



**Clean Michigan Initiative  
Nonpoint Source Grant**  
2000-0145

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## Quail Ridge Drain Improvements

November 5, 2001 through December 31, 2003

The Quail Ridge Drain, located in Northville Township, Wayne County, is a 275-acre watershed. Increased imperviousness resulted in an increase in runoff and bank-full events, causing extreme channel incision and bank failure that extends approximately 800 feet downstream of Eight Mile Road. Such erosion was threatening the structural integrity of man-made features adjacent to the drain and accelerating sediment transport.

The goals of this project were to:

1. Reduce sediment transport to downstream waterways, including Swan Harbour Lake and Middle Rouge River.
2. Protect existing property and habitat within the Quail Ridge Subdivision from rapidly eroding stream banks.
3. Protect health, safety and welfare of the residents of this area.

This project used a set of stream rehabilitation and bioengineered stream bank improvements that dramatically improved the appearance, habitat, natural function and safety of the Quail Ridge Drain. Using natural channel design and other best management practices protects adjacent infrastructure and enhances in-stream habitat while minimizing bank and bed erosion.



**Grant Amount: \$ 335,759**  
**Match Funds: \$ 199,210**

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**Total Amount: \$ 534,969**

**Best Management Practices:**

- Grade stabilization structure
- 75 linear feet stream bank restoration
- 560 linear feet stream channel restoration (includes 7 pool riffle structures and 3 step pools, critical area treatment, and rock rip rap)

**Annual Load Reductions:**

- 237 tons Sediment
- 273 lbs Phosphorus
- 544 lbs Nitrogen



**Partners involved:**

- City of Novi



Spring 2002: Future Location of Step Pools



Summer 2002: Step Pools during Construction



Fall 2003: Step Pools 1 Year after Construction