



**Federal Clean Water Act
Section 319 Grant
2007-0155**

The Watershed Center Grand Traverse Bay
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Grand Traverse Bay Strategic Approach to Stormwater Pollution Reduction
2/4/08 through 6/30/11

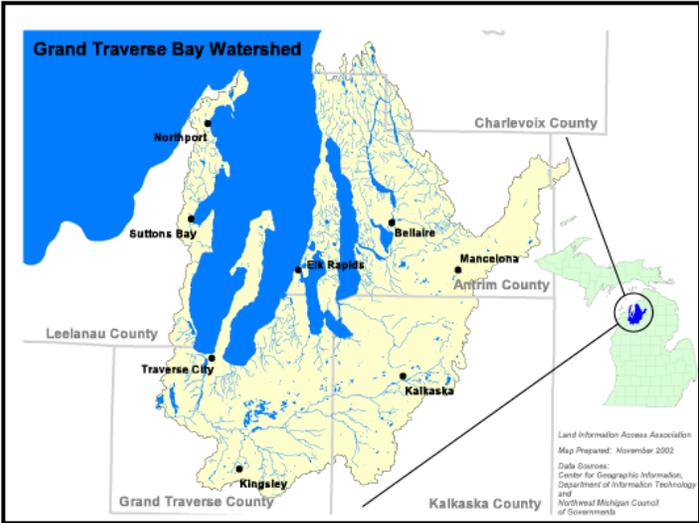
The Grand Traverse Bay watershed, located in northwest Michigan's Lower Peninsula and draining approximately 976 square miles of land, is one of the premier tourist and outdoor recreation regions in the State of Michigan. Sediment and excessive nutrient loading are the two highest ranking priority pollutants threatening the watershed. Stormwater inputs are also a primary concern throughout the watershed because of the potential to contribute excessive sediment, nutrients, pathogens and toxins to the bay and its tributaries. The goals of this project were to: 1) Protect the aquatic life and coldwater fishery in the watershed by decreasing pollution stemming from stormwater runoff entering waterways; 2) Implement water quality protection ordinances in selected townships in the watershed, and provide local governments in the Elk River Chain of Lakes (ERCOL) subwatershed with model language and ordinances for water quality protection for inclusion in master plans and zoning ordinances; and 3) Continue to implement an outreach strategy in the watershed by focusing education efforts on low impact development options for developers, available water quality information and its potential use by local governments in the ERCOL subwatershed, and updating the general public on current, ongoing watershed initiatives.

- Best Management Practices:**
- 5 Rain Gardens at Boardman River Nature Center (4 around building, 1 out by entrance)
 - Demonstration Wetland at Boardman River Nature Center
 - Bioretention basins (2) at Parking Lot for Rugg Pond on Rapid River
 - Pervious Boat Ramp installed at Rugg Pond on Rapid River
- Annual Load Reductions:**
- 67.3 tons sediment
 - 266.2 pounds of phosphorus, 112.5 pounds of Nitrogen



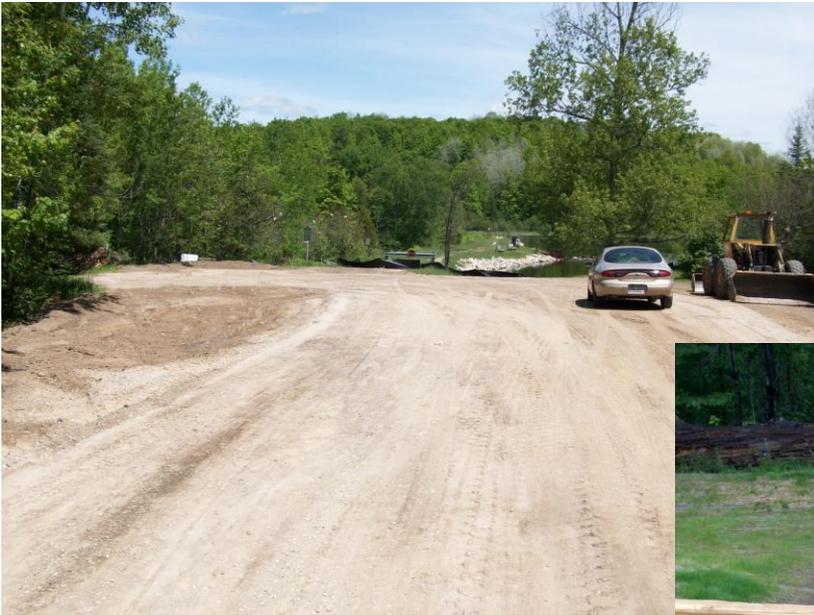
Grant Amount:	\$212,400
Match Funds:	\$124,700
Total Amount:	\$337,100

- I&E Activities:**
- Held two workshops about rain gardens, wetlands, and other ways to handle stormwater
 - Worked with townships on developing riparian buffer setback, septic system point of transfer, and other ordinances that would protect water quality
 - Educated watershed residents on proper septic system care (brochure and newspaper articles)
 - Conducted education activities on the benefits of using low impact development techniques to treat stormwater onsite (i.e. brochure, meetings with developers/engineers/local governments)
 - 3 Freshwater Focus inserts in local newspaper
 - Updated shoreline guide "Up North Shoreline"
 - Bi-annual editions of newsletter (6 total)
 - 2 Elk River Chain of Lakes water quality reports



- Partners involved:**
- Grand Traverse and Kalkaska Conservation Districts; Whitepine Associates; Three Lakes Association; Ellen Kohler, PLC; Grand Traverse County Health Department, Tip of the Mitt Watershed Council

Before After Pictures of Rugg Pond BMPs



Rugg Pond Parking Lot before

Below: Rugg Pond bioretention basins - after significant rain, immediately after planting/seeding



Rugg Pond - Boat Ramp, during and after pervious paving (Geo-grid and Afton stone)



Before/After Pictures of Boardman River Nature Center Rain Gardens and Wetland



**Future site of Boardman River Nature Center
- rain gardens and wetland were built as part
of construction of new building**



Below: Four of Five rain gardens installed - these were around the Nature Center (Rain Gardens #1 - #4)



Rain Garden at Boardman River Nature Center driveway entrance (Rain Garden #5)



Demonstration Wetland next to Nature Center building

