



Macatawa Area Coordinating Council

A Cooperative Effort Among Units of Government

Lake Macatawa Watershed Agreement Reduction of Phosphorus Loading

ORIGINAL DATE: May 1, 2000

FIRST REVISION: July 2010

SECOND REVISION: January 2021

Policy Board

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This agreement is between the State of Michigan Department of Environment, Great Lakes and Energy (EGLE), Water Resources Division, and the Macatawa Area Coordinating Council.

We the undersigned acknowledge the importance of Lake Macatawa and its tributaries as valuable water resources for the residents, wildlife and aquatic life in the watershed and do hereby cooperatively agree to the following:

1. In 1997, the Michigan Department of Environmental Quality (now EGLE) estimated that the total annual phosphorus load to Lake Macatawa was 138,500 lbs (in-lake concentration of 0.125 mg/L), with 91% coming from non-point sources. The method used to calculate this load was a computer program entitled "AutoBeale: An Implementation of the Beale Ratio Estimator Load Calculation." This program uses actual field measurements to calculate mean daily load. They determined that this level of phosphorus was impairing the lake and causing it to not support certain designated uses. A Total Maximum Daily Load (TMDL) of 55,000 lb/yr (in-lake concentration of 0.050 mg/L) of phosphorus was established for Lake Macatawa and published in January 1999. The goal includes a waste load allocation of 20,000 lb/yr for point source discharges of phosphorus and a load allocation of 35,000 lb/yr for non-point sources of phosphorus. This equates to an estimated reduction in non-point source phosphorus of 91,100 lbs/yr or 72% of 1997 levels.
2. In 2009, the Michigan Department of Environmental Quality (now EGLE) published a report of modeled pollutant loads for the Macatawa Watershed based on 2005 land use data. This model calculated pollutant loads using estimated annual runoff and loading per land cover as defined in the Water Quality Trading Rules, which does not rely on actual monitoring data. The results showed a modeled load of 51,820 lb/yr of non-point source phosphorus. Based on this new model and the original TMDL goal of 35,000 lb/yr, this equates to a 16,280 lb/yr reduction or 31% of 2005 levels.
3. To improve the resource and achieve attainment of Water Quality Standards, phosphorus levels must be reduced.
4. Members of the Macatawa Area Coordinating Council (MACC) have agreed to pursue activities to bring about a significant reduction in nonpoint source discharges of phosphorus in the

watershed under a voluntary program known as the Macatawa Watershed Project. Nonpoint source discharges of phosphorus occur from a variety of rural, urban and suburban land uses in the watershed.

5. Members of the MACC have agreed to implement a voluntary, watershed-wide strategy titled “Macatawa Watershed Management Plan” dated June 2012. This plan meets both EPA Nine Element and Michigan CMI criteria. This plan is more comprehensive than the initial phosphorus reduction plan developed in 1999. The 2012 plan prioritizes all identified pollutants, sources and causes of water quality impairment, with phosphorus included as a high priority pollutant along with other nutrients, sediment, hydrology, and temperature. Since the plan was approved, a considerable amount of conservation has been implemented. Because of this, the MACC and local partners will be updating this plan starting in 2021 to account for the work that has been done, update various maps, update studies and models, and re-evaluate priorities.
6. The majority of the current point source phosphorus loadings are from three (3) facilities. As identified in the January 20, 1999 TMDL document, EGLE agrees to:

Propose and support the current National Pollutant Discharge Elimination System (NPDES) permit limitations for phosphorus listed in the following table for the three point source dischargers for each re-issuance or modification of their respective NPDES permits, until the expiration of this agreement. The permitted monthly loads and average concentrations shown below may be adjusted within each individual NPDES permit, if necessary as determined by the facility in cooperation with their EGLE NPDES representative, due to future growth and expansions provided that the collective wasteload allocation does not exceed 20,000 pounds per year. Upon expiration of this agreement, it is EGLE’s position that the point source limits for phosphorus loadings may need to be revised if this voluntary agreement is ineffective in achieving the goals of the TMDL.

| Permittee | Monthly Average Loading | Monthly Average Concentration |
|-------------------|-------------------------|-------------------------------|
| Holland WWTP | 58 lbs/day | 1 mg/L |
| Zeeland WWTP | 14 lbs/day | 1 mg/L |
| Mead Johnson & Co | 5 lbs/day | -- |

7. The permittees listed above agree to put forth reasonable efforts to keep within the combined wasteload allocation of 20,000 pounds of phosphorus per year from point source discharges as identified in the TMDL document. In the event that the collective annual phosphorus discharge approaches or exceeds this amount, the permittees will work with the MACC and EGLE to develop feasible solutions to meet the wasteload allocation.
8. Watershed stakeholders, including parties named in this agreement and others, will meet on a regular basis to:
 - a. Discuss activities being implemented and progress made towards meeting the phosphorus goals identified in the TMDL document,

- b. Review the Macatawa Watershed Management Plan and recommend modification for improving implementation, and
 - c. Review data and information developed through the continued monitoring to be conducted pursuant to paragraphs 10 and 11 below.
9. An annual report shall be submitted by the MACC to EGLE and all other parties to this agreement on or before November 1st of each year, summarizing the progress made towards meeting the phosphorus goals identified in the TMDL document.

The report shall include the following:

- Summaries from watershed stakeholder meetings
 - Progress made in implementing phosphorus reduction strategies
 - Changes in the management plan in response to new challenges
 - Summary of the point source phosphorus effluent data and control methods
 - Summary of any locally derived watershed monitoring data, including trend data as implementation proceeds
10. EGLE agrees to continue monitoring water quality in Lake Macatawa and at the six tributary stations where phosphorus loads were previously determined as resources allow. The exact monitoring locations are identified in the EGLE staff report number MI/DEQ/SWQ-98/015. Minimum monitoring frequency will be monthly for six months every other year at each site. EGLE will prepare a report of the sampling results by May 1st of the year following monitoring. The report will be provided to the MACC and distributed to local stakeholders and made available to the general public.
11. EGLE agrees to consider conducting wet weather sampling every five years as part of the rotating schedule of watershed monitoring as resources allow. At a minimum, wet weather sampling should occur at the six tributary stations referenced above.
12. The parties agree that further study may demonstrate designated use attainment in the watershed even if phosphorus levels are not reduced as prescribed by the TMDL. The undersigned agree to discuss supporting continued study of water quality parameters and developing agreed upon measures of success.

Study should include, but not be limited to, the following:

- Continued monitoring of ambient phosphorus levels, including monitoring as required per the Macatawa area MS4 permits (as of December 2020, new permits have not been issued to the six (6) Macatawa area permittees)
- Establish measures of success for relevant warm water fish species and other indigenous aquatic life and wildlife
- Study and quantify phosphorus resuspension from lake sediments
- Evaluate other causes of water quality impairment

- Establish relationship between phosphorus reduction activities and observed or measured water quality improvements
13. Either party may terminate its involvement in this agreement. Notice of such termination shall be given in writing to the other party at least 30 days prior to the effective date of termination. The terms of this agreement may be modified or changed prior to its expiration in the event that new information is presented, there are significant changes to water quality conditions, or other circumstances change in the watershed that impact the terms of this agreement. Any modification must be documented in writing, approved by both parties and appended to this original agreement. Any modification will be effective through the agreement expiration date.
14. This agreement, and any subsequent modifications, shall be treated as an integral part of, and not severable from, the TMDL Document.

This agreement was passed via resolution at the January 4 2021 meeting of the MACC Policy Board. This agreement shall expire on December 31, 2031. The parties to the agreement may renew it on the basis of agreement.



Tyler Kent, Executive Director, Macatawa Area Coordinating Council

1/6/2021
Date



Teresa Seidel, Director, Water Resources Division
Michigan Department of Environment, Great Lakes and Energy

4/2/21

Date