Pebble Creek Erosion and Sedimentation Control Study, Farmington Hills, Michigan

A publication of the Wayne County Rouge River National Wet Weather Demonstration Project
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Objective

The objective of the Pebble Creek watershed erosion and sedimentation control (ESC) study was to:

- Review the erosion and sedimentation procedures and requirements in the City of Farmington Hills and Charter Township of West Bloomfield.
- Report on results of the 1997 ESC programs for both communities.
- Detail and discuss 1997 field monitoring of existing and potential new ESC methods.
- Identify improved products and methods to improve ESC programs.
- Provide technical resource information on ESC products.
- Improve the ESC program by identifying measures to enhance the performance and proper use of silt fencing.

Owner/Location
Farmington Hills, Michigan and Charter Township of West Bloomfield, Michigan

Dates
June 1996 – May 1998

Total Project Cost
$59,000

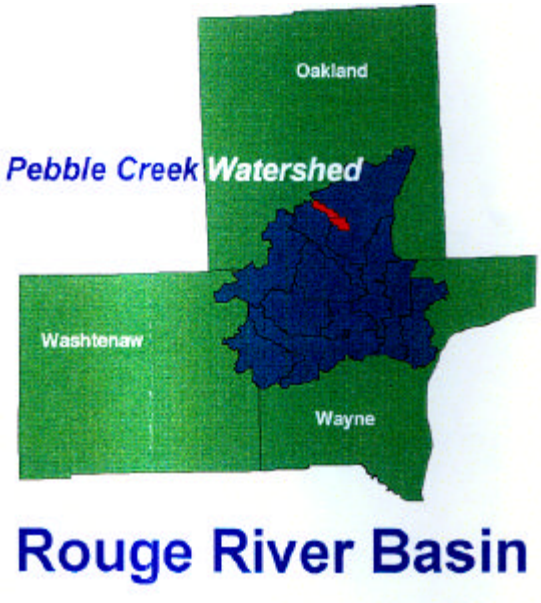
Reinforced gravel check dam upstream of wetland area. 7/21/97

Demonstration Aspects

- A videotape "City of Farmington Hills Soil Erosion: A Study of Current Practices" was prepared to document results from this project. The videotape provides summary educational information for community enforcement officers, developers, and engineers both locally and nationally.
- This project explains methods to control soil erosion and prevent sedimentation during new construction projects.
- This project demonstrates that problems that cause waterways to be polluted can be solved more effectively when communities work together towards a common goal.

Project Highlights

- The study assisted in providing information and improving the knowledge of erosion and sedimentation control processes in the Rouge watershed.
- The evaluation resulted in the development of a rating system and definition of the "Nine phases of the Residential Construction Process". The nine phases are identified as: site planning; pre-construction measures; earth work/site preparation; road construction; foundations and basements; framing, masonry, and initial dry wall; interior completion; final grade and installation of driveways and sidewalks; and occupancy. Erosion and sedimentation control measures are evaluated for each phase.



Major Elements

- The study area is 3,764 acres and is tributary to the Main branch of the Rouge River. The Lower portion of the watershed is in Farmington Hills, and the upstream portion is in West Bloomfield Township.
- This partnership shows that an upstream community can use pollution prevention techniques that contribute not only to the health of the stream of its area but also to the health of the stream enjoyed by its downstream neighbors.

Project Results

The focus of the Pebble Creek Erosion and Sedimentation control Study was to identify measures to enhance the performance of silt fencing and improve erosion and sediment control during residential construction projects. This task was accomplished by reviewing current erosion and sedimentation control programs, identifying other practices and methods that may be substituted or used in conjunction with silt fence, implementing and observing some of these methods in the field, and reporting on the results.

Both of theses communities are designated Local Enforcement Agencies (LEA) for enforcement of Part 91 of Public Act 451 (previously Act 347 of 1972) by the Michigan Department of Environmental Quality (MDEQ). The LEA programs in both of these communities are strong and include an in-depth permitting, inspection and enforcement process. During the 1997 construction season, the City of Farmington Hills issued approximately 150 single-family ESC permits, that resulted in 300 inspections and 7 stop work orders. The charter Township of West Bloomfield issued 468 ESC permits, conducted 575 inspections and issued four stop work orders for the same period.

Based on observations in this study, the following were noted:

- Silt fence by itself is highly ineffective in the active construction site environment. Thirty-eight percent of the time this product was in a "failed" condition.

- Silt fence combined with other products, such as plastic snow fence, improved performance considerably. In the applications tested, the use of snow fence eliminated failure of the product and improved the "good" rating by 19 percent.
- The combination of erosion control blankets and snow fence is a viable alternative to silt fence in flat area.

To obtain further information on the Rouge Project, including documents, maps and general information, visit us at:

http://www.rougeriver.com

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