

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.



The 2003-2008 Genesee County Phase II Illicit Discharge Elimination Plan (IDEP) was a success - only 134 illicit discharges found between 2003 and 2008!

The Michigan Department of Environmental Quality (MDEQ) requires Phase II permittees to submit Illicit Discharge Elimination Plans (IDEP) for continued permit coverage. The IDEP are designed to prohibit and eliminate illicit discharges and connections, including the discharge of sanitary wastewater, to Genesee County's separate storm sewer system.



Of the 5,510 outfalls investigated, only 134 instances of illicit discharge were found between 2003 and 2008.

To comply with the NPDES permit, the County is required to conduct screenings of all Municipal Separate Storm Sewer System (MS4s) outfalls.

To investigate outfalls throughout the 2003 to 2008 permitting cycle, field crews walked over 645 miles of the County drainage system and/or kayaked the waters of the State. During this time, over 5,510 outfalls were found. An outfall is a point where storm water from one area flows to another area. Examples of outfalls include connections from one pipe to another,

the area where a pipe empties to a ditch, or a connection between two ditches. Outfalls can be owned by a private entity or, alternatively, be part of a MS4. Once identified, each outfall is mapped to allow for further investigation at least once every five years.

If conditions are allowable, the flow of the outfall is sampled and analyzed. The County may also conduct dye tests on suspected properties to confirm and coordinate potential disconnections. When an illicit connection is identified, the pollutant source is isolated and the property owners are contacted in an effort to eliminate the discharges. Field crews found only 134 illicit discharges during the 2003-2008 permitting cycle! Of these, 75 have been removed to date. Follow-up investigations and removals of all illicit discharges are currently underway.

Useful Definitions

Illicit Discharge: Any discharge or seepage to the separate storm water drainage system that is not composed entirely of storm water or uncontaminated groundwater.

Illicit Connection: A connection to the separate storm water drainage system that allows illicit discharges into the system and/or is not authorized or permitted by the Genesee County Drain Commissioner's Office.

Municipal Separate Storm Sewer System (MS4): Public agency owned or operated ditches, curbs, gutters, and/or storm sewers that collect runoff and do not connect with a wastewater collection system or treatment plant.

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 Center for Applied Environmental Research (CAER) 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, CAER designs and writes this newsletter on behalf of the Genesee County Drain Commissioner's Office.

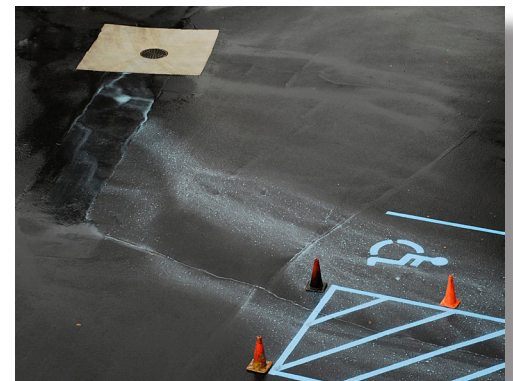
CAER's primary contact for the NPDES Phase II Program is Danielle Gartner. If you are interested in contributing an article for publication in future editions of the newsletter, you can contact Danielle by email at danyg@umflint.edu or by phone at (810) 424-5456.

NPDES 101: A quick guide to understanding basic storm water permitting in your community

Under the National Pollution Discharge Elimination System (NPDES), all facilities that discharge pollutants into surface waters (i.e. lakes, rivers, streams, drains) of the United States are required to obtain a permit to do so. In Michigan, the Michigan Department of Environmental Quality (MDEQ) administers the NPDES program. Through the development of strict requirements, the MDEQ regulates a variety of factors to maintain satisfactory water quality including bacteria, biochemical oxygen demand, dissolved oxygen, pH, phosphorus, temperature, and total suspended solids. There are three types of permits issued by the MDEQ to monitor release of the above mentioned factors: general, individual, and "permit by rule". The MDEQ determines the appropriate type of permit for each discharge site and consequently determined your community gain coverage through a general permit.

MS4s, or municipal separate storm sewer systems, are public agency owned or operated ditches, curbs, gutters, and/or storm sewers that collect runoff and do not connect with a wastewater collection system or treatment plant. Only operators

of MS4s in "urbanized areas" (delineated and defined by the U.S. Census Bureau) are required to gain a stormwater permit under Phase II regulations. Two general NPDES permits are available to smaller MS4s, like your community: a general jurisdictional permit and a general watershed-based permit. Phase II communities in Genesee County have a general watershed-based



In addition to making sure discharges are regulated, NPDES permits also include storm water education components to ensure chemicals aren't washed into storm drains.

permit. The general watershed-based permit addresses the same basic requirements as the traditional jurisdictional permit except that it provides greater flexibility in selecting and implementing stormwater controls.

To attain coverage, the Genesee County Drain Commissioner's Office prepares an application that outlines a proposal for compliance with the permit requirements. The MDEQ reviews the application, and if deemed satisfactory, issues a Certificate of Coverage (CoC). The CoC gives Genesee County Phase II communities the authority to discharge storm water. All NPDES permits are subject to a 30-day public notice period and if approved, are valid for a maximum of five years.

Upcoming Events

Flint River Watershed Coalition Walks

- ♦ Wednesday, July 15th, 10:00 a.m. - Clio River Walk Trail
- ♦ Wednesday, July 22nd, 10:00 a.m - Hogback Water Trail

Genesee County Fair ♦ August 17-23.

Mark your calendars for the upcoming Paddling Events in the Flint River Watershed.

- ♦ Saturday, August 8th, Fresh Water Forever Rally, Downtown Flushing to Flushing Township Nature Park, FTNP to Montrose
- ♦ Sunday, August 23rd, Holloway Dam to Richfield Park, Richfield Park to Mott Lake
- ♦ Wednesday, August 26, Flushing Township Nature Park to Montrose
- ♦ Sunday, September 13th, Misten Landing to Flushing



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 has been working with communities to establish a Storm Water Ordinance for communities within Genesee County. The ordinance is currently in draft form and is ready for legal review. The CSP sub-committee has recently been dedicating time to understand low impact development 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 been working to schedule trainings for 'good housekeeping' practices related to SWPPI.

Public Education and Participation (PEP) Sub-Committee

This sub-committee oversees the implementation of the Public Education Plan. The PEP sub-committee recently approved a new budget for the 2008-09 year. Education programs from the previous reporting cycle, conducted by PEP partners, are continuing into the reporting new cycle. Recently, a television public service announcement was identified to be used as part of the *Our Water* Campaign. Additionally, informational tools and lesson plans were created to provide area teachers with project ideas to engage students in stormwater education projects.

How the Genesee County Conservation 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.

If you hunt, fish, boat, hike, garden, farm, or do anything else involving natural resources in Genesee County, then you benefit from the Genesee County Conservation District (GCCD). The GCCD is a unique local unit of the State of Michigan's Government that works to solve today's conservation problems.

The GCCD plays an integral role in the Genesee County Phase II program through their provision of storm water education

services to school-aged children. During the 2007-08 reporting cycle, the seven Phase II education elements reached over 8,000 students in Phase II communities! The GCCD uses the EnviroScape Watershed

Model as an interactive tool to teach students about the sources of water pollution and ways to prevent it. Children are fascinated by the realism of the model and enjoy

the opportunity to participate in the demonstrations. The presentation meets Michigan Department of Education Standards and Benchmarks.

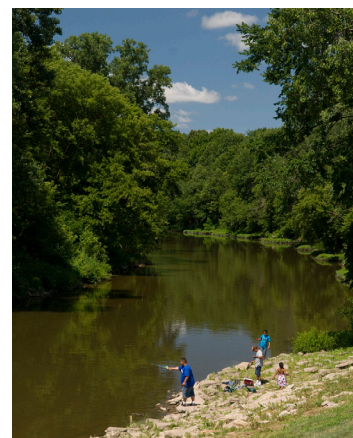
Additionally, the GCCD publishes newsletters that support the public

education mission of the Phase II program and have worked to develop Certificates of Appreciation to award to Phase II communities.

Contact the Genesee County Conservation District at www.geneseeconservation.org or (810) 230-8766 ext. 3 for more information.



The EnviroScape Watershed Model provides an interactive way to engage students in learning about water pollution and prevention.



The Genesee County Conservation District works to solve today's conservation problems so that we can enjoy Genesee County's great natural resources.

City of Bangor, Van Buren County, successfully uses LID techniques for the Lion's Park restoration project

Clean and clear water resources in Genesee County and Michigan are necessary for future economic prosperity. Stormwater management is an important component of water quality protection in our communities. Low Impact Development (LID) provides

an opportunity for you to learn how other municipal representatives are successfully implementing LID techniques around Michigan.

Lion's Park is located in the City of Bangor, Van Buren County, Michigan. The Black River winds through the City of Bangor, with the city owning significant river frontage within Lion's Park. Funded through a MDEQ 319 Nonpoint Source Management Grant, a Michigan Natural Resources Trust Fund Grant, and the City of Bangor, the city undertook a

restoration project to remediate stream bank erosion and reduce stormwater runoff into the Black River.

Erosion of the Black River's stream

What is LID?

LID is a set of ecologically friendly practices for site development and storm water management. LID minimizes impacts on the environment with design and planning techniques that conserve water.

bank erosion was reduced by re-grading the banks and stabilizing them with native plantings. Additionally, the city's stormwater, which previously flowed directly into the Black River, is now filtered by the Lion's Park rain garden. This project not only improves water quality, but also provides opportunities for public education due to its location within the city. In this case study, the City of Bangor played a critical role in working with state-level governmental employees, local planners, and community members to implement this LID project.

Specific LID techniques undertaken in this project include, protecting sensitive features, protecting riparian areas, re-planting disturbed areas with native plant species, bioretention, vegetated filter strips, and porous pavement.



Erosion on the banks of this stream is prevented through plantings of vegetative buffers.

a unique way to protect water resources through stormwater management and enable economic growth.

The following case study provides an

Field crews conduct road stream crossing studies to determine appropriate actions for improving stream quality

During the summers of 2007 and 2008, a team of consultants from Tetra Tech and Wade Trim conducted a visual assessment of road stream crossings in the Lower and Middle Flint River and Shiawassee River Watersheds. The crew investigated a total of 183 road-stream crossings over the two summers. The assessment identified background information about the crossings, the bottom substrate, type of bank vegetation, surrounding land use, and the physical habitat of each road stream crossing. Similar data will be collected every one to three years and compared to

this baseline data to show if conditions are improving, worsening, or staying the same.

The collected data was compiled and categorized by actions that could be taken to improve watershed conditions. Identified actions to improve stream quality include, improving canoeing and recreation access, stabilizing stream banks, stabilizing disturbed ground, increasing shade cover, establishing 30 or 100 foot riparian buffers, cleaning trash, and investigating and improving Illicit Discharge Elimination Plans (IDEP).



Some road stream crossings are delineated by interpretive signage to educate commuters on the geographic location of local water bodies.