

Grand River (Michigan)

Watershed location and features:

- tributary to Lake Michigan at Grand Haven, Michigan
- the watershed is located in all or parts of Muskegon, Newaygo, Mecosta, Montcalm, Gratiot, Ottawa, Kent, Ionia, Clinton, Shiawasee, Barry, Eaton, Ingham, Livingston, Jackson Counties in Michigan
- total watershed area is 5,660 square miles
- major tributaries include Lower Grand River, Upper Grand River, Maple River and Thornapple River



Watershed characteristics:

- 53% agricultural, 27% urban and 20% forest

Soil erosion and sedimentation issues:

- erosion of agricultural land
- bank erosion and downcutting in urban areas
- construction activities and sand pits
- gravel mining along Grand River
- harbor structures interrupt littoral drift
- lack of monitored BMP's

Contamination issues:

- largest contributor of some contaminants to Lake Michigan
- PCB's, nutrients, turbidity and total suspended solids are known contaminants in the system

Partners on tributary modeling:

- Grand Valley State University
- Michigan State University
- City of Grand Haven,
- Clinton Soil and Water Conservation District
- Grand Haven – Spring Lake Sewer Authority
- Kent, Ottawa County Drain Offices
- Ottawa County Planning Commission
- Michigan Department of Agriculture
- Michigan Department of Environmental Quality
- Michigan Department of Natural Resources
- USDA – Natural Resource Conservation Service
- U.S. Geological Survey

Modeling approach:

- specific models not yet selected
- hydrologic model developed for the watershed
- hydraulic modeling to assess the erosion issued along the system
- sediment delivery model will be created to estimate the amount and gradation of the sediment entering the system for various land-use scenarios
- watershed GIS framework

Status:

- modeling to be completed by April 2005 with a training workshop for interested parties to be held shortly thereafter (summer 2005)

Applications:

- assist counties with their stormwater management
- evaluate impacts of changed agricultural practices