Macatawa Area Coordinating Council
*A Cooperative Effort Among Units of Government*

MACATAWA WATERSHED PROJECT

**Policy Board**
- Rosemary Ervine, Chair
- Blaine Koops
- Hannes Meyers, Jr.
- Pankaj Rajadhyaksha
- William Vanderbilt

Howard Baumann, Jr.
Joseph Baumann
Thomas Bird
Terry M. Burns
Kurt Dykstra
Terry Hofmeyer
Lester Hoogland
George Jacob
John Kleinheksel
Dal McBurrows
Al Myaard
Terry Nienhuis
Keith Potter
Russ Te Slaa
Todd Wolters

- Executive Committee

# WATERSHED PLANNING COMMITTEE

**Thursday, February 24, 2011**
**1:00 PM**
**MACC Office**
**301 Douglas Avenue, Holland**

## Agenda

I. REPORT ON GEOMORPHOLOGY ANALYSIS

*Over the last 6 months, FTCH has conducted an in depth geomorphology analysis of 3 tributaries to the Macatawa River: Noordeloos Creek, South Branch Macatawa, and North Branch Macatawa (also called the Tulip Intercounty Drain). FTCH staff will present the results of the analysis in which they documented sites of stream bank erosion, proposed best management practices and made conclusions about the causes of channel erosion throughout these corridors.* ***See attached memo for more information.***

II. REPORT ON PARK TOWNSHIP'S STORM DRAIN MAPPING PROJECT

*FTCH will also report on a recent project they completed for Park Township in which they created an interactive map of the storm drain system to identify various system owners throughout the township.*

III. GENERAL UPDATES

a. *Farmer Breakfast with MDNRE (Feb 22nd)*
b. *Sediment Sampler Installation Watershed Wide*
c. *Volunteer Monitoring Proposal Submitted*
d. *Watershed Festival, Kollen Park, Sat April 16th*
e. *New Watershed and Storm Water Tabletop Displays Available*
f. *Updated Homeowners Handbook*
g. *Mid Project Evaluation via Survey Monkey*

IV. NEXT REGULAR MEETING: Thursday, April 28, 2011, 1pm
Back to watershed management planning: identification of critical areas

301 Douglas Avenue, Holland, Michigan 49424
*phone*: (616) 395-2688 - *fax*: (616) 395-9411
*www.the-macc.org*
*email:* info@the-macc.org

Macatawa Area
Coordinating Council
*A Cooperative Effort Among Units of Government*

# Memo

**To:** Policy Committee Members

**From:** Mary Fales

**Date:** February 17, 2011

**Re:** Watershed Geomorphology Study

---

Recently, Fishbeck, Thompson, Carr & Huber (FTCH) was retained to complete a geomorphology study of priority areas in the watershed. The project was funded by a Section 319 grant from the Michigan Department of Natural Resources and Environment (MDNRE). A geomorphology study includes an assessment of channel movement over time, channel shape and channel evolution (ex. is the channel aggrading, degrading or stable). Results of the geomorphology study will help us determine:

1.) how the streams in the watershed are changing over time,

2.) to what extent stream bank erosion is a source of sediment to the stream, and

3.) what locations are most critical for installation of channel stabilizing best management practices.

The geomorphology study was completed for 3 priority subwatersheds including the **South Branch of the Macatawa, the North Branch of the Macatawa and Noordeloos Creek**. These subwatersheds were selected based on land use, the presence of highly erodible soils, lack of stream buffers, amount of storm water runoff and the presence of road stream crossings of concern. Highly detailed measurements were conducted in each of these watersheds (FTCH surveyed approximately 18 miles of streams).

The results of the study indicate that stream bank erosion is a concern in the downstream reaches of each subwatershed which are degrading (becoming deeper over time). Stream bank erosion is generally not a concern in the upper most reaches of each subwatershed where the streams are aggrading (filling in) because of sediment input from surface runoff (see attached "sediment loading" figure). Findings indicate that:

1.) South Branch of the Macatawa has the most severe bank erosion (most critical from 46$^{th}$ street downstream) and is contributing **1,242 tons of sediment** annually to the stream.

2.) Noordeloos Creek has the second most severe bank erosion (most critical downstream of Riley Street) and is contributing **950 tons of sediment** annually to the stream.

3.) North Branch of the Macatawa has the least severe bank erosion of the three subwatersheds studied (most critical between M-40 and 32$^{nd}$ Street) and is contributing **731 tons of sediment** annually to the stream.

The main cause of this extensive stream bank erosion is the increased hydrology in our watershed. That means that when it rains, too much water is entering the stream channels too fast, causing high flows and high water velocities which results in stream bank erosion.

Recommendations indicate that to reduce stream bank erosion there needs to be a reduction in the amount of water entering streams after storms. These changes need to occur in the upper most reaches of the stream (see attached figure for “Upland BMP Prioritization”).

Recommended **upland best management practices** include:

1.) Wetland Restoration,

2.) Implementation of cover crops,

3.) Conservation tillage techniques,

4.) Buffer strips, and

5.) Bioswales

Once hydrology is addressed, then we can start addressing areas of stream bank erosion. Priority areas of stream bank stabilization have been identified in the attached figure (Instream BMP Prioritization).

Recommended **instream best management practices** include:

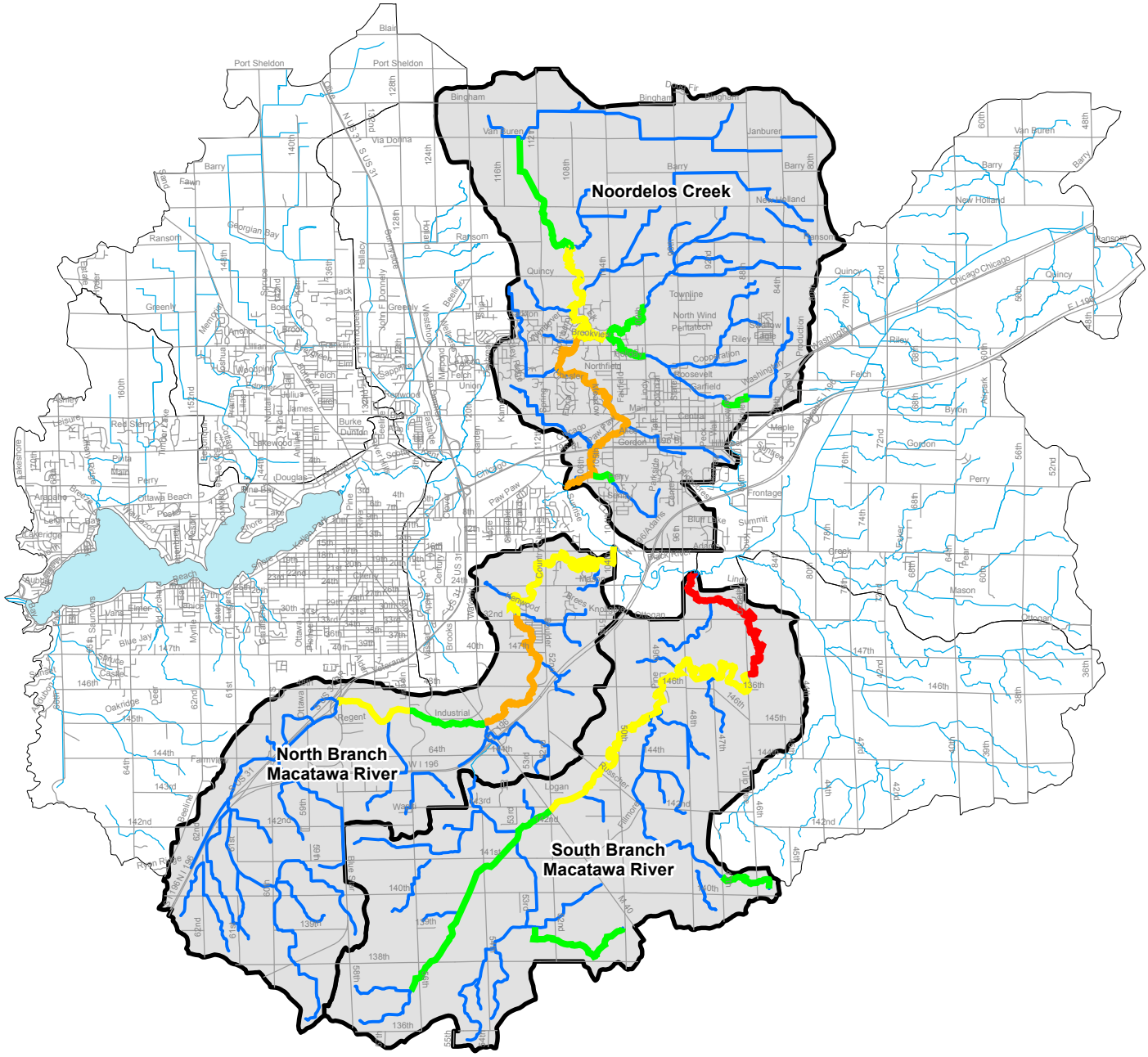
1.) Implement low impact development ordinances,

2.) Removal of large log jams,

3.) Bank Stabilization including native plantings,

4.) Grade control structures, and

5.) Replacement of undersized culverts.



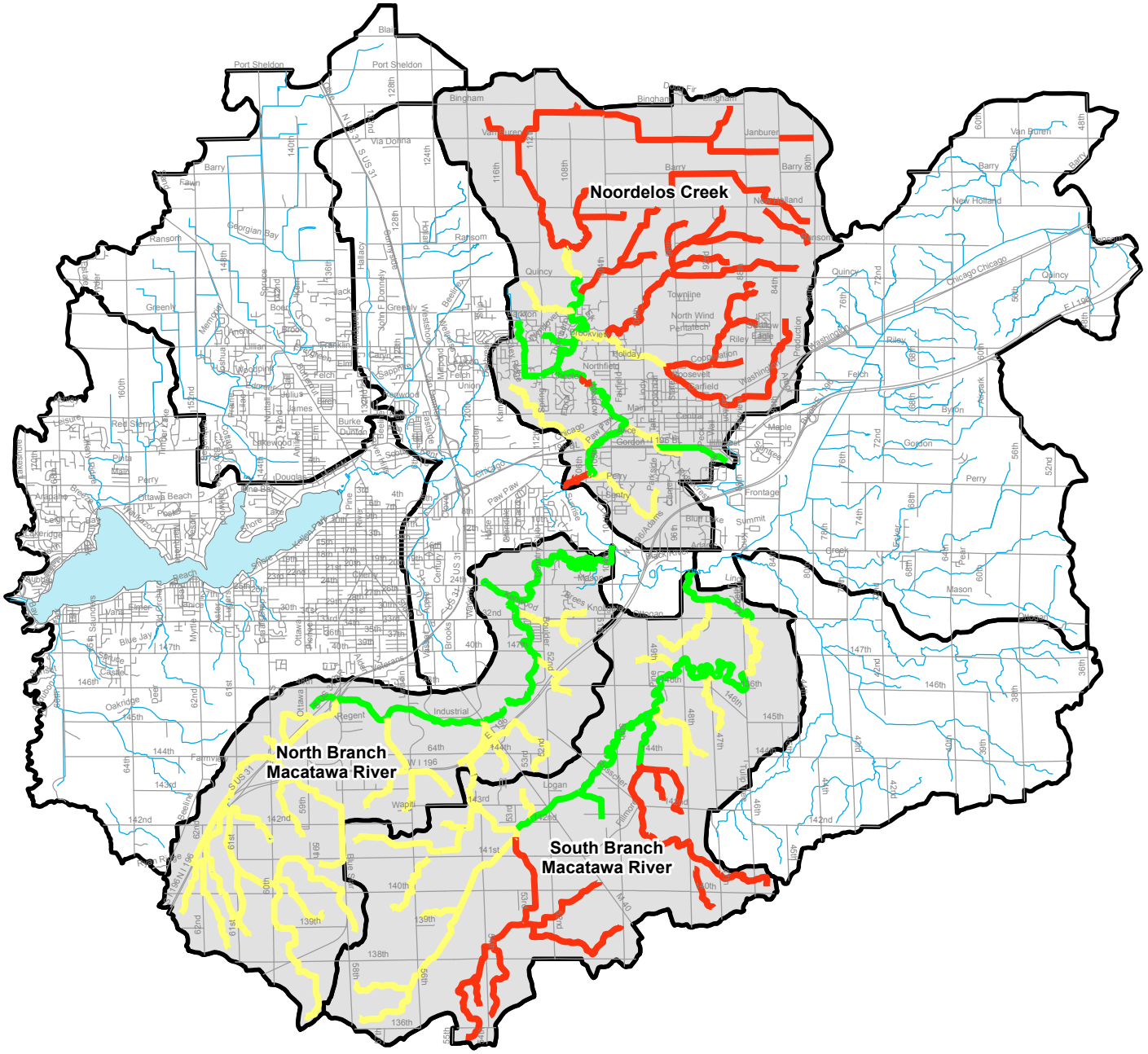

## LEGEND

**SEDIMENT LOADING**

- VERY LOW LOW < 0.1 CFT/YR/LF
- LOW 0.1 - 0.2 CFT/YR/LF
- MODERATE 0.2 - 0.4 CFT/YR/LF
- HIGH 0.4 - 0.6 CFT/YR/LF
- VERY HIGH > 0.6 CFT/YR/LF
- PRIORITY SUBWATERSHED

# SEDIMENT LOADING

PLOT INFO: U:\CADD\100240\GIS\MAP_DOCUMENT\PRELIM.MXD DATE: 12/28/2010 USER: MB2



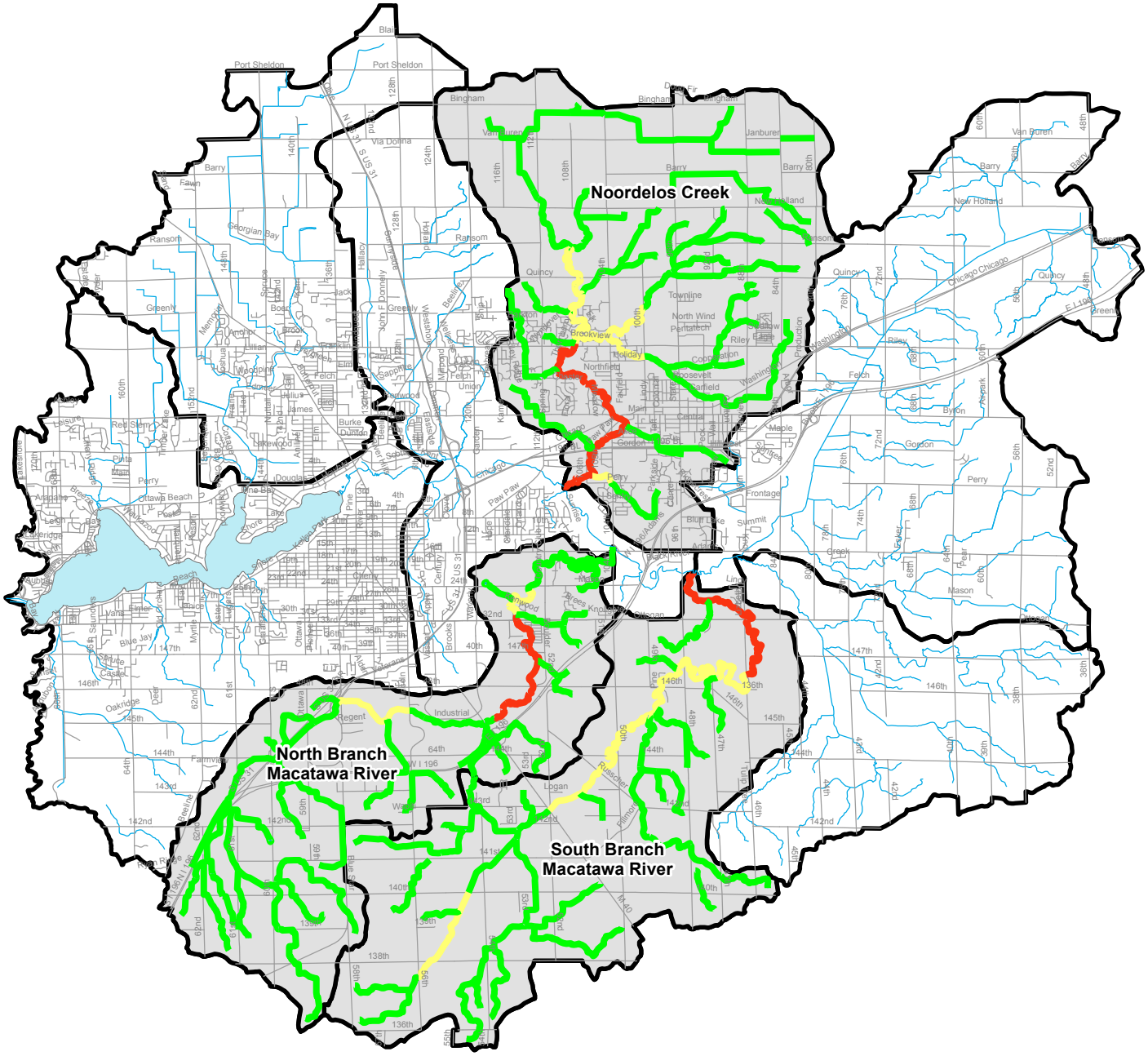

**LEGEND**

**UPLAND BMP PRIORITIZATION**

- LOW
- MODERATE
- HIGH
- PRIORITY SUBWATERSHED

# UPLAND BMP PRIORITIZATION

PLOT INFO: U:\CADD\100240\GIS\MAP_DOCUMENTS\STREAM SURVEY LOCATION.MXD DATE: 12/29/2010 USER: MB2




**LEGEND**

**INSTREAM BMP PRIORITIZATION**

- LOW
- MODERATE
- HIGH
- PRIORITY SUBWATERSHED

# INSTREAM BMP PRIORITIZATION

PLOT INFO: U:\CADD\100240\GIS\MAP_DOCUMENTS\STREAM SURVEY LOCATION.MXD DATE: 12/29/2010 USER: MB2