



**Clean Michigan Initiative
Clean Water Fund
#2002-0245**



**Calhoun County Road
Commission/Community Development**
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Harper Creek/Beadle Lake Water Quality Project

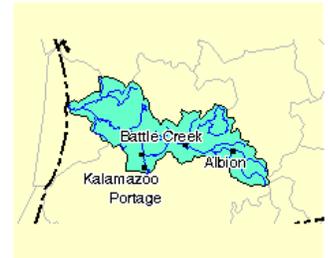
July 1, 2004 - December 31, 2005

The western shoreline of Beadle Lake is adjacent to approximately 520 feet of shoreline and provides a unique vista rarely seen without obstructions. Unfortunately, shoreline erosion and road runoff are degrading the quality of the lake system. The lack of vegetation and the presence of a steep slope along the shoreline adjacent to Beadle Lake Road was the focus of this project. The construction of a geogrid or lift structure along the entire road frontage was implemented to create a more stable shoreline and provide an area for native plantings that will secure the shoreline against future erosion and aid in filtering stormwater pollutants from road runoff. The installation of the best management practices (BMPs) included construction of a glacial stone toe along the entire 520 feet of road frontage. On top of the stone toe, soil was backfilled into a wrap of bioengineered materials to create two successions of shoreline. The fill material was densely seeded with a variety of native sedges, rushes, and wildflowers to provide a stable yet aesthetically pleasing structure.



**Grant Amount: \$ 50,300
Match Funds: \$ 50,500**

Total Amount: \$ 100,800



Best Management Practices:



- Construction of glacial stone toe
- Construction of two successions of shoreline
- Seeding of shoreline with native seed mix
- 30" Culvert replacement

Annual Load Reductions:

- 9 tons of sediment
- 7 pounds of phosphorus
- 15 pounds of nitrogen

Partners involved:

- JF New
- CEI, Inc
- Michigan Department of Environmental Quality
- Calhoun County Road Commission

I&E Activities:

The Beadle Lake shoreline restoration site was highlighted as part of the Calhoun County Road Commission Annual Road Tour (October 2005). This event focuses on educating local officials, consultants, and the general public of the year's high priority projects.





Beadle Lake Shoreline Before Installation of BMPs: 520 feet of shoreline with minimal vegetation to serve as a filter for removing pollutants present in storm water. Shoreline characterized as steep, bare in spots, with shrub roots exposed.



Beadle Lake Shoreline After Construction of BMPs: BMPs included construction of a glacial stone toe along the entire 520 feet of road frontage. On top of the stone toe, soil was backfilled into a wrap of bioengineered materials to create two successions of shoreline. The fill material was densely seeded with a native wildflower mix.



Beadle Lake Shoreline Established After Construction of BMPs: Native plantings incorporated to provide shoreline stabilization and filtering of storm water runoff.