



**Clean Michigan Initiative  
Nonpoint Source Grant**

Tracking Code: 2004-0128

**Organization Name:** Whitney Intercounty Drainage Board

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## Whitney Intercounty Drain Improvement Project

April 2005 thru June 2009

The Whitney Intercounty Drain flows through portions of Iosco, Arenac, and Ogemaw Counties, and is the outlet for the East Branch of the AuGres River watershed. The Whitney Drain carries the highest sediment bedload of any watershed within the Saginaw Bay Region; it has been estimated that over 500,000 cubic yards of sediment have been deposited in the Saginaw Bay. Eroding banks, widening channels, and loss of floodplain were creating public safety concerns as natural gas and water mains were exposed. Furthermore, extensive costs were being incurred to protect a road from the encroaching stream channel.

Project goals included reducing sediment load into the watercourse and improving water quality. To prevent further down-cutting, 3.7 miles of the streambed was stabilized. Approximately 5,500 feet of eroded stream bank was stabilized at 46 sites, and 42 trees were removed to eliminate site-specific erosion. Riffle structures were installed to centralize flow, reduce flow rates, and decrease streambed erosion. A new floodplain was created and vegetative plantings were installed to reduce continued bank erosion. The floodplain also provides controlled access for fishermen, which will reduce stream bank erosion due to recreational foot traffic at this popular fishing spot.



**Grant Amount:** \$754,753

**Match Funds:** \$292,019

**Total Amount:** \$1,046,772



**Best Management Practices:**

- 3.7 miles of stream bank stabilized
- 23 riffle structures
- 1,560 feet of new channel
- Floodplain construction
- Vegetative planting
- Tree removal



**Annual Load Reductions:**

- Sediment 3,522 tons
- Phosphorus 3,145 pounds
- Nitrogen 6,667 pounds

**Partners involved:**

- Iosco County Drain Commissioner
- Arenac County Drain Commissioner
- Ogemaw County Drain Commissioner
- Saginaw Bay Watershed Initiative Network (WIN)
- Michigan Department of Environmental Quality
- Michigan Department of Agriculture
- Great Lakes Commission





**Before:** Originally a 3' x 2' channel, excessive erosion, down-cutting, loss of floodplain and in-stream deposition created the 110' x 40' channel (pictured above). The impaired watercourse contributed the highest sediment bedload of any watershed in the Saginaw Bay region. Due to the excess bank erosion and associated sedimentation, water quality and aquatic habitat was severely degraded, and migration for the many species of fish that use this river for spawning was compromised.



**After:** A new channel was created through a process of cutting and filling within this portion of the project area. Rock riprap in the form of Newbury Riffles and bank armoring was keyed into the drain bottom and placed up the side of the channel to a height equal to the bank-full elevation. A floodplain shelf was constructed from the top of the new channel banks outward to the sides of the existing valley walls.



**Before:** Severe bank erosion was a result of the stream's inability to dissipate flow away from the banks and extreme down-cutting of the drain bed. Channel width was continuing to expand, causing a threat to road stability and adversely impacting aquatic habitat.



**After:** Riffle structures were installed to improve water quality by reducing bed and bank erosion, centralizing the flow away from the banks and increasing aquatic habitat diversity.