



Riparian Corridor Project Profile



Brownstown Creek Streambank Stabilization Project

Background

The Brownstown Creek is part of the Combined Downriver watershed. Like most streams, the Brownstown Creek's watershed is undergoing change due to development and upstream land use change. The Brownstown Creek suffers from high flow variability, sediment and stormwater pollution. Land use changes particularly from residential development replacing open land upstream have increased the amount of impervious surfaces, reducing the land's ability to absorb and filter stormwater, causing unstable flows. Increases in impervious surfaces can be directly linked to a decline in the biological integrity of streams, according to the Center for Watershed Protection. The huge surges in flow that follow rain and snow melts cause streambanks to erode and sediment to be deposited in the river and downstream. As stormwater pollution warms the water, reduces clarity and erodes away the vegetation that shades the river, the Brownstown Creek's water quality is degrading.

Project Overview

The Brownstown Township Hall is adjacent to the Brownstown Creek. It is a multi-use area with baseball fields, parking and municipal buildings. Much of the area is mowed, providing little in the way of a buffer zone for the creek. Streambanks where the lawn is mowed up to the waters edge are eroding.

Wayne County Department of Environment (WCDOE), in conjunction with Brownstown Township, were awarded a grant from the Great Lakes Commission to create a buffer zone of native plants, 10 feet wide, along with stabilizing 120 feet of streambank. Soft bioengineering techniques were used to stabilize the banks.

The Lake Erie Watersheds Riparian Corridor Management Sub-Committee provided technical advice for the project. The WCDOE and Brownstown Township prepared the site by re-grading the bank, removing turf grass and delivering topsoil. On June 4th, 2004, a Riparian Corridor Management Workshop, Hand-on Technique Training Workshop and Demonstration Project was held at the site. This event included a session of where participants received information on hands-on stream bank stabilization technique training, then the participants completed the demonstration project. 10 participants stabilized the eroding streambank by installing 60 linear feet of Live Fascines and 60 linear feet of live stakes (Both are soil bioengineering stabilization techniques.) The toe of each slope's bank were stabilized with coir logs. The top of each slope was planted with grasses and native plants to create a new buffer area.

This project will improve the health of the stream at a minimal cost by creating a buffer zone and stabilizing the bank using natural materials that also provide wildlife habitat. Using volunteer labor and installing interpretive signs help to educate local residents about good riparian practices. The cooperation of a municipality, and local volunteers is an effective strategy at improving the health of the river while simultaneously creating better river stewards.



The southern streambank is stabilized with live stakes and native wildflower seed (M. Best)

Methods Used

Soft Bioengineering (Live Fascines, Live Posts and Brushmattress)
Riparian Buffers

Materials Used

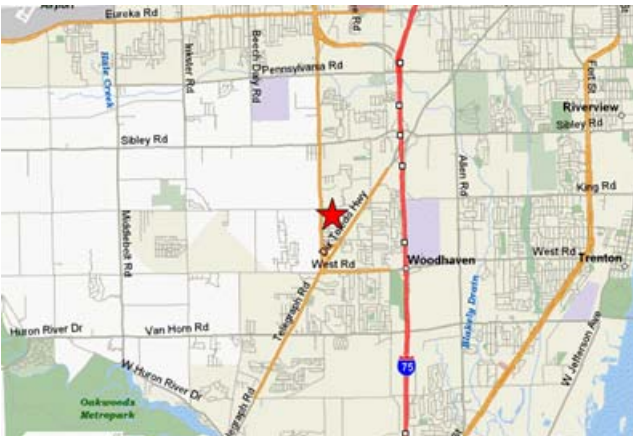
Buffer: native plants, topsoil, shovels, trowels, rakes, wheelbarrows, signs and sign posts

Bioengineering: red osier dogwood and willow cuttings, coir (coconut) logs, stakes, hammer, shovels, wheelbarrows, topsoil, mulch blankets, front-end loader to re-grade and move soil, sledgehammer

Other: Refreshments



Volunteers cover the fascines with topsoil . (Picture - S. Harbour)



Partners

City of Rockwood, The Stream Team, Lake Erie Watersheds Riparian Corridor Management sub-committee, Dietrich, Bailey and Associates P.C., Wayne County Department of Environment and the Great Lakes Commission



Riparian area before work was done. (Picture - M. Best)

Cost

The total cost of the project materials was \$4,311.60, matched with volunteer labor and City support. A grant from the Great Lakes Basin Program for Soil Erosion and Sediment Control covered the costs. The costs fall well below the industry average for this type of project due to the volunteer labor and support.



Riparian area two months later . (Picture - M. Best)



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Text and photographs supplied by Matthew R. Best (WCDOE), and Stephanie Harbour (Dietrich, Bailey and Associates P.C.) For more information on this project, please contact Wayne County Department of Environment at (734) 326-3936, 3600 Commerce Court, Building E, Wayne, Michigan 48184

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