



DEQ
Michigan's
Nonpoint Source
Program

Federal Section 319
Non-Point Source Grant
Tracking code #2009-0056



Wayne
County

Wayne County Department of Public Services
Water Quality Management Division
Telephone (734) 326-4486
Fax: (734) 326-4421
Email: nmullett@co.wayne.mi.us

Water Quality Improvements in the Alliance of Downriver Watersheds

February 15, 2010 through June 30, 2012

The primary purpose of the *Water Quality Improvements in the Alliance of Downriver Watersheds (ADW)* was to implement two (2) green roofs; update and improve watershed management plans for the three (3) watersheds within the Alliance of Downriver Watersheds (ADW); and increase awareness of green infrastructure and low impact development practices in the region. The ADW is approximately 203 square miles. The predominant land use is single-family residential. Woodland and wetland areas comprise the second largest category. Other project goals included: reducing nutrient loading, sedimentation and erosion by reducing storm water runoff volumes; building support and capacity within the local communities, schools, County and other public and private institutions to improve the management of existing green infrastructure; and to better estimate imperviousness, flow alteration and pollutant loadings within the ADW. The project's goals were achieved by: constructing 28,500 square feet of green roofs on public educational buildings owned and operated by the Woodhaven-Brownstown School District; updating and obtaining Clean Water Act 319 approval on watershed management plans for Ecorse Creek, Combined Downriver and the Lower Huron River watersheds; conducting and/or participating in numerous educational workshops, work days and events; developing informational and educational project profiles highlighting green infrastructure practices and developing a web-based virtual tour of low impact development projects in the region (see Lawrence Technological University's website at <http://www.ltu.edu/lid/>).

Grant Amount: \$ 611,600
Match Funds: \$ 293,200
Total Amount: \$ 904,800

Best Management Practices:

- 15,500 square feet of vegetative mat green roof
- 13,000 square feet of live roof tray green roof
- 53% of total rainfall is being retained
- 100% retention for storms < 0.1"
- 55% reduction in peak discharge
- 11.6 tons of sediment reduction*
- 25 pounds of phosphorous reduction*
- 175 pound of nitrogen reduction*

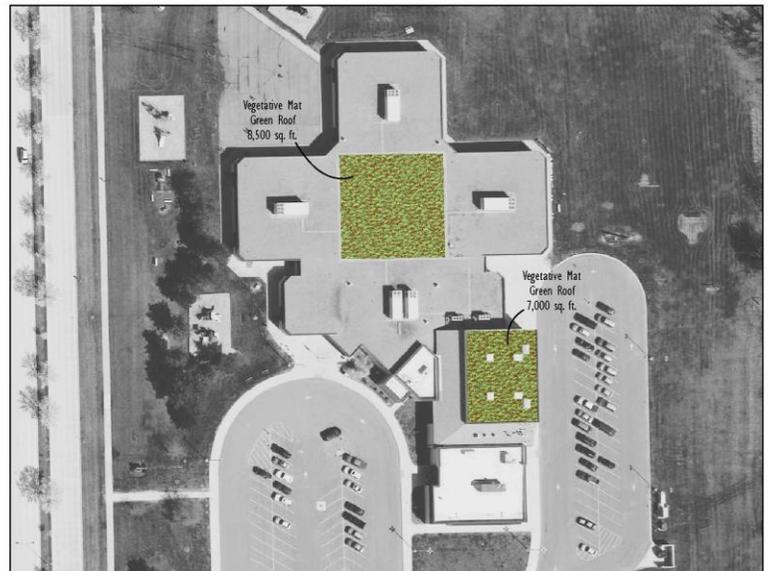
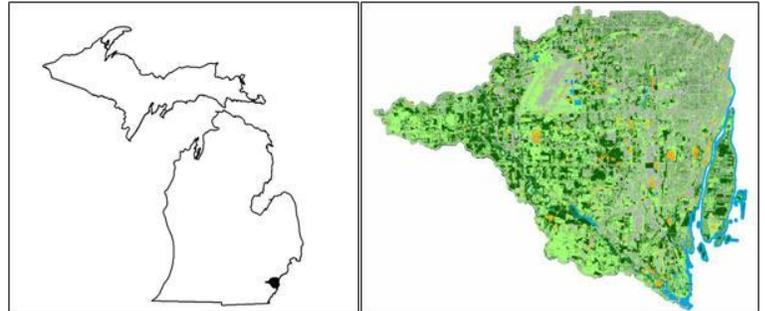
- 75 trees planted
- 1,110 pounds of CO2 stored currently**
- 983 gallons of rainfall intercepted per year**
- 4 pounds of air pollution avoided per year**
- Benefits increase each year as trees grow

* estimates based on a 25- year roof life expectancy

** estimates generated by I-Tree

I&E Activities:

- DROM displays and presentations
- Fall 2011 *What Color is Your Infrastructure Conference*
- 1,750 tree seedlings distributed
- 2011 Municipal Grow Zone GI Stewardship Day
- 2012 School Grow Zone GI Stewardship Day
- Grow Zone Project Profiles (10 sites)
- Green Roof Project Profiles (2 sites)
- LTU's Web-based GI/LID Inventory and Virtual Tour
- Green Infrastructure (CityGreen©) Analysis reports
- Project Evaluation/Assessment Green Roof Monitoring Report
- Estimated 1,785 education event attendees and approximately 25,000 information recipients



Project Partners

Wayne County Department of Public Services
Alliance of Downriver Watersheds
Woodhaven/Brownstown School District
Lawrence Technological University
Huron River Watershed Council
OHM, Inc. & Wade Trim & Associates
Friends of the Detroit River/Detroit River Keeper
Wayne County Conservation District
SEMCOG



**ADW Green Infrastructure
Stewardship Day - Gudith Elementary**



**ADW Green Infrastructure
Stewardship Day - Flat Rock**



ADW Green Infrastructure Display



**Fall 2011 - *What Color is Your Infrastructure*
Conferenc**



Green Roof Monitoring



Monitoring - Control Site