

## A smaller rural community takes on an LID project to reduce stormwater pollution by 80%

A great example of a smaller community making a shift towards Low Impact Development (LID), while providing leadership that other communities can follow, is found in Grayling, Michigan. The Grayling Storm Water Project will eliminate nearly 80% of the water pollution

from the City through its installation of 86 rain gardens, a detention basin and seven underground oil-grit separator units. At this time, all of the major outfalls of the City's stormwater are being treated through one of these measures.

Oil-grit separators, also called oil and water separators, are systems designed to remove trash, debris, sediment, oil and grease from stormwater runoff.

Rain gardens, also called bioretention areas, are shallow depressions planted with select native plants that manage runoff volume and filter pollutants from the stormwater runoff of parking lots, streets and rooftops. Rainwater pools within the planted area, allowing the water to infiltrate the garden. Implementable in many sizes, the gardens utilize plant species that are generally tolerant to insects, disease,



Bioretention areas, also called rain gardens, collect stormwater and filter out potentially harmful pollutants. (Photo: Chesapeake Bay Program)

To learn of other LID case studies, visit the SEMCOG LID database:  
<http://www.semco.org/Data/lid.cfm>

pollution and climatic stress.

The total project cost was \$1,200,000 and many lessons were learned throughout the process. Due to the well-drained, sandy soil structure in Grayling, plants took a while to establish and need frequent watering, requiring additional maintenance. Area residents were also concerned with the "wild" look of the gardens and would have preferred more manicured gardens.

In the future, the City hopes to include a maintenance program with incentives for landowners who maintain their rain gardens, as well as an education and outreach program to encourage other communities to adopt similar LID practices, including porous pavement parking lots and infiltration trenches.

Source: *Huron Pines*

## Many Our Water Resources Available For Educators

We are all responsible for helping keep our water clean. The stewardship activities we know and undertake as adults have to be taught to younger generations so that they can help us achieve our mission. The *Our Water* program provides a number of resources for teachers and educators to help prepare the next generation of water stewards. Visit the Teacher Resources webpage of the *Our Water* website to access these resources (<http://www.cleargeneseewater.org/teachers.html>)

Available tools include EnviroScape Watershed Models, available for check out and use, with step-by-step directions for setup and cleanup, lesson plans and tips. Also included on the webpage are lesson plans for K-12 activities and service-learning opportunities related to keeping our water clean. Many of the lesson plans have the appropriate curricular connections, including Michigan Content Level Expectations, identified and listed.



Students gain valuable experience applying knowledge learned in the classroom by conducting storm water awareness projects.

## Upcoming Events

June 21, 2011	<i>Our Water Paddle*</i>	Aug 14-21, 2011	Genesee County Fair
June 29, 2011: 10am-12	<i>Our Water River Walk*</i>	Aug 20, 2011	<i>Our Water Paddle*</i>
July 9, 2011	<i>Our Water Paddle*</i>	Aug 24, 2011: 7-9pm	<i>Our Water River Walk*</i>
July 13, 2011: 10am-12	<i>Our Water River Walk*</i>	Sept 23, 2011	<i>Our Water Paddle*</i>
Aug 10, 2011: 10am-12	<i>Our Water River Walk*</i>	*Contact Sue Lossing at <a href="mailto:slossing@flinriver.org">slossing@flinriver.org</a> for more information	

### What is NPDES and why are you involved?

The Federal Clean Water Act of 1972 requires municipalities to obtain stormwater permits under the National Pollution Discharge Elimination System (NPDES) permit program. The NPDES works to reduce water pollution, including non-point source pollution. Non-point source pollution is pollution that comes from diffuse sources. As rain water and snowmelt travel overland, they pick up man-made and natural pollutants, like spilled motor oil and phosphorus used on agricultural fields, and deposit them into our local water bodies.

There are two phases to the NPDES permitting program: phase I applies to large cities, like Flint, and phase II to smaller communities. The NPDES program also entails elements beyond drainage permits including, public education and participation; watershed management; new construction standards; monitoring and mapping; illicit discharge detection and elimination; and Storm Water Pollution Prevention Initiatives (SWPPI).

In Michigan, the Michigan Department of Environmental Quality (MDEQ) administers the NPDES program under the supervision of the U.S. Environmental Protection Agency (EPA). The Genesee County Drain Commissioner's Office coordinates and implements these programs under the County Public Improvement Agreement (P.A. 342). They help local units of government and public organizations collaborate to protect our local natural resources.

## Students from 20 schools gather to share research results and improve water quality

Middle and high school students from 20 Genesee County schools gathered on Mott Community College's campus this past May for the Flint River GREEN Student Summit to share their water quality monitoring research results. Using scientific methods, classrooms of students around Genesee County test or monitor a body of water, identify an environmental problem, research the causes of the problem and then work to eliminate the problem.

Each spring, classrooms that participate in the program gather to learn from each other. In addition to gaining presentation skills by participating in the Student Summit, students also gain a better understanding of local stewardship needs and community issues by attending a

variety of breakout sessions taught by local community organizations and members. This year's Summit offered sessions on everything from beekeeping to edible backyard plants to hydroponics and paddling the Flint River.

You, through the *Our Water* program, support our partner the Flint River Watershed Coalition and Flint River GREEN - Earthforce, the Genesee Intermediate School District, General motors and a handful of others - to coordinate this applied curriculum. In Genesee County, the work done for Flint River GREEN provides information for the *Our Water* program to fulfill our requirements.



Students present their water quality monitoring research findings at the Flint River GREEN Student Summit.

Breakout sessions at the Summit offer students the opportunity to learn about other exciting environmental projects and topics in Genesee County.



### Why you received this newsletter

You are receiving a copy of this newsletter because of your involvement with Genesee County's NPDES Phase II Program. Through this newsletter we will keep you informed of the status of the public education campaign, the best management practices committee and the illicit discharge elimination program and help you stay up-to-date on statewide changes relevant to NPDES permitting. New editions of this newsletter will be sent out periodically.

The University of Michigan-Flint's University Outreach has partnered with the Genesee County Drain Commissioner's Office to provide assistance with the coordination, implementation and evaluation of the Phase II public education campaign. As part of this collaboration, University Outreach designs and writes this newsletter on behalf of the Genesee County Drain Commissioner's Office. University Outreach's primary contact for the NPDES Phase II Program is Danielle Gartner. If you are interested in contributing an article for publication in future editions of the newsletter, you can contact Danielle by email at [danyg@umflint.edu](mailto:danyg@umflint.edu) or by phone at (810) 424-5456.

## Storm Water Pollution Prevention Initiatives (SWPPI): Our road map to clean water

The Storm Water Pollution Prevention Initiatives (SWPPI) is your plan designed and implemented to reduce the discharge of pollutants into our surface waters (lakes, rivers, streams) for Ophase II communities. The goal of the SWPPI is to detail, in one single comprehensive document, your community commitments to practically reduce the discharge of pollutants. The SWPPI requires Michigan Department of Environmental Quality (MDEQ) approval, and most importantly, the commitments outlined in the SWPPI are enforceable by MDEQ.



Photo: Chesapeake Bay Program

A SWPPI has been prepared for the Phase II communities within Genesee County to comply with the Phase II Storm Water NPDES general permit. The goals, objectives and actions listed in the SWPPI were developed in compliance with the Public Participation Plan (PPP) requirements of the NPDES permit. We also continue to pursue the stakeholder-identified actions listed in the Watershed Management Plan (WMP), as these actions are related to the new NPDES permit requirements.

For more information on our SWPPI, including access to SWPPI templates, action tables, public education plans, etc., visit the SWPPI page of the Genesee County Drain Commissioner's Office, Surface Water Management Division website: [http://www.gcdswm.com/PhaseII/SWPPI\\_SWO/SWPPI\\_SWO.htm](http://www.gcdswm.com/PhaseII/SWPPI_SWO/SWPPI_SWO.htm)

## Sub-Committees oversee construction, monitoring and public education

### Construction Standards and Practices (CSP) Sub-Committee:

This sub-committee oversees new construction standards, post construction practices and updates ordinances to ensure compliance with the U.S. Environmental Protection Agency (EPA) requirements. The CSP sub-committee wrote a Storm Water Ordinance and Best Management Practices (BMP) Manual for communities within Genesee County and submitted these items to the State in 2009. The CSP sub-committee also continues to dedicate time to understand low impact development (LID) practices and their application in the State of Michigan.

### Monitoring and Mapping (M&M) Sub-Committee:

This sub-committee oversees organization and implementation of watershed monitoring, field sampling protocols, and mapping guidelines. The M&M sub-committee manages several water quality monitoring programs such as the Road-Stream Crossing Survey, 319 Nonpoint Source Grant Projects, Project GREEN, and the Benthic Macroinvertebrate Study. They also monitor the Illicit Discharge Elimination Plan (IDEP) and oversee the Hot-spot Water Quality Monitoring Program. The M&M sub-committee has recently created and is currently hosting 'good housekeeping practices' trainings for grounds workers related to SWPPI, as well as creating a progress report on dry weather testing for the IDEP.

### Public Education and Participation (PEP) Sub-Committee:

This sub-committee oversees the implementation of the Public Education Plan. The PEP sub-committee met recently to discuss potential new educational programming and research on other Phase II programs is being conducted in an effort to expand the education and outreach efforts of the *Our Water* program. Many public education activities to meaningfully engage Genesee County residents with our local water resources have been undertaken through partnerships with area organizations. Through a recent partnership with the City of Flint, there is great potential to expand the reach of the *Our Water* education and outreach efforts. For example, discussions have started to possibly add road signage in city parks.

## Paddles and walks offer opportunity to experience the Flint River watershed up close

Have you ever wanted to explore the Flint River in greater detail but wasn't sure where the best spots were? Through a program in partnership with the Flint River Watershed Coalition, you can now meet with fellow community members and go on guided *Our Water* paddles and walks.

In addition to getting assistance with your first time on the river or trying out new nature trails along the river, you will also learn about some of Genesee County's water quality concerns. Led by a knowledgeable educator, you will learn more about our

watersheds, current challenges for the Flint River, as well as many actions you can take to keep our water clean.

There are four *Our Water* walks and four *Our Water* paddles scheduled for June through September that Genesee County residents can attend! Consider joining us for one of these fun paddles or walks in the future. For an updated calendar of *Our Water* paddle or walk events go to <http://www.flintriver.org/Calendar.html> or contact Sue Lossing at [slossing@flinriver.org](mailto:slossing@flinriver.org)



Genesee County community members learn about the watershed and water quality issues while having fun and relaxing in a kayak!

## How the Genesee Intermediate School District partners with us

*In this and subsequent editions of the Newsletter, we will highlight the valuable work of one of the partners in the Phase II Program.*

The Genesee Intermediate School District (GISD) provides leadership that links learners to public schools, the community, the private sector and public agencies to improve education for all area citizens. The GISD serves over 83,000 students and nearly 10,000 educators. Their primary service area consists of the 21 public school districts and 10 charter schools in

Genesee County, while some services extend to Lapeer, Shiawassee and other surrounding counties.

The GISD first began working with the *Our Water* program in an effort to increase the availability of Phase II educational resources for area K-12 teachers. Larry Casler, Director of the Genesee Area Math/Science Center, says the partnership has really had a domino effect on programming. The relationships formed between the GISD and other *Our Water* educational



Increased use and accessibility of the Ligon Outdoor Center is one example of the benefits allowed through the partnership of the GISD and the *Our Water* program.



Students enjoy outdoor educational opportunities at the GISD's Ligon Outdoor Center.



partners have blossomed and now allow more students access to exciting and valuable environmental education. "This is a valuable partnership – the kind that should go on in every community. We are helping kids understand that they can make an impact on their community."