



Macatawa Watershed Project

Macatawa Watershed Voluntary Agreement Annual Report 2004 June 2005

Lake Macatawa 2004

Introduction

This is the fifth annual report developed under the Macatawa Watershed Voluntary Agreement. The agreement was developed to show the commitment between the point sources and nonpoint sources to improve water quality in the Macatawa Watershed. The intent of the agreement is to outline the ways in which all parties will support reduction of phosphorus loading into Lake Macatawa as detailed in the Lake Macatawa Watershed Plan.

Summary of Effluent Data and Point Source Control Methods

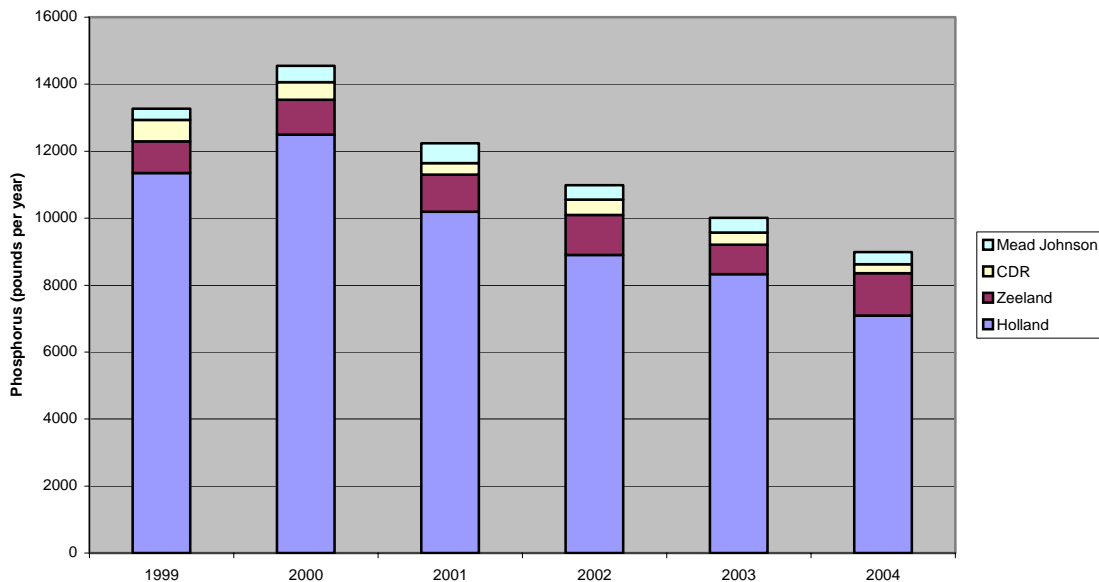


Figure 1. Annual Phosphorus Load from Point Sources in the Watershed

Point Source Updates:

Holland Board of Public Works (HBPW) reported their phosphorus discharge for the calendar year 2004 at 7089 lbs.

Mead Johnson reported that phosphorus discharges for the year 2004 were 369 lbs.

CDR Pigments reported that phosphorus levels for the year 2004 were 267 lbs.

The Zeeland Clean Water Plant reported that in the year 2004 they discharged 1265 lbs of Phosphorus.

Summary of Monitoring Data

MDEQ Report

Average spring phosphorus concentrations were 258 micrograms per liter according to the MDEQ staff report (MI/DEQ/WB-05/039).

The sampling results from throughout the watershed demonstrate that when flows increase during storm events, total phosphorus concentrations increase substantially and phosphorus loading to Lake Macatawa increases dramatically.

The relationship between flow and phosphorus concentrations in Lake Macatawa demonstrates that the water quality of Lake Macatawa continues to be strongly influenced by non-point source inputs during periods of higher flow (storm events). Best management practices that are designed to reduce peak flows and improve water quality during storm events need to continue to be pursued aggressively throughout the watershed. (from staff report mentioned above)

A copy of the full report is attached.

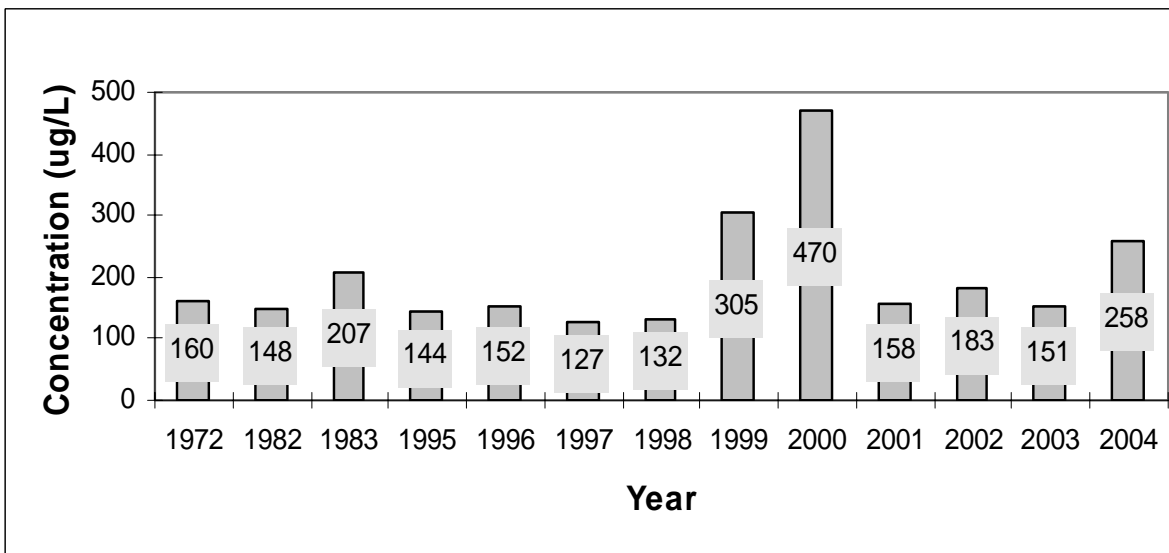


Figure 2: Average Spring Concentrations in Lake Macatawa

Highlights of 2004

Smallenburg Park – Urban

A successful partnership between the MACC, Hope College, City of Holland and the MDEQ built an Urban Stormwater Demonstration site at the City of Holland's Smallenburg Park. Water quality Best Management Practices installed include raingardens, wetlands, buffer strips, sedimentation basin, and a vegetative buffer. Construction and the majority of native plantings occurred in 2004. Additional planting through a volunteer planting day and permanent sign installation will occur in 2005. Funding for this project was through private funds as well as a Clean Michigan Initiative grant.



Upper Macatawa Project

The Ottawa County Parks Commission is partnering with the Macatawa Greenway Partnership, the Macatawa Watershed Project, and the MDEQ, to implement what is referred to as the Upper Macatawa Conservation Area project.

Acquisition of a 27 acre parcel was completed along the Macatawa River to expand the Upper Macatawa Conservation Area to 488 acres. The property was acquired with park millage funds at a cost of \$120,330. Plans call for future restoration of the property as wetland and native grassland habitat.

The Upper Macatawa Conservation Area Project was a major undertaking in 2004 with a goal to restore habitat on previously farmed muck soils in the Macatawa River floodplain. The project was the realization of a vision shared by many conservation-minded partners. An extensive series of wetland features including potholes, serpentine and ponds was created. Grass filter strips were planted

along the river to trap sediments, and large numbers of bottomland tree species were planted.

In addition to moving earth to create wetlands, previously installed drainage structures were dismantled. Drain tiles were broken or removed and ditches were plugged. The original wetland hydrology of the area is expected to return along with a new landscape offering a mosaic of over 140 acres of emergent wetlands, scrub-shrub wetlands, wooded wetlands and wet meadow.

The project accomplished four basic goals: 1) it preserves a large block of park and open space land as a key greenway anchor property in this rapidly growing area, 2) the project improves water quality by restoring wetlands which can filter out sediment, phosphorous and other excess nutrients, 3) it provides flood storage capability, and 4) the restoration increases wildlife habitat in this rapidly suburbanizing area.

Also important for the Upper Macatawa Conservation Area in 2004 was approval of a grant through the Michigan Department of Environmental Quality's Clean Michigan Initiative to provide \$500,000 toward Phase II wetland restoration at the site. This grant, along with matching funds provided through the Ottawa County parks millage and private funds raised by the Macatawa Greenway Partnership, will fund additional wetland restoration work in the floodplain. The work, targeted toward water quality improvement, will benefit other project goals as well. Actual wetland construction through this grant is targeted for 2006.

Stormwater Regulations

The National Pollutant Discharge Elimination System regulated communities within the Macatawa Watershed include: Allegan County Drain Commission, Allegan County Road Commission, Ottawa County Drain Commission, Ottawa County Road Commission, City of Holland, City of Zeeland, Holland Township, Zeeland Township, Laketown Township, Park Township, Olive Township, and Fillmore Township.

These permittees all participate in a Stormwater Committee where in 2004 they developed the permit application and associated plans and requirements for the Watershed General Permit. The communities met the requirements successfully and received their Certificates of Coverage in November of 2004. Work will continue in 2005 to meet the permit requirements such as approval of their Public Participation Process, Illicit Detection and Elimination Plan, Public Education Plan, and Watershed Plan.

Agriculture

Practices Installed	2003	Year to Date
Filter Strips		45.6 acres
Grassed Waterways	16126 linear ft	68665 linear ft
Grassed Stabilization Structure	1 unit	40 linear ft
No Till	439.4 acres	1307.5 acres
Minimum Till		384.1 acres
Hayland Planting		62.3 acres
Cover Crop		52.6 acres
Critical Area Planting		26.4 acres
Fence	2002 linear ft	2002 linear ft
Pasture Management-stream crossing and livestock access	1 unit	1 unit

Total Pollutants Reduced	2003	Year to Date
Nitrogen	3805 lbs/yr	19413 lbs/yr
Sediment	6432 tons/yr	9146 tons/yr
Phosphorus	1908 lbs/yr	10667 lbs/yr

Attachments:

1. Sign-in and Agenda for TMDL/Stakeholder Meeting
2. Monthly Water Quality Assessment of Lake Macatawa and its Tributaries 2004, (MDEQ Staff Report MI/DEQ/WB-05/039)