



Muskegon River Transition/Implementation 1

September 27, 2004 – June 30, 2007

The Muskegon River Watershed is located in north central Michigan. Its river main stem is the second longest in the State, flowing over 219 miles from its start at Higgins and Houghton Lakes down to its mouth at Muskegon Lake and eventually into Lake Michigan. The Muskegon River Watershed is one of the largest in Michigan, spanning over 2,700 square miles. A Muskegon River Watershed Management Plan was completed in 2002 to address nonpoint source water quality concerns in the watershed. This grant allowed for the Muskegon River Watershed Assembly and partners to: 1) install best management practices in two critical area subwatersheds (Tamarack Creek and West Branch Clam River), 2) continue implementing information and education activities, 3) develop a hydrologic study for Upper Tamarack Creek and 4) update the Muskegon River Watershed Management Plan to meet EPA watershed planning requirements.

Grant Amount: \$100,000

Match Funds: \$119,104

Total Amount: \$219,104

Best Management Practices:

- Permanent conservation easements established on 16.47 acres of vegetative filter strips along waterways in the Tamarack Creek Subwatershed.
- Installation of a 2,000 square foot rain garden to help infiltrate storm water runoff from the McBain School parking lot.

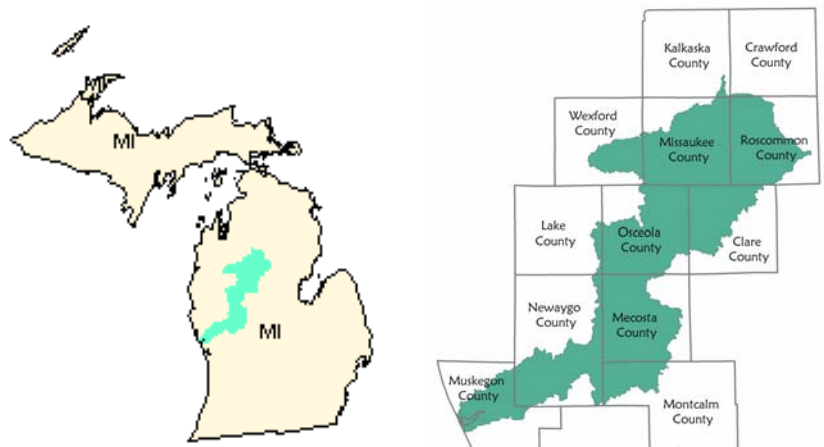
Annual Load Reductions:

- 391 tons of sediment/year
- 457 lbs. of phosphorus/year
- 920 lbs. of nitrogen/year
- 825 lbs. of total suspended solids/year



I&E Activities:

- Eight project updates given at MRWA meetings and to other local groups.
- Eight articles produced for the MRWA's *River View* newsletter and submitted to local newspapers, newsletters and media.
- Two meetings/tours held to inform local residents on implementation efforts.
- Hydrology report for the headwaters of the Tamarack Creek Subwatershed.
- Updated MRW project website.



Partners involved:

- Annis Water Resources Institute-GVSU
- Natural Resource Conservation Service
- McBain Schools
- Wege Foundation
- Chippewa Watershed Conservancy (easement holder)
- W.F. Pearson Engineering
- Prein & Newhof (engineers)
- Griffelle Development (excavator)
- Mid-State Title Services, Inc.
- The Hubbard Law Firm
- Spicer Group (surveyors)
- Ken & Vicki Rader (easement landowner)
- Charles & Judith Kohler (easement landowner)
- Ora Kohler (easement landowner)
- Marshall & Marcia Rutledge (easement landowner)



Rader Property (Before): The Rader property was of particular concern because it surrounds waterways that enter Tamarack Creek above Howard City. The fields that surround these waterways were farmed close to the edge. A concern was the amount of surface runoff entering the waterways causing temperature fluctuations, excessive erosion of stream banks and fertilizer/pesticides contained in the runoff.



Rader Property (After): Nearly 16.5 acres of vegetative filter strips were converted to permanent conservation easements on agricultural land working with four different property owners located between Howard City and Lakeview in Montcalm County. Six acres of vegetative filter strips were newly installed (on Rader property) as a result of the extra incentive this project grant provided for the landowner using matching funds



McBain School Property (Before): The West Branch Clam River subwatershed receives a large amount of surface water runoff which results in temperature fluctuations in the streams. A parcel of land that was of particular concern was located on McBain School grounds. A significant amount of storm water runoff from the school's main parking lot was directly entering the waterway, causing temperature fluctuations and carrying with it oil, grease and other residue.



McBain School Property (After): One goal was to install a rain garden to capture, filter and divert parking lot runoff to adjoining wetlands before discharging into a tributary of the West Branch Clam River. A 2,000 square foot rain garden with twenty species of native plants was installed on McBain School grounds. This rain garden handles a drainage area of approximately 35,700 square feet off the school's main parking lot. McBain Schools agreed to maintain the rain garden and a science teacher / students will use the rain garden as an outdoor classroom project.