manager for their quick response to several items of concern which he expressed to them. He thanked the Board for their selection of the current Township Manager, specifically as it relates to another Township Manager candidate who was Flint's Emergency Manager and is now the Emergency Manager for Detroit Public Schools. Mr. Provencher voiced concern there should be a plan in place to deal with the underfunded pension liability, and it should be one of the Board's 2016 Goals.

Kathy DeVito, 470 Chimney Oaks, Okemos, stated she passed out flyers concerning the BRT and many of the business owners she visited were in opposition to its placement on Grand River. She noted many business owners were unaware of CATA's meeting here at the Township. Ms. DeVito believed the prohibition on left hand turns off Grand River would be detrimental to those business owners and, as a result, customers will go elsewhere to shop.

Shirley Decker, co-owner of Mert's Specialty Meats, 1870 Grand River, Okemos, stated her retail store is one of convenience and believed the BRT would decimate her business with no allowed left hand turns. She stated Meridian Township is not a bus environment, and her experience traveling the Grand River corridor several times a day showed buses in Lansing are full, buses in East Lansing are full during the winter and buses in Okemos are nearly empty.

Debbie Alexander, 2535 Capeside, Okemos, Project Manager for the BRT, clarified the medians for the current BRT project in Meridian Township end at Okemos Road. She handed out information being circulated around the community, alleging it contains a significant amount of inaccurate information. Ms. Alexander stated the proposed medians have the ability to reduce auto and pedestrian accidents by 40% and would be a safety improvement. She also indicated removing buses from the auto lanes increase auto capacity and improve movement. Ms. Alexander noted the current cash fare is \$1.25, and calculations mentioned in earlier public comment were inaccurate. She added the cost per fixed route rider is \$2.58, and the cost for trips on Redi-Ride services or other demand response services is in the \$20 range. Ms. Alexander emphasized CATA is always willing to make presentations to interested members of the public in order to provide accurate information. She stated that as of this meeting, all the costs of the BRT project will be absorbed through the existing revenue and there is no recommendation for a tax increase.

Rhonda Bueche, 4126 Leeward Drive, Okemos, stated she was very supportive of public transit. She noted she had the opportunity to listen to a CATA BRT representative and felt the proposed BRT was a "beautification" project. Ms. Bueche expressed her dismay CATA stops at Marsh Road and does not service residents who live in Meridian Township east of Marsh Road. She asked the Township Board not to support the BRT as presented, as it does not increase accessibility or destination points. Ms. Bueche offered that no businesses have currently elected to own a bus station, despite a comment from CATA regarding funding for bus stations could come from a federal grant and from Meridian Township business owners.

Trustee Veenstra responded to Ms. Bueche by stating even though CATA's line service does not go to her neighborhood, she is eligible to use CATA's Redi-Ride, a curb to curb service, which runs from 9:00 AM until 5:00 PM.

Supervisor LeGoff closed Public Remarks.

6. TOWNSHIP MANAGER REPORT

Manager Walsh reported the following:

- The economic development staff person walked the business district and handed out information regarding the January 14, 2016 meeting on the BRT
- #1 Goal in the 2016 Board Goals document lists creation of a plan to address legacy costs

- Trustee Styka, Trustee Wilson and he attended the Master Plan consultant interviews
- He attended the Neighborhood Leadership meeting held on January 14th where he presented 2015 accomplishments, 2016 Goals and results of the 2015 Citizens Survey
- Representatives from the Michigan Department of Environmental Quality (MEDQ) were unable to attend tonight's meeting to discuss The Square Brownfield Redevelopment Plan
- Appreciation event for Board and Commission members to be held January 28th at the new central fire station
- Ribbon cutting ceremony for the new central fire station to be held Monday, February 1st at 1:00 PM
- He is scheduled to meet with the new Supervisor for Williamstown Township to discuss the police contract which will expire in December, 2016
- Contract extension for fire services in Alaiedon Township will be on the next Board agenda

7. BOARD COMMENTS & REPORTS

Trustee Scales reported his attendance at the January 14th Neighborhood Leaders meeting. He also attended the Okemos Public Schools discussion on Diversity held at the Meridian Senior Center and announced Okemos High School has started a Black Student Union as an outcome of that discussion. He announced Trustee Styka, Veenstra and he convened the organizational meeting of the Redi-Ride Review Committee on January 11th and broke it down into three (3) phases: 1) What was Redi-Ride established to do; 2) Is the goal relevant today; and 3) What is needed going forward. Trustee Scales noted he was selected as Chairperson and specific information was requested in order to review and the committee will reconvene in 30-45 days.

Trustee Scales reported his attendance at the January 13th meeting of the Ingham County Road Advisory Board where the Transportation Improvement Program (TIP) projects were reviewed as follows:

- 1) Completion of the emergency repair of the Marsh Road Bridge
- 2) In 2016, the entire Marsh Road Bridge will be replaced
- 3) In 2016, Park Lake Road will be resurfaced from M-43 to Merritt Road
- 4) Deferred funding applications were reviewed and three (3) projects in Meridian Township are on hold until funding is available:
 - A. Resurfacing of Central Park Drive from Okemos Road to M-43
 - B. Resurfacing of Lake Lansing Road from Hagadorn Road to BL-69
 - C. Resurfacing of Meridian Road from Jolly Road to M-43
- 5) Okemos Road bridge over the Red Cedar River:
 - A. Request for Proposal (RFP) sent for temporary repair
 - B. \$1.725 million of the project's cost to be funded from the local bridge program
 - C. \$1.775 million of the project's cost to be funded from new resources
 - D. Temporary repair to be performed in order to open the bridge in the Spring of 2016
 - E. Once the temporary repair is made, it will make approval of complete replacement funding by the Regional Bridge Council more problematic
- 6) Actual 2015 road revenues for Ingham County was \$12.90 million, with anticipated revenues in 2021 of \$21.870 million an increase in state funding of \$8.971 million over fiscal year 2015. Additional federal funding is still needed
- 7) Funding for a project at the intersection of Hagadorn and Mt. Hope Roads was taken by the Tri County Regional Planning Commission (TCRPC) to fund the BRT

Trustee Veenstra noted that as the Township representative to the TCRPC, he was unsuccessful in retaining the funding for the Hagadorn/Mt. Hope Road intersection. He indicated the Board received a presentation on the BRT last August and at that time, the cost of the BRT was stated to be \$167 million. He suggested a public hearing be held by the Township Board to hear a full presentation of the BRT in its latest form, as he believed the January 14th forum to be

unsatisfactory. Trustee Veenstra reminded interested parties the Township Board does not have a vote on approval of the BRT; however, the Township has two (2) members who sit on the CATA Board who can voice the Township's concern with the project. He noted the resignation of Jim Hershiser from the Zoning Board of Appeals (ZBA) after 20 years of service and suggested the Township pay tribute to him. Trustee Veenstra acknowledged letters from Mary Ann Martin and Juan Arellano regarding building a Chick-fil-A in a small wetland in front of Meijer and expressed concern it will aggravate flooding problems at Grand River and Okemos Road.

Trustee Wilson reported her attendance at the January 7th interviews for consultants to update the Township's Master Plan. She also reported her attendance at the Michigan Townships Association (MTA) Conference held January 19-22, 2016. Trustee Wilson agreed it would be helpful and informative to have a presentation from CATA on the BRT to obtain accurate information on the most recent version.

Supervisor LeGoff also reported her attendance at last week's MTA Conference.

Trustee Styka expressed appreciation for the number of residents attending tonight's Board meeting. He attended the January 14th Neighborhood Leadership meeting where there were few reports of crime in Meridian neighborhoods. He also attended the Diversity session hosted by Okemos Public Schools, as well as the interviews for a potential consultant to assist in the update of the Township's Master Plan. Trustee Styka noted his attendance at the January 11th organizational session of the Redi-Ride Review Committee where improvement will be encouraged and examined in detail. He agreed with earlier comment there needs to be more informational sessions for the public regarding the BRT.

Clerk Dreyfus reported his attendance as the Board representative to the Meridian Economic Development Corporation where the following issues were discussed:

- 1) Property owners were notified of the CIA public hearing
- 2) Engaging business owners along Grand River to ensure it is an inclusive process
- 3) Challenges of business owners along the Grand River Corridor who are absent, out of state, corporate chains, etc.
- 4) Approval of a \$1,000 contribution from the EDC budget to help fund the Joan Smith Memorial Fund
- 5) Approval of a \$1,000 contribution from the EDC budget to be spent on the 2016 Chinese New Year Event to be held at Meridian Mall on February 7th
- 6) The top 3 2016 EDC Goals and objectives:
 - A. Support endeavors that foster entrepreneurship, startups and businesses of all sizes through volunteerism, advocacy and funding
 - B. Work strategically to ensure Meridian Township is a great place to run a business
 - C. Collaborate with other entities within the Township and the greater Lansing to ensure Meridian remains competitive and congruent with regional development initiatives

Clerk Dreyfus reported his attendance at a presentation hosted by Jane Rose and held in the Okemos Library titled "Meridian, Going Back in Time". He noted the Clerk's Office maintains an archive of historical newspaper clippings, articles, photographs, etc. related to Meridian Township and any resident interested in Meridian's history may make an appointment to review the materials dating back to the late 1800s. Clerk Dreyfus indicated he attended the Neighborhood Leadership Meeting where there was harmony among neighborhoods and no "overarching" concerns expressed. He pointed out the issue of strengthening the Township's public nuisance ordinance, specifically related to problems associated with vacant commercial properties. Clerk Dreyfus reported his attendance at the January 14th meeting on the proposed BRT, acknowledging a well-publicized public hearing on the system needs to be held.

Clerk Dreyfus announced March 8th is the Presidential Primary Election, adding a voter must select either a Democratic Party or Republican Party ballot. He noted over 2,000 absentee ballot applications have been returned to the Clerk's Office, 200 of which were missing the necessary designation. As a public service, he indicated his office has sent out letters to those 200 prospective voters, apprising them of their need to make a selection and return the application back to the Clerk's Office.

Treasurer Brixie reported the Pension Board met earlier today and took action to update to an actuarial life expectancy table which is multi-generational, believed to offer a more accurate reflection of how long people currently live. She added longer life has implications for funding of Meridian's pension program. Treasurer Brixie attended the Land Preservation Advisory Board (LPAB) meeting last week and will likely bring to the Board a grant opportunity to purchase property in the Township for permanent preservation.

Treasurer Brixie reported her attendance at the January 14th meeting on the BRT, held to seek public input on design elements. She indicated one reason CATA uses stations and posters at its meetings is because history revealed residents do not stay for an entire formal presentation and do not offer input. Treasurer Brixie believed there is room for improvement in reaching the citizenry with factual information on the BRT, highlighting CATA's offer to provide a presentation in the near future. She reminded fellow Board members that in addition to the two CATA Board representatives, the Township has representation on the BRT Steering Committee, which the Supervisor sits on. Treasurer Brixie indicated much of the decision making on the BRT is handled through TCRPC, and Trustee Veenstra is the Board representative to that body. Treasurer Brixie emphasized she was aware inaccurate information was given out at the Neighborhood Leadership Meeting regarding the costs of fixed route service, costs for Redi-Ride service, and costs for SpecTran service. She reminded the public that voters approve the spending and subsidy of public transit, which are supplemented by federal and state funding.

Trustee Scales suggested scheduling a special meeting dedicated solely to the BRT, as he has heard information tonight from the CATA representative that currently all costs would be absorbed and there are no recommended tax increases at this time.

Trustee Veenstra expanded on the Clerk's earlier comment, adding that Jane Rose has written a book on the early history of Meridian Township, titled "Images of America - Meridian Township." He clarified CATA charges the Township \$22.50 for each Redi-Ride. He also requested an updated presentation and a public hearing on the BRT so the public can voice their comments and concerns.

8. APPROVAL OF AGENDA

Treasurer Brixie moved to approve the agenda as submitted. Seconded by Clerk Dreyfus.

Trustee Veenstra offered the following friendly amendment:

- **Amend Action #12D by deleting the word "Appeal" and Inserting the word "Repeal"**

The friendly amendment was accepted by the maker and seconder.

Trustee Veenstra moved to amend the agenda by moving Agenda Item #13A (the Brownfield credit for The Square on Grad River Avenue) to Action Item #12E

The motion died for lack of a second.

ROLL CALL VOTE: YEAS: Trustees Scales, Styka, Veenstra, Wilson, Supervisor LeGoff,
Treasurer Brixie, Clerk Dreyfus
NAYS: None
Motion carried unanimously.

9. CONSENT AGENDA (SALMON)
Supervisor LeGoff reviewed the consent agenda.

Trustee Veenstra moved to adopt the Consent Agenda. Seconded by Clerk Dreyfus.

ROLL CALL VOTE: YEAS: Trustees Scales, Styka, Veenstra, Wilson, Supervisor LeGoff,
Treasurer Brixie, Clerk Dreyfus
NAYS: None
Motion carried unanimously.

A. Communications

(1) Board Deliberations (BD)

BD 13A-1 Dave Bueche, 2689 Roseland, East Lansing; RE: Opposition to The Square
Brownfield Redevelopment Plan

(2) Board Information (BI)

- BI-1 Mary Ann Martin, 2504 Arrowhead Drive, Okemos; RE: New construction in floodplain/wetland (Chick-Fil-A)
- BI-2 Christine Beavers, 5125 Brookfield Drive, East Lansing; RE: January 5, 2016 Board Meeting
- BI-3 Trustee Milton Scales; RE: Anti-Racism Awareness & Training Event on January 30, 2016
- BI-4 Dr. B Ray Horn, 2790 Sirhal Drive, Apt. 115, East Lansing; RE: Redi-Ride Review Commission
- BI-5 Donna Rose, 6207 Cobblers Court, East Lansing; RE: Response to Dr. Horn's letter on the Redi-Ride Review Commission
- BI-6 Christine Beavers, 5125 Brookfield Drive, East Lansing; RE: Travel Vouchers
- BI-7 William and Chris Collette, 2373 Barnsbury Road, East Lansing; RE: CATA's Bus Rapid Transit (BRT) Proposal
- BI-8 Treasurer Julie Brixie; RE: Response to William and Chris Collette on CATA's BRT Proposal
- BI-9 Vance Poquette, 2226 Kent Street, Okemos; RE: CATA's BRT Proposal
- BI-10 Barbara O'Kelly, 2576 Woodhill Drive, Okemos; RE: CATA BRT
- BI-11 Juan and Olga Arellano, 2170 Seminole Drive, Okemos; RE: Okemos Citizens Sympathize & Empathize with Flint

(3) Commission Linkage (CL)

- CL-1 Brian Seipel, 4114 Spinnaker Lane, Okemos; RE: Resignation from the Cable Communications Commission
- CL-2 Richard Searl, 1445 Forest Hills Drive, Okemos; RE: Resignation from the Environmental Commission
- CL-3 John C. Schlinker, 2426 Burcham Drive, East Lansing; RE: Resignation from the Pension Board of Trustees
- CL-4 Jim Hershiser, 2580 Saranac Lane, Okemos; re: Resignation from the Zoning Board of Appeals

(4) Regional Linkage (RL)

- RL-1 Ingham County Drain Commissioner Patrick Lindemann, 707 Buhl Street, Mason; RE: Button, Spring Lakes Branch Drain Drainage District "Notice of Day of Review of Drainage District Boundaries" to be held on January 28, 2016 from 9:00 A.M. to 5:00 P.M. at the Drain Commissioner's Office
- RL-2 Ingham County Drain Commissioner Patrick Lindemann, 707 Buhl Street, Mason; RE: Herron Creek Drain Drainage District "Notice of Day of Review of Drainage District Boundaries" to be held on January 28, 2016 from 9:00 A.M. to 5:00 P.M. at the Drain Commissioner's Office
- RL-3 Ingham County Drain Commissioner Patrick Lindemann, 707 Buhl Street, Mason; RE: Okemos Preserve Drain Drainage District "Notice of Day of Review of Drainage District Boundaries" to be held on January 28, 2016 from 9:00 A.M. to 5:00 P.M. at the Drain Commissioner's Office
- RL-4 Ingham County Drain Commissioner Patrick Lindemann, 707 Buhl Street, Mason; RE: Sanders-Tacoma Hills Drain Drainage District "Notice of Day of Review of Drainage District Boundaries" to be held on January 28, 2016 from 9:00 A.M. to 5:00 P.M. at the Drain Commissioner's Office

(5) On File in the Clerk's Office (OF)

Material handed out at the January 5, 2016 Board Meeting

Melanie C. Lynn, Board President, Okemos Public Schools' Board of Education, 2001 Timberview Drive, Okemos; RE: Community Conversation to be held on January 13, 2016 from 7:00 P.M. to 8:30 P.M. in the Meridian Senior Center

Trustee Veenstra moved that the communications be received and placed on file, and any communications not already assigned for disposition be referred to the Township Manager or Supervisor for follow-up. Seconded by Clerk Dreyfus.

ROLL CALL VOTE: YEAS: Trustees Scales, Styka, Veenstra, Wilson, Supervisor LeGoff, Treasurer Brixie, Clerk Dreyfus
NAYS: None
Motion carried unanimously.

B. Minutes

(1) Trustee Veenstra moved to approve and ratify the minutes of the January 5, 2016 Regular Meeting as submitted. Seconded by Clerk Dreyfus.

ROLL CALL VOTE: YEAS: Trustees Scales, Styka, Veenstra, Wilson, Supervisor LeGoff, Treasurer Brixie, Clerk Dreyfus
NAYS: None
Motion carried unanimously.

(2) Trustee Veenstra moved to approve and ratify the minutes of the January 12, 2016 Joint Meeting as submitted. Seconded by Clerk Dreyfus.

ROLL CALL VOTE: YEAS: Trustees Scales, Styka, Veenstra, Wilson, Supervisor LeGoff, Treasurer Brixie, Clerk Dreyfus
NAYS: None
Motion carried unanimously.

C. Bills

Trustee Veenstra moved that the Township Board approve the Manager’s Bills as follows:

Common Cash	\$ 725,071.94
Public Works	\$ 576,562.76
Trust & Agency	\$ 6,167,171.37
Total Checks	\$ 7,468,806.07
Credit Card Transactions	\$ 53,018.77
Total Purchases	<u>\$ 7,521,824.84</u>
ACH Payments	<u>\$ 1,845,316.98</u>

Seconded by Clerk Dreyfus.

ROLL CALL VOTE: YEAS: Trustees Scales, Styka, Veenstra, Wilson, Supervisor LeGoff,
Treasurer Brixie, Clerk Dreyfus
NAYS: None
Motion carried unanimously.

[Bill list in Official Minute Book]

D. Ratification of Police Officer Appointment

Trustee Veenstra moved to ratify the appointment of Adam Slavick to the position of police officer contingent upon successful completion of those items stipulated in the conditional offer of employment. Seconded by Clerk Dreyfus.

ROLL CALL VOTE: YEAS: Trustees Scales, Styka, Veenstra, Wilson, Supervisor LeGoff,
Treasurer Brixie, Clerk Dreyfus
NAYS: None
Motion carried unanimously.

10. QUESTIONS FOR THE ATTORNEY (None)

11. HEARINGS

A. Corridor Improvement Authority (CIA)

Supervisor LeGoff opened the public hearing at 7:12 P.M.

Associate Planner Menser summarized the proposed CIA as outlined in staff memorandum dated January 21, 2016.

Chris Buck, Chair of the Meridian Economic Development Corporation (EDC), explained the need to establish a CIA in order to have a voice and “seat at the table” to develop what the Grand River corridor will look like with the possible addition of the CATA BRT. He clarified the CIA will be comprised of volunteer citizens who are interested in the progress of the Grand River Corridor, irrespective of whether the BRT comes to fruition. Mr. Buck stated the City of Lansing, Lansing Township and the City of East Lansing all have established a CIA, meeting both individually to address their portion of the corridor and collaboratively to focus on continuity. He requested, both as a business owner and Chair of the EDC, that Meridian Township establish a CIA so it has a voice in what the “after” looks like.

Keith Lambert, Tri-County Development Manager, Lansing Economic Area Partnership (LEAP), 1000 S. Washington Avenue, Suite 201, Lansing, indicated there are two CIAs in Lansing, one on Saginaw Street and one on Michigan Avenue from the Capitol Building to the jurisdictional line shared with Lansing Township. He added under his leadership, City of Lansing, Lansing Township and the City of East Lansing came together in a single forum for a regional planning approach to this area's economic spine. Mr. Lambert offered LEAP's support for the proposed CIA as Meridian Township's non-profit economic development agency.

- Public
Maria Cowan, 1914 Wilder Street, Haslett, inquired as to how business owners or members of the public can be involved.

Mr. Buck and Mr. Menser explained interested parties must be either a business owner, property owner or someone with a business interest within the boundaries of the proposed CIA, as mandated in state law. They noted agendas are published and members of the public are invited to attend meetings.

Supervisor LeGoff closed the public hearing at 7:22 P.M.

B. Daniels Drain Improvements

Supervisor LeGoff opened the public hearing at 7:22 P.M.

Assistant Township Manager/Director of Public Works and Engineering Perry summarized the process for the improvements to the Daniels Drain as outlined in staff memorandum dated January 21, 2016.

- Public
Vij Pankaj, 4532 Mistywood Drive, Okemos, representative for the Board of Whispering Oaks Subdivision, expressed concern benefits to the subdivision are minimal based on existing wetlands and current drain infrastructure. He requested the map included as part of the project be amended based on the survey performed by the developers of Whispering Oaks and benefits reduced for some of the properties within Whispering Oaks.

Cecilia Kramer, 4560 Oakwood, Okemos, thanked Clerk Dreyfus for his remarks regarding the recent Friends of the Library Event where Jane Rose was hosted to dialogue on her Historic Meridian book. She also expressed appreciation to Trustee Scales and Veenstra for their attendance at that event. As the president of Forest Hills Homeowners Association, she acknowledged stormwater from the affected portion of the subdivision flows down through Walden Pond and into the Daniels Drain system. Ms. Kramer also acknowledged the Board has a responsibility for maintenance and improvements which are necessary and conducive to public health, safety and welfare. She believed it necessary for stormwater detention to be moved from garden apartments, cleanup of easements, centerline descriptions and to ensure the drain pipes are clean, whole and in alignment, while acknowledging these items go well beyond a normal maintenance project for this drain. Ms. Kramer believed outlet work should be conducted under Grand River Avenue and urged the Board, at the appropriate time, to look closely at the benefit derived relative to the additional upgrades and improvements to Walden Pond itself.

Margaret Lynch, 1555 West Pond, #32, Okemos, spoke to the 2.78 acre retention pond in the middle of Walden Pond. She indicated the purpose of the pond is to filter water for the immediate area. Ms. Lynch stated because the drainage basin no longer does it job properly, wells servicing nearby homes may be negatively impacted. She added Walden Pond is a regulated wetland and the water discharge terminates in Lake Michigan. Ms. Lynch believed the recent water emergency in Flint has emphasized the need to properly take care of the Township's water system. She requested the cleanup of this water basin be taken up as soon as possible, since the Ingham County Drain Commissioner met with the Board of The Ponds Cooperative, Inc. four (4) years ago regarding the extensive work needed on the pond.

Quenda Story, 4526 Marlborough, Okemos, offered information on the history of The Ponds, stating the soil “problems” were known when The Ponds was being created, alleging the land would not carry the weight of the buildings. She stated her property and that of her immediate neighbors are serviced with ditches and do not receive the amount of runoff like some homes in the area. Ms. Story voiced concern with the proposed cost per parcel

Chuck Barbieri, Foster Swift, 313 S. Washington Square, Lansing and attorney for The Ponds Cooperative, Inc., noted the hearing is being held to move on to the next step in the process to develop improvements needed for the Daniels Drain. He indicated that at its February 2, 2016 meeting, the Board will have an opportunity to pass a resolution authorizing the filing of a petition with the Ingham County Drain Commissioner. He believed the purpose of this hearing is to consider creation of a special assessment district to provide a way to “cover” the costs the Township may be assigned so the pond can be restored, pollution is limited, collapsed pipes can be replaced, and other necessary changes to control runoff. He submitted a letter and petition with 77 signatures.

Treasurer Brixie suggested the Township Manager consider instructing Assistant Township Manager/Director of Public Works and Engineering Perry to meet with Mr. Pankaj regarding concerns with the map provided in the notice sent to affected property owners.

Supervisor LeGoff closed the public hearing at 7:37 P.M.

12. ACTION ITEMS

Supervisor LeGoff opened Public Remarks.

John Scott-Craig, 5244 Wardcliff Drive, Okemos and Chair of the Planning Commission, spoke in support of Board approval of the Master Plan Consultant Contract.

Leonard Provencher, 5824 Buena Parkway, Haslett, suggested that as progress is made throughout the year, the public be made aware of when goals are achieved or problems are encountered.

Supervisor LeGoff closed Public Remarks.

A. 2016 Goals Document

Township Manager Walsh summarized the 2016 goals document as outlined in staff memorandum dated January 21, 2016.

Treasurer Brixie moved to approve the 2016 goals document. Seconded by Trustee Styka.

Trustee Veenstra moved to change the target date for the tree ordinances from December, 2017 to December, 2016. Seconded by Clerk Dreyfus.

Board and staff discussion:

- Township Manager will create a work plan for each department head based on the approved 2016 goals document
- Process for the goals document is different from how it was handled in previous years
- Target dates are set to allow time for any particular item to be thoroughly vetted for a quality end result
- Board member belief adjusting the target date for each item defeats the purpose of having the goals document be inclusive
- Target dates do not prohibit staff from achieving goals prior to their target date
- Goals document has a long life and contains many ongoing components
- Board sets priorities and directs staff activity to implement the goals
- Board member preference for the MUPUD target date to be moved up to sometime in 2016
- Each Board member has favorite goals
- Board members asked the Township Manager and staff to perform a risk analysis and risk benefit

- Street Tree Ordinance is on tonight's agenda
- Board member optimism the goals are realistic and target dates may be achieved earlier than outlined
- Review of the Township's MUPUD ordinance is on the 2016 Action Plan
- Need to take sufficient time to make sure review of the MUPUD ordinance is thoroughly vetted for the best work product available
- March, 2017 target date for review of the MUPUD ordinance is realistic given the amount of worked involved

VOICE VOTE: Motion failed 3-4 (Trustees Scales, Styka, Wilson, Treasurer Brixie).

Continued Board discussion:

- Appreciation to staff and the public for their input
- Reminder that providing medical first response to a portion of Alaiedon Township (Goal #2n) will be a mutually agreed upon service, including input from Delhi Township
- Board member assurance that services to the residents of Meridian Township are paramount in any shared services agreement
- Clarification that any medical first response to Alaiedon Township would be to only the portion of Alaiedon where we currently provide fire services
- Agreement would be similar to police services Meridian provides to Williamstown Township
- Mutually agreed upon services speak to the caliber of service provided by our township staff
- Such service is not typical and builds on Meridian's commitment to a regional approach
- Fire station on south Okemos Road is within ½ mile of Jolly Road and an ambulance could respond much quicker to the designated area than the current services provided to Alaiedon Township by another entity
- Need to increase efforts to make the public aware of Granger's free recycling services to residents who utilize Granger's trash pickup service in Meridian Township
- Board member suggestion for an annual presentation by Granger regarding their services offered in Meridian Township
- Board member belief recycling opportunities in apartment buildings should be required
- Board member belief the target date for review of the cost/benefit analysis of implementing a railroad quite zone be changed to October, 2016

Trustee Scales called the question. Seconded by Trustee Styka.

ROLL CALL VOTE: YEAS: Trustees Scales, Styka, Wilson, Supervisor LeGoff, Treasurer Brixie
NAYS: Trustee Veenstra, Clerk Dreyfus
Motion carried 5-2.

ROLL CALL VOTE ON THE MAIN YEAS: Trustees Scales, Styka, Veenstra, Wilson, Supervisor LeGoff, Treasurer Brixie
MOTION: NAYS: Clerk Dreyfus
Motion carried 6-1.

Clerk Dreyfus moved to add to Goal #1 the Township review open space requirements by zoning category and development ordinances (such as MUPUD, PUD, PRD and CPUD). Seconded by Trustee Veenstra.

Board discussion:

- Number of goals already listed involve open space including one designated as ongoing (Goal #1d)
- Best way to achieve applying the best planning practices to encourage the preservation of green and open spaces is to review our ordinances
- Developer comment in the past the Township's open space requirements need to be looked at
- Board member belief the motion just offered and seconded is out of order as the Board just approved the 2016 Goals document

- Statement was made at the last Board meeting that Board members could introduce motions to add items to the 2016 Goals list and if approved, those items will be added
- Inquiry if the intent of the motion is to change the open space requirements of the different development categories
- Maker of the motion's preference for this addition to direct staff to prepare a written report which compares open space requirements for these categories with those in other communities
- Maker of the motion's preference to then place the item on the agenda for discussion and invite developers and other interested parties to speak to the issue
- Open space requirements can be evaluated under the review of the MUPUD
- Board member belief the motion was to bring back debate about the agenda item which just passed
- A Board member cannot speak to an item and then make a motion to table that same item

Supervisor LeGoff moved to table the amendment. Seconded by Treasurer Brixie.

ROLL CALL VOTE: YEAS: Trustees Scales, Styka, Wilson, Supervisor LeGoff, Treasurer Brixie

NAYS: Trustee Veenstra, Clerk Dreyfus

Motion carried 5-2.

B. Master Plan Consultant Contract

Director Kieselbach summarized the process to date as outlined in staff memorandum dated January 21, 2016.

Trustee Styka moved to authorize the Supervisor and Clerk to sign a contract with McKenna Associates, not to exceed \$50,000, for the update of the Meridian Township Master Plan, subject to the review and approval of the Township Attorney. Seconded by Trustee Wilson.

Board discussion:

- Interview process conducted was thorough and will move the Master Plan along to adoption
- All three (3) applicants were qualified
- Appreciation to the Planning Commission for its work toward the Master Plan to date
- McKenna Associates knew Meridian Township and what the Township desired in its Master Plan document
- "Add ons" were included in McKenna's fee structure regardless of the time needed to complete
- McKenna Associates understood the values of our Planning Commission and the community
- McKenna's presentation included:
 - Goal of smart growth has changed to a goal of sustainable growth for 2016
 - Reuse of existing infrastructure
 - Building on the Township's assets, with an emphasis on sustainability, strengthening our neighborhoods and preserving open space
 - Trends within the millennials and their interest in walkability and living in more urban core areas
 - Installation of green infrastructure, rain gardens, green roofs and blue infrastructure
- McKenna will use existing data already compiled by staff and the Planning Commission
- McKenna will provide priority development site scenarios which will "put" pictures to the words

ROLL CALL VOTE: YEAS: Trustees Scales, Styka, Veenstra, Wilson, Supervisor LeGoff, Treasurer Brixie, Clerk Dreyfus

NAYS: None

Motion carried unanimously.

C. Branding/Website Contracts

Trustee Styka moved to approve \$30,000 from the Cable TV Fund Balance for the

Township Brand Development and Campaign project. Seconded by Trustee Wilson.

Board discussion:

- Branding and the website go “hand in hand”
- Board member reiteration of public comment expressing concern spending \$110,000 (on website development and the branding “exercise”) is too much money
- Explanation by staff that \$30,000 was carried over from 2014 for website development
- \$50,000 for branding was approved and carried over from 2015
- \$30,000 in additional funds will come from the Cable TV fund balance for branding
- The community has been discussing this project since 2008
- Last year, the Township Board approved \$50,000 for the branding project without knowing an exact cost
- At the end of the bidding process, it became apparent the project would be more expensive than what had been budgeted
- Question before the Board is whether to use \$30,000 from the Communications Budget to move forward on the branding/website contracts
- There has been a discourse on the issues of the website, placemaking and branding since 2000
- Board member belief the branding component has recently taken on a “life of its own”
- Board member belief that while he is an advocate for website overhaul and the need for Township branding, the process should not be circumvented
- Board member reminder Goal #8 t. contained in the 2015 Goals Document adopted by the Board on December 9, 2014 stated “Begin the process of overhauling the Township website and branding up to an amount of \$30,000”
- Original \$30,000 budgeted for 2015 was for both the website and branding
- Special budget request on the September 15, 2015 agenda included \$50,000 to complete website and branding improvements
- A branding discussion was deleted from the September 1, 2015 agenda
- Board member comparison between \$44,000 consultant contract for more challenging Master Plan development v. \$80,000 consulting contract for less challenging branding assistance
- Board member belief website development is specific and incurs significant hard costs
- Concern the \$50,000 became an expense specifically designated toward branding, despite the explanation in the special budget request
- Board member belief \$80,000 is too high a fee to spend for the development of branding
- Board member preference for the Township to assemble a group of diverse and committed stakeholders in the community to “drive” the brand

Communications Director Guthrie offered a historical “recap” of discussions held at Economic Development Corporation and Township Board meetings beginning in 2008 as outlined in staff memorandum dated January 20, 2016. She introduced Tiffany Dowling, Chief Executive Officer and her team from M3 Group, who offered a Powerpoint presentation on their company and “plan of action” to establish a brand for Meridian Township.

Board, staff and M3 Group discussion:

- Important to ascertain who the Township is today, and where the Township wants to be in the future
- Logo is a visual representation of Meridian Township
- Branding will help transmit the goals of the Township and give a polished vision of Meridian
- Development of a strategic marketing plan
- How M3Group would measure success in attaining its proposed goals
- Township undertook a major change to overhaul its website which went live in 2009
- Board member belief the proposed overhaul to the current website will be much less extensive than the one in 2009 but will provide many new technical advantages
- Board member iteration of the timeline of the website and branding approval process, including monetary consideration
- Stated Board member opposition with spending \$80,000 to create “buzz”
- Township Manager’s in depth explanation of the timeline for the Board approved amounts for the website and the branding projects

- Sustainability as a community is also about attracting and retaining a diverse population
- 2015 Citizen Survey showed most residents moved to Meridian Township for its school systems
- 2015 Citizen Survey showed most residents don't know the myriad of services offered by the Township and branding will provide that information
- Need to move away from having the Township logo be Meridian's brand
- The Township's brand will be a reflection of "all the good produced by the community in its various manners"
- Board member belief it is incongruent to compare an update to the Master Plan to development of Township branding
- Township Board faith in the branding committee and staff to vet the branding requests for proposal (RFP) and bring that selection to the Board
- Cost of branding is based upon the parameters established by the Township

ROLL CALL VOTE: YEAS: Trustees Scales, Styka, Wilson, Supervisor LeGoff, Treasurer Brixie
NAYS: Trustee Veenstra, Clerk Dreyfus
Motion carried 5-2.

D. Resolution to Repeal Section 57 of P.A. 269

Manager Walsh summarized the effects of Section 57 of Public Act 269 on the ability of local communities to disseminate information regarding ballot questions within 60 days of an election as outlined in staff memorandum dated January 21, 2016.

Treasurer Brixie moved Therefore, be it resolved to request the Township Board to pass a resolution of support to Repeal Section 57 of PA 269. Seconded by Trustee Wilson.

Board discussion:

- Manager Walsh and a number of Directors attended a state legislative committee hearing
- PA 269 prohibits school districts and municipalities from providing any mailed information relative to ballot issues within 60 days of an election
- Not all ballot issues involve money (e.g., annexation)
- Passage of this resolution is time sensitive and will have significance to the Legislature
- Class action lawsuit was filed today by school districts who have millage issues on the March 8, 2016 ballot
- It is essential to the democratic process for voters to be provided with the facts concerning a ballot proposal
- This "gag order" was enacted the night of the last state legislative session in 2015 through a 41 page substitute bill

ROLL CALL VOTE: YEAS: Trustees Scales, Styka, Veenstra, Wilson, Supervisor LeGoff, Treasurer Brixie, Clerk Dreyfus
NAYS: None
Motion carried unanimously.

[Supervisor LeGoff recessed the meeting at 9:29 P.M.]

[Supervisor LeGoff reconvened the meeting at 9:36 P.M.]

13. BOARD DISCUSSION ITEMS

Supervisor LeGoff opened Public Remarks.

Barb Sears, 9492 Coleman Road, Haslett, stated encouragement of The Square on Grand River through tax abatement is not reflective of the interests and priorities of Meridian citizens. She listed Meridian citizen values as parks, green space, libraries, school systems and many offered governmental services. Ms. Sears noted additional student apartments place increased demand on fire and police services, road maintenance, etc. She believed the Board has an opportunity to correct a bad decision it made earlier regarding this by following the recommendation of the Planning Commission for The Square on Grand River.

Eckhart Dersch, Vice-Chair, Liaison for Inter-Neighborhood Cooperation (LINC), PO Box 40, Haslett, read a letter in opposition to The Square on Grand River Brownfield Redevelopment Plan.

Eric Helzer, Advanced Redevelopment Solutions, PO Box 204, Eagle, noted recent data showed a cost savings of over \$1 million from the previous estimates for cleanup of the proposed site for The Square on Grand River. He stated the developer would amend the brownfield plan to reflect the data recently obtained.

Leonard Provencher, 5824 Buena Parkway, Haslett, spoke to the various entities which would "lose" money if The Square on Grand River Brownfield Redevelopment Plan is approved. He alleged the developer is not a good citizen as they do not want to pay their full share to our community and spoke in opposition to the plan. Mr. Provencher believed citizens should have use of the Community Room in the new central fire station as they approved a \$3.5 million millage for its construction. He stated citizens should have the ability to rent the room at a reasonable rate and the \$35 hourly rate is costly for non-profit organizations which host a monthly meeting. Mr. Provencher requested information on the occupancy limits for this room and the number of non-employee parking spaces available.

Cecilia Kramer, 4560 Oakwood, Okemos, read excerpts from the Daniels Drain petition language. She noted residents of the Forest Hills subdivision will be watching how the benefit derived is assigned. Ms. Kramer requested after the project is completed, the Board "take back" the cost of maintenance in the future.

Supervisor LeGoff closed Public Remarks.

A. The Square, 2655 Grand River Avenue – Brownfield

Board, Ingham County Brownfield Development Authority representative, and the applicant's discussion:

- Need for the applicant to provide information which shows it is advantageous to the Township to embark upon the partnership for the brownfield redevelopment plan
- Additional \$4 million cost to the applicant turns the project "upside down"
- Board member suggestion for the developer to recoup cleanup costs through negotiation with the seller
- Developer statement that the cleanup costs are more than the value of the property
- Developer statement the seller cannot cover the cost of cleanup unless he gives the land away
- Board member statement the developer obviously wants this project as he is still before the Board
- Board member belief that although the brownfield allows school taxes to be collected, development of commercial property and the resulting tax dollars do not help the school district "that much"
- A school district receives its funding based upon the foundation allowance of student enrollment
- Real assistance to the schools is for the developer to provide the type of housing which will generate children for the school district, which this project does not do
- Developer for the Triangle knew of the onsite contamination and apprised the Township early on in the process
- Board member inquiry if the site is in compliance today

- Earlier statement made by the applicant that the site cannot be redeveloped with the contamination
- Site was previously redeveloped with the existing contamination (Foods for Living, Salvation Army)
- Redevelopment and blight have already occurred
- What the Board recently approved for The Square is further infill development of the site
- Michigan Department of Environmental Quality (MDEQ) is waiting for the applicant to submit the due care plan and assessments
- MDEQ stated the existing use (parking lot), is a good physical barrier to prevent water from spreading contamination throughout the system
- Board member belief the developer is “pretty much” in compliance with the existing use
- Board member concern the applicant is asking the Board to place the drainage system in one of the two areas of the site where the “very bad” contamination is located
- High standards for indoor air volatilization
- Cost of installing the vapor barrier and system used to pull benzene out in order for residents to live in a building constructed on top of contaminated soils
- Other parts of the site do not have contamination and are proposed to be a parking lot
- Standards would be different if the developer chose to place a retail building over the area proposed for construction of living units
- Cleanup proposed to occur does not clean it all up
- Cleanup for the Douglas J site would remove all of the contamination
- Board member concern with driving up the cost of the cleanup for this site while potentially exposing future residents to problems
- Purpose of the Brownfield Act is to allow for the cleanup of problem sites in order to be able to place them on the tax rolls
- Proposed site is on the Township’s tax rolls as it has already been redeveloped
- Board member uncertainty whether the cost of the plan and the cost of cleanup are worth the risks being taken, as well as the sacrifice to the General Fund
- Reminder that apartments are the most expensive type of housing for a community to maintain
- The brownfield process starts with the county instead of the Township because it is a county brownfield authority
- If the Township had its own brownfield authority, the entire brownfield process would stay within the Township
- County Brownfield Authority is a recommending body
- Under state law, the Ingham County Board of Commissioners (ICBC) cannot approve the brownfield unless the Township Board does
- Any amendments the Township Board makes to the brownfield plan must go before the ICBC for approval in the exact form passed by the Board
- The aforementioned process was used when the Board approved the brownfield plan for the Douglas J project at the Hamilton/Okemos Road intersection
- ICBC has the final approval
- If both the Board and the developer do nothing, there is no tax to be gained
- Seller conducted a baseline environmental assessment (BEA)
- BEA holds the seller harmless from past contamination
- Applicant relied on prior data and built upon that data for the new development
- Applicant’s statement that any BEA includes a Phase 1 environmental site assessment
- Purchaser obtained a Phase 1 (paper study) approximately 6-7 months ago from the seller,, which was “fairly clean”
- Based on that Phase 1, the applicant determined it was not a high priority to immediately conduct its own Phase 1
- Soil borings discovered buried concrete on the site
- Site engineers are required to determine the amount of load the soils can take
- Developer statement the seller was not aware of the buried concrete
- Applicant was aware there had been a gas station on the property at one point in time
- Board member inquiry if the site currently has any “contact hazards”
- The way the site currently sits, there is no direct contact hazard

- Western parcel had a total of 17 borings, where benzene was discovered as the predominant soil gas
- Discovery of methane in the southwest corner, known as the “stormwater” detention area
- Geoprobe (subsurface sampling tool) investigation was conducted in late summer of 2015
- Applicant intent to conduct two additional test bit “rounds” to quantify the northern and southern areas, which will focus on the environmental conditions
- Developer hit the aquifer at greater than 20 feet below grade
- Contaminant concern centers on the soils, not groundwater
- Information gathered by the developer has led to the estimated cost of cleanup based on the proposed redevelopment
- Soils in the northwest corner will be excavated and managed off site and be transported to a Class 2 landfill
- Fill in the southwest corner which contains methane, PVCs, and other chemicals of concern will be managed off site and not repurposed
- Material specific to the concrete fill and the soils below the concrete will be repurposed back around the development
- Clean Class 2 sand will be placed underneath the building footprints
- Buildings in the northernmost section of the site will be protected from existing chemical levels through use of a liner and venting system
- Cleanup costs include the liner and venting system in the event protection of the building is necessary
- Statement by the applicant’s representative that Part 201 regulations through the MDEQ are being followed
- After Part 201 standards are met, the MDEQ does not regulate indoor air
- After the BEA, the applicant must adhere to a due care compliance plan
- Applicant will provide an environmental construction management plan, a document available to the MDEQ and the public
- Environmental construction management plan will outline actions taken to manager the materials and protect occupants on the site
- Due care compliance plan is the final document which is transmitted to the MDEQ
- Applicant statement the state and county will ensure they do not spend any more money than necessary to clean up the site through review of all eligible expenses
- Township will receive some tax revenue during the abatement period
- Board member inquiry if the applicant would be willing to present a proposal which “splits” the cost of the brownfield cleanup
- 100% of the money required for the cleanup come from the developer
- Current proposal requests a \$320,000 per year reimbursement from the Township to the purchaser over a 13 year period
- 100% pass through would go to the Okemos Public School system and the debt mills
- Possibility of a ten percent (10%) pass through of taxes per year to the taxing jurisdictions during the term of the brownfield would lengthen the reimbursement period
- Need for the Board to ascertain the advantage to the Township to enter into this partnership with the purchaser
- Cost of cleanup on the site is higher than the value of the property
- Brownfield allows school taxes to be collected, but the school district bases its funding on student enrollment
- Best way to help the schools is to provide the type of housing which provides living arrangements for children
- Inquiry if the Township knew from the beginning that the Douglas J project would be seeking a brownfield
- Township Board can make better decisions for all parties involved when it is aware of the need for a brownfield
- Site was previously redeveloped with contamination on the site
- MDEQ response that the current use (parking lot), is preventing contamination from being washed into the River and aquifer
- placing living units above known contaminated sites when there are other areas where the living units could be located
- Retail building standards are different than living units

- Proposed cleanup will not be all inclusive
- Redevelopment and the subsequent proposed cleanup still exposes residents to contaminants
- Concern whether the costs of the redevelopment plan and the cleanup are worth the risk to the Township
- Apartment zoning is the most expensive type of development and the cost of the most expensive services (police, fire) will not be recouped for 13 years
- Current detention pond at the rear of the site has significant environmental issues
- Proposed plan will clean up the detention pond by using a sealed detention method
- Standards for placement of the living units near Foods for Living where there is no contamination are different than the proposed location
- This project will result in no net income to the Okemos School District
- Okemos School District Sinking Fund would lose \$150,000
- Sinking Funds are one of the few places school districts can obtain money beyond what the state gives
- Township will lose money for 13 years by providing police and fire services to the hundreds of students living within the development
- Inquiry if the site contaminants will work into the water table or river if the site remains “as is”
- Applicant’s representative statement the site, as it sits today, is a threat
- Applicant belief the proposed development, with a sealed water detention system, is a solution to existing groundwater problems
- Capping a problem area protects the groundwater situation
- Reminder by the applicant’s representative that in the north where the benzene is located, 50% of that parcel is open grass and the proposed development will remove the soils and then cap the property
- Applicant representative statement that residents walking the site in its current condition are not exposed to the known contaminants
- Board member statement local taxes in Meridian Township are less than half of the taxes assessed by Lansing and East Lansing
- Board member belief the current condition of the land should reduce the purchase price
- Board member concern with the placement of apartment buildings on a portion of the site which is so contaminated that both a vapor barrier and an passive/active vapor extraction system are needed
- Concern with the validity of a statement made that the actual expenses of the cleanup are the only items which can be billed to the brownfield credit given a previous comment regarding the brownfield credit for the Douglas J project
- Board member request for the Board to be apprised if a brownfield credit will be sought prior to any project approval
- Board member concern no entity is required to take responsibility for the existing contamination, but the Township is expected to approve a brownfield plan at a significant cost to the tax base for many years
- Board member allegation that a misapplication of the intent of the MUPUD ordinance allowed inclusion of existing commercial property (Foods for Living, Salvation Army) to provide higher density as an amenity bonus
- Board member belief if a strict application of the MUPUD ordinance was adhered to, one entire apartment building would have been eliminated (approximately 40% smaller in size), and the project could have been reconfigured to prevent living units over contaminated land
- Board member belief the misapplication of the MUPUD ordinance resulted in a series of cause and effects:
 - Increased density allowed for a larger project
 - Contamination on the site was discovered
 - Larger size of the project impinged on the contamination sites
 - Purchaser of the property cannot find the cash flow to pay for the environmental remediation
 - Applicant approached the municipality to request taxpayers fund the cleanup cost
- If the brownfield redevelopment plan does not move forward, the applicant has the option to come back to the Board with a project redesign which is smaller in scope
- Current applicant is in the business of developing apartments

[Sidebar discussion on Board policy regarding no new Township business discussed after 10:00 P.M.]

Trustee Scales moved to forge ahead and complete the end of tonight's agenda. Seconded by Treasurer Brixie.

ROLL CALL VOTE: YEAS: Trustees Scales, Styka, Wilson, Supervisor LeGoff, Treasurer Brixie
NAYS: Trustee Veenstra, Clerk Dreyfus
Motion carried 5-2.

B. Corridor Improvement Authority

Board discussion:

- 60 day waiting period ends March 26th
- Board member preference to move this item forward on the agenda at the end of the required waiting period
- Creation and implementation of a CIA would provide an additional planning tool
- Need for a more comprehensive outreach program to businesses and affected residents who live within the proposed CIA boundaries
- Suggestion for staff to send out a letter to every property owner and all occupants within the proposed CIA district
- Staff complied with the state law requirement that notices be sent to all property owners within the CIA district
- Board member request for the resolution provided at the April 5, 2016 meeting to include language at the end of the provision which states the CIA "will not include the use of tax increment financing (TIF)." The additional clause will read "or tax dollars for financing development projects"
- Board member belief the additional language to be included in the resolution will ensure the concept does not occur
- Notification process for this public hearing was discussed
- Board member understanding the state law requires one member of the CIA Board to be a resident who lives within the CIA district or within ½ mile of the district boundary
- Board member assertion the CIA is essentially an advisory committee

It was the consensus of the Board to place this item on a Board agenda after the 60 day waiting period.

C. Daniels Drain Improvements

Assistant Township Manager/Director of Public Works and Engineering Perry apprised the Board the next step in the process is to present a resolution of petition for the Board to consider at its February 2, 2016 Board meeting.

Board and staff discussion:

- Staff memorandum contains a reasonable assumption that the estimated overall project cost is \$2 million
- Property benefit calculation roll contained in the packet were hypothetical cost estimates
- Cost estimates for \$100,000 were provided so affected property owners could perform "easy math"
- Drainage assessment costs cannot be definitively quantified until they are completed
- Staff explanation of the estimated costs

ATTORNEY COMMENT: The other thing I might add is that you shouldn't take the methodology, as Trustee Wilson suggested, that's on here and automatically assume that's going to be the methodology for assessments once the project has been designed. We had a gentleman testify earlier today during the public hearing about his specific development, and that might

benefit differently than another development. We have to analyze that after the design has been completed and then make those adjustments. This graphic was put together very early in the process to address the initial questions that you had about rough estimates of costs.

Continued Board discussion:

- Reminder that when costs are assessed it will be calculated on a benefit derived basis
- Residents who receive the greatest benefit from the project will be assessed the largest cost
- Board member belief his calculation of \$1,060 assessment to a typical subdivision lot for a \$2 million project is too high for lots which receive little benefit

It was the consensus of the Board to place this item on for action at the February 2, 2016 Board meeting.

D. Zoning Amendment #15080 (Township Board) – Street Tree Ordinance

Trustee Veenstra moved to table this item.

The motion died for lack of a second.

Director Kieselbach summarized the proposed zoning amendment to the street tree ordinance as outlined in staff memorandum dated January 21, 2016.

Board discussion:

- Part of the impetus for the zoning amendment was the new development on Cornell Road
- Prior to this proposed amendment, the Township subrogated itself to the Ingham County Road Department (ICRD) standards
- Proposed ordinance change will provide for a better dialogue with the Ingham County Road Department (ICRD) on projects relative to retention of large trees
- County standards provide for clear cutting a specific distance from the road

It was the consensus of the Board to place this item on for action at the February 2, 2016 Board meeting.

E. Expense Policy

Trustee Veenstra moved to table this item. Seconded by Trustee Scales.

ROLL CALL VOTE: YEAS: Trustees Styka, Wilson, Supervisor LeGoff, Treasurer Brixie, Clerk Dreyfus

NAYS: Trustees Scales, Veenstra

Motion failed 2-5.

Human Resources Director Marx summarized the draft travel expense policy as outlined in staff memorandum dated January 22, 2016. She suggested Board members review the draft and provide any comments directly to her. Director Marx requested the Board contemplate the need for a separate policy for elected officials.

Board discussion:

- Agreement with the Director's comment the Board may wish to have a separate policy for elected officials, as some of the specifics contained in the draft are not applicable to Board members
- Not feasible for Board members to use a township vehicle for Township business and travel use
- Possible consideration of other expenses (e.g., meals) in the policy for elected officials

It was the consensus of the Board for staff to create a separate travel expense policy for elected officials.

- F. Haslett-Okemos Rotary Club Community Room – Use Policy
Manager Walsh summarized the proposed use policy of the Haslett-Okemos Rotary Club Community Room as outlined in staff memorandum dated January 21, 2016.

Board discussion:

- Concept of making the policy similar to what was used at the Service Center is a sound one
- Board member preference to allow any group use of the community room
- Board member belief it is fair to charge a larger fee to a non-resident who is not a Meridian Township taxpayer
- Concern with earlier public comment suggestion to provide the room for free as there are fixed costs associated with the room rental
- Fees charged for non-profit v. for profit organizations
- Consideration of priority for users
- Rotary Club will have a standing meeting on Tuesdays at noon
- Rotary Club donated \$10,000 towards construction of the community room
- Community Room needs to be handled independent of the fire suppression division
- Concern with building access for renters use when fire personnel are out on a call
- Costs charged for the Service Center are reasonable and should be duplicated
- No fee would be charged if an elected official used the room for official township business
- A fee would be charged if an elected official used the room for non-township business
- Process used by other fire departments for rental of their community rooms
- No awareness that other fire departments rent out their training rooms to residents
- Primary use of the room is for fire training
- Rotary Club donated \$10,000 towards furnishing of the community room
- Fire staff would like to see service oriented groups use the community room
- Board member request for staff to research policies used by other fire departments in the area relative to rental of their community room
- Board member preference for this issue to be handled “right the first time”

14. FINAL PUBLIC REMARKS

Supervisor LeGoff opened Public Remarks.

Rhonda Bueche, 4126 Leeward Drive, Okemos, stated her belief the BRT project will not increase ridership, accessibility or improve/increase routes, destination points, distance traveled, or services for Meridian citizens. She referred to the Pittsburgh Transportation Authority study on line which revealed that an increase in ridership fares caused decreased ridership.

Ms. Bueche did not believe this project would survive without either fiscal funding or increasing fees. She noted CATA did not receive the federal grant money it applied for to fund this \$200 million project, questioning why it is being considered if the federal government did not believe this was a worthy project. She questioned how a project can be promoted when it is not known where funding would be obtained. Ms. Bueche suggested we emulate the Pittsburgh Transportation Authority program to provide bus transportation to and from airports and other communities (e.g., Detroit Metro Airport, Chicago’s O’Hare Airport).

Kathy DeVito, 470 Chimney Oaks Drive, Okemos, stressed the importance of publicizing the additional meeting on the BRT, suggesting the meeting be held later than 4:00 P.M. She voiced concern with a specific member of the Board telling residents the issue of the BRT would not be on tonight’s agenda, yet inviting a CATA representative to attend to address issues surrounding the BRT. Ms. DeVito noted her objection to the public receiving such conflicting information.

Supervisor LeGoff closed Public Remarks.

15. FINAL BOARD MEMBER COMMENT

Trustee Veenstra suggested the three page summary of the brownfield redevelopment plan for The Square on Grand River be included in the packet for members of the public who are reading a board agenda for the first time. He stated basic information should always be included in the board packet.

Trustee Wilson spoke to results from the National Citizen Survey which showed a significant increase in citizens' appreciation for better customer service and attributed that increase to the new administration.

Clerk Dreyfus stated it would have been reasonable and appropriate to allow individual Board members the opportunity to make motions to add goals to the 2016 Goals Document. He believed it was the process agreed upon when discussed at the last Board meeting. Clerk Dreyfus alleged the processed used this evening circumvented the free speech of individual Board members to modify the document. He listed the four (4) goals he would have liked to review as:

- 1) Review Township open space requirements by zoning category and development ordinances (MUPUD, PUD, PRD, CPUD)
- 2) Inclusion of "no concealed weapons allowed in the Meridian Township workplace" as a goal in the employee personnel policy.
- 3) Strengthen the public nuisance ordinance dealing with vacant houses and vacant commercial properties, including review of signs, dilapidated facades, garbage and debris, dumpsters and vehicles.
- 4) Review of the parking ordinance, analyzing and potentially changing requirements through new definitions of dwelling units and considering unique circumstances which may impact parking requirements.

Treasurer Brixie responded to earlier public comment noting she was the Board member who approached a resident whose business is located east of Marsh Road. She clarified that when the resident indicated he was here regarding CATA's placement of the median, she explained that issue was not on tonight's agenda and that CATA had no plans to place a median in front of any business east of Marsh Road. She voiced appreciation for the additional meeting with CATA so that accurate information can be supplied to Meridian's business owners and residents.

16. ADJOURNMENT

Supervisor LeGoff adjourned the meeting at 11:45 P.M.

ELIZABETH LEGOFF
TOWNSHIP SUPERVISOR

BRETT DREYFUS
TOWNSHIP CLERK

Sandra K. Otto, Secretary

9B (2)

PROPOSED BOARD MINUTES

PROPOSED MOTION:

Move to approve and ratify the minutes of the February 2, 2016 Regular Meeting as submitted.

ALTERNATE MOTION:

Move to approve and ratify the minutes of the February 2, 2016 Regular Meeting with the following amendment(s): [insert amendments].

**FEBRUARY 16, 2016
REGULAR MEETING**

CHARTER TOWNSHIP OF MERIDIAN
TOWNSHIP BOARD REGULAR MEETING - **DRAFT** -
5151 Marsh Road, Okemos, MI 48864-1198
853-4000, Town Hall Room
TUESDAY, FEBRUARY 2, 2016 **6:00 P.M.**

PRESENT: Supervisor LeGoff, Clerk Dreyfus, Treasurer Brixie, Trustees Scales, Styka, Veenstra
(6:04 P.M.), Wilson
ABSENT: None
STAFF: Township Manager Frank Walsh, Assistant Township Manager/Director of Public
Works Derek Perry, Director of Community Planning & Development Mark
Kieselbach, Fire Chief Fred Cowper

1. CALL MEETING TO ORDER

Supervisor LeGoff called the meeting to order at 6:00 P.M.

2. PLEDGE OF ALLEGIANCE/INTRODUCTIONS

Supervisor LeGoff led the Pledge of Allegiance.

3. ROLL CALL

The secretary called the roll of the Board.

4. SPECIAL PRESENTATION

A. David Gard – Board of Water and Light (BWL) Community Solar Project

Mr. Gard indicated solar arrays will be built in the City of East Lansing and City of Lansing in conjunction with several project partners, including MI Energy Options, Patriot Solar Group and Rich VanderVeen. While he acknowledged many BWL electric customers desire to have solar panels on the rooftops of their homes and businesses, in many instances that is not possible. Mr. Gard stated 80% of residents and 40% of businesses nationwide cannot place solar panels on their property due to tree shading, available roof space not facing the sun and cost of the system and installation. He noted community solar provides an opportunity for residents to participate in a solar project if they so choose. Mr. Gard explained BWL electric customers enter into a 25 year lease for a portion of the project and receives a monthly utility bill credit, dependent upon how much of the project the resident has leased, estimated to be a \$25 overall return the 1st year.

Mr. Gard noted participation begins with a BWL customer paying a one-time upfront fee of \$399, which includes start up construction costs, maintenance for the life of the project and all other “soft costs.” He indicated each community solar array will have 1,000 panels (300 kilowatts), one located on a one acre parcel in Burcham Park, near the Park Lake Road roundabout (on a capped landfill) and one next to Benjamin F. Davis Park south of Jolly Road between Wise Road and Pleasant Grove. Mr. Gard stated the cost per installed watt is \$1.33. Upon request, Mr. Gard clarified there are 922 residential, 194 commercial and one industrial BWL electric customers in Meridian Township who can take advantage of this opportunity.

Board and presenter’s discussion:

- Board member inquiry if BWL is requesting the Township provide the site
- BWL already has two sites selected, one in Lansing and one in East Lansing
- Presentation this evening was to share information with the Board and BWL electric customers in Meridian Township
- Website has already been established to allow interested BWL electric customers to preregister
- Formal registration and construction of the projects will begin in approximately one month
- BWL electric customers have already preregistered for over 500 of the 2,000 available panels

- Customer will pay the one-time upfront fee and once the project is operational, each monthly bill for the next 25 years will receive a credit based upon the generation of the project
- BWL has estimated a 12-13 year payback period
- Credit computed by BWL is for the amount of solar energy generated from the panel
- Solar engineering modeling showed an estimated \$25 credit for the first year
- Panels designed to last well beyond 25 years
- BWL used a conservative approach in selecting 25 years as the lease period
- Earlier installations show a 35-50 year life span
- Possible opportunity to restructure a lease for those electric customers who wish to participate beyond 25 years
- Possibility of a lease extension with a marginal cost for maintenance beyond the 25 years
- Calculation of approximately .3 kilowatt per panel per year
- Industry standard for panels is 300 watts
- Usage of electricity for the average BWL customer is 500 kilowatt hours per month
- BWL electric customers can preregister at www.micommunitysolar.org, and the link is available from the BWL website as well
- Program is being publicized through bill inserts
- \$25 credit is a conservative estimate, dependent upon the amount of sunshine generated
- Panel will generate between 1/15th-1/20th of the electrical use for an average household
- Resident who moves, but remains a BWL electric customer, can transfer the credit
- Resident who moves out of the BWL service area can include the value of the remaining lease into the sale price of the home or donate the remaining lease to a non-profit organization who is a BWL electric customer
- Option to purchase a panel up front and donate it to a non-profit organization, a tax deduction for the donor

B. Clyde Dugan, Manager, East Lansing Meridian Water and Sewer Authority (ELMWSA) – Water Plant Testing and Quality Control

Mr. Dugan addressed lead in Meridian's drinking water as a result of the media coverage on the Flint water crisis. He described what he believed lead to the problems with Flint's water supply. Mr. Dugan explained drinking water quality testing and quality controls used at ELMWSA, particularly as they related to lead. He noted water supplied to Meridian Township residents come from wells that draw from a deep sandstone aquifer and then treated to reduce hardness. Mr. Dugan stated the same method of treatment has been in place since 1972. He added the regulatory parameters of the Environmental Protection Agency's (EPA) Lead and Copper Rule has shown Meridian Township water has optimal corrosion control treatment (OCCT). Mr. Dugan stated water provided by ELMWSA does not contain any detectable amount of lead.

Mr. Dugan described where lead in drinking water comes from, how ELMWSA tests for lead, and what residents can do to reduce their exposure to lead in tap water. He explained that citizens who are still concerned with potential lead levels can have their water tested by a certified laboratory. Mr. Dugan stated there is a link on the Township's website to ELMWSA's annual water quality report for its customers (which includes results for lead testing), as well as a link to the EPA and resources for lead testing.

Board and presenter's discussion:

- Letter generated in 1994 from the Michigan Department of Public Health provided specific water quality control parameters and acceptable ranges
- September, 2015 test revealed lead level at the 90th percentile was 0

- Regulatory changes over the years have provided additional protections against lead in plumbing materials (e.g., lead free solder and plugs requirement as well as the reduction of the lead content of brass (.25%) approved for home plumbing systems)
- Appreciation for the excellent water provided to Meridian Township residents by the ELMWSA
- Tips for reducing exposure to lead in tap water include running cold water through the tap until it gets cold and do not use hot water for cooking
- Mr. Dugan is an instrumental part of the Groundwater Management Board (GMB) and the Technical Advisory Committee to the Tri-County Regional Planning Commission (TCRPC)

5. PUBLIC REMARKS

Supervisor LeGoff opened Public Remarks.

Leonard Provencher, 5824 Buena Parkway, Haslett, inquired if the panels used in the community solar array project would be seasonably adjustable to maximize efficiency. He inquired if the proposed sites will be prepared for vandalism, domestic terrorism and international terrorism. Mr. Provencher spoke to the annual open houses held at the ELMWSA and expressed appreciation for availability of its Annual Report for the public at a Township meeting.

Upon request, Mr. Gard replied a decision was made not to use single access pivot panels due to the cost. He added there will be a fence built around the solar array system and a 40 foot perimeter boundary inside the fence before reaching the shatter resistant panels.

Neil Bowlby, 6020 Beechwood Drive, Haslett, apologized to Trustee Wilson for abusive remarks he made two Board meetings ago during final public remarks. He addressed the way comments are reported in the minutes and accepted the comments as recorded in the January 5th minutes. Mr. Bowlby spoke to the manner in which the Board's "dirty laundry" was aired before the public over such a trivial matter as a mileage reimbursement, indicating it could have been handled in private and accommodations made. He addressed The Square Brownfield Redevelopment Plan, offering his calculations as to the revenue which would be generated over a 30 year period. Mr. Bowlby believed, contrary to a previous statement by the developer, that the developer can certainly afford the cleanup. He believed if the Township commits any money to the project, it is a tacit approval to place residents in the "face of danger." Mr. Bowlby urged the Board to not contribute to this project.

Supervisor LeGoff closed Public Remarks.

6. TOWNSHIP MANAGER REPORT

Manager Walsh reported the following:

- Finance Director Gretchen Gomolka will be leaving the Township at the end of this month to become the Finance Director for the City of Brighton
- Meeting last week with Wanda Bloomquist, Williamstown Township Supervisor to discuss common issues between the two municipalities
- Meet with Mark Burnham, Director of Governmental Affairs at Michigan State University (MSU) to converse about the relationship between Meridian Township and MSU
- Two promotions within the Police Department effective February 18th: Lt. Plaga to Assistant Chief of Police and Lt. Frenger to Captain
- The Square Brownfield will be back before the Board on March 1st
- Manager will not be in attendance at the February 16th meeting due to a planned vacation

7. BOARD COMMENTS AND REPORTS

Treasurer Brixie reminded residents and Meridian Township taxpayers winter taxes are due by the close of business on Tuesday, February 16th. She suggested residents make use of the white drop box in front of the Meridian Municipal Building beginning next week to ensure tax payments are received in the Treasurer's office by the due date. Treasurer Brixie also stated any taxpayer wishing to make their tax payment electronically can do so through enrollment in the program by February 5th. She announced the Chinese New Year Event will be held Sunday, February 7th from 1-4:30 P.M. to be held at the Meridian Mall.

Trustee Wilson reported her attendance at the Greater Lansing Taxi Authority (GLTA) monthly meeting held on January 27, 2016. She noted her attendance, along with several other Board members, at the first Boards and Commissions Appreciation Event on January 28th at the new central fire station, where it was announced Planning Commissioner Pat Jackson and Zoning Board of Appeals Chair Brian Beauchine were award recipients. Trustee Wilson conveyed her attendance at yesterday's "hose uncoupling" ceremony to dedicate the new central fire station, an event well attended by Township residents. She indicated her attendance at today's Lansing Economic Area Partnership (LEAP) Board of Directors meeting, where a presentation was given by Mike Trevorrow, Lansing Area Plant Manager for General Motors, about the expansion of the two plants in Lansing and the \$400 million in wages generated by those two plants. She noted he indicated studies reveal the younger generation is buying fewer cars and relying more on public transportation, and the auto industry is working on ways to incorporate that concept into its business model. She named some of the upcoming innovations, including automobiles which drive themselves and used for taxi services.

Trustee Scales reported his attendance at the antiracism training held at Faith Lutheran Church on January 30th, where his greatest "takeaway" was that in order to effectuate change, one must change themselves. He clarified a comment he made at the last Board meeting during his road department report that if money is captured for replacement of the camelback bridge, a total replacement of the bridge would be set in one piece and would eliminate the greenspace in between.

Trustee Styka announced the Environmental Commission is seeking nominations for its Environmental Stewardship Award.

Trustee Veenstra pointed to a letter contained in the public Board packet regarding frustration in waiting over an hour for the public hearing on the Daniels Drain to commence. He suggested public hearings be moved up on the agenda, prior to approval of the consent agenda. Trustee Veenstra noted there were eight to ten letters in the packet opposed to the Bus Rapid Transit (BRT), explaining the Township Board does not have a voice on BRT approval.

Clerk Dreyfus agreed the Township Board needed to do a better job of communicating with the public regarding notification of a public hearing and a cover letter will accompany future public hearing notices with a link to the Township website where the public hearing is located on the agenda. He reported the Clerk's office conducted a voter registration drive last week to serve targeted underserved and hard to reach populations (e.g., disabled, elderly, affordable housing facilities, rehabilitation facilities, assisted living facilities, etc.). Clerk Dreyfus reminded citizens the Clerk's Office is accepting absentee voter applications up until the Saturday before the March 8th Presidential Primary.

Trustee Styka noted road departments are interested in moving cars and he understood the long range plan for the bridges over the Red Cedar River was to replace the current southbound bridge and turn the camelback bridge into a pedestrian bridge. He suggested fellow Board members think about resident access to both Wonch and Ferguson parks if turns are not allowed, urging a request for input into the Ingham County Road Department's (ICRD) decision.

Trustee Scales addressed his request at the last Board meeting concerning a special public meeting to allow CATA to offer a presentation on the BRT and provide for a question and answer period for the public in a town hall setting. He inquired if a motion was needed to move on that.

Manager Walsh stated the Board's intent was clearly communicated at the last Board meeting and he contacted CATA the next day to convey the Board's desire. He noted he continues to have a discussion with CATA to come up with a mutually agreeable date to hold this community conversation.

Trustee Scales inquired of the Clerk if the last day to register to vote in the March 8th Presidential Primary was February 8th.

Clerk Dreyfus responded in the affirmative.

Treasurer Brixie clarified an earlier Board member comment by stating the two proposed turnaround points with the park and ride lots would be out of the right-of-way and on private properties which have active special use permits (SUP) on them. She noted both of the SUPs would need to be modified and would come before the Township Board for approval.

Trustee Veenstra inquired when the absentee ballots for the March 8th Presidential Primary would be sent from the Clerk's Office.

Clerk Dreyfus responded the first mailing will take place on Thursday, February 4th.

Trustee Scales asked if voters aged 60 will automatically receive a ballot, or do they need to sign up to be placed on the absentee list.

Clerk Dreyfus clarified there is an absentee ballot application list, which a voter must request to have their name placed on it. He noted the names on the list are sent an application, which must be filled out and returned to the Clerk's Office; once received, his office sends out a ballot.

8. APPROVAL OF AGENDA

Treasurer Brixie moved to approve the agenda as submitted. Seconded by Trustee Scales.

VOICE VOTE: Motion carried unanimously.

9. CONSENT AGENDA

Supervisor LeGoff reviewed the consent agenda.

Treasurer Brixie moved to adopt the Consent Agenda. Seconded by Trustee Styka.

ROLL CALL VOTE: YEAS: Trustees Scales, Styka, Veenstra, Wilson, Supervisor LeGoff,
Treasurer Brixie, Clerk Dreyfus

NAYS: None

Motion carried unanimously.

A. Communications

(1) Board Information (BI)

BI-1 Cynthia Summers, 2607 Rockwood Drive, East Lansing; RE: Property Damage

BI-2 Steve Vagnozzi, 2144 Woodfield Road, Okemos; RE: On-time Performance for Intercity Passenger Rail

BI-3 Donna Rose, 6207 Cobblers Court, East Lansing; RE: Copy of paper titled "Inclusion in Action: Give Riders a Voice in Transportation Planning and Making Dialysis Less Stressful" by Eric Weakly, Program Specialist, Administration for Community Living and Rik Opstelten, Program Manager, Federal Transit Administration

BI-4 Ari B. Adler, 1580 Hillside Drive, Okemos; RE: Frustration with the public hearing on January 26, 2016

BI-5 Kathy DeVito and Rich Baum, 470 Chimney Oaks Drive, Okemos; RE: CATA/BRT

- BI-6 Bill and Chris Collette, 2373 Barnsbury Road, East Lansing; RE: Response to Treasurer Brixie's response dated January 19, 2016 concerning the CATA BRT Proposal
- BI-7 Treasurer Julie Brixie; RE: Response to Bill and Chris Collette concerning the CATA BRT Proposal
- BI-8 Sherry and Kirk Martin, 4137 Trillium Court, Okemos; RE: Proposed CATA/BRT Project
- BI-9 Treasurer Julie Brixie; RE: Response to Sherry and Kirk Martin concerning the proposed CATA/BRT Project
- BI-10 Mary Hoenshell, 2341 Barnsbury Road, East Lansing; RE: CATA Plans on Grand River Avenue
- BI-11 L.M. French, 105 Samuel Oaks Drive, Okemos; RE: Stop the Express Bus Route Now
- BI-12 Ronald W. Rowe, 6247 E Lake Drive, Haslett; RE: BRT System by CATA
- BI-13 Rita Peffers, 4932 Sioux Way, Okemos; RE: CATA BRT
- BI-14 Anne Woiwode, 5088 Powell Road, Okemos; RE: Thanks to the Township for Supporting CATA and Bus Rapid Transit
- BI-15 Ranji and Barbara Samaraweera, 430 Chimney Oaks Drive, Okemos; RE: CATA/BRT
- BI-16 Matt Rhodes, Owner, Dusty's Cellar, 1839 W. Grand River, Okemos; RE: Grand River Project
- BI-17 Louis Nigg, 3810 Hemmingway Drive, Okemos; RE: CATA express bus line
- BI-18 Virginia Perry, 1392 Stillman Road, Mason; RE: Proposed bus stop lane
- BI-19 Tom and Gerry Chirgwin, 4719 Rocky Hill Drive, Williamston; RE: Bus Plan
- BI-20 Rod Petersen, 1105 Robb Street, East Lansing; RE: Proposed CATA Grand River track
- BI-21 Tim Roth, 1671 Forest Hills Drive, Okemos; RE: New CATA Dedicated Bus Lane
- BI-22 Rhonda Bueche, 4126 Leeward Drive, Okemos; RE: CATA/BRT
- BI-23 Pam Fraker, 351 Newman Road, Okemos; RE: The incredible arrogance of CATA
- BI-24 Diane Levy, 125 Wind-n-Wood Drive, Okemos; RE: Proposed CATA/BRT Project
- BI-25 Shirley Decker Prescott, Owner, Mert's Specialty Meats, 1870 W. Grand River Avenue, Okemos; RE: BRT Project
- BI-26 Treasurer Julie Brixie; RE: Response to Shirley Decker Prescott concerning the BRT Project
- BI-27 Shirley Decker Prescott, Owner, Mert's Specialty Meats, 1870 W. Grand River Avenue, Okemos; RE: Response to Treasurer Brixie's response on the BRT Project
- BI-28 Treasurer Julie Brixie; RE: Continued response to Shirley Decker Prescott concerning the BRT Project
- BI-29 Debra Chamberlain-Hamilton, 4819 Meridian Road, Williamston; RE: CATA Dedicated Bus Lane

(2) Staff Communications (SC)

- SC-1 Associate Planner Martha Wyatt; RE: Site Plan Review Decisions as of January 26, 2016

(3) On File in the Clerk’s Office (OF)

Material handed out at the January 26, 2016 Board Meeting

Donald R. Isleib, 5400 Park Lake Road, East Lansing; RE: Opposition to the “The Square” Redevelopment Plan

Neil Bowlby, 6020 Beechwood Drive, Haslett; RE: Request to amend minutes of January 5, 2016 Township Board meeting

Eric Helzer, Advanced Redevelopment Solutions, PO Box 204, Eagle; RE: Revised Eligible Activity Costs for The Square Brownfield Redevelopment Plan

Material submitted at the January 26, 2016 Board Meeting

Petition signatures from 78 Residents of The Ponds Cooperative Homes; RE: Daniels Drain

Eckhart Dersch, Vice President, Liaison for Inter-Neighborhood Cooperation (LINC), PO Box 40, Okemos; RE: The Square on Grand River Brownfield Redevelopment Plan

Sandy Gower, Ingham County Brownfield Redevelopment Authority, PO Box 319, Mason; RE: Ingham County Brownfield Redevelopment Authority Project Review Worksheet

Treasurer Brixie moved that the communications be received and placed on file, and any communications not already assigned for disposition be referred to the Township Manager or Supervisor for follow-up. Seconded by Trustee Styka.

ROLL CALL VOTE: YEAS: Trustees Scales, Styka, Veenstra, Wilson, Supervisor LeGoff, Treasurer Brixie, Clerk Dreyfus

NAYS: None

Motion carried unanimously.

B. Bills

Treasurer Brixie moved that the Township Board approve the Manager’s Bills as follows:

Common Cash	\$ 326,305.77
Public Works	\$ 162,860.94
Trust and Agency	\$ 3,117.25
Payroll Checks	\$ 12,020.85
Total Checks	\$ 504,304.81
Credit Card Transactions	\$ 10,748.11
Total Purchases	<u>\$ 515,052.92</u>
ACH Payments	<u>\$ 382,852.60</u>

Seconded by Trustee Styka.

ROLL CALL VOTE: YEAS: Trustees Scales, Styka, Veenstra, Wilson, Supervisor LeGoff, Treasurer Brixie, Clerk Dreyfus

NAYS: None

Motion carried unanimously.

(Bill list in Official Minute Book)

10. QUESTIONS FOR THE ATTORNEY (None)

11. HEARINGS (None)

12. ACTION ITEMS

Supervisor LeGoff opened Public Remarks.

Charles Barbieri, Foster Swift, 313 Washington Avenue, Lansing, and attorney for The Ponds Cooperative Homes, Inc., urged the Board to support improvements to the Daniels Drain through adoption of the proposed resolution.

Supervisor LeGoff closed Public Remarks.

- A. Zoning Amendment #15080 (Township Board) – Street Tree Ordinance – **Introduction**
Treasurer Brixie moved [and read into the record] **NOW THEREFORE BE IT RESOLVED THE TOWNSHIP BOARD OF THE CHARTER TOWNSHIP OF MERIDIAN, hereby INTRODUCES FOR PUBLICATION AND SUBSEQUENT ADOPTION Ordinance No. _____, entitled “Ordinance Amending the Code of the Charter Township of Meridian, Ingham County, Michigan, Chapter 86, Article V, DIVISION 1, by amending Section 86-473 Street trees.**

BE IT FURTHER RESOLVED the Clerk of the Charter Township of Meridian is directed to publish the Ordinance in the form in which it is introduced at least once prior to the next regular meeting of the Township Board. Seconded by Trustee Wilson.

Board and staff discussion:

- Planning Commission spent a great deal of time working on the language
- Input was also provided to the Planning Commission by the Environmental Commission
- Language was changed to include site specific retention of existing mature trees which do not adhere to ICRD’s strict regulations relative to clear cutting
- Use of deciduous trees as street trees due to ICRD concern with sight distance
- Safety concerns with an object (e.g., newly planted street trees) within five (5) feet of the curb line
- Speed limits are lower in residential areas where street trees are planted approximately five (5) feet from the curb line
- Proposed ordinance makes it the responsibility of the property owner to replace a dead tree if it dies after two (2) years
- If a homeowner plants a tree and it dies, it does not need to be replaced
- The developer of the subdivision would be responsible for tree replacement if it dies before two (2) years
- Existing ordinance contains language which requires replacement by the homeowner after two (2) years if it was a condition of approval
- Board member preference for the time period of replacement by the developer to be longer than two (2) years
- Type of materials which deflect the roots away from growing directly under the sidewalk and is placed around the base of the tree to force the roots down into the soil
- Township does not have a specific ordinance to direct tree removal unless it becomes a public nuisance
- Subdivision regulations dictate standards for residential property
- Non-residential property has landscape requirements which must be maintained
- If a tree dies within the right-of-way, the ICRD is required to remove the dead tree
- Most residents are aware the ICRD will remove a dead tree in the road right-of-way
- Suggestion to have an explicit provision in this ordinance which requires the removal of dead trees close to the road
- Board member suggestion to have an article in the next *Meridian Monitor* about the new street tree ordinance, explaining the process for tree removal and the responsible parties involved
- Board member suggestion to issue a press release on this ordinance once approved
- 2” caliper trees addressed in the ordinance
- Inquiry if 1-1/2” caliper trees are of sufficient size

- Calls which come into the Township about dead trees in the right-of-way are referred to the ICRD for action

ROLL CALL VOTE: YEAS: Trustees Scales, Styka, Veenstra, Wilson, Supervisor LeGoff,
Treasurer Brixie, Clerk Dreyfus

NAYS: None

Motion carried unanimously.

B. Daniels Drain Improvements

Assistant Township Manager/Director of Public Works and Engineering Perry explained the steps in the petition process for the Daniels Drain.

Trustee Wilson moved [and read into the record] NOW, THEREFORE BE IT RESOLVED by the Township Board of Meridian Charter Township, Ingham County, Michigan, as follows:

1. **The Township Clerk is hereby authorized and directed to execute and send the Petition substantially in the form attached hereto, as Exhibit B, to the Ingham County Drain Commissioner by registered mail.**
2. **All resolutions and parts of resolutions insofar as they conflict with the provisions of this resolution be and the same are hereby rescinded.**

Seconded by Trustee Styka.

Board and staff discussion:

- Issues with the Daniels Drain need to be addressed for the health, safety and welfare of some residents within Meridian Township
- Petition is one step in a long process of correcting problems within the Daniels Drain
- Board member disagreement with proposed assessments for individual properties in subdivisions
- Michigan Department of Transportation (MDOT) will likely fund a significant portion of the project
- Object lesson regarding this project is for the Board to consider the long term maintenance costs when the size of a development is contemplated
- MDOT will receive notice of the project once the ICDC acts on the Township's petition
- Concern with the Township's ability to control costs of the proposed drain improvements
- Board member hope that MDOT's involvement will provide an additional layer of oversight to the project to ensure the project is not more than what is needed to "fix" the known problems

ROLL CALL VOTE: YEAS: Trustees Scales, Styka, Veenstra, Wilson, Supervisor LeGoff,
Treasurer Brixie, Clerk Dreyfus

NAYS: None

Motion carried unanimously.

C. Appointment to the Zoning Board of Appeals

Trustee Veenstra moved to appoint Kenneth Lane to serve as a member of the Zoning Board of Appeals to fill the vacant term ending on December 31, 2017. Seconded by Trustee Scales.

Board discussion:

- Appointment to fill a vacancy as the result of Jim Hershiser's resignation
- Appreciation for the degree of professionalism Mr. Hershiser brought to his position on the Zoning Board of Appeals

ROLL CALL VOTE: YEAS: Trustees Scales, Styka, Veenstra, Wilson, Supervisor LeGoff,
Treasurer Brixie, Clerk Dreyfus

NAYS: None

Motion carried unanimously.

D. Fire Services Agreement – Alaiedon Township

Trustee Scales moved to approve the agreement between Delhi Charter Township and Meridian Charter Township for fire and rescue services within Alaiedon Township and authorize the Township Manager and Fire Chief to sign the agreement. Seconded by Trustee Styka.

Board discussion:

- Timing of this agreement is in “sync” with the opening of the new central fire station
- Meridian Fire Department will provide the same level of excellent service as it provides to Meridian residents
- Board member caution that there is ample staffing to ensure the continued safety of Meridian residents
- Proposal is a continuation of the services currently provided to Alaiedon Township
- Agreement is in keeping with Meridian’s regional approach
- Board member belief ambulance service also needs to be included
- Tri-County Medical Control Authority has the final say in which municipality services an area
- Mutual Aid Agreement provides for the closest ambulance to respond to a medical emergency
- Retention of the same hourly service fees and service call charges is a testament to Meridian’s Fire Department

ROLL CALL VOTE: YEAS: Trustees Scales, Styka, Veenstra, Wilson, Supervisor LeGoff,
Treasurer Brixie, Clerk Dreyfus

NAYS: None

Motion carried unanimously.

E. 2015 Assistance to Firefighters Grant Program

Treasurer Brixie moved to authorize the Fire Department to apply for and accept an Assistance to Firefighters Grant through the Department of Homeland Security in the amount of \$238,600 with the Township’s 10% share being \$21,960 coming from the 2016 General Fund. Seconded by Trustee Scales.

Board and staff discussion:

- Opportunity provided by the federal government to submit a grant
- Grant application is submitted online and the federal government inserts the match amount required from the Township
- The figure is a targeted number provided by the federal government for local agencies to “apply to”
- The amount authorized through Homeland Security grants to the State of Michigan is unknown until the federal government releases the figures
- Township’s match would come from the General Fund

ROLL CALL VOTE: YEAS: Trustees Scales, Styka, Veenstra, Wilson, Supervisor LeGoff,
Treasurer Brixie, Clerk Dreyfus

NAYS: None

Motion carried unanimously.

13. BOARD DISCUSSION ITEMS

Supervisor LeGoff opened Public Remarks.

Leonard Provencher, 5824 Buena Parkway, Haslett, posed several questions regarding the use policy of the Haslett-Okemos Rotary Club Community Room. He believed the room should be exclusively available for residents of Meridian Township and a lower rate charged for non-profit groups.

Supervisor LeGoff closed Public Remarks.

A. Haslett-Okemos Rotary Club Community Room – Use Policy

Board and staff discussion:

- Board member belief the public paid for use of the room through the millage and residents should be allowed to use the community room for free
- Haslett-Okemos Rotary Club will not be charged to use the room for its meetings as it donated \$10,000 towards the room
- Board member belief non-profit organizations should be allowed the use of the community room free of charge
- Practical difficulty in staff making a determination relative to for profit v. non-profit organizations
- Board member support to continue charging a nominal fee for those who wish to rent the room
- Board member support to continue the methodology previously used to rent the Meridian Service Center
- Board member belief the community room was “sold” as part of the millage request and a fee for room use was not discussed
- Service Center reservation application already designates whether a prospective applicant is a resident or non-profit organization
- Board member preference to initially not charge for use of the community room
- Board member belief a refundable deposit is practical
- Option for the Board to revisit community room rental in the future if problems occur
- Board member recollection firefighters initiated the idea of using the training room as a community room to help pay for the facility
- Reminder that the number one priority of the room is its use for emergency operations
- Prospective renters who are not part of the Township would not necessarily use the same level of care for the room as those invested in the Township
- Board member preference for a simple priority system
- Fees are charged to Township residents for rental of the park pavilions
- Board member reminder this is public use of the firefighters’ “home”
- One of the two doors to the community room allows access to the firefighters’ quarters
- Door to the firefighters’ quarters remains locked at all times
- 2013 ice storm was the last time there was a need to set up emergency operations
- Board member belief charging \$70 to a group of Meridian residents for minimum use of the community room is “outrageous”
- Board member preference to mirror the use policy of the room at the Service Center
- Suggestion for the Fire Department to host community events at the fire station to engage the community and tie it to the fire station

It was the consensus of the Board to place this item on the February 16, 2016 Board agenda for action.

14. FINAL PUBLIC REMARKS

Supervisor LeGoff opened Public Remarks.

Leonard Provencher, 5824 Buena Parkway, Haslett, suggested the Clerk could better communicate with the public with respect to public hearings by pointing out “first public remarks is available to them and that the issue is presented, to some degree, online in the packet.” He noted the other thing to point out is they will be able to hear the discussion by going to HOMTV afterward. Mr. Provencher inquired if there was a point of sale (POS) requirement relative to lead levels in drinking water and suggested any POS in our community contain lead level disclosure as well as it be a requirement for rental license renewals. He indicated \$56,000 of the fire station millage money remained and inquired if the pole barn for the auxiliary equipment can be built with those remaining funds. Mr. Provencher stated the decorum exhibited by Board members at the central fire station “hose uncoupling” was excellent and suggested that same congeniality be brought to Board meetings.

Mr. Provencher inquired how many calls were covered under the first year of the contract which provided fire services to Alaieton Township, and how much additional income was generated by those calls. He voiced disappointment the bronze plaque in the entryway of the new central fire station did not acknowledge the public who contributed \$3.44 million to the construction of the new central fire station.

Township Manager Walsh explained there was approximately \$100,000 budgeted in the general fund this year for a project to perform work at the fire stations and the project cost came in at a cost of \$50,000-\$55,000. He stated using the remaining budgeted amount in the general fund to construct the pole barn will result in only a minimal amount of the remaining bond money needed to complete the pole barn project.

Supervisor LeGoff closed Public Remarks.

15. FINAL BOARD MEMBER COMMENTS

Treasurer Brixie spoke to earlier comments made concerning the bridge over the Red Cedar River. She shared with the Board the last time the camelback bridge was worked on, there was significant community concern expressed by residents against a complete replacement. As a result, she noted only repairs were made by the ICRD in an effort to preserve the historical quality of the camelback bridge. Treasurer Brixie suggested Trustee Scales schedule a well-publicized meeting in the Town Hall Room with the ICRD to garner public input. She believed residents still feel strongly about "getting rid" of greenspace.

Trustee Scales reiterated his statement from the last meeting that once the approximate \$1.7 million repair of the bridge is completed, the Township's ability to obtain the remaining \$1.8 million to completely replace the bridge will be more difficult. He believed the timing of this issue to be critical.

Treasurer Brixie replied the issue last time was to repair the bridge and preserve the historical quality of it rather than replace the bridge. She indicated repair of the current bridge would "get rid" of the camelback bridge, and she was unsure whether residents would welcome the additional lanes. She voiced her desire to get in front of this issue instead of being behind. Treasurer Brixie expressed her appreciation for the update by Trustee Scales on this important issue.

Trustee Veenstra believed it critical to preserve access to Wonch Park.

16. ADJOURNMENT

Supervisor LeGoff adjourned the meeting at 8:52 P.M.

ELIZABETH LEGOFF
TOWNSHIP SUPERVISOR

BRETT DREYFUS, CMMC
TOWNSHIP CLERK

Sandra K. Otto, Secretary

Charter Township of Meridian
Board Meeting
2/16/2016



MOVED THAT THE TOWNSHIP BOARD APPROVE THE MANAGER'S
BILLS AS FOLLOWS:

COMMON CASH	\$ 616,362.94
PUBLIC WORKS	295,796.68
TRUST & AGENCY	1,635,934.52
TOTAL CHECKS:	\$ 2,548,094.14
CREDIT CARD TRANSACTIONS	11,533.50
TOTAL PURCHASES:	<u>\$ 2,559,627.64</u>
ACH PAYMENTS	<u>\$ 487,991.26</u>

Attachment:
Copy of Petty Cash Transactions

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Vendor Name	Description	Amount	Check #
1. AFFORDABLE TIRE			
	TIRES 2016 (STATE CONTRACT PRICING)	246.66	
2. AIRGAS GREAT LAKES			
	STANDING PO - MEDICAL OXYGEN	106.75	
	STANDING PO - MEDICAL OXYGEN	545.20	
	TOTAL	651.95	
3. AMERICAN PLANNING ASSOCIATION			
	APA MEMBERSHIP - H GMAZEL	405.00	
	APA MEMBERSHIP - P MENSER	280.00	
	TOTAL	685.00	
4. AMERICAN RENTALS			
	CHAIRS, TABLES, PAPER & DRAPE FOR CHINESE NEW YEAR	830.00	
5. ARROW INTERNATIONAL INC			
	STANDING PO - INTRAOSSEOUS NEEDLE SUPPLIES	562.26	
6. ASAP PRINTING			
	FORMS AND PAMPHLET PRINTING	239.28	
	FORMS AND PAMPHLET PRINTING	74.73	
	TOTAL	314.01	
7. AT&T			
	SERVICES FOR JAN 25 TO FEB 24, 2016	5,033.87	91568
	SERVICE FOR JANUARY 2016	74.83	91571
	SERVICE FOR JANUARY 2016	107.31	91571
	SERVICE FOR JANUARY 2016	74.83	91571
	SERVICE FOR JANUARY 2016	105.60	91571
	SERVICE FOR JANUARY 2016	2,251.72	91571
	SERVICE FOR JANUARY 2016	2,407.72	91571
	TOTAL	10,055.88	
8. AUTO VALUE OF EAST LANSING			
	OPEN PO REPAIR PARTS 2015	38.29	
	2016 REPAIR PARTS	84.87	
	2016 REPAIR PARTS	16.88	
	2016 REPAIR PARTS	14.40	
	2016 REPAIR PARTS	40.00	
	2016 REPAIR PARTS	17.59	
	2016 REPAIR PARTS	18.54	
	2016 REPAIR PARTS	167.97	
	2016 REPAIR PARTS	41.95	
	2016 REPAIR PARTS	19.79	
	2016 REPAIR PARTS	25.80	
	2016 REPAIR PARTS	72.22	
	2016 REPAIR PARTS	78.19	
	2016 REPAIR PARTS	16.89	
	2016 REPAIR PARTS	20.59	
	2016 REPAIR PARTS	30.98	
	2016 REPAIR PARTS	30.98	
	TOTAL	735.93	
9. B & D ELEVATOR INC.			
	QUARTERLY MAINT PERFORMED ON 1/22/16	128.00	
10. BANNASCH WELDING INC			
	REPAIR DUMP TRUCK BED - PATCH HOLE	362.40	
11. BARYAMES CLEANERS			
	STANDARD POLICE UNIFORM CLEANING	270.40	
	STANDARD POLICE UNIFORM CLEANING	86.95	
	STANDARD POLICE UNIFORM CLEANING	384.75	
	TOTAL	742.10	
12. BOARD OF WATER & LIGHT			
	STREET LIGHTS FOR JANUARY 2016	544.75	91569

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Vendor Name	Description	Amount	Check #
13. BRANDIE YATES			
	REIMBURSEMENT FOR MILEAGE - JANUARY 2016	15.66	
14. BRD PRINTING			
	PRINTING OF ANNUAL FAMILY FUN GUIDE 2016	13,769.78	
	ADDITIONAL POSTAGE FOR 2016 FAMILY FUN GUIDE	149.49	
	CHINESE NEW YEAR POSTERS AND FLYER FOR 2016	258.12	
	TOTAL	14,177.39	
15. BRETT DREYFUS			
	REIMB EXPENSES FROM MTA ANNUAL EDUCATIONAL CONF	156.50	
16. BS&A SOFTWARE			
	AP, CR, GL, MR, UB ANNUAL SERVICE	6,363.00	
17. CAPITOL COMMUNICATION SYSTEMS, INC			
	TECHNICAL SERVICE 11/18/15	72.50	
18. CDW			
	SOPHOS RED 50 SECURITY APPLIANCE	580.10	
19. CHRISTY ANN IDLE			
	REFUND OVERPMT CR160821 (2016 ANNUAL RENEWAL FEE)	100.00	
20. CINTAS CORPORATION #725			
	WORK UNIFORMS FRANK/PUNG	25.70	
	WORK UNIFORMS FRANK/PUNG	25.70	
	TOTAL	51.40	
21. CITY PULSE			
	TWP NOTICES	74.20	
22. COMCAST			
	REIMBURSEMENT OF VENDOR'S CASH BOND - RECEIPT #988	500.00	
23. CONSUMERS ENERGY			
	CRC EMERG PAYMENT TO AVOID SHUTOFF	225.00	91570
24. CUMMINS BRIDGEWAY LLC			
	EMERGENCY REPAIR - FAILED BATTERY CHARGER	511.67	
	GENERATOR REPAIRS SERVICE CENTER	923.93	
	ANNUAL GENERATOR MAINTENACE 2016	263.01	
	ANNUAL GENERATOR MAINTENACE 2016	418.42	
	ANNUAL GENERATOR MAINTENACE 2016	561.85	
	ANNUAL GENERATOR MAINTENACE 2016	263.01	
	ANNUAL GENERATOR MAINTENACE 2016	561.85	
	TOTAL	3,503.74	
25. DARCI WEIGAND			
	REIMB MILEAGE FOR JANUARY 2016	111.89	
26. DAVID J & ROBIN J ELIAS			
	REFUND OVERPMT RENTAL FEES/2207 WOOD LEAF	144.00	
27. DBI			
	RETURN MIRROR - OFFICE SUPPLIES	(44.99)	
	PORTFOLIO & ORGANIZER - OFFICE SUPPLIES	102.88	
	BINDERS, ENV, STAMP PAD, RIBBON - OFFICE SUPPLIES	180.31	
	APPT BOOK - OFFICE SUPPLIES	12.99	
	MISC OFFICE SUPPLIES	48.72	
	TOTAL	299.91	
28. DENNIS E & CECILE A PATH			
	REFUND OVERCHG ELECTRICAL PERMIT PE15-15-0225/5695	60.00	
29. DEWITT FENCE CO			
	INSTALL FENCE PER QUOTE ON MT HOPE RD	3,355.00	
30. DIETZ JANITORIAL SERVICE INC			
	JANITORIAL SERVICE PSB,SC, HARRIS NATURE, TOWER	2,001.90	
	JANITORIAL SERVICE PSB,SC, HARRIS NATURE, TOWER	343.00	
	TOTAL	2,344.90	
31. DOUGLASS SAFETY SYSTEMS LLC			
	GASKETS - SPECIAL	55.77	
32. EYDE COMPANY LLC			
	REFUND PERFORMANCE GUARANTEE PG#2015-029/GEORGETOW	50.00	

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33. FANTASTIC ALTERATIONS			
	ALTER 3 SHIRTS - CHIEF COWPER	60.00	
	ALTER 3 SHIRTS - W PRIESE	115.00	
	TOTAL	175.00	
34. FIRST COMMUNICATIONS			
	LONG DISTANCE CHG FOR JAN 2016	836.03	
35. FISHBECK, THOMPSON, CARR & HUBER			
	WETLAND CONSULTING FEES	933.50	
36. FRIENDS OF HISTORIC MERIDIAN			
	2015 MAINT COST FOR HISTORICAL VILLAGE BUILDINGS	2,633.31	
37. GOODYEAR COMMERCIAL TIRE			
	STEER TIRE LADDER TRUCK	710.79	
	ESTIMATE FRONTEND REPAIRS UNIT 261	772.44	
	TOTAL	1,483.23	
38. GRANGER			
	SERVICE FOR FEB - 3711 OKEMOS RD FIRE STATION	62.92	
	SERVICE FOR FEB - 5000 OKEMOS RD	76.00	
	SERVICE FOR FEB - 5151 MARSH RD	111.00	
	SERVICE FOR FEB - GAYLORD C SMITH CT	128.51	
	SERVICE FOR JAN - MUN BLDG/POLICE	108.00	
	SERVICE FOR JAN - GAYLORD C SMITH CRT	17.50	
	SERVICE FOR FEB - APRIL	47.39	
	SERVICE FOR CURBY RECYCLER - HASLETT RD & OKEMOS R	9.00	
	TOTAL	560.32	
39. HASLETT-OKEMOS ROTARY			
	1ST QTR 2016 MEMBER DUES - BRIXIE	135.00	
40. HAWORTH INC			
	HAWORTH C/O DBI - ZODY TASK CHAIR	2,252.55	
41. INGHAM COUNTY 911			
	STANDING PO - RADIO SYSTEM FEES	1,787.19	
42. INGHAM COUNTY FIRE CHIEFS ASSOC			
	LEADERSHIP 1 COURSE - R GONZALES	50.00	
	LEADERSHIP COURSE II - R GONZALES	50.00	
	TOTAL	100.00	
43. IRON MOUNTAIN			
	RECORD SHREDDING SERVICE - JAN 2016	32.00	
44. JEFFORY BROUGHTON			
	STANDING PO - RADIO REPAIR	85.00	
	RADIO REPAIR - POLICE DEPT	375.00	
	STANDING PO - RADIO REPAIR	1,444.50	
	TOTAL	1,904.50	
45. JERRY FEDEWA HOMES, INC			
	REFUND OVERPMT PB16-0034/6096 SACRAMENTO	8.00	
46. JOHN DEERE			
	GASOLINE	5,085.00	
	DIESEL FUEL	2,856.45	
	TOTAL	7,941.45	
47. KEGAN COSGROVE			
	REFUND FOR DROPPED HASLETT BOYS BASKETBALL	65.00	
48. KIT RICH			
	REIMB FOR MILEAGE JANUARY 2016	72.90	
49. KODIAK EMERGENCY VEHICLES			
	AMBULANCE REPAIR PARTS	684.00	
	AMBULANCE REPAIR PARTS	749.24	
	TOTAL	1,433.24	

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50. LANSING SANITARY SUPPLY INC			
	STANDING PO - CLEANING SUPPLIES/EQUIPMENT	83.66	
	JANITORIAL SUPPLIES 2016	2,483.18	
	STANDING PO - CLEANING SUPPLIES/EQUIPMENT	204.88	
	STANDING PO - CLEANING SUPPLIES/EQUIPMENT	70.50	
	STANDING PO - CLEANING SUPPLIES/EQUIPMENT	173.66	
	JANITORIAL SUPPLIES 2016	739.40	
	TOTAL	3,755.28	
51. LANSING UNIFORM COMPANY			
	STANDING PO - UNIFORMS	127.50	
	STANDING PO - UNIFORMS	300.00	
	STANDING PO - UNIFORMS	67.45	
	STANDARD POLICE UNIFORM PURCHASES	369.85	
	TOTAL	864.80	
52. MEGAN SLIVA			
	INSTRUCTOR FOR OVER 50 - JAN 2016	32.00	
53. MERIDIAN DRY CLEANERS			
	STANDING PO - UNIFORM DRY CLEANING - JAN	407.00	
54. MERIDIAN TOWNSHIP			
	TRANSFER FOR FLEX CKING P/R 2/5/16	1,119.66	
55. MERIDIAN TOWNSHIP PETTY CASH			
	PARKING - MDOT	0.50	
	RIMBURSEMENT FOR MILEAGE	17.26	
	REIMBURSEMENT FOR MILEAGE	11.88	
	FILING CHARGE FOR JEOPARDY TAX ASSESSMENT	10.00	
	REIMBURSEMENT FOR MILEAGE	9.78	
	REIMBURSEMENT FOR MILEAGE	16.10	
	GTA DOECORATIONS	27.54	
	REIMB FOR ENVELOPES	20.11	
	REIMB FOR KITCHEN SUPPLIES	9.72	
	REIMBURSEMENT FOR MILEAGE	43.63	
	OMB PAPER & OMB SHEET PROTECTORS	43.28	
	CONTINUING ED FOR PERSONAL PROPERTY - D UPCHURCH	25.00	
	STUDIO SET PIECE	5.00	
	REIMB FOR CAMCA MEETING	10.63	
	BOARD/COMMS APPRECIATION EVENT	32.95	
	PARKING - CAPITAL	5.00	
	REIMBURSEMENT FOR MILEAGE	11.34	
	REIMBURSEMENT FOR MILEAGE	3.78	
	REIMBURSEMENT FOR MILEAGE	2.70	
	REIMBURSEMENT FOR PARKING	20.00	
	TOTAL	326.20	
56. MERIDIAN TOWNSHIP RETAINAGE			
	PAVING CONTRACT 2015 PAY EST#4 (ORIG PO 52171)	5,194.86	
57. MICHIGAN PAVING			
	PAVING CONTRACT - PAY ESTIMATE #4 (ORIG PO #52171)	52,180.72	
58. MICHIGAN STATE UNIVERSITY			
	RENEWAL SUBSCRIPTION SKY CALENDAR - HNC	12.00	
59. MICHIGAN TOWNSHIP ASSOCIATION			
	CLASSIFIED ADVERTISING - HR	178.00	
60. MICHIGAN.COM			
	AD FOR WINTER FARMERS MARKET	147.00	
	2015 NOTICE/ TC-1222854	874.12	
	2016 NOTICES/ TC-1224224, 25, 1225534, 39, 45	465.98	
	TOTAL	1,487.10	
61. MICRO SOURCE INC			
	PRINTER TONER	2,329.00	
62. MID MICHIGAN EMERGENCY EQUIPMENT			
	LUMENS PAR WORK LITE	110.00	

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63. MILTON SCALES			
	REIMB EXPENSE FROM MTA 2016 ANNUAL EDUCATIONAL CON	212.88	
64. MOLLY NEVINS			
	INSTRUCTOR FEE FITNESS OVER 50 - JAN 2016	176.00	
65. MOORE MEDICAL LLC			
	STANDING PO - EMS AMBULANCE SUPPLIES/EQUIPMENT	2,534.29	
	STANDING PO - EMS AMBULANCE SUPPLIES/EQUIPMENT	12.95	
	STANDING PO - EMS AMBULANCE SUPPLIES/EQUIPMENT	844.75	
	BATTERIES FOR SUPPLY	148.85	
	BATTERIES FOR EQUIPMENT	76.25	
	TOTAL	3,617.09	
66. MUZZALL GRAPHICS			
	BUSINESS CARDS FOR BOLEK, GMAZEL & ESSER	115.85	
	TOWNSHIP LETTERHEAD & DEPARTMENTAL ENVELOPES	493.00	
	TOWNSHIP LETTERHEAD & DEPARTMENTAL ENVELOPES	141.00	
	TOTAL	749.85	
67. NAPA			
	BRAKE PADS FOR FORD TRUCK	141.48	
	FLEET REPAIR PARTS 2016	540.78	
	TOTAL	682.26	
68. O'BOYLE, COWELOL, BLALOCK & ASSOC INC			
	CENTRAL PARK MASTER PLAN DESIGN DEVELOPMENT CONTRA	5,560.31	
69. PRINTING SYSTEMS INC			
	VOTER REGISTRATION FORMS	576.36	
	CHECKS - LASER BS&A FORMAT	176.87	
	TOTAL	753.23	
70. PRO AIR			
	STANDING PO - SCBA AIR COMPRESSOR MAINTENANCE	100.70	
	STANDING PO - SCBA AIR COMPRESSOR MAINTENANCE	1,170.00	
	TOTAL	1,270.70	
71. RECLAIMED BY DESIGN			
	RECYCLING SERVICE - FEBRUARY 2016	2,000.00	
72. RM ELECTRIC INC			
	EMERGENCY FIRE TONE ALERT SYSTEM	602.80	
73. RW MERCER			
	REFUND PERFORMANCE GUARANTEE PG#2015-031/2841 HANN	500.00	
74. SOLDAN'S FEED & PET SUPPLIES			
	CANINE SUPPLIES FOR TWO DOGS	32.99	
	CANINE SUPPLIES FOR TWO DOGS	58.98	
	CANINE SUPPLIES FOR TWO DOGS	32.99	
	TOTAL	124.96	
75. SPARROW OUTPATIENT REHABILITATION			
	EMPLOYMENT PHYSICALS	1,296.47	
76. SPARTAN CHASSIS INC			
	SEAT BELT - EMERGENCY REPLACEMENT	302.10	
	EMERGENCY REPAIR PARTS FOR FIRE ENGINE	1,546.92	
	TOTAL	1,849.02	
77. SSS PRINTING			
	PERSONAL PROPERTY FORMS	1,150.38	
78. STANDARD ELECTRIC CO			
	ELECTRICAL SUPPLIES	239.40	
79. STATE PERMITS			
	REFUND OVERPMT PB16-0046/1982 GRAND RIVER-KAY JEWEL	40.00	
80. TARGET SOLUTIONS			
	RENEWAL OF ONLINE LEARNING SYSTEM	4,137.25	

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Vendor Name	Description	Amount	Check #
81. TDS	SERVICE FOR JANUARY 2016	1,326.52	
82. THE BANK OF NEW YORK MELLON	MERIDIAN TWP 2013 UTGO BONDS	244,946.25	
83. TVU NETWORKS	MONTHLY DATA SERVICE - DECEMBER 2015	500.00	
	MONTHLY DATA SERVICE - JANUARY 2016	500.00	
	TOTAL	<u>1,000.00</u>	
84. UNIVERSAL LAUNDRY MACHINERY	FIRE GEAR WASHER/DRYING CABINET	15,030.00	
85. VERIZON WIRELESS	SERVICE - JAN 2016	1,928.81	
86. WIELAND DAVCO CORP	CONSTRUCT FIRE STATION NO. 91 AT OKEMOS ROAD & CEN	187,519.02	
87. ZOLL MEDICAL CORP	STANDING PO - HEART MONITOR SUPPLIES/RESQPOD	1,200.00	
TOTAL - ALL VENDORS		616,362.94	

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Vendor Name	Description	Amount	Check #
1. AMERICAN WATER WORKS ASSOC	ANNUAL RENEWAL - D PERRY 2016	75.00	
2. CARUS CORPORATION	CARUSOL PERMANGANATE FOR SEWER ODOR CONTROL	17,498.80	26218
3. CITY OF EAST LANSING	DEBT SERVICE WASTE WATER BONDS	157,446.00	
4. CUMMINS BRIDGEWAY LLC	EMERGENCY GENERATOR FAILED - NEW BATTERY CHARGER	921.36	
	FAILED BATTERY - REPLACED	161.16	
	ANNUAL GENERATOR MAINTENACE 2016	368.89	
	ANNUAL GENERATOR MAINTENACE 2016	368.89	
	ANNUAL GENERATOR MAINTENACE 2016	253.74	
	ANNUAL GENERATOR MAINTENACE 2016	253.74	
	ANNUAL GENERATOR MAINTENACE 2016	253.74	
	ANNUAL GENERATOR MAINTENACE 2016	418.42	
	ANNUAL GENERATOR MAINTENACE 2016	418.42	
	ANNUAL GENERATOR MAINTENACE 2016	253.74	
	ANNUAL GENERATOR MAINTENACE 2016	263.01	
	TOTAL	3,935.11	
5. ETNA SUPPLY COMPANY	WATER SERVICE INSTALLATION PARTS	11,763.26	
6. FISHBECK, THOMPSON, CARR & HUBER	TELEVISION INSPECTION & MONHOLE INSPECTIONS	74,493.29	
7. GRANGER	TICKET#W09502 & #W10145 FOR DEC 2015	280.00	
	TICKET #W16082 FOR JAN 2016	52.50	
	TOTAL	332.50	
8. JOHNSON & ANDERSON INC	CITYWORKS IMPLEMENTATION-STEPS 1&2 OF YOUR JANUARY	1,050.00	
	SCADA PROTOCOL UPGRADE PROPOSAL 10-5-15 J&A#17678	275.00	
	SCADA PROTOCOL UPGRADE PROPOSAL 10-5-15 J&A#17678	11,595.00	
	TOTAL	12,920.00	
9. KYLE WILKINS	REIMB FOR JEANS & BIBS	125.99	26219
10. MAULDON BROTHERS CONSTRUCTION LLC	CONSTRUCT TOWAR GARDENS LIFT STATION 2015	13,000.00	
11. MERIDIAN TOWNSHIP RETAINAGE	PAVING CONTRACT 2015 PAY EST #4 (ORIG PO #52171)	3,349.80	
12. RED CEDAR FLATS	REFUND OVERPMT OF FINAL UB BILL - NOWI-005020-0000	19.59	
	REFUND OVERPMT FINAL UB - NOWI-005030-0000-02	19.13	
	TOTAL	38.72	
13. ROBERT & CARMEN CARLTON	REIMB FOR CLEANING & SANITATION OF BASEMENT/3146 B	125.00	
14. STATE OF MICHIGAN	APPL FOR STORM WATER CONST (A-1J) CERTIFICATION -	95.00	26217
15. TDS	SERVICE FOR JANUARY 2016	147.82	
16. VERIZON WIRELESS	SERVICE - JAN	450.39	
TOTAL - ALL VENDORS		295,796.68	

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1. EAST LANSING PUBLIC SCHOOLS	SUMMER 2015 TAX	1,540.74	11737
2. HASLETT PUBLIC SCHOOLS	WINTER/SUMMER 2015 TAX & DPP 2014	232,667.28	11738
3. INGHAM INTERMEDIATE SCHOOL	SUMMER 2015 TAX & DPP 2014	8,406.65	11739
4. LANSING COMMUNITY COLLEGE	WINTER 2015 TAX & DPP TAX 2014	579,636.83	11740
5. MERIDIAN TOWNSHIP DDA	2014 WINTER DPP TAX COLLECTION	2.36	11741
6. OKEMOS PUBLIC SCHOOLS	WINTER/SUMMER 2015 TAX & DPP 2014	799,384.77	11742
7. QUALITY DAIRY & FRED GORDON PC	REFUND TAX TRIBUNAL #33-02-02-06-337-034/3332 LAKE	652.80	11736
8. RITE AID	REFUND OVERPMT OF 2015 WINTER TAX #33-02-02-22-401	1,127.20	11743
9. STEVEN ROZNOWSKI	REFUND OVERPMT OF WINTER TAX #33-02-02-25-228-001/	39.19	11744
10. WILLIAMSTON SCHOOLS	WINTER 2015 TAX	12,476.70	11745
TOTAL - ALL VENDORS		1,635,934.52	

<u>Date</u>	<u>Merchant Name</u>	<u>Amount</u>	<u>Name</u>
2016/02/03	4IMPRINT	\$235.80	ANDREA SMILEY
2016/01/29	ADOBE *CREATIVE CLOUD	\$31.79	DARKUS BEASLEY
2016/02/05	AMWAY GRAND PLAZA HOTE	\$596.55	DAVID HALL
2016/02/08	BAGGER DAVES	\$14.61	DEREK PERRY
2016/02/09	BANNASCH WELDING	\$19.00	TODD FRANK
2016/01/28	BANNASCH WELDING	\$172.39	KEITH HEWITT
2016/01/28	BUDDY'S PIZZA	\$15.70	DEBORAH GUTHRIE
2016/02/10	COMCAST OF LANSING	\$84.90	DEBORAH GUTHRIE
2016/02/08	COMPLETE BATTERY SOURCE	\$25.46	MARTHA WYATT
2016/01/28	COURTHOUSE PUB	\$11.06	WILLIAM PRIESE
2016/02/07	CTC*CONSTANTCONTACT.COM	\$110.00	ANDREA SMILEY
2016/01/28	DELTA AIR 0067747853706	\$145.60	DENISE GREEN
2016/01/28	DELUX TENTS & EVENTS LLC	\$241.60	KRISTEN COLE
2016/02/03	DELUX TENTS & EVENTS LLC	\$816.00	KRISTEN COLE
2016/02/01	DISCOUNT ONE HOUR SIGNS	\$50.00	TODD FRANK
2016/02/08	DISCOUNT ONE HOUR SIGNS	\$51.75	WILLIAM PRIESE
2016/02/03	DOMINO'S 1206	\$47.76	DARKUS BEASLEY
2016/02/06	DOUBLETREE HOTELS	\$362.97	DEREK PERRY
2016/02/01	DUNGAREES LLC	\$69.99	TOM OXENDER
2016/02/05	EB REVOLUTIONIZING ST	\$69.57	JOYCE A MARX
2016/01/28	EXPEDIA*1126482542888	\$7.00	DENISE GREEN
2016/01/31	FACEBOOK B8L998NL92	\$39.69	LUANN MAISNER
2016/02/02	FEDEX 782281127980	\$9.25	SCOTT DAWSON
2016/01/28	FEDEX OFFICE 00000828	\$46.11	DEBORAH GUTHRIE
2016/02/07	FLICKR PRO 1 MONTH	\$5.99	ANDREA SMILEY
2016/01/28	GFS STORE #1901	\$62.39	KATHERINE RICH
2016/02/01	GFS STORE #1901	\$186.24	WILLIAM PRIESE
2016/01/30	GRAND TRAVERSE PIE- OKEMO	(\$281.52)	BRANDIE YATES
2016/01/30	GRAND TRAVERSE PIE- OKEMO	\$267.00	BRANDIE YATES
2016/01/30	GRAND TRAVERSE PIE- OKEMO	\$281.52	BRANDIE YATES
2016/01/30	GUITAR CENTER #324	\$168.97	DEBORAH GUTHRIE
2016/01/29	GUITAR CENTER #324	\$359.98	DEBORAH GUTHRIE
2016/01/29	HASLETT TRUE VALUE HDW	\$1.00	KYLE WILKINS
2016/02/04	HASLETT TRUE VALUE HDW	\$8.95	RICH WHEELER
2016/01/29	HASLETT TRUE VALUE HDW	\$204.95	PETER VASILION
2016/02/01	JERSEY GIANT SUBMARINES	\$184.00	KRISTEN COLE
2016/01/29	JETS PIZZA OF HASLETT	\$49.00	WILLIAM PRIESE
2016/01/28	KIMBALL MIDWEST	\$208.08	TODD FRANK
2016/01/30	KOHL'S #0738	\$120.00	JOE VANDOMMELEN
2016/02/08	KROGER #793	\$5.98	DARCIE WEIGAND
2016/01/28	KROGER #793	\$322.86	JOYCE A MARX
2016/01/28	LARRY CUSHION TROPHIES	\$40.00	DARCIE WEIGAND
2016/02/03	LEXISNEXIS RISK DAT	\$50.00	GREGORY FRENGER
2016/02/01	LOWES #01596*	\$299.00	ROBERT MACKENZIE
2016/01/31	MARCOS PIZZA - 1235	\$29.29	KATHERINE RICH
2016/02/02	MAXMIGHTYBAT	\$107.99	WADE PRESTONISE
2016/01/29	MEIJER #253	\$120.00	TOM OXENDER
2016/02/01	MEIJER INC #025 Q01	\$18.39	WILLIAM PRIESE
2016/02/06	MEIJER INC #025 Q01	\$62.97	WILLIAM RICHARDSON
2016/02/01	MEIJER INC #025 Q01	\$332.62	WILLIAM PRIESE
2016/01/31	MI EMS LICENSE	\$25.00	WILLIAM PRIESE
2016/01/31	MI EMS LICENSE	\$25.00	WILLIAM PRIESE
2016/01/31	MI EMS LICENSE	\$25.00	WILLIAM PRIESE
2016/02/04	MICHIGAN ASSOCIATION OF C	\$50.00	GREGORY FRENGER

2016/01/28	MICHIGAN BATTERY EQUIPME	\$230.00	TODD FRANK
2016/02/02	MICHIGAN BATTERY EQUIPME	\$230.00	TODD FRANK
2016/02/03	MICHIGAN BATTERY EQUIPME	\$230.00	TODD FRANK
2016/01/28	MICHIGAN ELECTRIC SUPPLY	\$250.00	KEITH HEWITT
2016/02/02	MICHIGAN MUNICIPAL LEAGUE	(\$275.00)	CAROL HASSE
2016/02/09	MICHIGAN MUNICIPAL LEAGUE	\$75.00	ANDREA SMILEY
2016/02/09	MICHIGAN MUNICIPAL TRE	\$50.00	JULIE BRIXIE
2016/02/01	MID MICHIGAN EMERGENCY E	\$110.00	TODD FRANK
2016/02/03	MIDWEST POWER EQUIPMEN	\$33.64	ROBERT STACY
2016/01/29	NORTHERN FIRE & SAFETY	\$99.57	WILLIAM PRIESE
2016/01/30	NPC*NEW PIG CORP	\$229.20	PETER VASILION
2016/02/03	OFFICEMAX/OFFICEDEPOT #61	\$19.99	TODD FRANK
2016/02/03	OFFICEMAX/OFFICEDEPOT #61	\$130.96	MATTHEW WALTERS
2016/02/04	OFFICEMAX/OFFICEDEPOT #61	\$326.82	WILLIAM PRIESE
2016/02/04	OKEMOS HARDWARE INC	\$1.88	TOM OXENDER
2016/02/04	OKEMOS HARDWARE INC	\$2.20	TOM OXENDER
2016/02/04	OKEMOS HARDWARE INC	\$3.98	MARK VROMAN
2016/02/08	OKEMOS HARDWARE INC	\$6.99	TOM OXENDER
2016/01/28	ON THE SPOT ENGRAVING	\$137.00	WILLIAM PRIESE
2016/02/04	PANERA BREAD #715	\$13.99	ROBIN FAUST
2016/01/30	PANERA BREAD #715	\$23.47	BRANDIE YATES
2016/02/03	PETSMART INC 724	\$7.00	CATHERINE ADAMS
2016/02/09	PETSMART INC 724	\$7.00	CATHERINE ADAMS
2016/01/30	QUALITY DAIRY 31280027	\$4.19	BRANDIE YATES
2016/02/08	QUALITY DAIRY 31280027	\$29.97	DARCIE WEIGAND
2016/01/29	QUILL CORPORATION	\$69.69	CAROL HASSE
2016/02/04	SOLDAN'S FEEDS & PET S	\$15.30	MICHAEL DEVLIN
2016/02/03	SOLDAN'S FEEDS & PET S	\$29.48	CATHERINE ADAMS
2016/01/28	SS STORAGE JOLLY	\$128.00	DENNIS ANTONE
2016/02/09	SS STORAGE JOLLY	\$128.00	DENNIS ANTONE
2016/02/01	STAMP-RITE INC	\$19.50	DENISE GREEN
2016/02/01	THE HOME DEPOT 2723	\$15.92	WILLIAM PRIESE
2016/01/28	THE HOME DEPOT 2723	\$19.93	STEPHEN GEBES
2016/02/08	THE HOME DEPOT 2723	\$22.66	PETER VASILION
2016/02/03	THE HOME DEPOT 2723	\$74.94	DENNIS ANTONE
2016/02/04	THE HOME DEPOT 2723	\$108.31	KEITH HEWITT
2016/02/07	THE HOME DEPOT 2723	\$109.94	KENNITH PHINNEY
2016/02/01	THE HOME DEPOT 2723	\$241.57	WILLIAM PRIESE
2016/01/28	TWO MEN AND A TRUCK 0001	\$87.75	WILLIAM PRIESE
2016/02/01	TWO MEN AND A TRUCK 0001	\$962.50	WILLIAM PRIESE
2016/01/28	UNITED 0167747867542	\$145.60	DENISE GREEN
2016/01/28	USA BLUE BOOK	\$206.51	JOE VANDOMMELEN
2016/02/05	WAYFAIR*WAYFAIR	\$206.95	DEBORAH GUTHRIE
2016/02/05	WEEBLY-CHARGE.COM	\$67.90	DEBORAH GUTHRIE
2016/02/10	WEST MICHIGAN EDUCATIO	\$140.00	WILLIAM PRIESE
2016/02/10	WEST MICHIGAN EDUCATIO	\$140.00	WILLIAM PRIESE

\$11,533.50

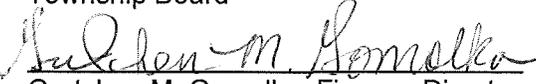
ACH Transactions

<u>Date</u>	<u>Payee</u>	<u>Amount</u>	<u>Purpose</u>
02/05/16	Various Financial Institutions	242,650.78	Direct Deposit 2/5 Payroll
02/05/16	ICMA	47,803.84	Payroll Deductions
02/05/16	IRS	96,953.13	Payroll Taxes
02/08/16	Consumers Energy	53,986.02	P'mt of Twp Consumers Energy
01/29/16	MERS	46,597.49	P'mt of Twp Retirement
		<hr/>	
	Total ACH Payments	<u><u>487,991.26</u></u>	

Name	Description	#	\$ amount	Init
Mary Ann Groop	Mileage	4635	412.08	
Denise Green	Parking @ MDOT	✓4636	\$0.50	ENT
Danielle Hughes	mileage	✓4637	\$10.93	DWF
Danielle Hughes	mileage	✓4638	\$6.33	DWF
Julie Brixie	mileage	✓4639	\$11.88	my
Julie Brixie	jeopardy assessment fitting	✓4640	\$10.00	my
Erin Bierly	mileage to PO	✓4641	\$9.78	ENT
Sandy Otto	mileage to PO	✓4642	\$6.90	DWF
Coty Kenneth	GTA Decorations	✓4643	\$27.54	ENT
Coty Kenneth	Envelopes	✓4644	\$20.00	ENT
Joan Horvath	mileage to PO	✓4645	\$9.20	DWF
Carol Hasse	dish soap/scrubbers - admin kitchen	✓4646	\$9.72	DWF
Joan Horvath	mileage	✓4647	\$9.07	DWF
Sandy Otto	OMB paper	✓4648	\$26.99	ENT
David Upchurch	Cont. Education for pers. prop.	✓4649	\$25.00	JB
Deborah G.	studio set piece	✓4650	\$5.00	ENT
Joan Horvath	CAMCA meeting	✓4651	\$10.63	DWF
Carol Hasse	cookies for Board/comm event	✓4652	\$21.98	DWF
Carol Hasse	board/comms apprec.	✓4653	\$10.97	ENT
Carol Hasse	Parking @ Capital	✓4654	\$5.00	ENT
Danielle Hughes	mileage	✓4655	\$11.34	DWF
Mary Ann Groop	mileage	✓4656	\$3.78	JB
Joan Horvath	mileage	✓4657	\$12.42	my
sandy otto	omb sheet protectors	✓4658	\$16.29	my
sandy otto	mileage	✓4659	\$2.70	my
Lysia Burgio	pkg water - gag order story (parking)	✓4660	\$20.00	my
Brett Dreyfus	mileage to CAMC meeting	✓4661	\$9.18	DWF
Erin Bierly	mileage	✓4662	\$12.96	my
			\$ 326.20	Total

MEMORANDUM

TO: Township Board

FROM: 
Gretchen M. Gomolka, Finance Director

DATE: February 11, 2016

RE: **2016 Beginning-of-Year Budget Amendment Request &
2015 Subsequent-to-Year-End Budget Amendment Request**

The 2016 Amended Budget is attached. It reflects the recommended Beginning-of-Year Budget Amendments that are detailed in Exhibit A. These amendments result from activities budgeted in 2015 that were not completed and are being carried over to 2016 as well as amendments for other expenditures that were unknown during the original budget process.

Amendments to the General Fund include \$4,000 for salary costs and related reimbursement revenue for the 2016 Presidential Primary, \$50,000 for the master plan, \$30,000 for branding and website design, \$269,600 for fire station outfitting and technology projects that were not completed by the end of 2015. Additionally, there is an adjustment to reduce the budget for watershed management by \$82,500, which is a result of lower than anticipated costs from the Ingham County Drain Office.

Subsequent to December 31, 2015, the Township received two invoices from the Ingham County Road Department related to the work done on local roads in Meridian Township. The two invoices were higher than originally anticipated and resulted in the Local Roads fund being over-budget by \$24,000. We are requesting final subsequent-to-year-end 2015 budget amendments to increase the General Fund transfer to Local Roads by \$24,000 and to increase the Local Roads budget by \$24,000 for transfers in and construction expenses. This additional \$24,000 expense is included in the Expenditures per preliminary financials of \$17,670,000 in the table below. Schedule B is attached and details this request.

The projected December 31, 2016 Fund Balance for General Fund is based in preliminary financial results at year-end. Final numbers for 2015 will not be available until after the audit.

The projected Fund Balance for the General Fund is computed as follows:

Fund Balance at 12/31/14 per audit		\$7,113,030
Preliminary Results of Operations – 2015		
Revenues per preliminary financials	18,100,000	
Expenditures per preliminary financials	<u>17,670,000</u>	
Preliminary increase in Fund Balance 2015		<u>430,000</u>
Projected Fund Balance at 12/31/15		7,543,030
Budgeted Results of Operations - 2016		
Revenues per original budget	17,969,535	
Expenditures per original budget	<u>19,087,102</u>	
Original Budgeted Use of Fund Balance	(1,117,567)	
Beginning-of-Year budget amendments	<u>(237,100)</u>	
Projected Use of Fund Balance		<u>(1,354,667)</u>
Projected Fund Balance at 12/31/16		<u>\$6,188,363</u>
Fund Balance/Average Monthly Expenditures		<u>4.17</u>

You will see amendments in the Park Restricted/Designated Fund for the new Celebrate Meridian event (\$33,000). Projects in the Cable TV Fund totaling \$30,900 are being carried over from 2015, and final completion of the new Central Fire Station totaling \$210,274 is being carried over from 2015. Adjustments in the Motor Pool Fund are being made to carry over \$28,615 for the City Works project, as well as a small adjustment to correct an addition error in the original adopted budget.

Please feel free to call me if you have any questions about the attached information. My direct-dial phone number is 853-4104.

The following motions are proposed:

MOVE TO APPROVE THE 2015 SUBSEQUENT-TO-YEAR-END BUDGET AMENDEDMENTS WITH AN INCREASE IN EXPENDITURES OF THE GENERAL FUND IN THE AMOUNT OF \$24,000. BASED ON PRELIMINARY 2015 RESULTS, THE PROJECTED FUND BALANCE AT DECEMBER 31, 2015 WILL BE \$7,543,030.

MOVE TO APPROVE THE 2016 BEGINNING-OF-YEAR BUDGET AMENDEDMENTS WITH A DECREASE IN BUDGETED FUND BALANCE FOR THE GENERAL FUND IN THE AMOUNT OF \$237,100 WHICH PROJECTS A USE OF FUND BALANCE OF \$1,354,667. BASED ON PRELIMINARY 2015 RESULTS, THE PROJECTED FUND BALANCE AT DECEMBER 31, 2016 WILL BE \$6,188,363.

Attachments:

1. 2016 Beginning-of-Year Budget Amendment Financial Information
2. 2015 Subsequent-to-Year-End Budget Amendment Financial Information

2016 Amended Budget
 With 2016 Beginning of Year Amendments
 Charter Township of Meridian

2016 REVENUE SUMMARY

	GENERAL FUND	SPECIAL REVENUE FUNDS*	DEBT SERVICE FUNDS*	CAPITAL PROJECTS FUNDS*	PUBLIC WORKS FUNDS	INTERNAL SERVICE FUND	DDA
REVENUES							
Taxes	\$9,640,790	\$3,401,490	\$320,033	\$0	\$0	\$0	\$15,000
Licenses & Permits	757,200	0	0	0	0	0	0
Intergovernmental	3,467,000	38,500	0	0	750,000	0	9,000
Charges For Services	3,872,000	78,000	0	0	8,737,200	1,147,535	0
Interest	20,985	33,500	0	15,500	3,000	0	0
Special Assessments	0	0	0	140,000	0	0	0
Other	215,560	958,800	0	0	38,500	20,000	16,000
SUBTOTAL	17,973,535	4,510,290	320,033	155,500	9,528,700	1,167,535	40,000
OTHER FINANCING SOURCES							
Operating Transfers In	0	175,000	0	0	0	0	0
TOTAL REVENUES	\$17,973,535	\$4,685,290	\$320,033	\$155,500	\$9,528,700	\$1,167,535	\$40,000

2016 EXPENDITURE SUMMARY

	GENERAL FUND	SPECIAL REVENUE FUNDS*	DEBT SERVICE FUNDS*	CAPITAL PROJECTS FUNDS*	PUBLIC WORKS FUNDS	INTERNAL SERVICE FUND	DDA
EXPENDITURES							
Legislative	\$86,527	\$0	\$0	\$0		\$0	\$0
General Government	6,654,359	0	0	0		0	23,500
Public Safety	10,940,892	47,000	0	0		761,468	0
Public Works	0	153,749	0	0	9,235,875	0	0
Health & Welfare	54,488	99,000	0	0		0	0
Recreation & Culture	710,286	1,738,495	0	0		0	0
Capital Outlay	706,650	2,262,250	0	290,274	705,000	645,500	0
Debt Service	0	0	273,818	0	191,828	0	5,985
SUBTOTAL	19,153,202	4,300,494	273,818	290,274	10,132,703	1,406,968	29,485
OTHER FINANCING USES							
Operating Transfers Out	175,000	0	0	0	0	0	0
TOTAL EXPENDITURES	\$19,328,202	\$4,300,494	\$273,818	\$290,274	\$10,132,703	\$1,406,968	\$29,485

* See attached Summary of Special Revenue Funds, Debt Service Funds, and Capital Projects Funds

2016 BUDGET

SUMMARY OF SPECIAL REVENUE FUNDS

	SPECIAL REVENUE FUNDS	Local Roads Fund	Pedestrian/Bicycle Pathway	CATA Ride Millage	Land Preservation Millage	Land Preservation Reserve	Park Millage	Senior Center Millage	Park Restricted/Designated	Nancy Moore - Park Beautification	Fire Restricted/Designated	Library Fund Restricted	Police Restricted/Designated	Cable Television	Community Needs	Energy Grant	Law Enforcement Grants
REVENUES																	
Taxes	\$3,401,490	\$399,900	\$443,870	\$320,000	\$528,060	\$0	\$1,573,600	\$136,060	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Licenses & Permits	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Intergovernmental	38,500	0	0	0	0	0	0	0	9,000	0	0	0	8,500	0	0	0	21,000
Charges For Services	78,000	0	0	0	0	0	40,000	0	38,000	0	0	0	0	0	0	0	0
Interest	33,500	0	0	0	7,000	25,000	1,500	0	0	0	0	0	0	0	0	0	0
Special Assessments	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other	958,800	0	0	0	0	0	5,000	0	45,000	3,000	0	0	17,600	880,200	8,000	0	0
SUBTOTAL	4,510,290	399,900	443,870	320,000	535,060	25,000	1,620,100	136,060	92,000	3,000	0	0	26,100	880,200	8,000	0	21,000
OTHER FINANCING SOURCES																	
Operating Transfers In	175,000	175,000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL REVENUES	\$4,685,290	\$574,900	\$443,870	\$320,000	\$535,060	\$25,000	\$1,620,100	\$136,060	\$92,000	\$3,000	\$0	\$0	\$26,100	\$880,200	\$8,000	\$0	\$21,000
EXPENDITURES																	
Public Safety	47,000	0	0	0	0	0	0	0	0	0	0	0	26,000	0	0	0	21,000
Public Works	153,749	0	153,749	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Health & Welfare	99,000	0	0	0	0	0	0	85,000	0	0	0	0	0	0	8,000	6,000	0
Recreation & Culture	1,738,495	0	0	320,000	81,311	0	591,635	0	89,843	0	0	0	0	655,706	0	0	0
Capital Outlay	2,262,250	574,000	300,000	0	100,000	0	921,200	15,000	19,000	5,000	0	0	0	328,050	0	0	0
Debt Service	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	4,510,290	574,000	453,749	320,000	181,311	0	1,512,835	100,000	108,843	5,000	0	0	26,000	983,756	8,000	6,000	21,000
OTHER FINANCING USES																	
Operating Transfers Out	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL EXPENDITURES	\$4,300,494	\$574,000	\$453,749	\$320,000	\$181,311	\$0	\$1,512,835	\$100,000	\$108,843	\$5,000	\$0	\$0	\$26,000	\$983,756	\$8,000	\$6,000	\$21,000

SUMMARY OF DEBT SERVICE FUNDS

	DEBT SERVICE FUNDS	Property Acquisition Debt Service	Fire Station Debt Service
REVENUES			
Taxes	\$320,033	\$0	\$320,033
EXPENDITURES			
Debt Service	\$273,818	\$0	\$273,818

SUMMARY OF CAPITAL PROJECTS FUNDS

	CAPITAL PROJECTS FUNDS	TIRF	Fire Station Construction
REVENUES			
Interest	\$15,500	\$15,500	\$0
Special Assessments	140,000	140,000	0
TOTAL REVENUES	\$155,500	\$155,500	\$0
EXPENDITURES			
Capital Outlay	\$290,274	\$80,000	\$210,274

Beginning of Year Budget Amendments
 2016 Budget
 Charter Township of Meridian

Department	Amount	Explanation	Account
GENERAL FUND			
<i>Revenue</i>			
Reimbursements	4,000.00	Reimbursement of additional temporary election worker	101-000.000-679.000
<i>Expenditures</i>			
General Government			
Elections	4,000.00	Salaries Presidential Primary - Additional temporary election worker	101-170.191-701.150
Watershed Management			
Drains at Large	-9,800.00	Billing from County came in lower than budgeted	101-170.260-842.000
Chapter 20 Drains	-33,900.00	Fewer than anticipated new Chapter 20 drains this year	101-170.260-842.500
Interest on Bonded Drains	-38,800.00	Savings related to the 2015 bond refinancing	101-170.260-843.501
Total General Government	-78,500.00		
Pub Safety - Comm Planning & Dev - Planning	50,000	Carry Over - Master Plan	101-300.400-821.000
Capital Outlay			
Professional Services	30,000.00	Carry Over - Website and branding	101-900.901-821.000
Network Node Replacement	40,500.00	Carry Over - New fire station equipment, switches, printers, routers	101-900.901-980.020
Construction/Improvements	135,000.00	Carry Over - Furniture, fixtures and equipment - new fire station	101-900.901-974.000
Construction/Improvements	10,000.00	Carry Over - Final completion of paving municipal lots	101-900.901-974.000
New Computer Workstations	9,600.00	Carry Over - Presentation laptop, projector, creative suite	101-900.901-980.015
Computer Upgrades	2,500.00	Carry Over - Windows XP upgrades to Windows 7/10	101-900.901-980.030
Network Servers	20,000.00	Carry Over - Memory upgrade	101-900.901-980.040
Server Upgrades	22,000.00	Carry Over - Central monitoring and power improvements	101-900.901-980.050
Total Capital Outlay	269,600.00		
Total Expenditures for General Fund	241,100.00		
Net from Fund Balance	-\$237,100.00		
SPECIAL REVENUE FUNDS			
Park Restricted/Designated Fund			
<i>Revenues</i> - Celebrate Sponsorship	33,000.00	Anticipated sponsorship for new Celebrate Meridian event	211-000.000-650.500
<i>Expenditures</i> - Celebrate Expense	33,000.00	Anticipated expenditures for new Celebrate Meridian event	211-000.000-892.000
Net from Fund Balance	\$0.00		
Cable Fund			
<i>Expenditures</i>			
Video Production Equipment	30,900.00	Carry Over - Lighting and other projects not completed in 2015	230-750.806-980.010
Total Expenditures	\$30,900.00		
Net from Fund Balance	-\$30,900.00		
Fire Station Construction Fund			
<i>Expenditures</i>			
Professional Services	11,704.00	Carry Over - Remaining on DLZ contract, completed in 2016	454-000.000-821.000
Construction & Improvements	198,570.43	Carry Over - Remaining on Wieland Davco contract, completed in 2016	454-000.000-974.000
Total Expenditures	\$210,274.43		
Net from Fund Balance	-\$210,274.43		
INTERNAL SERVICE FUND			
Motor Pool			
<i>Revenue</i> - Rentals	-3,175	Correct miscalculation on original budget	661-000.000-667.000
<i>Expenditures</i> - Contractual Services	28,615	Carry Over - Conversion of fleet to City Works	661-000.000-820.000
Net from Fund Balance	-\$31,790.00		

Subsequent-to-Year-End Budget Amendments
2015 Budget
Charter Township of Meridian

<u>Department</u>	<u>Amount</u>	<u>Explanation</u>	<u>Account</u>
GENERAL FUND			
<i>Expenditures</i>			
Operating Transfers Out to Local Roads	\$24,000.00	Final bill for 2015 road work came in higher than anticipated	101-965.966-999.008
Net from Fund Balance	<u><u>-\$24,000.00</u></u>		
 SPECIAL REVENUE FUNDS			
Local Roads Fund			
<i>Revenue</i> - Transfer In	\$24,000.00	Final bill for 2015 road work came in higher than anticipated	203-000.000-699.000
<i>Expenditures</i> - Construction & Improvements	\$24,000.00	Final bill for 2015 road work came in higher than anticipated	203-000.000-974.000
Net from Fund Balance	<u><u>\$0.00</u></u>		

MEMORANDUM

TO: Township Board

FROM: Mark Kieselbach
Mark Kieselbach
Director of Community Planning and Development

DATE: February 10, 2016

RE: Zoning Amendment #15080 (Township Board) – Final Adoption

Attached for the Board's approval is a resolution for final adoption of Zoning Amendment #15080. As directed by the Board, the Clerk has had the proposed ordinance published in the form in which it was introduced.

Attachment

1. Resolution

ORDINANCE NO. 2016-04
Zoning Amendment #15080
(Township Board)
FINAL ADOPTION

RESOLUTION

At the regular meeting of the Township Board of the Charter Township of Meridian, Ingham County, Michigan, held at the Meridian Municipal Building, in said Township on the 16th day of February 2016, at 6:00 p.m., Local Time.

PRESENT: _____

ABSENT: _____

The following resolution was offered by _____ and supported by _____.

WHEREAS, a zoning amendment (ZA #15080) was initiated to amend Section 86-473 Street Trees to continue to require the installation of new street trees and to expand the ordinance to consider preservation of existing street trees along and within the rights-of-way of public streets in Meridian Township; and

WHEREAS, the Planning Commission held a public hearing on the proposed zoning amendment on November 9, 2015, and reviewed staff material forwarded under cover memoranda dated November 5, 2015, December 10, 2015, and December 17, 2015; and

WHEREAS, the Planning Commission at its meeting on December 21, 2015 voted to recommend approval of the zoning amendment; and

WHEREAS, the amendment to Section 86-473 Street Trees continues to require the planting of street trees along public streets for the purpose of improving public health, safety and general welfare; and

WHEREAS, the amendment promotes the retention of existing street trees within public road rights-of-way to further preserve the township's natural assets and environment by allowing existing trees to substitute for required street trees; and

WHEREAS, the amendment provides a mechanism for evaluating existing street trees prior to removal to determine viability for preservation by considering tree species, size, form, age, location and physical condition; and

WHEREAS, the amendment is consistent with Goal 3, Objective E, Strategy 3 of the 2005 Master Plan to initiate and maintain a program of tree planting along the Township's major thoroughfares; and

WHEREAS, the amendment is consistent with a 2015 Township Board goal to update the street tree ordinance; and

RESOLUTION TO APPROVE – FINAL ADOPTION

ZA #15080 (Township Board)

Page 2

WHEREAS, the Township Board introduced Zoning Amendment #15080 for publication and subsequent adoption on February 2, 2016.

NOW THEREFORE BE IT RESOLVED THE TOWNSHIP BOARD OF THE CHARTER TOWNSHIP OF MERIDIAN, hereby **FINALLY ADOPTS** Ordinance No. 2016-04, entitled "Ordinance Amending the Code of the Charter Township of Meridian, Ingham County, Michigan, Chapter 86, Article V, DIVISION 1, by amending Section 86-473 Street trees.

BE IT FURTHER RESOLVED the Clerk of the Charter Township of Meridian is directed to publish the Ordinance in the form in which it is finally adopted at least once prior to the next regular meeting of the Township Board.

ADOPTED: YEAS: _____

NAYS: _____

STATE OF MICHIGAN)
) ss
COUNTY OF INGHAM)

I, the undersigned, the duly qualified and acting Clerk of the Charter Township of Meridian, Ingham County, Michigan, DO HEREBY CERTIFY that the foregoing is a true and a complete copy of a resolution adopted at a regular meeting of the Township Board on the 16th day of February 2016.

Brett Dreyfus CMMC
Township Clerk

ORDINANCE NO. 2016-04

ORDINANCE AMENDING THE CODE OF THE CHARTER TOWNSHIP
OF MERIDIAN, INGHAM COUNTY, MICHIGAN,
CHAPTER 86, ARTICLE V, Division 1 BY AMENDING SECTION 86-473

THE CHARTER TOWNSHIP OF MERIDIAN ORDAINS:

Section 1.

- A. Amendment to Section 86-473 of Article V Supplementary Regulations. Section 86-473 entitled Street trees of the Code of the Charter Township of Meridian, Ingham County, Michigan, is hereby amended to read as follows:

Sec. 86-473 Street trees.

The purpose of this section is to protect, preserve and provide trees along and near streets within the Township; to provide for public health, safety, and general welfare gained from the visual aesthetics, air purification, and traffic calming benefits of trees; to promote and retain the Township's natural beauty; and to identify, address mitigate and resolve concerns regarding trees during the design phase of projects.

- A. New street trees. New street trees shall be planted as part of any nonresidential or multiple-family developments, planned unit developments (PUD), mixed use planned unit developments (MUPUD), and commercial planned unit developments (CPUD), using the following minimum standards:

(1) Location of new street trees shall be determined by street classifications found in Section 86-367.

- a. Arterial streets: New street trees shall be planted in a manner determined appropriate by the Director of Community Planning and Development with input from the Ingham County Road Department and the Michigan Department of Transportation, as applicable.
- b. Collector and local streets: Street trees shall be planted between the curb line and edge of pavement and the right of way line of the street provided sight visibility shall be maintained in a manner consistent with Section 86-474. The Director of Community Planning and Development with input from the Ingham County Road Department or Michigan Department of Transportation, as applicable shall determine the appropriateness of the final location of proposed street trees.
- c. In those cases where a street tree is planted less than five feet from the curb line or a sidewalk/pathway, materials shall be installed with the tree(s) which prevent heaving by deflecting the roots away from growing directly under the curb, street or sidewalk/pathway.

(2) Tree size. New street trees shall be at least two inches in caliper when planted. Any tree which dies within two years after planting shall be replaced by the developer.

- B. Existing trees. In an effort to preserve viable existing trees and in lieu of planting new street trees, existing trees located in the right of way of all street classifications may be preserved and used as street trees subject to the approval of the Director of Community Planning and Development with input from the Ingham County Road Department or Michigan Department of Transportation, as applicable. The following minimum standards shall be utilized for all existing trees located within the right of way:
- (1) Existing trees shall be identified by species and diameter at breast height (dbh) on plans submitted with applications for special use permits, planned unit developments (PUD), mixed use planned unit developments (MUPUD), commercial planned unit developments (CPUD), and site plans if one or both of the following are proposed:
 - a. An applicant proposes to retain an existing street tree in lieu of planting a new tree.
 - b. An applicant proposes to remove one or more existing street trees located in the right of way abutting a development site and demonstrates the lack of feasible or prudent alternatives without causing undue hardship.
 - (2) Evaluation of existing street trees for either substitution for a new street tree or for preservation shall be based on the following criteria: desirability of the existing tree's species, form, size, age, location and physical condition.
 - (3) The preservation of individual existing trees meeting the criteria above should have priority over the design and location of proposed streets, access drives, and infrastructure when there are other practical alternatives to removing the tree(s).
 - (4) The Township may impose conditions on the method and extent of the proposed activities in the right of way, as necessary, to ensure they will be conducted in a manner which will minimize damage, encroachment, or interference with the health and well-being of the tree(s).
 - (5) Tree protection measures identified in Section 22-179 of the code of ordinances may be required to assure the health and well-being of each existing tree to be preserved. Activities should not be conducted within the drip line of the tree, including but not limited to placing solvents, material, machinery, vehicles, or soil.
 - (6) One replacement deciduous tree shall be planted for each preserved existing tree that dies within two years after completion of the project. Tree species and planting locations are subject to the approval of the Director of Community Planning and Development. Trees shall be a minimum of two inches in diameter.

Section 2. Validity and Severability. The provisions of this Ordinance are severable and the invalidity of any phrase, clause or part of this Ordinance shall not affect the validity or effectiveness of the remainder of the Ordinance.

Section 3. Repealer Clause. All ordinances or parts of ordinances in conflict therewith are hereby repealed only to the extent necessary to give this Ordinance full force and effect.

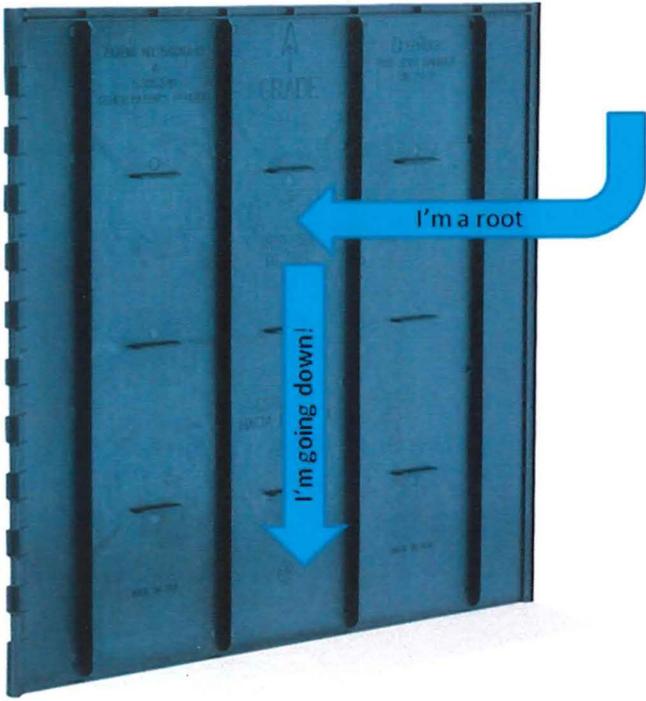
Section 4. Savings Clause. This Ordinance does not affect rights and duties matured, penalties that were incurred, and proceedings that were begun, before its effective date.

Section 5. Effective Date. This Ordinance shall be effective seven (7) days after its publication or upon such later date as may be required under Section 402 Michigan Zoning Enabling Act (MCL 125.3402) after filing of a notice of intent to file a petition for a referendum.

Elizabeth LeGoff, Township Supervisor

Brett Dreyfus, CMMC, Township Clerk

Steven O. Schultz, Township Attorney



ROOT BARRIER



MEMORANDUM

TO: Township Board

FROM: 
Derek N. Perry, Assistant Township Manager
Director of Public Works & Engineering

DATE: February 11, 2016

RE: **Consumers Energy Co. Gas Franchise Ordinance**

The current non-exclusive 30 year gas franchise agreement with Consumers Energy will expire on April 1, 2016. Consumers Energy has contacted the Township and has requested that a new 30 year revocable, non-exclusive franchise be approved.

The proposed Township ordinance granting the requested franchise agreement has been reviewed by our legal counsel and is attached for your discussion and future consideration and action at the upcoming March 1, 2016 Township Board meeting.

Chris Thelen, Area Manager for Consumers Energy, will be at the February 16, 2016 Township Board meeting to discuss the request and answer questions.

ORDINANCE NO. _____

CONSUMERS ENERGY COMPANY GAS FRANCHISE ORDINANCE

AN ORDINANCE, granting to CONSUMERS ENERGY COMPANY, its successors and assigns, the right, power and authority to lay, maintain and operate gas mains, pipes and services on, along, across and under the highways, streets, alleys, bridges, waterways, and other public places, and to do a local gas business in the CHARTER TOWNSHIP OF MERIDIAN, INGHAM COUNTY, MICHIGAN, for a period of thirty years.

THE CHARTER TOWNSHIP OF MERIDIAN ORDAINS:

SECTION 1. GRANT, TERM. The CHARTER TOWNSHIP OF MERIDIAN, INGHAM COUNTY, MICHIGAN, hereby grants to the Consumers Energy Company, a Michigan corporation, its successors and assigns, hereinafter called the "Grantee," the right, power and authority to lay, maintain and operate gas mains, pipes and services on, along, across and under the highways, streets, alleys, bridges, waterways, and other public places, and to do a local gas business in the CHARTER TOWNSHIP OF MERIDIAN, INGHAM COUNTY, MICHIGAN, for a period of thirty years.

SECTION 2. CONSIDERATION. In consideration of the rights, power and authority hereby granted, said Grantee shall faithfully perform all things required by the terms hereof.

SECTION 3. CONDITIONS. No highway, street, alley, bridge, waterway or other public place used by said Grantee shall be obstructed longer than necessary during the work of construction or repair, and shall be restored to the same order and condition as when said work was commenced. All of Grantee's pipes and mains shall be so placed in the highways and other public places as not to unnecessarily interfere with the use thereof for highway purposes.

SECTION 4. HOLD HARMLESS. Said Grantee shall at all times keep and save the Charter Township free and harmless from all loss, costs and expense to which it may be subject by reason of the negligent construction and maintenance of the structures and equipment hereby authorized. In case any action is commenced against the Charter Township on account of the permission herein given, said Grantee shall, upon notice, defend the Charter Township and save it free and harmless from all loss, cost and damage arising out of such negligent construction and maintenance.

SECTION 5. EXTENSIONS. Said Grantee shall construct and extend its gas distribution system within said Charter Township and shall furnish gas to applicants residing therein in accordance with applicable laws, rules and regulations.

SECTION 6. FRANCHISE NOT EXCLUSIVE. The rights, power and authority herein granted, are not exclusive. Either manufactured or natural gas may be furnished hereunder.

SECTION 7. RATES. Said Grantee shall be entitled to charge the inhabitants of said Charter Township for gas furnished therein, the rates as approved by the Michigan Public Service Commission, to which Commission or its successors authority and jurisdiction to fix and regulate gas rates and rules regulating such service in said Charter Township, are hereby granted for the term of this franchise. Such rates and rules shall be subject to review and change at any time upon petition therefor being made by either said Charter Township, acting by its Charter Township Board, or by said Grantee.

SECTION 8. REVOCATION. The franchise granted by this ordinance is subject to revocation upon sixty (60) days written notice by the party desiring such revocation.

SECTION 9. MICHIGAN PUBLIC SERVICE COMMISSION, JURISDICTION. Said Grantee shall, as to all other conditions and elements of service not herein fixed, be and remain subject to the reasonable rules and regulations of the Michigan Public Service Commission or its successors, applicable to gas service in said Charter Township.

SECTION 10. REPEALER. This ordinance, when accepted and published as herein provided, shall repeal and supersede the provisions of a gas ordinance adopted by the Charter Township Board on April 15, 1986 entitled:

AN ORDINANCE, granting to CONSUMERS POWER COMPANY, its successors and assigns, the right, power and authority to lay, maintain and operate gas mains, pipes and services on, along, across and under the highways, streets, alleys, bridges and other public places, and to do a local gas business in the CHARTER TOWNSHIP OF MERIDIAN, INGHAM COUNTY, MICHIGAN.

and amendments, if any, to such ordinance whereby a gas franchise was granted to Consumers Energy Company.

SECTION 11. EFFECTIVE DATE. This ordinance shall take effect upon the day after the date of publication thereof; provided, however, it shall cease and be of no effect after thirty days from its adoption unless within said period the Grantee shall accept the same in writing filed with the Charter Township Clerk. Upon acceptance and publication hereof, this ordinance shall constitute a contract between said Charter Township and said Grantee.

We certify that the foregoing Franchise Ordinance was duly enacted by the Charter Township Board of the CHARTER TOWNSHIP OF MERIDIAN, INGHAM COUNTY, MICHIGAN, on the _____ day of _____, 2016.

Elizabeth LeGoff, Charter Township Supervisor

Attest:

Brett Dreyfus, Charter Township Clerk

MEMORANDUM

TO: Township Board

FROM:



Mark Kieselbach
Director of Community Planning and Development



Martha K. Wyatt
Associate Planner/Landscape Architect

DATE: February 12, 2016

RE: Special Use Permit #16011 (PHG Land Development, LLC), request to construct a 4-story hotel and the structure is greater than 25,000 square feet in gross floor area.

PHG Land Development has submitted a special use permit request to construct a 4-story hotel with 99 rooms, which exceeds 25,000 square feet in gross floor area. The approximate 67,000 square foot hotel is to be located on the south side of Jolly Oak Road, west of Meridian Crossing Drive, in the Meridian Crossing shopping center (Unit 5 in the Meridian Crossing Condominium).

In accordance with Section 86-654 of the Code of Ordinances, the Planning Commission reviewed and approved the special use permit for the hotel use. The request to construct a building greater than 25,000 square feet in gross floor area requires a recommendation from the Planning Commission and decision by the Township Board per Section 86-658.

The Planning Commission held the public hearing for Special Use Permit #16011 on January 11, 2016 and voted 9-0 to recommend approval for a building greater than 25,000 square feet on January 25, 2016 and voted 9-0 to approve the hotel use at the same meeting. The reasons cited by the Planning Commission in its recommendation for approval of a building greater than 25,000 square feet were:

1. The subject site is properly zoned in the C-2 (Commercial) district, which allows a hotel use and buildings greater than 25,000 square feet in gross floor area by special use permit.
2. The structure has been designed to be harmonious and appropriate with the existing and potential future uses surrounding the site.
3. The surrounding road system has sufficient capacity to absorb the additional traffic projected to result from the 99-room hotel.
4. The site dimensions are consistent with the minimum lot area and minimum lot width requirements of the C-2 (Commercial) district.
5. The proposed development will be served by public water and sanitary sewer.

**SUP #16011 (PHG Land Development, LLC)
Township Board (2/12/16)
Page 2**

Minor revisions to the plans have been made since the public hearing at the Planning Commission, with adjustments to the patio areas, some sidewalks, and the location of the bike racks.

Copies of the staff memorandums dated January 8, 2016 and January 22, 2016 and minutes of the Planning Commission's January 11, 2016 and January 25, 2016 meetings are attached.

Township Board Options

The Township Board may approve, approve with conditions or deny the request for a building greater than 25,000 square feet in gross floor area. A resolution will be provided for consideration at a future meeting.

Attachments

1. Staff memorandums dated January 8, 2016 and January 22, 2016
2. Planning Commission minutes dated January 11, 2016 (public hearing) and January 25, 2016 (decision)
3. Approval letter for Special Use Permit #16011 dated January 28, 2016, approving the use
4. Floor Plans and Building Elevations dated November 1, 2015
5. Site Plans dated February 1, 2016

**Special Use Permit #16011
(PHG Land Development, LLC)
January 8, 2016**

APPLICANT: PHG Land Development, LLC
520 N. Main Street
Cheboygan, MI 49721

STATUS OF APPLICANT: Owner

REQUEST: Special use permit for a hotel use and size of building

CURRENT ZONING: C-2 (Commercial)

LOCATION: Jolly Oak Road (south side) at Meridian Crossing Drive

AREA OF SUBJECT SITE: 2.78 acres

EXISTING LAND USE: Undeveloped

**EXISTING LAND USES
IN AREA:** North: Office building
South: Commercial (Meridian Crossing shopping center)
East: Commercial (Meridian Crossing shopping center)
West: Hotel (Staybridge Suites)

CURRENT ZONING IN AREA: North: PO (Professional and Office)
South: C-2 (Commercial)
East: C-2 (Commercial)
West: C-2 (Commercial)

**FUTURE LAND USE
DESIGNATION:** Commercial

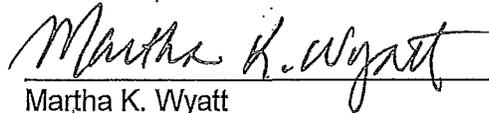
FUTURE LAND USE MAP: North: Office
South: Commercial
East: Commercial
West: Commercial

CHARTER TOWNSHIP OF MERIDIAN

MEMORANDUM

TO: Planning Commission.

FROM



Martha K. Wyatt
Associate Planner/Landscape Architect

DATE: January 8, 2016

RE: Special Use Permit #16011 (PHG Land Development, LLC), request to construct a 4-story hotel and the structure is greater than 25,000 square feet in gross floor area

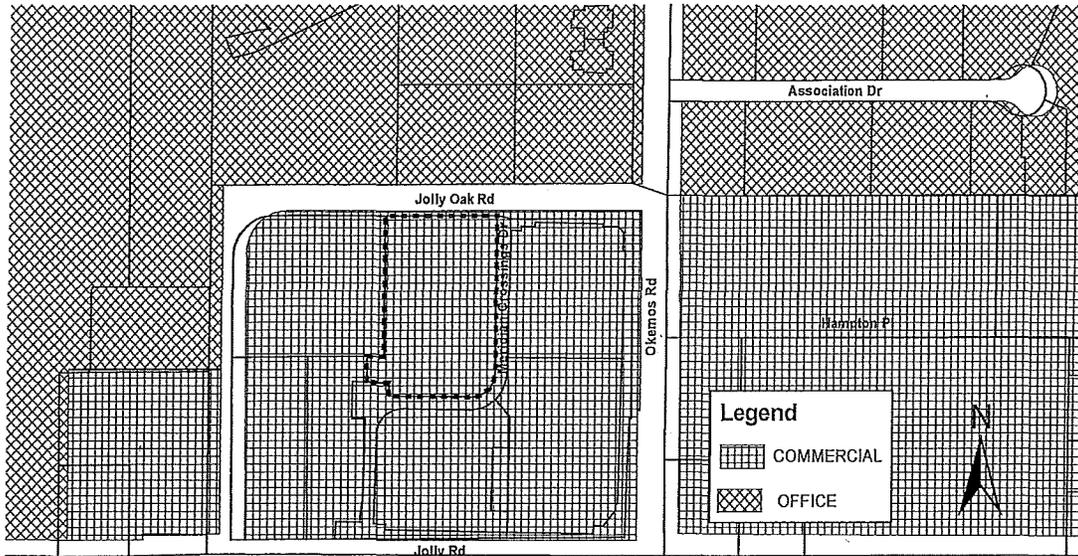
PHG Land Development, LLC has requested a special use permit to construct a 99-room, approximate 67,000 square foot hotel on the south side of Jolly Oak Road, west of Meridian Crossing Drive, in the Meridian Crossing shopping center (Unit 5 in the Meridian Crossing Condominium). Access to the site is provided from Jolly Oak Road and Meridian Crossing Drive. The 4-story Courtyard Marriott includes meeting areas, dining and reception lounges, indoor swimming pool, and hotel rooms. The approximate 2.78 site is zoned C-2 and is located in Section 33 of the Township.

A hotel is a permitted use in C-2 by special use permit under Section 86-404(e)(14). A special use permit is also required for any building or group of building totaling more than 25,000 square feet in gross floor area and located on a lot, per Section 86-404(e)(9). The Planning Commission will decide the special use permit to allow for the construction of a hotel and will make a recommendation to the Township Board regarding the special use permit for a structure greater than 25,000 square feet in gross floor area.

Master Plan

The 2005 Master Plan designates the subject property in the Commercial category.

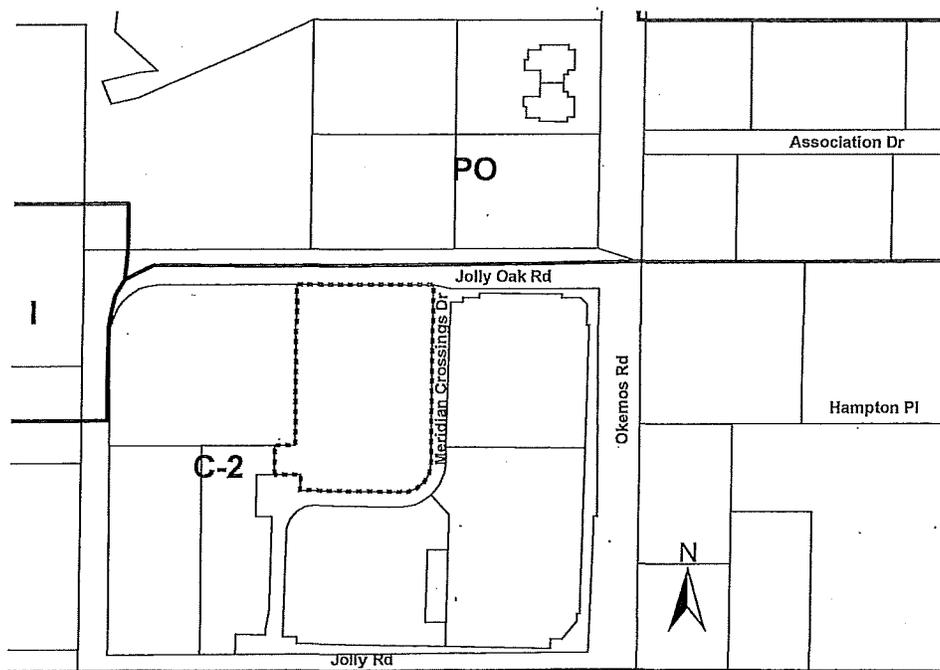
FUTURE LAND USE MAP



Zoning

The subject site is zoned C-2 (Commercial). Lot area is approximately 2.78 acres (121,097 square feet). Lot width measures approximately 283 feet along Jolly Oak Road, approximately 361 feet along Meridian Crossing Drive (private, north-south portion), and approximately 300 feet along Meridian Crossing drive (private, east-west portion). The C-2 district requirements for minimum lot width and lot area are 100 feet and 4,000 square feet respectively.

ZONING MAP



Physical Features

The site is undeveloped and primarily grass covered. The land slopes from the northwest to south from a high elevation of approximately 889 feet above mean sea level in the northwest portion of the site to a low of approximately 880 feet above mean sea level at the south. Floodplain and wetlands are not located on the site. The site has not been given any special designation on the Township's Greenspace Plan.

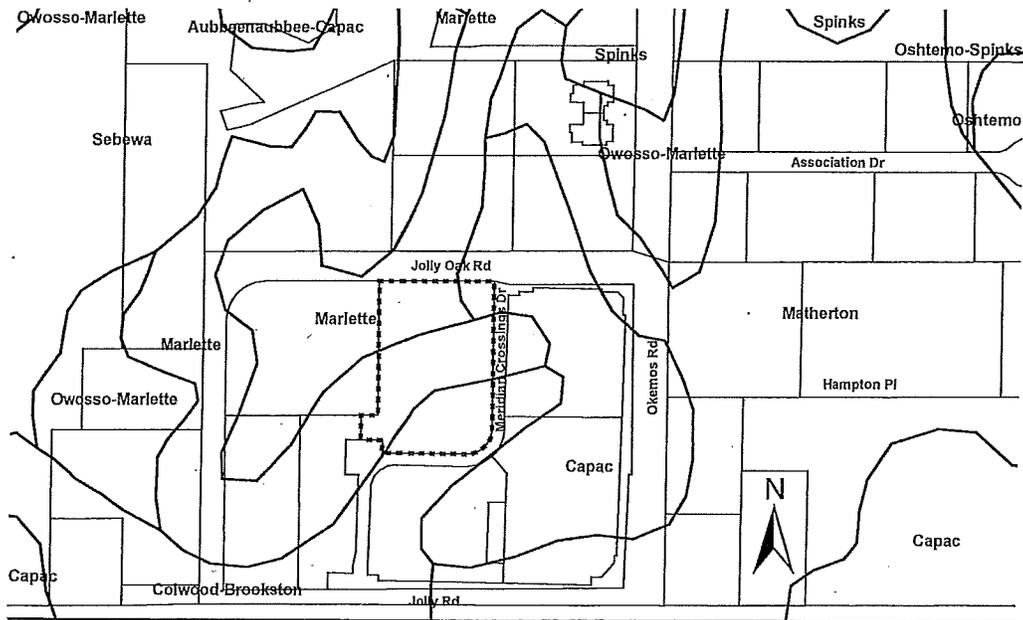
Soils

The following predominant soil types are found at the subject site:

SOIL ASSOCIATION	SEVERE LIMITATIONS
CaA (Capac)	Wetness
Co (Colwood-Brookston)	Ponding
Mab/MaC (Marlette)	Slope

Source: Soil Survey of Ingham County, Michigan. 1992.

SOILS MAP



Streets and Traffic

The site has frontage on Jolly Oak Road (east-west portion) and Meridian Crossing Drive, which is a private street. Jolly Oak Road is a two-lane paved road with curb and gutter. The road is under the jurisdiction of the Ingham County Road Department (ICRD) and the posted speed limit is 35 miles per hour. Jolly Oak Road is designated as a local street on the Street Setbacks and Service Drives Map, Section 86-367 of the zoning ordinance. An Ingham County Road Department (ICRD) traffic count from 2008 for Jolly Oak Road showed average weekday vehicle trips for both directions totaled 3,187 with the a.m. peak hour between 11:00 a.m. and 12 noon and the p.m. peak hour between 1:00 p.m. and 2:00 p.m.

Meridian Crossing Drive is a two-lane paved private street located approximately in the center of Meridian Crossing Shopping center. The private street is a general common element for the Meridian Crossing Condominium. The street intersects Jolly Oak Road on the north and Jolly Road on the south. Traffic counts are not taken on private streets and the speed limit is not posted.

Two proposed driveways provide access to the subject site. The first driveway is on the east side of the site which connects to Meridian Crossing Drive. The second driveway, on the west property line, connects to the existing parking lot of Staybridge Suites (3553 Meridian Crossing Drive), which then outlets onto Jolly Oak Road.

The applicant's consultant, Traffic Engineering Associates, Inc. (TEA), has provided a Traffic Assessment for the proposed project using Hotel (Code 310) as the land use type from the ITE Trip Generation Manual, 9th Edition. The level of service (LOS) was assessed at three locations: Staybridge Suites and Jolly Oak Drive; Meridian Crossing Drive and Jolly Oak Road; and the Courtyard Marriott east approach and Meridian Crossing Drive. Site distance issues were also reviewed at the two proposed driveways.

Based on the traffic study the proposed hotel will generate 53 vehicle trips in the A.M. peak hour (7:30-8:30 A.M.), 59 vehicle-trips in the P.M. peak hour (4:45-5:45 P.M.), with a weekday total volume of 513 trips.

The applicant's traffic consultant offered the following conclusions and recommendations:

- There are no anticipated traffic issues with additional traffic associated with the proposed hotel to the existing public or private streets.
- The sight distance at the site meets the Ingham County Road Department's requirements.
- All future turning movements at the studied intersections are expected to operate at a good level of service (LOS A or B) during the A.M. and P.M. peak hours.

The TEA Traffic Assessment was forwarded to the Township's traffic consultant who concurred with their findings. The ICRD also reviewed the Traffic Assessment and had no concerns. The nearest CATA bus stops associated with the #23 Okemos route are located approximately one-quarter mile east of the site near the intersection of Jolly Road and Okemos Road. Termination points are Meridian Mall and Michigan State University.

Utilities

Public water and sanitary sewer services are available to serve the site. The site is located within the Smith Drain Drainage District and stormwater management plans for the site is under the jurisdiction of the Ingham County Drain Commissioner's office. The final design will be reviewed during site plan review.

Staff Analysis

The applicant is requesting a special use permit to construct a hotel and to construct a building greater than 25,000 square feet in area. A hotel in the C-2 zoning district must receive special use permit approval from the Planning Commission. A special use permit is evaluated using the nine general special use permit criteria listed in Section 86-126 of the Code of Ordinances. Specific standards for hotels found in Section 86-404(e)(14) are as follows:

- Access must be provided from a street designated as a minor or principal arterial in Section 86-376 of the Code of Ordinances or by means of a street designated for the purpose of serving a commercial development.
- Ancillary guest services such as meeting rooms and fitness facilities are allowed.
- The rooms may not be occupied as a residence.
- Buildings shall be setback a minimum 150 feet from any residential zoning district.
- The parcel must be a minimum 2.5 acres.

The proposed 4-story hotel has 99 bedrooms with a mix of rooms offering two queen size beds or one king size bed. Hotel amenities include an indoor swimming pool, screened courtyard with outdoor patios, fitness room, multiple lounge areas, and a meeting room for guests. All food is pre-packaged and on-site food preparation is not proposed. Per the applicant, the common areas will not be rented out for conferences or meetings. The hotel is open seven days a week, 24 hours a day. Staffing of the hotel includes 10 employees for the first shift; 4 employees for the second shift; and 2 employees for the third shift.

The hotel building is situated in the center of the site with parking areas provided on all four sides of the building. The main entrance to the hotel is on the east side of the building, which faces Meridian Crossing Road. A drop-off lane and canopy are provided at the main entrance. A screened courtyard (with 5-foot high privacy wall) with patio areas and fire pit are shown on the west side of the building. Access to the courtyard is provided from inside the hotel on the first floor for guests to use.

A loading zone is provided east of the main entrance (10 feet in width by 40 feet in length). Per the parking standards, one parking space is required per sleeping unit, which equates to 99 parking spaces for this site. The plan indicates 99 parking spaces are proposed.

Bicycle parking is required at a rate of 1 bicycle parking space per 10 motor vehicle parking spaces. Five bicycle racks (or 10 bicycle parking spaces) are required and six bicycle racks are provided on the east side of the building. A dumpster enclosure is proposed on the west side of the site, south of the courtyard.

A 5-foot wide sidewalk exists along the frontage of Jolly Oak Road. A new 5-foot wide sidewalk is proposed along Meridian Crossing Drive, which connects to the existing sidewalk on the south side of the site. Internal sidewalks are provided and connect to the existing fountain, located southeast of the hotel site. The maximum allowed impervious coverage is 70% and the proposed impervious surface area is 69.92%.

The building materials include a mix of brick, cast stone, and EIFS on all four sides of the building. Brick covers approximately 48% of the building. The building has a flat roof and is 55 feet in height as measured to the top of the parapet walls, which are present on the east and west elevation. The majority of the building is approximately 46 feet in height.

The required front yard setback for the building is 25 feet from the street right-of-way on Jolly Oak Road. The side and rear yard setback is 15 feet. Buildings are allowed to exceed the maximum height of 35 feet if all the required yard setbacks are increased an additional foot for every foot the building exceeds 35 feet. Using the building height of 55 feet, the front setback increases to 45 feet along the frontage of Jolly Oak Road. The proposed setback is 115.5 feet. The side and rear yard setback increases to 35 feet on the east, west, and south. The plan exceeds the setbacks for the side and rear yards.

A landscape plan has been provided. A more detailed review will occur during site plan review. Landscaping requirements are outlined in Section 86-473 and Section 86-758 of the code of Ordinances. Site lighting must comply with the Township's Lighting Ordinance, Chapter 38-171, of the Code of Ordinances. Site lighting will be evaluated during site plan review.

Comments from the Township's Development Review Committee have been incorporated into this memorandum.

The Planning Commission should take into consideration issues related to the hotel use, including hours of operation, number of employees, lighting, and noise. The Planning Commission may place appropriate conditions on an approval to address these topics.

Planning Commission Options

The Planning Commission may approve, approve with conditions or deny the special use permit for the use; and recommend approval, approval with conditions or denial of the special use permit for building size to the Township Board. Resolutions will be provided for a future meeting.

Attachments to be revised

1. Special Use Permit Application and Attachments
2. Special Use Permit Standards (Section 86-126)
3. Site Plans dated November 9, 2015
4. Floor Plans and Building Elevations

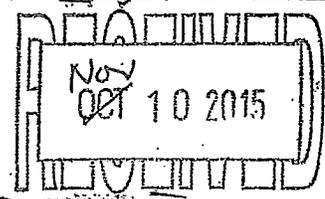
**CHARTER TOWNSHIP OF MERIDIAN
DEPARTMENT OF COMMUNITY PLANNING AND DEVELOPMENT
5151 MARSH ROAD, OKEMOS, MI 48864
PLANNING DIVISION PHONE: (517) 853-4560, FAX: (517) 853-4095**

SPECIAL USE PERMIT APPLICATION

Before submitting this application for review, an applicant may meet with the Director of Community Planning and Development to discuss the requirements for a special use permit and/or submit a conceptual plan for review to have preliminary technical deficiencies addressed prior to submittal of the application. If the property or land use is located in the following zoning districts RD, RC, RCC, RN then the applicant must meet with the Planning Director to discuss technical difficulties before filing a formal application.

Part I

- A. Applicant PHG Land Development LLC
 Address of Applicant 520 N Main St Cheboygan MI 49721
 Telephone - Work 513-524-9500 Home _____ Fax 513-523-9415 Email dave@hotedvelop
 Interest in property (circle one): Owner Tenant Option Other ment.net
 (Please attach a list of all persons with an ownership interest in the property.)
- B. Site address / location / parcel number UNIT 5 OF MERIDIAN CROSSING CONDO
 Legal description (please attach if necessary) SEE PLANS
 Current zoning C-2 33-318-005
 Use for which permit is requested / project name BLDG > 25,000 G²
 Corresponding ordinance number 86-658
- C. Developer (if different than applicant) Hotel Development Services, LLC
 Address 125 W Spring St Oxford Ohio 45056
 Telephone - Work 513-524-9500 Home _____ Fax 513-523-9415
- D. Architect, Engineer, Planner or Surveyor responsible for design of project if different from applicant:
 Name KEBS, INC - JEFF KYES
 Address 2116 HASLETT RD HASLETT MI 48840
 Telephone - Work (517) 339-1414 Home _____ Fax (517) 339-8047
- E. Acreage of all parcels in the project: Gross 2.78 Net 2.78
- F. Explain the project and development phases:
- G. Total number of:
 Existing structures _____ bedrooms _____ offices _____ parking spaces _____ carports _____
 garages _____ Proposed structures 1 bedrooms 99 offices _____ parking spaces 99 carports _____
 garages _____
- H. Square footage: existing buildings _____ proposed buildings 70,000
 Usable Floor area: existing buildings _____ proposed buildings _____
- I. If employees will work on the site, state the number of full time and part time employees working per shift and hours of operation: 24 hrs 5 employees MAX SHIFT
- J. Existing Recreation: Type TR Acreage _____
 Proposed Recreation: Type COURT YARD Acreage _____



Existing Open Space: Type V. Habitat Acreage _____
 Proposed Open Space: Type Max 75% Impervious Acreage _____
Revised

K. If Multiple Housing:
 Total acres of property NA
 Acres in floodplain _____ Percent of total _____
 Acres in wetland (not in floodplain) _____ Percent of total _____
 Total dwelling units _____
 Dwelling unit mix:
 Number of single family detached: for Rent _____ Condo: _____
 Number of duplexes: for Rent _____ Condo: _____
 Number of townhouses: for Rent _____ Condo: _____
 Number of garden style apartments: for Rent _____ Condo: _____
 Number of other dwellings: for Rent _____ Condo: _____

L. The following support materials must be submitted with the application:

1. Nonrefundable Fee.
2. Legal Description of the property.
3. Evidence of fee or other ownership of the property.
4. Site Plan containing the information listed in the attachment to this application.
5. Architectural sketches showing all sides and elevations of the proposed buildings or structures, including the project entrance, as they will appear upon completion. The sketches should be accompanied by material samples or a display board of the proposed exterior materials and colors.
6. A Traffic Study, prepared by a qualified traffic engineer, based on the most current edition of *Evaluating Traffic Impact Studies: A Recommended Practice for Michigan Communities*, published by the State Department of Transportation.
 - a. A traffic assessment will be required for the following:
 - 1) New special uses which could, or expansion or change of an existing special use where increase in intensity would, generate between 50 to 99 directional trips during a peak hour of traffic.
 - 2) All other special uses requiring a traffic assessment as specified in the Township Code of Ordinances, Chapter 86, Article IV, Division 2.
 - b. A traffic impact study will be required for the following:
 - 1) New special uses which would, or expansion or change of an existing special use where increase in intensity would, generate over 100 directional trips or more during a peak hour of traffic, or over 750 trips on an average day.
 - 2) All other special uses requiring a traffic assessment as specified in the Township Code of Ordinances, Chapter 86, Article IV, Division 2.
7. Natural features assessment which includes a written description of the anticipated impacts on the natural features at each phase and at project completion that contains the following:
 - a. An inventory of natural features proposed to be retained, removed, or modified. Natural features shall include, but are not limited to, wetlands, significant stands of trees or individual trees greater than 12 inches dbh, floodways, floodplains, waterbodies, identified groundwater vulnerable areas, slopes greater than 20 percent, ravines, and vegetative cover types with potential to sustain significant or endangered wildlife.
 - b. Description of the impacts on natural features.
 - c. Description of any proposed efforts to mitigate any negative impacts.

The natural features assessment may be waived by the Director of Community Planning and Development in certain circumstances.

- M. Any other information specified by the Director of Community Planning and Development which is deemed necessary to evaluate the application.
- N. In addition to the above requirements, for zoning districts, RD, RC, RCC, RN, and CV and Group Housing Residential Developments the following is required:
1. Existing and proposed contours of the property at two foot intervals based on United States Geological Survey (USGS) data.
 2. Preliminary engineering reports in accordance with the adopted Township water and sewer standards, together with a letter of review from the Township Engineer.
 3. Ten copies of a report on the intent and scope of the project including, but not limited to: Number, size, volume, and dimensions of buildings; number and size of living units; basis of calculations of floor area and density and required parking; number, size, and type of parking spaces; architectural sketches of proposed buildings.
 4. Seven copies of the project plans which the Township shall submit to local agencies for review and comments.
- O. In addition to the above requirements, a special use application in zoning district RP requires the following material as part of the site plan:
1. A description of the operations proposed in sufficient detail to indicate the effects of those operations in producing traffic congestion, noise, glare, air pollution, water pollution, fire hazards or safety hazards or the emission of any potentially harmful or obnoxious matter or radiation.
 2. Engineering and architectural plans for the treatment and disposal of sewerage and industrial waste failings, or unusable by-products.
 3. Engineering and architectural plans for the handling of any excessive traffic congestion, noise, glare, air pollution, or the emission of any potentially harmful or obnoxious matter or radiation.
- P. In addition to the above requirements, a special use application for a use in the Floodway Fringe of zoning district CV requires the following:
1. A letter of approval from the State Department of Environmental Quality.
 2. A location map including existing topographic data at two-foot interval contours at a scale of one inch representing 100 feet.
 3. A map showing proposed grading and drainage plans including the location of all public drainage easements, the limits, extent, and elevations of the proposed fill, excavation, and occupation.
 4. A statement from the County Drain Commissioner, County Health Department, and Director of Public Works and Engineering indicating that they have reviewed and approved the proposal.
- Q. In addition to the above requirements, a special use application for a use in the Groundwater Recharge area or zoning district CV requires the following:
1. A location map including existing topographic data at two-foot interval contours.
 2. A map showing proposed grading and drainage plans including the location of all public drainage easements, the limits and extent of the proposed fill, excavation, and occupation.
 3. A statement from the County Drain Commissioner, County Health Department, and Director of Public Works and Engineering indicating that they have reviewed and approved the proposal.
- R. In addition to the above requirements, the Township Code of Ordinances, Article VI, should be reviewed for the following special uses: group housing residential developments, mobile home parks, nonresidential structures and uses in residential districts, planned community and regional shopping center developments, sand or gravel pits and quarries, sod farms, junk yards, sewage treatment and disposal installations, camps and clubs for outdoor sports and buildings greater than 25,000 square feet in gross floor area.
- S.

November 2, 2015.

RE: Unit 5, Meridian Crossing Condominium Proposed Hotel

The project is a proposed 99 room hotel located on Unit 5 of the Meridian Crossing Condominium which has frontage on Jolly Oak Road to the north and the Private Meridian Crossing Drive to the east and south.

1, 2: The project is an allowed use in the C-2 zoning district and requires an SUP due to being over 25,000 sq ft in size. Therefore the project is consistent with the purpose of this chapter and land use policies.

3: The project will be harmonious and appropriate in appearance with the existing character of the general vicinity and will not change the character of the area. There is an existing Staybridge Hotel to the west, existing commercial development to the east and south.

4: The project will not adversely affect neighboring uses.

5: The project will not be detrimental to the economic welfare of surrounding properties or the community. The project will fill a need for the surrounding area.

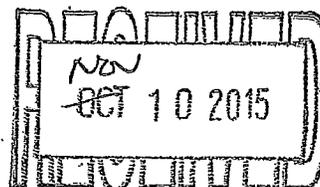
6: There are adequate public facilities serving the site. Access to the site is from indirect entrances from the Existing Staybridge site and private Meridian Crossing Drive. There will be no new drives installed to the public road system.

7: There are adequate utilities serving the site including sanitary sewer, water, storm sewer and private utilities.

8: The project will not involve any conditions that would be detrimental to any person, property or general welfare of the community.

9: This is a re-development site which has been developed for a future commercial use. The project will not have an adverse impact on any natural resources.

Prepared By: Jeffrey W. Kyes, P.E.
K&S, Inc.





KEBS, INC

Engineering • Surveying

November 10, 2015

Mr. Tavis Millerov
Meridian Township Fire Department ("MTFD")
5151 Marsh Road
Okemos, MI 48864

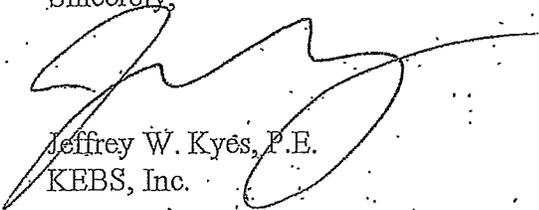
Re: Marriott Courtyard, Meridian Crossing

Dear Mr. Millerov,

We have prepared SUP Plans for the proposed Marriott Courtyard Hotel, for submittal to Meridian Township. One of the Township requirements for the SUP is that we submit to the MTFD for written comments. Please find enclosed 1 copy of the proposed site plan for the Marriott Courtyard for your preliminary review and comment. Your written comment back to Meridian Township would be greatly appreciated.

If you should have any questions regarding the plans please do not hesitate to contact me at (517) 339-1014.

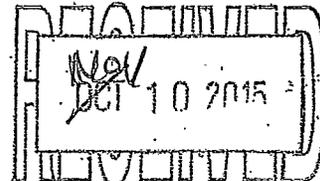
Sincerely,



Jeffrey W. Kyés, P.E.
KEBS, Inc.

Enclosures: 1 Site plans

Cc: Mark Kieselbach





KEBS, INC

Engineering • Surveying

November 10, 2015

Mr. Bob Peterson, P.E.
Ingham County Road Department (ICRD)
301 Bush Street
P.O. Box 38
Mason, Michigan 48854-0038

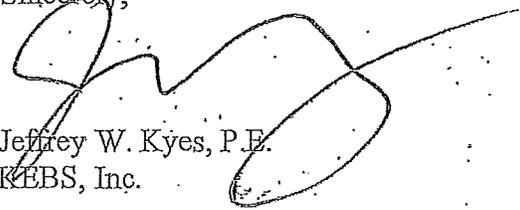
Re: Marriott Courtyard, Meridian Crossing

Dear Mr. Peterson:

We have prepared SUP Plans for the proposed Marriott Courtyard Hotel, for submittal to Meridian Township. One of the Township requirements for the SUP is that we submit to the ICRD for written comments. Please find enclosed 1 copy of the proposed site plan for the Marriott Courtyard for your preliminary review and comment. Your written comment back to Meridian Township would be greatly appreciated.

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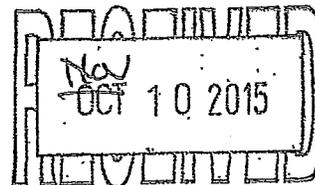
Sincerely,



Jeffrey W. Kyes, P.E.
KEBS, Inc.

Enclosures: 1 Plan set

Cc: Mark Kieselbach





KEBS, INC

Engineering • Surveying

November 10, 2015

Mr. David Love
Ingham County Drain Commission ("ICDC")
P.O. Box 220
Mason, Michigan 48854-0220

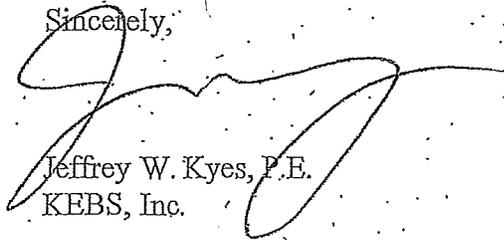
Re: Marriott Courtyard, Meridian Crossing

Dear Mr. Love:

We have prepared SUP Plans for the proposed Marriott Courtyard Hotel, for submittal to Meridian Township. One of the Township requirements for the SUP is that we submit to the ICDC for written comments. Please find enclosed 1 copy of the proposed site plan for the Marriott Courtyard for your preliminary review and comment. Your written comment back to Meridian Township would be greatly appreciated.

If you should have any questions regarding the plans please do not hesitate to contact me at (517) 339-1014.

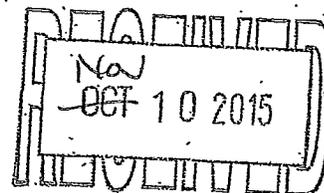
Sincerely,



Jeffrey W. Kyes, P.E.
KEBS, Inc.

Enclosures: 1 Plan set

Cc: Mark Kieselbach

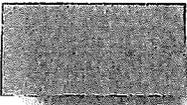


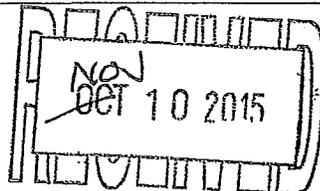


Kawneer Anodize finishes

Kawneer gives you a wide variety of anodized finishes with attractive alternatives. The benefit of a durable, anodized finish is married to the beauty of some very dynamic and exciting colors.

At the start of every design, there's a choice of how you want to finish. Contact your Kawneer sales rep for the information on these and other finishes available from Kawneer.

	KAWNEER FINISH NO.	COLOR	ALUMINUM ASSOCIATION SPECIFICATION	OTHER COMMENTS
	#14	CLEAR	AA-M10C22A41	Architectural Class I (.7 mils minimum)
	#17	CLEAR	AA-M10C22A31	Architectural Class II (.4 mils minimum)
	#18	CHAMPAGNE	AA-M10C22A44	Architectural Class I (.7 mils minimum)
	#26	LIGHT BRONZE	AA-M10C22A44	Architectural Class I (.7 mils minimum)
	#28	MEDIUM BRONZE	AA-M10C22A44	Architectural Class I (.7 mils minimum)
	#40	DARK BRONZE	AA-M10C22A44	Architectural Class I (.7 mils minimum)
	#29	BLACK	AA-M10C22A44	Architectural Class I (.7 mils minimum)



Tan Bricks: Alamo Blend

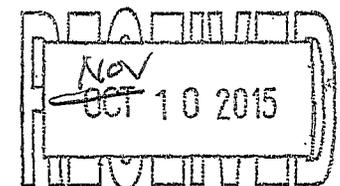
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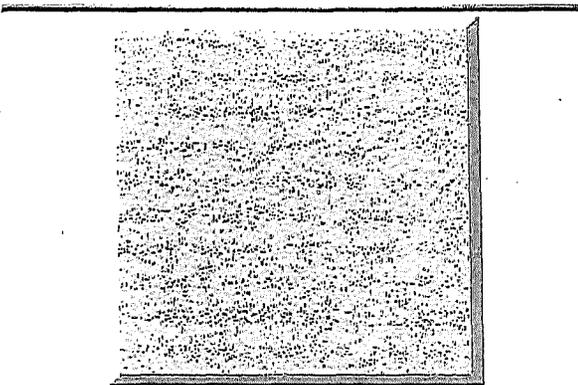


PLANT 3 MOLDED	STANDARDS (Meets grade SW for all)	TYPE	TEXTURE	COMP.	CW IRA		TEST REPORT
	FACE BRICK C216 THIN BRICK C1088	FBA TBA	Handmade Appearance	11,776 psi	3.76	9.1	
Cleaning Recommendation	Belden Brick recommends using Sure Klean Vana Trol® to clean this product. Alternatively, EaCo Chem NMD 80® can be used to clean any of our brick.						



SIZES	WIDTH	HEIGHT	LENGTH	THIN FLAT BACK	THIN DOVETAIL	UNITS / SQ. FT.
2-5/8" Jumbo Standard	3 5/8" / 92mm	2 5/8" / 67mm	8" / 203mm	3/4" / 19mm	X	5.5
Modular	3 5/8" / 92mm	2 1/4" / 57mm	7 5/8" / 194mm	3/4" / 19mm	X	6.86

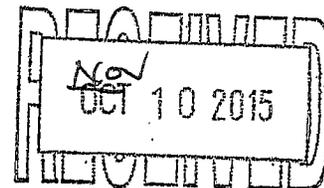
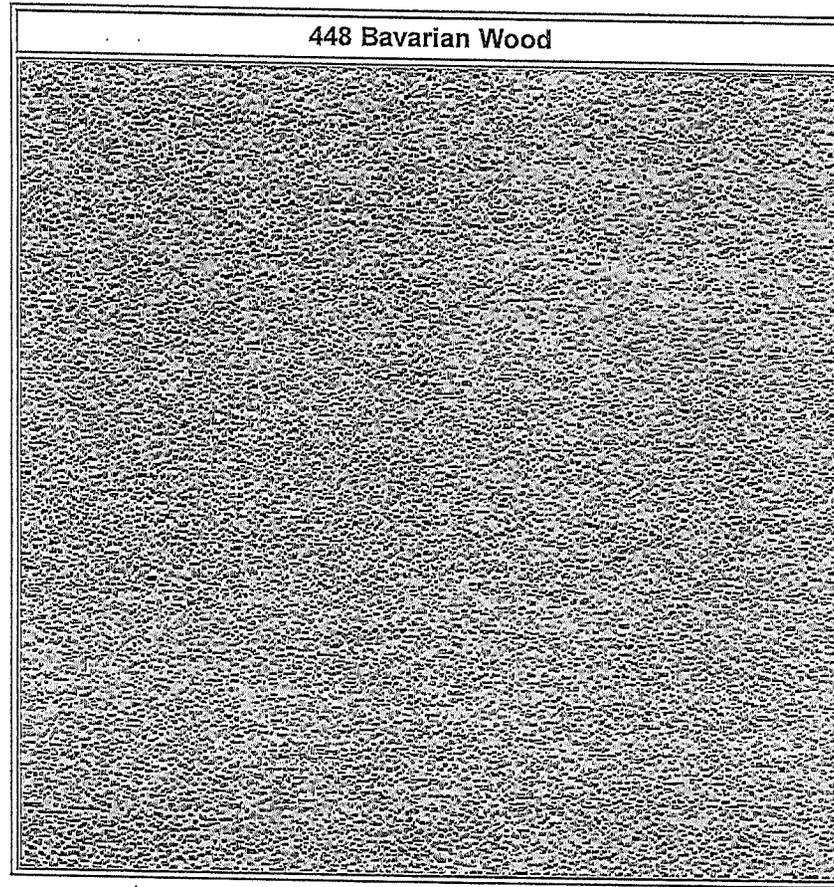


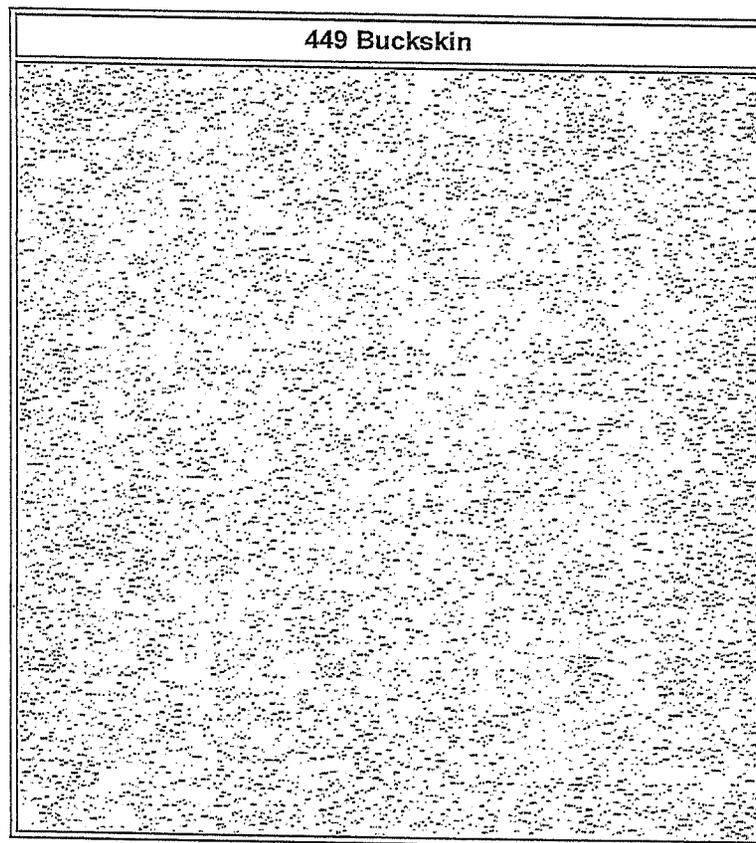


Mesquite (dry cast)

Ventura Cast Stone, Inc Colors

Now
OCT 10 2015





449 Buckskin

RECEIVED
Nov
OCT 10 2015

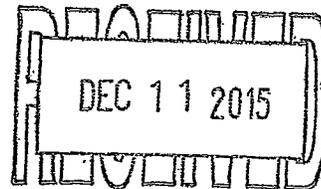


TRAFFIC ASSESSMENT

For the Proposed Marriott Courtyard Hotel

Meridian Charter Township, Ingham County, MI

December, 2015



Prepared by:

**Traffic Engineering
Associates, Inc.**

PO Box 100 • Saranac, Michigan 48881
517/627-6028 FAX: 517/627-6040

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PROJECT DESCRIPTION

The purpose of this study is to determine the driveway impact for the proposed Marriott Courtyard Hotel development in Meridian Charter Township, Ingham County, Michigan. The proposed Marriott Courtyard Hotel development will be located on the south side of Jolly Oak Road, between Meridian Crossing Drive (private) and the existing Staybridge Hotel in Meridian Charter Township. The proposed Marriott Courtyard Hotel will consist of a four (4) story building with 99 rooms. The property is currently zoned C-2, Commercial District.

SCOPE OF WORK

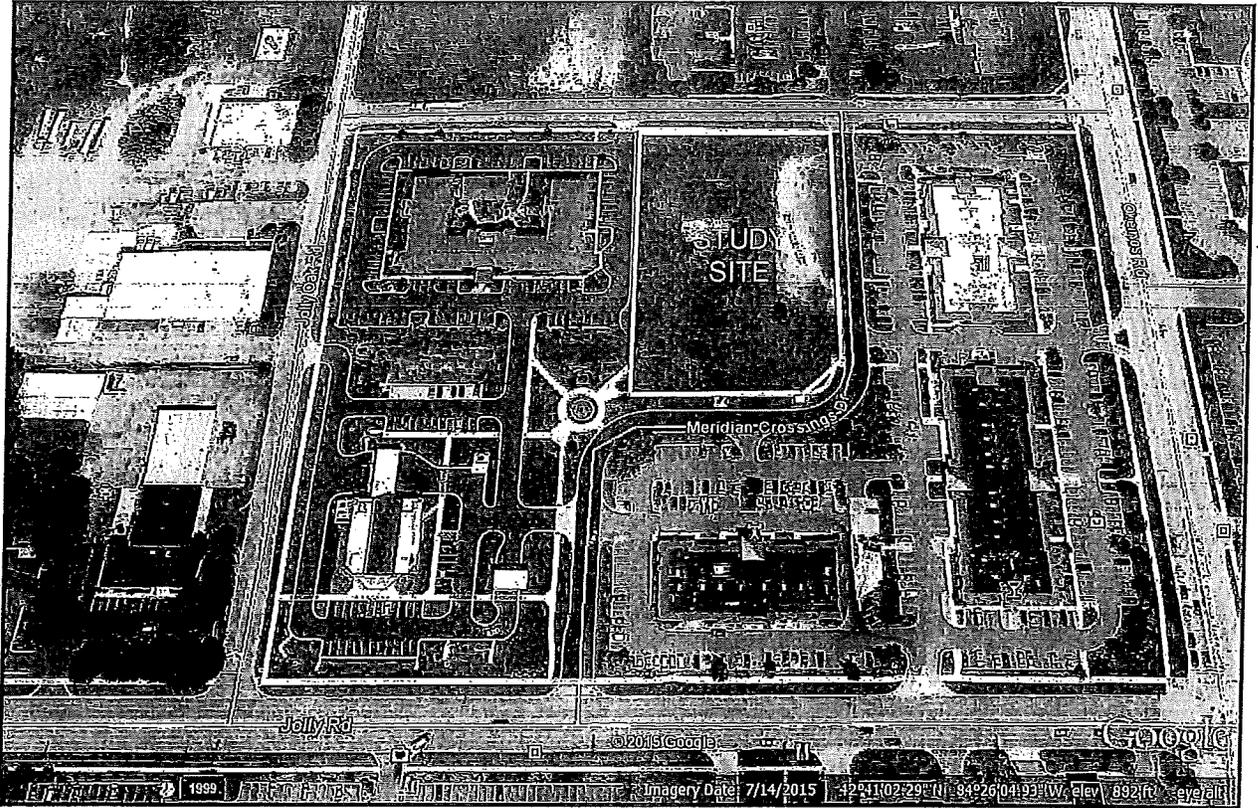
The Township is requesting a traffic assessment that will estimate future trips to the site, and an evaluation of the level of service (LOS) at the driveways. There are two (2) proposed driveways, the first is on the east side of the site connecting to Meridian Crossing Drive, and the second is on the west side of the site connecting to the existing Staybridge Hotel driveway. This traffic assessment will provide a level of service (LOS) at three (3) locations: Staybridge Hotel driveway and Jolly Oak Road, Meridian Crossing Drive and Jolly Oak Road, and the Marriott Courtyard Hotel east approach and Meridian Crossing Drive.

The traffic analysis is limited to the following items:

- Projection and distribution of future traffic volumes to be generated by the proposed Marriott Courtyard Hotel development.
- Conduct capacity analysis for future conditions for the proposed development with emphasis on determining the future Level of Service (LOS) at the proposed driveway and intersections.
- Discussion of any potential sight distance issues.

This study was conducted in accordance with the guidelines set forth in "Evaluating Traffic Impact Studies, A Recommended Practice for Michigan Communities," sponsored by the Tri-County Regional Planning Commission and the Michigan Department of Transportation, and the Meridian Charter Township Zoning Ordinance.





Aerial Photo



EXISTING CONDITIONS

Jolly Oak Road is a two-lane paved roadway with concrete curb and gutter. There is a concrete sidewalk along the south side of Jolly Oak Road, and also along the north side of Jolly Oak Road from Okemos Road to the west property line of the proposed site. Jolly Oak Road is under the jurisdiction of the Ingham County Department of Roads. The posted speed limit is 35 MPH.

Meridian Crossing Drive is a two-lane paved roadway with concrete curb and gutter. There is a concrete sidewalk along the south side of the proposed site. Meridian Crossing Drive is a private roadway with no posted speed limit.

LAND USE

The project site is vacant. Surrounding land uses include offices to the north; to the immediate east are retail businesses; to the west is the Staybridge Suites Hotel. Just south of the proposed rezoning site, between Jolly Oak Road and Jolly Road, is the Meridian Crossing retail center.

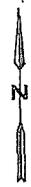
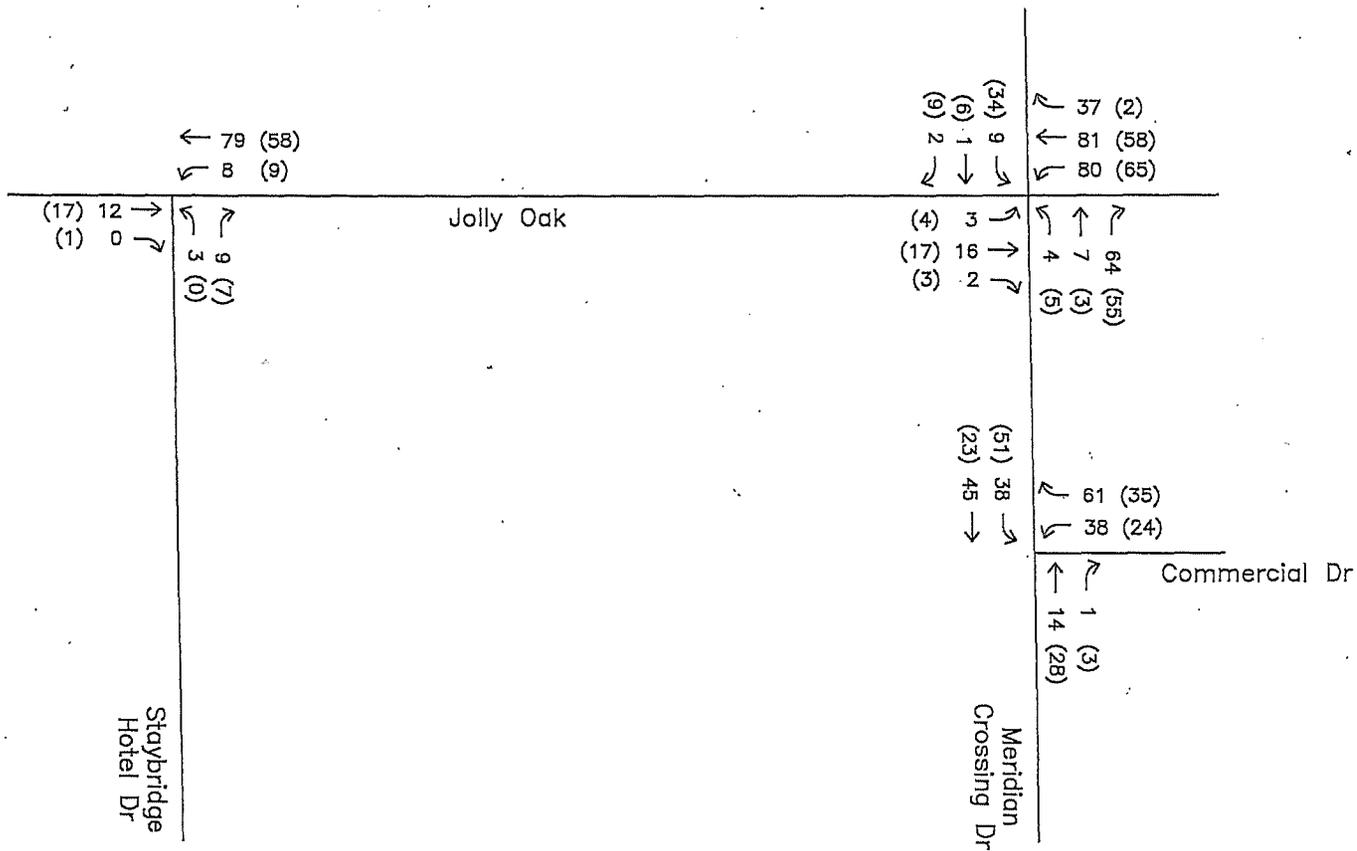
EXISTING TRAFFIC VOLUMES

TEA, Inc. conducted midweek vehicle turning movement surveys during the morning and afternoon peak periods in December, 2015, at the following locations:

- Jolly Oak Road and Meridian Crossing Drive
- Jolly Oak Road and Staybridge Hotel Drive
- Meridian Crossing Drive and existing Staybridge Hotel driveway

The AM and PM peak hours of existing traffic is 7:30-8:30 AM and 4:45-5:45 PM respectively. The existing weekday AM and PM peak hour traffic volumes are shown in **Figure 1**.





LEVEL OF SERVICE ANALYSIS FOR EXISTING TRAFFIC

The critical intersections defined for this study were analyzed according to the methodologies published in the most recent edition of the *Highway Capacity Manual*. The analysis determines the "Level of Service" of the intersections and is based on factors such as the number and types of lanes, signal timing, traffic volumes, pedestrian activity, etc. The level of service (LOS) is defined by average vehicle delay in seconds created by a traffic control device for a given traffic movement or intersection approach.

Level of Service	Delay per Vehicle (seconds)	
	Non-Signalized	Signalized
A	< 10	<10
B	10 to 15	10 to 20
C	15 to 25	20 to 35
D	25 to 35	35 to 55
E	35 to 50	55 to 80
F	> 50	> 80

Levels of Service are expressed in a range from "A" to "F," with "A" being the highest LOS and "F" representing the lowest LOS. Level of service "D" is considered the minimum acceptable LOS in an urban area. The above table shows the thresholds for Levels of Service "A" through "F" for non-signalized and signalized intersections, respectively.

All Level of Service computations contained in this report were based upon the Synchro 8 software package which is approved by the Michigan Department of Transportation (MDOT). Delay per vehicle includes initial deceleration delay, queue move-up time; stopped delay, and final acceleration delay.

The Level of Service analysis for existing traffic at the subject intersections during the AM and PM peak hours is summarized in **Table 1**. All existing turning movements at the studied intersections operate at a good level of service (LOS B or better) during the AM and PM peak hours.



Table 1
Level of Service (LOS) Summary
Existing AM and PM Peak Hour Traffic

Location	Movement	Weekday AM Peak Hour		Weekday PM Peak Hour	
		Avg. Delay	LOS	Avg. Delay	LOS
Jolly Oak Road and Meridian Crossing Drive	EB Left-Thru-Right	7.5	A	7.4	A
	WB Left-Thru-Right	7.4	A	7.4	A
	NB Left-Thru-Right	9.3	A	9.0	A
	SB Left-Thru-Right	12.0	B	11.8	A
	Intersection	4.9	A	6.4	A
Jolly Oak Road and Staybridge Hotel Drive	EB Left-Thru-Right	0.0	A	0.0	A
	WB Left-Thru-Right	7.3	A	7.3	A
	NB Left-Thru-Right	8.8	A	8.4	A
	Intersection	1.6	A	1.6	A
Meridian Crossing Drive and Commercial Driveway	WB Left-Thru-Right	9.2	A	9.2	A
	NB Left-Thru-Right	0.0	A	0.0	A
	SB Left-Thru-Right	7.3	A	7.3	A
	Intersection	6.0	A	4.2	A

Note: Delay = Average control delay per vehicle in seconds.
LOS = Level of Service



TRAFFIC GENERATION

The trip generation rates for the proposed Marriott Courtyard Hotel development were derived from the ITE TRIP GENERATION MANUAL (9th edition). Hotel (ITE Code 310) was selected to represent the proposed development. The ITE description of Hotel is as follows:

Hotels are places of lodging that provide sleeping accommodations and supporting facilities such as restaurants, cocktail lounges, meeting and banquet rooms or convention facilities, limited recreational facilities (pool, fitness room), and/or other retail and service shops.

It is projected that the proposed Marriott Courtyard Hotel development will generate 53 vehicle-trips in the AM peak hour, 59 vehicle-trips in the PM peak hour with a weekday total volume of 513 trips. The projected traffic to be generated by the proposed development is summarized in Table 2.



Table 2

**Vehicle Trip Generation Summary
Proposed Boomer Group All-Suites Hotel**

Land Use	Size	AM Peak Hour			PM Peak Hour			Weekday
		In	Out	Total	In	Out	Total	Total
Hotel; Code 310	99 Rooms	31	22	53	30	29	59	513
Total Trips		31	22	53	30	29	59	513



SITE TRAFFIC DISTRIBUTION

Traffic distribution was based on existing traffic patterns at the intersection of Jolly Oak Road and Meridian Crossing Drive. The proposed new site traffic was distributed based on the following percentages.

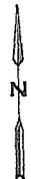
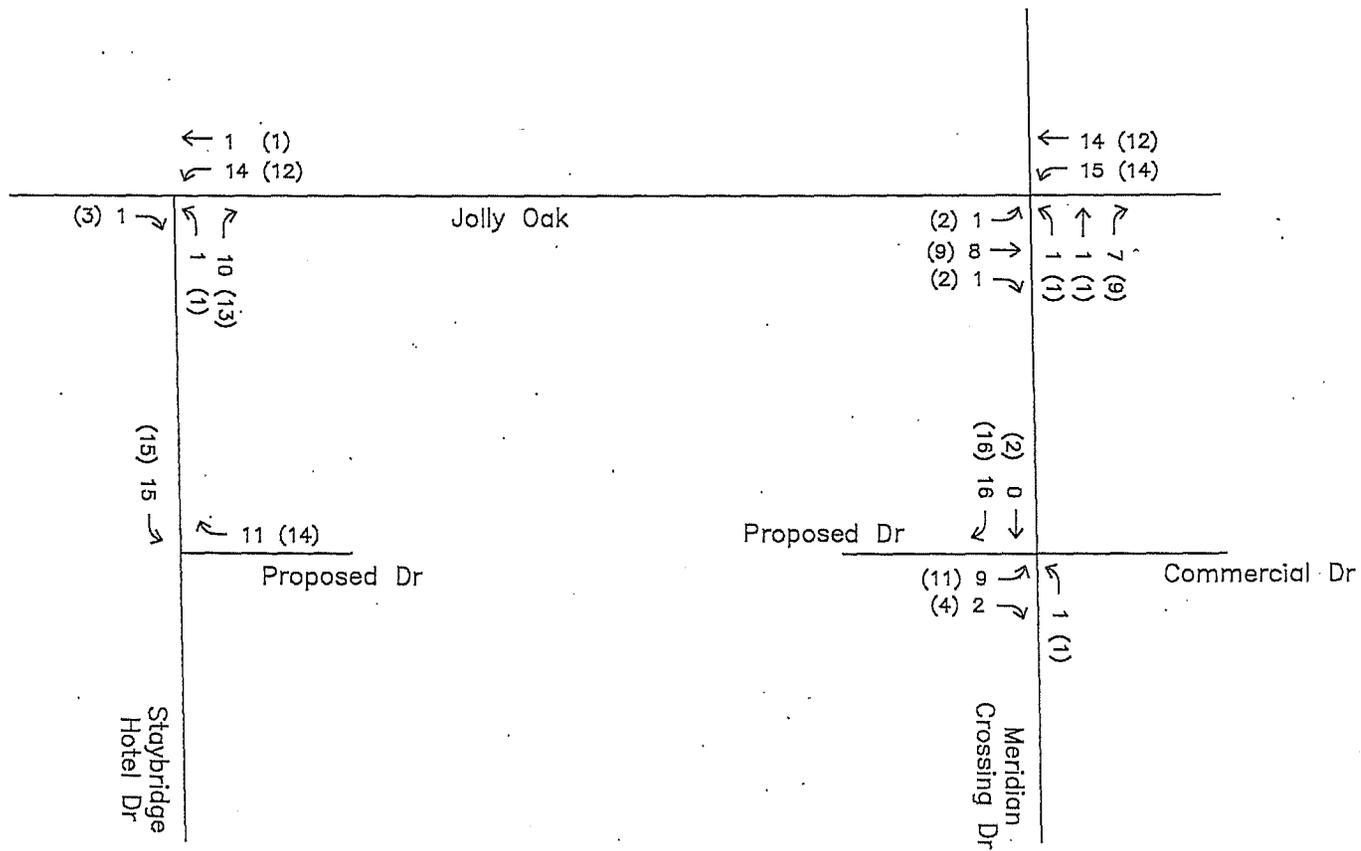
Direction of Approach and Departure	AM Peak Hour Distribution	PM Peak Hour Distribution
To/From the EAST on Jolly Oak Road	90%	80%
To/From the WEST Jolly Oak Road	10%	20%
To/From the NORTH Meridian Crossing Dr.	84%	70%
To/From the SOUTH Meridian Crossing Dr.	26%	30%

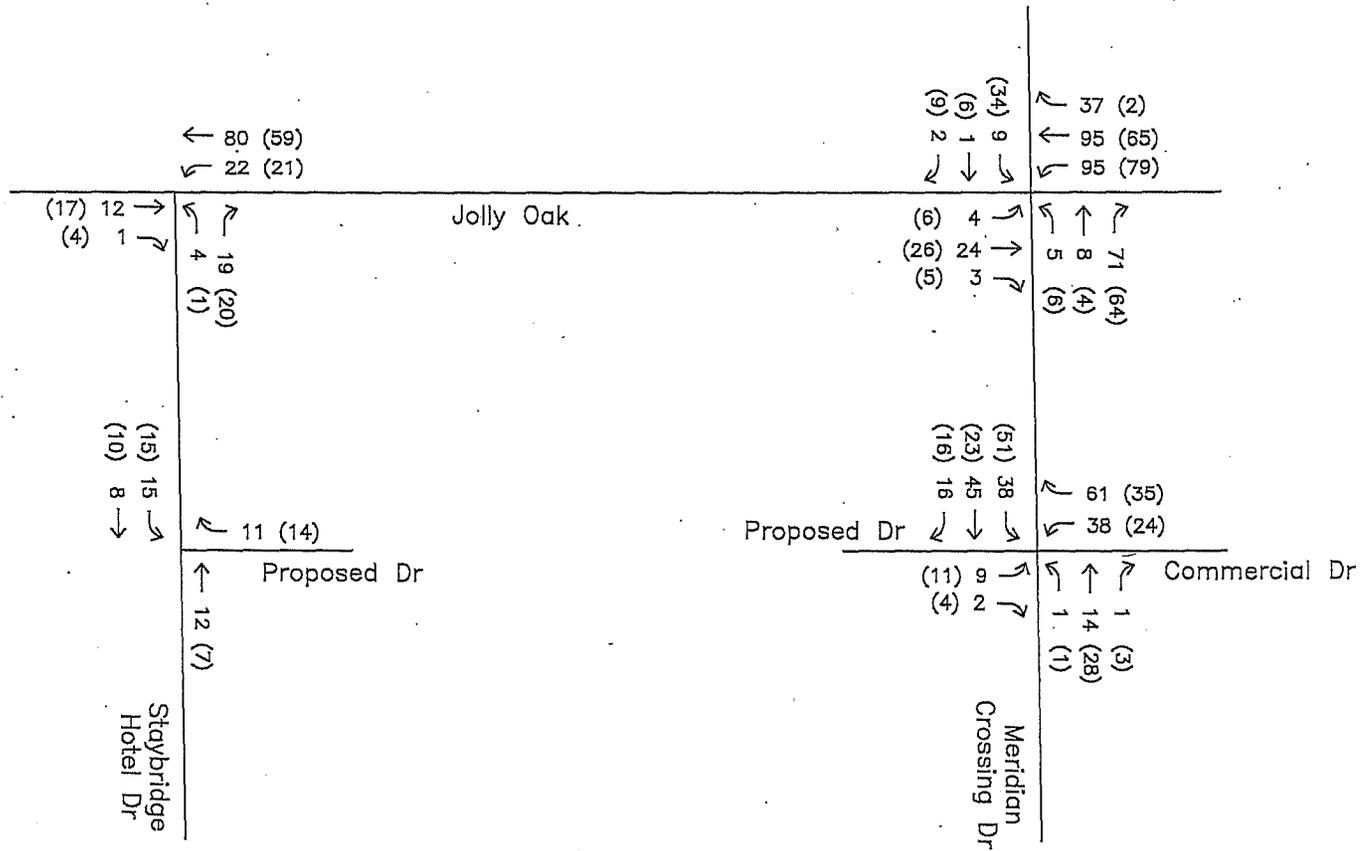
Traffic was then further distributed by driveway. For traffic entering the site, the shortest route was utilized; thus, traffic from the east accessed the east driveway and traffic from the west used the west driveway. For traffic exiting the site, a 50% split for each driveway was used to distribute the site generated traffic between the east and west driveways to match the parking lot layout, then the driveway traffic was distributed the same as outlined above.

The distribution of new site generated traffic volumes for the future AM and PM peak hours for the proposed Marriott Courtyard Hotel development are illustrated in **Figure 2**.

Adding proposed site traffic to existing traffic yields the total future volumes. The future traffic volumes are illustrated in **Figure 3**.







TRAFFIC ENGINEERING
ASSOCIATES, INC.
PO Box 100
Saranac, MI 48881
PHONE: (517) 627-6028
FAX: (517) 627-6040

LEGEND

XXX AM Pk Hr (7:30-8:30 AM) Volumes
(XXX) PM Pk Hr (4:45-5:45 PM) Volumes

FIGURE 3: Future Traffic - Peak Hours

DATE: December, 2015

SCALE: NTS

PAGE: 11

LEVEL OF SERVICE ANALYSIS FOR FUTURE TRAFFIC

The level of service analysis for future AM and PM peak hour traffic for the proposed Marriott Courtyard Hotel is summarized in **Table 3**. For future traffic conditions, all existing geometrics on Jolly Oak Road were used. The proposed driveways were modeled as one (1) entering lane and one (1) exiting lane.

All future turning movements at the studied intersections are expected to operate at a good level of service (LOS B) during the AM and PM peak hours.



Table 3
Level of Service (LOS) Summary
Future AM and PM Peak Hour Traffic

Location	Movement	Weekday AM Peak Hour		Weekday PM Peak Hour	
		Avg. Delay	LOS	Avg. Delay	LOS
Jolly Oak Road and Meridian Crossing Drive	EB Left-Thru-Right	7.5	A	7.4	A
	WB Left-Thru-Right	7.5	A	7.5	A
	NB Left-Thru-Right	9.6	A	9.3	A
	SB Left-Thru-Right	12.9	B	12.9	B
	Intersection	4.9	A	6.3	A
Jolly Oak Road and Staybridge Hotel Drive	EB Left-Thru-Right	0.0	A	0.0	A
	WB Left-Thru-Right	7.4	A	7.3	A
	NB Left-Thru-Right	8.9	A	8.6	A
	Intersection	2.8	A	3.1	A
Meridian Crossing Drive and Marriott East Drive/Commercial Driveway	EB Left-Thru-Right	9.9	A	10.0	B
	WB Left-Thru-Right	9.3	A	9.4	A
	NB Left-Thru-Right	7.3	A	7.3	A
	SB Left-Thru-Right	7.3	A	7.4	A
	Intersection	5.8	A	5.5	A
Staybridge Hotel Drive and Marriott West Driveway	WB Left-Thru-Right	8.4	A	8.4	A
	NB Left-Thru-Right	0.0	A	0.0	A
	SB Left-Thru-Right	7.3	A	7.3	A
	Intersection	4.4	A	4.9	A

Note: Delay = Average control delay per vehicle in seconds.
LOS = Level of Service



SIGHT DISTANCE

A field review shows that there are no sight distance issues with either driveway at this property.

DRIVEWAY SPACING

The proposed site plan for the Marriott Courtyard Hotel development shows two (2) new driveways, one (1) on the east property line opposite an existing commercial driveway, and one (1) on the west property line opposite the Staybridge Hotel driveway. The two (2) connections to Jolly Oak Road where the new Marriott Courtyard Hotel development traffic will enter and exit are existing.

CONCLUSIONS

A summary of the findings of this study are listed as follows:

- There are no anticipated traffic issues with the addition of the Marriott Courtyard Hotel development traffic to the existing public road system, or the private road system at this site.
- The sight distance at the site meets the Ingham County Department of Roads requirements.



Sec. 86-126. Review criteria.

Applications for special use permits shall be reviewed for compliance with the following standards and requirements, where applicable. An application for a special use permit that complies with all the following standards and requirements in this chapter may be approved. The applicant shall assure that:

- (1) The project is consistent with the intent and purposes of this chapter.
- (2) The project is consistent with applicable land use policies contained in the township's comprehensive development plan of current adoption.
- (3) The project is designed, constructed, operated, and maintained so as to be harmonious and appropriate in appearance with the existing or intended character of the general vicinity and that such a use will not change the essential character of the same area.
- (4) The project will not adversely affect or be hazardous to existing neighboring uses.
- (5) The project will not be detrimental to the economic welfare of surrounding properties or the community.
- (6) The project is adequately served by public facilities, such as existing roads, schools, stormwater drainage, public safety, public transportation, and public recreation, or that the persons or agencies responsible for the establishment of the proposed use shall be able to provide any such service.
- (7) The project is adequately served by public sanitation facilities if so designed. If on-site sanitation facilities for sewage disposal, potable water supply, and stormwater are proposed, they shall be properly designed and capable of handling the longterm needs of the proposed project.
- (8) The project will not involve uses, activities, processes, materials, and equipment and conditions of operation that will be detrimental to any persons, property, or the general welfare by reason of excessive production of traffic, noise, smoke, fumes, glare, or odors.
- (9) The project will not directly or indirectly have a substantial adverse impact on the natural resources of the township, including, but not limited to, prime agricultural soils, water recharge areas, lakes, rivers, streams, major forests, wetlands, and wildlife areas.

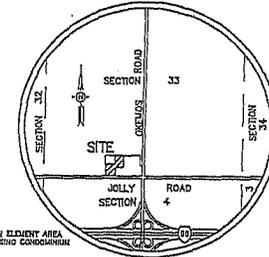
(Code 1974, § 81-3.2(F))

Sec. 86-127. Conditions.

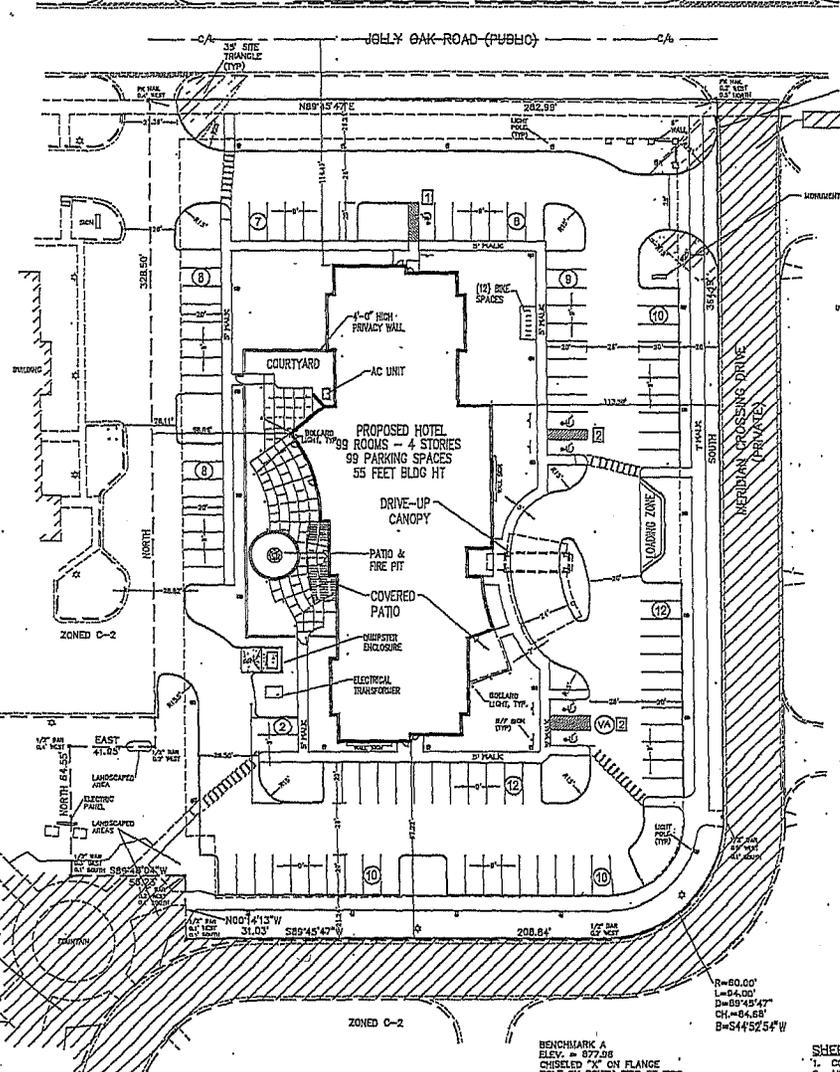
The planning commission may require additional conditions, beyond those specified for the particular special use in this chapter, necessary to accomplish the purposes and intent of this chapter as follows:

- (1) Site conditions including, but not limited to, the following:
 - a. Special yards, open spaces, or buffers.

S.U.P. FOR:
Marriot Courtyard
 MERIDIAN TOWNSHIP, INGHAM COUNTY, MICHIGAN



SCALE 1" = 30'
 0' 30' 60' 90'



LEGAL DESCRIPTION:

(As provided by Transaction Title Agency of Michigan, Commitment No. 23107425, Revision No. 6 Dated September 24, 2008)
 Unit 2, Meridian Crossing, a Site Condominium according to the Master Deed recorded in Instrument No. 2025-08828, as amended in the First Amendment to Master Deed recorded in Instrument No. 2025-08829, in the Office of the Ingham County Register of Deeds, and designated as Ingham County Condominium Subdivision Plot No. 218, together with rights in general common elements and limited common elements as set forth in said Master Deed, and amendments thereto, and as described in Act 20 of the Public Acts of 1978 as amended.

SITE/BUILDING DATA

PARCEL SIZE	2.78 ACRES
EXISTING ZONING	C-2 DISTRICT
PROPOSED USE	HOTEL
REQUIRED FRONT SETBACK	25' +/- / FT OF HT OVER 35'
PROPOSED FRONT SETBACK	45'
PROPOSED FRONT SETBACK (ROAD)	114.49' (JOLLY OAK ROAD)
REQUIRED REAR & SIDE SETBACK	15' +/- / FT OF HT OVER 35' = 35'
PROPOSED REAR SETBACK	97.22'
113.50' (EAST PROPERTY LINE)	
68.66' (WEST PROPERTY LINE)	
PROPOSED BUILDING HEIGHT	55'
PROPOSED BUILDING AREA	
FIRST FLOOR	17,482 S.F.
SECOND FLOOR	16,532 S.F.
THIRD FLOOR	16,532 S.F.
FOURTH FLOOR	16,532 S.F.
TOTAL	67,078 S.F. = 70,000 S.F. MAX.
FOR SUP	
MAX. IMPERVIOUS SURFACE	70%

PERVIOUS/IMPERVIOUS CALCULATIONS:

TOTAL PROPERTY	= 121,469 S.F. (2.79 AC.)
TOTAL PERVIOUS	= 36,537 S.F. = 30.08%
TOTAL IMPERVIOUS	= 84,932 S.F. = 69.92%

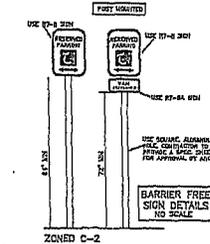
PARKING DATA

PARKING REQUIRED	1 SPACE PER SLEEPING UNIT
99 SPACES REQUIRED	
PARKING PROVIDED	99 SPACE PROVIDED

GENERAL NOTES

- ALL OUTDOOR LIGHTS SHALL BE SHIELDED TO REDUCE GLARE AND SHALL BE ARRANGED TO NOT INTERFERE WITH THE VISION OF PERSONS ON ADJACENT ROADWAYS OR ADJACENT PROPERTY.
- ALL SIGNS SHALL MEET LOCAL MUNICIPALITY ORDINANCE REQUIREMENTS.

- (1) DENOTES NUMBER OF P/V SPACES
- (VA) DENOTES VAN ACCESS P/V SPACES
- (2) DENOTES PROPOSED NUMBER OF 8' x 20' PARKING SPACES



PURE INVENTORY

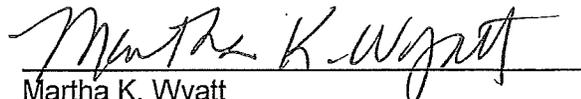
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- N 1/4 NW 1/4 = 231.22
- S 1/4 SW 1/4 = 231.22
- S 1/4 NW 1/4 = 231.22
- WHOLE #12
- N 1/4 SW 1/4 = 231.22
- N 1/4 NW 1/4 = 231.22
- S 1/4 SW 1/4 = 231.22
- S 1/4 NW 1/4 = 231.22
- WHOLE #11
- N 1/4 SW 1/4 = 231.22
- N 1/4 NW 1/4 = 231.22
- S 1/4 SW 1/4 = 231.22
- S 1/4 NW 1/4 = 231.22
- WHOLE #10
- N 1/4 SW 1/4 = 231.22
- N 1/4 NW 1/4 = 231.22
- S 1/4 SW 1/4 = 231.22
- S 1/4 NW 1/4 = 231.22
- WHOLE #9
- N 1/4 SW 1/4 = 231.22
- N 1/4 NW 1/4 = 231.22
- S 1/4 SW 1/4 = 231.22
- S 1/4 NW 1/4 = 231.22
- WHOLE #8
- N 1/4 SW 1/4 = 231.22
- N 1/4 NW 1/4 = 231.22
- S 1/4 SW 1/4 = 231.22
- S 1/4 NW 1/4 = 231.22
- WHOLE #7
- N 1/4 SW 1/4 = 231.22
- N 1/4 NW 1/4 = 231.22
- S 1/4 SW 1/4 = 231.22
- S 1/4 NW 1/4 = 231.22
- WHOLE #6
- N 1/4 SW 1/4 = 231.22
- N 1/4 NW 1/4 = 231.22
- S 1/4 SW 1/4 = 231.22
- S 1/4 NW 1/4 = 231.22
- WHOLE #5
- N 1/4 SW 1/4 = 231.22
- N 1/4 NW 1/4 = 231.22
- S 1/4 SW 1/4 = 231.22
- S 1/4 NW 1/4 = 231.22
- WHOLE #4
- N 1/4 SW 1/4 = 231.22
- N 1/4 NW 1/4 = 231.22
- S 1/4 SW 1/4 = 231.22
- S 1/4 NW 1/4 = 231.22
- WHOLE #3
- N 1/4 SW 1/4 = 231.22
- N 1/4 NW 1/4 = 231.22
- S 1/4 SW 1/4 = 231.22

CHARTER TOWNSHIP OF MERIDIAN

MEMORANDUM

TO: Planning Commission

FROM


Martha K. Wyatt
Associate Planner/Landscape Architect

DATE: January 22, 2106

RE: Special Use Permit #16011 (PHG Land Development, LLC), request to construct a 4-story hotel and the structure is greater than 25,000 square feet in gross floor area

The Planning Commission held a public hearing on January 11, 2016 for Special Use Permit #16011. The applicant, PHG Land Development LLC, is requesting a special use permit to construct a 4-story Courtyard Marriott hotel with 99 rooms, which exceeds 25,000 square feet in gross floor area. The approximate 67,000 square foot hotel is to be located on the south side of Jolly Oak Road, west of Meridian Crossing Drive, in the Meridian Crossing shopping center (Unit 5 in the Meridian Crossing Condominium). Access to the site is provided from a connecting driveway with Staybridge Suites (to the west) and Meridian Crossing Drive. The approximate 2.78 acre site is zoned C-2 and is located in Section 33 of the Township.

At the public hearing the Planning Commission discussed potential traffic issues related to the subject site and surrounding businesses in the general area. The Planning Commission also noted the proposed project provided the required amount of parking and pervious areas as well as meeting the required building and parking setbacks.

A hotel is a permitted use in C-2 by special use permit under Section 86-404(e)(14). A special use permit is also required for any building or group of buildings totaling more than 25,000 square feet in gross floor area and located on a lot, per Section 86-404(e)(9). The Planning Commission will decide the special use permit to allow for the construction of a hotel and will make a recommendation to the Township Board regarding the special use permit for a structure greater than 25,000 square feet in gross floor area.

Planning Commission Options

The Planning Commission may approve, approve with conditions or deny the special use permit for the use; and recommend approval, approval with conditions or denial of the special use permit for building size to the Township Board. Separate resolutions to approve the use and recommend approval of the building size are attached.

Attachments

1. Resolution to approve use
2. Resolution to recommend approval for building size
3. Special Use Permit standards (Section 86-126)

RESOLUTION TO APPROVE

**Special Use Permit #16011
(PHG Land Development, LLC)
Jolly Oak Road and Meridian Crossing Drive**

RESOLUTION

At a regular meeting of the Planning Commission of the Charter Township of Meridian, Ingham County, Michigan, held at the Meridian Municipal Building, in said Township on the 25th day of January 2016 at 7:00 p.m., Local Time.

PRESENT: _____

ABSENT: _____

The following resolution was offered by _____ and supported by _____

WHEREAS, PHG Land Development, LLC has requested a special use permit to construct, a 99-room hotel (Courtyard Marriott), approximately 67,000 square feet in gross floor area, to be located at the northwest corner of Jolly Oak Road and Meridian Crossing Drive in Section 33 of the Township; and

WHEREAS, the Planning Commission held a public hearing at its regular meeting on January 11, 2016; and

WHEREAS, the Planning Commission reviewed and discussed staff material forwarded under cover memorandums dated January 8, 2016 and January 22, 2016; and

WHEREAS, the structure has been designed to be harmonious and appropriate with the existing and potential future uses surrounding the site; and

WHEREAS, the approximately 2.78 acre site, exceeds the minimum lot area and minimum lot width requirements of the C-2 (Commercial) district; and

WHEREAS, anticipated future motor vehicle traffic of 112 new vehicle trips per day, 53 during the a.m. peak hour and 59 during the p.m. peak hour will not have a significant impact on adjacent roadways; and

WHEREAS, the proposed building meets the required setbacks for the C-2 (Commercial) district; and

WHEREAS, the proposed site is approximately 69.92 percent impervious and the maximum impervious surface coverage for a commercial zoned site is 70 percent; and

WHEREAS, the proposed development will be served by public water and sanitary sewer; and

WHEREAS, the proposed project is consistent with the general standards for granting a special use permit found in Section 86-126 of the Code of Ordinances.

**Resolution to Approve
SUP #16011 (PHG Land Development, LLC)
Page 2**

NOW THEREFORE, BE IT RESOLVED THE PLANNING COMMISSION OF THE CHARTER TOWNSHIP OF MERIDIAN hereby approves Special Use Permit #16011 (PHG Land Development LLC) with the following conditions:

1. Approval is granted based on the site plans dated November 19, 2015 prepared by KEBS, Inc., and building elevations dated November 1, 2015 prepared by Mark A. Carlsen subject to revisions as required.
2. Approval is subject to the applicant receiving Township Board approval to construct a building greater than 25,000 square feet in gross floor area.
3. The final site plan, landscape plan, building elevations, building materials and colors, shall be subject to the approval of the Director of Community Planning and Development.
4. Street trees shall be installed along Jolly Oak Road and Meridian Crossing Drive. Species and location of the trees shall be subject to the approval of the Director of Community Planning and Development.
5. Trash and recycling dumpsters shall be enclosed on four sides; the enclosure(s) shall be constructed of brick or stone materials to match the building.
6. All mechanical, heating, ventilation, air conditioning, generators, and similar systems shall be screened from view by an opaque structure or landscape material selected to complement the building. Such screening is subject to approval by the Director of Community Planning and Development.
7. Site and building lighting shall comply with Article VII in Chapter 38 of the Code of Ordinances and shall be subject to the approval of the Director of Community Planning and Development. LED lighting shall be used where feasible.
8. Final utility, grading, and storm drainage plans for the site shall be subject to the approval of the Director of Public Works and Engineering and shall be completed in accordance with the Township Engineering Design and Construction Standards.
9. The applicant shall obtain all necessary permits, licenses, and approvals from the Ingham County Drain Commissioner and the Township. Copies of all permits, licenses, and approval letters shall be submitted to the Department of Community Planning and Development.
10. Copies of the site plan information and construction plans for the project that exist in an AutoCAD compatible format shall be provided to the Township Engineering staff.
11. Any future building additions or expansions shall require a modification to Special Use Permit #16011.

**Resolution to Approve
SUP #16011 (PHG Land Development, LLC)
Page 3**

ADOPTED: YEAS: _____

NAYS: _____

STATE OF MICHIGAN)
) ss
COUNTY OF INGHAM)

I, the undersigned, the duly qualified Chairperson of the Planning Commission of the Charter Township of Meridian, Ingham County, Michigan, DO HEREBY CERTIFY that the foregoing is a true and a complete copy of a resolution adopted at a regular meeting of the Planning Commission on the 25th day of January 2016.

John Scot-Craig, Chair
Planning Commission

**RESOLUTION TO APPROVE
BUILDING SIZE**

**SUP #16011
(PHG Land Development, LLC)
Jolly Oak Road and Meridian Crossing Drive**

RESOLUTION

At a regular meeting of the Planning Commission of the Charter Township of Meridian, Ingham County, Michigan, held at the Meridian Municipal Building in said Township on the 25th day of January at 7:00 p.m., Local Time.

PRESENT: _____

ABSENT: _____

The following resolution was offered by _____ and supported by _____.

WHEREAS, PHG Land Development, LLC has requested a special use permit to construct, a 99-room hotel (Courtyard Marriott), approximately 67,000 square feet in gross floor area, to be located at the northwest corner of Jolly Oak Road and Meridian Crossing Drive in Section 33 of the Township; and

WHEREAS, the Planning Commission held a public hearing at its regular meeting on January 11, 2016; and

WHEREAS, the Planning Commission reviewed and discussed staff material forwarded under cover memorandums dated January 8, 2016 and January 22, 2016; and

WHEREAS, the structure has been designed to be harmonious and appropriate with the existing and potential future uses surrounding the site; and

WHEREAS, the surrounding road system has sufficient capacity to absorb the additional traffic projected to result from the 99-room hotel; and

WHEREAS, the site dimensions are consistent with minimum lot area and minimum lot width requirements of the C-2 (Commercial) district; and

WHEREAS, the proposed development will be served by public water and sanitary sewer.

NOW THEREFORE BE IT RESOLVED THE PLANNING COMMISSION OF THE CHARTER TOWNSHIP OF MERIDIAN hereby recommends approval of Special Use Permit #16011 (PHG Land Development, LLC) to construct a single building totaling approximately 67,000 square feet in gross floor area, subject to the following conditions:

1. Approval of the special use permit is recommended in accordance with the cover sheet prepared by KEBS, Inc. dated November 9, 2015, subject to revisions as required.
2. Special Use Permit #16011 is subject to approval and all conditions placed by the Township Board.

Sec. 86-126. Review criteria.

Applications for special use permits shall be reviewed for compliance with the following standards and requirements, where applicable. An application for a special use permit that complies with all the following standards and requirements in this chapter may be approved. The applicant shall assure that:

- (1) The project is consistent with the intent and purposes of this chapter.
- (2) The project is consistent with applicable land use policies contained in the township's comprehensive development plan of current adoption.
- (3) The project is designed, constructed, operated, and maintained so as to be harmonious and appropriate in appearance with the existing or intended character of the general vicinity and that such a use will not change the essential character of the same area.
- (4) The project will not adversely affect or be hazardous to existing neighboring uses.
- (5) The project will not be detrimental to the economic welfare of surrounding properties or the community.
- (6) The project is adequately served by public facilities, such as existing roads, schools, stormwater drainage, public safety, public transportation, and public recreation, or that the persons or agencies responsible for the establishment of the proposed use shall be able to provide any such service.
- (7) The project is adequately served by public sanitation facilities if so designed. If on-site sanitation facilities for sewage disposal, potable water supply, and stormwater are proposed, they shall be properly designed and capable of handling the longterm needs of the proposed project.
- (8) The project will not involve uses, activities, processes, materials, and equipment and conditions of operation that will be detrimental to any persons, property, or the general welfare by reason of excessive production of traffic, noise, smoke, fumes, glare, or odors.
- (9) The project will not directly or indirectly have a substantial adverse impact on the natural resources of the township, including, but not limited to, prime agricultural soils, water recharge areas, lakes, rivers, streams, major forests, wetlands, and wildlife areas.

(Code 1974, § 81-3.2(F))

Sec. 86-127. Conditions.

The planning commission may require additional conditions, beyond those specified for the particular special use in this chapter, necessary to accomplish the purposes and intent of this chapter as follows:

- (1) Site conditions including, but not limited to, the following:
 - a. Special yards, open spaces, or buffers.

Gary Rouse, GBC Design, 5656 White Pond Drive, Akron, Ohio, availed himself for questions when the special use permits related to the Chick-fil-A project are taken up by the Planning Commission.

Chair Scott-Craig closed public remarks.

7. Communications

- A. Pam Fraker, 351 Newman Road, Okemos; RE: Special Use Permit #15171 (Chick-fil-A)
- B. James R. Hewitt, 2728 Del Mar Drive, Okemos; RE: Special Use Permit #15171 (Chick-fil-A)
- C. Hannah Henning, 5924 Patriots Way, East Lansing; RE: Special Use Permit #15171 (Chick-fil-A)
- D. Mary Ann Martin, 2504 Arrowhead Drive, Okemos; RE: Special Use Permit #15171 (Chick-fil-A)
- E. James Raynak, DDA Chair, Meridian Township DDA, RE: Special Use Permit #15171 (Chick-fil-A)

 **8. Public hearings**

- A. Special Use Permit #16011 (Marriott), request to construct a 67,000 square foot Courtyard by Marriott with 99 rooms on Jolly Oak Road east of Staybridge Suites

Chair Scott-Craig opened the public hearing at 7:19 P.M.

- Introduction by the Chair (announcement of procedures, time limits and protocols for public participation and applicants)
- Summary of subject matter
Associate Planner Wyatt summarized the special use permit request as outlined in staff memorandum dated January 8, 2016.
- Applicant
David Wespiser, Hotel Development Services, LLC, 125 W. Spring Street, Oxford, Ohio availed himself and his team members for questions relative to this special use permit request.
- Public
Leonard Provencher, 5824 Buena Parkway, Haslett, expressed concern with bicycle parking being placed near the exits to this site, as it provides an opportunity for bicycle theft. He stated his preference is for bicycle parking to be placed adjacent to the handicap parking near the entrance to the hotel to provide security for parked bicycles.
- Planning Commission discussion:
Commissioner Ianni voiced his appreciation the applicant has not requested any variances, has met the Township's Code of Ordinances and the project does not significantly impact traffic. He added the pervious/impervious ratio has been met.

Commissioner Jackson inquired of staff if 2008 is the latest traffic counts available.

Principal Planner Oranchak replied 2008 was the latest found on the Ingham County Road Department's (ICRD) website.

Commissioner Jackson asked how much additional development has occurred in this location since 2008.

Principal Planner Oranchak replied Staybridge Suites was constructed "quite a while ago". She believed Staybridge Suites was constructed around the time improvements to the road were made. Ms. Oranchak stated the Michigan State University (MSU) Federal Credit Union branch is the most recent development in this area. She added there are areas under consideration for development which are to the north and the west of this site. Principal Planner Oranchak indicated this is the last parcel in Meridian Crossing, with the remainder, of Meridian Crossing, other than the credit union, having been built prior to Staybridge Suites.

Commissioner Van Coevering reiterated the applicant has not requested any variances, and voiced her support for the project as presented.

Chair Scott-Craig agreed with earlier public comment regarding the preferred location of bicycle parking. He noted the Township's traffic consultant has approved the project. Chair Scott-Craig acknowledged a traffic problem does not exist with the internal turns, but at the end of the street where the turns empty onto Okemos Road or Jolly Road. He spoke to the accumulation of traffic as a result of the impending large development by Forsberg. Chair Scott-Craig noted someday the Township will need to deal with the situation in the Okemos Road/Jolly Road area. He voiced appreciation that no variances were requested by the applicant.

Chair Scott-Craig closed the public hearing at 7:38 P.M.

9. Unfinished Business

Commissioner DeGroff moved to amend the agenda by moving Agenda Item #9C to Agenda Item #9A and relettering the remaining unfinished business items.

The motion died for lack of a second.

- A. Special Use Permit #15171 (Chick-fil-A), request to construct a 4,730 square foot restaurant with drive-through window

Commissioner Tenaglia moved [and read into the record] **NOW THEREFORE BE IT RESOLVED THE PLANNING COMMISSION OF THE CHARTER TOWNSHIP OF MERIDIAN hereby approves Special Use Permit #15171 (Chick-fil-A, Inc) to construct a commercial drive-thru building subject to the following conditions:**

1. Approval is granted in accordance with the site plans prepared by GBC Design, Inc., dated November 23, 2015, subject to revisions as required.
2. The Charter Township of Meridian will be a third party signatory to all access easements between the applicant and the owners of the access drives adjacent to the site.
3. Where appropriate, signage shall be improved to sufficiently direct traffic to and from the site.
4. A by-pass lane shall be designed along the entire length of the drive-through lanes.
5. A special use permit shall be required for the proposed changeable freestanding sign.

CHARTER TOWNSHIP OF MERIDIAN
PLANNING COMMISSION
REGULAR MEETING MINUTES
January 25, 2016

APPROVED

5151 Marsh Road, Okemos, MI 48864-1198
853-4000, Town Hall Room, 7:00 P.M.

PRESENT: Commissioners Cordill, DeGroff, Honicky, Ianni, Jackson, Opsommer, Scott-Craig,
Tenaglia, Van Coevering
ABSENT: None
STAFF: Principal Planner Oranchak

1. Call meeting to order

Chair Scott-Craig called the regular meeting to order at 7:06 P.M.

2. Approval of agenda

Commissioner Honicky moved to approve the agenda. Seconded by Commissioner Cordill.

VOICE VOTE: Motion carried unanimously.

3. Approval of Minutes

Commissioner Ianni moved to approve the Regular Meeting Minutes of January 11, 2016.
Seconded by Commissioner DeGroff.

Commissioner Opsommer requested staff change the references regarding the amount of acreage for the proposed Chick-fil-A site to provide consistency.

VOICE VOTE: Motion carried unanimously.

4. Public Remarks

Chair Scott-Craig opened the floor for public remarks.

Leonard Provencher, 5824 Buena Parkway, Haslett, requested the Planning Commission consider an additional condition be added for SUP #16011 to provide bicycle parking near the entrance of the hotel in an effort to afford security for the bicycles.

Jeff Kyes, KEBS, Inc., 2116 Haslett Road, Haslett, availed himself for Planning Commission questions relative to Special Use Permit #16011. He noted Malinda Barr is also available to answer technical questions regarding management of the facility. Mr. Kyes responded to earlier public comment by indicating the applicant had no issue with moving bicycle parking near the entrance of the hotel.

Chair Scott-Craig closed public remarks.

5. Communications (None)

6. Public hearings (None)

7. Unfinished Business

- A. Special Use Permit #16011 (Marriott), request to construct a 67,000 square foot Courtyard by Marriott with 99 rooms on Jolly Oak Road east of Staybridge Suites

Commissioner DeGross moved [and read into the record] NOW THEREFORE, BE IT RESOLVED THE PLANNING COMMISSION OF THE CHARTER TOWNSHIP OF MERIDIAN hereby approves Special Use Permit #16011 (PHG Land Development LLC) with the following conditions:

1. Approval is granted based on the site plans dated November 19, 2015 prepared by KEBS, Inc., and building elevations dated November 1, 2015 prepared by Mark A. Carlsen subject to revisions as required.
2. Approval is subject to the applicant receiving Township Board approval to construct a building greater than 25,000 square feet in gross floor area.
3. The final site plan, landscape plan, building elevations, building materials and colors, shall be subject to the approval of the Director of Community Planning and Development.
4. Street trees shall be installed along Jolly Oak Road and Meridian Crossing Drive. Species and location of the trees shall be subject to the approval of the Director of Community Planning and Development.
5. Trash and recycling dumpsters shall be enclosed on four sides; the enclosure(s) shall be constructed of brick or stone materials to match the building.
6. All mechanical, heating, ventilation, air conditioning, generators, and similar systems shall be screened from view by an opaque structure or landscape material selected to complement the building. Such screening is subject to approval by the Director of Community Planning and Development.
7. Site and building lighting shall comply with Article VII in Chapter 38 of the Code of Ordinances and shall be subject to the approval of the Director of Community Planning and Development. LED lighting shall be used where feasible.
8. Final utility, grading, and storm drainage plans for the site shall be subject to the approval of the Director of Public Works and Engineering and shall be completed in accordance with the Township Engineering Design and Construction Standards.
9. The applicant shall obtain all necessary permits, licenses, and approvals from the Ingham County Drain Commissioner and the Township. Copies of all permits, licenses, and approval letters shall be submitted to the Department of Community Planning and Development.
10. Copies of the site plan information and construction plans for the project that exist in an AutoCAD compatible format shall be provided to the Township Engineering staff.
11. Any future building additions or expansions shall require a modification to Special Use Permit #16011.

Seconded by Commissioner Ianni.

Planning Commission and applicant's representative discussion:

- Proposed project is a good fit for this area of the community
- Applicant has not requested any variances
- Project will not have a negative impact on traffic
- Inquiry if this Marriott will allow guests with pets
- Marriott has not yet determined whether they will allow pets in their rooms
- Nearby Staybridge Suites is a pet friendly hotel
- Staybridge Suites is the same group of owners as the Courtyard by Marriott
- Planning Commission suggestion that if pets are allowed, a portion of the landscape be dedicated to a pet friendly walking area and have a specified waste receptacle with mutt mitten stand
- Applicant has stated there is no objection to placing the bicycle parking near the entrance and will make that change on the plans prior to this project going before the Township Board

Commissioner Opsommer moved to add condition #12 which states the applicant will relocate the bicycle parking adjacent to the handicap parking.

The motion died for lack of a second.

ROLL CALL VOTE: YEAS: Commissioners Cordill, DeGroff, Honicky, Ianni, Jackson, Opsommer, Tenaglia, Van Coevering, Chair Scott-Craig

NAYS: None

Motion carried unanimously.

Commissioner Cordill moved [and read into the record] NOW THEREFORE, BE IT RESOLVED THE PLANNING COMMISSION OF THE CHARTER TOWNSHIP OF MERIDIAN hereby approves Special Use Permit #16011 (PHG Land Development LLC) with the following conditions:

1. Approval of the special use permit is recommended in accordance with the cover sheet prepared by KEBS, Inc. dated November 9, 2015, subject to revisions as required.
2. Special Use Permit #16011 is subject to approval and all conditions placed by the Township Board.

Seconded by Commissioner Honicky.

Planning Commission discussion:

- Size is in keeping with a hotel of this scale
- Proposed project fits the area
- Project will not place undue demand on infrastructure currently in place

ROLL CALL VOTE: YEAS: Commissioners Cordill, DeGroff, Honicky, Ianni, Jackson, Opsommer, Tenaglia, Van Coevering, Chair Scott-Craig

NAYS: None

Motion carried unanimously.

8. Other Business (None)

CHARTER TOWNSHIP OF MERIDIAN

Elizabeth Ann LeGoff Supervisor
Brett Dreyfus Clerk
Julie Brixie Treasurer
Frank L. Walsh Manager



Milton L. Scales Trustee
Ronald J. Styka Trustee
John Veenstra Trustee
Angela Wilson Trustee

January 28, 2016

David Wespiser
PHG Land Development, LLC
520 N. Main Street
Cheboygan, MI 49721

RE: Special Use Permit #16011 (PHG Land Development, LLC)

Dear Mr. Wespiser:

At its regular meeting held on January 25, 2016, the Planning Commission voted to approve Special Use Permit #16011, a request to construct a 4-story hotel with 99 rooms and approximately 67,000 square feet in size. The hotel is to be located south of Jolly Oak Road and west of Meridian Crossing Drive, in the Meridian Crossing shopping center. Approval was granted with the following conditions:

1. Approval is granted based on the site plans dated November 19, 2015 prepared by KEBS, Inc., and building elevations dated November 1, 2015 prepared by Mark A. Carlsen subject to revisions as required.
2. Approval is subject to the applicant receiving Township Board approval to construct a building greater than 25,000 square feet in gross floor area.
3. The final site plan, landscape plan, building elevations, building materials and colors, shall be subject to the approval of the Director of Community Planning and Development.
4. Street trees shall be installed along Jolly Oak Road and Meridian Crossing Drive. Species and location of the trees shall be subject to the approval of the Director of Community Planning and Development.
5. Trash and recycling dumpsters shall be enclosed on four sides; the enclosure(s) shall be constructed of brick or stone materials to match the building.
6. All mechanical, heating, ventilation, air conditioning, generators, and similar systems shall be screened from view by an opaque structure or landscape material selected to complement the building. Such screening is subject to approval by the Director of Community Planning and Development.



7. Site and building lighting shall comply with Article VII in Chapter 38 of the Code of Ordinances and shall be subject to the approval of the Director of Community Planning and Development. LED lighting shall be used where feasible.
8. Final utility, grading, and storm drainage plans for the site shall be subject to the approval of the Director of Public Works and Engineering and shall be completed in accordance with the Township Engineering Design and Construction Standards.
9. The applicant shall obtain all necessary permits, licenses, and approvals from the Ingham County Drain Commissioner and the Township. Copies of all permits, licenses, and approval letters shall be submitted to the Department of Community Planning and Development.
10. Copies of the site plan information and construction plans for the project that exist in an AutoCAD compatible format shall be provided to the Township Engineering staff.
11. Any future building additions or expansions shall require a modification to Special Use Permit #16011.

Decisions by the Planning Commission regarding special use permits may be appealed to the Township Board. An appeal must be filed within 10 days of the date of the Planning Commission's action and be in accordance with Section 86-189 of the Code of Ordinances. Consequently, your special use permit will not become valid until February 3, 2016.

This letter shall act as the Special Use Permit. The use permitted by the granting of the special use permit must have commenced within two years after issuance or the permit shall be void. All construction related to the special use must be completed within three years from the effective date of the special use permit.

The special use permit process is not complete. Any building greater than 25,000 square feet in size must receive approval from the Township Board. The review is scheduled for the Board's February 16, 2016 meeting. The meeting begins at 6:00 p.m.

Please contact me if you have any questions.

Sincerely,

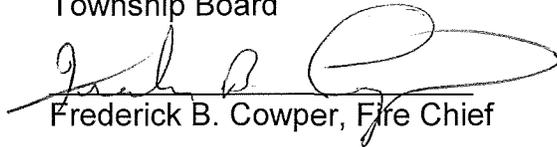


Mark Kieselbach
Director of Community Planning and Development

MEMORANDUM

TO: Township Board

FROM:


Frederick B. Cowper, Fire Chief

DATE: February 11, 2016

RE: **Tri-County Regional Hazard Mitigation Plan**

Tri-County Regional Planning Commission prepared and adopted a Regional Hazard Mitigation Plan in 2015. The document is hereby submitted for your review and subsequent approval. Local adoption is required by Michigan State Police and FEMA in order to be eligible for hazard mitigation and disaster declaration grants.

Tri-County Regional Hazard Mitigation Plan

For
Clinton, Eaton, Ingham Counties
And
Delta Charter Township
In Mid-Michigan



Prepared by
Tri-County Regional Planning Commission
3135 Pine Tree Road, Suite 2C
Lansing, Michigan 48912
FINAL/ADOPTED
JULY 2015

ACKNOWLEDGEMENTS

A FEMA funded Pre-Disaster Mitigation (PDM) Grant from the Michigan State Police Emergency Management and Homeland Security Division supported this regional plan development. The Ingham County Sherriff's Emergency Management Office served as fiduciary. The Tri-County Regional Planning Commission provided contractual services and matching contributions of technical resources, data, and facilitation. The Clinton, Eaton, and Ingham County Emergency Management offices and the Delta Charter Township Fire Department contributed matching funds and services as well. The region's participating municipalities provided in-kind matching contributions of staff time and participation.

**We wish to recognize and express special thanks
for the important contributions of the**

Tri-County Hazard Mitigation Plan Update Team

Jeffrey Weiss & Rob Dale, Ingham County Emergency Management

Larry St. George, Clinton County Emergency Management

John Clark, Delta Charter Township Fire Department

Claudine Williams, Eaton County Community Development

Rodney Sadler, Eaton County Emergency Management

Michael Sobocinski, Michigan State Police- Emergency Management and Homeland
Security Division

Harmony Gmazel & Susan Pigg, Tri-County Regional Planning Commission



TRI-COUNTY REGIONAL PLANNING COMMISSION

Planning for People in the Greater Lansing Region Since 1956

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VICE-CHAIRPERSON

Kenneth Fletcher, Eaton County

TREASURER

Shirley M. Rodgers, City of Lansing

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Clinton, Eaton and Ingham County
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EXECUTIVE DIRECTOR

Susan M.C. Pigg, CECD

Ms. Christine Stack, Director and Ms. Kirstin Kuenzi, Specialist
FEMA Region V

U.S. Department of Homeland Security
536 S. Clark St. 6th Floor
Chicago, IL 60605-1509

Mr. Matt Schnepf and Mike Sobocinski, Specialist
Emergency Management and Homeland Security Division
Michigan State Police
4000 Collins Road,
Lansing, MI 48910-5883

July 30, 2015

Dear Ms. Stack, Ms. Kuenzi, Mr. Schnepf, and Mr. Sobocinski,

We are pleased to provide you with the *Tri-County Regional Hazard Mitigation Plan for Clinton, Eaton, and Ingham Counties and Delta Charter Township* with resolutions of adoption. This is a combined plan with updated data, opportunities, and recommendations to address hazards in the tri-county region. The Plan provides the process for evaluation of land use and development from a hazard mitigation perspective that will protect lives and property. We prepared it to renew eligibility for Federal Emergency Management Agency (FEMA) programs and funding in our regional community.

The intent of this hazard mitigation plan is not to limit development but to ensure as possible, that development avoids damage from natural and technological hazards. The Plan's intent is to channel development into areas that will not pose undue risk to the owners or occupants nor cause an undue need for disaster response by local, state, and federal agencies.

The Tri-County Regional Planning Commission facilitated the grant-funded development of this multi-jurisdictional Plan. We worked closely with our region's emergency management offices, land use development agencies, the Michigan State Police, affected businesses, and interested members of the public. We appreciated your reviews of this Plan and your indication that it meets the requirements of the federal Disaster Mitigation Act of 2000. Clinton, Eaton, and Ingham Counties, Delta Charter Township, and the Tri-County Regional Planning Commission adopted the final reviewed Plan by resolution. Thank you for the opportunity to plan for our regional future together.

Sincerely,

Susan M. C. Pigg, CECD.
Executive Director

Cc: Hazard Mitigation Advisory Committee w/attachments

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Region V
536 S. Clark St., 6th Floor
Chicago, IL 60605-1509



FEMA

JUL 06 2015

Mr. Matt Schnepf
State Hazard Mitigation Officer
Michigan State Police
Emergency Management and Homeland Security Division
4000 Collins Rd
Lansing, MI 48910

Dear Mr. Schnepf:

Thank you for submitting the adoption documentation for the Tri-County Hazard Mitigation Plan. The plan was reviewed based on the local plan criteria contained in 44 CFR Part 201, as authorized by the Disaster Mitigation Act of 2000. Clinton, Eaton, and Ingham counties met the required criteria for a multi-jurisdiction hazard mitigation plan and the plan is now approved for Clinton County. Please submit the adoption resolutions for any remaining jurisdictions who participated in the planning process.

The approval of this plan ensures continued availability of the full complement of Hazard Mitigation Assistance (HMA) Grants. All requests for funding, however, will be evaluated individually according to the specific eligibility and other requirements of the particular program under which the application is submitted.

We encourage Clinton County to follow the plan's schedule for monitoring and updating the plan, and continue their efforts to implement the mitigation measures. The expiration date of the Tri-County Plan is five years from the date of this letter. In order to continue project grant eligibility, the plan must be reviewed, revised as appropriate, resubmitted, and approved no later than the plan expiration date.

Please pass on our congratulations to Clinton County for this significant action. If you or the communities have any questions, please contact Kirstin Kuenzi at (312) 408-4460 or Kirstin.Kuenzi@fema.dhs.gov.

Sincerely,

A handwritten signature in cursive script that reads "Christine Stack".

Christine Stack, Director
Mitigation Division

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Diane Zuker

RESOLUTION 2015-10

TO ADOPT THE TRI-COUNTY REGIONAL HAZARD MITIGATION PLAN

WHEREAS the Commissioners of the County of Clinton recognize the threat that natural, social, and technological hazards pose to people and communities and that undertaking hazard mitigation actions will reduce the potential harm to people and property from future hazard occurrences; and

WHEREAS an adopted hazard mitigation plan is required as a condition of future funding for various Federal Emergency Management Agency (FEMA) disaster mitigation programs; and

WHEREAS Clinton County, its agencies and residents have fully participated in the mitigation planning process with the Tri-County Regional Planning Commission to prepare this plan and have submitted the plan to the Michigan State Police Emergency Management division and the FEMA Region 5 for their review; now

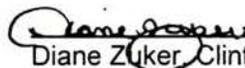
THEREFORE BE IT RESOLVED that Clinton County hereby adopts the Tri-County Regional Hazard Mitigation Plan as an official plan; and

BE IF FURTHER RESOLVED that in coordination with the Tri-County Regional Planning Commission, and as a member of the other participating municipalities in Clinton, Eaton, and Ingham Counties in Michigan, we will submit this adoption to the Michigan State Police Emergency Management Division and to Federal Emergency Management Agency (FEMA) officials.

STATE OF MICHIGAN

COUNTY OF CLINTON

I, DIANE ZUKER, Clerk of the County of Clinton do hereby certify that the foregoing resolution was duly adopted by the Clinton County Board of Commissioners at the regular meeting held June 30, 2015 and is on file in the records of this office.


Diane Zuker, Clinton County Clerk

PASSAGE OF A RESOLUTION

The following resolution was adopted by the Township Board of the Charter Township of Delta at its regular meeting on Monday, July 20, 2015:

4. Resolution To Adopt The Tri-County Regional Hazard Mitigation Plan

TRUSTEE MOJICA MOVED THAT THE DELTA TOWNSHIP BOARD ADOPT THE TRI-COUNTY REGIONAL HAZARD MITIGATION PLAN AS AN OFFICIAL PLAN, AND, FURTHER, THAT IN COORDINATION WITH THE OTHER PARTICIPATING AGENCIES IN CLINTON, EATON, AND INGHAM COUNTIES IN MICHIGAN, SUBMIT THIS ADOPTION TO THE MICHIGAN STATE POLICE EMERGENCY MANAGEMENT DIVISION AND THE FEDERAL EMERGENCY MANAGEMENT AGENCY OFFICIALS.

TREASURER PIZZO SUPPORTED THE MOTION. THE MOTION PASSED 5-0.

CHARTER TOWNSHIP OF DELTA

A handwritten signature in black ink that reads "Mary R. Clark". The signature is written in a cursive style with a large initial "M".

MARY R. CLARK, TOWNSHIP CLERK

cc Fire Department

EATON COUNTY BOARD OF COMMISSIONERS**RESOLUTION TO ADOPT THE
TRI-COUNTY REGIONAL HAZARD MITIGATION PLAN****July 15, 2015**

Commissioner Whittum moved the approval of the following resolution. Seconded by Commissioner Rogers.

Introduced by the Public Safety Committee

WHEREAS; the Commissioners of the Eaton County recognize the threat that natural, social, and technological hazards pose to people and communities and that undertaking hazard mitigation actions will reduce the potential harm to people and property from future hazard occurrences; and

WHEREAS; an adopted hazard mitigation plan is required as a condition of future funding for various Federal Emergency Management Agency (FEMA) disaster mitigation programs; and

WHEREAS; Eaton County, its agencies and residents have fully participated in the mitigation planning process with the Tri-County Regional Planning Commission to prepare this plan and have submitted the plan to the Michigan State Police Emergency Management division and the FEMA Region 5 for their review.

NOW, THEREFORE BE IT RESOLVED; that Eaton County hereby adopts the Tri-County Regional Hazard Mitigation Plan as an official plan; and

BE IT FURTHER RESOLVED that in coordination with the Tri-County Regional Planning Commission, and as a member of the other participating municipalities in Clinton, Eaton, and Ingham Counties in Michigan, we will submit this adoption to the Michigan State Police Emergency Management Division and to Federal Emergency Management Agency (FEMA) officials. Carried.

**ADOPTED - JULY 28, 2015
AGENDA ITEM NO. 41**

Introduced by the Law & Courts Committee of the:

INGHAM COUNTY BOARD OF COMMISSIONERS

**RESOLUTION TO ADOPT THE TRI-COUNTY REGIONAL HAZARD MITIGATION
PLAN**

RESOLUTION # 15 – 291

WHEREAS, the Ingham County Office of Homeland Security & Emergency Management has been involved in a Tri-County Regional Hazard Mitigation Plan process to update the Plan that exists; and

WHEREAS, an adopted Hazard Mitigation Plan is required as a condition of future funding for various Federal Emergency Management Agency (FEMA) disaster mitigation programs; and

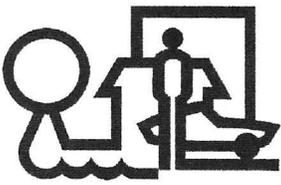
WHEREAS, Michigan has experienced risks that may damage commercial, residential, and public properties; displace citizens and businesses; close streets and impair infrastructure; and present general public health and safety concerns; and

WHEREAS, Ingham County has prepared a Hazard Mitigation Plan that outlines the community's options to reduce damages and impacts from natural and technological hazards; and

WHEREAS, the updated Tri-County Regional Hazard Mitigation Plan has been reviewed by community residents, business owners, and federal, state, and local agencies, and has been revised where appropriate to reflect their concerns.

THEREFORE BE IT RESOLVED, the Ingham County Board of Commissioners authorizes the adoption of the updated Tri-County Regional Hazard Mitigation Plan as an official plan of Ingham County.

LAW & COURTS: Yeas: Tsernoglou, Crenshaw, Koenig, Celentino, Nolan, Hope, Schafer
Nays: None **Absent:** None **Approved 7/16/15**



TRI-COUNTY REGIONAL PLANNING COMMISSION

Planning for the Mid-Michigan Region Since 1956

RESOLUTION

TRI-COUNTY REGIONAL PLANNING COMMISSION (TCRPC) A METROPOLITAN PLANNING ORGANIZATION

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Shirley M. Rodgers, City of
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Gail Watkins

Jessica Yorko

EX-OFFICIO

City of Lansing Mayor

Clinton, Eaton and Ingham

County Chairpersons

EXECUTIVE DIRECTOR

Susan M.C. Pigg, CEcD

ACCEPTING THE TRI-COUNTY REGIONAL HAZARD MITIGATION PLAN

WHEREAS the Tri-County Regional Planning Commission recognizes the threat that natural, social, and technological hazards pose to people and communities and that undertaking hazard mitigation actions will reduce the potential harm to people and property from future hazard occurrences; and

WHEREAS this plan has been adopted by Clinton, Eaton and Ingham Counties and Delta Charter Township as a required condition of future funding for various Federal Emergency Management Agency (FEMA) disaster mitigation programs; and

WHEREAS the Tri-County Regional Planning Commission, its member agencies, and residents have fully participated in the mitigation planning process to prepare this plan and have submitted the plan to the Michigan State Police Emergency Management division and the FEMA Region 5 for their review; now

THEREFORE BE IT RESOLVED that the Tri-County Regional Planning Commission accepts the Tri-County Regional Hazard Mitigation Plan as an official plan; and

BE IF FURTHER RESOLVED that this acceptance will be submitted to the Michigan State Police Emergency Management Division and to Federal Emergency Management Agency (FEMA) officials along with adoption of the plan from other participating municipalities in Clinton, Eaton, and Ingham Counties in Michigan.

David Pohl, Chairperson
Tri-County Regional Planning Commission

7-29-15

Date

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EXECUTIVE SUMMARY

The Tri-County Regional Hazard Mitigation Plan was created to protect the health, safety, and economic interests of residents and businesses in Clinton, Eaton, and Ingham Counties and Delta Charter Township in mid-Michigan's greater Lansing region. The regional Plan will reduce the impacts of natural and technological hazards through hazard mitigation planning, awareness, and implementation.

This Plan is the foundation for hazard mitigation activities and actions within Michigan's Tri-County Capital area region. Implementation of recommendations will reduce loss of life, destruction of property, and economic losses due to natural and technological hazards. The plan provides a path toward continuous, proactive reduction of vulnerability to hazards that result in repetitive and oftentimes severe social, economic and physical damage. The ideal end state is full integration of hazard mitigation concepts into day-to-day governmental and business functions and management practices.

This Plan employs a broad perspective in examining multi-hazard mitigation activities and opportunities in the Tri-County region. Emphasis is placed on hazards that have resulted in threats to the public health, safety and welfare, as well as the social, economic and physical fabric of the community. The plan addresses such hazards as floods, tornadoes, windstorms, winter storms, forest fires, structural fires, hazardous material incidents, and secondary technological hazards that result from natural hazard events. Each hazard was analyzed from a historical perspective, evaluated for potential risk, and considered for possible mitigative action. The plan also lays out the legal basis for planning and the tools to be used for its implementation.

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Preface

This 2015 Tri-County Regional Hazard Mitigation Plan provides a combined plan with updated data, opportunities, and recommendations to address hazards in the mid-Michigan area. This Plan offers actions that complement and expand on existing efforts and provide a strong foundation for hazard mitigation activities and actions within the region. In mid-Michigan, Clinton, Eaton and Ingham Counties and Delta Charter Township make up an active Emergency Management community. Together they implement related programs and initiatives that improve the general health, safety and welfare within the region. They have worked together through the Tri-County Regional Planning Commission to improve and update this regional Hazard Mitigation Plan.

Although not all hazards can be mitigated completely, implementation of recommendations in this plan will reduce loss of life, destruction of property, and economic losses that result from natural, technological and human-related hazards. This Plan provides a path toward continuous, proactive reduction of vulnerability to hazards, and can prevent repetitive and oftentimes severe social, economic and physical damage. One important goal for our region is to fully integrate hazard mitigation concepts into routine governmental and business functions and management practices including planning, regulation, procedures and policy.

This new Plan is a regional plan. In 2005, Ingham, Clinton and Eaton Counties and Delta Charter Township completed four separate hazard mitigation plans. In 2015, these same entities now adopt a combined plan that meets the requirements of the Federal Emergency Management Agency (FEMA). This plan provides updated data on our region. It was developed with public input and with expert input from area emergency managers, municipal officials, and various municipal and infrastructure managers so the Plan describes the processes used to develop the plan. This Plan includes new goals and objectives that were not in previous plans.

This Plan employs a broad perspective in examining multi-hazard mitigation activities in the Michigan's Capital area region. Emphasis is placed on hazards that result in threats to the public health, safety and welfare, as well as those that impact the social, economic and physical fabric of the region. The plan addresses such hazards as floods, storms, hazardous material incidents, and school/institutional violence. The Plan provides a historical analysis of each hazard, evaluates each hazard for potential risk, and shares possible mitigation actions. This Plan also lays out the tools and strategies to be used for its overall implementation.

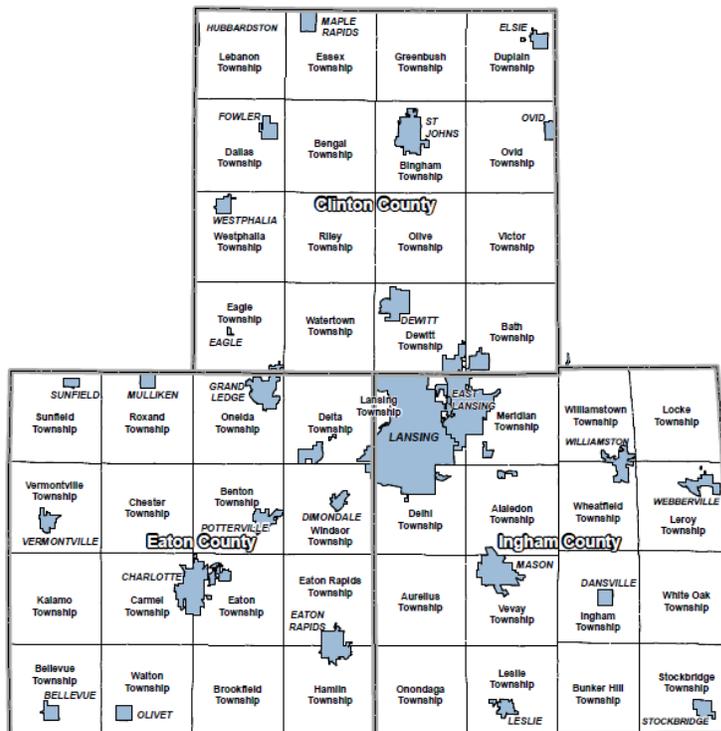
This Plan is a step toward fully integrating hazard mitigation into the normal operation of government and business. In the process of completing this Plan update, substantial effort was made to incorporate a range of expertise and information regarding local hazards. In addition, the Plan process included opportunities for the community to make adjustments so that it accurately represents specific jurisdictions, businesses and changes in our region. This Plan will remain active for a period of five years. Regional leaders should review and update this Plan again by 2020.

Chapter 1 - Planning Background and Process

Hazard mitigation is any action taken before, during, or after a disaster to permanently eliminate or reduce the long-term risk to human life and property. This 2015 Tri-County Regional Hazard Mitigation Plan provides a framework to enhance the general health, welfare and safety of residents in mid-Michigan’s Ingham, Clinton and Eaton Counties and Delta Charter Township (see map below). Each of these four jurisdictions are continuing their participation since the adopting their 2004 Hazard Mitigation Plans. This Plan considers the potential impact of natural, technological and social hazards on our region, and identifies some level of mitigation for each hazard.

Hazard mitigation is an essential element of emergency management, along with preparedness, response, and recovery. There is a cyclical relationship between the four phases of emergency management. A community prepares for a disaster, and then responds when it occurs. Following the response, there is a transition into the recovery process when mitigation measures are evaluated and adopted. This, in turn, improves the preparedness of the community for the next incident, and so on. When successful, mitigation will lessen the impacts to such a degree that succeeding incidents will remain incidents and not become disasters. This Plan updates a regional plan adopted in 2004. All jurisdictions depicted in the map below are represented in this updated Plan except for the City of Lansing, which updated their plan separately.

Fig.1 Map of Tri-County Region



Source: TCRPC

The Greater Lansing Michigan Metropolitan Area last acted on its hazard mitigation plans with the 2004 adoption of four plans: the Ingham County plan, Clinton County plan, Eaton County plan and Delta Charter Township plan. We provide here the regional hazard analysis, mitigation actions, in support of each of those goals. There is brief comment on implementation steps for this Plan, but that is discussed at more length throughout the document.

The hazard mitigation planning process is a public and transparent activity with many steps and initiatives over time. The planning process is punctuated by specific planning events, activities, and documents. They included reestablishing goals and objectives, scoping and technical analyses, soliciting and integrating the needs and desires of our region’s populace, then sharing and seeking responses to the resultant proposed plan. This chapter describes the planning steps implemented to update our 2004 plans.

The Tri-County Regional Planning Commission is committed to ensuring that citizen input figures prominently in the planning process. We implement a multi-faceted process to include citizens, residents, visitors, and others in developing, reviewing, and commenting on the Plan. In the development of this updated Plan, we sought input through traditional public meetings online forums, committee and workgroup sessions, public comment periods, and other approaches.

In addition to soliciting public participation, TCRPC acknowledges the critically important role of cooperating, collaborating, and coordinating regional activities with the many agencies and organizations with roles in transportation. This chapter also describes the consultation process that we followed for this Plan. We consulted with agencies and organizations responsible for land use planning, transit, air travel, non-motorized travel, environmental protection, natural resources management, economic development, human services and assistance, and community development. Their technical and specific expertise was invaluable in developing our regional plan.

Of the 78 local jurisdictions within the tri-county region, the following are those who have actively participated in this plan update as of its finalization and local adoption in July 2015:

Ingham County	Total 2010 population:	280,895
City of East Lansing	population:	46,605
Meridian Charter Township	population:	39,685
Williamstown Township	population:	4953
City of Williamston	population:	3864
Village of Dansville	population:	563
Village of Webberville	population:	1272
City of Mason	population:	8261
Delhi Charter Township	population:	25,873

Lansing Charter Township	population:	8114
Eaton County	Total 2010 population:	107,759
Delta Charter Township	population:	32,405
City of Grand Ledge	population:	7790
City of Charlotte	population:	9082
City of Eaton Rapids	population:	5235
Clinton County	Total 2010 population	75,382
DeWitt Charter Township	population:	14,317
City of DeWitt	population:	4507
Bath Charter Township	population:	11,605
City of St Johns	population:	7878
Dallas Township	population:	1161
	Total Covered Population:	233,175

These eighteen participating communities constitute the majority of the region's population, including its top five most populous jurisdictions. This does not include the City of Lansing. They have their own hazard mitigation plan.

Hazard mitigation strives to reduce the impact of hazards on people and property through the coordination of resources, programs, and authorities. Hazard mitigation plans can prevent a cycle whereby communities contribute to the increasing severity of a hazard by allowing repairs and reconstruction that restore damaged property to pre-disaster conditions quickly. Such efforts may appear to expedite a return to normalcy. However, replication of pre-disaster conditions can result in a cycle of damage, reconstruction, and damage again. Through a combination of regulatory, administrative, and engineering approaches, losses can be limited by reducing susceptibility to damage. The mitigation process helps break disaster cycles by analyzing hazards and helping communities identify ways to create less vulnerable conditions before the next potential incident.

The tri-county region recognizes the importance of reducing vulnerability to natural and technological hazards, so we are actively addressing hazard mitigation through the development and implementation of this Plan. This effort will result in many benefits including protection of public health and safety, preservation of important services, reduction of property damage and more. This Plan is one important way to help our region remain a vibrant, safe and enjoyable place to live.

In 2004, the tri-county region developed and adopted its first Hazard Mitigation plan. Ingham, Clinton, Eaton Counties, the City of Lansing and Delta Charter Township each adopted their own plan and began implementing the mitigation actions that were recommended in each respective plan. Our region has undergone significant changes in the last ten years and will likely continue to experience change in the future. This Plan includes a revision of the previous plan, incorporating changes in technology, population and economic concerns.

Fig. 2 2005 Hazard Mitigation Plans



Source: TCRPC

This Plan includes a description of the planning update process and updated profiles of Clinton, Eaton, Ingham Counties and Delta Charter Township, the four jurisdictions addressed in the planning update. It provides an overview of the region and an analysis of hazards. The hazards analysis considers the current concerns and opinions of emergency services providers, citizens, and local government infrastructure managers. This Plan addresses the goals, objectives, and strategies of the original plan with a more current perspective and it provides a snapshot of potential and existing hazards to the mid-Michigan region.

In addition to meetings of the hazard mitigation steering group, the TCRPC Program and Grant Review Committee regularly discussed the plan update at their meetings in 2012-2013-2014 and 2015. Throughout the planning process technical groups such as the Greater Lansing Regional Committee for Stormwater Management and the Capital Area Regional Transportation Study-Technical Committee convened to discuss the Plan. These committees received progress reports, provided suggestions and gave input into planning for hazard mitigation and the prioritization of various hazards.

The following figure depicts the meetings, the number of attendees and communities/agencies represented.

Fig. 3 Plan Update Meetings

Hazard Mitigation Plan Update Meetings & Outreach			
Group	Date	# of Attendees	Communities
Program & Grant Committee	March&June 2013 July 2014	12	Eaton, Ingham, Clinton and Charlotte
Hazard Mitigation Advisory Group	May 2012 June 2013 April 2015	24	MSP, Eaton, Ingham, Clinton & Delta Twp
Public Forums (Presented findings of existing plans, presented overview of hazard occurrences, facilitated discussion on planning process and outcomes)	July, August, September 2013	9	Clinton County EM (representing DeWitt & Bath Charter Townships) Village of Ovid Clinton Co Sheriff City of Potterville Eaton Co EM (representing Charlotte/Eaton Rapids etc) Ingham Co EM (representing Mason/Meridian Township/Williamston/Williamstown Township, Lansing Charter Township, etc.)
Hazard Analysis Survey (online)	2015	24	The Library of Michigan The Michigan Dept of Transportation The City of East Lansing MSU City of Charlotte City of DeWitt Delhi Charter Township CATA

Hazard Mitigation: Unlocking the Disaster Equation

A good way to understand hazard mitigation is to understand the nature of disasters themselves. The basic equation for a disaster is simple: **Hazards + People and Structures = Disaster**. Disasters only occur because people and structures are in harm’s way. The key to preventing or limiting disaster damage and impact is to unlock and separate the key components of this equation. Controlling the hazard may be difficult or impossible. A tornado is a good example. However, there are situations when vulnerability can be effectively reduced. Strategies to reduce or mitigate hazards include modifying the hazard (see strategy #1) or modifying the people and structures portion of the disaster equation (see strategies #2-5). Modifying the characteristics of people and structures is often easier and more effective in reducing or eliminating hazard vulnerability because these elements are more closely under our control. However, even that can be a daunting proposition at times, given the freedom of choice that our

citizens value and the widespread appeal of living near or in hazard-prone or at-risk areas such as by water, in the woods, on hillsides, etcetera. The following five basic hazard mitigation strategies can reduce or prevent the harmful interaction between hazards, people, and development that results in a disaster:

Strategy #1: Modification of the Hazard

The first strategy is to modify the hazard itself. That involves removing or eliminating the hazard, reducing its size or amount, or controlling the rate of release of the hazard. This strategy can be successful in the right circumstances but it is often difficult to do. Examples of this strategy include cloud seeding, slope planting to prevent erosion, and stream widening or modification to improve water flow. These measures can be cost-effective, but their application is limited and therefore may not be as effective as other strategies in reducing or eliminating damage on a wide scale.

Strategy #2: Segregating the Hazard

Segregating the hazard attempts to “*keep the hazard away from people.*” In flood-prone areas this is accomplished through the construction of structural protection measures such as dams, levees, floodwalls, and debris basins. These and other public works projects redirect the impacts of a flood away from people and development. This strategy can be highly effective, but it can also be expensive and may cause or exacerbate environmental problems. Also, history has shown that structural protection measures constructed to protect one community can increase problems in other communities. For example, levees channel and increase the velocity of floodwaters which can cause severe flooding downstream. Economics and limited effectiveness may make this a marginal strategy in many situations and locations.

Strategy #3: Preventing or Limiting Development

The third strategy is to prevent or limit development in where people and development would be at risk. This approach is based on “*keeping the people away from the hazard*” and includes a variety of land use planning and development regulation tools, such as comprehensive planning, zoning, floodplain management ordinances, capital improvements planning, disclosure laws, and acquisition and relocation of hazard prone properties. This strategy is to reduce or eliminate community hazard vulnerability through prudent land use and development decision-making. When properly applied, this strategy can be highly effective in promoting safe, sustainable development.

Strategy #4: Altering Design or Construction

The fourth strategy involves altering developments’ design or construction to make it less vulnerable to disaster damage. This strategy, commonly known as “*interacting with the hazard,*” allows the hazards to interact with human systems that have been planned and designed to withstand potentially destructive impacts. Examples of this strategy include elevating structures, employing wet and dry flood-proofing to resist flood damage, managing vegetation buffer zones in urban/wild land intermix areas, using wind bracing to resist wind damage, and insulating water and sewer lines to prevent ground freeze damage. This strategy allows development in hazard prone areas on the condition that it meets stringent disaster resistant performance criteria. This approach

can balance the dual needs of enhancing a community's economic base while also reducing community hazard vulnerability. History has shown that the two goals are not mutually exclusive. When careful and prudent development decisions are made that take into account the reduction of hazard vulnerabilities, the result is safe and sustainable community development.

Strategy #5: Early Warning and Public Education (overlaps with emergency management preparedness/response) This strategy seeks to ensure that the public is aware of the hazards it faces and that proper warning and communication systems and practices are in place to save lives and protect property. This strategy should be applied in all communities, as it is typically the last line of defense against serious disaster-related injury or loss of life.

Hazard Mitigation: Corrective and Preventive

Hazard mitigation strategies may also be grouped into two other broad categories:

Corrective Mitigation – correcting past practices that have increased hazard vulnerability; and

Preventative Mitigation – preventing future problems from occurring through public education, wise decision-making and disaster-resistant building and development practices.

The **corrective** form of hazard mitigation can be expensive, resource intensive, time consuming, and sometimes only marginally effective. Structural protection measures, hazard modification, and large-scale retrofitting fall under this category. Attempting to go back and fix something that is problematic is usually more difficult than doing it right the first time. However, when dealing with hazard prone property such as structures in a floodway, floodplain or other hazard area, it may be necessary to try to correct the problem in order to protect the affected community and individual property owners from future harm.

The **preventative** form of hazard mitigation is desirable because it seeks to prevent future problems from occurring in the first place. Wise land use planning and building design, small-scale retrofitting, and early warning and public education are considered preventative mitigation measures. When it comes to reducing community hazard vulnerability, the sensible old adage “an ounce of prevention is worth a pound of cure” could be restated as “an ounce of mitigation is worth a pound of recovery!”

Doing it right the first time is almost always preferable to going back and trying to correct recurring problems at a later date. Preventive mitigation is generally easier to implement than corrective mitigation because the administrative mechanisms that guide the land development process – planning and plan review, zoning, capital improvements programming, building codes and standards, etc. – are available to every local community and only require adoption and consistent application to be highly effective in reducing or eliminating hazard vulnerability. This plan addresses both types

of hazard mitigation—an ideal hazard mitigation program will involve both types being applied in appropriate amounts, in appropriate places, in a coordinated fashion.

Corrective hazard mitigation measures are effective and important for areas that suffer recurring or severe disaster damages or for areas with clear mitigation opportunities that can be addressed with existing resources. Preventive hazard mitigation helps state and local governments ensure that, at the very least, they do not contribute to the increasing severity of the problem through unwise decision-making.

Michigan's Vulnerability to Hazards

Michigan is vulnerable to a wide range of natural, technological and human-related hazards. Although Michigan is fortunate in that it is generally not susceptible to catastrophic disasters involving major earthquakes or hurricanes, it nonetheless has its share of potentially severe and widespread disasters and emergencies. Michigan is a heavily populated state with thousands of inland lakes, hundreds of rivers and streams, over 3,200 miles of Great Lakes shoreline, numerous major manufacturing centers, frequent wind and winter storms, and lies on the northern fringe of the nation's tornado belt. Michigan experiences major disasters and emergencies on a regular basis. The Hazard Analysis section in this document describes the state's vulnerability to more than two dozen different types of natural, technological, and human-related hazards, ranging from civil disturbances to snowstorms. Although these hazards all potentially affect Michigan, several of them cause more disaster events and generally result in more damage and/or impact to affected communities. Summaries and analyses appear in the Hazard Analysis sections of this plan.

Since 1953, Michigan has experienced 34 events that were declared a major disaster or emergency by the U.S. President. Since 1977, Michigan has experienced 64 events that resulted in a Governor's declaration of disaster or emergency. The majority of those declarations were granted for flooding, tornadoes, winter storms, or severe thunderstorms. Those disasters or emergencies resulted in hundreds of millions of dollars in damage and destruction and caused tremendous disruption to the affected communities. Clearly, there is a need to focus hazard mitigation efforts on those four particular hazards in Michigan. In addition to these natural hazards, the U.S. Federal Emergency Management Agency (FEMA) requires the state of Michigan to address land subsidence, coastal erosion, extreme temperatures, dam failures, earthquakes, and drought as part of Hazard Mitigation Planning.

Hazard Mitigation: National Perspective and Federal Government Role

The Michigan Hazard Mitigation Plan of 2014 states that nationally, hazard mitigation is at a crossroads. Recent catastrophic disasters across the United States resulted in unparalleled devastation, suffering, and economic loss. These events suggest that certain aspects of development strategy throughout the United States have been on a collision course with our natural environment. Increased development in hazard prone areas has put an ever-increasing number of people and structures in harm's way, greatly exacerbating our risk and vulnerability to natural, technological, and human-related hazards. As a result, when disasters occur they increasingly cause tremendous economic, social, and physical losses to the communities and people they affect.

Fortunately, due to a depressed economy in recent years, Michigan's slowed rate of development offers many of its communities a chance to prevent many risks from increasing through appropriate plans and policies. Michigan's population declined between the previous U.S. Censuses but, in some communities, the trend did not halt green field development trends and patterns. National efforts are under way to promote resilient communities and hazard mitigation.

Grant programs and updated guidance from the Federal Emergency Management Agency (FEMA) have supported the development of plans nationwide. The National Mitigation Strategy, National Pre-Disaster Mitigation Plan, National Flood Insurance Program (NFIP), Flood Mitigation Assistance Program (FMAP), Hazard Mitigation Grant Program (HMGP), Pre-Disaster Mitigation Program (PDMP), and the Disaster Mitigation Act of 2000 are the most prominent of the federal government's current efforts to reduce or eliminate the nation's risk and vulnerability to hazards. FEMA's efforts are in partnership with federal agencies, the Congress, the states, local governments, academia, the private sector, and individual citizens. The approach is one that invites the participation of the whole community—public, private, nonprofit, and the civil sectors.

Hazard Mitigation Plans Identify and Create Implementable Hazard Mitigation Opportunities

It must be emphasized that the hazard mitigation measures identified in this Plan and in counterpart local plans are, in reality, **hazard mitigation opportunities**. Identification of a possible hazard mitigation measure does not necessarily mean that it can or even should be implemented. The desirability or implementation of a hazard mitigation measure is highly dependent on a number of factors—environmental, social, economic and political. Just because a measure may reduce or eliminate hazard effects does not necessarily mean that it should be implemented. There may be factors or circumstances that could or should preclude its implementation. Decisions to adopt or implement hazard mitigation measures will be made in the local and state political arenas and in the land use and land development decision-making processes.

Typically, hazard mitigation measures will be implemented if they are able to balance environmental, social, economic and political factors, and are cost-effective. It does not make sense to implement a measure that will not be supported by officials and citizens or that cannot be economically justified. Accomplishing everything proposed in this plan will be a very tall order and will take years. Nevertheless, it is important to the future of this state that these issues be addressed, at least to some degree. Our nation, our state, our local communities and the insurance industry cannot continue to respond to and pay for increasingly large disasters. Proper application of hazard mitigation measures and strategies, coupled with wise land use and land development decision-making, can help our communities become more safe and sustainable, and our future as disaster-free as possible

The Role of the Citizen

The Michigan Hazard Mitigation Plan states that each citizen or resident of Michigan has a role in disasters and emergency preparedness that can protect lives during a serious event. Most of this document addresses the analysis and mitigation of hazards that could have a serious impact upon mid-Michigan or its communities. However, this small section describes personal and household preparedness actions that may become more important to your safety during a disaster than governmental efforts. Everyone should study the following list of preparedness actions along with a consideration of the types of hazards described throughout this document.

1. Develop an emergency plan for your household! Even an informal draft plan is a useful starting point. Consider the ways to prepare for responses to the various hazards that could occur in your area. Do you have a way to contact and meet your family members if something prevents you from staying in or returning to your home? Do you know the most reliable evacuation route if you have to leave your community in an evacuation?

2. Keep a supply of food and water. How many days could your home or community be without power or other utilities during a disaster event? You should always have a supply of fresh water (e.g. in bottles) and food that does not require refrigeration or cooking to help you endure periods without your community's normal utilities and services. In your preparation, consider the medicines that will be needed. Many emergencies cause a loss of power for 2 or 3 days, so your preparations should allow you to live independently for at least that long or longer.

3. Equip your home and vehicle. At a minimum, useful items to enable survival during a disaster would include a first aid kit, flashlight with batteries, a battery operated radio, and adequate clothing and blankets. Basic training in first aid may be vital to deal with the effects of injuries and weather.

4. During a disaster, use your available communication devices (battery operated radios and phones) to listen for instructions from official sources. Do what you can to obey those instructions. Be prepared to change your evacuation route, for example, if you learn that your original route is unavailable. Consider alternatives that you could evacuate to such as friends and family who live in areas less seriously affected by the emergency.

Process to Update the Tri-County Regional Plan

The Local Hazard Mitigation Planning Workbook (EMHSD-PUB207), with information on completing a successful mitigation plan, guided the planning process for this Tri-County Regional Hazard Mitigation Plan. This Plan update was based upon the extensive process to create a regional Hazard Mitigation Plan which was completed and adopted by the region in 2004. And, new and refreshed data for our area along with discussions, work sessions, and input from throughout the region in a variety of formats and venues over the past three years guided the development of the 2015 Tri-county Regional Hazard Mitigation Plan. The work was supported by a grant from the United States

Federal Emergency Management Agency, administered through the Michigan State Police, the tri-county region with the Ingham County Emergency Management Office serving as fiduciary. The Tri-County Regional Planning Commission facilitated the grant application in 2010 and, once awarded, was hired to develop a work agreement and lead the planning process to develop the plan.

The overall planning process included two approaches, one technical analysis in-house by TCRPC staff and the other a public planning process. The public planning process was conducted on two levels- level one with the direct and frequent interaction with area emergency management offices and level two interactions with other interested and concerned agencies or organizations in the region and with the general public.

In 2011, the process began with meetings and work plan agreements between the State of Michigan Police Planning Department (MSP) and Ingham County Emergency Management. TCRPC staff began a thorough review and analysis of the previous planning documents. Staff also began acquisition and compilation of updated data for the region including geographic information systems data for parcels and land use, hazard areas, and contracted for elevations and other data. Population changes, development densities, and other development data were compiled. Analysis for changes from the previous plan development began and continued alongside public involvement activities. In late 2011, TCRPC secured updated aerial photography data for the region from a 2010 flyover supported by U.S. Geological Survey and area municipalities. However, while the photography was collected with some elevations information, elevations detail was unavailable to use without necessary software and training. So, in 2012 TCRPC staff acquired ERDAS software and attended a national training workshop in Denver, CO to learn how to manipulate LiDAR data with ERDAS. TCRPC staff developed and analyzed the region with newly acquired LiDAR data that provided a detailed view of topography in the region. LiDAR maps of the region are included as supporting documents to this plan.

The Public Process, with a role for the technical advisory group began with a kick-off meeting for the Steering Committee hosted at the offices of the Tri-County Regional Planning Commission. The meeting included the emergency managers of the three Counties and Delta Charter Township and the Community Development Director of Eaton County. The Michigan State Police planner, Mike Sobocinski attended the meeting and provided an overview of the expected planning process for this project. The kick-off meeting provided the Committee with an understanding of FEMA requirements for a successfully adopted plan. The Steering Committee also reviewed the hazards and mitigation actions from the 2004 plans and narrowed them down to a new list of hazards and mitigation actions that address the known issues within our region nearly ten years later. This Plan is a product of those discussions about known hazards.

Throughout 2012 and 2013, TCRPC staff reviewed the existing Hazard Mitigation plans for the region and began editing the documents into one regional plan. In October of 2012, the Steering Committee met again at TCRPC to review the hazards that were

presented in the 2006 Plans and to discuss the applicability of these hazards to the new plan. Attendees included Sgt. Robert Ott of Ingham County's Emergency Management Office, Larry St. George of the Clinton County Emergency Management Office, and Claudine Williams of the Eaton County Community Development Office and staff members of the Tri-County Regional Planning Commission staff (Dan Dillinger, Harmony Gmazel). Discussions revolved around the need to remove certain hazards that deemed inapplicable in 2014, and to add certain hazards that have become an issue in recent years.

In 2013, four public workshops were publicized and held in Eaton, Ingham, Clinton Counties and Delta Charter Township, on August 20, 21, 23 and September 30 respectively. Emergency managers, Sherriff deputies, planning staff and local jurisdictions' representatives participated. The Clinton workshop, held at the Clinton County Courthouse in St. Johns, MI was attended by the County Sheriff and his staff; staff from the Villages of Ovid and Fowler, area townships and many others. The Eaton workshop, held at the Eaton County Courthouse in Charlotte, MI, was attended by Eaton County Sherriff's office staff, Charlotte residents, Village of Potterville staff. A workshop was scheduled for the Delta Charter Township Fire Department in Lansing, MI and was cancelled due to lack of response. The Ingham workshop was at the Hilliard Building in Mason, MI, and Ingham County Sheriff Department staff attended. In each jurisdiction TCRPC staff presented a PowerPoint show that reviewed existing plans, hazards and analyses and shared new topographic maps. Then TCRPC facilitated a discussion on recent hazard occurrences and preferred mitigation strategies.

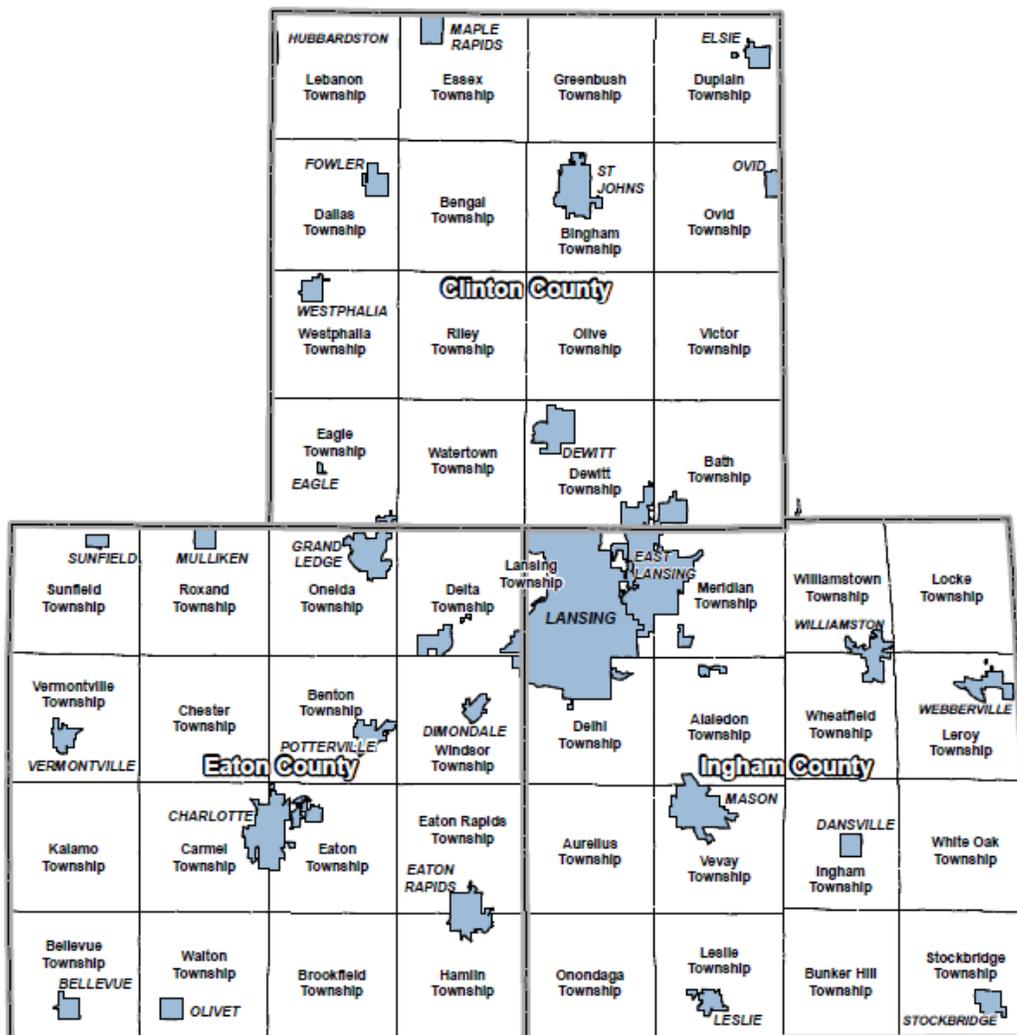
TCRPC provided a rough outline of the Plan document to workshop attendees and the region's emergency managers to share with emergency committee members and others in each county. Comments from agencies and the public in all jurisdictions were collected and incorporated into the plan. Neighborhood leaders, residents, local and regional agencies involved in emergency management and others such as academic institutions, non-profits and businesses were invited to the workshops and provided access to the draft plan. As a result of these activities, the Committee developed a general outline of this Plan. The major chapters are listed here:

- Community profile.
- Hazards and risks.
- Mitigation strategies.
- Maintenance of the plan.

TCRPC, working with representatives from each jurisdiction, researched and compiled data from the Regional Growth: Choice for our Future report, Greening Mid-Michigan and the Michigan State Hazard Mitigation Plan of 2014 about likely hazards, and also about potential responses. Maps of the region were developed and shared with committee members and the public at the workshops and the draft Plan was distributed and posted for public comment and adoption by FEMA and by the four local jurisdictions.

Chapter 2 - Community Profiles

Presenting a full Community Profile is the first step in creating an effective Hazard Mitigation plan. The information and data in this chapter provides an in-depth look at the different characteristics of the mid-Michigan region and its communities. Examination of characteristics that define each community's unique fabric is an effective means of identifying potential vulnerabilities that relate to a specific area in the county. This Community Profile contains a range of data and information about our region overall. It is also specific to the population and geography of each of the three counties and the township. The profiles are presented in alphabetical order, Clinton County, Delta Charter Township, Eaton County and Ingham County. Below is a map of the tri-county region, created by the Tri-County Regional Planning Commission.



Tri-County Regional Population Estimates and Projections

Population information for the tri-county region comes from a variety of sources. The most recent U.S. Census was 2010, so the Tri-County Regional Planning Commission analyzed and compiled data from a number of other sources to generate accurate estimates of current population and forecasts of future population. The base year calculations and projections were reviewed and adopted by the TCRPC board of Commissioners on behalf of the region most recently in spring 2014. Per those analyses, computing firm Woods & Poole estimated area population at 464,076. This is an increase of 7% or 30,662 persons since 1990. TCRPC projects that by 2045, our region will have 508,613 persons, an increase of 9.5% or 44,537 persons. The following chart, developed by the Tri-County Regional Planning Commission, depicts the historical population numbers and a projected forecast of regional population out to 2045.

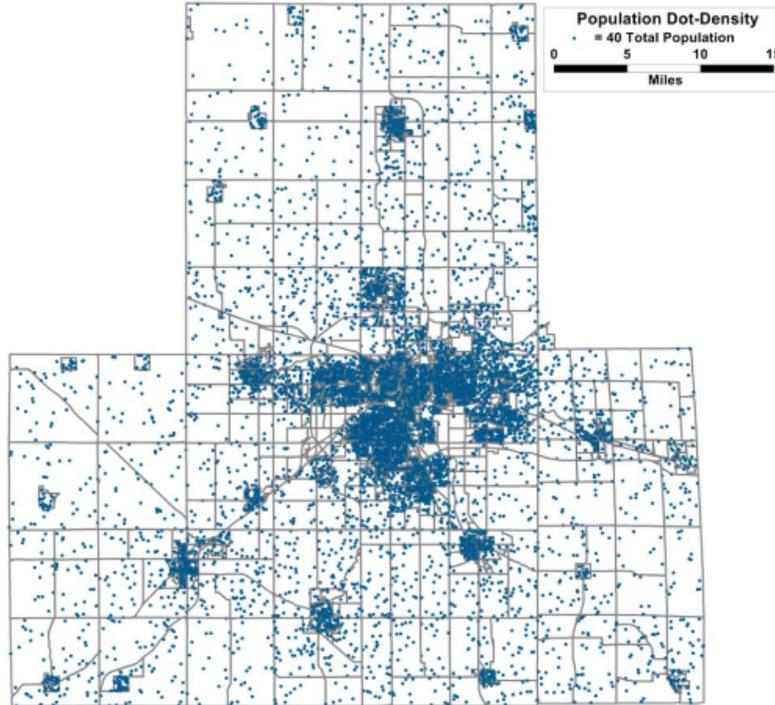
Fig. 4 Regional Population Estimates

Year	Historical Census	Global Insight	2012 Woods & Poole	REMI	Projected Population
1990	433,414	433,899	433,414		
1995	443,395	444,030	443,395		
2000	448,355	448,569	448,735		
2005	455,315	455,335	462,743		
2010	464,036	462,604	464,076	464,036	464,036
2015		470,666	474,086	470,032	473,192
2020		477,938	485,260	476,850	482,656
2025		484,405	496,862	485,021	490,995
2030		490,055	508,383	491,545	498,257
2035		494,101	519,719	495,706	502,207
2040		498,147	531,273	497,953	504,465
2045		502,193	542,827	502,090	508,613

Source: Tri-County Regional Planning Commission (2014)

TCRPC developed the following population density map with the above data and traffic/movement analyses in 2014. It depicts population centers across the three counties, providing a visual for where our urban centers are located.

Fig. 5 Population Density Map



Regional Climate

The continental type climate of mid-Michigan means that the area typically experiences larger temperature ranges than in locations of similar latitude. Our mid-peninsula location away from the Great Lakes can impact or moderate temperatures. The area seldom experiences prolonged periods of either extreme cold in the winter or extreme heat and humidity during the summer. The average possible sunshine varies from about 28% during December and 70% during July. The average possible sunshine is an average 51% annually in mid-Michigan.

Mid-Michigan has moderately warm summers with an average of eleven days annually that reach or exceed 90°F. There have been occasions with temperatures exceeding 100°F, but this is a rare event in our tri-county region. The record for temperature maximum occurred in 1936 with a temperature of 106°F. Winter weather in the county can bring extreme cold, but the Great Lakes typically modify the coldest arctic air masses. This area averages eleven days annually when the minimum temperature reaches zero or below. There is an average of fifty-seven days annually when the temperature does not rise above the freezing mark (32°F).

The average number of heating degree days in January is approximately 1360 and approximately 450 on average in October. On average the month of July brings 200 cooling degree days to the area, while in May the number of cooling degree days is closer to thirty. The average date of the last freezing temperature in the area is May 11th and the average date of the first freezing temperature is October 3rd. On average mid-Michigan experiences 145 freeze-free growing days.

Michigan is located on the northeast fringes of the Midwest tornado belt and mid-Michigan has experienced occasional severe tornados or high winds. But the severe weather events are primarily warmer weather activity, in the form of afternoon showers and thundershowers. Thunderstorms will occur in the area an average of about 33 days during the spring, summer and early fall.

Fig.6 Regional Climate Data

Month	Avg. Max	Avg. Min	Mean	Rec. Max	Rec. Min
January	28.5°	13.0°	20.7°	60°	-23°
February	31.6°	13.7°	22.6°	62°	-30°
March	41.3°	22.6°	31.9°	77°	-15°
April	57.1°	34.5°	45.8°	88°	8°
May	69.7°	44.5°	57.1°	92°	23°
June	79.1°	54.1°	66.6°	100°	34°
July	83.2°	58.3°	70.7°	106°	41°
August	81.2°	56.8°	69.0°	100°	36°
September	73.2°	49.4°	61.3°	99°	27°
October	61.5°	39.8°	50.6°	87°	16°
November	46.2°	30.1°	38.1°	77°	-6°
December	33.5°	19.4°	26.4°	67°	-14°

All temperatures are in degrees Fahrenheit.

Month	Mean Liquid	Max Daily	Avg precipitation/day			Mean Snowfall	Max Monthly Amount	Max Daily Amount	Max Total Depth
			.10	.25	.50				
January	1.37	1.28	4	2	1	10.0	28.1	17.0	26
February	1.12	1.05	3	2	1	6.8	38.0	7.0	22
March	1.99	2.15	5	3	1	6.6	24.0	12	14
April	3.19	3.35	7	4	2	1.9	11.6	8.7	10
May	2.84	3.35	6	4	2	0	T	0	0
June	3.20	3.39	6	4	2	0	0	0	0
July	3.22	4.25	6	4	2	0	0	0	0

Month	Mean Liquid	Max Daily	Avg precipitation/day			Mean Snowfall	Max Monthly Amount	Max Daily Amount	Max Total Depth
			.10	.25	.50				
August	3.57	3.42	6	4	2	0	0	0	0
September	2.95	9.35	6	4	2	0	T	0	0
October	2.60	3.79	6	3	1	0.3	6.0	6.0	3
November	2.33	2.12	5	3	1	3.0	14.0	9.0	8
December	1.86	1.81	5	3	1	7.7	17.0	10.0	15

T = Trace.
Precipitation values given in inches

Environmental Protection Priorities

The U.S. Environmental Protection Agency has identified two National Priorities for contaminant clean up in this Plan region. Sites registered as National Priorities are eligible for long-term cleanup actions under the federal Superfund Program. These sites are scored in relation to their impact to public health and environment. For example, in Lansing Charter Township, Ingham County, Adams Plating Co. began doing chrome, nickel and copper electroplating in 1964. In 1989, it was placed on the National Priorities List of hazardous waste sites, making it eligible for cleanup under the EPA Superfund program. Waste disposal practices prior to 1980 led to contamination of surrounding soil and ground water. A Superfund cleanup in 1994 removed contaminated soil, placed vertical barriers to prevent recontamination of the clean fill dirt, restricted well use and installed monitoring wells to check whether the soil removal was helping reduce ground water pollution. Then the site entered a long-term maintenance phase, and MDEQ assumed oversight from EPA. Fire destroyed the building in December 2010 and a plan to monitor the site is in place.

Immediately to the south of our region, with potential marginal impacts on southern Ingham county communities of Stockbridge, Leslie, and Onondaga Township was an Enbridge Oil Pipeline leak. In the fall of 2014, Enbridge completed its remaining obligations to the 2013 EPA Order that directed specific sub-oil and sediment removal criteria pursuant to EPA authority. The final portion of this work, the sediment removal by dredging at Morrow Lake and the Delta, was completed in October 2014. Based on successful completion of the other work requirements of the 2013 Order, EPA determined that Enbridge has completed all of the prescribed actions, and has now transitioned the site to the Michigan Department of Environmental Quality.

The State of Michigan Department of Environmental quality has also identified sites potentially contaminated with hazardous materials throughout this region, particularly from Leaking Underground Storage Tanks (LUST) sites. This detailed information on those sites and their status is at http://www.deq.state.mi.us/sid-web/LUST_Search.aspx. The maps on the following pages depict the leaking underground storage tanks within the tri-county region at the northwest corner of Ingham County, the northeast corner of Eaton County and south east corner of Clinton County. All other LUST maps of the counties are available at www.mitcrpc.org.

Fig.7 LUST Map- NW Ingham Co.

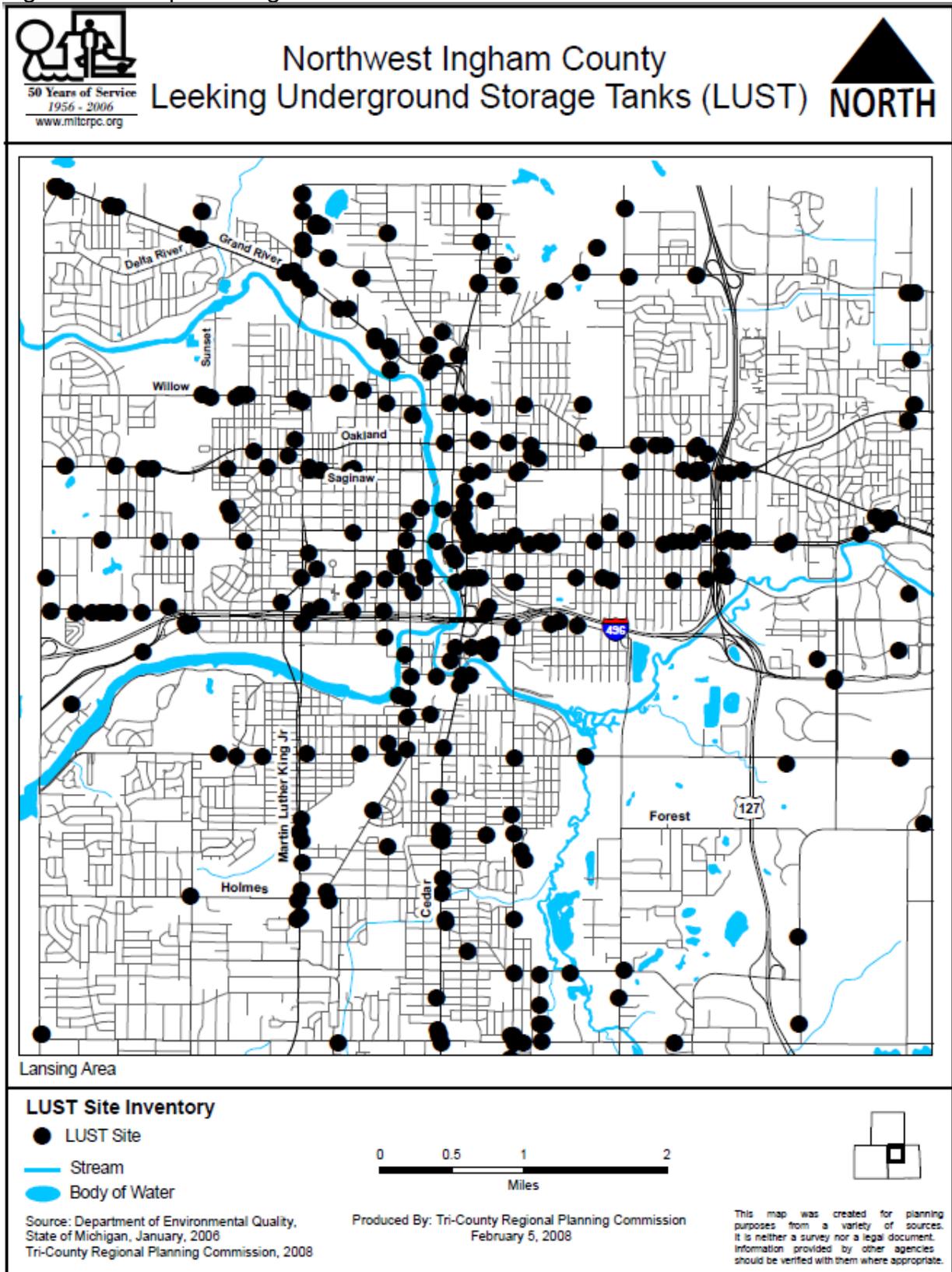


Fig. 8 LUST Map- NE Eaton Co.

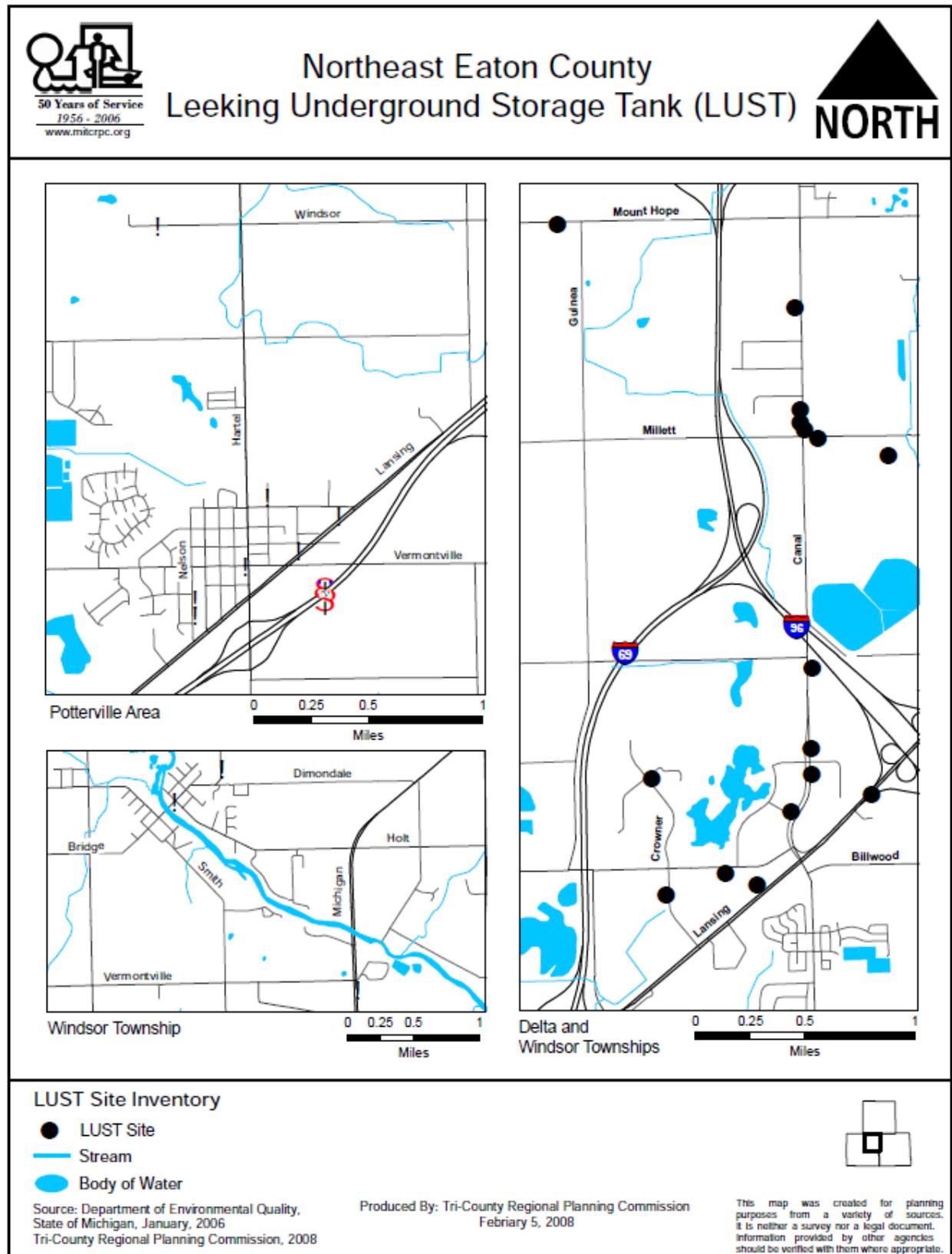


Fig. 9 LUST Map- SE Clinton Co.

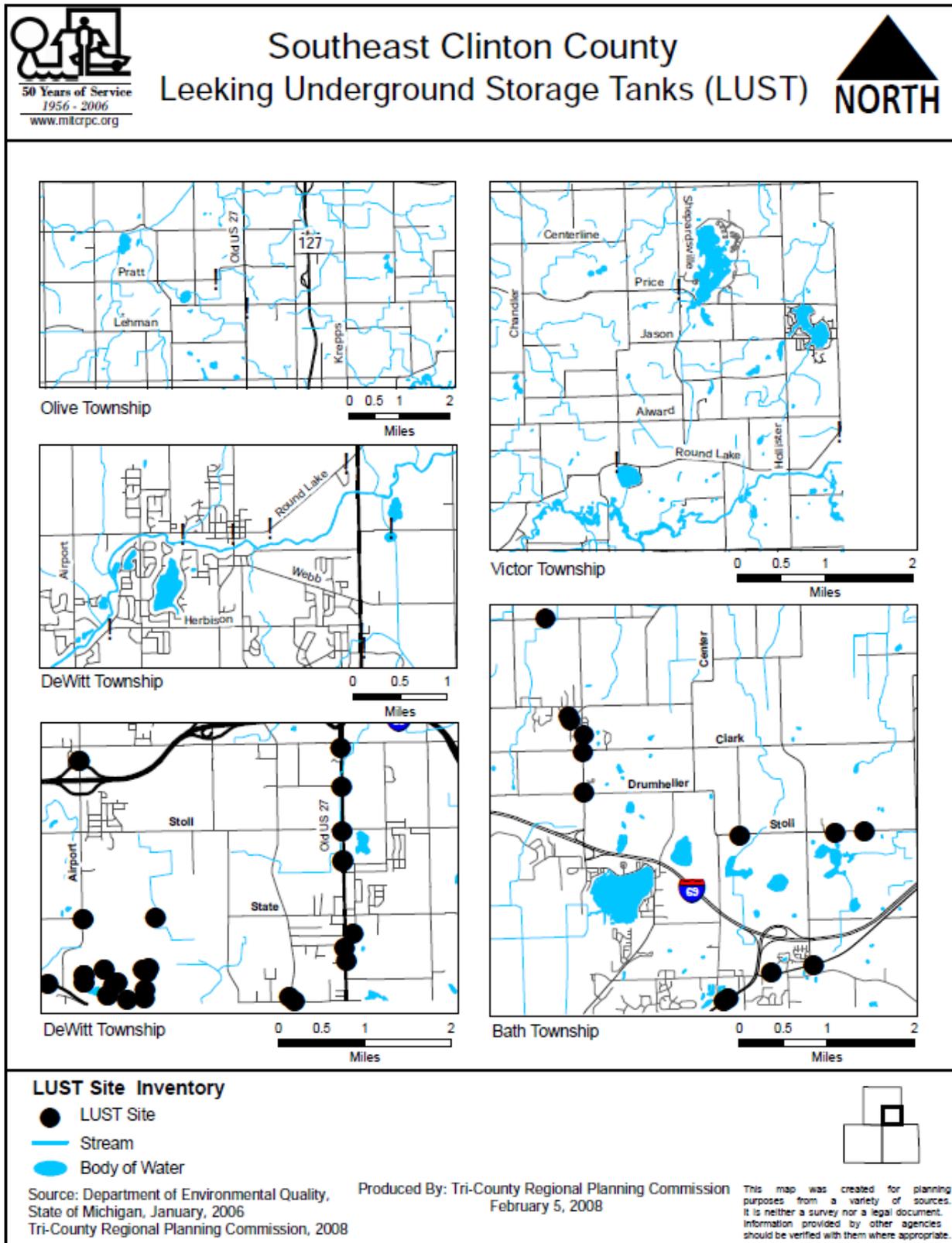


Fig. 12 Area Hospital Locations



The counties provide emergency operations services on a countywide basis through their Emergency Operations Centers (EOCs). The EOC offices are co-located with 911 Dispatch, which also provides countywide 911 dispatch services.

Municipal level public works services of sewer and water exist at some level in incorporated cities region-wide. Municipalities with services include the larger communities of each county such as City of Charlotte, City of Eaton Rapids, City of Grand Ledge, and Delta Charter Township in Eaton County; the cities of East Lansing, Mason, Williamston, Meridian Township, Lansing Township, and Delhi Township in Ingham County; and the cities of St. Johns and DeWitt, and Watertown Townships in Clinton County. A variety of communities in the urbanized core area of the region has 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 region's smaller villages and towns such as Sunfield, Olivet, and Vermontville in Eaton County; Webberville, Stockbridge, and Dansville in Ingham County; Ovid, Fowlerville, and Bath in Clinton County.

This region still maintains a good number of residents and businesses outside of public water and sewer service areas. There are rural individual structures and small residential and commercial developments throughout the region still only served by groundwater wells and individual or small shared septic systems.

Key Community Facilities/Organizations: Utility Services

Consumers Energy Company, the Lansing Board of Water and Light, and Detroit Edison provide electrical power and natural gas to residents and businesses in this region. The City of Eaton Rapids also has an electric generating utility. Natural Gas is

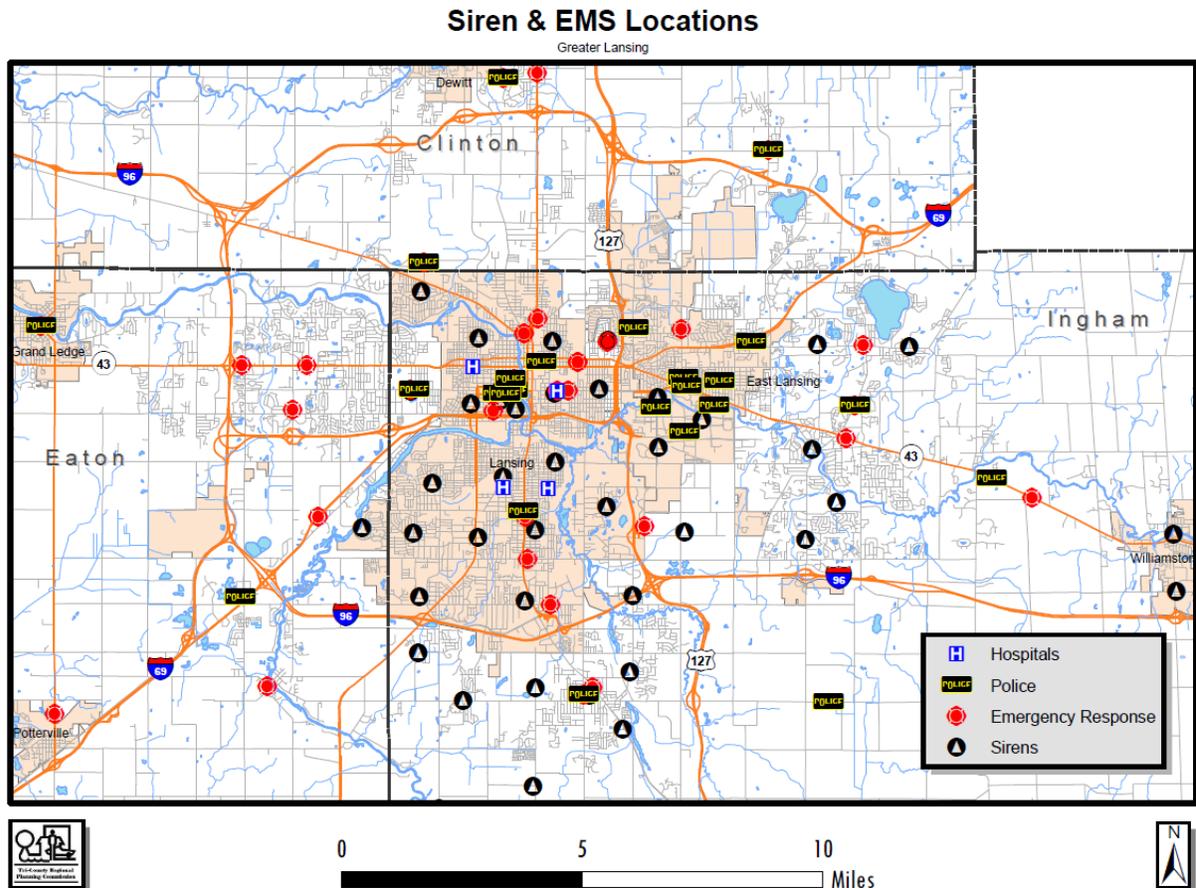
the most common form of heating fuel type for households and the communities in the urbanized central area of our region are mostly served by traditional gas utility lines. Bottled, tank or LP gas provides a large portion of the heat fuel to homes and businesses in the regions more rural areas. Some 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 such that use corn or wood pellets.

Emergency/Crisis Services

There are a number of organizations that provide emergency and/or crisis services in the mid-Michigan area. Primary amongst them is Central Michigan Chapter of the American Red Cross. The American Red Cross has created this Disaster and Safety Library in the event of a disaster or emergency. Here you will find fact sheets, preparedness checklists, recovery guides and other helpful information to keep you informed and safe. More information about the Red Cross and its emergency plan assistance for this region is available at <http://www.redcross.org/prepare/disaster-safety-library>. There are a variety of other organizations and entities listed hear: <http://theear.org/newear/>.

The region is home to many emergency warning sirens. They are depicted below, along with hospital locations, police stations and emergency response facilities.

Fig. 13 Area Siren and ER Locations



The regional 211 Service now serves all areas of our region and offers an online and telephone access line for assistance. <http://www.referweb.net/uwjc/>

Higher Learning Institutions

Michigan State University is the largest four-year institution located in the region. Olivet College is located in southern Eaton County. Great Lakes Christian College is located in Delta Township. Lansing Community College, a two-year institution, has a main campus in Lansing city and a large branch campus in Delta Charter Township. Western Michigan and Central Michigan Universities have small branches within the region, and Davenport University as well as Cooley Law School has campuses located in downtown Lansing.

Michigan State University (MSU) is located in the City of East Lansing and has an enrollment of more than 40,000 students on the local campus. Additionally, MSU employs approximately 10,000 faculty and staff. MSU's campus occupies a large portion of the City of East Lansing's land area and MSU provides many benefits to the community, but it also presents new challenges with respect to new potential threats to public safety and welfare. MSU operates its own infrastructure system of water, sewer, and power. It is also implementing its own master land use plan with transportation and utility developments.

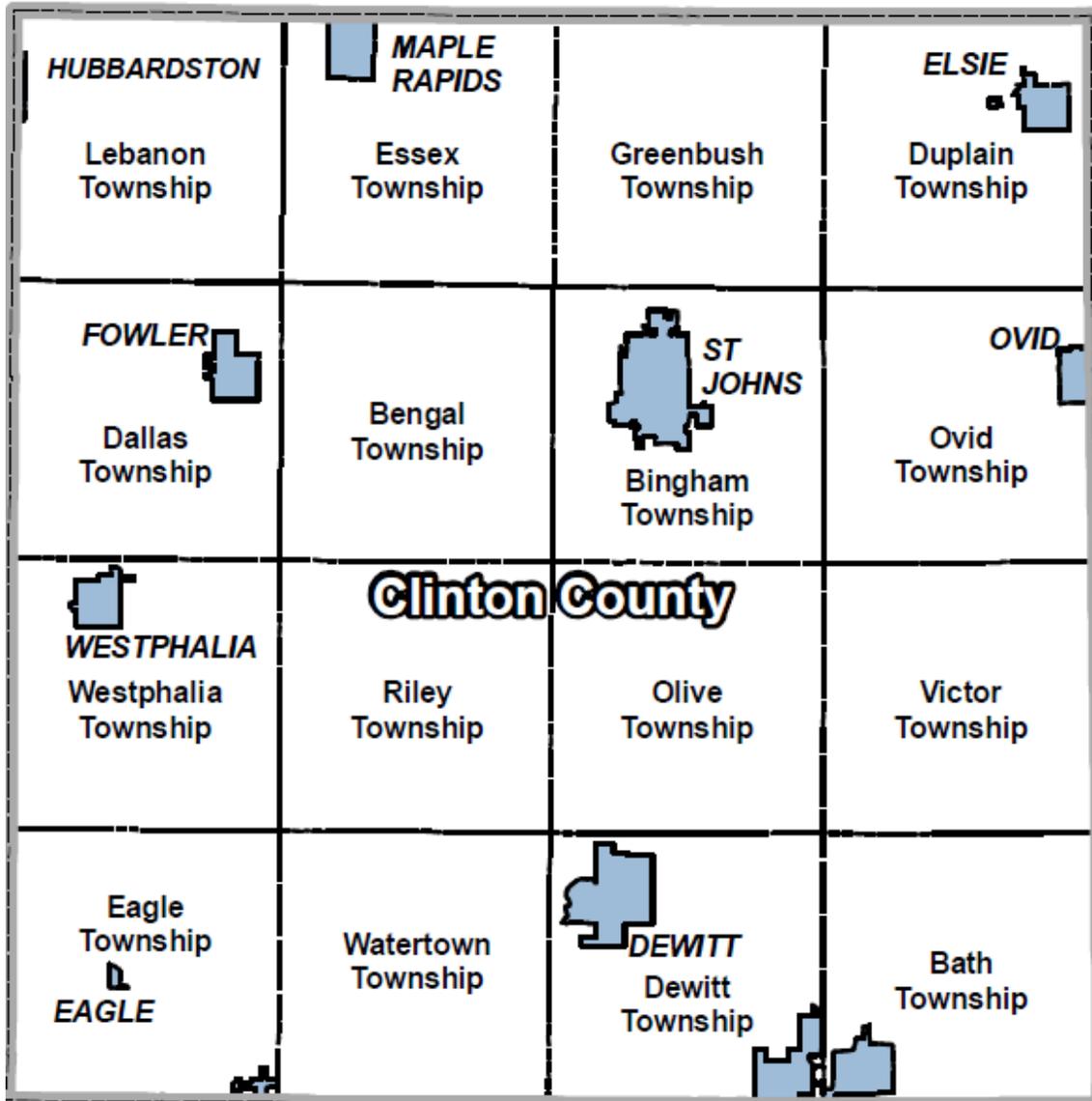
Major Events & Activities

Major events and activities occur frequently throughout mid-Michigan. They include a regular schedule of festivals and fairs in communities region-wide. Please see the regional convention and visitor's website for a current and comprehensive list of events at <http://www.lansing.org/events/> . The East Lansing and MSU area, as well as city of Charlotte, Olivet College and Lansing Community College maintain large entertainment venues that host concerts and performances throughout the year. Each County hosts a County Fairgrounds that host events each year. The largest conference and event facilities are located in the city of Lansing and in East Lansing. There are a number of hotels and banquet conference centers located in Delta Township and East Lansing/Meridian Township areas. There are many smaller venues throughout the three counties, mostly in or near the larger cities and adjacent to major roadways.

The region has a number of large sports event venues including fields and field houses for football, baseball, soccer, lacrosse, basketball, and hockey. There are large ice arenas in Delta Township and East Lansing that host events drawing thousands from around and outside of the region. Michigan State University (MSU) sporting events such as football games draw crowds from 1,000-70,000 persons for games throughout the fall. New baseball fields at MSU and a new special needs sport complex in DeWitt draw thousands of people a season. For a complete schedule of entertainment events, including concerts, performances and sporting events visit Michigan State University's website at www.msu.edu.

CLINTON COUNTY PROFILE

Fig. 14 Clinton Co. Map



Clinton County is the northern most County of the Tri-County Region. It consists of 14 general law townships, 2 charter townships, 5 villages and 2 cities as presented in the following map. The charter townships and cities do not operate under the county planning commission. Clinton County is five hundred seventy-one (571) square miles in size and is centrally located in the lower peninsula of the State of Michigan. The County is bordered by Shiawassee County to the east, Gratiot County to the north, Ionia County to the west, and Eaton and Ingham Counties to the south. The City of Lansing, the State's capital is located immediately south of Clinton County. Interstate 69 and Interstate 96 pass through the southern portion of the County and US-127 bisects the county. The major east-west connector is State Highway 21, which connects Flint to

Grand Rapids. Considering its close proximity to the urbanized core city of Lansing, the County remains predominantly rural. The density of development is located in the southern tier of the County with concentrations in the County seat of St. Johns.

Population

Clinton County's current population is 72,922. Growth in Clinton County's resident population accelerated during the 1960's and 1970's with the construction and opening of regional highways. (I-496, I-96, I-69 and US-127). These trends continued during the 1970s and '80s and, by the 1990 Census, almost 58,000 people were living in the county. Though slowing somewhat through the decade of the 1990s, the county's rate of growth exceeds that of neighboring jurisdictions.

Clinton County's population is expected to approach 75,357 by 2020, a 9% increase from 69,360 residents in 2005. The combination of further regional in-migration and natural increase as county residents form new households and have children will result in continued growth to the year 2020 and beyond.

Fig. 15 Clinton Co. Population

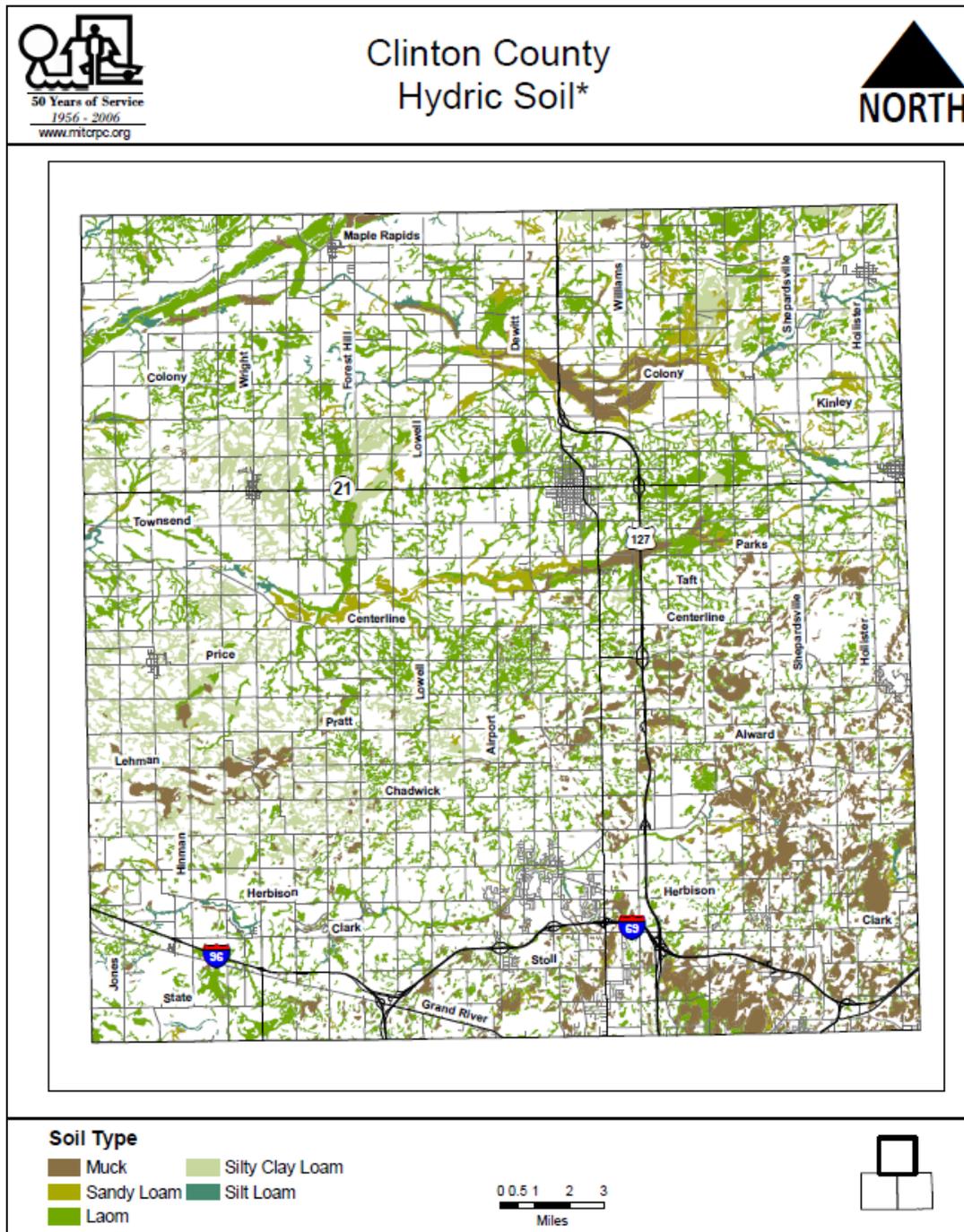
	POPULATION BY FORECAST YEAR								
Clinton County	2005	2010	2015	2020	2025	2030	2035	2040	2045
MCD									
Bath Twp	10,484	10,513	10,593	10,734	10,930	11,135	11,311	11,495	11,682
Bengal Twp	1,241	1,252	1,279	1,323	1,380	1,434	1,474	1,512	1,548
Bingham Twp	2,391	2,413	2,467	2,556	2,670	2,777	2,857	2,999	3,155
Dallas Twp	1,259	1,270	1,299	1,346	1,407	1,464	1,506	1,546	1,585
Dewitt	4,396	4,412	4,452	4,518	4,602	4,681	4,740	4,796	4,849
Dewitt Twp	12,947	14,001	14,817	15,720	16,556	17,053	17,186	17,284	17,366
Duplain Twp	1,321	1,333	1,362	1,411	1,474	1,532	1,576	1,618	1,657
Eagle	130	141	149	158	166	171	173	174	174
Eagle Twp	2,220	2,237	2,276	2,342	2,425	2,504	2,563	2,618	2,672
East Lansing	1,020	1,022	1,028	1,036	1,045	1,054	1,059	1,063	1,066
Elsie	1,002	1,009	1,024	1,050	1,083	1,114	1,137	1,159	1,180
Essex Twp	1,227	1,238	1,266	1,313	1,372	1,428	1,470	1,509	1,547
Fowler	1,082	1,086	1,096	1,113	1,135	1,155	1,171	1,185	1,199
Grand Ledge	5	5	5	6	6	6	6	6	6
Greenbush Twp	2,126	2,145	2,192	2,269	2,368	2,461	2,530	2,596	2,659
Lebanon Twp	792	800	818	848	886	922	949	975	999
Maple Rapids	614	619	631	651	677	700	718	735	751
Olive Twp	2,323	2,344	2,394	2,478	2,584	2,685	2,820	2,983	3,166
Ovid	1,416	1,422	1,437	1,462	1,494	1,524	1,547	1,568	1,588
Ovid Twp	2,024	2,042	2,088	2,163	2,259	2,350	2,417	2,481	2,542
Riley Twp	1,797	1,813	1,853	1,920	2,004	2,084	2,144	2,200	2,254
St Johns	7,574	7,595	7,648	7,735	7,846	7,951	8,029	8,103	8,174
Victor Twp	3,241	3,262	3,314	3,399	3,508	3,610	3,686	3,758	3,828
Watertown Twp	4,460	4,823	5,104	5,415	5,702	5,874	5,920	5,953	5,981
Westphalia	835	839	848	863	882	899	913	925	937
Westphalia Twp	1,436	1,449	1,480	1,531	1,597	1,659	1,705	1,749	1,790
Total Clinton County	69,360	71,084	72,922	75,357	78,058	80,229	81,604	82,979	84,354
% Change vs 2005		2%	5%	9%	13%	16%	18%	20%	22%

Source: Tri-County Regional Planning Commission (2014)

Soils

Clinton County has been an agricultural community since its settlement in the early 1800's. Clinton County's rich agricultural soils range from loam types to muck. In the map below, created by the Tri-County Regional Planning Commission from Natural Resource Conservation Service data, the majority of the county is covered by loam-type soils. Areas associated with water features provide a more muck-based soil.

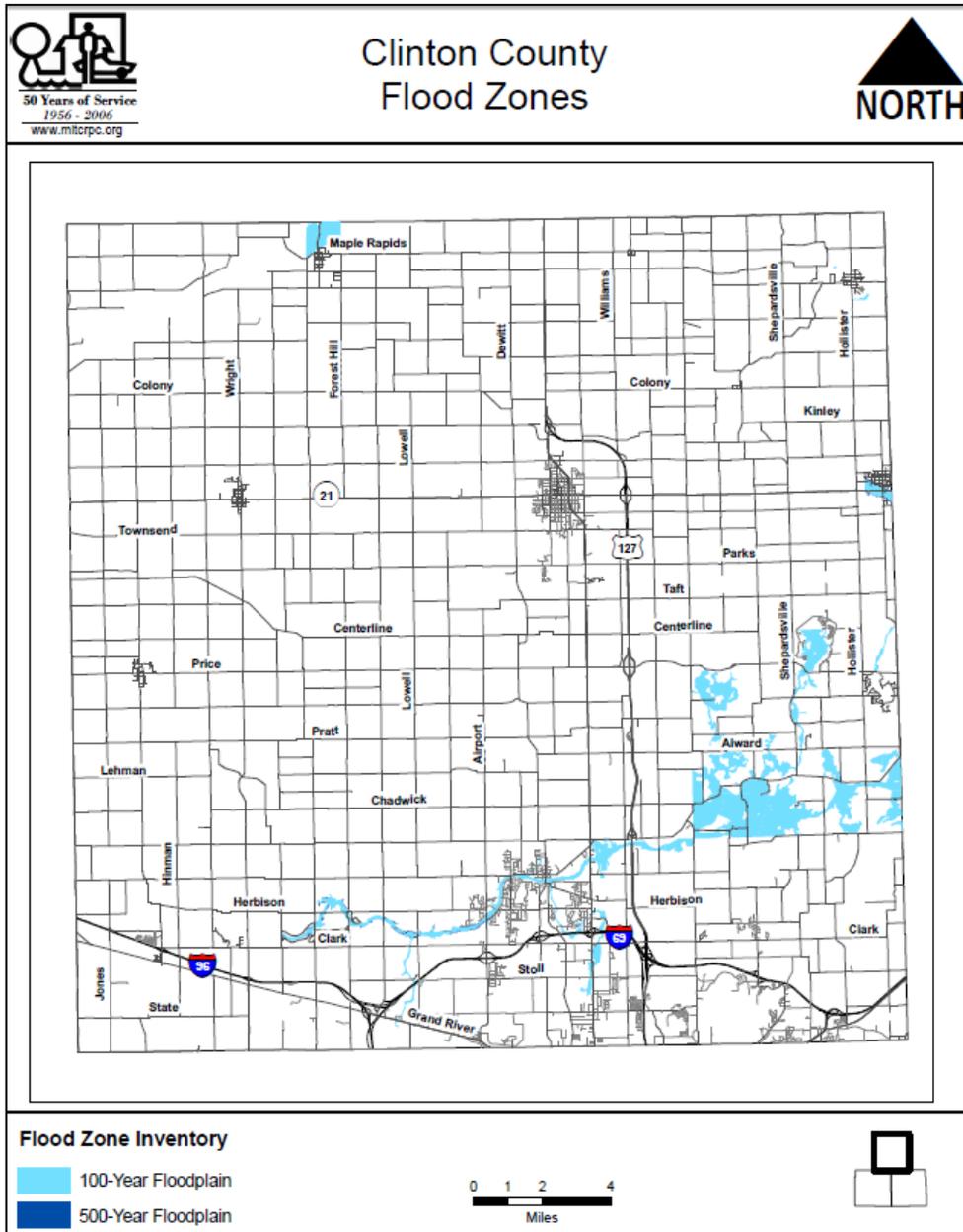
Fig. 16 Clinton Co. Soils



Water Features

Significant water features, including lakes and rivers in Clinton County include: Lake Ovid, Park Lake, Round Lake, Looking Glass River, Maple River, and Muskrat Lake. The map below, created by the Tri-County Regional Planning Commission using FEMA Flood Insurance Rate maps, depicts the flood zones across Clinton County. Significant areas include the Maple River area along the northern border of the county, and the Lake Ovid area on the eastern edge of the county. The Looking Glass River, which runs along the southern tier of the county, is also an area of flood concern.

Fig. 17 Clinton Co. Flood Zones



Existing and Future Land Use

Clinton County land use categories were determined through analysis and revision of existing land use maps and field inspections. In an effort to simplify analysis and allocation of future land use, several of the existing land use categories were combined into more generalized categories. These generalized categories, along with a brief description and examples, are provided below.

Clinton County's land use statistics have changed significantly since the previous inventory in 1978. According to the 1999 land use statistics, over ten percent (10%) of the County is single family residential. This is an increase from 3.14 percent in 1978. This increase comes at the expense to agricultural land whose land share dropped from seventy-four percent (74%) in 1978 to sixty-six percent (66%) in 1999, almost 29,000 acres. In the Future Land Use Map, created by TCRPC, Clinton County is planning for increased residential growth near city and village centers.

Fig. 18 Clinton Co Land Use

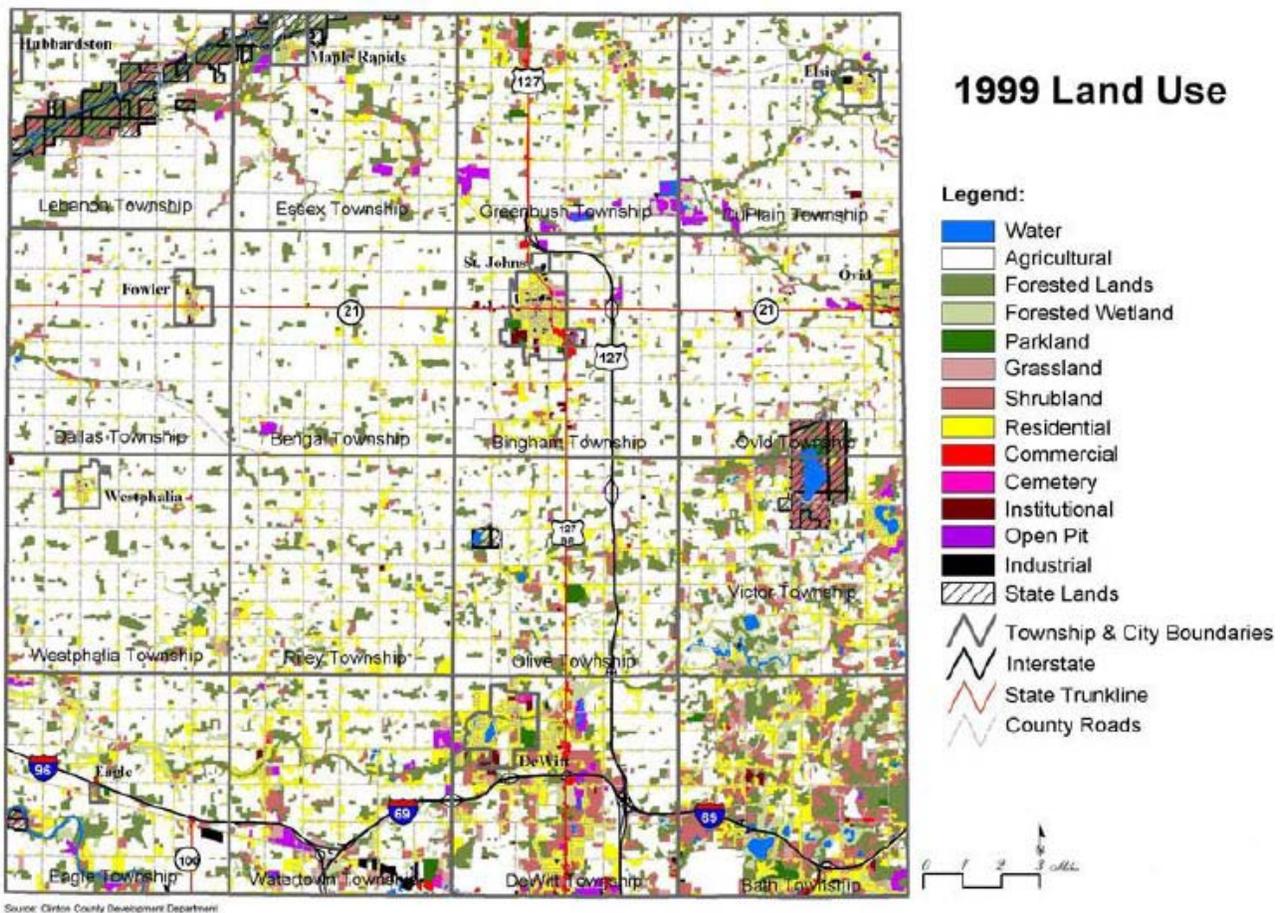
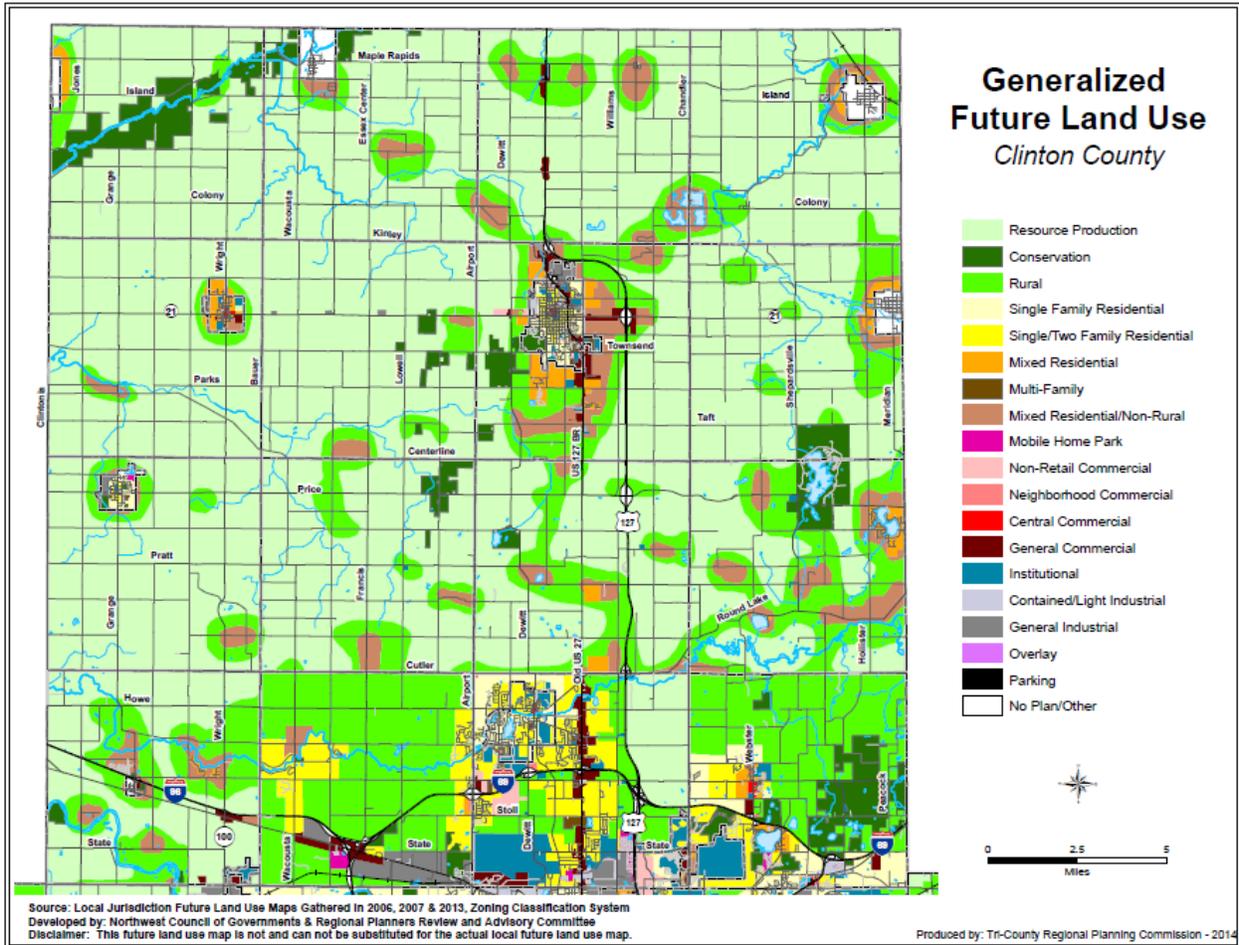


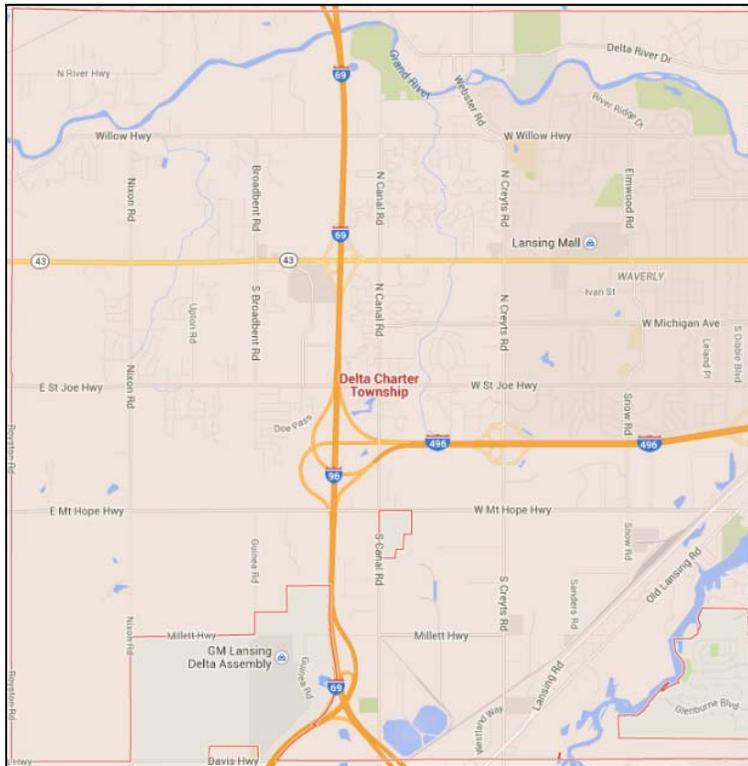
Fig. 19 Clinton Co Future Land Use



DELTA CHARTER TOWNSHIP PROFILE

Delta Charter Township is located in the northeastern corner of Eaton County, just west of the region's core City of Lansing. The Township's north and eastern borders are shared with the counties of Clinton and Ingham, respectively. To the south and west of Delta Township are the townships of Windsor and Oneida. The following map depicts Delta Charter Township.

Fig. 20 Delta Township Map



Source: Tri-County Regional Planning Commission (2013)

Delta Township is a Charter Township with a Supervisor, Clerk, Treasurer and four Trustees. The Township Hall is located on West Saginaw Highway (M-43) just east of the I-96/Saginaw Highway interchange. As a Charter Township, Delta Township has basic powers granted to general law townships by state statute as well as the power to levy more millage (up to 5 mills or 10 mills with the electorate's approval) and protect itself from annexation. The Township employs a full time manager, assessor, fire chief and other necessary personnel. Townships are mandated to administer assessments, hold elections, and collect taxes. They are also responsible for financial administration, including budgets, accounting, investments and deposits. In addition, townships may enact and enforce ordinances, which include zoning ordinances.

Population

According to the 2010 Census, Delta Township's population was 32,408. According to the Tri-County Regional Planning Commission, the Township's population in 2015 is estimated at 35,390 residents. The table below, taken from Delta Charter Township, depicts Delta's population growth in comparison to neighboring communities. It predicts a 25% growth rate between 2000 and 2025, compared to lesser growth rates nearby.

Fig. 21 Delta Township Population

POPULATION GROWTH ESTIMATES							
	2000	2005	2010	2015	2020	2025	Growth
Grand Ledge	7,804	7,956	8,124	8,420	8,719	8,965	15%
Delhi Township	22,570	24,678	25,250	25,732	26,462	27,278	21%
Delta Township	29,682	31,835	32,408	35,390	36,861	36,971	25%
Meridian Township	39,119	40,964	41,875	43,079	44,850	46,805	20%

Current and Future Land Use

The township has an area of approximately 23,096 acres. The majority of the central and northern areas are residential and commercial. The western area of the township is mainly agricultural, while the southern portions are typically industrial. In Delta Township's Future Land Use map, below, an urban service boundary is depicted and much of the northwest portion of the township is planned for residential.

Fig. 22 Delta Township Land Use Map

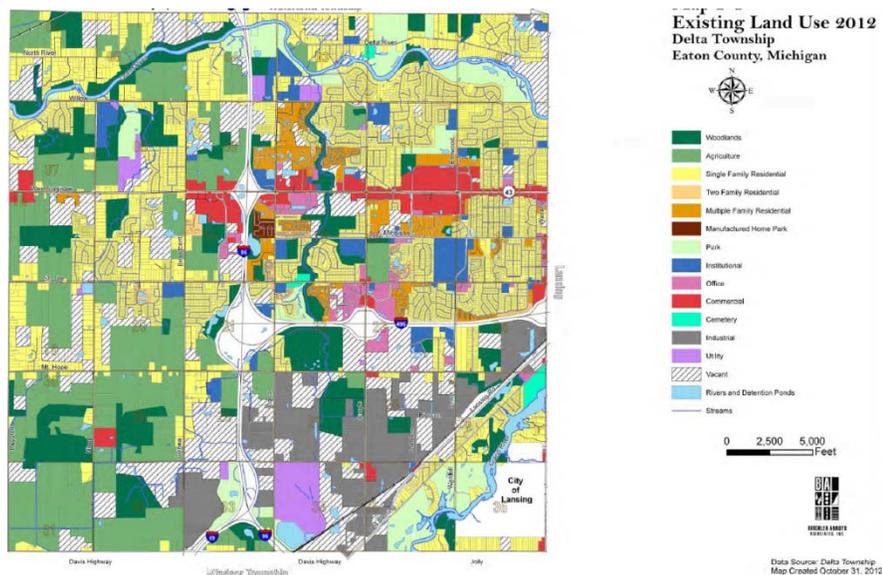
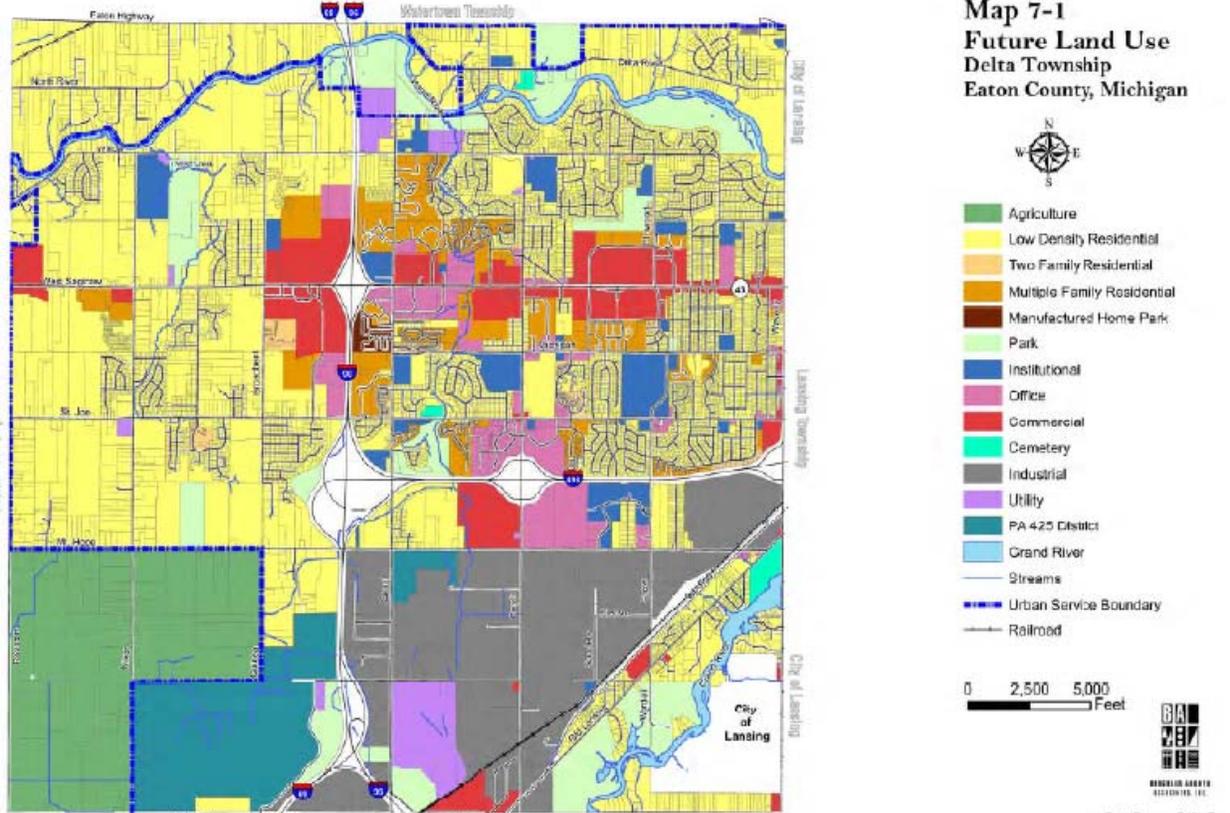


Fig. 23 Delta Township Future Land Use



Roads The transportation network within the Township can be divided into four classifications: freeways, arterial, collector and local streets. These classifications are based on the service function of the street and its relationship to other streets in the Township. In total, the transportation network within the Township occupies more than 2,500 acres and consists of more than 175 miles of roads. Interstates

Delta Township Transportation

Interstate highways I-69 and I-96 and the urban beltway, I-496 are the principal highways within the Township. I-69 is a major north/south highway in southern Lower Michigan. It passes through the Township connecting it to the county seat, Charlotte and providing access to I-94 to the south and offers a connection to Flint (I-75) to the east. It is part of an international trade corridor connecting to the U.S.- Canada border. I-96 connects Delta Township with Grand Rapids on the west and Lansing then Detroit to the east. Within the Township, I-96 and I-69 occupy much of the same highway right-of-way. Interstate 96 merges with I-69 north of the Township where they continue south several miles as a single highway until they split just south of Delta Township. Interstate 96 continues east while I-69 continues southwest. A traffic count of 63,000 vehicles per day was recorded in 2003 for I-96 and I-69 just south of M-43. The I-96, I-69, and I-496 junctions is located in the southern portion of the Township, where I-496 penetrates

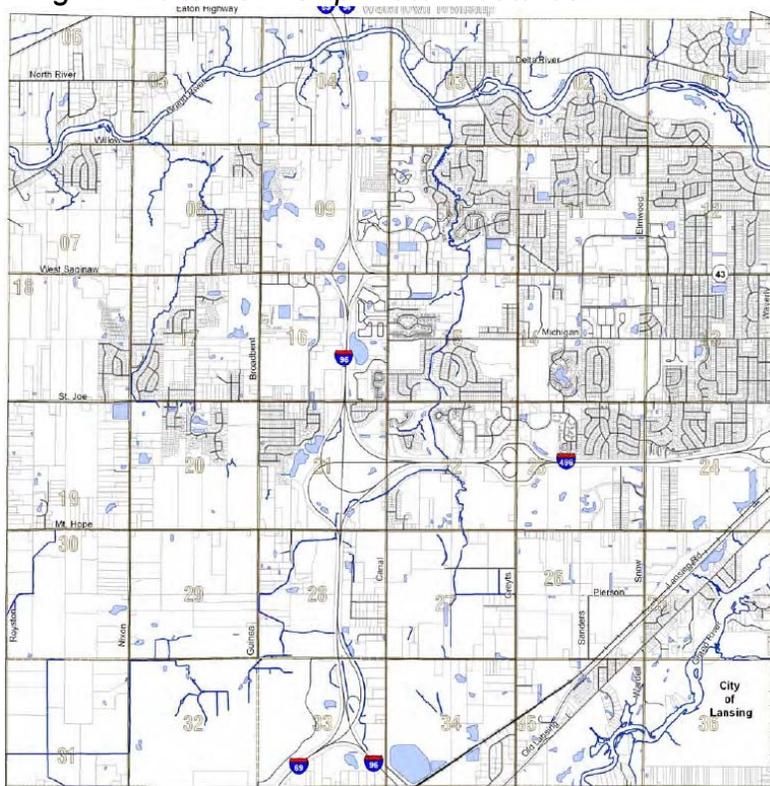
east into the City of Lansing.

Roads classified as “arterial roads” serve as the primary collectors of traffic generated on the collector and local streets in Delta Township. The collector streets in the Township generally follow a one-mile grid pattern that mirrors the township’s one-mile section lines that date back to the 19th century survey of the area. Some of the major roads in the Township include the following east-west routes: Michigan Avenue, M-43/Saginaw Highway, Mt. Hope Highway, Willow Highway and St. Joe Highway. In Delta Township, Creyts Road, Canal Road, Nixon Road, and Waverly Road, all north-south routes within the Township.

Water Resources

Located in the Grand River Watershed, the township has over 410 acres of ponds, rivers and streams within its boundaries. The principle water feature is the Grand River. The Grand River occupies approximately 348 acres and stretches more than 10 miles the Township. More of the Grand River is located in Delta Township than any other single governmental unit in the Tri-County area. Other water features in the Township include Miller Creek and Carrier Creek, both tributaries of the Grand River. These creeks, and the drains which feed them, flow from south to north draining much of the Township. The water features within the township are depicted in the map below, taken from Delta Township’s Master Plan.

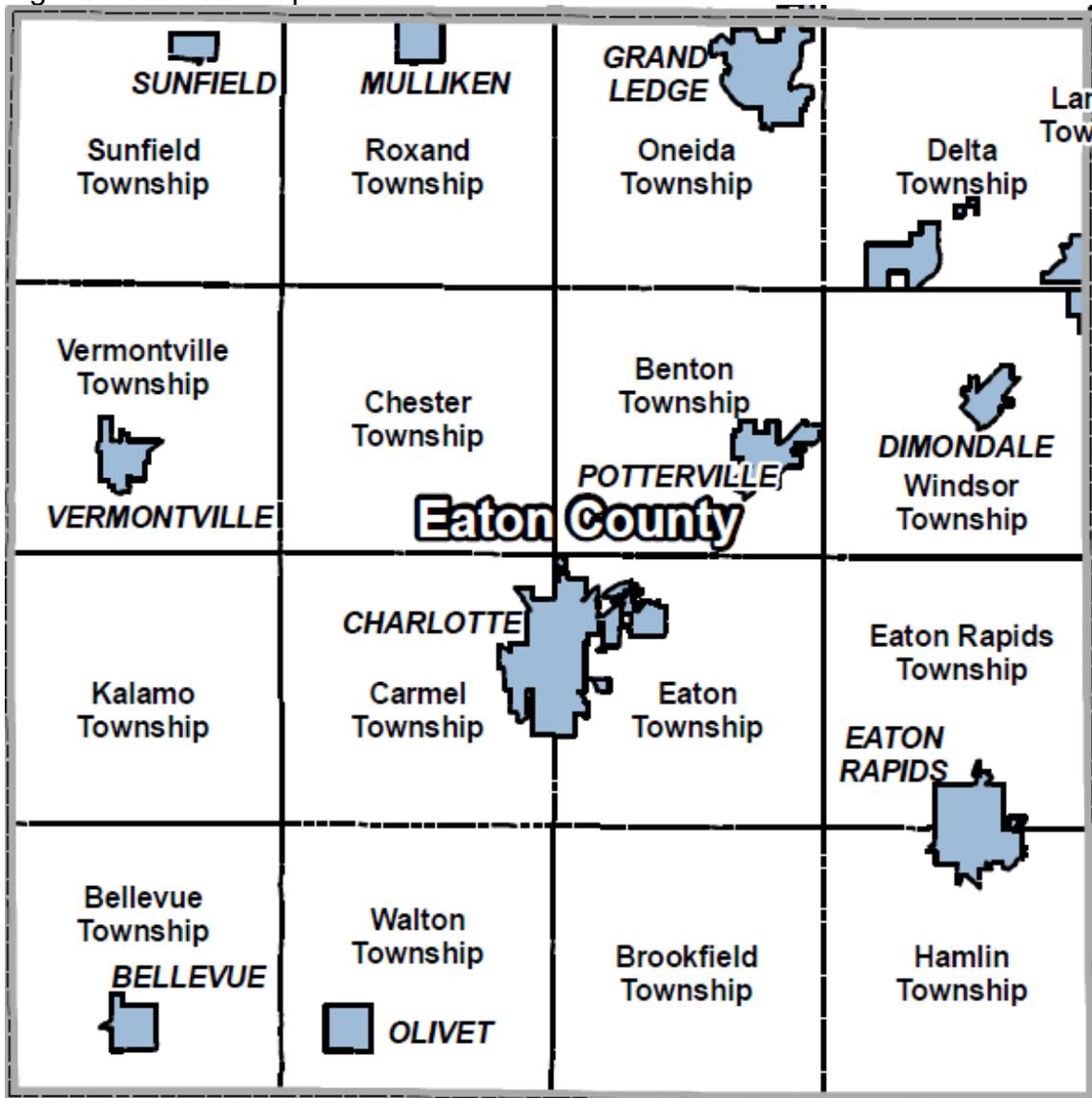
Fig. 24 Delta Township Water Features



EATON COUNTY PROFILE

Eaton County is located in south central Michigan and is part of the Tri-County region that also includes Ingham and Clinton Counties. The City of Lansing, the region's urban focal point, lies in the center of the three-counties. While the bulk of the urban area is within Ingham County, a portion of the City of Lansing extends into Eaton County at its northeastern corner.

Fig. 25 Eaton Co. Map



Source: Tri-County Regional Planning Commission (2013)

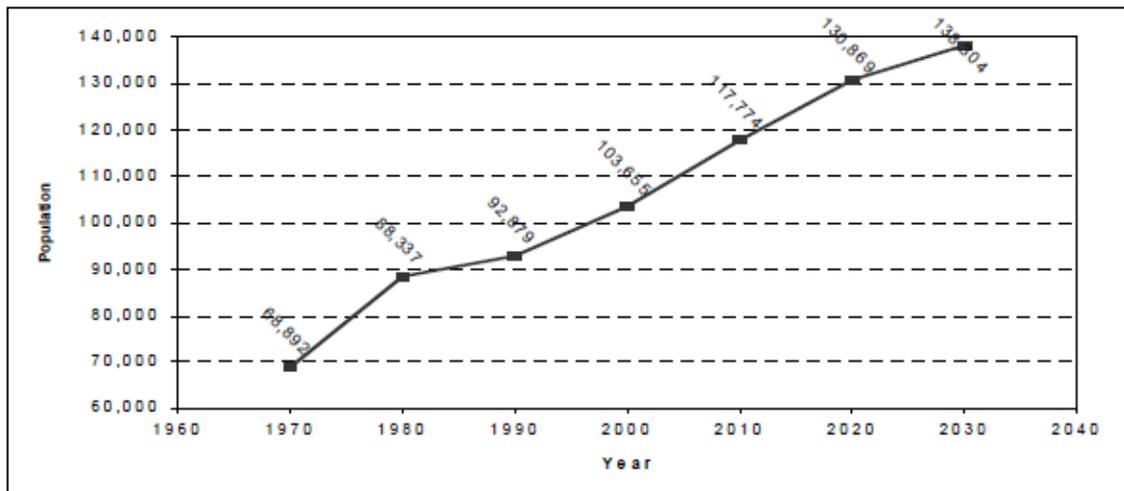
Eaton County is a mixture of rural farmlands, small industrial parks, traditional communities and suburban development. Within Eaton County's approximate 580 square miles are twenty-seven units of government including, six cities (including part of Lansing), five villages and sixteen townships. The higher development concentrations occur in the northeastern corner and along the eastern border of the County. The

County seat, Charlotte, is located just south of the county’s geographic center. The county includes two other larger incorporated cities- Grand Ledge and Eaton Rapids- and villages including Sunfield, Milliken, Vermontville, Potterville, Bellevue, and Olivet. Population concentrations are highest in Delta Charter Township and in the City of Charlotte. Large and heavy industrial development is concentrated in southern Delta Township, in Charlotte, and adjacent to Eaton Rapids. Eaton County has planning and zoning authority over all unincorporated areas. Delta Charter Township controls its own planning and zoning, as do most incorporated municipalities.

Population

According to Eaton County’s 2011 Master Plan, their 2000 Census population totaled 103,655 residents. As depicted in the table below, created by the Tri-County Regional Planning Commission, Eaton County’s population is projected to increase to 117,400 residents by 2020. This is an 11.7% increase.

Fig. 26 Eaton Co. Population Chart

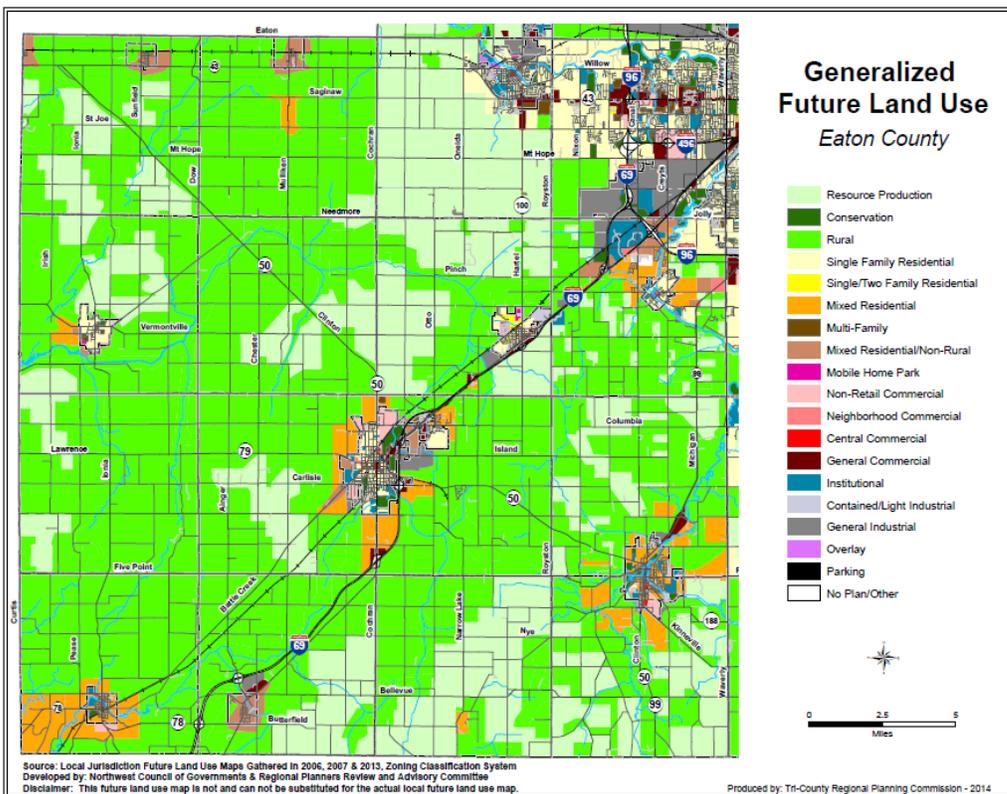
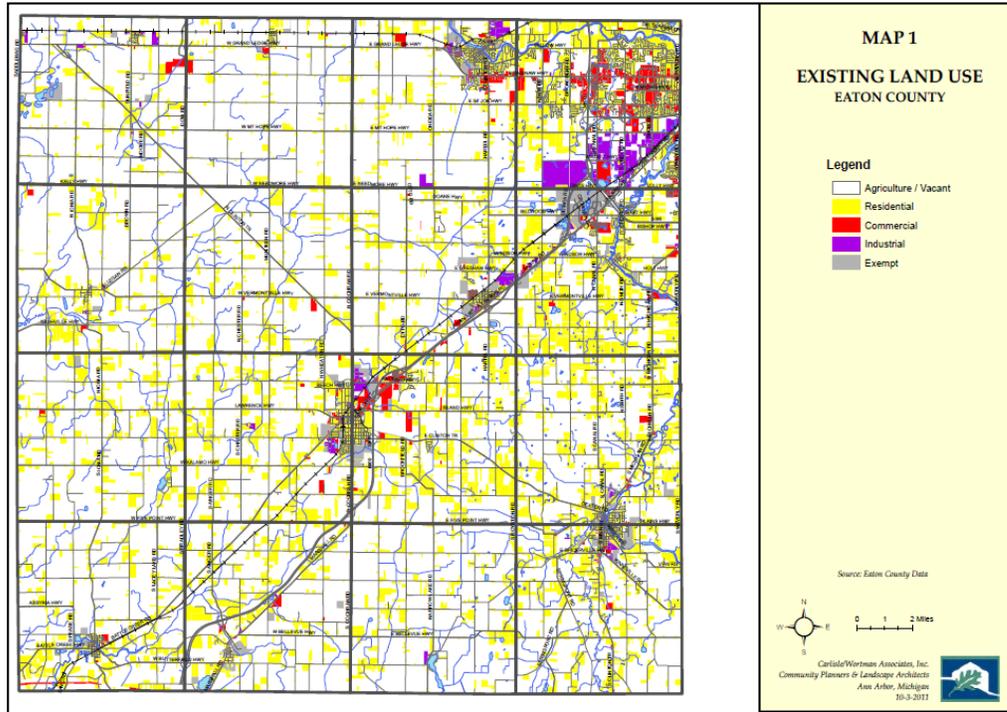


Transportation

Eaton County is reliant mostly on automobiles. The Interstate highway I-69 bisects the County southwest to northeast and is part of an international trade corridor connecting to the U.S-Canada border. It connects the county seat, Charlotte, to points south with access to I-94 and offers a connection to Flint (I-75) to the northeast. Michigan route M-43, a major east-west highway, crosses the top third of the county from west to east. I-69 and M-43 connect County residents to Lansing, East Lansing and points east via I-96 and the region’s urban beltway, I-496. Within the county, I-96 and I-69 occupy much of the same highway right-of-way. M-100 is a north-south collector serving the County’s northern tier and M-99 is another north-south route that connects the city of Lansing to Eaton Rapids and points south. M-50 slices across the County from west to east connecting Charlotte and Eaton Rapids with points east and south of the region.

There are active rail lines across the County with daily passenger service. There are no active passenger stops in Eaton County. Most rail lines carry very heavy freight traffic.

Fig. 27 & 28 Existing and Future Land Use Maps, Eaton Co.



Those lines run directly through population centers in Olivet, Charlotte, and Potterville and Grand Ledge and serve industrial developments in the county.

Current and Future Land Use

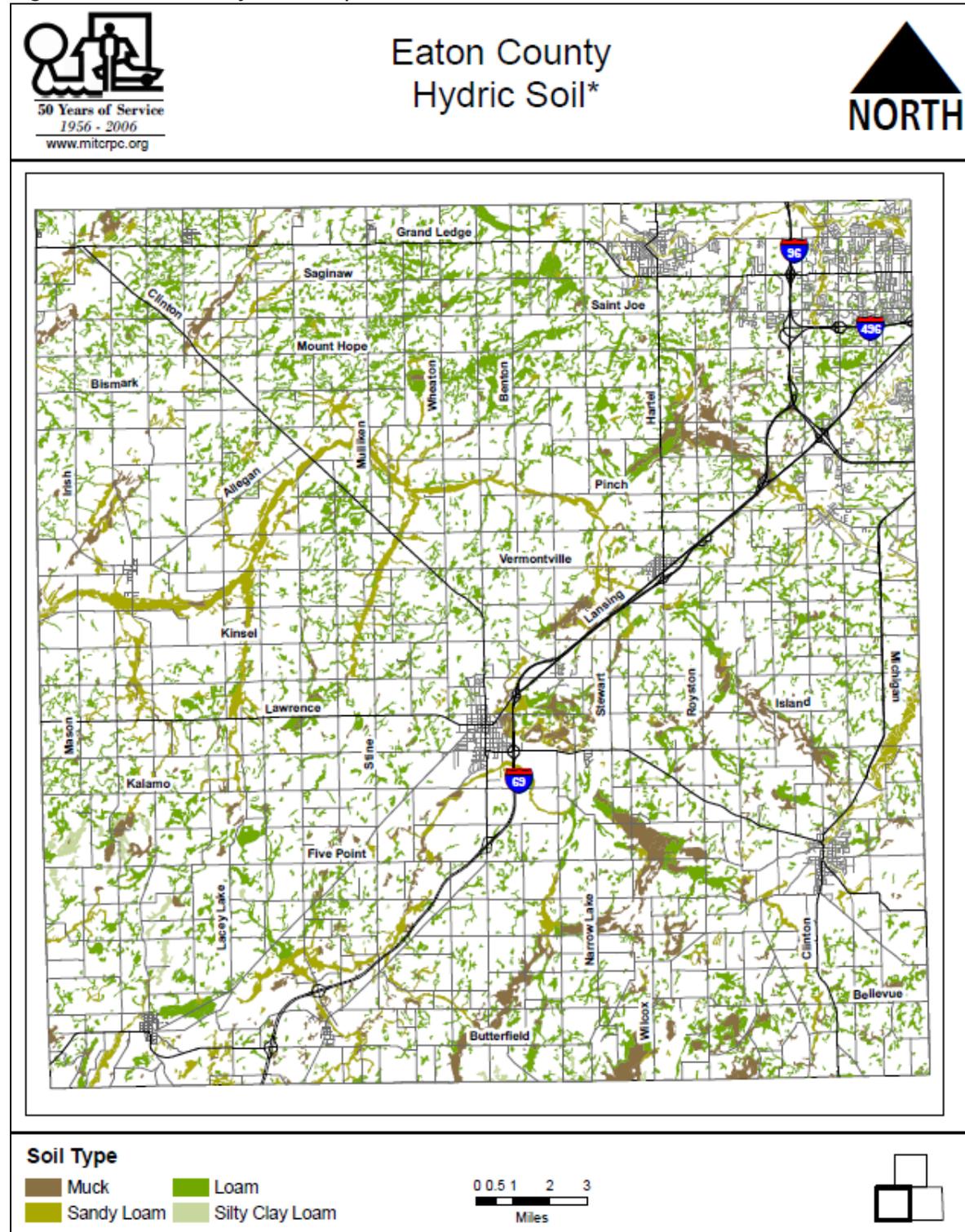
Agricultural property remains the predominant land use in Eaton County, encompassing approximately 72.8 percent of the County's entire area. The land use map developed for Eaton County's Master Plan demonstrates the rural nature of the county. Residential development currently occupies approximately 22.7% or 82,220 acres Eaton County's total land area. Residential uses are focused around the population centers and extend along the major transportation routes throughout the County. Whereas, commercial and industrial land uses continue to make up a relatively small portion of the County's land area, with the majority of commercial land uses found in the concentrated population centers such as Delta Township, Grand Ledge, Eaton Rapids and Charlotte. The Future Land Use Map, below, created by TCRPC depicts a growth of residential areas near town and city centers.

Eaton County Soils

Soils within the County are one of its most valuable natural resources. Agricultural land uses represent 62% (230,000 acres) of the County, and \$53,054,000 in revenues through agricultural products. While half of the County contains well and moderately drained soils (43% or 160,000 acres), 48% of the County contains somewhat poorly Soils

Eaton County soils include large areas of well drained farmland and some poorly drained mineral soils. Those areas lend themselves to sand and gravel mining and there are a number of small mining operations throughout the county. The map below identifies where these soil categories are located. Prime farmland and farmland of local importance makes up approximately 51% of the County, while prime farmland if drained makes up 43%. Areas that are not considered prime farmland are primarily in urban areas or directly adjacent to rivers and other waterways. The map below, created by TCRPC, shows the muck and loam soils along areas affiliated with water features.

Fig. 29 Eaton County Soil Map

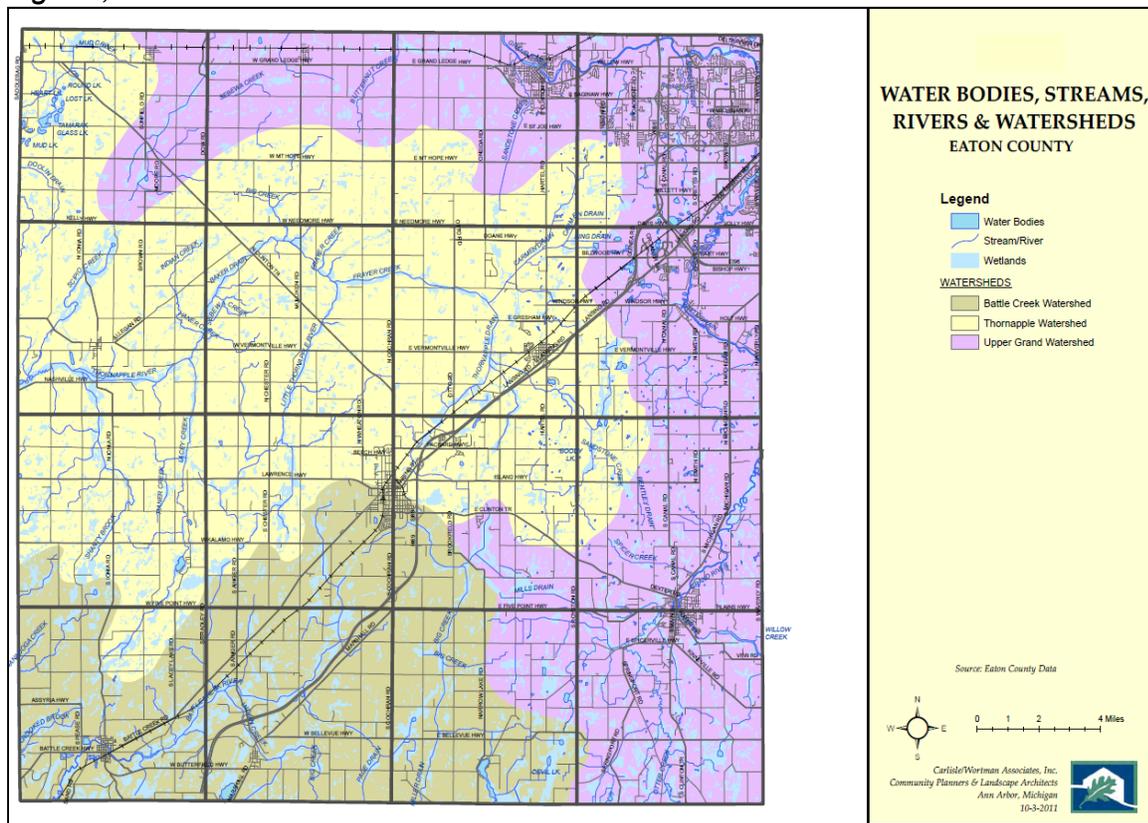


Water Resources

Eaton County is part of three watersheds. One is the Upper Grand River watershed, covering approximately 34% (or 128,000 acres) of the County. Another is the Thornapple River watershed, a sub-watershed of the Lower Grand River watershed. The Thornapple River watershed covers approximately 44% (or 163,000 acres) of Eaton County. The Battle Creek watershed, a sub-watershed of the Kalamazoo River watershed, covers approximately 21% (or 79,000 acres) of the County. These areas are depicted in the map below, taken from the 2011 County Master Plan.

Since 1999, the County has participated in several watershed-planning efforts, in conjunction with applying for and receiving a storm water permit from the state through the Phase II Stormwater National Pollutant Discharge Elimination System (NPDES). The Eaton County Drain Commissioner's office has spearheaded these efforts in the County. The goal of NPDES is twofold: 1) to protect water *quality* in the nation's surface waters, and 2) to control the amount of storm water that reaches streams and rivers (or storm water *quantity*).

Fig. 30, Eaton Co. Water Features

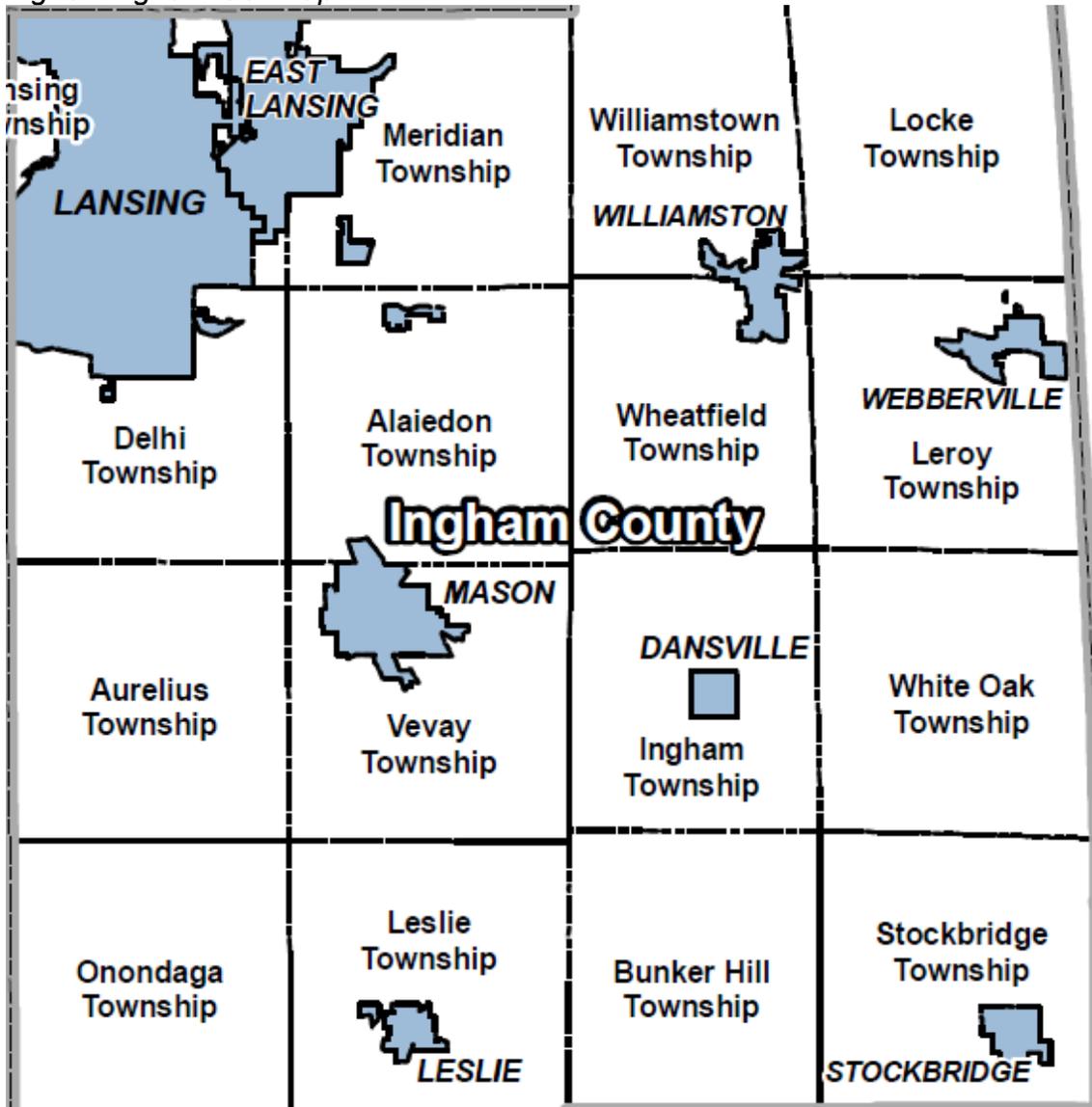


Watershed management plans were developed for the Upper Grand River, the Lower Grand River (which includes the Thornapple River sub-watershed), and the Battle Creek River. These plans describe the current condition of each watershed, and identify significant pollutants that need to be addressed in each watershed.

INGHAM COUNTY PROFILE

Ingham County is located in south central Michigan. As depicted in the Tri-County the map below, there are 13 general law townships, three charter townships, three villages and five cities in Ingham County. The City of Lansing has developed its separate Hazard Mitigation Plan and so that is not addressed in this plan. Besides the city of Lansing, Ingham County's largest communities include Meridian Township,

Fig. 31 Ingham Co. Map



Population

Population statistics indicate that Ingham County has a larger share of the region's population base. According to the 2010 U.S. Census, Ingham County's population was 280,895. It has steadily increased over the past several decades, and is projected to do so through 2045. By 2020, the population is projected to be 279,954 persons, According to TCRPC, by 2045, the population is projected to be 299,661, an increase of 8% since 2005.

Most of Ingham County's population is centered in the greater Lansing metropolitan area. Growth patterns tend to radiate primarily from the Lansing area outward, with growth decreasing as the distance from Lansing increases. There is a limited amount of commuting between the Lansing metropolitan area and outlying major cities such as Flint, Detroit, Ann Arbor, Jackson, Kalamazoo, Grand Rapids and Saginaw. Most Ingham County residents work within the Lansing metropolitan area.

Current and Future Land Use

The current and future land use maps, below, depict a pattern of residential and commercial land uses in urban core areas. A notable growth of residential near city and village centers is depicted in the future land use map.

Fig. 32 Ingham Co Land Use Cover

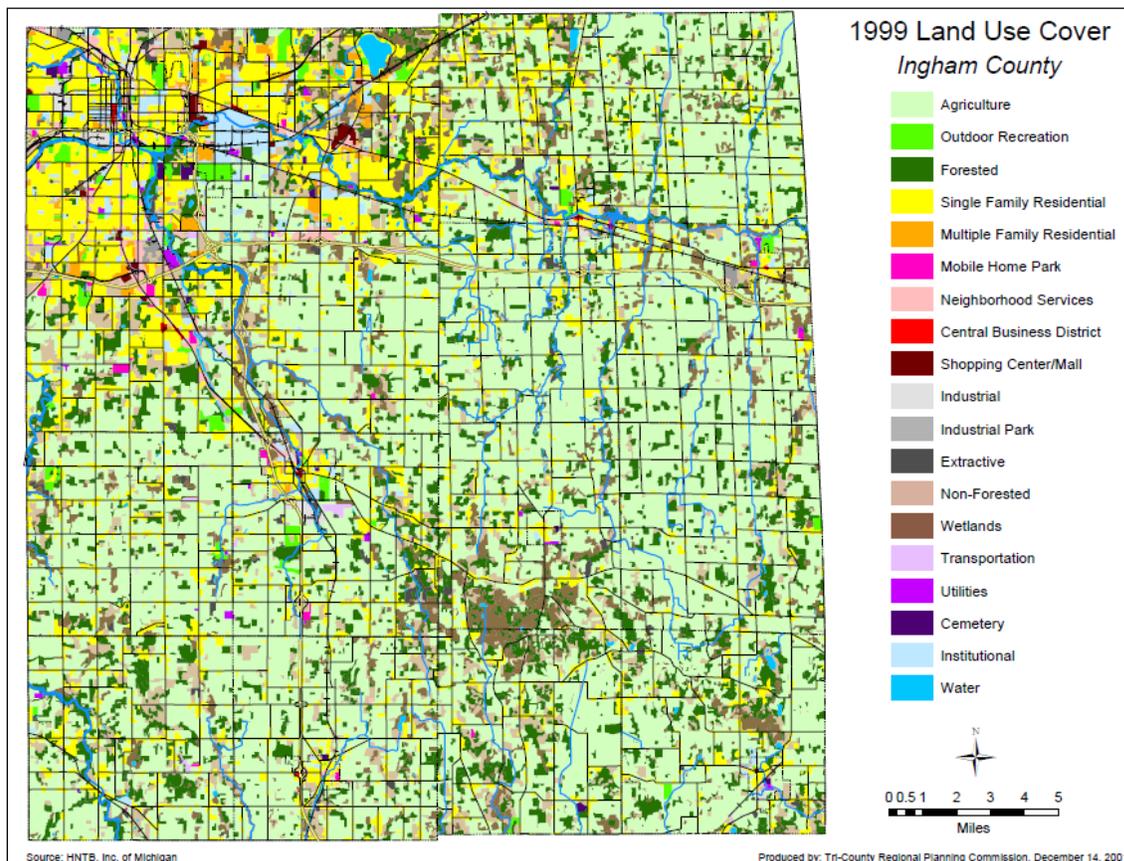
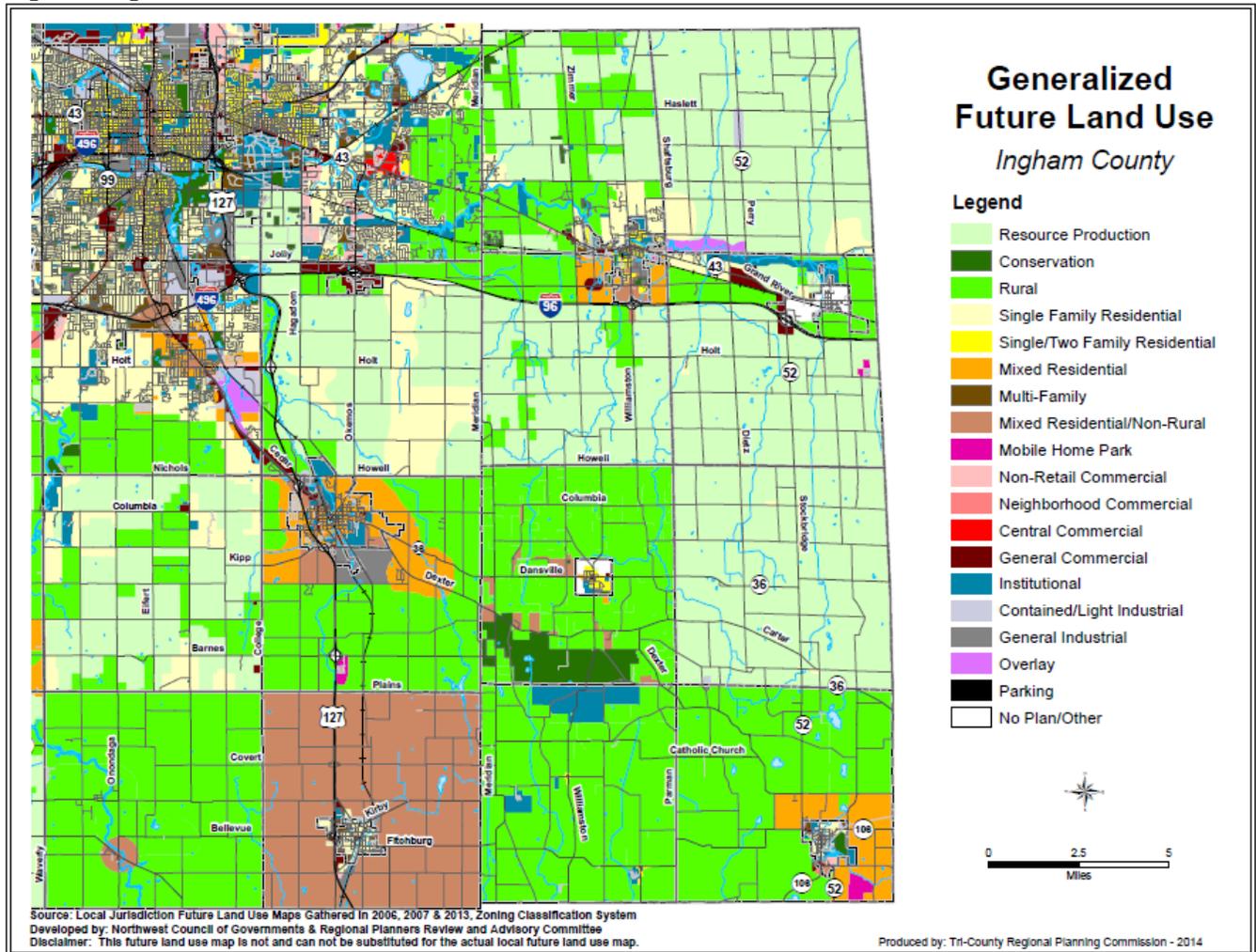


Fig. 33 Ingham Co. Future Land Use



Soils

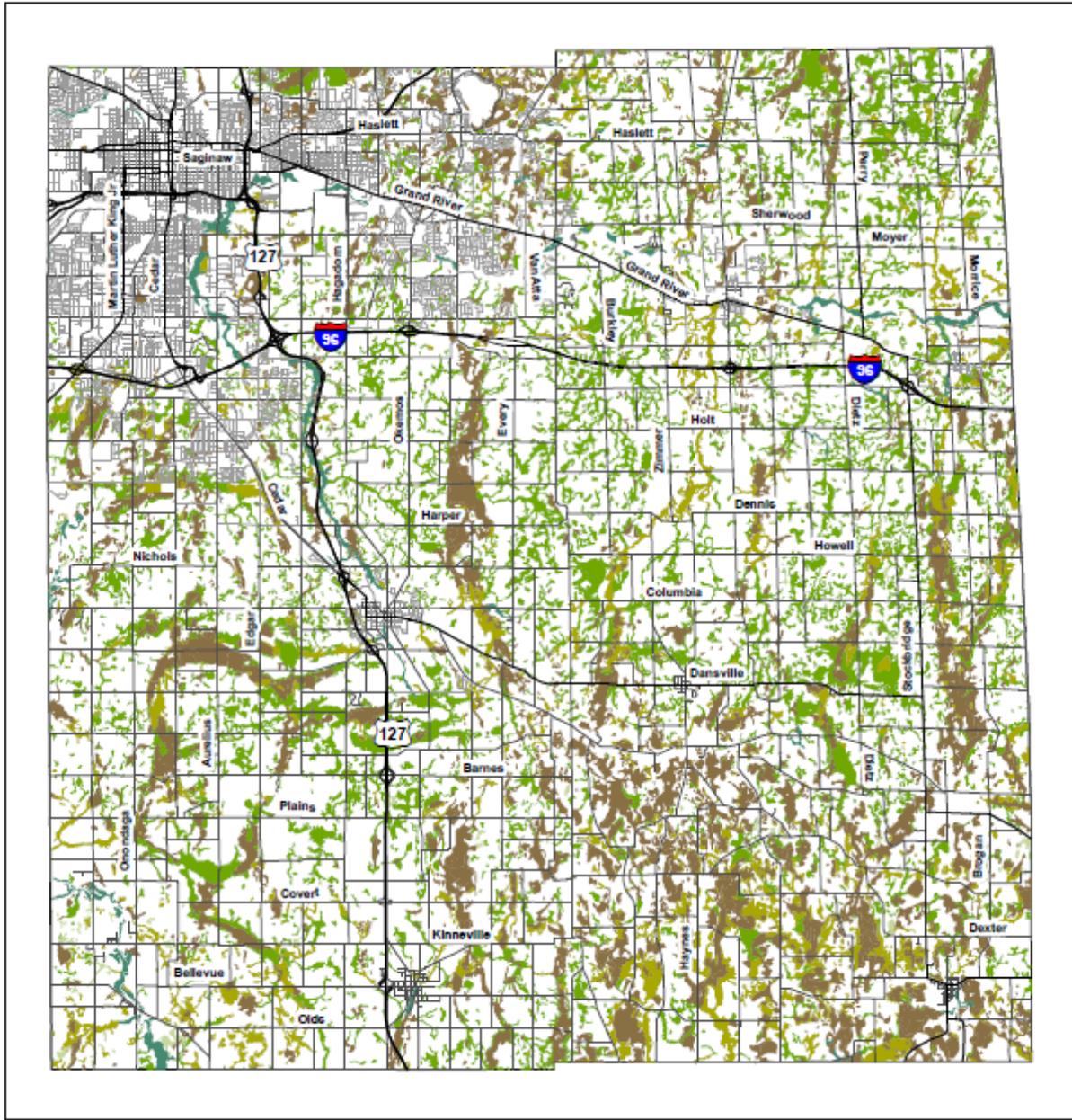
Ingham County topography is characterized as flat to gently rolling. Two major rivers traverse the county: the Grand River and the Red Cedar River. Several glacial eskers also pass through the county. Land uses include: 15% urban areas, 67% agriculture and open space, 14% woodland and 4% wetlands. Of the wetlands, only 0.5% is classified as water, including both rivers and lakes.

Wetlands cover 4% of the county, with lakes and rivers accounting for 0.5%. Lake Lansing, located in the north-central part of the county, is the largest natural lake. Several smaller lakes are located in the southeastern portion of the county,

Fig. 34 Ingham County Soil Map

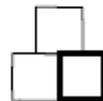
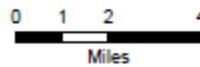


Ingham County Hydric Soil*



Soil Type

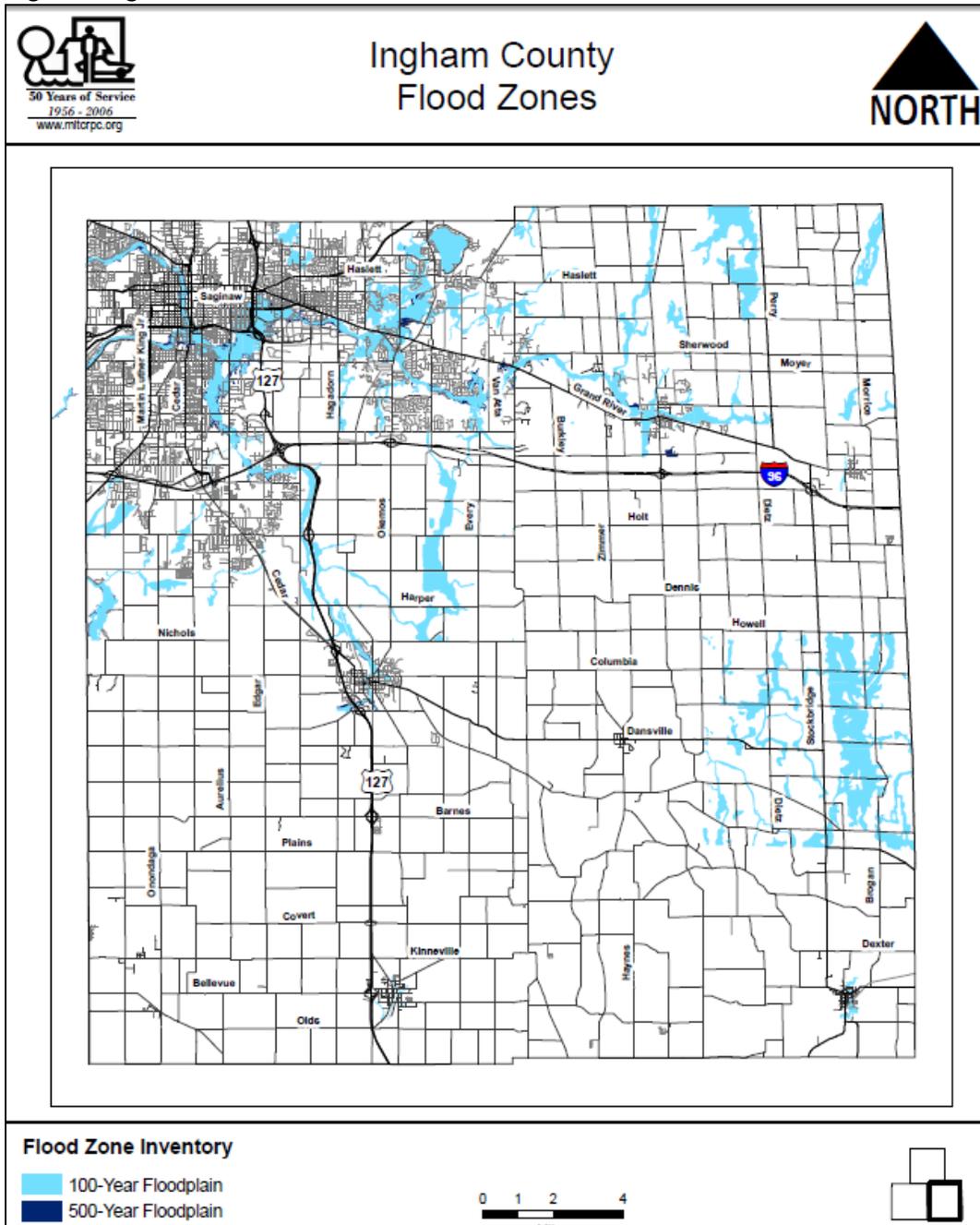
- Muck
- Silty Clay Loam
- Sandy Loam
- Silt Loam
- Loam



Water

Both the Grand River and Red Cedar River are significant in their impact on the county. The Grand River flows to the north along the west side of the county. The Red Cedar River flows westward along the northern portion of the county. Both meet in Lansing and flow out toward the northwest corner. Ingham County is within the Grand River drainage basin.

Fig. 35 Ingham Co. Flood Zones



Transportation

The people of Ingham County are mainly dependent on the automobile for transportation. Other modes are available, but play a minor role in moving people. Roads and highways in the county are part of the regional and state network. The freeways, particularly I-96, I-496 and U.S. Route 127, are routes to destinations outside of Ingham County. Commercial centers are located adjacent to these routes to take advantage of the access.

The Capital Region International Airport, located north of Lansing, is the largest in the area. It is a full-service, all-weather, commercial-airline airport, serving the entire Lansing metropolitan area. In addition, the Airport Authority includes a smaller airfield, Jewett Airport, in Mason. It is used by crop dusters, small clubs and recreational pilots. There are a number of small airfields in rural areas. Conrail, CSX and Canadian National operate railroads in the county. Some railways, however, are no longer in use.

Fig. 36 Ingham Co. Map

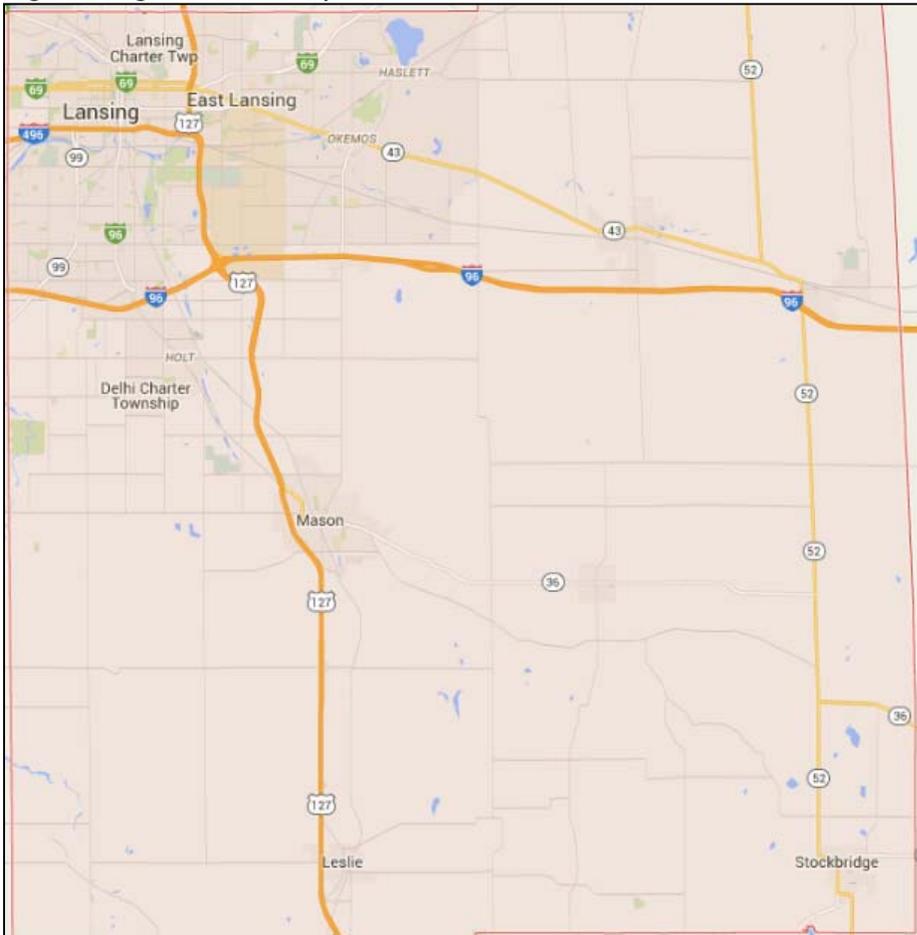


Fig. 38 2004 Hazards- Eaton Co.

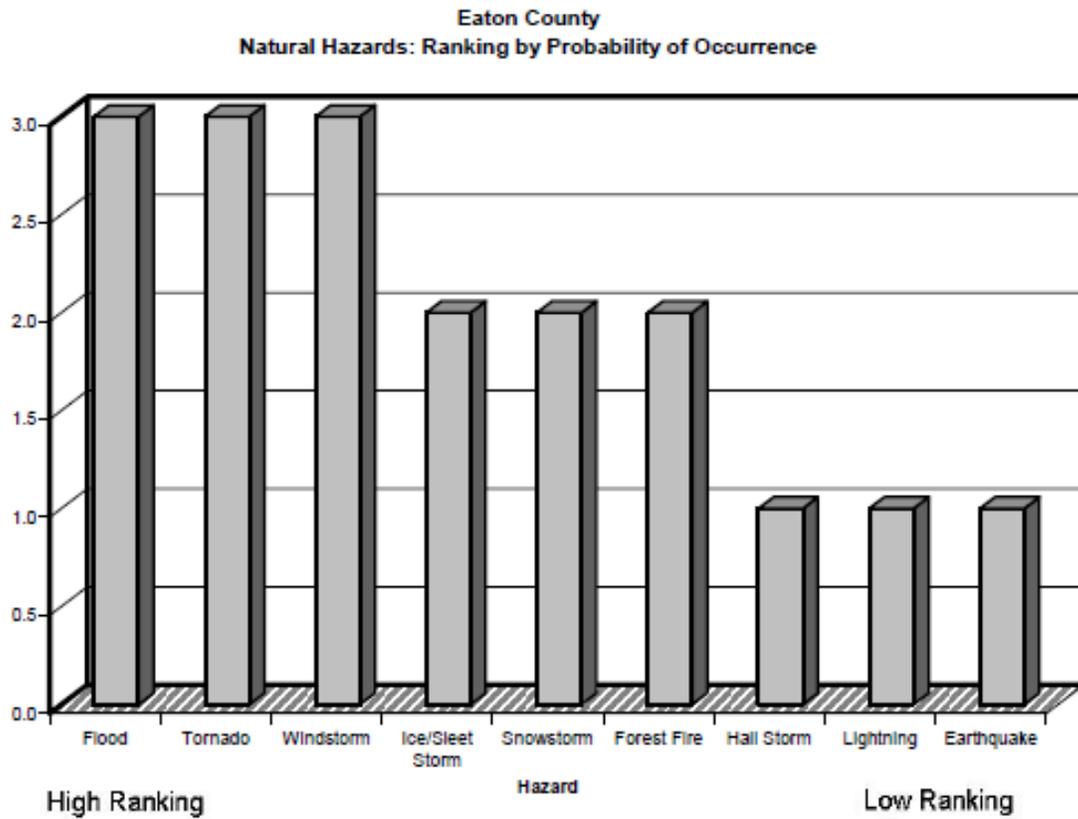


Fig. 39 2004 Hazards- Ingham Co.

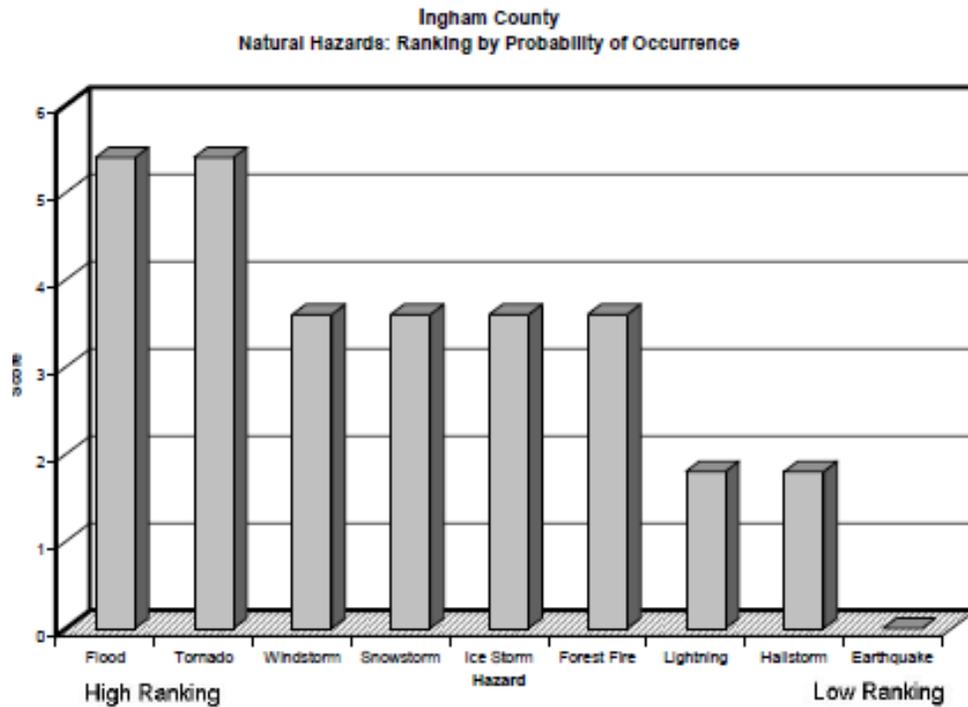


Fig. 42 Ingham County Flood Zones and Land Uses, Area 2

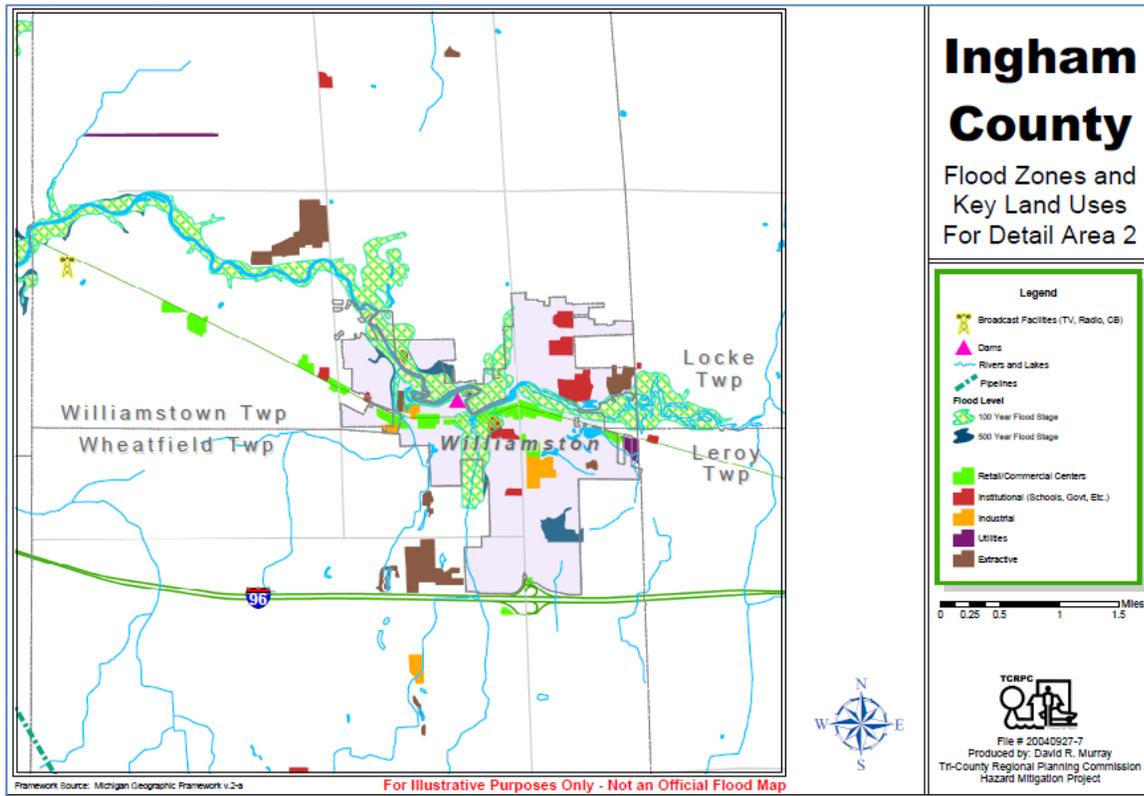
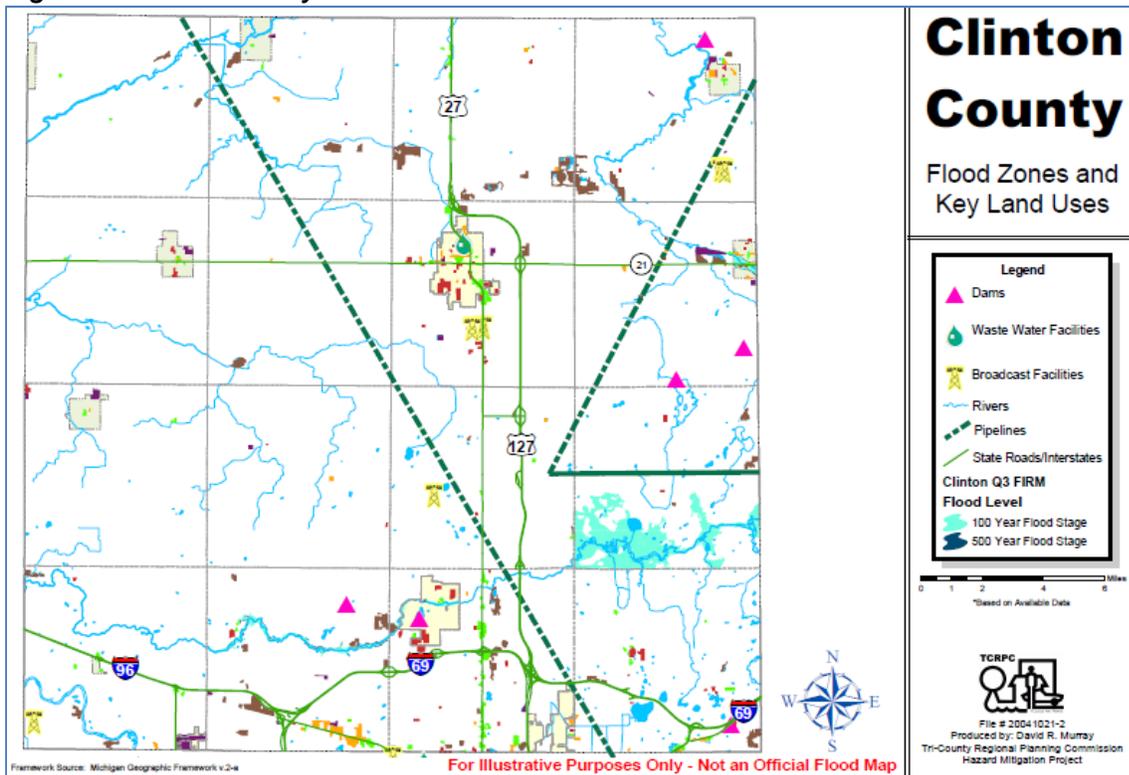


Fig. 43 Clinton County Flood Zones and Land Uses



The hazard analysis used for this plan is the process suggested in *The Local Hazard Mitigation Planning Workbook*. The Michigan Hazard Mitigation Plan of 2014 offers the following summary of top hazards in Clinton, Eaton and Ingham County and Delta Charter Township: Hail, Lightning, Ice/Sleet, Snowstorms, Severe winds, tornadoes, Extreme Heat and Cold, Fog, Flooding, Drought and Wildfires.

The following table summarizes historical information about these natural hazards in Clinton, Eaton, and Ingham Counties. *The Michigan Hazard Mitigation Plan* served as a reference for many of the hazards discussed in this section. Some multi-county damages and events may be counted twice in these data (once for each involved county). For clarification, when multiple events have happened in the same day, the number of event-days also is listed. Averages involve: tri-county average events, the average number of events per year, and the average county impact per event.

Fig. 44 Natural Hazards Historical Data (1996 2013)

PD = Property Damage, CD = Crop Damage, I = injuries, D = deaths

Hazard	Clinton events	Impacts	Eaton events	Impacts	Ingham events	Impacts	Avg events regional	Average impacts per event
Hail	26 (19 days)	\$150,000 PD \$115,000 CD	41 (33 days)	\$435,000 PD \$325,000 CD	40 (26 days)	\$400,000 PD \$235,000 CD	2 per year	\$9,206 PD \$6,308 CD
Lightning	0	--	0	--	0	--	0	Above \$0
Ice/Sleet Storms	7	\$330,000 PD	7	\$325,000 PD	7	\$340,000 PD	7 (0.4/year)	\$47,381 PD
Snowstorms	40	\$1,025,000 PD	45	\$1,025,000 PD	46	\$1,025,000 PD	43.7 (2.4/year)	\$23,295 PD
Severe Winds	196 (116 days)	\$3,077,000 PD \$100,000 CD 2 deaths	196 (116 days)	\$5,255,000 PD \$210,000 CD	210 (116 days)	\$6,060,000 PD \$85,000 CD	200.7 (11.3/year)	\$23,907 PD \$342 CD 0.003 deaths
Tornadoes	2	\$450,000 PD \$150,000 CD	8	\$50,357,000 PD \$225,000 CD 6 injuries	7	\$20,850,000 PD \$200,000 CD 2 injuries 2 deaths	5.7 (0.3/year)	\$4,215,118 PD \$33,824 CD 0.47 injuries 0.12 deaths
Extreme Heat	0	--	0	--	0	--	0	Above 0.0 injuries
Extreme Cold	0	--	0	--	0	--	0	Above 0.0 injuries
Fog	1	--	1	--	1	--	1 (0.01/year)	--
Flooding	26 (21 days)	\$12,395,000PD \$475,000 CD	25 (21 days)	\$11,945,000PD \$825,000CD	26 (21 days)	\$17,420,000PD \$475,000 CD	25.7 (1.4/year)	\$542,338 PD \$23,052 CD
Drought	0	--	0	--	0	--	0	\$0
Wildfires	0	--	0	--	0	--	0	\$0

Source: Michigan Hazard Mitigation Plan, March 2014, adapted from the National Climatic Data Center's online Storm Events database

When the average impacts per event are multiplied by the average events per year, the result is an estimate of the expected annual damage from each hazard. This allows the list of hazards to be prioritized based on the history of past impacts. However, it is important to note that this “history” is really just a sample of events from limited time period, and estimate, and not as accurate as a long term set of records were readily available for all of these hazards. Nevertheless, the table presents an estimate of how these natural hazards are tentatively ranked in terms of the expected annual damages based upon this sample of historical event records.

In March-April of 2015, the Tri-County Regional Planning Commission (TCRPC) created and conducted a survey in order to collect input on local perceptions of hazards. The survey questionnaire was distributed to TCRPC committee members, County Road Commissioners and staff, local government staff, community leaders, technical staff throughout the region, infrastructure managers, transportation and land use planners, and the public. Twenty-four responses were collected. In response to the questionnaire, participants identified some hazards as being a threat to property, crops and human life. Respondents from across the tri-county region provided comments about the ranking of the following hazards and how they impact the region and our local communities.

- 1. Tornadoes**
- 2. Flooding**
- 3. Severe Winds**
- 4. Snowstorms**
- 5. Hail**
- 6. Ice/Sleet Storms**
- 7. Drought**
- 8. Wildfires**
- 9. Lightning**
- 10. Extreme Heat**
- 11. Extreme Cold**
- 12. Fog**

Eighty percent of the 24 respondents replied that this ranking was in keeping with their experience. After questions about the natural hazards, the following technological and social hazards were presented in the survey. Respondents were invited to comment and then rank them against the natural hazards previously listed. A majority of the respondents felt that these hazards were less of a threat to property, crops and human life than the top twelve natural hazards identified for the tri-county region.

- Dam failures
- Invasive species
- Earthquakes
- Subsidence (ground cave-ins)
- Solar Storms
- Erosion on river or stream shorelines
- Major structural fires
- Hazardous materials accidents (onsite)
- Hazardous materials accidents (in transit)
- Pipeline accidents
- Oil or gas well accidents
- Infrastructure failures
- Civil disturbances
- Public health emergencies
- Terrorism/similar criminal activities

The majority of respondents reported that they felt hazardous material accidents should rank higher than a few natural hazards, namely tornadoes and snowstorms.

The following sections provide an overview of the main natural, technological and social hazards that face the tri-county region. The selection of Hazards discussed in this section is based on the Michigan Hazard Mitigation Plan of 2014 and the results of the tri-county region’s 2015 survey, Each hazard is defined, placed into the context of the State of Michigan and also includes a statement of the impacts upon in the tri-county region. The following figure offers a snapshot of each participating jurisdiction and the natural hazards that they face.

Fig. 45 Hazard Overview of Local Participating Jurisdictions

Participating Jurisdictions	Identified Natural Hazards
City of East Lansing Meridian Charter Township Williamstown Township City of Williamston Village of Dansville Village of Webberville City of Mason Delhi Charter Township Lansing Charter Township Delta Charter Township City of Grand Ledge City of Charlotte City of Eaton Rapids DeWitt Charter Township City of DeWitt Bath Charter Township City of St Johns Dallas Township	<ol style="list-style-type: none"> 1. Tornadoes 2. Flooding 3. Severe Winds 4. Snowstorms 5. Hail 6. Ice/Sleet Storms 7. Drought 8. Wildfires 9. Lightning 10. Extreme Heat 11. Extreme Cold 12. Fog

Natural Weather Hazards

Thunderstorm Hazards (General)

Hazard Description - Weather systems accompanied by strong winds, lightning, heavy rain, and possibly hail and tornadoes. Severe thunderstorms can occur at any time in Michigan, although they are most frequent during the warm spring and summer months from May through September. The potential thunderstorm threat is often measured by the number of “thunderstorm days” – defined as days in which thunderstorms are observed. As the map below indicates, Michigan is subject to 20-60 thunderstorm days per year. According to the National Weather Service (NWS) the Lower Peninsula, in general, is subject to approximately 30-40 thunderstorm days per year per year.

Thunderstorms form when a deeper layer of cool overruns a shallow layer of warm, moist air, dry air. Cumulonimbus clouds, frequently called “thunderheads”, are formed in these conditions. These clouds are often enormous (up to six miles or more across and 40,000 to 50,000 feet high) and may contain tremendous amounts of water and energy. That energy is often released in the form of high winds, excessive rains, lightning, and possibly hail and tornadoes. Thunderstorms are typically short-lived (often lasting no more than 30-40 minutes) and fast moving (30-50 miles per hour). Strong frontal systems, however, may spawn one squall line after another composed of many individual thunderstorm cells.

Between 1996 and 2013 there were 726 major thunderstorm & high wind events reported in Ingham, Clinton and Eaton Counties. That amounts to an average of 13.6 events per year. The reported storms resulted in deaths that averaged 0.12 deaths per year directly attributed to the storms and property damage unadjusted for inflation valued at \$36.7 million. The following sections address in detail these specific storm hazards:

- 1) Hail;
- 2) Lightning;
- 3) Severe winds; and
- 4) Tornadoes.

Hail

Hazard Description - Conditions where atmospheric water particles from thunderstorms form into rounded or irregular lumps of ice that fall to the earth. Hail is a product of the strong thunderstorms. Hail is formed when strong updrafts within the storm carry water droplets above the freezing level, where they remain suspended and continue to grow larger until their weight can no longer be supported by the winds. As the thunderstorm passes over, hail usually falls near the center of the storm, along with the heaviest rain. Most hailstones range in size from a pea to a golf ball, but hailstones larger than baseballs have occurred. Sometimes, strong winds occurring at high altitudes in the thunderstorm can blow the hailstones away from the storm center, causing an unexpected hazard at places that otherwise might not appear threatened. They finally fall to the ground, battering crops, denting autos and injuring wildlife and people. Large

hail is a characteristic of severe thunderstorms, and it may precede the occurrence of a tornado.

Between 1996 and 2013 there were a total of 107 hail events reported for the tri-county region. They accounted for \$985,000 in property damage and \$675,000 in damage to crops.

Lightning

Hazard Description - The discharge of electricity from within a thunderstorm. Lightning is a random and unpredictable product of a thunderstorm's tremendous energy. The energy in the storm produces an intense electrical field like a giant battery, with the positive charge concentrated at the top and the negative charge concentrated at the bottom. Lightning strikes when a thunderstorm's electrical potential (the difference between its positive and negative charges) becomes great enough to overcome the resistance of the surrounding air. Bridging that difference, lightning can jump from cloud to cloud, cloud to ground, ground to cloud, or even from the cloud to the air surrounding the thunderstorm. Lightning strikes can generate current levels of 30,000 to 40,000 amperes, with air temperatures often superheated to higher than 50,000 degrees Fahrenheit (hotter than the surface of the sun) and speeds approaching one-third the speed of light.

Globally, there are about 2,000 thunderstorms occurring at any given time, and those thunderstorms cause approximately 100 lightning strikes to earth each second. In the United States, approximately 100,000 thunderstorms occur each year, and every one of those storms generates lightning. It is commonplace for a single thunderstorm to produce hundreds or even thousands of lightning strikes. However, to the majority of the public, lightning is perceived as a minor hazard. That perception lingers despite the fact that lightning damages many structures and kills and injures more people in the United States per year, on average, than tornadoes or hurricanes. Many lightning deaths and injuries could be avoided if people would have more respect for the threat lightning presents to their safety. Lightning deaths are usually caused by the electrical force shocking the heart into cardiac arrest or throwing the heartbeat out of its usual rhythm. Lightning can also cut off breathing by paralyzing the chest muscles or damaging the respiratory center in the brain stem. It takes only about one-hundredth of an ampere of electric current to stop the human heartbeat or send it into ventricular fibrillation. Lightning can also cause severe skin burns that can lead to death.

Statistics compiled by the National Oceanic and Atmospheric Administration (NOAA) and the National Lightning Safety Institute (NLSI) for the period 1959-1994 revealed the following about lightning fatalities, injuries and damage in the United States:

- 40% are at unspecified locations
- 27% occur in open fields and recreation areas (not golf courses)
- 14% occur to someone under a tree (not on golf course)
- 8% are water-related (boating, fishing, swimming, etc.)
- 5% are golf related
- 3% are related to heavy equipment and machinery

2.4% are telephone-related
0.7% are radio, transmitter and antenna-related

The NLSI estimates that 85% of lightning victims are children and young men (ages 10-35) engaged in recreation or work-related activities. Approximately 20% of lightning strike victims die, and 70% of survivors suffer serious long-term after-effects such as memory and attention deficits, sleep disturbance, fatigue, dizziness and numbness.

Lightning is such a common occurrence that records of specific events are not generally kept. The regional database is incomplete. In terms of property losses from lightning, statistics vary widely. The Insurance Information Institute (a national clearinghouse of insurance industry information) estimates that lightning-caused damage amounts to nearly five percent of all paid insurance claims, with residential claims alone exceeding \$1 billion. Information from insurance companies shows one homeowner's damage claim for every 57 lightning strikes. The NLSI estimates that lightning causes more than 26,000 fires annually, with damage to property exceeding \$5-6 billion. Electric utility companies across the country estimate as much as \$1 billion per year in damaged equipment and lost revenue from lightning. The Federal Aviation Administration (FAA) reports approximately \$2 billion per year in airline industry operating costs and passenger delays from lightning. Because lightning-related damage information is compiled by so many different sources, using widely varying collection methods and criteria, it is difficult to determine a collective damage figure for the U.S. from lightning. However, suffice it to say that annual lightning-related property damages are conservatively estimated at several billion dollars per year, and those losses are expected to continue to grow as the use of computers and other lightning sensitive electronic components becomes more prevalent.

Severe Winds and Tornadoes

Tornado

Hazard Description - An intense rotating column of wind that extends from the base of a severe thunderstorm to the ground. Tornadoes in Michigan are most frequent in the spring and early summer when warm, moist air from the Gulf of Mexico collides with cold air from the Polar Regions to generate severe thunderstorms. These thunderstorms can produce the violently rotating columns of wind that are called tornadoes. Michigan lies at the northeastern edge of the nation's primary tornado belt, which extends from Texas and Oklahoma through Missouri, Illinois, Indiana and Ohio.

Most of a tornado's destructive force is exerted by the powerful winds that knock down walls and lift roofs from buildings in the storm's path. The violently rotating winds then carry debris aloft that can be blown through the air as dangerous missiles. A tornado may have winds up to 300+ miles per hour and an interior air pressure that is 10-20 percent below that of the surrounding atmosphere. The typical length of a tornado path is approximately 16 miles, but tracks up to 200 miles have been reported. Tornado path widths are generally less than one-quarter mile wide. Typically, tornadoes last only a few minutes on the ground. But those few minutes can result in extreme damage and

devastation. Historically, tornadoes have resulted in tremendous loss of life, with the mean national annual death toll of 87 persons. Property damage from tornadoes is in the hundreds of millions of dollars every year. Tornado intensity is measured on the Fujita Scale, which examines the damage caused by a tornado on homes, commercial buildings and other man-made structures. The Fujita Scale rates the intensity of a tornado based on damage caused, not by its size. It is important to remember that the size of a tornado does not necessarily indicate its intensity. Large tornadoes can be weak, and small tornadoes can be extremely strong, and vice versa. It is difficult to judge the intensity and power of a tornado while it is occurring. Measurements of the intensity of a tornado can be done after it has passed using the Fujita Scale.

The Enhanced Fujita Scale of Tornado Intensity:

EF0 Gale tornado 65-85: Light damage. Some damage to chimneys; breaks branches off trees; pushes over shallow-rooted trees; damages sign boards.

EF1 Weak tornado 86-110: Moderate damage. The lower limit is the beginning of hurricane wind speed; peels surface off roofs; mobile homes pushed off foundations or overturned; moving autos pushed off the roads; attached garages may be destroyed.

EF2 Strong 111-135: Considerable damage. Roofs torn off frame houses; tornado mobile homes demolished; boxcars pushed over; large trees snapped or uprooted; light object missiles generated.

EF3 Severe tornado 136-165 Severe damage. Roof and some walls torn off well-constructed houses; trains overturned; most trees in forest uprooted; heavy cars lifted off ground and thrown.

EF4 Devastating 166-200 Devastating damage. Well-constructed houses tornado leveled; structures with weak foundations blown off some distance; cars thrown and large missiles generated.

EF5 Incredible tornado; Over 200: Incredible damage. Strong frame houses lifted off foundations and carried considerable distances to disintegrate; automobile-sized missiles fly through the air in excess of 100 meters; trees debarked; steel reinforced concrete structures badly damaged; incredible phenomena will occur.

Fig. 46 Typical Tornado Damage



Source: FEMA

According to the National Weather Service (NWS), since 1950 approximately 74% of the tornadoes that occurred in the United States were classified as weak tornadoes (F0 or F1 intensity). Approximately 25% were classified as strong tornadoes (F2 or F3 intensity), and only 1% were classified as violent tornadoes (F4 or F5 intensity). Those violent tornadoes, while few in number, caused 67% of all tornado-related deaths nationally. Strong tornadoes accounted for another 29% of tornado-related deaths, while weak tornadoes caused only 4% of tornado-related deaths.

Michigan's Tornado Experience

National Weather Service data indicates that Michigan has experienced 923 tornadoes and 242 related deaths during the period from 1950 through 2009, an average of 15 tornadoes and 4 tornado-related deaths per year. The greatest number of tornadoes per year during that period occurred in 1974 with 39 tornadoes. The least number occurred in 1959 with only 2 tornadoes. From 1950 to March 2005, Michigan experienced 508 "tornado days" (defined as days in which tornadoes are observed), an average of nearly 9 days per year. Between 1996 and 2013 the tri-county region experienced 17 tornado events, totaling \$71.7 Million total in property damage. These events caused \$575,000 in crop damage, 8 injuries and 2 deaths. On average, the tri-county region experiences \$4.2 Million in property damage per year, and \$33,824 in crop damages.

Severe winds, which are wind events measured at velocities less than gale force, occurred 210 times in the tri-county region between 1996 and 2013. The region incurred \$14.4 Million in property damage and \$395,000 in crop damages and 2 deaths were reported for the time between 1996 to 2013.

Extreme Temperatures

Hazard Description - Prolonged periods of very high or very low temperatures, often accompanied by other extreme meteorological conditions. Prolonged periods of extreme temperatures pose severe problems for Michigan's citizens. Whether extreme summer heat or extreme winter cold, extreme temperature can be life threatening. Although they are radically different in terms of initiating conditions, the two hazards share a commonality in that they both primarily affect the most vulnerable segments of the

population – the elderly, children, impoverished individuals, and people in poor health. Due to their unique characteristics, extreme summer heat and extreme winter cold hazards will be discussed individually.

Extreme Summer Heat

Extreme summer weather is characterized by a combination of very high temperatures and exceptionally humid conditions. When persisting over a long period, this phenomenon is commonly called a heat wave. The major threats of extreme summer heat are heatstroke (a major medical emergency), and heat exhaustion. Because the combined effects of high temperatures and high humidity are more intense in urban centers, heatstroke and heat exhaustion are a greater problem in cities than in suburban or rural areas. Nationwide, approximately 200 deaths a year are directly attributable to extreme heat. Extreme summer heat is also hazardous to livestock and agricultural crops, and it can cause water shortages, exacerbate fire hazards and prompt excessive demands for energy. Roads, bridges, railroad tracks and other infrastructure are susceptible to damage from extreme heat.

Air conditioning is the most effective measure for mitigating the effects of extreme heat on people. However, many people most vulnerable to this hazard do not live or work in air-conditioned environments. The use of fans to move air may help some, but recent research indicates that increased air movement may actually exacerbate heat stress in many individuals.

Extreme Temperature Events: During the second week of July 1936, a terrible heat wave struck the mid-Michigan, with temperatures exceeding 100 degrees for up to seven consecutive days. The extreme heat was an equal opportunity killer, causing many healthy adults to succumb to the heat at work or in the streets. Also, because most people relied on iceboxes to keep their food fresh, many heat-related deaths and illnesses occurred when the ice melted, and food spoiled. The summer of 1953 included eleven days in a row with temperatures of 90 degrees or higher in Southern Michigan, nine of which were 95 degrees or hotter, and also including two days that each hit 100 degrees.

The 1988 summer drought and heat wave in the Central and Eastern U.S. also greatly impacted the tri-county region. Nationwide, the drought caused an estimated \$40 billion in damages from agricultural losses, disruption of river transportation, water supply shortages, wildfires, and related economic impacts. The heat wave that accompanied the drought conditions was particularly long in Michigan – 39 days with 90 degree or better heat – eclipsing the previous record of 36 days recorded in the “dust bowl” days of 1934. Nationwide, the 1988 drought/heat wave caused an estimated 5,000 to 10,000 deaths. Extreme heat and humidity in the Midwest and Central Plains during parts of June, July and August of 2001 sent heat stress index readings soaring well above 100 degrees Fahrenheit on many days. On August 1 and August 8, heat advisories were issued for many counties in the southern Lower Peninsula, with heat indices at 105 degrees for some jurisdictions on the former date, and 110 degrees for some jurisdictions on the latter date.

Summary: Approximately once or twice per decade, extreme heat waves tend to cause human and infrastructure impacts across the county including power failures. Their frequency may be increasing, due to climate change. An extreme summer heat event inventory for the tri-county region is incomplete.

Extreme Winter Cold

Cold weather can result in a significant number of temperature-related deaths. Each year in the United States, approximately 700 people die because of severe cold temperature-related causes. This is substantially higher than the average of 200 heat-related deaths each year. It should be noted that a significant number of cold-related deaths are not the direct result of “freezing conditions. Rather, many deaths are the result of illnesses and diseases that are negatively impacted by severe cold weather, such as stroke, heart disease and pneumonia. It could convincingly be argued that, were it not for the extreme cold temperatures, death in many cases would not have occurred at the time it did from the illness or disease alone.

Severe winter weather hazards include snowstorms, blizzards, and extreme cold, ice and sleet storms. As a northern state, Michigan is vulnerable to all of these winter hazards. Most of the severe winter weather events that occur in Michigan have their origin as Canadian and Arctic cold fronts that move across the state from the west or northwest.

Extreme summer heat event inventory in the tri-county region database is admittedly incomplete.

Ice and Sleet Storms

Hazard Description - A storm that generates sufficient quantities of ice or sleet to result in hazardous conditions and/or property damage. Ice storms are sometimes incorrectly referred to as sleet storms. Sleet is similar to hail only smaller and can be easily identified as frozen rain drops (ice pellets) which bounce when hitting the ground or other objects. Sleet does not stick to trees and wires, but sleet in sufficient depth does cause hazardous driving conditions. Ice storms are the result of cold rain that freezes on contact with the surface, coating the ground, trees, buildings, overhead wires and other exposed objects with ice, sometimes causing extensive damage. When electric lines are downed, households may be without power for several days, resulting in significant economic loss and disruption of essential services in affected communities.

In December of 2013, a severe ice storm event occurred across mid-Michigan, impacting power grids for 1,000's of residents. In the tri-county region, there were 21 ice/sleet storm events between 1996 and 2013. Property damages totaled \$995,000, an average of \$47,381 per year.

The following is from a Report on the Lansing Board of Water and Light's Response to the December 2013 Ice Storm by the City of Lansing Community Review Team, a group

of citizen leaders and technical experts who assessed the situation and published a report to the City.

The December 2013, ice storm was the most catastrophic event to ever hit the Lansing Board of Water & Light's (BWL) electric service territory. While the duration of the restoration effort was neither better nor worse than other similar restoration efforts based on national data, it did cause significant hardship and suffering for customers who were out of service during the holiday season. The combination of disrupted holiday plans, the duration of outages and the cold weather was particularly difficult for the BWL's customers. In the wake of the storm the BWL pledged a top-down review of its performance during the ice storm and its aftermath. T

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Ice storms frequently result in a large number of extended outages because falling branches and trees take down individual services, secondary distribution lines, single and three phase primary lines, and can even damage high voltage transmission lines. Simply stated, they impact every segment of a utility's transmission and distribution system. These storms typically occur during the year when daylight hours are at a minimum and temperatures are below freezing, so crews must protect themselves from exposure. They may be accompanied by snow storms that further hinder restoration efforts. Unless the ice melts quickly, branches and trees continue to break days after the storm has passed damaging lines that had been repaired only days earlier. The BWL's crews experienced all these difficulties and in their restoration efforts.

The ice storm resulted in approximately 40% of the BWL's customers losing power; there has been no comparable loss among Michigan utilities. The BWL sustained over 2,400 downed power lines and replaced 5 miles of service lines, or half the normal annual volume, in the ten day restoration period. The volume of restoration work was unprecedented.

...

The ice storm had a devastating impact on the BWL's electric distribution system. Approximately 40,000, or about 40%, of the BWL's customers lost power. The combination of ice accumulation and wind gusts up to 64 mph tested the design limits of the BWL's distribution infrastructure. This combination of ice and wind caused widespread destruction and damage to trees and other vegetation causing them to fall onto power lines. The falling limbs, trees, and other vegetation combined with the ice loading on distribution lines caused more than 2,400 lines to break.

Since much of the Lansing area has overhead distribution lines and extensive tree cover, line failures were extensive and included primary voltage lines, secondary voltage lines, and individual services. More than 1,000 individual service line failures occurred and these individual services required intensive one-on-one attention from restoration crews. In fact, the BWL replaced approximately 5 miles of service wire during the ten day restoration period. This accounts for nearly half of the BWL's typical annual replacement.

Snowstorms

Hazard Description - A period of rapid accumulation of snow often accompanied by high winds, cold temperatures, and low visibility. Because of being surrounded by the Great Lakes, Michigan experiences large differences in snowfall in relatively short distances. The average annual snowfall accumulation ranges from 30 to 200 inches of snow. The highest accumulations are in the northern and western parts of the Upper Peninsula. In Lower Michigan, the highest snowfall accumulations occur near Lake Michigan and in the higher elevations of northern Lower Michigan. Blizzards are the most dramatic and perilous of all snowstorms, characterized by low temperatures and strong winds (35+ miles per hour) bearing enormous amounts of snow. Most of the snow accompanying a blizzard is in the form of fine, powdery particles that are wind-blown in such great quantities that, at times, visibility is reduced to only a few feet. Blizzards have the potential to result in property damage and loss of life. Just the cost of clearing the snow can be enormous.

Beginning on January 26, 1977, a significant snowstorm affected much of southern Michigan. Blizzard winds caused extensive drifting of snow, blocking many roads. Many residents were isolated in rural residences or stranded in public shelters. This storm also resulted in a Presidential Emergency Declaration for 15 counties in the southern part of the state. Then, a severe snowstorm struck the Midwest January 26-27, 1978 and Michigan was at the center of the storm. Dubbed a "white hurricane" by some meteorologists, the storm measured 2,000 miles by 800 miles and produced winds with the same strength of a small hurricane and tremendous amounts of snow. In Michigan, up to 34 inches of snow fell in some areas, and winds of 50-70 miles per hour piled the snow into huge drifts. At the height of the storm, it was estimated that over 50,000 miles of roadway were blocked, 104,000 vehicles were abandoned on the highways, 15,000 people were being cared for in mass care shelters, and over 390,000 homes were without electric power. In addition, 38 buildings suffered partial or total roof collapse. Two days after the storm, snow still blocked over 90% of the state's road system and 8,000 people were still being cared for in shelters. The storm stranded 70,000 vehicles and 52,000 homes were still without electricity days later. This storm resulted in a Presidential Emergency Declaration for the entire state to provide assistance with snow clearance and removal operations.

In the early morning hours of January 2, 1999 a severe winter storm moved across the middle and southern lower Michigan. The storm grew in intensity and size, producing record snowfall that affected much of the southern two-thirds of the Lower Peninsula by the evening of January 3rd. High winds and frigid temperatures created blizzard conditions that lasted until late in the day on January 4. Subsequent storms over the next several days dumped an additional foot of snow in many areas of the state, resulting in snowfall of historic proportions in several Michigan communities. Combined, these winter storms produced the worst winter conditions to hit Michigan since the 1978 statewide blizzard. A Presidential Emergency Declaration was granted for the 31

Michigan counties that received record or near-record snowfall making available Federal snow removal assistance under the Federal Emergency Management Agency's (FEMA) Public Assistance Grant Program.

Between 1996 and 2013, snowstorm events in the tri-county region totaled 131. Property damage totaled \$3.07 Million during those same years, for an average of \$23,295 per year. No deaths or injuries were reported.

Fig. 47 Severe Winter Driving Hazards



Source: TCRPC

Geologic Hazards

Subsidence

Hazard Description - The lowering or collapse of the land surface caused by natural or human-induced activities that erode or remove subsurface support. Subsidence is the lowering or collapse of the land surface due to loss of subsurface support. It can be caused by a variety of natural or human-induced activities. Natural subsidence occurs when the ground collapses into underground cavities produced by the solution of limestone or other soluble materials by groundwater. Human-induced subsidence is caused principally by groundwater withdrawal, drainage of organic soils, and underground mining. In the United States, these activities have caused nearly 17,000 square miles of surface subsidence, with groundwater withdrawal (10,000 square miles of subsidence) being the primary culprit. In addition, approximately 18% of the United States land surface is underlain by cavernous limestone, gypsum, salt, or marble, making the surface of these areas susceptible to collapse into sinkholes.

Generally, subsidence poses a greater risk to property than to life. Nationally, the average annual damage from all types of subsidence is conservatively estimated to be at least \$125 million according to The National Research Council. There is little information or tracking of subsidence issues in mid-Michigan.

Flooding Hazards

Hazard Description - The overflowing of rivers, streams, drains and lakes due to excessive rainfall, rapid snowmelt or ice. Flooding of land adjoining the normal course of a stream or river has been a natural occurrence since the beginning of history. If these

floodplain areas were left in their natural state, floods would not cause significant damage. Development has increased the potential for serious flooding because rainfall that used to soak into the ground or take several days to reach a river or stream via a natural drainage basin now quickly runs off streets, parking lots, and rooftops, and through man-made channels and pipes. Floods can damage or destroy public and private property, disable utilities, make roads and bridges impassable, destroy crops and agricultural lands, cause disruption to emergency services, and result in fatalities. People may be stranded in their homes for several days without power or heat, or they may be unable to reach their homes at all. Long-term collateral dangers include the outbreak of disease, widespread animal death, broken sewer lines causing water supply pollution, downed power lines, broken gas lines, fires, and the release of hazardous materials.

The primary flooding sources include the Great Lakes and connecting waters (Detroit River, St. Clair River and St. Mary's River), thousands of miles of rivers and streams, and hundreds of inland lakes. Michigan is divided into 63 major watersheds. All of these watersheds experience flooding, although the following watersheds have experienced the most extensive flooding problems or have significant damage potential: 1) Clinton River; 2) Ecorse River; 3) Grand River; 4) Huron River; 5) Kalamazoo River; 6) Muskegon River; 7) Saginaw River; 8) Rifle River; 9) River Raisin; 10) Rouge River; 11) St. Joseph River; and 12) Whitefish River. The flooding is not restricted to the main branches of these rivers.

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 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.

Flood Events in the Tri-County Region

One of the most disastrous and extensive floods ever to occur in Michigan struck the central and southern Lower Peninsula during March 24-27, 1904. The flooding was caused by runoff resulting from intense rainfall, compounded by heavy snow pack and frozen soils. The flooding was most prevalent in the Grand, Kalamazoo, Saginaw and River Raisin basins and to a lesser extent in the Huron and St. Joseph River basins.

(The flood peaks from this flood are still the highest associated with spring flooding in the southern Lower Peninsula since record keeping began.) Damage was widespread and severe.

A flood on April 4-11, 1947 was caused by a combination of snow and rainfall that began in late March of that year. Two frontal systems in early April dumped several inches of rain in many localities across central and eastern Lower Michigan. The areas primarily affected by the April, 1947 flood included the Clinton, Detroit, Grand, Kalamazoo, Saginaw and St. Clair Rivers, and the River Rouge.

A series of intense thunderstorms struck southern Lower Michigan in the last two weeks of April 1975, spawning several tornadoes and causing widespread flooding over a 21 county area. Total public and private damage was nearly \$58 million dollars. A Presidential Major Disaster Declaration was granted for the 21 affected counties.

Fig. 48 Flood of 1975, Lansing/East Lansing MI



Source: TCRPC

In May 2004, a stationary front over Iowa, Wisconsin, and Michigan brought severe thunderstorms and heavy rains, which caused widespread flooding across the region. Much of the rainfall occurred in saturated areas that had experienced well-above average precipitation for the month of May. Backyards were submerged under several feet of water. Total rainfall over the Grand River basin from May 20th through June 3rd varied from four to as much as seven inches. It was the biggest and longest duration flooding event in the past twenty years across southwestern and south central Lower Michigan. It was the wettest May on record in Lansing and Muskegon and the third wettest May on record in Grand Rapids. A Presidential Major Disaster Declaration was granted to 23 counties in Southern Lower Michigan.

Fig. 49 & 50 Flooding at MSU, and Meridian Township, 2004



Source: TCRPC

National Flood Insurance Program

For many years, the response to reducing flood damages followed a structural approach of building dams, levees and making channel modifications. However, this approach did not slow the rising cost of flood damage, plus individuals could not purchase insurance to protect themselves from flood damage. It became apparent that a different approach was needed.

The National Flood Insurance Program (NFIP) was instituted in 1968 to make flood insurance available in those communities agreeing to regulate future floodplain development. As a participant in the NFIP, a community must adopt regulations that:

- 1) Require any new residential construction within the 100- year floodplain to have the lowest floor, including the basement, elevated above the 100-year flood elevation;
- 2) Allow non-residential structures to be elevated or dry flood proofed (the flood proofing must be certified by a registered professional engineer or architect); and
- 3) Require anchoring of manufactured homes in flood prone areas. The community must also maintain a record of all lowest floor elevations or the elevations to which buildings in flood hazard areas have been flood proofed.

In return for adopting floodplain management regulations, the federal government makes flood insurance available to the residents of that community. In 1973, the NFIP was amended to mandate the purchase of flood insurance as a condition of any federally regulated, supervised or insured loan on any construction or building within the 100-year floodplain. Currently, there are about 25,956 flood insurance policies in force in Michigan, which amounts to approximately \$2.5 billion worth of coverage. About 18,621 (71.1%) of these policies are within an identified flood hazard area, and the remainder are for properties located outside flood hazard areas. Officials from FEMA and the MDEQ estimate that only 15% of all flood prone structures in Michigan eligible to purchase flood insurance actually have flood insurance. Furthermore, since only about 40% of the communities in Michigan participate in the NFIP, there are thousands of structures that are flood prone, but are not eligible to purchase flood insurance.

All Flood Insurance Rate maps for the tri-county region are available at the FEMA Flood Map Service Center website:

<https://msc.fema.gov/portal/search?AddressQuery=lansing%20MI>.

Flood Insurance Rate Maps were analyzed as a part of this plan update. The four jurisdictions covered by this plan update are active in the NFIP. Any properties located within the identified flood areas are susceptible to flood events any given year. Sample maps from each County and Delta Charter Township are depicted below:

FEMA’s Community Status Book reports that the following communities are participating in the national flood program:

Fig. 51 FEMA Community Status Chart

Clinton County	Eaton County	Ingham County
Bath Charter Twp	Bellevue (Village and Twp)	Alaiedon Twp
Bengal Twp	Brookfield Twp	Aurelius Twp
Bingham Twp	Carmel Twp	Bunker Hill Twp
Dallas Twp	City of Charlotte	Delhi Charter Twp
DeWitt (City & Charter Twp)	Delta Charter Twp	Lansing Charter Twp
East Lansing	Village of Dimondale	Leroy Twp
Village of Elsie	Eaton Rapids (City & Twp)	Leslie (City & Twp)
Lebanon Twp	City of Grand Ledge	Locke Twp

Village of Maple Rapids	Hamlin Twp	City of Mason
Olive Twp	Kalamo Twp	Meridian Charter Twp
Ovid (Village & Twp)	City of Olivet	Onondaga Twp
City of St Johns	Oneida Charter Twp	Stockbridge (City & Twp)
Watertown Charter Twp	City of Pottersville	Vevay Twp
Westphalia Twp	Roxand Twp	Victor Twp
	Sunfield Twp	Village of Webberville
	Vermontville Twp	White Oak Twp
	Walton Twp	Williamstown Twp
	Windsor Charter Twp	City of Williamston

Fig. 52 Delta Charter Township FIRM

Fig. of



53 City Mason FIRM

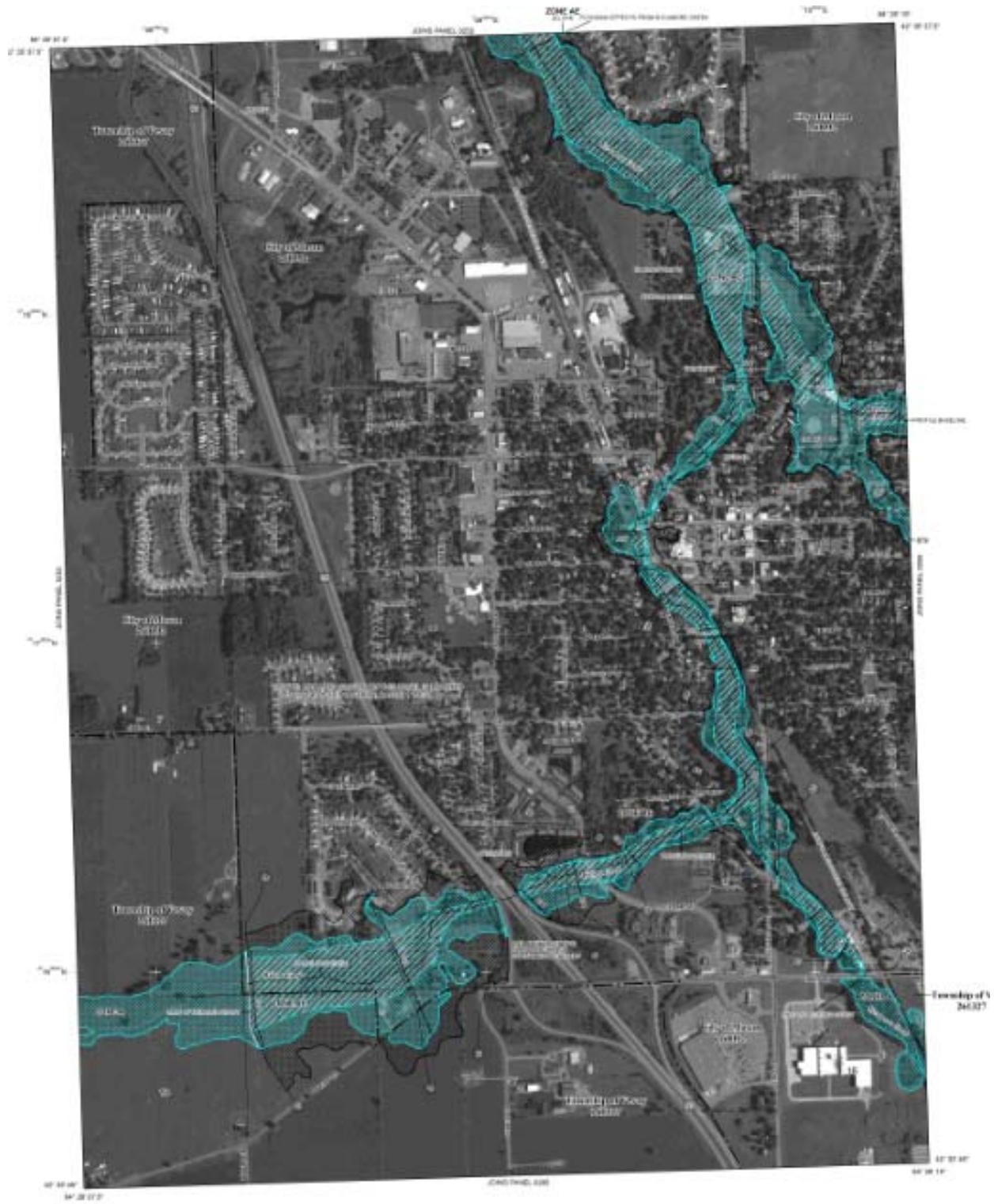


Fig. 54 City of St. Johns FIRM



Repetitive Loss Property Information in the Tri-County Region

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 in order 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.

Clinton County’s NFIP listings have a total of nine repetitive-loss properties officially identified by the NFIP. However, it is evident by inspecting the (confidential) property addresses that eight out of these nine properties have been misclassified by the NFIP as being within the wrong county, and should instead be included in the listings for Ingham County. Four of these properties are located in the City of East Lansing, and they include two single-family homes—the first of which had suffered an average of \$5,225 per flood event, over three events since 1980, and the second of which had suffered an average of \$15,780 per event in two events during the same time period. The other two East Lansing properties are classified as “other residential” type, which had suffered an average of \$3,868 per event during two events in the 1980s, and “2-4 family” type, which had suffered an average of \$8,900 per event during three events since 2008. There are four structures identified within the City of Lansing, one of which is listed as “mitigated.” The three non-mitigated structures include one non-residential building that had two flood events since 2000 which caused an average of \$38,062 per event; one single-family home that had two events during the 1980s with an average of about \$1,500 in damage per event; and one “other residential” structure that saw an average of \$2,123 in damage in each of its two reported flood events during the early 1980s. The one property on the list that is actually located in Clinton County is a non-residential structure within Victor Township, which suffered an average of \$82,836 in damages from each of its two reported events since 2000.

Eaton County has a total of twelve 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 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.

Ingham County had eight properties mistakenly listed within Clinton County (see the paragraph above, for more information), but also has four properties correctly classified within the official NFIP database. (One additional listing of a property in the City of Mason has been denoted as “mitigated.”) All four of the remaining Ingham County properties in the repetitive loss list are single-family homes located in Meridian Township, and two of them are located on the same street. Two of these homes have endured three reported flood losses since 1980, while the other two have experienced two flood events during that same time. The average loss per event to each of these four houses was \$9,268.

Dam Failures

Hazard Description - The collapse or failure of an impoundment that results in downstream flooding. A dam failure can result in loss of life and extensive property or natural resource damage for miles downstream from the dam. Dam failures occur not only during flood events, which may cause overtopping of a dam, but also because of poor operation, lack of maintenance and repair, and vandalism. Such failures can be catastrophic because they occur unexpectedly, with no time for evacuation. The Michigan Department of Environmental Quality (MDEQ) has documented approximately 278 dam failures in Michigan.

The definition for these rating by Michigan law (Part 315, Dam Safety, of the Natural Resources and Environmental Protection Act) is as follows: “High hazard potential dam” means a dam located in an area where a failure may cause serious damage to inhabited homes, agricultural buildings, campgrounds, recreational facilities, industrial or commercial buildings, public utilities, main highways, or class I carrier railroads, or where environmental degradation would be significant, or where danger to individuals exists with the potential for loss of life. “Significant hazard potential dam” means a dam located in an area where its failure may cause damage limited to isolated inhabited homes, agricultural buildings, structures, secondary highways, short line railroads, or public utilities, where environmental degradation may be significant, or where danger to individuals exists. There are several dams whose failure would potentially harm area property and residents with flash flooding, but there is no history of this occurring at any recent time within the county.

Drought

Hazard Description – Drought is a water shortage caused by a deficiency of rainfall, generally lasting for an extended period. Drought is a normal part of the climate of Michigan and of virtually all other climates around the world – including areas with high and low average rainfall. Drought differs from normal arid conditions found in low rainfall areas in that aridity is a permanent characteristic of that type of climate. Drought is the consequence of a natural reduction in the amount of precipitation expected over an extended period, usually a season or more in length. The severity of a drought depends not only on its location, duration and geographical extent, but also on the water supply demands made by human activities and vegetation. This multi-faceted nature of the hazard makes it difficult to define a drought and assess when and where one is likely to occur. Drought differs from other natural hazards in several ways. First, it is difficult to

determine the exact beginning and end of a drought, since its effects may accumulate slowly and linger even after the event is generally thought of as being over. Second, the lack of a clear-cut definition of drought often makes it difficult to determine whether one actually exists, and if it does, its degree of severity. Third, drought impacts are often less obvious than other natural hazards, and they are typically spread over a much larger geographic area. Fourth, due primarily to the aforementioned reasons, most communities do not have in place any contingency plans for addressing drought. This lack of pre-planning can greatly hinder a community's response capability when a drought does occur.

Droughts can cause many severe impacts on communities and regions. Impacts include 1) water shortages for human consumption, industrial, business and agricultural uses, power generation, recreation and navigation; 2) a drop in the quantity and quality of agricultural crops; 3) decline of water quality in lakes, streams and other natural bodies of water; 4) malnourishment of wildlife and livestock; 5) increase in wildfires and wildfire-related losses to timber, homes and other property; 6) declines in tourism in areas dependent on water-related activities; 7) declines in land values due to physical damage from the drought conditions and/or decreased economic or functional use of the property; 8) reduced tax revenue due to income losses in agriculture, retail, tourism and other economic sectors; 9) increases in insect infestations, plant disease, and wind erosion; and 10) possible loss of human life due to food shortages, extreme heat, fire, and other health-related problems such as diminished sewage flows and increased pollutant concentrations in surface water.

The available NCDC drought records (those that use the Palmer drought index) began with a period of extreme drought throughout Michigan. Every one of Michigan's climate divisions registered drought conditions for at least 8 months—some as long as 17 months—during this period from 1895-1986. Recovery was spotty and temporary over the following few years, and it is probable that numerous areas felt little distinction between this drought event and the only that followed closely afterward.

Without a doubt, the "Dust Bowl" drought of the 1930s was the most famous drought ever to occur in the U.S. It was caused by misuse of the land combined with years with lack of rainfall. As the land dried up, great clouds of dust and sand, carried by the wind, covered everything and the term "Dust Bowl" was coined. As a result of this drought, millions of acres of farmland became useless, forcing hundreds of thousands of people to leave their farms and seek an existence elsewhere. Although exact figures were not kept, some researchers estimate that nearly \$1 billion (in 1930s dollars) was provided in assistance to victims of the Dust Bowl drought. That event also ushered in a new era of farming and conservation programs and practices aimed at preventing a recurrence of a drought of the magnitude and impact of the Dust Bowl drought. In Michigan, this "dust bowl" period took the form of a most severe statewide drought condition from 1929 to 1932, followed by a less severe period from 1933 to 1937 in which the general pattern involved the south and western areas seeing the hardest conditions.

The most extreme conditions ever seen in Michigan occurred in the period from 1929 to 1932. Nine out of Michigan's ten climatic divisions set their all-time drought records during the beginning of 1931. Between 1930 and 1931, all nine of Michigan's most heavily affected climate divisions experienced this most unusual level of drought for at least 6 straight months. Unfortunately, those areas that experienced the more prolonged conditions of extreme drought were also the most heavily agricultural areas of the state, in the southern Lower Peninsula. The drought / heat wave that struck Michigan during the summer of 2001 damaged or destroyed approximately one-third of the state's fruit, vegetable and field crops, resulting in a U.S. Department of Agriculture Disaster Declaration for 82 of the state's counties. In 2002, moderate to extreme drought affected more than 45 percent of the country during the months of June, July and August. Nationwide, the summer was the third hottest on record, following only 1936 and 1934. The summer of 2002 was also very hot and dry in Michigan. During the first half of the month, hundreds of communities across the area were under water restrictions. Hardest hit from the drought was the agricultural industry. The severely dry weather was classified as a drought until mid-2003.

An analysis by year tends to overstate Michigan's drought-susceptibility, because the presence of a single drought month may be counted the same as an entire year of sustained drought (although longer drought periods often will be distinguished by having more severe Palmer Index values). A single month's drought will not necessarily cause severe agricultural impacts, because the timing of the drought with regard to the crop cycle is also important for the extent of drought impact. A drought event inventory in the tri-county region database is admittedly incomplete, with no damages or injuries reported between 1996 and 2013.

Storm Events

Clinton, Eaton, Ingham Counties and Delta Charter Township have each weathered many instances of storms since 2004. The National Climatic Data Center offers the following comprehensive listings of events within each jurisdiction. The following charts list the location, county, date, time, type of storm event, magnitude, deaths, injuries, property damage estimates and crop damage estimates beginning with Clinton County, then Eaton County and finishing with Ingham County.

Location	County/Zone	St	Date	Time	T.Z.	Type	Mag	Dth	Ini	PrD	CrD
Totals:								0	0	9.349M	320.00K
CLINTON (ZONE)	CLINTON (ZONE)	MI	01/14/2004	04:00	EST	Heavy Snow		0	0	0.00K	0.00K
CLINTON (ZONE)	CLINTON (ZONE)	MI	01/27/2004	07:00	EST	Winter Storm		0	0	0.00K	0.00K
MAPLE RAPIDS	CLINTON CO.	MI	05/14/2004	14:38	EST	Tornado	F0	0	0	150.00K	50.00K
CLINTON (ZONE)	CLINTON (ZONE)	MI	05/21/2004	23:32	EST	Flood		0	0	1.000M	200.00K
DE WITT	CLINTON CO.	MI	05/23/2004	18:10	EST	Thunderstorm Wind	53 kts. EG	0	0	30.00K	0.00K
WESTPHALIA	CLINTON CO.	MI	06/13/2004	16:43	EST	Thunderstorm Wind	53 kts. EG	0	0	5.00K	0.00K
ST JOHNS	CLINTON CO.	MI	06/14/2004	12:42	EST	Hail	1.00 in.	0	0	10.00K	10.00K
ST JOHNS	CLINTON CO.	MI	07/13/2004	20:10	EST	Hail	1.00 in.	0	0	5.00K	5.00K
DE WITT	CLINTON CO.	MI	07/13/2004	20:25	EST	Thunderstorm Wind	53 kts. EG	0	0	5.00K	0.00K
DE WITT	CLINTON CO.	MI	07/13/2004	21:15	EST	Thunderstorm Wind	53 kts. EG	0	0	10.00K	0.00K
CLINTON (ZONE)	CLINTON (ZONE)	MI	10/30/2004	11:00	EST	High Wind	50 kts. EG	0	0	50.00K	0.00K
CLINTON (ZONE)	CLINTON (ZONE)	MI	11/24/2004	12:00	EST	Winter Storm		0	0	0.00K	0.00K
CLINTON (ZONE)	CLINTON (ZONE)	MI	01/21/2005	23:00	EST	Heavy Snow		0	0	0.00K	0.00K
WESTPHALIA	CLINTON CO.	MI	06/05/2005	17:06	EST	Thunderstorm Wind	52 kts. EG	0	0	20.00K	0.00K
DE WITT	CLINTON CO.	MI	06/09/2005	17:54	EST	Thunderstorm Wind	52 kts. EG	0	0	10.00K	10.00K
DE WITT	CLINTON CO.	MI	06/09/2005	18:26	EST	Thunderstorm Wind	52 kts. EG	0	0	10.00K	10.00K
MAPLE RAPIDS	CLINTON CO.	MI	07/24/2005	06:45	EST	Thunderstorm Wind	53 kts. EG	0	0	25.00K	0.00K
WESTPHALIA	CLINTON CO.	MI	07/24/2005	07:05	EST	Thunderstorm Wind	53 kts. EG	0	0	10.00K	0.00K
ST JOHNS	CLINTON CO.	MI	09/22/2005	12:40	EST	Thunderstorm Wind	53 kts. EG	0	0	20.00K	0.00K
ST JOHNS	CLINTON CO.	MI	09/22/2005	16:30	EST	Thunderstorm Wind	53 kts. EG	0	0	10.00K	5.00K
CLINTON (ZONE)	CLINTON (ZONE)	MI	12/08/2005	16:00	EST	Heavy Snow		0	0	0.00K	0.00K
CLINTON (ZONE)	CLINTON (ZONE)	MI	01/20/2006	19:00	EST	Heavy Snow		0	0	0.00K	0.00K
OVID	CLINTON CO.	MI	06/03/2006	13:20	EST	Hail	0.88 in.	0	0	5.00K	5.00K
LANSING ARPT	CLINTON CO.	MI	08/02/2006	20:49	EST	Thunderstorm Wind	51 kts. MG	0	0	0.00K	0.00K
ST JOHNS	CLINTON CO.	MI	09/23/2006	17:30	EST	Thunderstorm Wind	52 kts. EG	0	0	10.00K	0.00K
WESTPHALIA	CLINTON CO.	MI	10/02/2006	13:45	EST-5	Hail	0.88 in.	0	0	10.00K	10.00K
CLINTON (ZONE)	CLINTON (ZONE)	MI	12/01/2006	04:00	EST-5	Ice Storm		0	0	30.00K	0.00K
CLINTON (ZONE)	CLINTON (ZONE)	MI	01/14/2007	09:00	EST-5	Winter Storm		0	0	25.00K	0.00K
FOWLER	CLINTON CO.	MI	06/02/2007	13:30	EST-5	Thunderstorm Wind	50 kts. EG	0	0	10.00K	0.00K
ST JOHNS	CLINTON CO.	MI	06/04/2007	16:47	EST-5	Hail	0.75 in.	0	0	0.00K	0.00K
ST JOHNS	CLINTON CO.	MI	06/19/2007	04:10	EST-5	Thunderstorm Wind	52 kts. EG	0	0	0.00K	0.00K
BATH	CLINTON CO.	MI	07/05/2007	12:30	EST-5	Thunderstorm Wind	50 kts. EG	0	0	10.00K	0.00K
OVID	CLINTON CO.	MI	07/19/2007	13:26	EST-5	Thunderstorm Wind	52 kts. EG	0	0	10.00K	0.00K
MAPLE RAPIDS	CLINTON CO.	MI	08/22/2007	20:58	EST-5	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
WAOOUSTA	CLINTON CO.	MI	08/23/2007	18:12	EST-5	Thunderstorm Wind	50 kts. EG	0	0	50.00K	0.00K
EUREKA	CLINTON CO.	MI	08/29/2007	14:45	EST-5	Thunderstorm Wind	50 kts. EG	0	0	50.00K	0.00K
ST JOHNS	CLINTON CO.	MI	08/29/2007	15:10	EST-5	Thunderstorm Wind	50 kts. EG	0	0	25.00K	0.00K
OVID	CLINTON CO.	MI	08/29/2007	15:30	EST-5	Thunderstorm Wind	50 kts. EG	0	0	3.00K	0.00K
EAGLE	CLINTON CO.	MI	09/25/2007	17:10	EST-5	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
WESTPHALIA	CLINTON CO.	MI	09/25/2007	17:15	EST-5	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
CLINTON (ZONE)	CLINTON (ZONE)	MI	12/01/2007	17:00	EST-5	Winter Storm		0	0	0.00K	0.00K
CLINTON (ZONE)	CLINTON (ZONE)	MI	12/15/2007	19:00	EST-5	Heavy Snow		0	0	0.00K	0.00K
CLINTON (ZONE)	CLINTON (ZONE)	MI	02/01/2008	03:00	EST-5	Winter Storm		0	0	0.00K	0.00K
CLINTON (ZONE)	CLINTON (ZONE)	MI	02/06/2008	12:30	EST-5	Winter Storm		0	0	0.00K	0.00K
MAPLE RAPIDS	CLINTON CO.	MI	04/11/2008	15:53	EST-5	Hail	0.88 in.	0	0	0.00K	0.00K

MAPLE RAPIDS	CLINTON CO.	MI	04/11/2008	15:53	EST-5	Hail	0.88 in.	0	0	0.00K	0.00K
DE WITT	CLINTON CO.	MI	04/11/2008	16:32	EST-5	Hail	1.25 in.	0	0	10.00K	10.00K
DE WITT	CLINTON CO.	MI	04/11/2008	16:32	EST-5	Hail	0.88 in.	0	0	0.00K	0.00K
DE WITT	CLINTON CO.	MI	04/11/2008	16:34	EST-5	Hail	1.00 in.	0	0	10.00K	5.00K
MERLE BEACH	CLINTON CO.	MI	05/17/2008	17:03	EST-5	Thunderstorm Wind	50 kts. EG	0	0	1.00K	0.00K
ST JOHNS ARCHER FLD	CLINTON CO.	MI	05/17/2008	17:08	EST-5	Thunderstorm Wind	50 kts. EG	0	0	1.00K	0.00K
WESTPHALIA	CLINTON CO.	MI	06/06/2008	16:28	EST-5	Thunderstorm Wind	52 kts. EG	0	0	0.00K	0.00K
ST JOHNS	CLINTON CO.	MI	06/06/2008	16:29	EST-5	Thunderstorm Wind	60 kts. EG	0	0	0.00K	0.00K
MERLE BEACH	CLINTON CO.	MI	06/06/2008	16:30	EST-5	Thunderstorm Wind	60 kts. EG	0	0	0.00K	0.00K
ST JOHNS	CLINTON CO.	MI	06/06/2008	16:30	EST-5	Thunderstorm Wind	60 kts. EG	0	0	0.00K	0.00K
MERLE BEACH	CLINTON CO.	MI	06/06/2008	17:00	EST-5	Thunderstorm Wind	52 kts. EG	0	0	0.00K	0.00K
ST JOHNS	CLINTON CO.	MI	06/06/2008	17:15	EST-5	Thunderstorm Wind	60 kts. EG	0	0	0.00K	0.00K
ST JOHNS	CLINTON CO.	MI	06/06/2008	17:22	EST-5	Thunderstorm Wind	60 kts. EG	0	0	0.00K	0.00K
ST JOHNS	CLINTON CO.	MI	06/06/2008	17:36	EST-5	Thunderstorm Wind	65 kts. EG	0	0	50.00K	0.00K
DE WITT	CLINTON CO.	MI	06/07/2008	21:55	EST-5	Thunderstorm Wind	52 kts. EG	0	0	0.00K	0.00K
DE WITT	CLINTON CO.	MI	06/07/2008	22:00	EST-5	Thunderstorm Wind	52 kts. EG	0	0	0.00K	0.00K
ST JOHNS	CLINTON CO.	MI	07/02/2008	14:55	EST-5	Thunderstorm Wind	52 kts. EG	0	0	0.00K	0.00K
CLINTON (ZONE)	CLINTON (ZONE)	MI	11/30/2008	12:30	EST-5	Winter Storm		0	0	0.00K	0.00K
CLINTON (ZONE)	CLINTON (ZONE)	MI	12/01/2008	00:00	EST-5	Winter Storm		0	0	0.00K	0.00K
CLINTON (ZONE)	CLINTON (ZONE)	MI	12/19/2008	04:30	EST-5	Winter Storm		0	0	0.00K	0.00K
CLINTON (ZONE)	CLINTON (ZONE)	MI	12/28/2008	04:00	EST-5	High Wind	52 kts. EG	0	0	0.00K	0.00K
EAGLE	CLINTON CO.	MI	06/19/2009	21:30	EST-5	Flash Flood		0	0	0.00K	0.00K
CLINTON (ZONE)	CLINTON (ZONE)	MI	12/24/2009	12:00	EST-5	Winter Weather		0	0	0.00K	0.00K
CLINTON (ZONE)	CLINTON (ZONE)	MI	02/09/2010	07:00	EST-5	Heavy Snow		0	0	0.00K	0.00K
CLINTON (ZONE)	CLINTON (ZONE)	MI	02/22/2010	00:00	EST-5	Heavy Snow		0	0	0.00K	0.00K
EAGLE	CLINTON CO.	MI	06/04/2010	17:24	EST-5	Thunderstorm Wind	65 kts. EG	0	0	200.00K	0.00K
(LAN)CAPITOL CTY ARP	CLINTON CO.	MI	06/04/2010	17:51	EST-5	Thunderstorm Wind	55 kts. EG	0	0	50.00K	0.00K
CLINTON (ZONE)	CLINTON (ZONE)	MI	02/01/2011	19:00	EST-5	Winter Storm		0	0	0.00K	0.00K
CLINTON (ZONE)	CLINTON (ZONE)	MI	02/20/2011	14:00	EST-5	Winter Storm		0	0	0.00K	0.00K
CLINTON (ZONE)	CLINTON (ZONE)	MI	03/22/2011	20:00	EST-5	Winter Weather		0	0	0.00K	0.00K
ST JOHNS	CLINTON CO.	MI	04/19/2011	22:18	EST-5	Hail	0.75 in.	0	0	0.00K	0.00K
OVID KOSHT ARPT	CLINTON CO.	MI	06/22/2011	12:30	EST-5	Hail	1.00 in.	0	0	0.00K	0.00K
ST JOHNS GLOWACKI FL	CLINTON CO.	MI	08/20/2011	13:45	EST-5	Thunderstorm Wind	52 kts. EG	0	0	0.00K	0.00K
CLINTON (ZONE)	CLINTON (ZONE)	MI	11/29/2011	18:00	EST-5	Winter Storm		0	0	1.000M	0.00K
CLINTON (ZONE)	CLINTON (ZONE)	MI	02/23/2012	20:00	EST-5	Heavy Snow		0	0	0.00K	0.00K
ST JOHNS	CLINTON CO.	MI	05/03/2012	16:45	EST-5	Thunderstorm Wind	65 kts. EG	0	0	100.00K	0.00K
MERLE BEACH	CLINTON CO.	MI	05/03/2012	17:03	EST-5	Hail	0.75 in.	0	0	0.00K	0.00K
FOWLER	CLINTON CO.	MI	07/05/2012	02:07	EST-5	Thunderstorm Wind	51 kts. MG	0	0	1.00K	0.00K
FOWLER	CLINTON CO.	MI	07/05/2012	02:07	EST-5	Thunderstorm Wind	51 kts. MG	0	0	1.00K	0.00K
ST JOHNS	CLINTON CO.	MI	07/05/2012	02:15	EST-5	Thunderstorm Wind	52 kts. EG	0	0	25.00K	0.00K
MATHERTON	CLINTON CO.	MI	04/17/2013	16:00	EST-5	Flood		0	0	5.000M	0.00K
(LAN)CAPITOL CTY ARP	CLINTON CO.	MI	05/28/2013	19:07	EST-5	Thunderstorm Wind	70 kts. EG	0	0	25.00K	0.00K
MERLE BEACH	CLINTON CO.	MI	05/30/2013	18:45	EST-5	Thunderstorm Wind	61 kts. EG	0	0	15.00K	0.00K
(LAN)CAPITOL CTY ARP	CLINTON CO.	MI	11/17/2013	16:39	EST-5	Thunderstorm Wind	53 kts. MG	0	0	0.00K	0.00K
CLINTON (ZONE)	CLINTON (ZONE)	MI	11/17/2013	19:00	EST-5	High Wind	61 kts. EG	0	0	100.00K	0.00K
CLINTON (ZONE)	CLINTON (ZONE)	MI	12/21/2013	18:00	EST-5	Ice Storm		0	0	1.000M	0.00K
CLINTON (ZONE)	CLINTON (ZONE)	MI	01/04/2014	20:00	EST-5	Heavy Snow		0	0	0.00K	0.00K
CLINTON (ZONE)	CLINTON (ZONE)	MI	03/12/2014	01:00	EST-5	Heavy Snow		0	0	0.00K	0.00K
ST JOHNS	CLINTON CO.	MI	04/12/2014	17:31	EST-5	Thunderstorm Wind	70 kts. EG	0	0	50.00K	0.00K
ST JOHNS	CLINTON CO.	MI	07/06/2014	23:50	EST-5	Thunderstorm Wind	61 kts. EG	0	0	50.00K	0.00K
ST JOHNS GLOWACKI FL	CLINTON CO.	MI	07/07/2014	00:00	EST-5	Tornado	EF0	0	0	50.00K	0.00K
EAST DE WITT	CLINTON CO.	MI	07/27/2014	14:30	EST-5	Hail	1.00 in.	0	0	0.00K	0.00K
DE WITT	CLINTON CO.	MI	08/19/2014	14:41	EST-5	Thunderstorm Wind	52 kts. EG	0	0	2.00K	0.00K

Location	County/Zone	St.	Date	Time	T.Z.	Type	Mag	Dth	Inj	PrD	CrD
Totals:								0	5	55.203M	925.00K
EATON (ZONE)	EATON (ZONE)	MI	01/27/2004	07:00	EST	Winter Storm		0	0	0.00K	0.00K
CHARLOTTE	EATON CO.	MI	05/09/2004	12:50	EST	Thunderstorm Wind	53 kts. EG	0	0	20.00K	5.00K
MULLIKEN	EATON CO.	MI	05/10/2004	17:35	EST	Thunderstorm Wind	65 kts. EG	0	0	50.00K	10.00K
BELLEVUE	EATON CO.	MI	05/10/2004	19:15	EST	Thunderstorm Wind	53 kts. EG	0	0	25.00K	10.00K
BELLEVUE	EATON CO.	MI	05/14/2004	14:56	EST	Thunderstorm Wind	53 kts. EG	0	0	50.00K	10.00K
CHARLOTTE	EATON CO.	MI	05/21/2004	12:12	EST	Hail	0.75 in.	0	0	40.00K	10.00K
EATON (ZONE)	EATON (ZONE)	MI	05/21/2004	23:32	EST	Flood		0	0	1.000M	200.00K
CHARLOTTE	EATON CO.	MI	05/23/2004	15:50	EST	Hail	1.75 in.	0	0	40.00K	40.00K
VERMONTVILLE	EATON CO.	MI	06/14/2004	12:35	EST	Hail	0.75 in.	0	0	10.00K	5.00K
GRAND LEDGE	EATON CO.	MI	07/13/2004	21:05	EST	Thunderstorm Wind	53 kts. EG	0	0	15.00K	0.00K
VERMONTVILLE	EATON CO.	MI	08/02/2004	15:57	EST	Hail	0.75 in.	0	0	10.00K	5.00K
VERMONTVILLE	EATON CO.	MI	08/25/2004	16:50	EST	Thunderstorm Wind	85 kts. EG	0	0	100.00K	25.00K
VERMONTVILLE	EATON CO.	MI	08/25/2004	16:53	EST	Tornado	F0	0	0	50.00K	25.00K
EATON (ZONE)	EATON (ZONE)	MI	10/30/2004	11:00	EST	High Wind	50 kts. EG	0	0	50.00K	0.00K
EATON (ZONE)	EATON (ZONE)	MI	11/24/2004	12:00	EST	Winter Storm		0	0	0.00K	0.00K
EATON (ZONE)	EATON (ZONE)	MI	01/21/2005	23:00	EST	Heavy Snow		0	0	0.00K	0.00K
MULLIKEN	EATON CO.	MI	06/05/2005	16:58	EST	Thunderstorm Wind	52 kts. EG	0	0	25.00K	0.00K
GRAND LEDGE	EATON CO.	MI	06/05/2005	17:42	EST	Hail	0.75 in.	0	0	10.00K	10.00K
GRAND LEDGE	EATON CO.	MI	06/09/2005	19:05	EST	Hail	0.75 in.	0	0	25.00K	15.00K
NEEDMORE	EATON CO.	MI	06/14/2005	14:13	EST	Hail	0.75 in.	0	0	5.00K	5.00K
EATON RAPIDS	EATON CO.	MI	06/26/2005	16:50	EST	Thunderstorm Wind	52 kts. EG	0	0	15.00K	0.00K
OLIVET STATION	EATON CO.	MI	06/30/2005	08:45	EST	Thunderstorm Wind	52 kts. EG	0	0	10.00K	0.00K
CHARLOTTE	EATON CO.	MI	07/04/2005	17:00	EST	Thunderstorm Wind	53 kts. EG	0	0	10.00K	0.00K
CHARLOTTE	EATON CO.	MI	07/18/2005	13:45	EST	Thunderstorm Wind	53 kts. EG	0	0	10.00K	0.00K
BELLEVUE	EATON CO.	MI	07/20/2005	16:28	EST	Thunderstorm Wind	53 kts. EG	0	0	25.00K	0.00K
GRAND LEDGE	EATON CO.	MI	07/24/2005	07:15	EST	Thunderstorm Wind	53 kts. EG	0	0	25.00K	0.00K
EATON RAPIDS	EATON CO.	MI	07/26/2005	01:35	EST	Thunderstorm Wind	50 kts. MG	0	0	10.00K	0.00K
EATON (ZONE)	EATON (ZONE)	MI	12/08/2005	16:00	EST	Heavy Snow		0	0	0.00K	0.00K
GRAND LEDGE	EATON CO.	MI	08/02/2006	20:37	EST	Thunderstorm Wind	53 kts. EG	0	0	10.00K	0.00K
BELLEVUE	EATON CO.	MI	09/13/2006	01:55	EST	Thunderstorm Wind	52 kts. EG	0	0	10.00K	0.00K
EATON (ZONE)	EATON (ZONE)	MI	12/01/2006	04:00	EST-5	Ice Storm		0	0	25.00K	0.00K
EATON (ZONE)	EATON (ZONE)	MI	01/14/2007	09:00	EST-5	Winter Storm		0	0	25.00K	0.00K
EATON (ZONE)	EATON (ZONE)	MI	02/02/2007	19:00	EST-5	Blizzard		0	0	0.00K	0.00K
MILLETT	EATON CO.	MI	05/15/2007	18:11	EST-5	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
CHARLOTTE	EATON CO.	MI	06/02/2007	12:40	EST-5	Hail	0.75 in.	0	0	0.00K	0.00K
EATON RAPIDS SKYWAY	EATON CO.	MI	08/23/2007	18:04	EST-5	Thunderstorm Wind	50 kts. EG	0	0	100.00K	0.00K
KALAMQ	EATON CO.	MI	08/24/2007	15:07	EST-5	Thunderstorm Wind	52 kts. EG	0	0	40.00K	0.00K
CHARLOTTE	EATON CO.	MI	08/24/2007	15:25	EST-5	Tornado	EF3	0	5	40.000M	0.00K
BELLEVUE	EATON CO.	MI	08/29/2007	16:55	EST-5	Thunderstorm Wind	52 kts. EG	0	0	0.00K	0.00K
MULLIKEN	EATON CO.	MI	10/18/2007	18:41	EST-5	Funnel Cloud		0	0	0.00K	0.00K
POTTERVILLE	EATON CO.	MI	10/18/2007	22:12	EST-5	Thunderstorm Wind	52 kts. EG	0	0	1.00K	0.00K
GRESHAM	EATON CO.	MI	10/18/2007	22:12	EST-5	Thunderstorm Wind	52 kts. EG	0	0	1.00K	0.00K
BELLEVUE	EATON CO.	MI	10/18/2007	22:30	EST-5	Thunderstorm Wind	59 kts. EG	0	0	0.00K	0.00K
EATON (ZONE)	EATON (ZONE)	MI	12/01/2007	17:00	EST-5	Winter Storm		0	0	0.00K	0.00K
EATON (ZONE)	EATON (ZONE)	MI	12/15/2007	19:00	EST-5	Heavy Snow		0	0	0.00K	0.00K
EATON (ZONE)	EATON (ZONE)	MI	12/31/2007	20:30	EST-5	Winter Storm		0	0	0.00K	0.00K
EATON (ZONE)	EATON (ZONE)	MI	01/01/2008	00:00	EST-5	Winter Storm		0	0	0.00K	0.00K
EATON (ZONE)	EATON (ZONE)	MI	02/01/2008	02:18	EST-5	Winter Storm		0	0	0.00K	0.00K
EATON (ZONE)	EATON (ZONE)	MI	02/06/2008	11:00	EST-5	Winter Storm		0	0	0.00K	0.00K
EATON (ZONE)	EATON (ZONE)	MI	03/21/2008	14:00	EST-5	Winter Storm		0	0	0.00K	0.00K
GRAND LEDGE	EATON CO.	MI	04/11/2008	16:24	EST-5	Hail	0.75 in.	0	0	0.00K	0.00K

SUNFIELD	EATON CO.	MI	06/06/2008	15:45	EST-5	Thunderstorm Wind	65 kts. EG	0	0	0.00K	0.00K
HOYTVILLE	EATON CO.	MI	06/06/2008	15:55	EST-5	Thunderstorm Wind	52 kts. EG	0	0	0.00K	0.00K
MULLIKEN ARPT	EATON CO.	MI	06/06/2008	16:00	EST-5	Thunderstorm Wind	52 kts. EG	0	0	0.00K	0.00K
SHAYTOWN	EATON CO.	MI	06/06/2008	16:25	EST-5	Thunderstorm Wind	60 kts. EG	0	0	0.00K	0.00K
BELLEVUE	EATON CO.	MI	06/07/2008	21:12	EST-5	Flash Flood		0	0	600.00K	200.00K
ONEIDA CENTER	EATON CO.	MI	06/07/2008	21:41	EST-5	Thunderstorm Wind	65 kts. EG	0	0	0.00K	0.00K
DAWN HAVEN ESTATES	EATON CO.	MI	06/07/2008	21:45	EST-5	Thunderstorm Wind	60 kts. EG	0	0	0.00K	0.00K
DAWN HAVEN ESTATES	EATON CO.	MI	06/07/2008	21:50	EST-5	Thunderstorm Wind	60 kts. EG	0	0	0.00K	0.00K
DAWN HAVEN ESTATES	EATON CO.	MI	06/07/2008	21:50	EST-5	Thunderstorm Wind	61 kts. EG	0	0	0.00K	0.00K
BELLEVUE	EATON CO.	MI	06/08/2008	14:42	EST-5	Thunderstorm Wind	52 kts. EG	0	0	0.00K	0.00K
KELLY	EATON CO.	MI	06/08/2008	14:43	EST-5	Thunderstorm Wind	52 kts. EG	0	0	0.00K	0.00K
NEEDMORE	EATON CO.	MI	06/08/2008	14:45	EST-5	Tornado	EF1	0	0	0.00K	0.00K
DAWN HAVEN ESTATES	EATON CO.	MI	06/08/2008	15:00	EST-5	Thunderstorm Wind	60 kts. EG	0	0	0.00K	0.00K
HOYTVILLE	EATON CO.	MI	06/08/2008	15:42	EST-5	Thunderstorm Wind	52 kts. EG	0	0	0.00K	0.00K
VERMONTVILLE	EATON CO.	MI	07/02/2008	16:12	EST-5	Thunderstorm Wind	55 kts. EG	0	0	0.00K	0.00K
OLIVET STATION	EATON CO.	MI	07/02/2008	16:35	EST-5	Hail	1.25 in.	0	0	0.00K	100.00K
OLIVET STATION	EATON CO.	MI	07/02/2008	16:35	EST-5	Hail	1.00 in.	0	0	0.00K	0.00K
OLIVET STATION	EATON CO.	MI	07/02/2008	16:37	EST-5	Hail	0.75 in.	0	0	0.00K	0.00K
CHARLOTTE	EATON CO.	MI	07/02/2008	16:37	EST-5	Hail	1.00 in.	0	0	0.00K	0.00K
CHARLOTTE	EATON CO.	MI	07/02/2008	16:38	EST-5	Hail	0.88 in.	0	0	0.00K	0.00K
CHARLOTTE	EATON CO.	MI	07/02/2008	16:46	EST-5	Hail	0.75 in.	0	0	0.00K	0.00K
BROOKFIELD	EATON CO.	MI	09/13/2008	17:00	EST-5	Tornado	EF0	0	0	0.00K	0.00K
EATON (ZONE)	EATON (ZONE)	MI	12/19/2008	04:00	EST-5	Winter Storm		0	0	0.00K	0.00K
EATON (ZONE)	EATON (ZONE)	MI	12/28/2008	03:15	EST-5	High Wind	52 kts. EG	0	0	0.00K	0.00K
EATON (ZONE)	EATON (ZONE)	MI	01/09/2009	11:00	EST-5	Winter Storm		0	0	0.00K	0.00K
EATON (ZONE)	EATON (ZONE)	MI	04/05/2009	22:30	EST-5	Winter Storm		0	0	0.00K	0.00K
DIMONDALE	EATON CO.	MI	06/08/2009	14:30	EST-5	Hail	0.75 in.	0	0	0.00K	0.00K
EATON RAPIDS	EATON CO.	MI	06/19/2009	21:30	EST-5	Thunderstorm Wind	55 kts. EG	0	0	50.00K	0.00K
EATON (ZONE)	EATON (ZONE)	MI	12/24/2009	11:00	EST-5	Winter Weather		0	0	0.00K	0.00K
EATON (ZONE)	EATON (ZONE)	MI	02/09/2010	07:00	EST-5	Heavy Snow		0	0	0.00K	0.00K
EATON (ZONE)	EATON (ZONE)	MI	02/21/2010	22:00	EST-5	Heavy Snow		0	0	0.00K	0.00K
BELLEVUE	EATON CO.	MI	04/06/2010	10:04	EST-5	Hail	0.75 in.	0	0	0.00K	0.00K
BELLEVUE	EATON CO.	MI	07/10/2010	16:18	EST-5	Hail	0.75 in.	0	0	0.00K	0.00K
EATON (ZONE)	EATON (ZONE)	MI	02/01/2011	19:00	EST-5	Winter Storm		0	0	0.00K	0.00K
EATON (ZONE)	EATON (ZONE)	MI	02/20/2011	13:00	EST-5	Winter Storm		0	0	0.00K	0.00K
EATON (ZONE)	EATON (ZONE)	MI	04/17/2011	12:20	EST-5	Strong Wind	41 kts. EG	0	0	1.00K	0.00K
CHARLOTTE	EATON CO.	MI	04/19/2011	22:18	EST-5	Hail	0.88 in.	0	0	0.00K	0.00K
WEST WINDSOR	EATON CO.	MI	05/13/2011	19:09	EST-5	Hail	0.75 in.	0	0	0.00K	0.00K
CHARLOTTE	EATON CO.	MI	05/29/2011	15:55	EST-5	Thunderstorm Wind	87 kts. EG	0	0	1.000M	0.00K
BROOKFIELD	EATON CO.	MI	05/29/2011	15:55	EST-5	Thunderstorm Wind	74 kts. EG	0	0	1.000M	0.00K
WOODBURY	EATON CO.	MI	07/28/2011	00:00	EST-5	Flash Flood		0	0	1.000M	250.00K
BELLEVUE	EATON CO.	MI	08/20/2011	13:01	EST-5	Thunderstorm Wind	52 kts. EG	0	0	0.00K	0.00K
EATON (ZONE)	EATON (ZONE)	MI	11/29/2011	17:00	EST-5	Winter Storm		0	0	1.000M	0.00K
EATON (ZONE)	EATON (ZONE)	MI	02/23/2012	19:00	EST-5	Heavy Snow		0	0	0.00K	0.00K
SUNFIELD	EATON CO.	MI	05/03/2012	18:00	EST-5	Hail	0.75 in.	0	0	0.00K	0.00K
WOODBURY	EATON CO.	MI	04/17/2013	16:00	EST-5	Flood		0	0	3.000M	0.00K
ONEIDA CENTER	EATON CO.	MI	06/13/2013	01:00	EST-5	Flash Flood		0	0	50.00K	0.00K
PETRIEVILLE	EATON CO.	MI	11/17/2013	16:45	EST-5	Thunderstorm Wind	61 kts. EG	0	0	50.00K	0.00K
EATON (ZONE)	EATON (ZONE)	MI	11/17/2013	18:00	EST-5	High Wind	61 kts. EG	0	0	100.00K	0.00K
EATON (ZONE)	EATON (ZONE)	MI	12/21/2013	18:00	EST-5	Ice Storm		0	0	5.000M	0.00K
EATON (ZONE)	EATON (ZONE)	MI	01/04/2014	19:00	EST-5	Heavy Snow		0	0	0.00K	0.00K
EATON (ZONE)	EATON (ZONE)	MI	02/17/2014	21:00	EST-5	Heavy Snow		0	0	0.00K	0.00K
EATON (ZONE)	EATON (ZONE)	MI	03/12/2014	01:00	EST-5	Heavy Snow		0	0	0.00K	0.00K
CHARLESWORTH	EATON CO.	MI	07/27/2014	17:29	EST-5	Thunderstorm Wind	52 kts. EG	0	0	10.00K	0.00K

OLIVET STATION	EATON CO.	MI	09/05/2014	17:43	EST-5	Thunderstorm Wind	65 kts. EG	0	0	500.00K	0.00K
EATON (ZONE)	EATON (ZONE)	MI	11/17/2014	07:00	EST-5	Lake-effect Snow		0	0	0.00K	0.00K
Totals:								0	5	55.203M	925.00K

Location	County/Zone	St	Date	Time	T.Z.	Type	Mag	Dth	Inj	PrD	CrD
Totals:								2	0	36.397M	320.00K
INGHAM (ZONE)	INGHAM (ZONE)	MI	01/27/2004	07:00	EST	Winter Storm		0	0	0.00K	0.00K
LANSING	INGHAM CO.	MI	05/10/2004	17:48	EST	Thunderstorm Wind	65 kts. MG	0	0	25.00K	10.00K
MASON	INGHAM CO.	MI	05/20/2004	22:25	EST	Hail	1.00 in.	0	0	15.00K	15.00K
MASON	INGHAM CO.	MI	05/21/2004	12:37	EST	Thunderstorm Wind	50 kts. MG	0	0	10.00K	0.00K
MASON	INGHAM CO.	MI	05/21/2004	12:46	EST	Thunderstorm Wind	53 kts. EG	0	0	25.00K	0.00K
LESLIE	INGHAM CO.	MI	05/21/2004	20:50	EST	Hail	1.00 in.	0	0	20.00K	10.00K
INGHAM (ZONE)	INGHAM (ZONE)	MI	05/21/2004	23:32	EST	Flood		0	0	1.000M	200.00K
LANSING	INGHAM CO.	MI	06/09/2004	12:30	EST	Hail	0.75 in.	0	0	10.00K	0.00K
LANSING	INGHAM CO.	MI	06/14/2004	13:25	EST	Hail	0.75 in.	0	0	5.00K	5.00K
HOLT	INGHAM CO.	MI	07/13/2004	21:15	EST	Thunderstorm Wind	53 kts. EG	0	0	20.00K	0.00K
INGHAM (ZONE)	INGHAM (ZONE)	MI	10/30/2004	11:00	EST	High Wind	50 kts. EG	0	0	50.00K	0.00K
INGHAM (ZONE)	INGHAM (ZONE)	MI	11/24/2004	12:00	EST	Winter Storm		0	0	0.00K	0.00K
INGHAM (ZONE)	INGHAM (ZONE)	MI	01/21/2005	23:00	EST	Heavy Snow		0	0	0.00K	0.00K
LESLIE	INGHAM CO.	MI	05/13/2005	16:30	EST	Thunderstorm Wind	53 kts. EG	0	0	0.00K	0.00K
MASON	INGHAM CO.	MI	06/05/2005	13:49	EST	Hail	1.50 in.	0	0	25.00K	25.00K
LANSING	INGHAM CO.	MI	06/05/2005	17:40	EST	Hail	1.00 in.	0	0	50.00K	25.00K
AURELIUS	INGHAM CO.	MI	06/26/2005	17:10	EST	Thunderstorm Wind	52 kts. EG	0	0	15.00K	0.00K
LANSING	INGHAM CO.	MI	07/18/2005	14:25	EST	Thunderstorm Wind	53 kts. EG	0	0	50.00K	0.00K
INGHAM (ZONE)	INGHAM (ZONE)	MI	12/08/2005	16:00	EST	Heavy Snow		0	0	0.00K	0.00K
MASON	INGHAM CO.	MI	04/22/2006	19:44	EST	Hail	1.00 in.	0	0	10.00K	5.00K
WILLIAMSTON	INGHAM CO.	MI	04/22/2006	19:55	EST	Hail	0.75 in.	0	0	10.00K	5.00K
WEBBERVILLE	INGHAM CO.	MI	04/22/2006	19:57	EST	Hail	1.00 in.	0	0	10.00K	5.00K
WILLIAMSTON	INGHAM CO.	MI	06/19/2006	13:28	EST	Thunderstorm Wind	52 kts. EG	0	0	20.00K	10.00K
LANSING	INGHAM CO.	MI	08/02/2006	21:14	EST	Thunderstorm Wind	52 kts. EG	0	0	5.00K	0.00K
INGHAM (ZONE)	INGHAM (ZONE)	MI	12/01/2006	04:00	EST-5	Ice Storm		0	0	40.00K	0.00K
INGHAM (ZONE)	INGHAM (ZONE)	MI	01/14/2007	09:00	EST-5	Winter Storm		0	0	25.00K	0.00K
NORTH AURELIUS	INGHAM CO.	MI	05/15/2007	17:40	EST-5	Thunderstorm Wind	63 kts. MG	0	0	15.00K	0.00K
ONONDAGA	INGHAM CO.	MI	06/02/2007	17:50	EST-5	Thunderstorm Wind	52 kts. EG	0	0	15.00K	0.00K
HOPWOOD ACRES	INGHAM CO.	MI	06/27/2007	15:00	EST-5	Thunderstorm Wind	52 kts. EG	0	0	10.00K	0.00K
WEBBERVILLE	INGHAM CO.	MI	07/05/2007	13:05	EST-5	Thunderstorm Wind	60 kts. EG	0	0	25.00K	0.00K
HOPWOOD ACRES	INGHAM CO.	MI	07/19/2007	13:35	EST-5	Thunderstorm Wind	50 kts. EG	0	0	20.00K	0.00K
WILLIAMSTON	INGHAM CO.	MI	07/19/2007	13:55	EST-5	Thunderstorm Wind	50 kts. EG	0	0	15.00K	0.00K
HOPWOOD ACRES	INGHAM CO.	MI	08/23/2007	18:16	EST-5	Thunderstorm Wind	50 kts. MG	0	0	25.00K	0.00K
LANSING	INGHAM CO.	MI	08/24/2007	15:55	EST-5	Tornado	EF1	0	0	300.00K	0.00K
LESLIE	INGHAM CO.	MI	08/29/2007	16:35	EST-5	Thunderstorm Wind	50 kts. EG	0	0	20.00K	0.00K
HOPWOOD ACRES	INGHAM CO.	MI	08/29/2007	17:42	EST-5	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
VANTOWN	INGHAM CO.	MI	10/18/2007	21:28	EST-5	Tornado	EF2	2	0	15.000M	0.00K
NORTH AURELIUS	INGHAM CO.	MI	10/18/2007	23:06	EST-5	Thunderstorm Wind	52 kts. EG	0	0	5.00K	0.00K
BUNKER HILL CENTER	INGHAM CO.	MI	10/18/2007	23:06	EST-5	Thunderstorm Wind	52 kts. EG	0	0	5.00K	0.00K
DANSVILLE	INGHAM CO.	MI	10/18/2007	23:27	EST-5	Thunderstorm Wind	52 kts. EG	0	0	5.00K	0.00K
INGHAM (ZONE)	INGHAM (ZONE)	MI	12/01/2007	17:00	EST-5	Winter Storm		0	0	0.00K	0.00K
INGHAM (ZONE)	INGHAM (ZONE)	MI	12/15/2007	19:00	EST-5	Heavy Snow		0	0	0.00K	0.00K
HOPWOOD ACRES	INGHAM CO.	MI	12/23/2007	06:35	EST-5	Thunderstorm Wind	56 kts. EG	0	0	50.00K	0.00K
VANTOWN	INGHAM CO.	MI	12/23/2007	06:55	EST-5	Thunderstorm Wind	52 kts. EG	0	0	5.00K	0.00K
NORTH LESLIE	INGHAM CO.	MI	12/23/2007	07:05	EST-5	Thunderstorm Wind	56 kts. EG	0	0	5.00K	0.00K
MILLVILLE	INGHAM CO.	MI	12/23/2007	07:16	EST-5	Thunderstorm Wind	52 kts. EG	0	0	2.00K	0.00K

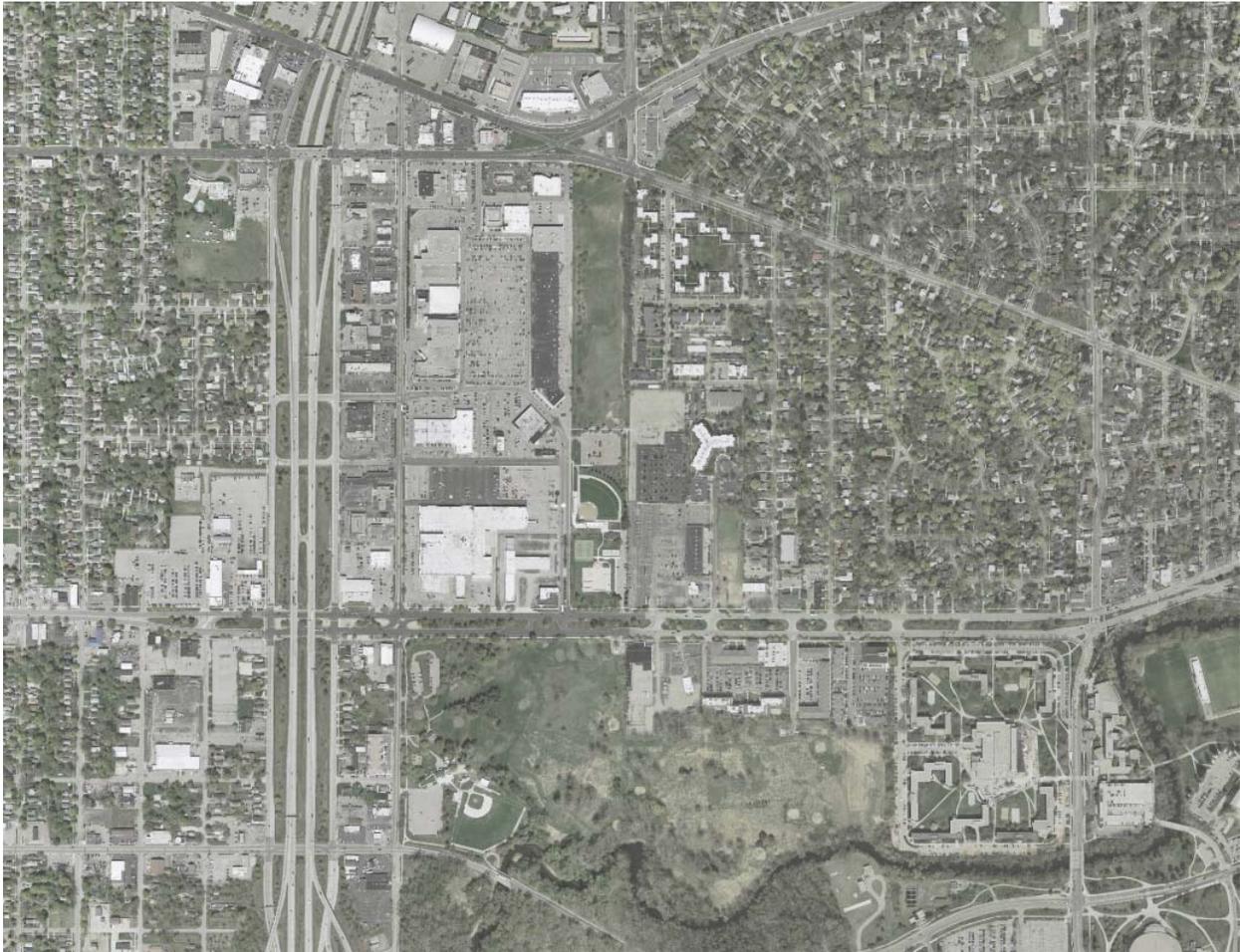
MILLVILLE	INGHAM CO.	MI	12/23/2007	07:16	EST-5	Thunderstorm Wind	52 kts. EG	0	0	2.00K	0.00K
INGHAM (ZONE)	INGHAM (ZONE)	MI	12/31/2007	20:30	EST-5	Winter Storm		0	0	0.00K	0.00K
INGHAM (ZONE)	INGHAM (ZONE)	MI	01/01/2008	00:00	EST-5	Winter Storm		0	0	0.00K	0.00K
INGHAM (ZONE)	INGHAM (ZONE)	MI	02/01/2008	02:17	EST-5	Winter Storm		0	0	0.00K	0.00K
INGHAM (ZONE)	INGHAM (ZONE)	MI	02/06/2008	11:00	EST-5	Winter Storm		0	0	0.00K	0.00K
WAVERLY PARK	INGHAM CO.	MI	04/11/2008	16:25	EST-5	Hail	1.00 in.	0	0	10.00K	5.00K
NORTH LESLIE	INGHAM CO.	MI	06/06/2008	17:36	EST-5	Thunderstorm Wind	52 kts. EG	0	0	0.00K	0.00K
HOPWOOD ACRES	INGHAM CO.	MI	06/07/2008	21:55	EST-5	Thunderstorm Wind	52 kts. EG	0	0	0.00K	0.00K
HOPWOOD ACRES	INGHAM CO.	MI	06/07/2008	22:00	EST-5	Thunderstorm Wind	60 kts. EG	0	0	0.00K	0.00K
HOPWOOD ACRES	INGHAM CO.	MI	06/08/2008	14:59	EST-5	Tornado	EF1	0	0	0.00K	0.00K
ONONDAGA	INGHAM CO.	MI	06/08/2008	15:00	EST-5	Thunderstorm Wind	52 kts. EG	0	0	0.00K	0.00K
HOPWOOD ACRES	INGHAM CO.	MI	06/08/2008	15:00	EST-5	Thunderstorm Wind	52 kts. EG	0	0	0.00K	0.00K
HOPWOOD ACRES	INGHAM CO.	MI	06/08/2008	15:05	EST-5	Thunderstorm Wind	54 kts. MG	0	0	0.00K	0.00K
EAST LANSING ARPT	INGHAM CO.	MI	06/08/2008	15:10	EST-5	Thunderstorm Wind	56 kts. EG	0	0	0.00K	0.00K
MASON	INGHAM CO.	MI	06/08/2008	15:14	EST-5	Thunderstorm Wind	52 kts. EG	0	0	0.00K	0.00K
HASLETT	INGHAM CO.	MI	06/08/2008	15:15	EST-5	Thunderstorm Wind	61 kts. EG	0	0	0.00K	0.00K
FOREST HILLS	INGHAM CO.	MI	06/08/2008	15:30	EST-5	Thunderstorm Wind	52 kts. EG	0	0	0.00K	0.00K
WAVERLY PARK	INGHAM CO.	MI	06/08/2008	15:40	EST-5	Thunderstorm Wind	52 kts. EG	0	0	0.00K	0.00K
KINNEVILLE	INGHAM CO.	MI	07/02/2008	17:09	EST-5	Hail	1.00 in.	0	0	0.00K	0.00K
ONONDAGA	INGHAM CO.	MI	07/02/2008	17:26	EST-5	Hail	1.00 in.	0	0	0.00K	0.00K
BUNKER HILL CENTER	INGHAM CO.	MI	09/03/2008	13:08	EST-5	Hail	0.88 in.	0	0	0.00K	0.00K
INGHAM (ZONE)	INGHAM (ZONE)	MI	12/19/2008	04:30	EST-5	Winter Storm		0	0	0.00K	0.00K
INGHAM (ZONE)	INGHAM (ZONE)	MI	12/28/2008	03:30	EST-5	High Wind	55 kts. MG	0	0	0.00K	0.00K
INGHAM (ZONE)	INGHAM (ZONE)	MI	01/09/2009	12:00	EST-5	Winter Storm		0	0	0.00K	0.00K
INGHAM (ZONE)	INGHAM (ZONE)	MI	04/05/2009	22:30	EST-5	Winter Storm		0	0	0.00K	0.00K
ENSEL	INGHAM CO.	MI	04/25/2009	12:10	EST-5	Thunderstorm Wind	46 kts. EG	0	0	10.00K	0.00K
ONONDAGA	INGHAM CO.	MI	04/25/2009	16:35	EST-5	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
LANSING	INGHAM CO.	MI	06/08/2009	14:30	EST-5	Hail	1.00 in.	0	0	0.00K	0.00K
HOLT	INGHAM CO.	MI	06/08/2009	14:37	EST-5	Hail	1.50 in.	0	0	0.00K	0.00K
HOLT	INGHAM CO.	MI	06/08/2009	14:40	EST-5	Hail	1.00 in.	0	0	0.00K	0.00K
HOLT	INGHAM CO.	MI	06/08/2009	15:00	EST-5	Hail	1.00 in.	0	0	0.00K	0.00K
WILLIAMSTON	INGHAM CO.	MI	06/08/2009	15:02	EST-5	Hail	1.75 in.	0	0	0.00K	0.00K
WILLIAMSTON	INGHAM CO.	MI	06/08/2009	15:09	EST-5	Hail	1.00 in.	0	0	0.00K	0.00K
WEBBERVILLE	INGHAM CO.	MI	08/09/2009	19:24	EST-5	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
INGHAM (ZONE)	INGHAM (ZONE)	MI	12/24/2009	11:00	EST-5	Winter Weather		0	0	0.00K	0.00K
INGHAM (ZONE)	INGHAM (ZONE)	MI	02/09/2010	07:00	EST-5	Heavy Snow		0	0	0.00K	0.00K
INGHAM (ZONE)	INGHAM (ZONE)	MI	02/21/2010	22:00	EST-5	Heavy Snow		0	0	0.00K	0.00K
INGHAM (ZONE)	INGHAM (ZONE)	MI	02/24/2010	05:00	EST-5	Heavy Snow		0	0	0.00K	0.00K
NORTH AURELIUS	INGHAM CO.	MI	04/06/2010	10:20	EST-5	Hail	1.00 in.	0	0	0.00K	0.00K
EAST LANSING ARPT	INGHAM CO.	MI	06/04/2010	17:58	EST-5	Thunderstorm Wind	70 kts. EG	0	0	1.000M	0.00K
PACKARD	INGHAM CO.	MI	07/15/2010	15:25	EST-5	Thunderstorm Wind	52 kts. EG	0	0	0.00K	0.00K
HOPWOOD ACRES	INGHAM CO.	MI	09/16/2010	13:04	EST-5	Flood		0	0	25.00K	0.00K
WILLIAMSTON	INGHAM CO.	MI	09/21/2010	21:38	EST-5	Thunderstorm Wind	52 kts. EG	0	0	50.00K	0.00K
INGHAM (ZONE)	INGHAM (ZONE)	MI	02/01/2011	19:00	EST-5	Winter Storm		0	0	0.00K	0.00K
INGHAM (ZONE)	INGHAM (ZONE)	MI	02/20/2011	13:00	EST-5	Winter Storm		0	0	0.00K	0.00K
INGHAM (ZONE)	INGHAM (ZONE)	MI	03/04/2011	05:00	EST-5	Winter Weather		0	0	0.00K	0.00K
LANSING	INGHAM CO.	MI	05/22/2011	21:05	EST-5	Thunderstorm Wind	52 kts. EG	0	0	0.00K	0.00K
ONONDAGA	INGHAM CO.	MI	05/29/2011	16:05	EST-5	Thunderstorm Wind	74 kts. EG	0	0	1.000M	0.00K
NORTH AURELIUS	INGHAM CO.	MI	05/29/2011	16:07	EST-5	Thunderstorm Wind	74 kts. EG	0	0	500.00K	0.00K
MILLVILLE	INGHAM CO.	MI	05/29/2011	16:17	EST-5	Thunderstorm Wind	78 kts. EG	0	0	500.00K	0.00K
BELL OAK	INGHAM CO.	MI	05/29/2011	16:27	EST-5	Tornado	EF0	0	0	50.00K	0.00K
MASON	INGHAM CO.	MI	06/21/2011	20:20	EST-5	Thunderstorm Wind	61 kts. EG	0	0	25.00K	0.00K
TOWAR GARDENS	INGHAM CO.	MI	07/18/2011	16:44	EST-5	Thunderstorm Wind	51 kts. MG	0	0	0.00K	0.00K
OAK GROVE	INGHAM CO.	MI	07/27/2011	23:30	EST-5	Flash Flood		0	0	5.000M	0.00K

INGHAM (ZONE)	INGHAM (ZONE)	MI	11/29/2011	17:00	EST-5	Winter Storm		0	0	1.000M	0.00K
MASON	INGHAM CO.	MI	05/03/2012	18:30	EST-5	Hail	1.25 in.	0	0	0.00K	0.00K
HOLT	INGHAM CO.	MI	05/03/2012	18:35	EST-5	Thunderstorm Wind	61 kts. EG	0	0	25.00K	0.00K
STOCKBRIDGE	INGHAM CO.	MI	07/03/2012	16:07	EST-5	Thunderstorm Wind	52 kts. EG	0	0	0.00K	0.00K
MASON	INGHAM CO.	MI	07/05/2012	02:50	EST-5	Thunderstorm Wind	52 kts. EG	0	0	0.00K	0.00K
HOPWOOD ACRES	INGHAM CO.	MI	07/05/2012	15:13	EST-5	Thunderstorm Wind	52 kts. EG	0	0	0.00K	0.00K
BUNKER HILL CENTER	INGHAM CO.	MI	07/06/2012	19:50	EST-5	Thunderstorm Wind	52 kts. EG	0	0	10.00K	0.00K
LANSING	INGHAM CO.	MI	04/17/2013	16:00	EST-5	Flood		0	0	5.000M	0.00K
MASON	INGHAM CO.	MI	05/20/2013	17:20	EST-5	Hail	0.75 in.	0	0	0.00K	0.00K
WILLIAMSTON	INGHAM CO.	MI	05/20/2013	17:20	EST-5	Thunderstorm Wind	52 kts. EG	0	0	10.00K	0.00K
DANSVILLE	INGHAM CO.	MI	05/28/2013	16:56	EST-5	Thunderstorm Wind	52 kts. EG	0	0	5.00K	0.00K
HOLT	INGHAM CO.	MI	06/12/2013	21:45	EST-5	Hail	1.00 in.	0	0	0.00K	0.00K
STOCKBRIDGE	INGHAM CO.	MI	09/11/2013	16:50	EST-5	Thunderstorm Wind	52 kts. EG	0	0	10.00K	0.00K
LANSING	INGHAM CO.	MI	11/17/2013	16:39	EST-5	Thunderstorm Wind	53 kts. MG	0	0	25.00K	0.00K
INGHAM (ZONE)	INGHAM (ZONE)	MI	11/17/2013	19:00	EST-5	High Wind	61 kts. EG	0	0	100.00K	0.00K
INGHAM (ZONE)	INGHAM (ZONE)	MI	12/21/2013	18:00	EST-5	Ice Storm		0	0	5.000M	0.00K
INGHAM (ZONE)	INGHAM (ZONE)	MI	01/04/2014	20:00	EST-5	Heavy Snow		0	0	0.00K	0.00K
INGHAM (ZONE)	INGHAM (ZONE)	MI	02/04/2014	22:00	EST-5	Heavy Snow		0	0	0.00K	0.00K
INGHAM (ZONE)	INGHAM (ZONE)	MI	03/12/2014	01:00	EST-5	Heavy Snow		0	0	0.00K	0.00K
LESLIE	INGHAM CO.	MI	07/27/2014	14:38	EST-5	Thunderstorm Wind	52 kts. EG	0	0	10.00K	0.00K
LESLIE	INGHAM CO.	MI	07/27/2014	17:13	EST-5	Thunderstorm Wind	52 kts. EG	0	0	20.00K	0.00K
OKEMOS	INGHAM CO.	MI	08/26/2014	14:25	EST-5	Thunderstorm Wind	52 kts. EG	0	0	0.00K	0.00K
PACKARD	INGHAM CO.	MI	09/05/2014	17:57	EST-5	Thunderstorm Wind	56 kts. EG	0	0	50.00K	0.00K
Totals:								2	0	36.397M	320.00K

Regional Data

With LiDAR based-maps, contour maps and aerial photography, emergency management personnel can analyze natural and manmade environments with accuracy. All three types of maps were shared at public workshops of 2013 and were used to analyze hazards throughout the region, particularly flood-prone areas. The sample aerial photo below depicts the Frandor Shopping Center Area in Lansing. Aerial snapshots of the entire region are available on CD or on printed posters by request. Please contact the Tri-County Regional Planning Commission for more information.

Fig. 56 The Frandor Shopping Center and Environs



As a part of this plan update, the Tri-County Regional Planning Commission acquired software to utilize recently developed LiDAR (Light Detection and Ranging) data of the region. LiDAR is a remote sensing method that uses light in the form of pulsed radar to measure ranges to the earth. According to the National Oceanic and Atmospheric Administration, LiDAR uses these light pulses along with other data sets recorded by an airborne system to generate precise 3-D information about the shape of the earth and its surface characteristics.

The next three figures provide examples of LiDAR –based maps with building footprints and manmade structures. Hand drawings were incorporated onto these snapshots to accentuate landscaping and natural vs. man-made elements of the sites. Drawings of this type are available for the Sparrow Hospital area, Frandor area and Meridian Mall areas of northern Ingham County. The entire 22 mile corridor of Michigan Avenue and Grand River Avenue in northern Ingham County is available in building footprint maps. Please contact Tri-County Planning Commission for access to these mapping resources.

Fig. 57 & 58 The Meridian Mall/Meijer Store Area



Fig. 59 The Sparrow Hospital Area and Environs



Contour maps were also created and utilized as part of this plan update. Contour maps are available for the entire tri-county region. They are derived from LiDAR data and depict changes in ground elevations throughout each county. The images depicted below are contours within the City of Charlotte and in northern Eaton County. Due to the nature of the large data sets, local agencies who desire a customized contour map of an individual tile within a county may contact the Tri-County Regional Planning Commission. Three types of LiDAR based contour maps are depicted below, two of which are located in Eaton County and one is located in Clinton County.

Fig. 60 Northern Eaton County

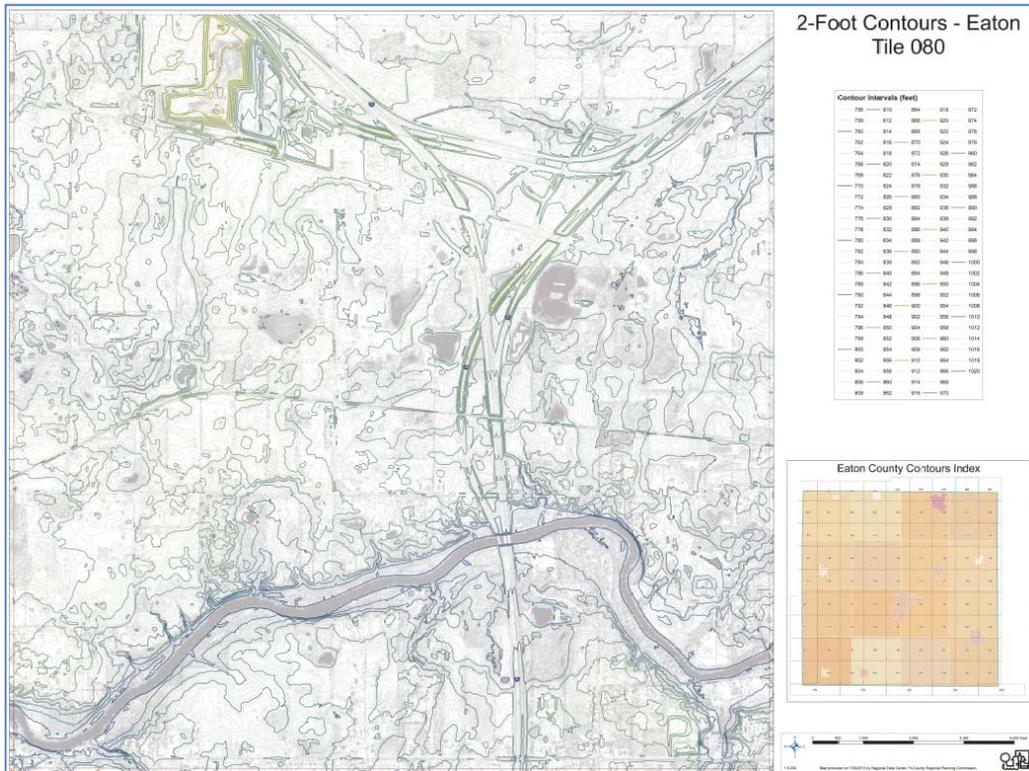


Fig. 61 City of Charlotte and Environs

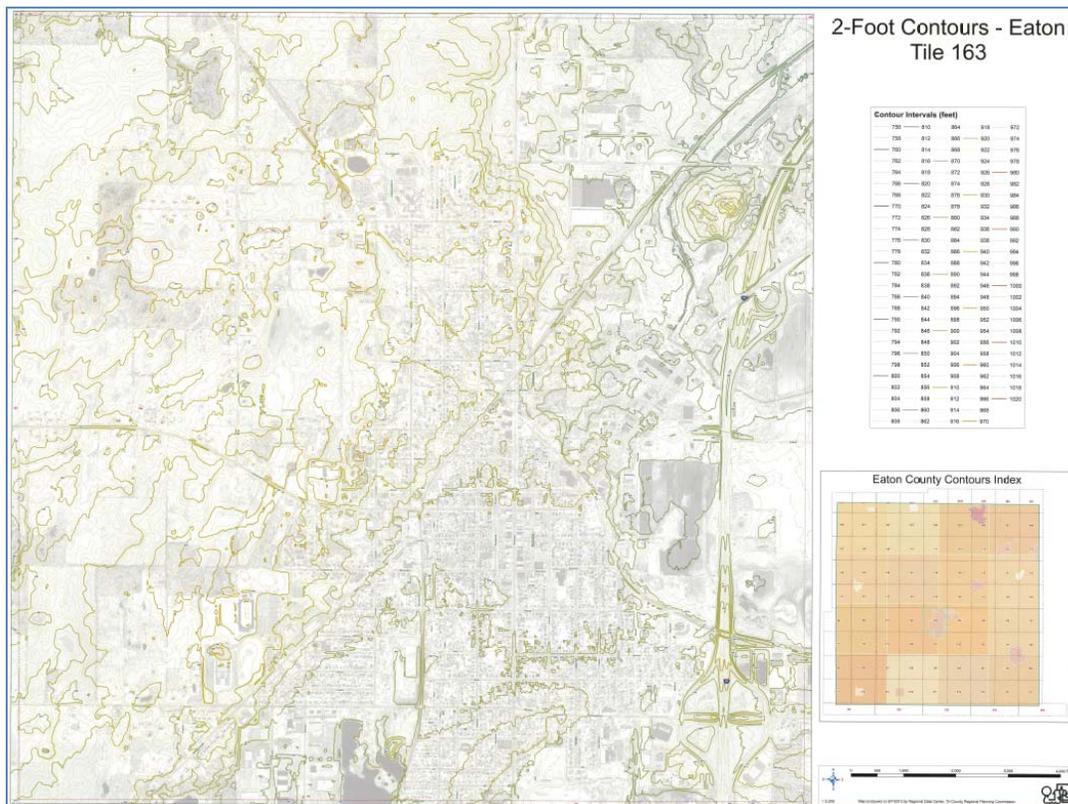
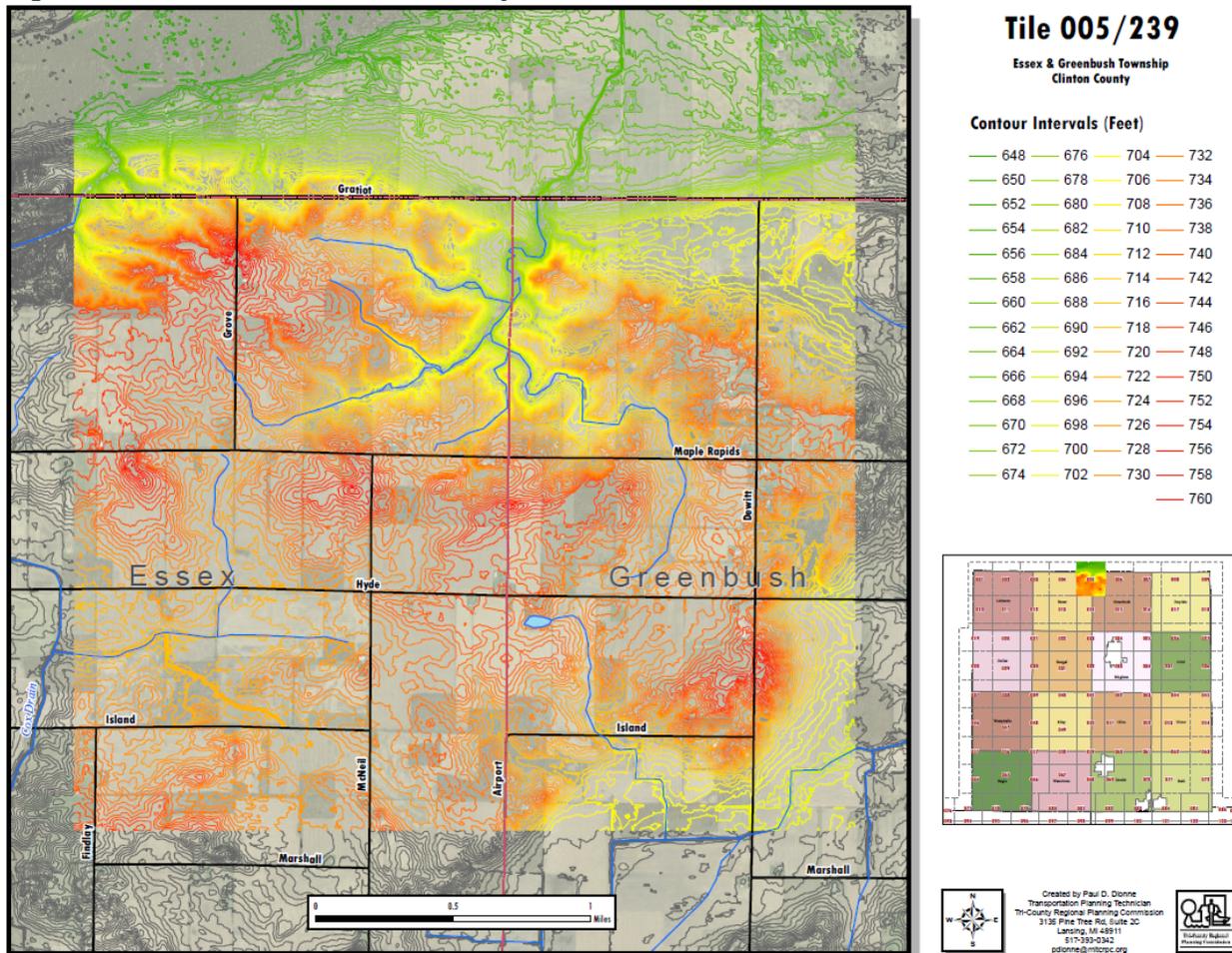


Fig. 62 North-Central Clinton County



Probability of Future Hazard Events

The probability of future hazard events within the tri-county region is calculated using storm event data provided by the National Climatic Data Center for Ingham, Clinton and Eaton Counties. Past events dating between January 1 of 2004 to August of 2014 were tallied and divided by the 10.5 years within that period. The Figure below depicts the probability of each event occurring per year in each county. Thunderstorms and Wind have the most probability of occurring the most during any given year throughout the region, followed by hail and winter storms.

Fig. 63 Probability of Future Hazard Events

	Heavy Snow	Winter Storm	Tornado	Flood	TStorm Wind	Hail	High Wind	Ice Storm	Blizzard	Funnel Cloud
Clinton	1	1.14	0.2	0.3	3.4	2.6	2	1		
Eaton	1	1.5	0.4	0.5	4	2	0.6	0.2	0.1	0.1
Ingham	0.1	1.5	0.4	0.4	5.5	2.1	0.7	0.1		

Past Disaster Declarations

Presidential and Governor Declarations between 2013 and 2003 are as follows for Clinton, Eaton, Ingham Counties and Delta Charter Township. Most recently, both Eaton and Ingham Counties were declared a major disaster in June of 2008 for thunderstorms and flooding. Notable declarations include flooding, Hurricane Katrina Evacuation declarations and Emerald Ash Borer declarations.

Fig. 64 Past Presidential & Governor's Disaster Declarations

Presidential Declarations		
Event/Date	Jurisdiction	Type
Thunderstorm/Flooding July 2008	Eaton & Ingham Counties	Major Disaster (4121)
Thunderstorm/Flooding May/June 2008	Eaton & Ingham Counties	Major Disaster (1527)
Hurricane Katrina Evacuation Area September 2005	All counties	Emergency (3225)
Electric Power Failure August 2003	Eaton & Ingham Counties	Emergency (3189)
Governor's Declarations		
Event/Date	Jurisdiction	Type
Thunderstorms/June 2008	Eaton County	Emergency
Hurricane Evacuation/ Sept 2004	All Counties	Disaster
Thunderstorms/Flooding June 2004	Ingham County	Disaster
Insect Infestation (Ash Borer) April 2004	Ingham County	Emergency

Source: 2014 MHMP

Vulnerabilities within Participating Jurisdictions

The seventeen participating jurisdictions were contacted and interviewed about the potential hazards facing their communities and special projects that they are planning or implementing. The following communities responded with their hazard priorities and mitigation ideas.

Clinton County

Dallas Township- The Clinton County Drain Commissioner is currently in receipt of a petition to address repetitive urban flooding concerns for homes and streets located along the Waltz and Sturgis Drain in the Village of Fowler, in Dallas Township, MI. A Board of Determination has been held as required under the Drain Code and a project was found necessary to address the identified flooding problems and assess the contributing drainage district.

Based on conversations with the local Director of Public Works and testimony given at the Board of Determination, 15 homes are affected by the multiple floods that have occurred in the last several years. The objective of any proposed projects is to mitigate flood damage and reduce vulnerability to existing roads and structures. The proposed strategy is implementation of storm water management practices such as construction detention basins and replacement of undersized culverts with the goal to reduce the depth, duration, and frequency of flooding along the Waltz and Sturgis Drain.

The project reduces physical damages and potential for injury/loss of life by attenuating peak runoff discharges and increasing the conveyance through undersized culverts along 6th Street, Maple Street, 5th Street, 4th Street, and Sorrell Street within the Village of Fowler. There will be a reduction in depth, duration, and frequency of flooding of homes and streets that are adjacent to and downstream of the Waltz & Sturgis Drain due to the detention provided in the upper watershed. The proposed project will also serve to collect deposited sediments carried from upstream which will improve water quality within the Waltz and Sturgis Drain downstream of the proposed improvements. Constructing the detention basin will also serve to repair and restore location of existing severe gully erosion that contribute excessive sediment downstream.

DeWitt and Bath Charter Townships

Residents in both DeWitt and Bath Charter Townships face tornado, high winds and localized flooding on a semi-regular basis. They are planning for public outreach/education related to these hazards.

City of St. Johns

According to City officials, St Johns' past experience with hazards have been with high winds, snow/thaw/rain events. The City instituted an aggressive plan to remove and trim any dangerous trees in the public right of way beginning six years ago. This action was initiated by a DNR grant to have all trees in the ROW cataloged to its condition therefore establishing an action plan which is still ongoing today. St Johns acquired a DEQ grant to study a specific area in the City prone to flooding and have initiated an action plan and committed \$500,000 for an engineered fix.

Eaton County

Cities of Charlotte and Eaton Rapids

According to City staff, the natural hazards most likely to pose the largest threat to life and property within these Cities would be severe weather in the form of winter snow and ice, as well as severe thunderstorms and tornadoes. Flooding is also an issue in Eaton Rapids. The new and future projects that might mitigate the impacts of these natural hazards include a newly-enacted sidewalk snow removal ordinance requiring all residents to clear walks of snow and ice, as well as a planned future upgrade to the city's tornado warning siren system and flood mitigation activities.

City of Grand Ledge

City officials report that they are most concerned with tornadoes, and that they are beginning to plan for education and mitigation efforts related to tornadoes.

Ingham County

City of Mason

According to City staff, natural hazards most likely to impact their residents would be tornadoes, ice storms and blizzards. Also heavy winds. The City is attempting to update their policies, training and identify equipment that would assist them to be sustaining for a level of self-sufficiency necessary to assist citizens during these types of events.

Village of Webberville

According to Village Officials, Tornadoes are a natural hazard that they do not have any plans to mitigate. Flooding is also an issue. The Village has turned local storm drains over to the Ingham County Drain Commissioner's Office and they are beginning a repair/replace project. They are in the planning stages now. The location of their industrial park on the outer edge of the populated area and the adjacent rail and highway interchange are well structured for emergency responses.

Village of Dansville

According to Village officials, the one square mile size of Dansville does not offer much in the way of hazards. The typical hazards that are identified within the plan for the entire Ingham County are those faced by Dansville. No special projects to mitigate hazards are underway currently.

Meridian Charter Township/Williamstown Township/Lansing Charter Township

According to staff, natural hazards most likely to impact their residents would be tornadoes, flooding, ice storms and blizzards and heavy winds. These jurisdictions are updating their policies, training and identify equipment that would assist them to be sustaining for a level of self-sufficiency necessary to assist citizens during these types of events.

Civil Disturbances

Hazard Description - A public demonstration or gathering, or a prison uprising, that results in a disruption of essential functions, rioting, looting, arson or other unlawful behavior.

Large-scale civil disturbances rarely occur. But when they do, they are usually a result of one or more of the following events: 1) labor disputes where there is a high degree of animosity between the participating parties; 2) high profile/controversial judicial proceedings; 3) the implementation of controversial laws or other governmental actions;

4) resource shortages caused by a catastrophic event; 5) disagreements between special interest groups over a particular issue or cause; 6) a perceived unjust death or injury to a person held in high esteem or regard by a particular segment of society.

Fig. 65 T-Shirt Graphic



Source: TCRPC

Mid-Michigan has few large crime events. There have been no recent distinctive or notable changes in crime patterns region wide. There are relatively few serious crimes and no notable trends or changes in serious crime patterns region wide. There were notable civil disobedience events, particularly related to Michigan State University (MSU) sports events. In March of 1999, a melee following a national championship sports game lasted for several hours before it was stopped by a multi-jurisdictional police force in East Lansing. Property damage exceeded \$250,000 and over 130 people were arrested. Smaller types of these incidences occur most years during the college basketball and football seasons. But recent year incidents have been smaller and strongly controlled. Regional police and emergency services have worked with MSU to develop pro-active and effective approaches to reducing and mitigating the damage of such events with good success.

Hazardous Material Incidents

Fixed Site Hazardous Material Incidents (explosions and industrial accidents)

Hazard Description - An uncontrolled release of hazardous materials from a fixed site capable of posing a risk to life, health, safety, property or the environment. Hazardous materials are highly regulated by federal and state agencies to reduce risk to the public and the environment. Despite precautions taken to ensure careful handling during the manufacture, transport, storage, use and disposal of these materials, accidental releases do occur. Often, these releases can cause severe harm to people or the environment if proper mitigation action is not immediately taken. Most releases are the result of human error. Occasionally, releases are attributed to natural causes, such as a flood that washes away barrels of chemicals stored at a site. However, those situations are the exception rather than the rule.

Hazardous materials are materials or substances that, because of their chemical, physical, or biological nature, pose a potential risk to life, health, property, or the environment if they are released. Examples of hazardous materials include corrosives, explosives, flammable materials, radioactive materials, poisons, oxidizers and dangerous gasses.

Industrial Accident

Hazard Description - A fire, explosion, or other severe accident involving hazardous materials at an industrial facility that results in serious property damage, injury, or loss of life. Industrial accidents differ from hazardous material incidents in the scope and magnitude of offsite impacts. Whereas hazardous material incidents typically involve an uncontrolled release of material into the surrounding community and environment that may necessitate evacuations or in-place sheltering of the affected population, the impacts from industrial accidents are often confined to the site or facility itself, with minimal physical outside impacts. Nonetheless, industrial accidents such as fires, explosions and excessive exposure to hazardous materials, may cause injury or loss of life to the workers at the facility, and significant property damage. In addition, industrial accidents can cause severe economic disruption to the facility and surrounding community, as well as significant, long-term impacts on the families of the workers injured or killed.

Hazardous Material Transportation Incidents

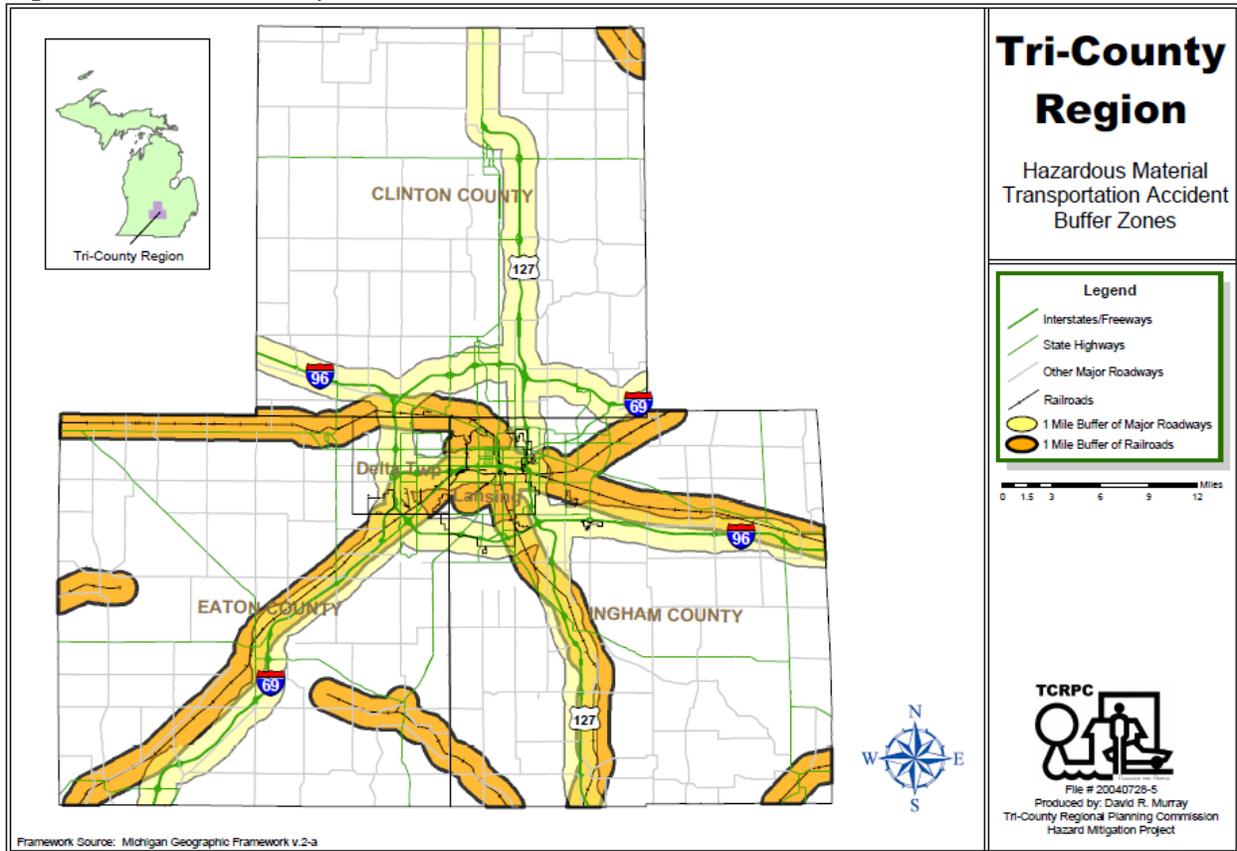
Hazard Description - An uncontrolled release of hazardous materials during transport capable of posing a risk to life, health, safety, property or the environment. Because of the extensive use of chemicals in our society, all modes of transportation – highway, rail, air, marine and pipeline – are carrying thousands of hazardous materials shipments on a daily basis through local communities. A transportation accident involving any one of those hazardous material shipments could cause a local emergency affecting many people. Note: Many of the programs and initiatives designed to mitigate, prepare for, respond to, and recover from fixed- site hazardous material incidents have the dual purpose of also protecting against hazardous material transportation incidents. Consequently, there is some overlap in the narrative programs and initiatives descriptions for each respective hazard.

Fig. 66 The Potterville Train Derailment, 2002, Source: MSP



Occasional events do happen in the tri-county region every few years, and require some expensive resources to respond to, even though the situations can usually be resolved within a few days. In 2002, a train derailment in the City of Potterville evacuated the residents for five consecutive days. This was the longest evacuation in Michigan history.

Fig. 67 Haz Mat Transportation Accident Buffer Zones



Oil and Natural Gas Well Accidents

Hazard Description - An uncontrolled release of oil or natural gas, or the poisonous by-product hydrogen sulfide, from production wells. Oil and natural gas are produced from fields scattered across 63 counties in the Lower Peninsula. Since 1925, over 44,000 oil and natural gas wells have been drilled in Michigan, of which roughly half have produced oil and gas. To date, Michigan wells have produced approximately 1.4 billion barrels of crude oil and 4 trillion cubic feet of gas.

Communities that may be affected by oil or natural gas well accidents should have adequate procedures in their Emergency Operations Plans to address the unique types of problems associated with this hazard, including rescue and evacuation. Affected communities must work closely with company officials and surrounding jurisdictions to ensure compatibility of procedures for a fast, coordinated response. Mitigation possibilities include the use of community zoning regulations to provide suitable 100 open, unoccupied "buffer" areas around refineries and compressor stations. Michigan

Department of Environmental Quality regulations provide for buffer zones around wells and treatment and storage facilities.

Infrastructure Failures

Hazard Description - An actual or potential shortage of electrical power, gasoline, natural gas, fuel oil, or propane of sufficient magnitude and duration to threaten public health and safety, and economic and social stabilization.

Michigan has had numerous widespread and severe electrical power outages, caused mostly by severe weather such as windstorms or ice and sleet storms. (Note: Refer to those sections for more information on specific events.) Michigan has had several power outages in recent years that left upwards of 500,000 people without power for several hours to several days at a time. Fortunately, most of those occurred in months when severe cold temperatures were not a problem. An adequate energy supply is critical to mid-Michigan's economic and social well-being. Our economy and lifestyle are dependent on a non-interrupted, reliable, and relatively inexpensive supply of energy that includes gasoline to fuel our vehicles, and electricity, natural gas, fuel oil and propane to operate our homes, businesses and public buildings. Energy emergencies became a serious national issue in the 1970s when two major "energy crises" exposed America's increasing vulnerability to long term energy disruptions.

To date, we have always dealt with short term energy disruptions caused by severe weather damage (i.e., downed power lines and poles), broken natural gas and fuel pipelines, and shortages caused by the inability of the energy market to adequately respond to consumer demand and meet required production. However, the Oil Embargo of 1973-74, the natural gas shortage of 1976-77, and the 1979 major price increases in oil resulting from the Iranian Revolution rendered the County highly vulnerable to energy disruptions. That vulnerability was again exposed during the Gulf War in 1991 (after Iraq invaded Kuwait and destroyed many of its oil fields) and in the aftermath of the September 11, 2001 terrorist attacks in the U.S.

The power outage of August 14, 2003 started affecting Michigan at 4:09 p.m. when power surges affected southern Ohio, west to Indiana, north to western Michigan, east to the Detroit area, and south to northern Ohio. By 4:15 p.m., the power outage was essentially complete, with 2.3 million customers of Consumers Energy, Lansing BWL, and Detroit Edison without power. The area affected in Michigan was all of the Detroit Edison service territory, Consumers Energy customers located near the Detroit Edison service territory, and the cities of Lansing and East Lansing and other areas served by the Lansing BWL. At 10:00 p.m., Consumers Energy reported that 118,400 customers were without power.

In November of 2013, wind storms across the tri-county region brought down trees and power lines, knocking out power to residents for up to 3 days. Then, when the debris was still being collected and managed, a huge winter ice storm the week before

Christmas, brought down trees and wires and caused long term, widespread power loss which lasted from days to more than a week.

Public Health Emergencies

Hazard Description - A widespread and/or severe epidemic, incident of contamination, or other situation that presents a danger to or otherwise negatively impacts the general health and well-being of the public. Public health emergencies can take many forms – disease epidemics, large-scale incidents of food or water contamination, extended periods without adequate water and sewer services, harmful exposure to chemical, radiological or biological agents, and large-scale infestations of disease-carrying insects or rodents – to name just a few. Public health emergencies can occur as primary events by themselves, or they may be secondary events to another disaster or emergency such as a flood, tornado or hazardous material incident. The common characteristic of most public health emergencies is that they adversely affect, or have the potential to adversely impact, a large number of people. Public health emergencies can be statewide, regional, or localized in scope and magnitude.

One of Michigan's most serious emergencies occurred in 1973 when a local farmer fed PBB laced feed to his dairy herd. Michigan Chemical Corporation had accidentally supplied the Michigan Farm Bureau Services with sacks of fire-proofing chemical PBB, which is known to cause cancer, genetic mutation, and birth defects -- and the PBB was inadvertently substituted for magnesium oxide (commonly used in antacid tablets used for human consumption) in a custom dairy feed # 402. During the crucial eight-month period between the farmer's first observations and the discovery of the accident, serious contamination had already occurred.

By 1975 the state had quarantined more than 500 farms. Condemned for slaughter were more than 17,000 cattle; 3,415 hogs; 1.5 million chickens and 4.8 million eggs.

In the 1980s, the state health department confirmed that 95 percent of Michigan's population had PBB in their bodies from eating beef, drinking milk or consuming other products from contaminated farms. A cancer epidemic was feared. Although one has not occurred been diagnosed yet. Studies do show the most exposed families have increased breast and digestive cancer, and lymphoma. Among the effects observed in the exposed populations the daughters of the most highly exposed women began menstruation, on average, before they reached their twelfth birthdays.

The world's worst influenza pandemic – the “Spanish flu” of 1918-19 – resulted in 500,000-675,000 deaths in the United States and 20 to 40 million worldwide. More than 25 million Americans – nearly one quarter of the population at the time – fell ill. Scientists speculate that the virus that caused that pandemic may have percolated for several years within humans, or possibly pigs, until it grew strong enough to kill millions worldwide. The virus spread rapidly – moving around the world in a matter of a few months – in a time period in which there was much less movement of people than there is today. The virus reached Michigan in the fall of 1918. Over 8,000 of the 2.8 million state residents fell ill and half of those eventually succumbed to the disease. In retrospect, the spread of the illness was felt to be exacerbated by behavior of important

officials who had misguided concerns that the effects of “panic” might be more harmful than the disease itself—a notion that proved disastrous. The pandemic had an unusual aspect, however, in that many of those who died were persons who had been young and healthy, whereas the normal pattern for influenza deaths is to take a higher toll among those who are elderly or have compromised immune systems.

In December 2003, there were reports that Bovine spongiform encephalopathy (BSE), or "Mad Cow Disease" was struck the United States. BSE is linked to a similar form of the incurable and fatal brain-wasting disease in humans, called variant Creutzfeldt-Jakob Disease (VCDJ). There have been a small number of VCJD cases reported worldwide of people who ate BSE-contaminated meat. Within hours of the announcement, an official with Japan's agriculture ministry told CNN that his country would ban imports of U.S. beef. South Korea, Taiwan, Malaysia and Singapore, Mexico and others followed suit within hours of the announcement. News of an outbreak in mid-Michigan would likely cause great fear and panic and affect dairy farmers and milk producers as well as area beef cattle operators.

At least 144 adult patients were admitted to 10 academic and community hospitals in the greater Toronto, Ontario, area between March 7 and April 10, 2003. 1,700 students and staff at Father Michael McGivney Catholic Academy in Markham, a northern suburb of Toronto, were quarantined, where a student showed symptoms of SARS while going to classes for three days last week. Health officials closed the school until June 3. The majority of cases in the SARS outbreak in the greater Toronto area were related to hospital exposure.

The December 2003 reports that Michigan health officials were introduced to the emerging health threats posed by foot-and-mouth disease and the West Nile encephalitis virus caused widespread concern. Although foot-and-mouth disease is a highly contagious disease that only affects animals, a widespread outbreak such as occurred in parts of the United Kingdom in 2001 could have significant public health implications due to the potentially large numbers of dead animal carcasses to be disposed of. The West Nile encephalitis virus, which arrived in Michigan in August 2001, presents an equally challenging scenario for public health officials. Transmitted to humans by infected mosquitoes, the West Nile virus is common in Africa, Asia, and the Middle East. Health officials do not know how the virus was introduced to the United States. But in 1999 and 2000, it caused outbreaks of human encephalitis in New York raised fears across the country of a full-blown public health emergency. Fortunately that has not occurred, although the New York City outbreak did cause 62 persons to fall ill and resulted in 7 deaths. Real or perceived outbreaks of communicable diseases in or around the tri-county area would adversely affect trade, tourism, travel (e.g.: College/University students), and health.

Enough potential threats exist that some type of public health emergency tends to affect the county every couple of years (although some threats, such as influenza, occur annually) throughout the whole area. Medical impacts upon the county's population are usually significant, but in a serious pandemic event, could become catastrophic.

Chapter 4 - Mitigation Strategies and Plan Implementation

The following strategies are projects or processes that will lessen the community's vulnerability to hazards. Mitigation strategies result from a process that identifies actions intended to meet the objectives and goals that have been set for the community. Mitigation strategies must present actions that are equitable to the community, technically possible, that do not harm the environment and that are economically feasible.

The impacts of a hazard can produce significant economic losses besides property damage that are difficult to measure. Economic losses may take time to spread entirely through a community and linger long after the actual disaster event. Government and business alike can experience economic hardships that eventually impact residents and other government functions or businesses in the community. A simple example of these longer-term losses is the accumulated cost of a winter when above average snow and ice removal is required. The additional funding required to remove the snow is taken from other programs or budget items, resulting in a potential loss or reduction of a services, employees, or other benefit to the local community.

The alternatives and actions listed in this updated Plan are the outcomes of discussions with county emergency managers and community agency partners over the project period. The alternatives offered are based on the locally available resources, funding, and the capacity of personnel in our region. The actions are also based on changes to local land use changes over time. Finally, the mitigation alternatives for our region are very much the same now as they were in the previous adopted Plan. Various actions were completed since 2005, such as the distribution of weather radios to residents, the adoption of low -impact development regulations across the region, and public service announcements pertaining to emergency preparedness. The TCRPC made every effort to ensure that actions can be accomplished and that they will reduce vulnerability. The implementable or practical nature of these alternatives is largely determined by the financial and personnel commitment of area residents and officials, the commitments of other resources, and a function of the benefits provided to the community.

Mitigation Alternatives

Following guidance of the Michigan Hazard Mitigation Plan, this section lists an array of hazard mitigation alternatives. Some alternatives, such as zoning decisions, are more appropriate for local implementation. Other alternatives, such as legislation, are more appropriate for implementation by state government. Some alternatives may involve the participation of multiple actors at different levels (local, state, and federal; public, private, and non-profit). An example of such a hazard mitigation idea could be an improvement in a local community's drainage infrastructure that obtains federal grant funds administered by a state agency and makes use of matching funds from a local community foundation, while providing benefits to downstream areas in the watershed region as well. Actions are presented here in order of hazard type.

Weather Hazards

Thunderstorm Hazards (General)

- Increased coverage and use of NOAA Weather Radio.
- Public early warning systems and networks.
- Tree trimming and maintenance to prevent limb breakage and safeguard nearby utility lines. (Ideal: Establishment of a community forestry program with a main goal of creating and maintaining a disaster-resistant landscape in public rights-of-way.)
- Buried/protected power and utility lines. (NOTE: Where appropriate. Burial may cause additional problems and costs in case of breakage, due to the increased difficulty in locating and repairing the problem.)

Hail-specific (in addition to the General Thunderstorm Hazards list)

- Moving vehicles into garages or other covered areas.
- Inclusion of safety strategies for severe weather events in driver education classes and materials.
- Purchase of insurance that includes coverage for hail damage.
- Using structural bracing, window shutters, laminated glass in window panes, and impact-resistant roof shingles to minimize damage to public and private structures.

Lightning-specific (in addition to the General Thunderstorm Hazards list)

- Using surge protectors on critical electronic equipment.
- Installing lightning protection devices on the community's communications infrastructure.

Severe Winds and Tornadoes (in addition to the General Thunderstorm Hazards)

- Using appropriate wind engineering measures and construction techniques (e.g. structural bracing, straps and clips, anchor bolts, laminated or impact-resistant glass, reinforced entry and garage doors, window shutters, waterproof adhesive sealing strips, and interlocking roof shingles) to strengthen public and private structures against severe wind damage.
- Proper anchoring of manufactured homes and exterior structures such as carports and porches.
- Securing loose materials, yard, and patio items indoors or where winds cannot blow them about.
- Construction of concrete safe rooms in homes and shelter areas in mobile home parks, fairgrounds, shopping malls, or other vulnerable public areas.

Winter Weather Hazards (General)

- Increased coverage and use of NOAA Weather Radio.
- Tree trimming and maintenance to prevent limb breakage and safeguard nearby utility lines. (Ideal: Establishment of a community forestry program with a main goal of creating and maintaining a disaster-resistant landscape in public rights-of-way.)

- Buried/protected power and utility lines, where appropriate.
- Establishing heating centers/shelters for vulnerable populations.

Ice and Sleet Storms (in addition to the General Winter Weather Hazards list)

- Home and public building design and maintenance to prevent roof and wall damage from "ice dams."

Snowstorms (in addition to the General Winter Weather Hazards list)

- Proper building/site design and code enforcement relating to snow loads, roof slope, snow removal and storage, etc.
- Agricultural activities to reduce impacts on crops and livestock.
- Pre-arranging for shelters for stranded motorists/travelers, and others.
- Using snow fences or "living snow fences" (rows of trees or vegetation) to limit blowing and drifting of snow over critical roadway segments.

Extreme Temperatures

- Organizing outreach to vulnerable populations during periods of extreme temperatures, including establishing and building awareness of accessible heating and/or cooling centers in the community, and other public information
- Campaigns about this hazard.
- Increased coverage and use of NOAA Weather Radio.

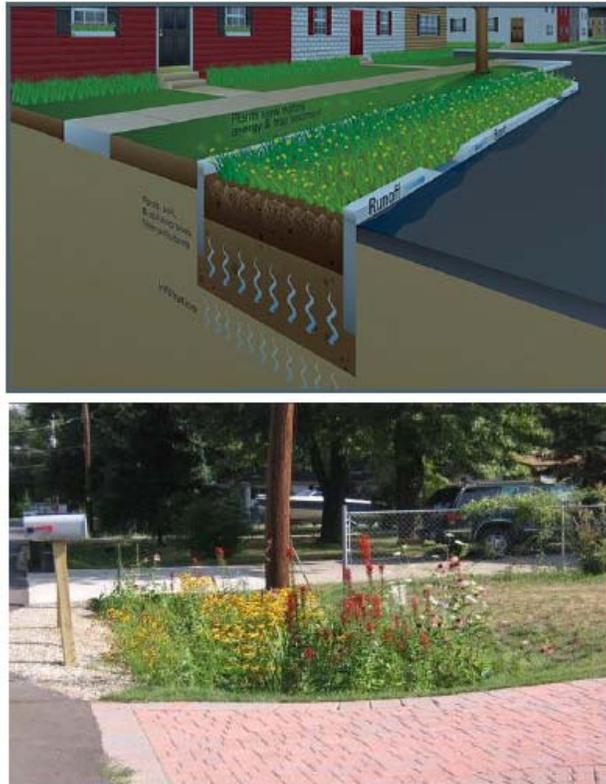
Hydrological Hazards

Riverine, Shoreline, and Urban Flooding

- Flood plain and coastal zone management – planning acceptable uses for areas prone to flooding (through comprehensive planning, code enforcement, zoning, open space requirements, subdivision regulations, land use and capital improvements planning) and involving drain commissioners, hydrologic studies, etc. in these analyses and decisions.
- Acceptable land use densities, coverage and planning for particular soil types and topography (decreasing amount of impermeable ground coverage in upland and drainage areas, zoning and open space requirements suited to the capacity of soils and drainage systems to absorb rainwater runoff, appropriate land use and capital improvements planning) and involving drain commissioners, hydrologic studies, etc. in these analyses and decisions.
- Dry flood proofing of structures within known flood areas (strengthening walls, sealing openings, use of waterproof compounds or plastic sheeting on walls).
- Wet flood proofing of structures (controlled flooding of structures to balance water forces and discourage structural collapse during floods).
- Elevation of flood-prone structures above the 100-year flood level.
- "Floating" architectural designs for structures in flood-prone areas
- Construction of elevated or alternative roads that are unaffected by flooding, or making roads more flood-resistant through better drainage and/or stabilization/armoring of vulnerable shoulders and embankments.

- Government acquisition, relocation, or condemnation of structures within floodplain or floodway areas.
- Employing techniques of erosion control within the watershed area (proper bank stabilization, techniques such as planting of vegetation on slopes, creation of terraces on hillsides, use of riprap boulders and geotextile fabric, etc.).
- Protection (or restoration) of wetlands and natural water retention areas.
- Obtaining insurance. (Requires community participation in the NFIP.)
- Joining the National Flood Insurance Program (NFIP).
- Participation in the Community Rating System (CRS).
- Structural projects to channel water away from people and property (dikes, levees, floodwalls) or to increase drainage or absorption capacities (spillways, water detention and retention basins, relief drains, drain widening/dredging or rerouting, debris detention basins, logjam and debris removal, extra culverts, bridge modification, dike setbacks, flood gates and pumps, wetlands protection and restoration).
- Higher engineering standards for drain and sewer capacity, or the expansion of infrastructure to higher capacity.
- Drainage easements (allowing the planned and regulated public use of privately owned land for temporary water retention and drainage).
- Installing (or re-routing or increasing the capacity of) storm drainage systems, including the separation of storm and sanitary sewage systems.
- Farmland and open space preservation.
- Elevating mechanical and utility devices above expected flood levels.
- Flood warning systems and the monitoring of water levels with stream gauges and trained monitors.
- Increased coverage and use of NOAA Weather Radio.
- Anchoring of manufactured homes to a permanent foundation in flood areas, but preferably these structures would be readily movable if necessary or else permanently relocated outside of flood-prone areas and erosion areas.
- Control and securing of debris, yard items, or stored objects (including oil, gasoline, and propane tanks, and paint and chemical barrels) in floodplains that may be swept away, damaged, or pose a hazard when flooding occurs.
- Back-up generators for pumping and lift stations in sanitary sewer systems, and other measures (alarms, meters, remote controls, switchgear upgrades) to ensure that drainage infrastructure is not impeded.
- Detection and prevention/discouragement of illegal discharges into storm-water sewer systems, from home footing drains, downspouts and sump pumps.
- Employing techniques of erosion control in the area (bank stabilization, planting of vegetation on slopes, creation of terraces on hillsides).

Fig 68 Stormwater Retention Techniques



Source: EPA

Fig. 69 Flood Preparation



Source; TCRPC

- Increasing the function and capacity of sewage lift stations and treatment plants (installation, expansion, and maintenance), including possible separation of combined storm/sanitary sewer systems, if appropriate.
- Purchase or transfer of development rights – to discourage development in floodplain areas.

- Stormwater management ordinances or amendments.
- Wetlands protection regulations and policies.
- Use of check valves, sump pumps and backflow preventers in homes and buildings.

Dam Failures

- Regular inspection and maintenance of dams.
- Garnering community support for a funding mechanism to assist dam owners in the removal or repair of dams in disrepair.
- Regulate development in the dam's hydraulic shadow (where flooding would occur if a severe dam failure occurred).
- Ensuring that dams meet or exceed the design criteria required by law.
- Public warning systems.
- Obtaining insurance.
- Increased coverage and use of NOAA Weather Radio
- Increased funding for dam inspections and enforcement of the Dam Safety Program (Part 315 of the Natural Resources and Environmental Protection Act) requirements and goals.
- Constructing emergency access roads to dams, where needed.
- Pump and flood gate installation/automation.

Drought

- Storage of water for use in drought events (especially for human needs during periods of extreme temperatures, and for responding to structural fire and wildfire events).
- Legislative acts, local ordinances, and other measures to prioritize or control water use.
- Encouragement of water-saving measures by consumers (including landscaping, irrigation, farming, and low priority lawn maintenance and non-essential auto washing).
- Anticipation of potential drought conditions, and the preparation of drought contingency plans.
- Designs, for recreational and other water-related structures and land uses, that take into account the full range of water levels (of lakes, streams, and groundwater).
- Designs and plans for water delivery systems that include a consideration of drought events.
- Obtaining agricultural insurance.

Invasive Species

- Restrictions on the import and transport of species carriers.
- Adjustments to hunting, fishing, and other policies and regulations related to wildlife populations.
- Use of barriers to prevent invasive species travel.
- Use of competing species or other population control techniques.

Geological Hazards

Earthquakes – The greatest threats of earthquakes in our region would be damage to pipelines, buildings that are poorly designed or constructed, the shelving, furniture, mirrors, gas cylinders, etc. within structures that could fall and cause injury or personal property damage)

- Adopt and enforce appropriate building codes.
- Use of safe interior designs and furniture arrangements.
- Obtain insurance.
- "Harden" critical infrastructure systems to meet seismic design standards for "lifelines."

Subsidence

- Identifying and mapping old mining areas and geologically unstable terrain, and limiting or preventing development in high-risk areas.
- Filling or buttressing subterranean open spaces (such as abandoned mines) to discourage their collapse.
- Hydrological monitoring of groundwater levels in subsidence-prone areas.
- Insurance coverage for subsidence hazards.
- Real estate disclosure laws.

Technological Hazards

Structural Fires

- Code existence and enforcement.
- Designs that include the use of firewalls and sprinkler systems (especially in tall buildings, dormitories, attached structures, and special facilities).
- Landlords and families can install and maintain smoke detectors and fire extinguishers. Install a smoke alarm on each level of homes (to be tested monthly, with the batteries changed twice each year). Family members and residents should know how to use a fire extinguisher.
- Proper installation and maintenance of heating systems (especially those requiring regular cleaning, those using hand-loaded fuels such as wood, or using concentrated fuels such as liquid propane).
- Safe use and maintenance/cleaning of fireplaces and chimneys (with the use of spark arresters and proper storage of flammable items). Residents should inspect chimneys at least twice a year and clean them at least once a year.
- Safe installation, maintenance, and use of electrical outlets and wiring.
- Measures to reduce urban blight and associated arson (possibly including Crime Prevention through Environmental Design).
- Defensible space around structures in fire-prone wildland areas.
- Proper maintenance of power lines, and efficient response to fallen power lines.
- Transportation planning that provides roads, overpasses, etc. to maximize access and improve emergency response times to all inhabited or developed areas of a community. (Not just planning for average traffic volumes in the community.)

- Discourage civil disturbances and criminal activities that could lead to arson.
- Enforced fireworks regulations.
- Elimination of clandestine methamphetamine laboratories through law enforcement and public education.
- Condominium-type associations for maintaining safety in attached housing/building units or multi-unit structures.
- Obtaining insurance.

Fixed Site Hazardous Material Incidents (including explosions and industrial accidents)

- Compliance with/enforcement of Resource Conservation and Recovery Act (RCRA) standards.
- Elimination of clandestine methamphetamine laboratories through law enforcement and public education.
- Identification of radioactive soils and high-radon areas
- Proper separation and buffering between industrial areas and other land uses.
- Location of industrial areas away from schools, nursing homes, etc.
- Public warning systems and networks for hazardous material releases.
- Increased coverage and use of NOAA Weather Radio (which can provide notification to the community during any period of emergency, including large scale hazardous material incidents).
- Compliance with all industrial, fire, and safety regulations.
- Insurance coverage.
- Enhanced security and anti-terrorist/sabotage/civil disturbance measures.

Hazardous Material Transportation Incidents

- Improved design, routing, and traffic control at problem roadway areas.
- Long-term planning that provides more connector roads for reduced congestion of arterial roads.
- Railroad inspections, maintenance and improved designs at problem railway/roadway intersections (at grade crossings, rural signs/signals for RR crossing).
- Proper planning, design, maintenance of, and enhancements to designated truck routes.
- Public warning systems and networks.
- Increased coverage and use of NOAA Weather Radio (which can provide notification to the community during any period of emergency, including large scale hazardous material incidents).
- Use of ITS (intelligent transportation systems) technology.
- Locating schools, nursing homes, and other special facilities away from major hazardous material transportation routes.

Pipeline Accidents (Petroleum and Natural Gas)

- Locating pipelines away from dense development, critical facilities, special needs populations, and environmentally vulnerable areas whenever possible.

- Increasing public awareness and widespread use of the "MISS DIG" utility damage prevention service (800-482-7171).
- Proper pipeline design, construction, maintenance and inspection.

Oil and Natural Gas Well Accidents

- Using buffer strips to segregate wells, storage tanks, and other production facilities from transportation routes and adjacent land uses, in accordance with state regulations, and consistent with the level of risk.
- Adherence to all regulations and best industry practices, especially for relatively new techniques of hydraulic fracturing, in order to preserve Michigan's environmental quality and public confidence in the industry.

Infrastructure Hazards

Infrastructure Failures

- Proper location, design, and maintenance of water and sewer systems (to include insulation of critical components to prevent damage from ground freeze).
- Burying electrical and phone lines, where beneficial and appropriate, to resist damage from severe winds, lightning, ice, and other hazards.
- Redundancies in utility and communications systems, especially "lifeline" systems; to increase resilience (even if at the cost of some efficiency).
- Separation and/or expansion of sewer system to handle anticipated stormwater volumes.
- Use of generators for backup power at critical facilities.
- "Rolling blackouts" in electrical systems that will otherwise fail completely due to overloading.
- Replacement or renovation of aging structures and equipment (to be made as hazard-resistant as economically possible).
- Physical protection of electrical and communications systems from lightning strikes.
- Tree-trimming programs to protect utility wires from falling branches. (Ideal: Establishment of a community forestry program with a main goal of creating and maintaining a disaster-resistant landscape in public rights-of way.)
- Increasing public awareness and widespread use of the "MISS DIG" utility damage prevention service (800-482-7171).

Energy Emergencies

- Redundancies and alternatives in the energy supply system; provision of backup supply systems.
- The capacity to use more than one type of fuel to sustain necessary operations and functions.
- Use of alternative sources of energy (e.g. solar, wind sources) for key functions.
- Architectural designs that reduce the need for outside energy inputs.

Transportation Accidents

- Improved design, routing, and traffic control at problem roadway areas.

- Railroad inspections and improved designs at problem railway/roadway intersections (at grade crossings, rural signs/signals for RR crossing).
- Long-term planning that provides more connector roads for reduced congestion of arterial roads.
- Use of designated truck routes.
- Use of ITS (intelligent transportation systems) technology.
- Airport maintenance, security, and safety programs.

Human Related Hazards

Civil Disturbances (prison or institutional rebellions, disruptive political gatherings, violent labor disputes, urban protests or riots, or large-scale uncontrolled festivities)

- Some suggest that design, management, integration, and lowered density of poor or blighted areas will reduce vandalism, crime, and some types of riot events. Crime Prevention Through Environmental Design (CPTED) is a field of planning that deals with this.
- Structure and property insurance in risky areas, combined with anti-arson practices.
- Design requirements for schools, factories, office buildings, shopping malls, hospitals, correctional facilities, stadiums, recreation areas, etc. that take into consideration emergency and security needs.

Public Health Emergencies

- Immunization programs to vaccinate against communicable diseases.
- Improving ventilation techniques in areas, facilities, or vehicles that are prone to crowding, or that may involve exposure to contagion or noxious atmospheres.
- Radon detection and abatement activities, to reduce concentrations of radon in homes and buildings.
- Maintaining community water and sewer infrastructure at acceptable operating standards.
- Providing back-up generators for water and wastewater treatment facilities to maintain acceptable operating levels during power failures.
- Demolition and clearance of vacant condemned structures to prevent rodent infestations.
- Free or reduced-expense community clinics and school health services.
- Brownfield and urban blight clean-up activities.
- Proper location, installation, cleaning, monitoring, and maintenance of septic tanks.
- Separation of storm and sanitary sewer systems.

Terrorism and Similar Criminal Activities

- Using laminated glass and other hazard-resistant, durable construction techniques in public buildings and critical facilities.
- Establishing avenues of reporting (and rewards) for information preventing terrorist incidents and sabotage.
- Consistent use of computer data back-up systems and anti-virus software.

Implementation of 2004 Adopted Actions

In 2004, Clinton, Eaton Ingham Counties and Delta Charter Township adopted mitigation strategies to address their natural hazards. This section presents a review of mitigation activities completed since 2004 by each jurisdiction. In the 2015 Plan Update, many of these mitigation activities were review and revisited, and adjusted to reflect present-day hazard concerns. These now include protection of special needs populations, identification of gaps in response, protection from flooding, decrease infrastructure vulnerabilities, and protect against high wind damages.

Clinton County

In 2004, Clinton County identified flooding, population influx, power outages, ice storms, civil disturbances, school violence and “multi-hazards” as threats to their communities. The charts below list the proposed mitigation actions which should occur, ranging from building flood proof basements, to tree trimming, defensive architecture and the provision of disaster kits. County officials report that many of these items have been completed and /or promoted at various levels around the county including acquiring new aerial photography periodically; The four major festivals in our county plan with their respective public safety agencies; Both BWL and Consumers Energy engage in regular inspection and maintenance plans; The county supports and promotes the Do 1 Thing program which has information on preparing for power outages; Consumer’s Energy contracts out tree trimmers to maintain the safety of their lines; NOAA weather radio use is promoted via social media and other sources including Do 1 Thing; SKYWARN training is held annually; BTPD has done pre-planning for civil disturbance events; Regular EOC staff meetings, plan updates, public education, exercises, capability building and maintenance.

Flooding:

Project #	Project Name	Mitigation Strategy Applied				Project Goals Addressed				Project Type	Project Implementation			Project Priority	Project Evaluation <i>Perform in 2008</i>			
		Modify the Hazard	Segregate the Hazard	Prevent or Limit Development	Alter Design or Construction	Other Mitigation Approaches Increase Public Awareness	Property Protection	Public Education	Injury / Casualty Prevention		Natural Resource Protection	Short-Term	Medium Term		Long Term	High	Medium	Low
FLD #1	Floodproof Basements			X			X			X		X			X			
FLD #2	Update FIRM Maps					X				X		X		X				
FLD #3	Replace to a Higher Standard			X			X			X		X		X				
FLD #4	Floodfighting Strategies					X				X		X		X				
FLD #5	ID of Repetitive Loss Structures		X				X	X	X	X		X		X				
FLD #6	AQ of Repetitive Loss Structures		X				X	X	X	X		X		X				
FLD #7	RL of Repetitive Loss Structures		X				X	X	X	X		X		X				
FLD #8	Temporary Flood Protection	X	X				X	X		X		X		X				
FLD #9	Public Education					X		X		X		X		X				
FLD #10	Stakeholder Education					X		X		X		X		X				
FLD #11	Flood Signs					X		X		X		X		X		X		
FLD #12	Floodplain Manager					X	X	X	X	X		X		X				
FLD #13	Watershed Management		X	X			X		X	X		X		X				
FLD #14	Urban Flood Reduction			X			X			X		X		X				
FLD #15	Urban Flood Reduction Solutions			X			X			X		X		X				
FLD #16	Acquire Aerial Photography					X				X		X		X				
FLD #17	Bridge Survey			X			X			X		X		X				
FLD #18	Bridge Modification			X			X			X		X		X				
FLD #19	ID Temp Flood Shelters					X		X		X		X		X				
FLD #20	ID Temp Storage Sites					X				X		X		X				
FLD #21	Raise Manholes			X			X			X		X		X				
FLD #22	Increase Pump Capacity					X				X		X		X				
FLD #23	Wastewater Plant Floodproofing			X			X			X		X		X				
FLD #24	Flood Warning Sensors					X	X			X		X		X				

Population Influx:

Project #	Project Name	Mitigation Strategy Applied				Project Goals Addressed				Project Type	Project Implementation			Project Priority	Project Evaluation <i>Perform in 2008</i>			
		Modify the Hazard	Segregate the Hazard	Prevent or Limit Development	Alter Design or Construction	Other Mitigation Approaches Increase Public Awareness	Property Protection	Public Education	Injury / Casualty Prevention		Natural Resource Protection	Short-Term	Medium Term		Long Term	High	Medium	Low
POP #1	Event Planning for Safety	X		X	X		X	X	X	X		X		X				
POP #2	Public Safety Presence				X		X	X	X	X		X		X				
POP #3	Pre-Planning and Coordination					X				X		X		X		X		
POP #4	First Aid Stations					X			X	X		X		X		X		

Power Outage:

Project #	Project Name	Mitigation Strategy Applied				Project Goals Addressed				Project Type	Project Implementation			Project Priority	Project Evaluation <i>Perform in 2008</i>					
		Other Mitigation Approaches	Increase Public Awareness	Alter Design or Construction	Prevent or Limit Development	Segregate the Hazard	Modify The Hazard	Natural Resource Protection	Injury / Casualty Prevention		Public Education	Property Protection	Prevention / Risk Reduction		Short-Term	Medium Term	Long Term	Low	Medium	High
POW #1	Underground Utilities		X					X	X	X			X			X				
POW #2	Inspection and Maintenance			X				X			X	X			X					
POW #3	Tree Trimming				X			X	X	X		X			X					
POW #4	Public Education Re: Blackouts		X								X		X		X					

Ice/Sleet Storms:

Project #	Project Name	Mitigation Strategy Applied				Project Goals Addressed				Project Type	Project Implementation			Project Priority	Project Evaluation <i>Perform in 2008</i>					
		Other Mitigation Approaches	Increase Public Awareness	Alter Design or Construction	Prevent or Limit Development	Segregate the Hazard	Modify The Hazard	Natural Resource Protection	Injury / Casualty Prevention		Public Education	Property Protection	Prevention / Risk Reduction		Short-Term	Medium Term	Long Term	Low	Medium	High
ICE #1	Underground Utilities		X					X	X	X		X			X					
ICE #2	Tree Trimming			X				X	X	X		X			X					
ICE #3	NOAA Weather Radio			X						X		X			X					
ICE #4	Storm Warning Public Education		X					X		X		X			X					

School Violence:

Project #	Project Name	Mitigation Strategy Applied				Project Goals Addressed				Project Type	Project Implementation			Project Priority	Project Evaluation <i>Perform in 2008</i>					
		Other Mitigation Approaches	Increase Public Awareness	Alter Design or Construction	Prevent or Limit Development	Segregate the Hazard	Modify The Hazard	Natural Resource Protection	Injury / Casualty Prevention		Public Education	Property Protection	Prevention / Risk Reduction		Short-Term	Medium Term	Long Term	Low	Medium	High
SCH #1	Communication Systems		X					X	X	X		X			X					
SCH #2	On-Site Security		X					X	X	X		X			X					
SCH #3	Public Ed. Re: School Violence		X							X		X			X					
SCH #4	Oblique Aerial Photographs		X					X		X		X			X					

Civil Disturbance:

Project #	Project Name	Mitigation Strategy Applied				Project Goals Addressed			Project Type		Project Implementation			Project Priority		Project Evaluation <i>Perform in 2008</i>				
		Other Mitigation Approaches Increase Public Awareness	Alter Design or Construction	Prevent or Limit Development	Segregate the Hazard Modify The Hazard	Natural Resource Protection	Injury / Casualty Prevention	Public Education	Property Protection	Prevention / Risk Reduction	New Project	Ongoing Project	Short-Term	Medium Term	Long Term	High	Medium	Low	Has This Project Been Implemented (Yes / No) ?	If Yes, List Number of Impacts on the Community ?
CIV #1	Defensive Architecture		X			X	X	X		X			X			X				
CIV #2	Crime Prevent Through Env Design		X			X	X	X		X			X			X				
CIV #3	Public Safety Presence					X	X	X		X		X			X					
CIV #4	Pre-Planning and Coordination				X	X				X		X			X					

Multi-Hazards:

Project #	Project Name	Mitigation Strategy Applied				Project Goals Addressed			Project Type		Project Implementation			Project Priority		Project Evaluation <i>Perform in 2008</i>				
		Other Mitigation Approaches Increase Public Awareness	Alter Design or Construction	Prevent or Limit Development	Segregate the Hazard Modify The Hazard	Natural Resource Protection	Injury / Casualty Prevention	Public Education	Property Protection	Prevention / Risk Reduction	New Project	Ongoing Project	Short-Term	Medium Term	Long Term	High	Medium	Low	Has This Project Been Implemented (Yes / No) ?	If Yes, List Number of Impacts on the Community ?
MH #1	Adopt and Implement Plan				X	X	X	X	X	X		X			X					
MH #2	Incorporate into Local Plans				X	X	X	X	X	X		X			X					
MH #3	Maintain and Update Plan				X	X	X	X	X	X		X			X					
MH #4	Cost - Benefit Analysis				X							X				X				
MH #5	Evacuation Routes				X			X			X			X		X				
MH #6	Transportation Planning				X	X					X			X		X				
MH #7	NOAA All Hazards Radio				X			X			X			X		X				
MH #8	Enhance Data				X						X			X		X				
MH #9	Continue LEPC				X	X	X	X	X	X	X		X		X					
MH #10	Maintain EOC				X	X	X	X	X	X	X		X		X					
MH #11	Communication				X						X			X		X				
MH #12	Recordkeeping				X						X			X			X			
MH #13	Alternate Energy Sources				X	X					X			X			X			
MH #14	Special Needs Populations				X			X	X		X			X		X				
MH #15	Educational Outreach				X			X			X			X		X				
MH #16	"How To" Booth				X			X			X			X		X				
MH #17	School Mitigation Plan				X	X	X	X	X	X	X		X		X		X			
MH #18	Mitigation Curriculum				X	X		X			X			X		X				
MH #19	Public Service Announcements				X			X			X			X		X				
MH #20	Disaster Kit				X	X		X	X		X			X		X				

Delta Charter Township

Delta Charter Township identified flooding, hazardous materials, tornadoes, national security threats and “multi-hazards” as threats to their communities. The charts below list the proposed mitigation actions which should occur, ranging from building flood proof basements, to tree trimming, residential safe rooms and the provision of disaster kits. Township officials report that many of these items have been promoted or completed at various levels around the township.

Flooding:

Project #	Project Name	Mitigation Strategy Applied				Project Goals Addressed			Project Type	Project Implementation			Project Priority	Project Evaluation <i>Perform in 2008</i>							
		Modify The Hazard	Segregate the Hazard	Prevent or Limit Development	Alter Design or Construction	Increase Public Awareness	Other Mitigation Approaches	Prevention / Risk Reduction		Property Protection	Public Education	Injury / Casualty Prevention		Natural Resource Protection	Short-Term	Medium Term	Long Term	High	Medium	Low	Has This Project Been Implemented (Yes / No) ?
FLD #1	Floodproof Basements			X				X				X				X					
FLD #2	Update FIRM Maps						X	X			X		X			X					
FLD #3	Replace to a Higher Standard				X			X			X		X								
FLD #4	Floodfighting Strategies						X			X		X				X					
FLD #5	ID of Repetitive Loss Structures			X			X	X		X			X			X					
FLD #6	AQ of Repetitive Loss Structures			X			X	X		X			X			X					
FLD #7	RL of Repetitive Loss Structures			X			X	X		X			X			X					
FLD #8	Temporary Flood Protection	X	X				X	X		X			X				X				
FLD #9	Public Education							X			X					X					
FLD #10	Stakeholder Education							X			X					X					
FLD #11	Flood Signs							X			X										
FLD #12	Floodplain Manager						X	X	X	X	X		X			X					
FLD #13	Watershed Management			X	X		X			X		X				X					
FLD #14	Urban Flood Reduction				X		X			X		X				X					
FLD #15	Urban Flood Reduction Solutions				X		X			X		X				X					
FLD #16	Acquire Aerial Photography							X		X		X						X			
FLD #17	Bridge Survey				X		X			X		X				X					
FLD #18	Bridge Modification				X		X			X		X				X					
FLD #19	ID Temp Flood Shelters						X		X	X		X				X					
FLD #20	ID Temp Storage Sites							X		X		X				X					
FLD #21	Raise Manholes				X			X		X		X				X					
FLD #22	Increase Pump Capacity						X			X		X				X					
FLD #23	Wastewater Plant Floodproofing				X			X		X		X				X					
FLD #24	Flood Warning Sensors						X	X		X		X				X					

Hazardous Materials (Transportation –related)

Project #	Project Name	Mitigation Strategy Applied				Project Goals Addressed			Project Type	Project Implementation			Project Priority	Project Evaluation Perform in 2008			
		Other Mitigation Approaches	Increase Public Awareness	Alter Design or Construction	Prevent or Limit Development	Property Protection	Public Education	Injury / Casualty Prevention		Natural Resource Protection	Short-Term	Medium Term		Long Term	High	Medium	Low
HMT #1	Pre-Response Training				X				Ongoing Project				X				
HMT #2	LEPC				X				New Project				X				
HMT #3	Oblique Aerial Photographs				X						X			X			
HMT #4	Land Use Buffers	X	X					X				X					

Tornadoes:

Project #	Project Name	Mitigation Strategy Applied				Project Goals Addressed			Project Type	Project Implementation			Project Priority	Project Evaluation Perform in 2008			
		Other Mitigation Approaches	Increase Public Awareness	Alter Design or Construction	Prevent or Limit Development	Property Protection	Public Education	Injury / Casualty Prevention		Natural Resource Protection	Short-Term	Medium Term		Long Term	High	Medium	Low
TRN #1	Residential Safe Rooms			X				X	Ongoing Project				X				
TRN #2	Institutional Safe Rooms / Spaces			X				X	New Project				X				
TRN #3	Free-Standing Safe Rooms			X				X			X		X				
TRN #4	Anchor Mobile / Temp Structures			X			X			X			X				
TRN #5	Bracing of Permanent Structures			X		X				X			X				
TRN #6	Wind Bracing For Signs			X			X			X					X		
TRN #7	Wind Bracing For Antennas			X			X			X					X		
TRN #8	Underground Utilities			X			X		X		X			X			
TRN #9	Tree Trimming						X	X		X				X			
TRN #10	Debris Management								X					X			
TRN #11	Early Warning Sirens				X			X		X				X			
TRN #12	Storm Spotters						X			X					X		
TRN #13	Storm Warning Public Education			X				X		X			X				
TRN #14	Severe Weather Awareness Week			X				X		X			X				
TRN #15	Public Storm Shelter Locations			X				X	X	X			X				
TRN #16	NOAA Weather Radio			X				X	X	X			X				

National Security Threat:

Project #	Project Name	Mitigation Strategy Applied					Project Goals Addressed				Project Type	Project Implementation			Project Priority	Project Evaluation <i>Perform in 2008</i>				
		Other Mitigation Approaches	Increase Public Awareness	Alter Design or Construction	Prevent or Limit Development	Segregate the Hazard	Modify The Hazard	Natural Resource Protection	Injury / Casualty Prevention	Public Education		Property Protection	Prevention / Risk Reduction	Long Term		Medium Term	Short-Term	Low	Medium	High
NST #1	Public Safety Presence		X				X	X				X				X				
NST #2	Defensive Architecture			X			X	X				X				X				
NST #3	Oblique Aerial Photographs						X					X					X			
NST #4	Public Education Related to WMD		X						X			X				X				

Ice/Sleet Storms:

Project #	Project Name	Mitigation Strategy Applied					Project Goals Addressed				Project Type	Project Implementation			Project Priority	Project Evaluation <i>Perform in 2008</i>				
		Other Mitigation Approaches	Increase Public Awareness	Alter Design or Construction	Prevent or Limit Development	Segregate the Hazard	Modify The Hazard	Natural Resource Protection	Injury / Casualty Prevention	Public Education		Property Protection	Prevention / Risk Reduction	Long Term		Medium Term	Short-Term	Low	Medium	High
ICE #1	Underground Utilities		X				X	X				X				X				
ICE #2	Tree Trimming					X	X	X				X				X				
ICE #3	NOAA Weather Radio		X					X				X				X				
ICE #4	Storm Warning Public Education		X					X				X				X				

Multi-Hazards:

Project #	Project Name	Mitigation Strategy Applied					Project Goals Addressed					Project Type		Project Implementation			Project Priority			Project Evaluation <i>Perform in 2008</i>	
		Segregate the Hazard	Alter Design or Construction	Prevent or Limit Development	Increase Public Awareness	Other Mitigation Approaches	Prevention / Risk Reduction	Property Protection	Public Education	Injury / Casualty Prevention	Natural Resource Protection	New Project	Ongoing Project	Short-Term	Medium Term	Long Term	High	Medium	Low	Has This Project Been Implemented (Yes / No) ?	# Yes, List Number of Impacts on the Community ?
MH #1	Adopt and Implement Plan				X		X	X	X	X	X	X			X						
MH #2	Incorporate into Local Plans				X		X	X	X	X	X	X		X							
MH #3	Maintain and Update Plan				X		X	X	X	X	X			X							
MH #4	Cost - Benefit Analysis				X		X						X					X			
MH #5	Evacuation Routes				X				X			X		X				X			
MH #6	Transportation Planning		X				X					X		X				X			
MH #7	NOAA All Hazards Radio				X			X				X		X				X			
MH #8	Enhance Data				X							X		X				X			
MH #9	Continue LEPC				X		X	X	X	X	X	X		X				X			
MH #10	Maintain EOC				X		X	X	X	X	X		X					X			
MH #11	Communication				X							X		X				X			
MH #12	Recordkeeping				X							X		X				X			
MH #13	Alternate Energy Sources		X				X					X		X				X			
MH #14	Special Needs Populations				X				X	X		X		X				X			
MH #15	Educational Outreach				X				X			X		X				X			
MH #16	"How To" Booth				X				X			X		X				X			
MH #17	School Mitigation Plan				X		X	X	X	X	X	X		X				X			
MH #18	Mitigation Curriculum				X	X			X			X		X				X			
MH #19	Public Service Announcements				X				X			X		X				X			
MH #20	Disaster Kit				X	X			X	X		X		X				X			

Eaton County

Eaton County identified hazardous materials, dam failure, tornadoes, power outages, flooding, tornadoes and “multi-hazards” as threats to their communities. The charts below list the proposed mitigation actions which should occur, ranging from building flood proof basements, to tree trimming, bridge modifications and the provision of disaster kits. County officials report that many of these items have been promoted or completed at various levels around the County including the review of floodplain information for building permits obtained in 13 of the 16 townships and some cities and villages where the county administers the Building Code. Additionally, the Barry –Eaton District Health Department occasionally promotes disaster preparedness through their educational and marketing outreach.

For dam failures, the inspection and maintenance of dams in the county are ongoing by dam owners. A dam removal in Dimondale has addressed flooding issues in the Grand Pointe area. Power outages have been addressed by inspections and tree trimmings by

utilities and through ongoing public education with PSA's, workshops at churches, long term care and community centers. The Do1Thing program addresses this issue too. For the fixed sites and transportation of hazardous materials, the LEPC is active, responder trainings are ongoing, ortho photos were updated and assessments of materials that are moving through the county are ongoing. To address tornado hazards, a Debris Management Plan is in final form, storm spotter trainings are ongoing, early warning software is being used by school officials and responders, NOAA weather radios were provided to every school and governmental building in the county, along with day cares and senior centers. Preparedness campaigns and "Awareness Weeks" are ongoing.

Hazardous Materials (Fixed Site):

Project #	Project Name	Mitigation Strategy Applied				Project Goals Addressed				Project Type	Project Implementation			Project Priority	Project Evaluation Perform in 2008			
		Modify The Hazard	Segregate the Hazard	Prevent or Limit Development	Alter Design or Construction	Injury / Casualty Prevention	Public Education	Property Protection	Prevention / Risk Reduction		Short-Term	Medium Term	Long Term		High	Medium	Low	Has This Project Been Implemented (Yes / No) ?
HMF #1	Enhance Pre-Planning				X	X				Ongoing Project				X				
HMF #2	Pre-Response Training				X	X				Ongoing Project				X				
HMF #3	LEPC				X	X				Ongoing Project				X				
HMF #4	Oblique Aerial Photographs				X	X				Ongoing Project		X			X			
HMF #5	Land Use Buffers	X	X			X		X		Ongoing Project		X			X			
HMF #6	Containment				X	X		X		Ongoing Project		X			X			

Dam failure:

Project #	Project Name	Mitigation Strategy Applied				Project Goals Addressed				Project Type	Project Implementation			Project Priority	Project Evaluation Perform in 2008			
		Modify The Hazard	Segregate the Hazard	Prevent or Limit Development	Alter Design or Construction	Injury / Casualty Prevention	Public Education	Property Protection	Prevention / Risk Reduction		Short-Term	Medium Term	Long Term		High	Medium	Low	Has This Project Been Implemented (Yes / No) ?
DAM #1	Replace to Higher Standard	X			X	X				Ongoing Project			X		X			
DAM #2	Inspection and Maintenance				X	X				Ongoing Project				X				
DAM #3	Dam Survey				X	X				Ongoing Project		X			X			
DAM #4	Dam Breach Sensors				X	X	X	X		Ongoing Project		X			X			

Power outage:

Project #	Project Name	Mitigation Strategy Applied					Project Goals Addressed			Project Type	Project Implementation			Project Priority	Project Evaluation Perform in 2008					
		Other Mitigation Approaches	Increase Public Awareness	Alter Design or Construction	Prevent or Limit Development	Segregate the Hazard	Modify The Hazard	Prevention / Risk Reduction	Property Protection		Public Education	Injury / Casualty Prevention	Natural Resource Protection		Short-Term	Medium Term	Long Term	High	Medium	Low
POW #1	Underground Utilities			X			X	X	X			X			X					
POW #2	Inspection and Maintenance						X				X	X			X					
POW #3	Tree Trimming						X	X	X		X	X			X					
POW #4	Public Education Re: Blackouts					X			X		X	X			X					

Flooding:

Project #	Project Name	Mitigation Strategy Applied					Project Goals Addressed			Project Type	Project Implementation			Project Priority	Project Evaluation Perform in 2008					
		Other Mitigation Approaches	Increase Public Awareness	Alter Design or Construction	Prevent or Limit Development	Segregate the Hazard	Modify The Hazard	Prevention / Risk Reduction	Property Protection		Public Education	Injury / Casualty Prevention	Natural Resource Protection		Short-Term	Medium Term	Long Term	High	Medium	Low
FLD #1	Floodproof Basements			X			X			X		X			X					
FLD #2	Update FIRM Maps					X	X			X		X	X		X					
FLD #3	Replace to a Higher Standard			X			X			X		X	X		X					
FLD #4	Floodfighting Strategies					X	X			X		X	X		X					
FLD #5	ID of Repetitive Loss Structures			X			X	X		X		X	X		X					
FLD #6	AQ of Repetitive Loss Structures			X			X	X		X		X	X		X					
FLD #7	RL of Repetitive Loss Structures			X			X	X		X		X	X		X					
FLD #8	Temporary Flood Protection	X	X				X	X		X		X	X		X					
FLD #9	Public Education					X		X		X		X			X					
FLD #10	Stakeholder Education					X		X		X		X			X					
FLD #11	Flood Signs					X		X		X		X			X					
FLD #12	Floodplain Manager						X	X	X	X	X	X			X					
FLD #13	Watershed Management			X	X		X			X		X			X					
FLD #14	Urban Flood Reduction			X			X			X		X			X					
FLD #15	Urban Flood Reduction Solutions			X			X			X		X			X					
FLD #16	Acquire Aerial Photography					X	X			X		X			X					
FLD #17	Bridge Survey			X			X			X		X			X					
FLD #18	Bridge Modification			X			X			X		X			X					
FLD #19	ID Temp Flood Shelters					X	X		X	X		X			X					
FLD #20	ID Temp Storage Sites					X	X		X	X		X			X					
FLD #21	Raise Manholes			X			X		X	X		X			X					
FLD #22	Increase Pump Capacity					X	X		X	X		X			X					
FLD #23	Wastewater Plant Floodproofing			X			X		X	X		X			X					
FLD #24	Flood Warning Sensors					X	X	X	X	X		X			X					

Hazardous Materials (Transportation –related)

Project #	Project Name	Mitigation Strategy Applied				Project Goals Addressed				Project Type	Project Implementation			Project Priority	Project Evaluation Perform in 2008					
		Other Mitigation Approaches	Increase Public Awareness	Alter Design or Construction	Prevent or Limit Development	Segregate the Hazard	Modify The Hazard	Natural Resource Protection	Injury / Casualty Prevention		Public Education	Property Protection	Prevention / Risk Reduction		Short-Term	Medium Term	Long Term	High	Medium	Low
HMT #1	Pre-Response Training																			
HMT #2	LEPC																			
HMT #3	Oblique Aerial Photographs																			
HMT #4	Land Use Buffers	X	X																	

Tornadoes:

Project #	Project Name	Mitigation Strategy Applied				Project Goals Addressed				Project Type	Project Implementation			Project Priority	Project Evaluation Perform in 2008					
		Other Mitigation Approaches	Increase Public Awareness	Alter Design or Construction	Prevent or Limit Development	Segregate the Hazard	Modify The Hazard	Natural Resource Protection	Injury / Casualty Prevention		Public Education	Property Protection	Prevention / Risk Reduction		Short-Term	Medium Term	Long Term	High	Medium	Low
TRN #1	Residential Safe Rooms			X																
TRN #2	Institutional Safe Rooms / Spaces			X																
TRN #3	Free-Standing Safe Rooms			X																
TRN #4	Anchor Mobile / Temp Structures			X				X												
TRN #5	Bracing of Permanent Structures			X				X												
TRN #6	Wind Bracing For Signs			X				X												
TRN #7	Wind Bracing For Antennas			X				X												
TRN #8	Underground Utilities			X				X												
TRN #9	Tree Trimming							X	X											
TRN #10	Debris Management																			
TRN #11	Early Warning Sirens			X				X												
TRN #12	Storm Spotters							X												
TRN #13	Storm Warning Public Education			X					X											
TRN #14	Severe Weather Awareness Week			X					X											
TRN #15	Public Storm Shelter Locations			X				X	X											
TRN #16	NOAA Weather Radio			X				X	X											

Multi-Hazards:

Project #	Project Name	Mitigation Strategy Applied					Project Goals Addressed					Project Type		Project Implementation			Project Priority			Project Evaluation <i>Perform in 2008</i>	
		Segregate the Hazard	Prevent or Limit Development	Alter Design or Construction	Increase Public Awareness	Other Mitigation Approaches	Prevention / Risk Reduction	Property Protection	Public Education	Injury / Casualty Prevention	Natural Resource Protection	New Project	Ongoing Project	Short-Term	Medium Term	Long Term	High	Medium	Low	Has This Project Been Implemented (Yes / No) ?	# Yes, List Number of Impacts on the Community ?
MH #1	Adopt and Implement Plan					X	X	X	X	X	X		X			X					
MH #2	Incorporate into Local Plans					X	X	X	X	X	X	X		X		X					
MH #3	Maintain and Update Plan					X	X	X	X	X	X	X			X		X				
MH #4	Cost - Benefit Analysis					X	X					X		X			X				
MH #5	Evacuation Routes					X			X			X		X			X				
MH #6	Transportation Planning			X			X					X		X			X				
MH #7	NOAA All Hazards Radio				X			X				X		X			X				
MH #8	Enhance Data					X						X		X			X				
MH #9	Continue LEPC					X	X	X	X	X	X	X		X			X				
MH #10	Maintain EOC					X	X	X	X	X	X	X		X			X				
MH #11	Communication					X						X		X			X				
MH #12	Recordkeeping					X						X		X				X			
MH #13	Alternate Energy Sources			X			X					X		X				X			
MH #14	Special Needs Populations					X			X	X		X		X			X				
MH #15	Educational Outreach				X				X			X		X			X				
MH #16	"How To" Booth				X				X			X		X			X				
MH #17	School Mitigation Plan					X	X	X	X	X	X	X		X			X				
MH #18	Mitigation Curriculum					X	X		X			X		X			X				
MH #19	Public Service Announcements					X			X			X		X			X				
MH #20	Disaster Kit					X	X		X	X		X		X			X				

Ingham County

Ingham County identified hazardous materials, chemicals, explosives, tornadoes, flooding, and “multi-hazards” as threats to their communities. The charts below list the proposed mitigation actions which should occur, ranging from building flood proof basements, to tree trimming, bridge modifications and the provision of disaster kits. County officials report that many of these items have been promoted or completed at various levels around the County.

Ingham County identified hazardous materials, chemicals, explosives, tornadoes, flooding, and “multi-hazards” as threats to their communities in 2004. The charts below list the proposed mitigation actions which should occur, ranging from building flood proof basements, to tree trimming, bridge modifications and the provision of disaster kits. County officials report that many of these items have been promoted or completed at various levels around the County including working with Do1Thing to improve citizen preparedness through education and providing disaster kits, expanding the outdoor warning siren alert system, and through giving NOAA All-Hazards Alert Radios to schools, hospitals, and county facilities. Debris removal has taken place in Delhi

Township to reduce flooding along the Sycamore Creek, and a 24/7 river gauge has been installed to provide better forecasts and alerts.

Hazardous Materials (Fixed Site):

Project #	Project Name	Mitigation Strategy Applied					Project Goals Addressed				Project Type	Project Implementation			Project Priority	Project Evaluation Perform in 2008			
		Other Mitigation Approaches	Increase Public Awareness	Alter Design or Construction	Prevent or Limit Development	Segregate the Hazard	Property Protection	Public Education	Injury / Casualty Prevention	Natural Resource Protection		Ongoing Project	Short-Term	Medium Term		Long Term	Low	Medium	High
HMF #1	Enhance Pre-Planning					X	X					X			X				
HMF #2	Pre-Response Training					X	X					X			X				
HMF #3	LEPC					X	X					X			X				
HMF #4	Oblique Aerial Photographs					X							X				X		
HMF #5	Land Use Buffers	X	X				X		X			X		X			X		
HMF #6	Containment			X			X		X			X		X			X		

Multi-Hazards:

Project #	Project Name	Mitigation Strategy Applied					Project Goals Addressed				Project Type	Project Implementation			Project Priority	Project Evaluation Perform in 2008			
		Other Mitigation Approaches	Increase Public Awareness	Alter Design or Construction	Prevent or Limit Development	Segregate the Hazard	Property Protection	Public Education	Injury / Casualty Prevention	Natural Resource Protection		Ongoing Project	Short-Term	Medium Term		Long Term	Low	Medium	High
MH #1	Adopt and Implement Plan					X	X	X	X	X		X			X				
MH #2	Incorporate into Local Plans					X	X	X	X	X		X		X		X			
MH #3	Maintain and Update Plan					X	X	X	X	X		X		X		X			
MH #4	Cost - Benefit Analysis					X	X					X			X				
MH #5	Evacuation Routes					X			X			X			X				
MH #6	Transportation Planning			X			X					X			X				
MH #7	NOAA All Hazards Radio				X			X				X			X				
MH #8	Enhance Data				X							X			X				
MH #9	Continue LEPC				X		X	X	X	X		X			X				
MH #10	Maintain EOC				X		X	X	X	X		X			X				
MH #11	Communication				X							X			X				
MH #12	Recordkeeping				X							X			X				
MH #13	Alternate Energy Sources			X			X				X				X				
MH #14	Special Needs Populations				X			X	X		X		X		X				
MH #15	Educational Outreach				X			X			X				X				
MH #16	"How To" Booth				X			X			X				X				
MH #17	School Mitigation Plan				X		X	X	X	X		X			X				
MH #18	Mitigation Curriculum				X	X		X			X				X				
MH #19	Public Service Announcements				X			X			X				X				
MH #20	Disaster Kit				X	X		X	X		X				X				

Chemicals:

Project #	Project Name	Mitigation Strategy Applied				Project Goals Addressed			Project Type	Project Implementation			Project Priority	Project Evaluation Perform in 2008						
		Other Mitigation Approaches	Increase Public Awareness	Alter Design or Construction	Prevent or Limit Development	Segregate the Hazard	Modify The Hazard	Natural Resource Protection		Injury / Casualty Prevention	Public Education	Property Protection		Prevention / Risk Reduction	Long Term	Medium Term	Short-Term	Low	Medium	High
CHM #1	Public Safety Presence							X												
CHM #2	Defensive Architecture			X								X								
CHM #3	Oblique Aerial Photographs																			
CHM #4	Public Education Related to WMD		X																	

Flooding:

Project #	Project Name	Mitigation Strategy Applied				Project Goals Addressed			Project Type	Project Implementation			Project Priority	Project Evaluation Perform in 2008						
		Other Mitigation Approaches	Increase Public Awareness	Alter Design or Construction	Prevent or Limit Development	Segregate the Hazard	Modify The Hazard	Natural Resource Protection		Injury / Casualty Prevention	Public Education	Property Protection		Prevention / Risk Reduction	Long Term	Medium Term	Short-Term	Low	Medium	High
FLD #1	Floodproof Basements			X																
FLD #2	Update FIRM Maps						X													
FLD #3	Replace to a Higher Standard			X																
FLD #4	Floodfighting Strategies						X													
FLD #5	ID of Repetitive Loss Structures			X																
FLD #6	AQ of Repetitive Loss Structures			X																
FLD #7	RL of Repetitive Loss Structures			X																
FLD #8	Temporary Flood Protection	X	X																	
FLD #9	Public Education							X												
FLD #10	Stakeholder Education							X												
FLD #11	Flood Signs							X												
FLD #12	Floodplain Manager						X	X	X	X										
FLD #13	Watershed Management			X	X															
FLD #14	Urban Flood Reduction			X																
FLD #15	Urban Flood Reduction Solutions			X																
FLD #16	Acquire Aerial Photography							X												
FLD #17	Bridge Survey			X																
FLD #18	Bridge Modification			X																
FLD #19	ID Temp Flood Shelters																			
FLD #20	ID Temp Storage Sites							X												
FLD #21	Raise Manholes			X																
FLD #22	Increase Pump Capacity							X												
FLD #23	Wastewater Plant Floodproofing			X																
FLD #24	Flood Warning Sensors					X	X													

Explosives:

Project #	Project Name	Mitigation Strategy Applied				Project Goals Addressed				Project Type	Project Implementation			Project Priority	Project Evaluation Perform in 2008	
		Modify The Hazard	Segregate the Hazard	Prevent or Limit Development	Alter Design or Construction	Other Mitigation Approaches	Injury / Casualty Prevention	Public Education	Property Protection		Prevention / Risk Reduction	Natural Resource Protection	Short-Term		Medium Term	Long Term
EXP #1	Public Safety Presence					X					X					
EXP #2	Defensive Architecture				X						X					
EXP #3	Oblique Aerial Photographs										X					
EXP #4	Public Education Related to WMD					X		X			X					

Tornadoes:

Project #	Project Name	Mitigation Strategy Applied				Project Goals Addressed				Project Type	Project Implementation			Project Priority	Project Evaluation Perform in 2008	
		Modify The Hazard	Segregate the Hazard	Prevent or Limit Development	Alter Design or Construction	Other Mitigation Approaches	Injury / Casualty Prevention	Public Education	Property Protection		Prevention / Risk Reduction	Natural Resource Protection	Short-Term		Medium Term	Long Term
TRN #1	Residential Safe Rooms				X						X					
TRN #2	Institutional Safe Rooms / Spaces				X						X					
TRN #3	Free-Standing Safe Rooms				X						X					
TRN #4	Anchor Mobile / Temp Structures				X						X					
TRN #5	Bracing of Permanent Structures				X		X				X					
TRN #6	Wind Bracing For Signs				X			X			X					X
TRN #7	Wind Bracing For Antennas				X			X			X					X
TRN #8	Underground Utilities				X			X			X		X			
TRN #9	Tree Trimming							X	X		X					X
TRN #10	Debris Management										X					X
TRN #11	Early Warning Sirens				X			X			X					X
TRN #12	Storm Spotters							X			X					X
TRN #13	Storm Warning Public Education				X				X		X					X
TRN #14	Severe Weather Awareness Week				X			X			X					X
TRN #15	Public Storm Shelter Locations				X			X	X		X					X
TRN #16	NOAA Weather Radio				X			X	X		X					X

Mitigation Goal Priorities

The mitigation goals and actions adopted and implemented as part of the 2004 Plans were a mix of actions for hazards that are not altogether deemed significant not on 2015. Early on in the planning process, the project team reviewed the 2004 hazards and agreed that the updated plan would address only natural hazards as required by FEMA. All strategies presented here will improve the health, safety and general welfare for citizens, business and government. There are, however, limitations to actionable items

in any plan. Two primary limitations for the mitigation strategies presented in this plan include funding opportunities and the general political processes that direct limited resources across expanding needs.

Consideration to these limitations is reflected in the selection of mitigation strategies, which seek to reduce vulnerability with actions that have been previously identified in an existing plan, that are volunteer based, that introduce manageable financial commitment from local government, or that provide a funding option from an external agency. Unfunded mitigation strategies have been estimated to provide a benefit over cost. The goals and activities listed here are in order of priority beginning with addressing the needs of vulnerable populations. Top priority items are critical to implement and address over the next 3 years. High priority items are critical to implement and address over the next 5 years.

Top Priority: Protect Special Needs Populations

- A. Mitigation Strategy:** Develop and promote contact list for local disaster planning and assistance organizations (Listening Ear, FIA, Commission on Aging, Red Cross) to be promoted to special needs populations.

Potential Lead Organization/Department: Emergency Operations Center, Red Cross, other community organizations

Potential Funding Sources: Local Government, State of Michigan, Community Organizations, Federal Government

- B. Mitigation Strategy:** Hold public seminar(s) on disaster planning and preparedness for special needs populations, caretakers planning officials and facilities caring for special needs populations.

Potential Lead Organization/Department: Emergency Operations Center, Red Cross, other community organizations

Potential Funding Sources: Local EOC, Local Government, Community Organizations

- C. Mitigation Strategy:** Seek funding for NOAA weather radios for facilities caring for special needs populations and special needs populations living independently.

Potential Lead Organization/Department: Emergency Operations Center

Potential Funding Sources: Local EOC, State EMD, FEMA, Local Government, SCT Two-percent Funding

- D. Mitigation Strategy:** Give disaster kits to caretakers of special needs populations, including hospice patients, and facilities caring for special needs populations.

Potential Lead Organization/Department: Emergency Operations Center

Potential Funding Sources: Local EOC, State EMD, FEMA, Local Government,

- E. Mitigation Strategy:** Mass mail all special needs facilities a brochure on facility disaster preparedness.

Potential Lead Organization/Department: Emergency Operations Center, Red Cross, other community organizations

Potential Funding Sources: Local EOC, Local Government, Community Organizations

- F. Mitigation Strategy:** Encourage each facility to conduct annual disaster drills.

Potential Lead Organization/Department: Emergency Operations Center

Potential Funding Sources: Local EOC, State EMD, FEMA,

- G. Mitigation Strategy:** Develop internal facility emergency/disaster warning systems.

Potential Lead Organization/Department: Emergency Operations Center

Potential Funding Sources: Local EOC, State EMD, FEMA, Private

High Priority: Identify gaps in community wide emergency response to hazards.

Objective: Conduct multi agency exercises for potential hazards to identify gaps and develop solutions.

- A. Mitigation Strategy:** Conduct annual orientations with each response agency regarding the counties disaster plans.

Potential Lead Organization/Department: Emergency Operations Center

Potential Funding Sources: Local EOC, Local Government

- B. Mitigation Strategy:** Conduct disaster drills with each response agency to exercise county disaster plan.

Potential Lead Organization/Department: Emergency Operations Center

Potential Funding Sources: Local EOC, State EMD, FEMA, Local Government,

- C. Mitigation Strategy:** Conduct a full scale disaster drill every third year with as many agencies as possible.

Potential Lead Organization/Department: Emergency Operations Center

Potential Funding Sources: Local EOC, State EMD, FEMA, Local Government, SCT Two-percent Funding

High Priority: Provide protective measures from severe wind, hail and tornadoes.

Objective: *Construct shelters and raise awareness to safe rooms and other construction methods that provide protective measures from wind/storm events.*

- A. Mitigation Strategy:** Encourage the construction of shelters at City and County Parks.

Potential Lead Organization/Department: Emergency Operations Center

Potential Funding Sources: Local EOC, State EMD, FEMA, Local Government.

- B. Mitigation Strategy:** Encourage the construction of shelters at mobile home/manufactures housing communities.

Potential Lead Organization/Department: Emergency Operations Center

Potential Funding Sources: Local EOC, State EMD, FEMA, Local Government, SCT two-percent funding.

- C. Mitigation Strategy:** Increase public awareness of safe rooms and enhanced construction methods in newly constructed homes through brochures, Internet and other literature to be made available from county and private entities.

Potential Lead Organization/Department: Emergency Operations Center, Community Development

Potential Funding Sources: Local EOC, FEMA, Local Government, Private

- D. Mitigation Strategy:** Ensure that all schools located in Clinton County are within the outdoor warning siren range and have indoor warning capabilities (indoor weather warning via NOAA Weather Radios).

Potential Lead Organization/Department: Emergency Operations Center, Clinton-Gratiot ISD, Local School Districts

Potential Funding Sources: Local EOC, FEMA, State of Michigan

Objective: *Raise public awareness of severe weather events and preventative actions.*

- A. Mitigation Strategy:** Increase attendance at National Weather Service Spotter classes through media (local weather stations, Internet, newspapers, etc.).

Potential Lead Organization/Department: Emergency Operations Center

Potential Funding Sources: Local EOC, FEMA, NOAA,

- B. Mitigation Strategy:** Create public service announcements regarding severe weather events.

Potential Lead Organization/Department: Emergency Operations Center

Potential Funding Sources: Local EOC, FEMA, Local Government,

High Priority: *Decrease vulnerability of county to infrastructure failures caused by natural events.*

Objective: *Include policies developed in Comprehensive Plan that promote growth in areas that have existing infrastructure in hazard mitigation plan.*

- A. Mitigation Strategy:** Discourage unplanned sprawl conditions in area without exist infrastructure.

Potential Lead Organization/Department: Local Legislative Body, Community Development, Planning Boards

Potential Funding Sources: Local Government

Objective: *Rehabilitate infrastructure where applicable (storm water, water, sewerage, underground utilities etc.).*

- A. Mitigation Strategy:** Identify infrastructure that needs rehabilitation.

Potential Lead Organization/Department: Drain Commission, Public Works

Potential Funding Sources: Local Government, State of Michigan,

- B. Mitigation Strategy:** Suggest local governments find sources of funding (Michigan Hazard mitigation funding, local budgets, local grantors, etc...) to fund rehabilitation projects.

Potential Lead Organization/Department: Local Governing Body, Community Development, Local EOC

Potential Funding Sources: Local Government

- C. Mitigation Strategy:** Create a digital GIS layer displaying locations of generators throughout county.

Potential Lead Organization/Department: Local EOC

Potential Funding Sources: Local EOC, State EMD, FEMA, Local Government.

High Priority: Reduce the impacts of riverine/urban flooding.

Objective: *To preserve or improve the water quality of water resources, such Rivers, their tributaries, lakes, and wetlands.*

- A. Mitigation Strategy:** Create an overlay zoning district which can be applied to the lands abutting water resources to manage growth and development, ensure sufficient setback distances, and preserve natural features.

Potential Lead Organization/Department: Local Governing Body, Community Development, Planning Boards

Potential Funding Sources: Local Government, FEMA,

- B. Mitigation Strategy:** Work with the Department of Environmental Quality to enforce water quality regulations.

Potential Lead Organization/Department: Local Governing Body, Community Development

Potential Funding Sources: Local Government, Michigan DEQ

- C. Mitigation Strategy:** Consider the potential impacts of stormwater runoff on water quality.

Potential Lead Organization/Department: Community Development, MSU Extension, MDEQ

Potential Funding Sources: Local Government, Michigan DEQ, EPA, FEMA

Objective: *To preserve the natural character of adjacent lands along the rivers...*

- A. Mitigation Strategy:** Provide incentives to preserve frontage and vegetation along the river banks.

Potential Lead Organization/Department: Local Governing Body, Community Development, Planning Boards

Potential Funding Sources: Local Government, FEMA,

- B. Mitigation Strategy:** Create an overlay zoning district which can be applied to the lands along the river banks.

Potential Lead Organization/Department: Local Governing Body, Community Development, Planning Boards

Potential Funding Sources: Local Government, FEMA,

- C. Mitigation Strategy:** Consider the established federal flood plain boundaries as a part of any proposed regulations. All local jurisdictions should participate in the National Flood Insurance Program and Repetitive Loss Programs, planning and implementing` federally recognized mitigation efforts.

Potential Lead Organization/Department: Local Governing Body, Community Development, Planning Boards

Potential Funding Sources: Local Government, FEMA

- D. Mitigation Strategy:** Encourage cooperative and coordinated planning efforts among neighboring communities.

Potential Lead Organization/Department: Local Governing Body, Community Development, Planning Boards

Potential Funding Sources: Local Government

Plan Implementation

With the support of a FEMA grant through the Michigan State Police, the tri-County region of Ingham Eaton, and Clinton Counties and the Charter Township of Delta have conducted research, convened advisory group and steering group meetings, and integrated the work of updating the regional Hazard Mitigation Plan. Beginning with research, mapping and the development of elevations data (LiDAR) followed by an analyses of hazards and vulnerable areas, the Tri-County Regional Planning Commission has worked to create a new and complete revised library of geographic

information systems. The anticipated goal is to complete an update of the regional Hazard Mitigation Plan and submit it for County approvals in July 2015. On behalf of the region, TCRPC will seek adoption of a final plan, which requires a resolution of adoption of the final Plan by the County and Township boards. Formal adoption of this plan will make it active for a period of five years, in which time consideration should be given to updates for the next planning period. The Hazard Mitigation Plan will officially be transferred to the Emergency Management Agencies of Clinton, Eaton and Ingham Counties and Delta Charter Township, as will responsibilities for maintenance. The transfer will include all materials used to create the plan and a CD containing digital documentation and maps.

The Tri-County Regional Planning Commission provided planning work during the planning process. In large part, this was due to the availability of grant funding and a limitation of resources required in completing this plan. On transfer of deliverables, TCRPC will have completed its role in this planning process. The TCRPC will aid the counties and township during the transfer and adoption phase in any means possible. Any future involvement by TCRPC will depend on the availability of staff and funding.

TCRPC will maintain digital copies of all data and information used and produced for this plan, including GIS data and maps. Distribution of this data and information, including the plan, shall be directed to the Emergency Management Agencies. TCRPC will maintain contact with the County and Township Emergency Management Coordinators and provide assistance on a limited basis. All requests and questions regarding this plan shall be directed to the County and Township Emergency Operations Centers.

During the development of this plan key individuals came together, raised awareness and leveraged support for mitigation planning. While many of these individuals and agencies are integral components of the mitigation strategies, successful implementation will continue to require an engaged audience that extends beyond stakeholders.

Specific project implementation should consider what is most feasible in terms of resources, financial commitment and the ability to connect a project publicly to hazard mitigation. Successful implementation and reduction of vulnerabilities can leverage tremendous public and political support. Engaging in attainable projects first will facilitate further projects and support for future planning activities.

Using MSP's Condensed Hazard Mitigation Plan Review Sheets, this plan meets the requirements listed in Section 1, Items 1 through 5; Section 2, Items 6 through 9; Section 3, Items 10 through 14; and Section 4, Items 15 through 20. All grant agreement steps have been met in the development of this plan update such as review of the 2004 Plans, convening of workgroup meetings, hosting of public workshops, the creation of LiDAR based contour maps and building footprint maps, development of hazard analysis chapters and hazard mitigation actions.

Maintenance and Updates of the Hazard Mitigation Plan

A review report was provided by representatives of FEMA and the Michigan State Police on June 11, 2015 following their consideration of the final draft plan. The minor changes recommended were completed and this final Plan document has been produced and publicly posted at www.mitcrpc.org, the Tri-County Regional Planning Commission website. The final Tri-County Regional Hazard Mitigation Plan was also submitted for formal adoption by the three counties and Delta Charter Township in June-July, 2015.

The Hazard Mitigation Plan will be active for five years beyond the date of FEMA approval. During that time, the Tri-County region's agencies will continue to consider how to maintain and improve the Hazard Mitigation Planning processes and their implementation. The Emergency Managers in the region will continue to monitor, evaluate and update the 2015 Hazard Mitigation Plan through many means including public participation in the plan maintenance process with periodic presentations to community groups, in public meetings, through internet and social media postings, or by the use of questionnaires and surveys.

To remain active with the planning process, this Plan recommends that a regional workgroup continue to meet at least annually after the adoption of this plan to review its implementation and ongoing maintenance and development. The implementation meetings should focus primarily on changes in the community, such as population shifts, new development patterns and changes to local, state and federal priorities. Regional participating agencies should conduct routine maintenance quarterly regarding the review and evaluation of mitigation strategies to ensure connectivity to projects and their stakeholders. Additionally, the maintenance topic should be introduced and discussed, when possible, at other forums such as local emergency response meetings. Over the next five years, local participating communities should recognize and adopt this hazard mitigation plan into or as an amendment to their local master land use plans. And, a variety of hazard mitigation action items should also be considered and adopted into local capital improvement plans so that local funds can be allotted to the implementation of the local community's chosen hazard mitigation activities.

During year five of this plan, in 2020, it is recommended that the regional emergency management agencies, municipalities, and other affected agencies organize their efforts to create the next version of a Hazard Mitigation Plan that recognizes and updates this five year Regional Hazard Mitigation Plan. Future meetings should carefully consider changes to the community and improving information as foundations for updating this plan. Maintenance and updates to this plan are the responsibility of the County and Township Emergency Management Agencies.

APPENDIX A: LOCAL MITIGATION PLAN REVIEW TOOL

The *Local Mitigation Plan Review Tool* demonstrates how the Local Mitigation Plan meets the regulation in 44 CFR §201.6 and offers States and FEMA Mitigation Planners an opportunity to provide feedback to the community.

- The Regulation Checklist provides a summary of FEMA’s evaluation of whether the Plan has addressed all requirements.
- The Plan Assessment identifies the plan’s strengths as well as documents areas for future improvement.
- The Multi-jurisdiction Summary Sheet is an optional worksheet that can be used to document how each jurisdiction met the requirements of the each Element of the Plan (Planning Process; Hazard Identification and Risk Assessment; Mitigation Strategy; Plan Review, Evaluation, and Implementation; and Plan Adoption).

The FEMA Mitigation Planner must reference this *Local Mitigation Plan Review Guide* when completing the *Local Mitigation Plan Review Tool*.

Jurisdiction: Clinton, Eaton, Ingham Counties, MI	Title of Plan: Tri-County Regional Hazard Mitigation Plan	Date of Plan: 2015
Local Point of Contact: Susan M. C. Pigg		Address: 3135 Pine Tree Rd, Suite 2C Lansing, MI 48911
Title: Executive Director		
Agency: Tri-County Regional Planning Commission		
Phone Number: (517) 393-0342		E-Mail: spigg@mitcrpc.org
State Reviewer: Mike Sobocinski	Title: Hazard Mitigation Planning Specialist	Date: 5/29/2015
FEMA Reviewer: Kirstin Kuenzi	Title: Community Planning Specialist	Date: 6/1/2015
Date Received in FEMA Region (insert #)	5/29/2015	
Plan Not Approved		
Plan Approvable Pending Adoption	XX- but please add additional text for the cities of Williamston, Eaton Rapids; the townships of Meridian Charter, Williamston, Lansing Charter, DeWitt Charter when adopting	

SECTION 1:

REGULATION CHECKLIST

INSTRUCTIONS: The Regulation Checklist must be completed by FEMA. The purpose of the Checklist is to identify the location of relevant or applicable content in the Plan by Element/sub-element and to determine if each requirement has been ‘Met’ or ‘Not Met.’ The ‘Required Revisions’ summary at the bottom of each Element must be completed by FEMA to provide a clear explanation of the revisions that are required for plan approval. Required revisions must be explained for each plan sub-element that is ‘Not Met.’ Sub-elements should be referenced in each summary by using the appropriate numbers (A1, B3, etc.), where applicable. Requirements for each Element and sub-element are described in detail in this *Plan Review Guide* in Section 4, Regulation Checklist.

1. REGULATION CHECKLIST Regulation (44 CFR 201.6 Local Mitigation Plans)	Location in Plan	Met	Not Met
ELEMENT A. PLANNING PROCESS			
A1. Does the Plan document the planning process, including how it was prepared and who was involved in the process for each jurisdiction? (Requirement §201.6(c)(1))	Plan Update Meetings, pp. 5. <i>Meetings were held in 2012, 2013, 2014, and 2015. An online survey was developed in 2015.</i>	X	
A2. Does the Plan document an opportunity for neighboring communities, local and regional agencies involved in hazard mitigation activities, agencies that have the authority to regulate development as well as other interests to be involved in the planning process? (Requirement §201.6(b)(2))	Figure 3: Plan Update Meetings, pp. 5. <i>Sheriff Departments, libraries, DOTs, and a representative from Michigan State University in Lansing participated in group meetings.</i>	X	
A3. Does the Plan document how the public was involved in the planning process during the drafting stage? (Requirement §201.6(b)(1))	Plan Update Meetings, pp. 5. <i>Meetings were open to all (public forums) and an online survey was utilized.</i>	X	

1. REGULATION CHECKLIST		Location in Plan	Met	Not Met
Regulation (44 CFR 201.6 Local Mitigation Plans)				
A4. Does the Plan describe the review and incorporation of existing plans, studies, reports, and technical information? (Requirement §201.6(b)(3))	Process to Update the Tri-County Regional Plan, pp. 10-12. <i>Existing information such as the Regional Growth: Choice for our Future report, the Greening Mid-Michigan Report, the State HM Plan, and various maps were reviewed and data was compiled.</i>	X		
A5. Is there discussion of how the community(ies) will continue public participation in the plan maintenance process? (Requirement §201.6(c)(4)(iii))	Maintenance and Updates, pp. 131. <i>“The Emergency Managers in the region will continue to monitor, evaluate and update the 2015 HM Plan through many means: Public participation in the plan maintenance process with periodic presentations to community groups or at public meetings, internet and social media postings, or the use of questionnaires and surveys”.</i>	X		

1. REGULATION CHECKLIST		Location in Plan	Met	Not Met
Regulation (44 CFR 201.6 Local Mitigation Plans)				
A6. Is there a description of the method and schedule for keeping the plan current (monitoring, evaluating and updating the mitigation plan within a 5-year cycle)? (Requirement §201.6(c)(4)(i))	Maintenance and Updates, pp. 131. <i>“To remain active with the planning process it is recommended that the workgroup meet annually beginning one year from the adoption of this plan to consider its ongoing implementation”.</i>	X		
ELEMENT A: REQUIRED REVISIONS <i>N/A</i>				
ELEMENT B. HAZARD IDENTIFICATION AND RISK ASSESSMENT				
B1. 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))	Hazard Analysis, pp. 48-98. <i>The ranking of hazards covered are, in order: tornado, flood, severe wind, snowstorm, hail, ice storm, drought, wildfire, lightning, extreme heat, extreme cold, and fog; manmade hazards covered are civil disturbance, hazmat, oil/natural gas accident, infrastructure failure, and public health emergency.</i>	X		

1. REGULATION CHECKLIST		Location in Plan	Met	Not Met
Regulation (44 CFR 201.6 Local Mitigation Plans)				
B2. 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))	Hazard Analysis, pp. 48-98. <i>Previous occurrences are documented by disaster declarations as well as NCDC information; probability for each hazard event is also estimated by county.</i>	X		
B3. 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))	Hazard Analysis, pp. 48-98. <i>Impact is well described.</i>	X		
B4. Does the Plan address NFIP insured structures within the jurisdiction that have been repetitively damaged by floods? (Requirement §201.6(c)(2)(ii))	Repetitive Loss Property Information in the Tri-County Region, pp. 74-75. <i>Clinton County has 1 rep loss property, Ingham County has 12 rep loss properties, and Eaton County has 12 rep loss properties.</i>	X		
ELEMENT B: REQUIRED REVISIONS <i>N/A</i>				
ELEMENT C. MITIGATION STRATEGY				
C1. Does the plan document each jurisdiction's existing authorities, policies, programs and resources and its ability to expand on and improve these existing policies and programs? (Requirement §201.6(c)(3))	Hazard Mitigation: Unlocking the Disaster Equation, pp. 5-9. <i>Existing policies and programs are covered in the introduction as well as through maps in the plan.</i>	X		

1. REGULATION CHECKLIST Regulation (44 CFR 201.6 Local Mitigation Plans)	Location in Plan	Met	Not Met
C2. 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))	Figure 51: FEMA Community Status Chart, pp. 69. <i>The table quotes FEMA's Community Status Books for documenting jurisdictional participation in the NFIP.</i>	X	
C3. Does the Plan include goals to reduce/avoid long-term vulnerabilities to the identified hazards? (Requirement §201.6(c)(3)(i))	Mitigation Gal Priorities, pp. 123-129. <i>Goals include the highest priorities to these communities: protecting the special needs populations, identifying gaps in community-wide emergency response to hazards, providing protective measures from severe wind, hail, and tornadoes, decreasing vulnerability of the counties to infrastructure failures caused by natural events, and reducing the impacts of riverine/urban flooding.</i>	X	
C4. 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))	Mitigation Strategies and Plan Implementation, pp. 99-123. <i>Mitigation actions are comprehensive and specific to each hazard addressed.</i>	X	

1. REGULATION CHECKLIST		Location in Plan	Met	Not Met
Regulation (44 CFR 201.6 Local Mitigation Plans)				
C5. 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))	Mitigation Strategies and Plan Implementation, pp. 99-123. <i>Action plan, by county, is prioritized in terms of high, medium, or low as well as project timeline.</i>	X		
C6. Does the Plan describe a process by which local governments will integrate the requirements of the mitigation plan into other planning mechanisms, such as comprehensive or capital improvement plans, when appropriate? (Requirement §201.6(c)(4)(ii))	Maintenance and Updates, pp. 131. <i>“Over the next five years, local participating communities should adopt this hazard mitigation plan as an amendment of their local mast plans. Various action items should also be considered and adopted into local capital improvement plans so that local funds can be allotted to the implementation of the local community’s chosen hazard mitigation activities”.</i>	X		
ELEMENT C: REQUIRED REVISIONS				
N/A				
ELEMENT D. PLAN REVIEW, EVALUATION, AND IMPLEMENTATION (applicable to plan updates only)				

1. REGULATION CHECKLIST		Location in Plan	Met	Not Met
Regulation (44 CFR 201.6 Local Mitigation Plans)				
D1. Was the plan revised to reflect changes in development? (Requirement §201.6(d)(3))	Community Profiles, pp. 13-47. <i>Current and future land use is well-documented within the plan by both maps and descriptions.</i>	X		
D2. Was the plan revised to reflect progress in local mitigation efforts? (Requirement §201.6(d)(3))	Mitigation Strategies and Plan Implementation, pp. 99. <i>“The mitigation alternatives for our region are very much the same now as they were in the previous adopted Plan. Various actions were completed since 2005, such as the distribution of weather radios to residents, the adoption of low-impact development regulations across the region, and public service announcements pertaining to emergency preparedness. The TCRPC made every effort to ensure that actions can be accomplished and that they will reduce vulnerability”.</i>	X		

1. REGULATION CHECKLIST		Location in Plan	Met	Not Met
Regulation (44 CFR 201.6 Local Mitigation Plans)				
D3. Was the plan revised to reflect changes in priorities? (Requirement §201.6(d)(3))	Hazards Analysis, pp. 48. <i>Priorities have been updated. "In 2004, Clinton, Eaton and Ingham Counties and Delta Charter Township proposed floods, tornadoes and ice/sleet storms as their top three hazards. This is in keeping with the new 2015 Plan update. Also, the earthquakes and forest fires that were identified as a hazard in 2005 do not play a major role in the 2015 update as our region is not host to substantial forested areas, nor is it prone to earthquakes".</i>	X		
<u>ELEMENT D: REQUIRED REVISIONS</u>				
N/A				
<u>ELEMENT E. PLAN ADOPTION</u>				
E1. 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))	<i>Plan can be adopted post-FEMA approval.</i>			X
E2. For multi-jurisdictional plans, has each jurisdiction requesting approval of the plan documented formal plan adoption? (Requirement §201.6(c)(5))	<i>Plan can be adopted post-FEMA approval.</i>			X
<u>ELEMENT E: REQUIRED REVISIONS</u>				
N/A				
<u>ELEMENT F. ADDITIONAL STATE REQUIREMENTS (OPTIONAL FOR STATE REVIEWERS ONLY; NOT TO BE COMPLETED BY FEMA)</u>				

1. REGULATION CHECKLIST		Location in Plan	Met	Not Met
Regulation (44 CFR 201.6 Local Mitigation Plans)				
F1.				
F2.				
<u>ELEMENT F: REQUIRED REVISIONS</u>				

SECTION 2:

PLAN ASSESSMENT

A. Plan Strengths and Opportunities for Improvement

This section provides a discussion of the strengths of the plan document and identifies areas where these could be improved beyond minimum requirements.

Element A: Planning Process

Element B: Hazard Identification and Risk Assessment

Element C: Mitigation Strategy

Element D: Plan Update, Evaluation, and Implementation (Plan Updates Only)

B. Resources for Implementing Your Approved Plan

There are many different resources that can assist your community in plan implementation. FEMA sources of funding include the following:

HMGP: The Hazard Mitigation Grant Program (HMGP) is authorized by Section 404 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act, as amended. The key purpose of HMGP is to ensure that the opportunity to take critical mitigation measures to reduce the risk of loss of life and property from future disasters is not lost during the reconstruction process following a disaster. HMGP is available, when authorized under the Presidential major disaster declaration, in the areas of the State requested by the Governor.

PDM: The Pre-Disaster Mitigation (PDM) program is authorized by Section 203 of the Stafford Act, 42 U.S.C. 5133. The PDM program is designed to assist States, Territories, Indian Tribal governments, and local communities to implement a sustained pre-disaster natural hazard mitigation program to reduce overall risk to the population and structures from future hazard events, while also reducing reliance on Federal funding from future major disaster declarations.

****The following are only available if you are a participating community in the NFIP****

FMA: *The Flood Mitigation Assistance (FMA) program is authorized by Section 1366 of the National Flood Insurance Act of 1968, as amended with the goal of reducing or eliminating claims under the National Flood Insurance Program (NFIP). The Repetitive Flood Claims (RFC) program has the goal of reducing flood damages to individual properties for which one or more claim payments for losses have been made under flood insurance coverage and that will result in the greatest savings to the National Flood Insurance Fund (NFIF) in the shortest period of time.*

SLR: *The Severe Repetitive Loss (SRL) program is authorized by Section 1361A of the NFIA has the goal of reducing flood damages to residential properties that have experienced severe repetitive losses under flood insurance coverage and that will result in the greatest amount of savings to the NFIF in the shortest period of time.*

RFC: *The Repetitive Flood Claims program is authorized by Section 1361A of the NFIA, 42 U.S.C. 4030 with the goal of reducing flood damages to individual properties for which one or more claim payment for losses have been made under flood insurance coverage and that will result in the greatest savings to the National Flood Insurance Fund in the shortest period of time.*

SECTION 3:

MULTI-JURISDICTION SUMMARY SHEET (OPTIONAL)

INSTRUCTIONS: For multi-jurisdictional plans, a Multi-jurisdiction Summary Spreadsheet may be completed by listing each participating jurisdiction, which required Elements for each jurisdiction were 'Met' or 'Not Met,' and when the adoption resolutions were received. This Summary Sheet does not imply that a mini-plan be developed for each jurisdiction; it should be used as an optional worksheet to ensure that each jurisdiction participating in the Plan has been documented and has met the requirements for those Elements (A through E).

Ingham County; the cities of East Lansing, Williamston, Mason; the villages of Dansville, Webberville; the townships of Meridian Charter, Williamston, Dehli Charter, Lansing Charter.

Eaton County; the cities of Grand Ledge, Charlotte, Eaton Rapids; Delta Charter Township.

Clinton County; the cities of DeWitt, St. Johns, the townships of DeWitt Charter, Bath Charter, Dallas.

MEMORANDUM

TO: Township Board

FROM: 
Frank L. Walsh, Township Manager

DATE: February 8, 2016

RE: **Haslett-Okemos Rotary Club Community Room – Use Policy**

As we celebrate the opening of the new Central Fire Station and the Haslett-Okemos Rotary Club Community Room, there is bound to be a plethora of requests for the meeting space. On Tuesday evening, we will continue the discussion regarding how you wish to handle the multitude of groups wanting to experience the room.

Do you want to limit the use of the room to established Meridian Township neighborhoods? Is there a fee to use the room? What about groups outside of the Township? There are many things to ponder when you consider how we manage the incoming requests. Who has final authority to grant use of the room?

The only standing meeting is the weekly Rotary Club meeting. The Rotary Club meets on most Tuesdays at noon. The room seats approximately 54.

We look forward to your direction on how you wish to proceed with the policy.

Attachment:

Example – Service Center Meeting Room Policy

Meridian Township Service Center

Meeting Room Policy



1. The Meeting Room maximum is **50** people (this number may vary according to number of chairs available for seating)
2. The Meeting Room is available Monday through Friday from 5:30-9:30 pm and weekends from 8 am to 9:30 pm.
3. This room is in use throughout each day. Please return the room to its original setup when finished. *Four (4) long tables in the middle of the room setup in a square; One (1) round table close to the door; and two (2) round tables by the window wall. There are **approximately 40-50 chairs available for use.** Cleaning supplies for spills or soiled areas and a vacuum, if needed, are available under the sink or in the closet. *Please notify the Township of the spill by leaving a note or by calling and leaving a message at (517) 853-4608. Your cooperation in this matter is greatly appreciated.**
4. Room reservation time should include the time required to set up and clean up for your event.
5. The television is available for your use. *Please do not disconnect any wires or cables or move the television.*
6. The kitchen area is available for use. You will need to bring your own coffee, cups, cream and sugar. You may use our coffee machine, but please clean after use. Items in the cupboards and refrigerator are personal property of Township employees and are **NOT** for public use. *If you bring in any food products, also bring trash bags and take the trash with you when you leave.*
7. Alcohol is not allowed on the premises.
8. By State Law, smoking is prohibited in all public buildings.
9. If an individual in the meeting group damages and/or breaks any item in the room, this incident must be immediately reported to the office either by leaving a note in the drop box or by phoning the next work day to (517) 853-4608.
10. The building key must be picked up before 4 pm the day of use, Friday before the weekend event or day before if the office is going to be closed such as for a holiday.
11. The key **must be returned** by placing in drop box to left of front door upon departure.
12. Receipt of a refundable deposit check is required at the time the reservation application is submitted. Payment is due 30 days prior to event. For those groups who wish to reserve the meeting room for more than one date during the calendar year, payment is due 30 days prior to the event
13. In case of room cancellation, a refund will be given with two (2) weeks notice.
14. If you have a medical emergency, dial 9 (for an outside line)-911. For all other emergencies, call the Police Non-Emergency number: 9 (for an outside line)-332.6526.

Questions, call 517-853-4608

Meridian Charter Township Service Center Meeting Room RESERVATION APPLICATION



Service Center Meeting Room Information:

Maximum **50** people (may vary to number of chairs available to room)
 Building key must be picked up before 4 pm the day of use (or day before if it is a holiday).
 Room is available Monday through Friday from 5:30-9:30 pm. and weekends from 8 am to 9:30 pm
 Reservation time must include room set up and clean up time.
 Key must be returned by placing in drop box to left of front door upon departure.
See Meeting Room Policy for additional information.
 Questions, call 853-4608.
 Location Address: 2100 Gaylord C. Smith Court, Haslett, MI 48840

Date(s) Facility is requested	Beginning time am/pm
	Ending time am/pm
Name of organization	Resident <input type="checkbox"/> YES <input type="checkbox"/> NO Non-Profit <input type="checkbox"/> YES <input type="checkbox"/> NO
Name of applicant	
Address, City, State, Zip	Phone No.
Applicant's signature	E-Mail address

MEETING ROOM FEE SCHEDULE

When reserving the room time, include room setup and cleanup time

Residents and/or civic, charitable, non-profit organizations with resident affiliation or membership	\$35/hr 2 hour minimum
All others and non-residents	\$60/hr 2 hour minimum

A \$50 Refundable Deposit is required.

DATE DEPOSIT RECEIVED _____

DATE DEPOSIT RETURNED _____