



**Clean Michigan Initiative  
Clean Water Fund Grant  
2005-0334**



City of Battle Creek

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## Willard Beach Implementation Project

September 1, 2005, through August 31, 2007

The primary goal of the City of Battle Creek Willard Beach Park Project was to showcase Low Impact Development (LID) practices to the community by installing porous asphalt throughout the park roadway system and by installing rain gardens. The project complimented other LID projects undertaken by the City, such as several bioretention basins, rain gardens, and a vegetated roof. All of these sites were used as examples for area developers to model. The project also reduced the impact of storm water by volume and pollutant loading from the park's four storm sewer discharge areas. Another goal of the project was to educate park users about the project and the importance of protecting water quality.

A secondary goal of the project was to improve the water quality of Wanandoga Creek through on-site infiltration and pre-treatment of storm water at the Pennfield High School.



**Grant Amount: \$198,947**

**Match Funds: \$251,478**

**Total Amount: \$450,425**



### Best Management Practices:

- Installation of porous asphalt over the entire two-acre drive throughout Willard Beach Park.
- Installation of five rain gardens and three pet waste disposal stations.
- In-line bioretention system planted with native plants (Pennfield)
- Oil and grit separator (Pennfield)
- Installation of native vegetation on steep slope (Pennfield)

### Annual Pollutant Load Reductions:

#### Willard Beach/Pennfield

- Sediment - 7.2 tons/22.8 tons
- Nitrogen - 21 lbs/40 lbs
- Phosphorous - 195 lbs/226 lbs
- Volume (Estimate) - 78%

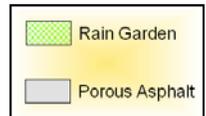


### Partners involved:

- City of Battle Creek
- Goguc Lake Board
- Pennfield High School
- J.F. New and Associates
- Calhoun County Community Development



Legend



### I&E Activities:

- Presentations to Service Groups
- Newspaper Articles
- Low Impact Development Workshop
- Public tours
- Signage





Project Area Before: The photo shows the entrance to Willard Beach Park before construction began.



Project Area After: The above left photo was taken at the park entrance during a rain event. The picture shows one rain garden and the porous asphalt. The above right photo below shows a close-up of the porous asphalt.



The photo shows one of the five rain gardens. The picture was taken in 2007 during the first growing season.



The pictures above show the installation of the native plants.



The photo above shows one of three pet waste stations installed at the park.



Signage installed at the park.



Excavated bioretention basin, prior to seeding.



Seeded area on steep slope in front of Middle School (September, 2006).



Post-planting, one year following installation (July 2007).