



**Clean Michigan Initiative
Nonpoint Source Grant**



City of Wayne
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CITY HALL STORM WATER QUALITY IMPROVEMENTS

November 2001 - February 2005

The City Hall is located near the center of the City of Wayne, Wayne County, and is adjacent to the Lower Rouge River. The original storm water system for the 2.0-acre City Hall site consisted of five catch basins located within the parking area and storm sewers that conveyed the runoff directly to the river. Neither treatment nor detention was provided prior to the runoff being discharged to the Lower Rouge River. The parking lot was contributing nonpoint source pollutants such as hydrocarbons, metals and solids, to the Rouge River.

In order to reduce the contribution of pollutants from this site, the existing parking lot was replaced and reduced in size. A system of BMPs combined in a treatment train was installed, including bioretention basins (depressed parking lot islands with native Michigan flowering plants and trees), dry swales (with an underdrain system), rain barrels, inlet filters (Hydro Kleen™) and underground swirl concentrators (Stormceptor™). As an added bonus, this project was constructed in a public area that is frequented by many City of Wayne residents, and therefore, increases awareness of efforts to improve the quality of the Rouge River.



Grant Amount: \$337,220
Match Funds: \$126,040

Total Amount*: \$463,260

** This amount includes engineering design, monitoring and construction costs.*

Best Management Practices:

- Bioretention basins
- Catch basin inserts
- Infiltration trenches
- Oil/grit separators



Annual Load Reductions:

- Sediment - 0.5 tons
- TSS 49%-99%
- Phosphorus - 0.5 lbs
- Cu 74%-97%
- Nitrogen - 1 lb
- Pb 93%-99%

Partners involved:

- Wayne County
- City of Wayne
 - Engineering Department
 - Department of Public Works
 - Planning Department
 - Parks and Recreation Department



The City of Wayne is in the Lower 2 Subwatershed of the Rouge River Watershed. The project site is indicated by the red star.



A variance in the local ordinance was granted for the reduction in parking lot size. A lower curb (4 inches versus the standard 6 inches) allows for car overhang and shorter parking spaces reducing the overall parking lot by 10%. The depressed bioretention basin captures and treats parking lot runoff.

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Bioretention Basins

Bioretention areas are constructed forested or vegetated beds, usually composed of gravel, soil, trees and shrubs, a sand layer, and a grassed swale (see below). Bioretention areas, also known as rain gardens, capture runoff and allow it to slowly infiltrate into the ground. These practices filter stormwater to reduce contaminant loadings using native plants as an additional filter medium. Infiltration enhances pollutant removal and allows the water to be cooled.



Native Vegetation:

Native landscaping has many benefits, such as greatly reduced costs of landscape maintenance, natural beauty, water quality protection, created wildlife habitat, reduced noise pollution, reduced soil erosion, enhanced property and real estate values, more livable communities; the list of advantages is endless. The major savings of natural landscaping over conventional landscaping is the low cost of maintenance. The combined costs of installation and maintenance for natural landscape over a ten year period may be one fifth of the costs for conventional landscape maintenance. Below are some native vegetation plantings that were used in the City Hall Storm Quality Parking Lot Improvements

