

Using a Systematic Approach to Natural Channel Designs and Agricultural Stewardship

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The Garvey Creek/Glenn Drain is one of five priority watersheds along the shore of Lake Huron. Field scouting identified soil erosion issues along with inadequate stormwater management and corresponding water quality problems.

When MVCA and landowners reviewed the assessment of watershed conditions, it became apparent that the long-term costs are very high if these issues are not addressed, including prime agricultural land, lakefront residential areas, and highway infrastructure. In partnership with landowners, MVCA staff developed a Soil and Water Environmental Enhancement Plan (SWEEP) for the entire watershed, as well as for individual properties. These plans set out strategies for improving water quality by addressing the impacts of soil erosion and nutrient runoff.

The SWEEP focuses on a systematic approach that encompasses the entire watershed to maximize the effectiveness of stewardship work.

In the fall of 2012, the first SWEEP erosion control project was completed in sub-basin one located in the headwaters. A series of berms and French Drains were installed to create ponding areas that slow down stormwater runoff. In the spring of 2013, 2.5 acres were planted to trees in order to retire fragile land next to the Garvey creek. Design work and tendering for erosion control projects in sub-basin two and sub-basin five have been completed and another 2 acres of trees are ready to be planted in 2014. As well, a permanent stream flow station, three temporary stream level gauges and a weather station were installed in the watershed. Data is now being gathered from this equipment to establish a rating curve that will enable staff to remotely estimate flow levels. Management Model. The model will assist with predicting the effects of weather events on water levels and erosion.

Eleven sites in the Garvey-Glenn watershed are monitored for water quantity, nutrients and sediment. This monitoring is critically important for evaluating the outcomes of stewardship work and ensuring project objectives are met.