



Michigan's
Nonpoint Source
Program

**Clean Michigan Initiative
Nonpoint Source Grant**
2006-0142



Virg Bernero, Mayor



City of Lansing

Telephone: (517) 483-4455

Fax: (517) 483-6082

Email: cgamble@lansingmi.gov

Michigan Avenue Bioretention Facilities

January 1, 2007 - June 30, 2011

The project's goal was to provide water quality mitigation to storm water runoff from an ultra-urban area. Concurrent with, but outside the scope of the grant, interpretive signage was incorporated as outreach to adjacent business owners and pedestrians informing them about the project and why it is important. The project encompasses four blocks along a very busy five-lane street with parallel parking and extra wide sidewalks lined with stores, restaurants, and other businesses. The project treats at least 1-inch of rainfall throughout the project area, and up to 4-inches of rainfall in certain areas. Stormwater enters the bioretention areas from the street by curb cuts. The curb cuts direct runoff to a sediment forebay before spilling into the bioretention areas. Specifically chosen trees and native plantings within the bioretention areas provide water uptake and also break up the soil while offering natural beauty. This grant resulted in 30 constructed rain gardens along the Michigan Avenue corridor from Larch Street to Pennsylvania Avenue. To determine project effectiveness, monitoring was performed including infiltration testing, flow monitoring, plant health assessment, and porosity and field capacity testing.



Grant Amount: \$ 595,200

Match Funds: \$ 199,000

Total Amount: \$ 794,200

Best Management Practices:

- 30 rain gardens

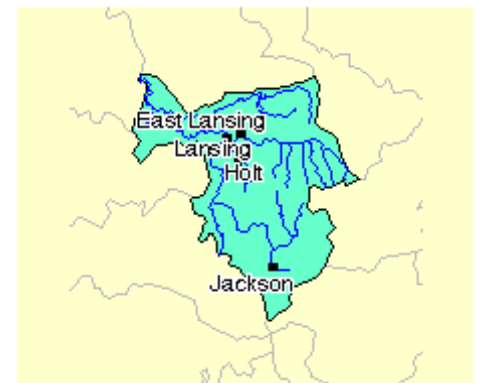
Annual Load Reductions:

- Sediment: 1,800 pounds/year
- Phosphorous: 9 pounds/year
- Nitrogen: 41 pounds/year



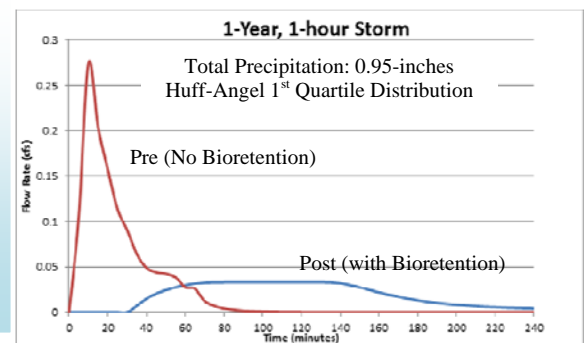
I&E Activities (Concurrent with, but outside the scope of the grant):

- Interpretive Signage
- Adopt-a-Rain Garden

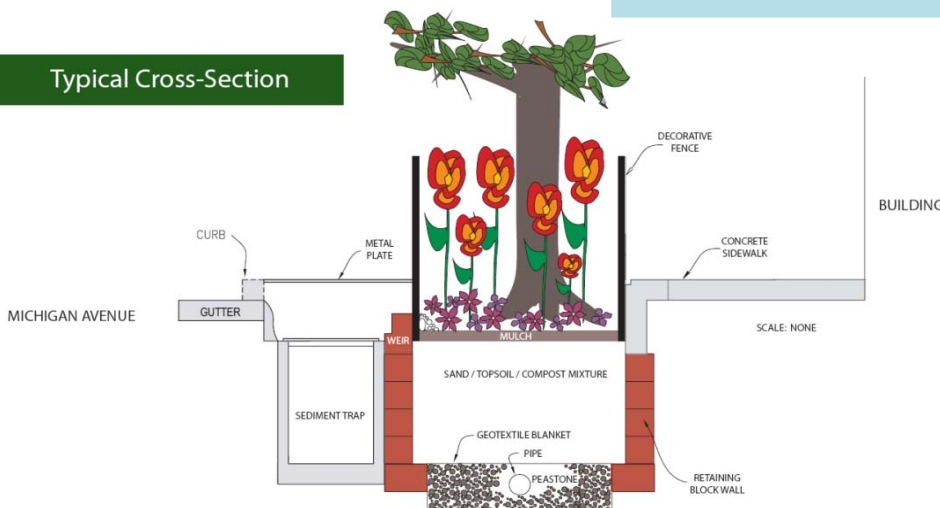


Partners involved:

- City of Lansing
- Tetra Tech, Inc.
- C2AE
- Aggregate Industries
- Wildtype Design, Native Plants and Seeds
- Downtown Lansing, Inc.
- MDOT

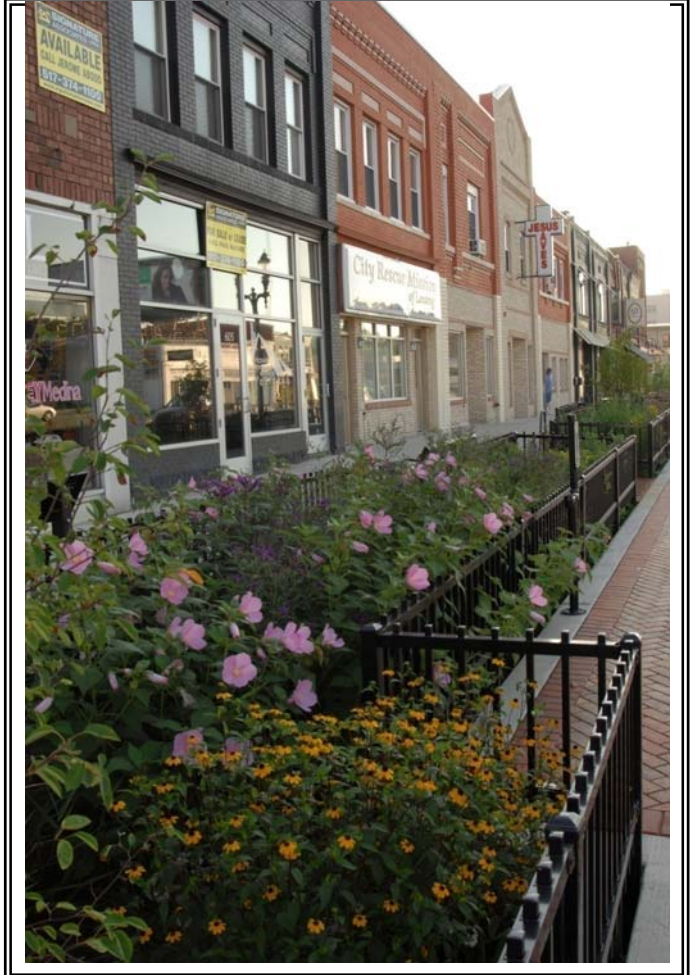


Typical Cross-Section



06/13/2011

BEFORE & AFTER PHOTOS



600 Block Mich. Avenue Before (top left): This corridor is 100% impervious, receiving runoff from the roadway, sidewalk and buildings. (bottom left): during construction.

(Right): A 1,300 square foot rain garden was installed with trees, perennial plants, and grasses to capture and treat stormwater runoff.



Before (above): In front of Young Bros. & Daley; and After (right): 170 square foot rain garden constructed; photo taken during infiltration testing.