



# **Genesee County Phase II Municipalities Annual Report**

***November 1, 2012 – October 31, 2013***

***Submitted to:***

***the State of Michigan Department of Environmental Quality,  
Surface Water Quality Division***

***by the Genesee County Drain Commissioner***

***on behalf of Genesee County and contracted Communities***



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## LIST OF ACRONYMS

E342C	Contract for services between Communities and Drain Office
Ad hoc	The Ad hoc Committees are formed to work on specific objectives until complete
BMP	Best Management Practice
CAER	University of Michigan – Flint, Center for Applied Environmental Research
CMI	Clean Michigan Initiative
CSO	Combined Sewer Overflow
EPA	Environmental Protection Agency
FRWC	Flint River Watershed Council
GCCD	Genesee County Conservation District
GCDC	Genesee County Drain Commissioner
GCHD	Genesee County Health Department
GCRC	Genesee County Road Commission
GISD	Genesee Intermediate School District
GREEN	Global Rivers Environmental Education Network
HHW	Household Hazardous Waste
IDEP	Illicit Discharge Elimination Plan
M&M	Monitoring and Mapping
MDEQ	Michigan Department of Environmental Quality
MDEQ	Michigan Department of Natural Resources and Environment
MS4	Municipal Separate Storm Sewer System
N/A	Not applicable
NPDES	National Pollutant Discharge Elimination System
O&M	Operations and Maintenance
PEP	Public Education Plan
PPP	Public Participation Plan
PSD	Point Source Discharge
QAPP	Quality Assurance Project Plan
SEMCOG	Southeast Michigan Council of Governments
SESC	Soil Erosion and Sedimentation Control
SSO	Sanitary Sewer Overflow
SWAC	Storm Water Advisory Committee
SWSC	Storm Water Structural Controls
SWM	Surface Water Management
SWPPI	Storm Water Pollution Prevention Initiative
TBD	To be determined
WMP	Watershed Management Plan
WWS	Water and Waste Services
WQI	Water Quality Index

## 1. NPDES PERMIT REQUIREMENTS AND ADMINISTRATION

This annual report was prepared by Genesee County's engineering consultant, Tetra Tech, for the Michigan Department of Environmental Quality (MDEQ).

### **PERMIT REQUIREMENTS**

This annual report summarizes activities completed for the period from November 1, 2012, to October 31, 2013, by the Genesee County Drain Commissioner's Office and the contracted Phase II Municipalities to meet the requirements of their National Pollutant Discharge Elimination System (NPDES) permit, including:

- Watershed management
- Public education and participation
- New construction standards
- Monitoring and mapping
- Illicit Discharge Elimination Program (IDEP)
- Storm Water Pollution Prevention Initiative (SWPPI)

### **WATERSHED MANAGEMENT ADMINISTRATION**

#### *Storm Water System Service District*

To implement the permit requirements and perform watershed management planning, Genesee County established a Storm Water Management System for the entire County under the authority of Michigan Public Act 342 of 1939. Genesee County had designated the Genesee County Drain Commissioner's Office to be their authorized agent. Many of the communities in the County have executed a contract to use the County 342 Storm Water Management System as the lead agency to provide Phase II permitting services, including watershed management planning.

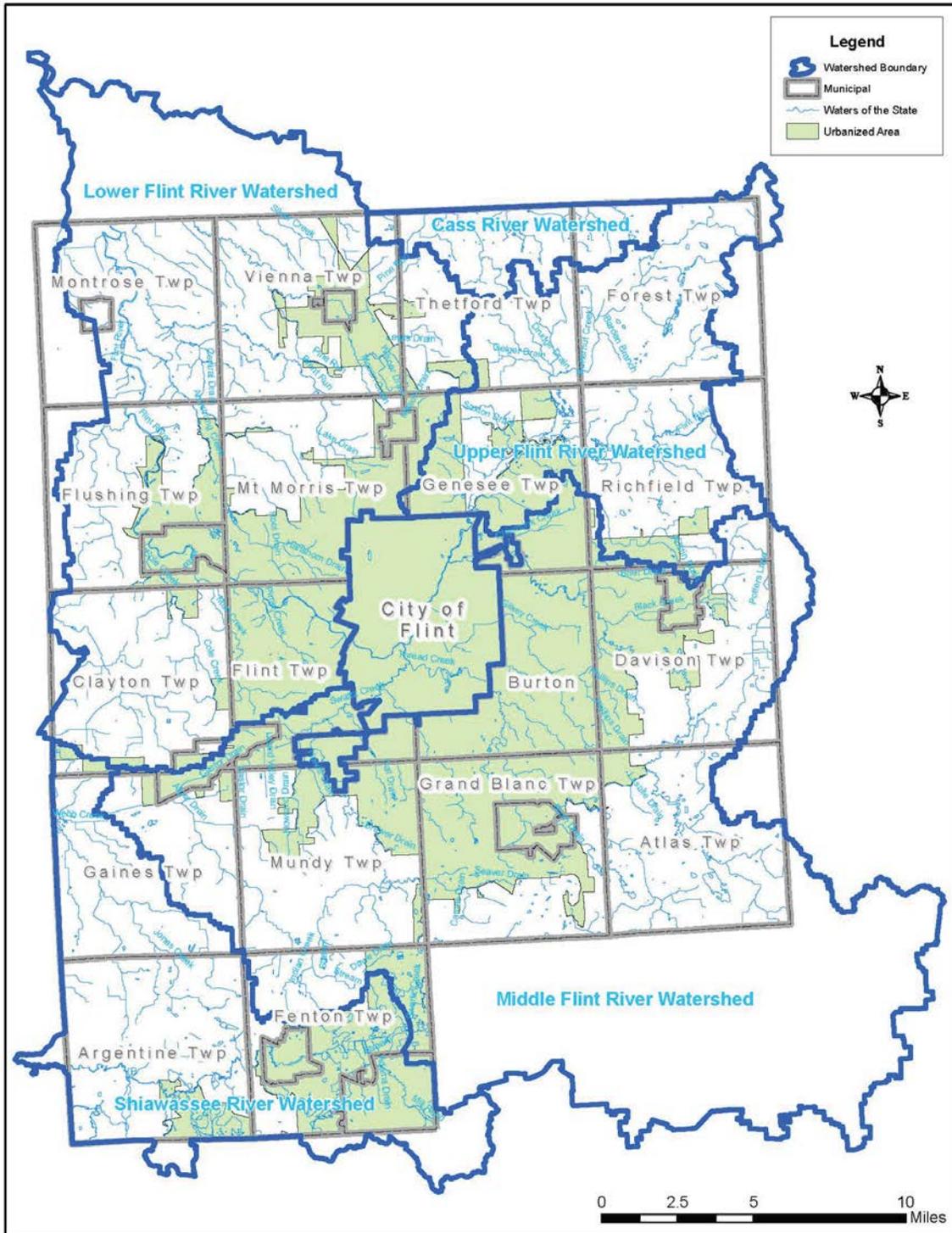
#### *Watershed Delineation*

Five major watersheds were delineated in the permit application, including:

- Lower Flint River Watershed
- Middle Flint River Watershed
- Upper Flint River Watershed
- Shiawassee River Watershed
- Cass River Watershed

Figure 1-1 shows the watershed boundaries. The Shiawassee River Watershed boundary was adjusted in 2005 to minimize overlap with Livingston County's efforts. Also, after discussions with MDEQ, the Upper Flint and Lower Flint watershed lines were changed. The five major watersheds listed above were divided into 20 sub-watershed planning areas.

Figure 1-1: Genesee County Watershed Boundaries



***Contract Communities***

Table 1-1 lists the Genesee County watershed-planning communities that have a 342 contract. Note that not all communities within Genesee County have NPDES permits and that Phase II status was realigned during the 2007-2008 reporting period. For the 2008–2013 cycle, some of the non-Phase II municipalities chose not to re-sign the 342 contract. Of the Phase II communities, Grand Blanc Township is the only Phase II community that chose not to re-sign the 342 contract and to provide all their own requirements for the new permit cycle. Although City of Flint was a Phase I community, in March 2010, they signed a 342 contract for public education services only. There are 4 **non Ph II communities** that chose to continue partnering through the contract. In 2013 Both Richfield Township and Clayton Township chose to opt out of the program for financial reasons.

Table 1-1: Contract Communities

<b>Argentine Township</b>	City of Flint (Public Education)	Mount Morris Township
City of Burton	Flint Township	Mundy Township
City of Clio	City of Flushing	<b>Richfield Township</b>
City of Davison	Flushing Township	City of Swartz Creek
<b>Clayton Township</b>	Genesee Township	Vienna Township
Davison Township	City of Grand Blanc	<b>Village of Lennon</b>
City of Fenton	City of Linden	Genesee County
Fenton Township	City of Mount Morris	

***Nested Drainage System Agreements***

The county has a nesting agreement with Bishop Airport.

The County has a nesting agreement with all but two (\*) of the Schools listed below.

Table 1-2: Nested School Districts

<b>School District</b>	<b>Within an urbanized area</b>
Atherton	Y
Beecher	Y
Bendle	Y
Bentley	Y
Carman-Ainsworth	Y
Clio	Y
Davison	Y
Fenton	Y
City of Flint	Y
Flushing	Y
Genesee Intermediate School District (GISD)	Y
Genesee	Y
Goodrich	*No
Grand Blanc	Y
Kearsley	Y
Lake Fenton	Y
Lake Ville	No
Linden	Y
Montrose	*No
Mt. Morris	Y
Swartz Creek	Y
Westwood Heights	Y

\*Schools that have been dropped from nesting due to noncompliance (letters sent Sept 2010)

The nested school districts have requested that the Genesee Intermediate School District (GISD) be their representative in this program. The GISD has been attending meetings and disseminating information to the individual school districts. They have facilitated meetings between the County and transportation and operations staff members, as well as superintendents, to discuss requirements, including staff training, to meet the requirements of the permit. The GISD participates in the county-wide education effort, including the development of grade-level appropriate watershed education curriculum. See chapter 2 for more details of GISD's involvement.

### ***Genesee County Storm Water Advisory Committee***

The Genesee County Storm Water Advisory Committee (SWAC) includes Genesee County and communities with a signed 342 contract. Most, but not all, are Phase II communities with a Certificate of Coverage. In addition, many of the Genesee County communities without a signed 342 contract continue to participate in SWAC activities. After the City of Flint signed a contract in March 2010, they became a member of the SWAC.

SWAC is guiding implementation of the entire Phase II Program and has three main sub-committees:

- Public Education (PE) and Participation Sub-Committee
- New Construction Standards and Practices (CSP) Sub-Committee
- Monitoring and Mapping (M&M) Sub-Committee

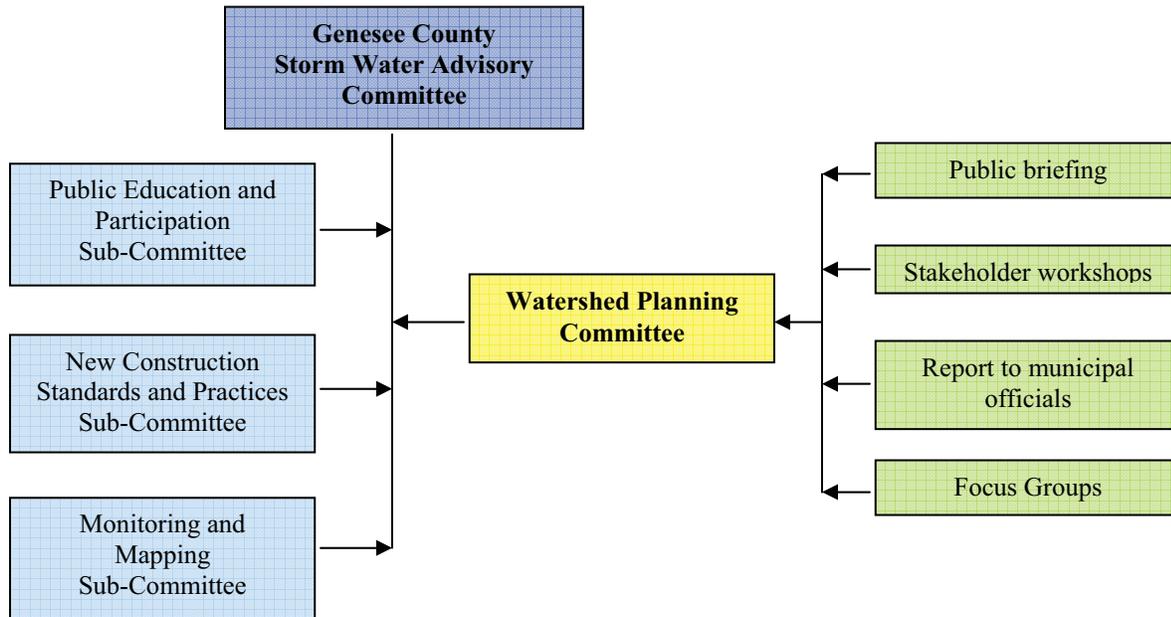
These sub-committees meet as needed along with stakeholders and/or individuals with specific specialized knowledge to implement the watershed plan, education plan and Illicit Discharge Elimination Plan (IDEP). A brief description of sub-committee duties is presented below Figure 1-2.

Figure 1-2 also shows the watershed planning decision-making process and sub-committee relationships. Work conducted by the Watershed Planning Committee(s) is used in development of the Lower Flint, Middle Flint, Upper Flint, and Shiawassee River Watershed Management Plans (WMPs). The Watershed Planning Committee(s) are made up of those communities that are located within a specific watershed. Each community serves on at least one sub-committee.

SWAC meetings during this reporting period were held on:

- October 17, 2012
- November 21, 2012
- December 19, 2012
- January 16, 2013
- February 20, 2013
- March 20, 2013
- April 17, 2013
- May 15, 2013
- September 18, 2013

Figure 1-2: Watershed Planning Decision Making Flowchart



***Public Education (PE) and Participation Sub-Committee***

The PE Sub-Committee guides the overall public education and participation process for the watershed management planning effort. PE activities are summarized in Section 2.

***New Construction Standards and Practices (CSP) Sub-Committee***

The CSP Sub-Committee oversees new construction standards and post-construction practices for Genesee County. This sub-committee is also updating ordinances to ensure compliance with Environmental Protection Agency (EPA) requirements. CSP activities are summarized in Section 3

***Monitoring and Mapping (M&M) Sub-Committee***

The M&M Sub-Committee oversees organization and implementation of watershed monitoring, field-sampling protocols, and mapping guidelines. In addition to several monitoring programs, they oversee the Illicit Discharge Elimination Plan (IDEP) Program. Local government leaders share their insights and views of the watershed throughout the project at workshops and meetings, as well as at other formal and informal exchanges. M&M activities are summarized in Section 4.

***Watershed Management Plans and Storm Water Pollution Prevention Initiatives***

Watershed Management Plans (WMP) for the Upper and Lower Flint as well as the Shiawassee River were submitted and accepted by the DEQ in 2008. In June 2009, permittees submitted their Storm Water Pollution Prevention Initiative (SWPPI) to the DEQ. The SWPPI contains action based on the WMP goals and objectives as well as s from the new NPDES permit requirements. Permittees are committed to undertake these actions.

## 2. PUBLIC EDUCATION AND PARTICIPATION SUB-COMMITTEE ACTIVITIES

The Public Education (PE) and Participation Sub-Committee held one meeting during this reporting period:

December 6, 2011

PE Membership included:

- **City of Burton – Paula Zelenko**
- **City of Clio – William Kovi**
- **City of Davison – Michael Hart**
- **City of Flint – Daugherty Johnson**
- Clayton Township – **Chris Gehringer**
- **Flint Township – Karyn Miller**
- Forest Township – Vacant
- **Mundy Township – Dave Guigear**
- Thetford Township – Eileen Kerr
- **Vienna Township – Randy Taylor**
- Village of Otisville – David Tatro

**Bolded** members are Phase II communities

The purpose of the PE committee is to implement the Public Education Plan (PEP) and assigned objectives in the action plan (Section 8 of the Watershed Management Plan). The PEP plan was revised to match the withdrawn MDEQ 2008-2013 guidance “Key Messages”. The actual implementation did not change. Implementation Table attached.

The City of Flint has signed a contract for Public Education, and similar to other 342 members, are now receiving the benefits of the SWAC’s public education efforts.

### **PUBLIC EDUCATION PLAN**

#### ***Permit Requirements***

The planning and implementation of public education is based on EPA-required elements, including:

1. Encourage public reporting of the presence of illicit discharges or improper disposal of materials into applicant’s separate storm water drainage system.
2. Educate public on the availability, location, and requirements of facilities for disposal or drop-off of household hazardous wastes, travel trailer sanitary wastes, chemicals, grass clippings, leaf litter, animal wastes, and motor vehicle fluids.
3. Educate public regarding acceptable application and disposal of pesticides and fertilizers.
4. Educate public concerning preferred cleaning materials and procedures for residential car washing.
5. Educate public concerning the ultimate discharge point and potential impacts from the separate storm water drainage system serving their place of residence.
6. Educate public about their responsibility and stewardship in their watershed.
7. Educate public concerning management of riparian lands to protect water quality.

## ***Partnerships***

The PE Sub-Committee through the Drain Commissioner's Office has coordinated, developed, and implemented several elements of the PEP. Work during this permit cycle included:

- Conducted riparian landowner workshops and distributed materials
- Program implementation with drain office
- Recruited volunteers and booth materials for the Genesee County Fair, Earth Day, the Crim and other events
- Planned, wrote, and designed two community updates
- Researched events suitable for Phase II education community outreach
- Coordinated and maintained public education tools (watershed models, etc.)
- Researched "Our Water" campaign public relations and communications strategy

*Flint River Watershed Coalition:* On behalf of the of the Phase II permittees, the Flint River Watershed Coalition (FRWC) was contracted by the GCDC to provide several services, including:

- *Speaker Materials and Presentations:* PowerPoint presentations on storm water education for adult audiences such as municipal officials, rotary clubs, neighborhood associations, lake associations, etc.
- Hosting *canoe trips* on the Flint River described in the Activities Update.
- *Global Rivers Environmental Education Network (GREEN):* described in the Activities Update. *NOTE although this program is part of Monitoring and Mapping, there are education components to it.*
- *Macroinvertebrate Monitoring Program:* described in the Activities Update. *NOTE although this program is part of Monitoring and Mapping, there are education components to it.*
- The FRWC was involved in the *Storm Drain Stenciling* program described in the Activities Update.

*Genesee Conservation District:* On behalf of the of the Phase II permittees, the GCD was contracted by the GCDC to provide several services, including:

- The GCD was involved in the *Storm Drain Stenciling* program described in the Activities Update.
- Operate and staff the "Our Water" Information *Display booth* at the County Fair and other events described in the Activities Update.
- The GCD continues to *educate children* on storm water issues using the Enviroscope and craft projects that reinforce storm water messages as described in the Activities Update.
- *Materials and Presentation for Riparian Land Owners:* GCD organized and presented at the Workshops described in the Activities Update.

## ***Activities Update***

*"Our Water" Campaign Webpage:* The development of an easy-to-use webpage with information about the seven storm water elements was identified as critical to the successful implementation of the "Our Water" Campaign. Since 2008, the Drain Commissioner's Office hosts and updates the [www.ClearGeneseeWater.org](http://www.ClearGeneseeWater.org) webpage as needed throughout the reporting period. The "Our Water" webpage has been online since July 2006. In addition [www.gcdcswm.com](http://www.gcdcswm.com), the Drain Commissioner's Office website also has content specifically for the NPDES Ph II permittees, including copies of this and past annual reports.

*"Our Water" Newsletter:* There has been a Community Update published and distributed in October 2012 and September 2013. Although both publications are available to the public, the purpose of the community updates is to keep the Communities updated with the changes to the permit program. Included in Appendix.

*Materials and Presentation for Riparian Land Owners:* An informational brochure was developed and served as a mail invite to a free workshop within the Middle Flint, Thread Creek Watershed and the Shiawassee Watershed. Literature was sent to 308 land owners within the Thread Creek Watershed (located in City of Flint, City of Burton, Grand Blanc Twp, City of Grand Blanc and Atlas Township) Literature was sent to 453 land owners within the Shiawassee River Watershed (located in Gaines Township, Argentine Township, Fenton Township, City of Fenton, City of Linden) the Residential Riparian landowners were invited to attend one of two Riparian Landowners Workshops were held on:

- August 26, 2013 at the Grand Blanc Township Library (14 Attendees)
- August 28, 2013 at the Camp Copniconic grounds. (7 Attendees)

Genesee Conservation District staff assisted in the coordination and presentations. Besides direct mailing, brochures are made available to each local Communities and at booth events. The brochure contained information on basic stream bank stabilization techniques. For a copy of the brochure mailer, see Appendix A. Working through the county since 2009, we have completed the direct mailings to the residential riparian landowners on the natural watercourses. Now this program has been implemented once within all the Watersheds, the program will be reevaluated for effectiveness to determine if it will be continued or replaced.

*Speaker Materials and Presentations:* An educational PowerPoint presentation was developed during the last permit cycle. The presentation contains appropriate branding for the “Our Water” Campaign. The presentation contains several modules that address various target audiences, including governmental and non-governmental entities. The modules of the presentation can easily be combined to customize a presentation for time or content within the required elements. GCDC continued its contract with the FRWC to use this modular presentation to educate groups such as municipal officials, rotary clubs, neighborhood associations, and lake associations. The following presentations were made during this permit cycle:

2012  
2012  
2012  
2012  
2013  
2013

*Brochures:* In the last permit cycle, an educational brochure was developed to provide information about EPA’s seven mandated elements of storm water education. 5,000 brochures were printed in November 2006, and an additional 10,000 were reprinted in 2010. All have been distributed and in September 2013, we are in the process of having another 10,000 printed. The brochures are given away actively at events (information booth, riparian landowner, canoe trips, stenciling, etc...), and many have been passively picked up by the public at local community Halls and other venues. Each municipality is periodically given brochures to distribute for public use and will report their activities under separate cover.

*Newsletter Articles:* In 2006 several newsletter articles were composed and compiled in a Word format, placed on CDs, and distributed to permittees and partners for their use. Sometimes permittees, partners, or other publications will print an article on a stormwater topic.

*Time of Sale Packets:* Information to help educate septic system owners on proper maintenance and practices has been compiled into a brochure with the help of Genesee County Health Department. Copies have been given to the Genesee County Health Department, interested communities and 800 were given to the realtors association to distribute to interested realtors wishing to provide this information to new property owners. (Not all communities have residents with septic systems.) A copy of the septic system booklet can be found in Appendix A.

*Promotional Giveaways:* GCDC purchased an additional 4000 promotional giveaways (premiums) in 2012 to further storm water awareness. Premiums purchased included water bottles and tote bags; a coloring book was also printed in-house to reach out to children. Premiums are given to the public at the information booth (see below). A person can win a premium if they answer a storm water-related question. This allows the booth staff/volunteers to engage the public in conversation and give them an educational brochure. In Sept 2013 an additional 4000 premiums were ordered for 2013-2014 events.

*Information Booth:* A display booth was developed in 2006 by CAER and the PE committee. The booth includes a table and a free-standing banner outlining the seven simple steps to clean water. Educational activities were also developed to help engage people at public events.

The booth is staffed by volunteer municipal officials and staff of the GCDC or the Conservation District. Volunteers are trained to conduct the educational activities, which include giving premiums to each person who tries to answer a question on water quality. This approach serves several purposes:



- To educate the elected official
- To allow the communities themselves to teach the public about storm water issues
- To actively involve participants in the learning process

During this reporting period, the booth was used at the events listed below.

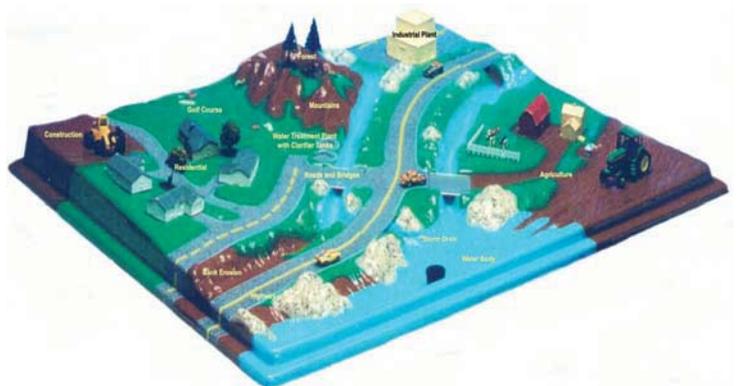
4/6/2013-4/7/2013	Home and Garden Show (Perani Arena)	539 educated
4/13/2013	Earth Day (U of M Flint Campus)	136 educated
6/29/2013	Flint Farmer's Market	136 educated
8/12/2013- 8/18/2013	Genesee County Fair	1173 educated
8/22/2013-8/24/2013	The Crim Expo (Riverfront Conference Center)	834 educated
9/22/2013	Grand Blanc Farmer's Market	71 educated
9/26/2013	Flint Farmer's Market	74 educated
9/28/2013	Applewood Harvest Festival	416 educated

\*Demographic Data by community in Appendix A

*Enviroscapes:* GCDC has four “Enviroscape” interactive models that demonstrate how pollutants can reach bodies of water. The Conservation District keeps one of the Enviroscape models for their own education program (see next section.)

The other three models are available to be checked out for use by teachers/educators and available for demonstrations at events.

GCDC contracted with the GCD to provide storm water education services to school-aged children on behalf of the Phase II permittees. During 2012-13 GCD reached over XXX students in the Phase II communities. In school presentations which may have included the Enviroscares or an arts and craft project focusing on aquatic habitat and its relation to the storm water system in Genesee County. Kids (approximately) ages 6-12 had an interaction period with staff that focused on the water cycle, watersheds and possible sources of



non point source pollution. They then had a hands on component that reiterated the concepts introduced in previous discussion.

Due to staff changes the GCD was unable to presentations throughout the entire reporting period. Following is a list of the presentations made in 2012-2013:

Table 2-1: Breakdown of GCCD Water Quality Presentations in Fiscal Year 2012

Month	Event	School aged children reached:	Parents/adults reached:
April 18, 2013	Classroom- Southwestern Academy 10 <sup>th</sup> -11 <sup>th</sup> grade	30	1
April 22, 2013	Classroom- Ripley Adult/ Alternative HS age 16-19	33	1
April, May, June 2013	4- weekly classes at the Boys and Girls Club	15-30/week	Unknown
June 2013	3- classes with teens at the Boys and Girls Club	20-30/week	N/A
	2- classes with student age 7-12 at U of M Flint	15-20/week	N/A
July 2013	4- weekly classes at the Boys and Girls Club	15-20/week	Unknown
	3- classes with student age 7-12 at U of M Flint	15-20/week	Unknown
	3 multi class: New Standard Sch 2 <sup>nd</sup> - 4 <sup>th</sup> grade		
	2 multi class: Montegue Elem. K - 5 <sup>th</sup> grade		
	1- classes age 8-12 at Camp Copneconic		
	1- classes age 5-15 at Crim Summer Camp		
	2- classes age 5-12 at Howard Estates		
August 2013	2- weekly classes at the Boys and Girls Club	15-20/week	Unknown
	3- classes with student age 7-12 at U of M Flint	15-20/week	Unknown
	1 multi class: New Standard Sch 2 <sup>nd</sup> - 4 <sup>th</sup> grade		
	1- classes age 8-12 at Camp Copneconic		
September 2013	3- classes age 5-15 at Crim Summer Camp		
	5- single classes at the Boys and Girls Club	20-30/week	Unknown
	3- classes with student age 7-12 at U of M Flint	15-20/week	Unknown
	3-multi class: Freeman Elem. 2 <sup>nd</sup> - 6 <sup>th</sup> grade		

GCDC also provides an opportunity for classrooms to check out the enviroscape for private class use.

- May 2013: Mt. Morris Middle School checked out the enviroscape
  - Used in 3 classes by 3 teachers. 3 adults and 162 students received a storm sewer lessons.

*Genesee County Conservation District (GCCD) Education Program:* GCDC contracted with the Genesee County Conservation District (GCCD) to provide storm water education services to school-aged children on behalf of the Phase II permittees. During 2012-13, GCCD reached over 900 participants in Genesee County communities. (see Appendix A for more detailed information).

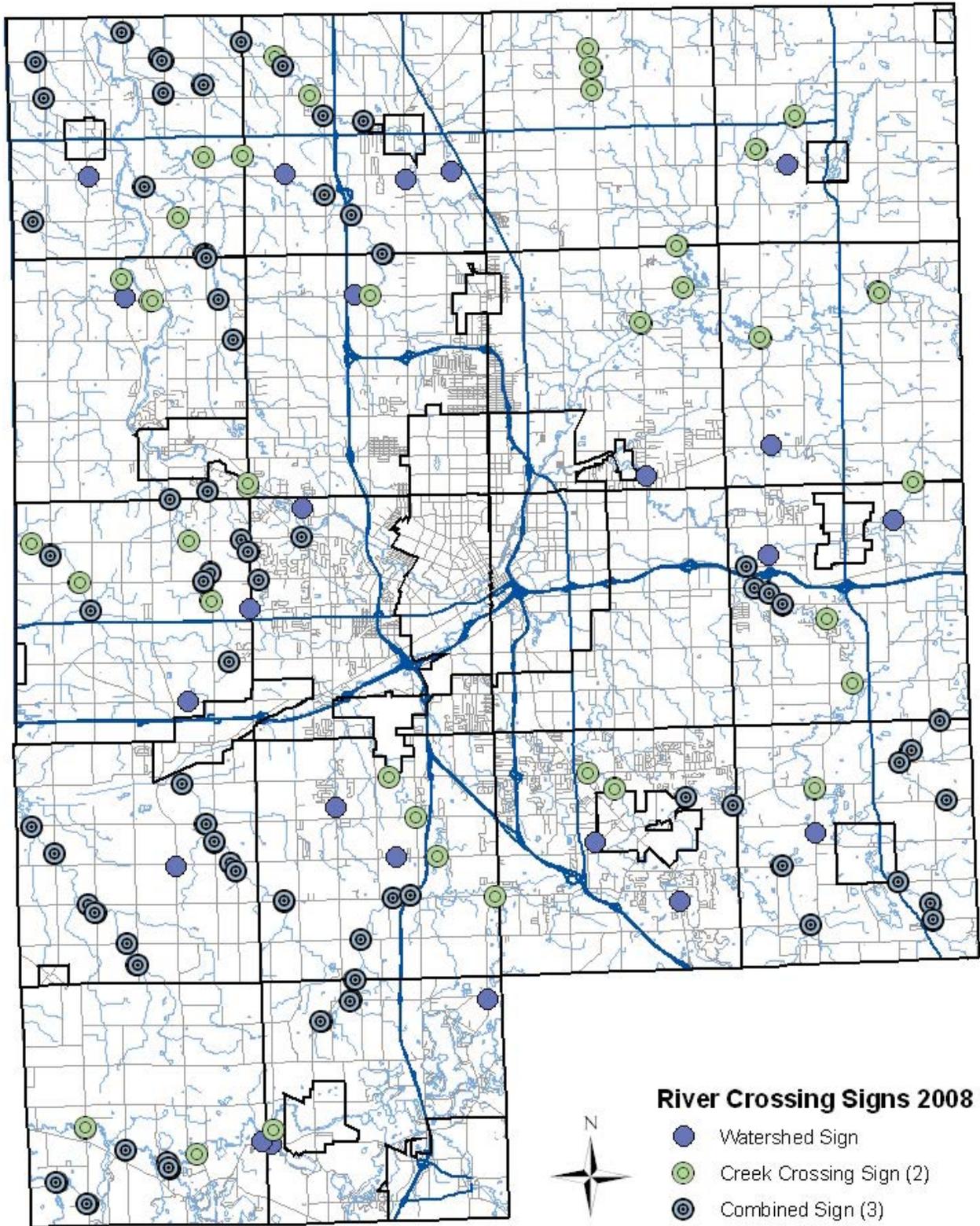
The Enviroscope model is the primary focus of the Conservation District’s education program. The program can be taught at any site, but since the Conservation District has been receiving requests for all age groups, they have made modifications to the program to accommodate various age ranges. Also this year Jeff Johnson has added stormwater pins for the kids.



*Watershed Signs:* In cooperation with the Genesee County Road Commission (GCRC), the PE committee began installing 24" x 30" watershed signs throughout the Shiawassee and Flint River Watersheds in late 2006 & 2008. Stream/river crossing identification signs have also been placed to increase public awareness. No new signs were added during this reporting period. Existing signs were maintained. 56 additional signs are ordered and being made to be installed by the Cities for 2013-14 fiscal year.



Figure 2-1: River Crossing Signs Placed as of October 2008



*Catch Basin Stenciling Program:* The GCDC has a catch basin stenciling program. The stencils say “No Dumping - Drains to River”. Since 2006, volunteers and County staff are able to paint approximately 500 stencils per year on Genesee County Roads, including City owned roads. A printed doorknob hanger is distributed to educate residents adjacent to the stenciling locations.

- As part of preventive maintenance, the Genesee County Drain Commissioner’s Surface Water Maintenance crew cleans and stencils hundreds of catch basins throughout the county each year. In 2012-2013, GCDC staff purchased an additional 1200 4” metal storm drain markers to be installed over the next several years. Storm drain markers are installed on catch basin grate covers located within road ditches and rear yards.
- Volunteer stenciling groups were organized by both FRWC and GCD. Also GCDC staff worked with individual stenciling volunteer groups by providing technical support, supplies and catch basin locations for stenciling. Below is a list of volunteer groups that participated.



GCD: Held 8 Storm drain stenciling events: See Appendix A

FRWC: Held 10 Storm drain stenciling events: See Appendix A

GCDC: Stenciled those storm inlets that were cleaned (weather permitting) approx 300  
 250 Storm drain markers have been placed over the last couple of years on Catch basins  
 Held 1 Storm drain stenciling events: Provided supplies and training to school.

*Canoe Trips on the Flint River.* Due to weather there were an additional 6 canoe trips scheduled and advertized this summer. Many were rescheduled and were held as shown below:

June 1, 2013	2 ½ hour paddle	Riverview Park to Flushing	7 attendees
June 15, 2013	3 hour paddle	Flushing to Montrose	14 attendees
July 6, 2013	2 ½ hour paddle	Irish Road To Mott Lake	20 attendees
July 20, 2013	2 ½ hour paddle	Montrose To Birch Run	6 attendees
Aug 3, 2013	2 hour paddle	Bray Road To Vietnam Veterans Park	13 attendees
Aug 17, 2013	2 hour paddle	University Ave to River Rd	11 attendees
Sept 7, 2013	2 ½ hour paddle	Mitson’s Landing to Flushing	8 attendees
Sept 21 2013	4+ hour paddle	Taymouth twp to Flushing	14 attendees



Also the FRWC had videoed a few participants reactions from being on the Flint River after the August paddle and posted the results on youtube.

<http://www.youtube.com/watch?v=iBbvFGOUgpM&feature=plcp>

*Local Watershed Maps:* The PE Sub-Committee has developed educational material for teachers. These materials are intended to meet the new curriculum requirements for grades K-12. The GCDC is working with GISD staff to distribute the watershed maps to the appropriate teachers. There is a Meeting planned to talk the GISD education coordinators in January 2014.

*Global Rivers Environmental Education Network (GREEN):* Project GREEN is a curriculum based, mentored program that seeks to engage young people as active citizens to improve conditions in their watersheds now and in the future. As part of this program, students receive classroom education on water quality and testing procedures and are trained to obtain samples at various sites within the watershed. Each year, schools participate in a summit, where the students are able to present their results. Several Genesee County and City of Flint Employees participated in this program as mentors. **Section 7** provides additional detail on Project GREEN. Participation from:

- Beecher Middle School
- Bendle High School
- Carman Ainsworth High School
- Clio Carter Middle School
- Davison Middle School
- Flushing Middle School
- Grand Blanc Middle School (East and West)
- Kearsley Armstrong Middle School
- Lakeville Middle School
- Linden Middle School
- Mt. Morris Jr. High School
- St John Vianney Catholic School
- Swartz Creek Middle School
- Westwood Heights Hamady High School

Many schools had multiple classes and there were over 22 Genesee County school teachers involved.

*Macroinvertebrate Monitoring Program:* Since 1999, the FRWC has executed a bi-annual Benthic-Monitoring Program that has been performed to meet MDEQ requirements. This program has expanded from 18 sites to 30 since its inception. (18 of the 30 are within Genesee County) This program is possible due to volunteers who live in the watershed who give up two days twice a year to be trained to collect and log samples. The data is used to categorize sites as “poor”, “fair”, “good” or “excellent” and provide a good

assessment of water quality. **Section 8** provides additional detail on Benthic-Monitoring Program and summarizes findings for each watershed.

*Public Education Plan Evaluation:* The evaluation plan will focus on monitoring outputs and outcomes of the education program. Currently, Tetra Tech and the GCDC staff are working to maintain records of outputs of the education program (number of people addressed at public events, number of presentations conducted, etc.) Tetra Tech, and the PE Sub-Committee are working on a robust evaluation plan to monitor outcomes (changes in behavior, changes in knowledge, etc.) in addition to outputs currently being monitored. Initial areas of success and areas needing improvement are summarized as follows.

Areas of success:

- Educational materials are constantly expanding and available
- Stenciling program delivered
- Brochures delivered
- Booth (for outside events) delivered
- Presentations are made to local groups on an on-going basis
- School age children are educated about storm water impacts on local waterways.
- Road Signs Installed and Maintained

Areas of need:

- Staffing constraints do not allow enough time dedicated solely to education efforts
- Have had contract issues with certain partners
- Implementation of Education efforts taking longer than expectations

There are many education efforts throughout Genesee County that promote the storm water message, but are not directly supported by this program. They may be supported by a local community or a nonprofit group. These efforts are listed below and included in Appendix A

- Walking path along river has free standing watershed signage, between Genesee county parks and City of Flushing Park.
- Park provides education on proper disposal of pet waste at the City of Flushing Park.
- The FRWC coordinates a river cleanup on the Flint River and its tributaries both within Genesee and Lapeer counties. The Cleanup was on April 27<sup>th</sup>. Volunteers removed debris/ trash along 10 different locations in Genesee County and 4 locations in Lapeer County on the Flint River and its Tributaries. Staff from the County and local municipalities including the Drain Office, Parks and Rec, City of Flushing, City of Flint and others assisted with the cleanup by provided staff or garbage removal.
- There is an Annual River cleanup on the first week of June along the Shiawassee River, organized by a Fenton council member.



- Friends of the Shiawassee in another watershed group that is focusing on the health of the Shiawassee River within Genesee County. There have been discussions with Drain Office Staff on expanding the Benthic monitoring program.
- Flint River Corridor Alliance is a community based organization of Government, non-profit and private sector stakeholders, focusing on the Flint River as it goes through the City of Flint. They held a Boats, Bikes & Bricks Triathlon on and around the Flint River.
- Household Hazardous Waste: The Our Water program supports this program by promoting it but this program is developed and managed by Genesee County Planning Commission, General Motors, UAW Local 599, Goodwill Industries, 5R Processors and Keep Genesee County Beautiful & several communities including City of Flint participate and/or support this program both financially and with staff. In the spring and fall there are HHW and electronic waste collections. City of Flint hosts a site at their Water service center. A second site moves to a new location around the County. This is either hosted at a school or municipal property. In the last couple of years this program has been expanded to include electronic waste. The Goodwill Industries will take electronic waste.
  - October 13, 2012: Carter Middle School, Flint Water Service Center, Goodwill Industries, Averill Ave
  - May 18, 2013: Grand Blanc HS, Flint Water Service Center, Goodwill Industries, Averill Ave
  - Oct 26, 2013: Davison HS, Flint Water Service Center, Goodwill Industries, Averill Ave

## **PUBLIC PARTICIPATION PLAN**

The PPP was implemented under previous years' annual reports. No PPP meetings were held within this reporting period. They are done on an as-needed basis and typically run concurrent with the updating of WMPs and if there is a significant event where public input is appropriate.

*Report to Municipal Officials:* Local appointed and elected officials are critical players in adopting the WMPs and allocating resources toward their implementation. Obtaining buy-in and providing education to this group helps to ensure the success of implementing the WMP. Local appointed and elected officials acknowledge their accountability to their constituents and embrace their role in shaping the future vision of the WMPs. As public officials, local government leaders value the advice, concerns, and issues that community residents see in terms of the watershed condition past, present and future.

Municipal officials are given newsletters as needed that provide updates on the status of storm water and watershed planning efforts. Each municipality is given 25-50 newsletters to be passed out to elected officials and planning boards. Municipalities are also given brochures and information packets to dispense to the public.

### 3. CONSTRUCTION STANDARDS AND PRACTICES SUB-COMMITTEE ACTIVITIES

The Construction Standards and Practices (CSP) Sub-Committee oversees new construction standards and post construction management practices for Genesee County, including storm water Best Management Practices (BMPs). This Sub-Committee also updates ordinances to ensure compliance with Environmental Protection Agency (EPA) requirements. In this reporting period, the CSP Sub-Committee held meetings on the following dates:

- February 19, 2013

CSP Membership included:

- **City of Flushing – Dennis Bow**
- **City of Grand Blanc – Matt Wurtz**
- **City of Linden – Scott Fairbanks**
- Atlas Township – Shirley Jones
- **Fenton Township – Bonnie Mathis**
- **Genesee Township – Steven Fuhr**
- Grand Blanc Township – Mikki Hoffman
- Montrose Township – Mark Emmendorfer
- Richfield Township – Joe Mador
- Village of Goodrich –

**Bolded** members are Phase II communities

The focus of these meeting was to discuss what has happened to date on the Storm water ordinance and BMP Manual.

#### **STORM WATER ORDINANCE**

The CSP Sub-Committee has been working to establish an approach for developing a Storm Water Ordinance for communities to adopt within Genesee County. After reviewing State requirements and sample ordinances from other counties, Kent County's ordinance was selected as a model. The CSP Sub-Committee reviewed and tailored the ordinance, and has been submitted to the state for their approval. All communities were encouraged to provide input to the draft ordinance. The final ordinance and Standards and Design Manual were submitted on September 30, 2010, after meeting with the DEQ and negotiating their contents.

The CSP Sub-Committee is setting the minimum standards for communities to adopt. The standards are a combination of state requirements and GCDC flood control requirements. The local governments may elect to adopt stricter standards, but must use the Sub-Committee's Storm Water Ordinance at a minimum. They may also choose to modify it, although the ordinance was written to be simple to administer, easily understood, and focused on improving water quality. Each community will have to adopt an ordinance, whether they choose the Sub-Committee's or a more stringent version.

Currently, the only enforcement powers the County has are those given to them from the State (Public Acts that govern SESC, Septic, Road Commissions and the Drain Code). The County cannot pass an ordinance that would affect private property, but will enact policy to govern County-owned property. Individual communities have their own police power to enforce the ordinance. They also have the right to extend those powers to another entity to enforce the ordinance on their behalf.

When the ordinances are adopted, there will be a fundamental change in how development occurs. Currently, the Genesee County Drain Commissioner (GCDC) Surface Water Management (SWM) reviews approximately 70 percent of the site plans either because a county drain is directly involved and must be

reviewed, or the local Community has required a review by the Drain Office and it is done as a courtesy to the Community. GCDC-SWM will review to their standards any plans submitted to their office. With the implementation of a water quality ordinance, all site plans within a community that has a storm water ordinance will be reviewed to those standards either by the Community or their representative. As always, any site plans submitted to the GCDC-SWM will be reviewed to that office's standards.

Items covered by the storm water ordinance are:

- Statutory authority and title
- General provisions
- Storm water permits and permit review procedure
- Storm water system
- Drainage plan
- Construction site runoff controls
- Floodplain and other standards
- Post construction soil erosion
- Applicability and exemptions
- Prohibited discharges (oil and other pollutants from parking lots, etc.)
- Inspection, monitoring, reporting, and record keeping
- Enforcement
- Storm water easements and maintenance agreements (post construction maintenance)
- Performance and design standards
- Storm water map
- Financial guarantee
- Terms and conditions of permits

It should be noted that the standards currently in place deal with water quantity. The new standards will also deal with water quality, and will expand both the community's and GCDC's authority as well as specify development requirements. The Storm Water Ordinance references a BMP Manual (see text below). By keeping the BMP Manual separate, and not including design guidance in the ordinance, changes can be made to the BMP Manual without revising the whole ordinance.

## **BMP MANUAL**

Currently, Genesee County Water & Waste is the County agent (City of Burton is the Municipal Agent in their community) on behalf of Part 91 of Public Act 451 and has construction BMPs for Soil Erosion and Sedimentation Control (SESC). Individual communities may or may not have ordinances that regulate construction and post construction. The CSP Sub-Committee is developing a BMP Manual, which will represent minimum standards for **post construction** BMPs for water quantity and quality. These BMPs will not be limited to SESC and are not intended to supersede or contradict construction SESC (Part 91 of Public Act 451).

Communities will be able to either adopt the CSP Sub-Committee's BMP Manual or create their own. The Sub-Committee is also working to address long-term BMP operation, maintenance, and schedule issues.

Since the ordinance template and BMP manual are draft and in the process of being adopted, they are not included in this report. They have been previously submitted to the MDEQ as part of the revised SWPPI submittal.

## 4. MONITORING AND MAPPING SUB-COMMITTEE ACTIVITIES

The Monitoring and Mapping (M&M) Sub-Committee met only once during this reporting period:

February 11, 2013

M&M Membership included:

- **City of Fenton – Dan Czarnecki**
  - City of Montrose – Everette Persall
  - **City of Mt. Morris – Jake LaFurgey**
  - **City of Swartz Creek – Tom Svrcek**
  - Argentine Township – Bob Cole
  - **Davison Township – Kurt Soper**
  - **Flushing Township – Terry Peck**
  - Gaines Township – Paul Fortino
  - **Mt. Morris Township – Gerald Deloney**
  - Village of Gaines – Thomas Keech
  - Village of Lennon – Larry Widigan
- Bolded** members are Phase II communities

The M&M Sub-Committee oversees organization and implementation of watershed monitoring, field-sampling protocols, and mapping guidelines. As part of their responsibilities, the M&M Work Group oversees several water quality monitoring programs as well as the Illicit Discharge Elimination Plan (IDEP) Program. In addition, they oversee the Hot-spot Water Quality Monitoring Program, which goes beyond IDEP by focusing on known problem areas, such as Blue Bell Beach that is frequently closed due to high E-coli counts.

The following sections of this report provide results for programs the M&M Sub-Committee oversees:

- Section 6 319 Nonpoint Source Grant Projects
- Section 7 Project GREEN (and its educational aspects discussed in Section 2)
- Section 8 Macroinvertebrate Study
- Section 9 IDEP Program
- Section 10 New Storm Water Point Source Discharges

## 5. GOOD HOUSEKEEPING

Good Housekeeping is a required and essential part of an effective storm water pollution protection program. Periodic training in Stormwater Good Housekeeping practices is required for all applicable maintenance staff employed in nested municipalities or school districts. Affected personnel must be trained at least once over the course of the permit cycle. On April 18, 2013, GCDC and Tetra Tech held two training sessions on Stormwater Good Housekeeping practices. Attendees could either attend the morning session or the afternoon session. These sessions explained the importance of preventing contamination from storm water run-off and ways employees can be involved at their facility. Attendance at the sessions met the permit requirements for employee training. In addition to covering the topics below by PowerPoint presentation, a video entitled “Storm Warning: Stormwater Pollution Prevention” by ExCal Visual LLP was presented to reiterate the major topics of discussion.

### Maintenance Staff Training Topics

- Spill prevention
- Spill Control and Response
- Vehicle and Equipment Maintenance
- Vehicle and Equipment Washing
- Material Storage
- Waste Management
- Facility Maintenance
- Landscape and Grounds Maintenance
- Illicit Discharge Detection

A copy of the Power Point presentation may be obtained upon request. A list of attendees is available on the [www.gcdcswm.com](http://www.gcdcswm.com) website under Our water then training.

In addition, individualized training in preparation for an MDEQ audit was offered to each school district nested under the GCDC general permit. The training focused on establishing and strengthening the Good Housekeeping practices listed above at school facilities. Below is a list of nested schools that chose to participate. One-on-one training for each school was provided by Tetra Tech staff.

### Schools Participating in On-Site Training

- Atherton
- Bendle
- Bentley
- Carman-Ainsworth
- Flushing
- Genesee
- Genesee Intermediate School District (GISD)
- Grand Blanc
- Lake Fenton
- Swartz Creek

The MDEQ SWPPP checklist used as a guideline for the audits is available upon request.

## 6. 319 NONPOINT SOURCE GRANT PROJECTS

In 1987, Congress amended the Clean Water Act to establish the Section 319 Nonpoint Source Management Program because it recognized the need for greater federal leadership to help focus State and local nonpoint source efforts. Under Section 319, State, Territories, and Indian Tribes receive grant money which support a wide variety of activities including technical assistance, financial assistance, education, training, technology transfer, demonstration projects, and monitoring to assess the success of specific nonpoint source implementation projects.

There are three 319-grant projects within Genesee County. All are within the Middle Flint Watershed: the Swartz Creek Watershed Project, Gilkey Creek Watershed Project, and the Kearsley Creek Watershed Project. CAER and FRWC developed the Swartz Creek and Gilkey Creek WMPs and GCDC developed the Kearsley Creek WMP to control nonpoint sources of pollution. Projects may include implementing structural BMPs, non-structural BMPs, and information and education activities to eliminate nonpoint source pollution.

### **SWARTZ CREEK WATERSHED PROJECT**

The Swartz Creek Watershed Plan has been granted 319 status by the MDEQ.

No activity occurred during the reporting period.

### **KEARSLEY CREEK WATERSHED PROJECT**

The Kearsley Creek Watershed Plan has been granted 319 status by the MDEQ.

No activity occurred during the reporting period.

### **GILKEY CREEK**

The Gilkey Creek Watershed Plan has been granted 319 status by the MDEQ. It outlines designated and desired uses for the watershed, historic and present conditions, watershed goals, best management practices recommendations, and an education and evaluation plan.

No activity occurred during the reporting period.

## 7. GENESEE GREEN

Project Green, now referred to as Genesee GREEN, has grown in Genesee County from approximately 100 students in 1990 to in excess of 3,600 in 2013. The ideal is that all of the students visit specific sampling sites along the Flint River Watershed within the same week to conduct a Water Quality Index (WQI) analysis. The data gives a snapshot of that moment in time. As each year is added, comparisons can be made about the quality of the water running through the watershed environment over time. Comparisons can also be drawn between geographical sites.

The Global Rivers Environmental Education Network (GREEN) is a curriculum-based, mentored program that seeks to engage young people as active citizens to improve conditions in their watersheds. GREEN empowers young people to learn more about the watersheds they live in and use their findings to create lasting solutions to water quality problems. GREEN has been in existence for twenty years in Genesee County under the direction of the Genesee County Intermediate School District (GISD).

In 2003, the Flint River Watershed Coalition (FRWC) was approached by Earth Force Green and General Motors to be the coordinator of GREEN in the Flint River Watershed. FRWC was identified as the primary organization that could help improve program participation and effectiveness because of its focus on water quality monitoring and environmental education. The FRWC Board of Directors has endorsed this vision and is providing administrative control.

As part of the program, students from local schools learn about water quality and testing procedures by visiting various sites to take water samples and by analyzing the collected data. For this reporting period See Attachment A

Schools are also encouraged to participate in a summit, where students are able to present their findings. On May 17, 2013, a student summit was held at Kettering University where students received additional education and presented collected data.



Each site visited is categorized as excellent, good, fair, poor, or very poor based on the National Sanitation Foundation (NSF) WQI analysis. To determine the WQI, nine tests are performed. Parameters tested include dissolved oxygen, fecal coliform, pH, biochemical oxygen demand (5-day), temperature, total phosphate, nitrates, turbidity, and total solids. After completing the nine tests, results are recorded and transferred to a weighting curve chart where a numerical value is obtained as shown in Table 7-1. For each test, the numerical value or Q-value between 0 and 10 is multiplied by a "weighting factor." For example, dissolved oxygen has a relatively high weighting factor (0.17) and therefore is more significant in determining water quality than the other tests. The nine resulting values are then added together to arrive at an overall WQI. If all nine water quality tests are not available, then the total of those samples available is multiplied by the inverse their total weighting factors.

Table 7-1: Water Quality Index Calculation Chart

Test Parameter	Q-Value	Weighting Factor	Total
1. Dissolved oxygen	$Q_{DO}$	0.17	$0.17 \times Q_{DO}$
2. Fecal coliform	$Q_{FC}$	0.16	$0.16 \times Q_{FC}$
3. pH	$Q_{pH}$	0.11	$0.11 \times Q_{pH}$
4. Biochemical oxygen demand	$Q_{BOD}$	0.11	$0.11 \times Q_{BOD}$
5. Temperature	$Q_T$	0.11	$0.11 \times Q_T$
6. Total phosphate	$Q_P$	0.10	$0.10 \times Q_P$
7. Nitrates	$Q_N$	0.10	$0.10 \times Q_N$
8. Turbidity	$Q_{Turb}$	0.08	$0.08 \times Q_{Turb}$
9. Total solids	$Q_{TS}$	0.07	$0.07 \times Q_{TS}$
Overall WQI			Sum ( $Q_x$ )

The WQI ranges are categorized as follows: 90-100 Excellent, 70- 90 Good, 50- 70 Fair (medium), 25- 50 Poor (bad), 0- 25 Very Poor.

It should be noted that there was no discernible correlation between the Genesee GREEN Results and the Benthic Monitoring Results. Since the benthic monitoring results reflect the macroinvertebrates' long term exposure to their environment the results are assumed to be more reflective of the overall health of the water body compared to the one-time sampling associated with Genesee GREEN.

[Reference: *Mitchell, Mark K. and William B. Sharp, 2000. Field manual for Water Quality Monitoring: An environmental education program for schools, (twelfth edition), Kendall/Hunt Publishing Company, Dubuque, Iowa*]

Table 7-2 and Figures 7-1 to 7-4 summarize Genesee Green results for the Lower, Middle, and Upper Flint River and Shiawassee River Watersheds. Sites categorized as “poor” are identified in the table with red font. Two sites out of 43 sites were categorized as either poor or very poor. In 2012-2013, 13 sites were visited and two were added in 2013.

Table 7-2: Genesee Green Results

ID No	Location	Sampled Years	Water Quality Index (WQI)
<b><i>Lower Flint River Watershed</i></b>			
1L	Armstrong Creek at Dodge Road	2006-07, 2011-2012	Good
2L	Craven and Benson Drain off Mt Morris Road	2007	Fair
3L	Mill Street Bridge	1993, 1998-2004, 2006-2009	Good
4L	North corner of Flushing and Linden Roads	1991, 1994, 1998-2004, 2007, 2008, 2010	Good*
5L	Pirnie Creek at Beecher Road	2006, 2008	Good*
6L	Southeast corner of M-57 and Seymour Road	2001-2011	Good
7L	Clio Bike Path at Jennings Road	2007, 2009, 2011, 2012	Good*
8L	Flushing Park at Pavilion #2	2001-02, 2005	Good
9L	Mott Golf Course Bridge at hole #6	1993, 1998-2000, 2010-2011	Good
10L	Pine Run at Clio Park	2006, 2009, 2012-13	Good
11L	North of Flushing at Mt. Morris Bridge	1998	Good
12L	Seymour Rd. North of Farrand Rd.	2009	Good
<b><i>Middle Flint River Watershed</i></b>			
1M	Swartz Creek at Hill Road Bridge	2005-06, 2009-2010, 2012-13	Good
2M	Behind McDonalds at Dort and Stewart	2003	Fair
3M	Bridge between UM-Flint and Autoworld	1993-94, 1998, 2001	Fair
4M	Crampton Drain at Kearsley Armstrong	2006, 2008-2011	Good
5M	Downstream from For-Mar Nature Center	2005, 2010	Good*
6M	Gilkey Creek behind Central High School	1991-92, 1994, 2001-2002, 2009	Poor**
7M	Immediately west of the Farmer's Market	2004-06 2012-13	Good*
8M	Pierson Drain at Atherton HS	2007	Good
9M	Swartz Creek at Happy Hollow	1993-94, 2002-2003. 2010-2012	Fair
10M	Swartz Creek at Swartz Creek M.S.	2005-06	Fair
11M	Swartz Creek at Van Slyke Road	2002, 2012	Good*
12M	Swartz Creek Golf Course	2001-02	Good
13M	Thread Creek at McCandlish Road	2007-2008	Fair
14M	Thread Creek at Rust Park in Grand Blanc	2005-2006 2012	Good
15M	Timberwolf Turnout off Irish Road	2005	Fair
16M	Kearsley Creek at Goodrich Commons	2004	Good
17M	Kearsley Creek near Goodrich High School	2004-05	Good
18M	Flint River West of Johnson AAA School	2006-2010	Good
19M	Thread Creek at Bristol Rd.	2008-2013	Fair
20M	Upstream of For-Mar Nature Center	2004, 2006-2009, 2011	Good*
21M	Swartz Creek at Swartz Creek MS	2012	Good
22M	Black Creek- Abernathy Park	2013	Fair
23M	Frost Gardens	2012-13	Good
<b><i>Upper Flint River Watershed</i></b>			
1U	Bear Swamp at Genesee Road	2007	Poor
2U	Oak Road North of Stanley	2001	Good
3U	Bluegill Boat Ramp on Mott Lake	2002, 2005	Good
4U	M-15 north of Stanley Road	1997-98, 2002	Good
5U	Holloway Reservoir at Mt. Morris Bridge	1997, 2001, 2003-05	Good
6U	Mott Farm between house and barn	1993-94, 1998, 2001, 2004	Good
7U	Richfield Park	2001, 2003-2010	Fair

ID No	Location	Sampled Years	Water Quality Index (WQI)
<i>Shiawassee River Watershed</i>			
1S	Platform south of Main Street Bridge in Fenton	1992, 1996, 1998-2004	Fair
2S	Linden Mill Pond (Shiawassee River)	2007, 2010	Good
3S	Fenton Mill Pond (Shiawassee River)	2009, 2012	Very Poor*
4S	Linden Middle School Grounds	2012-13	Good
<i>Unknown Watershed</i>			
1UNK	Unlisted Location	2009-2012	Good

\*Improved since previous sampling event

Figure 7-1: Genesee Green Results for the Lower Flint River Watershed

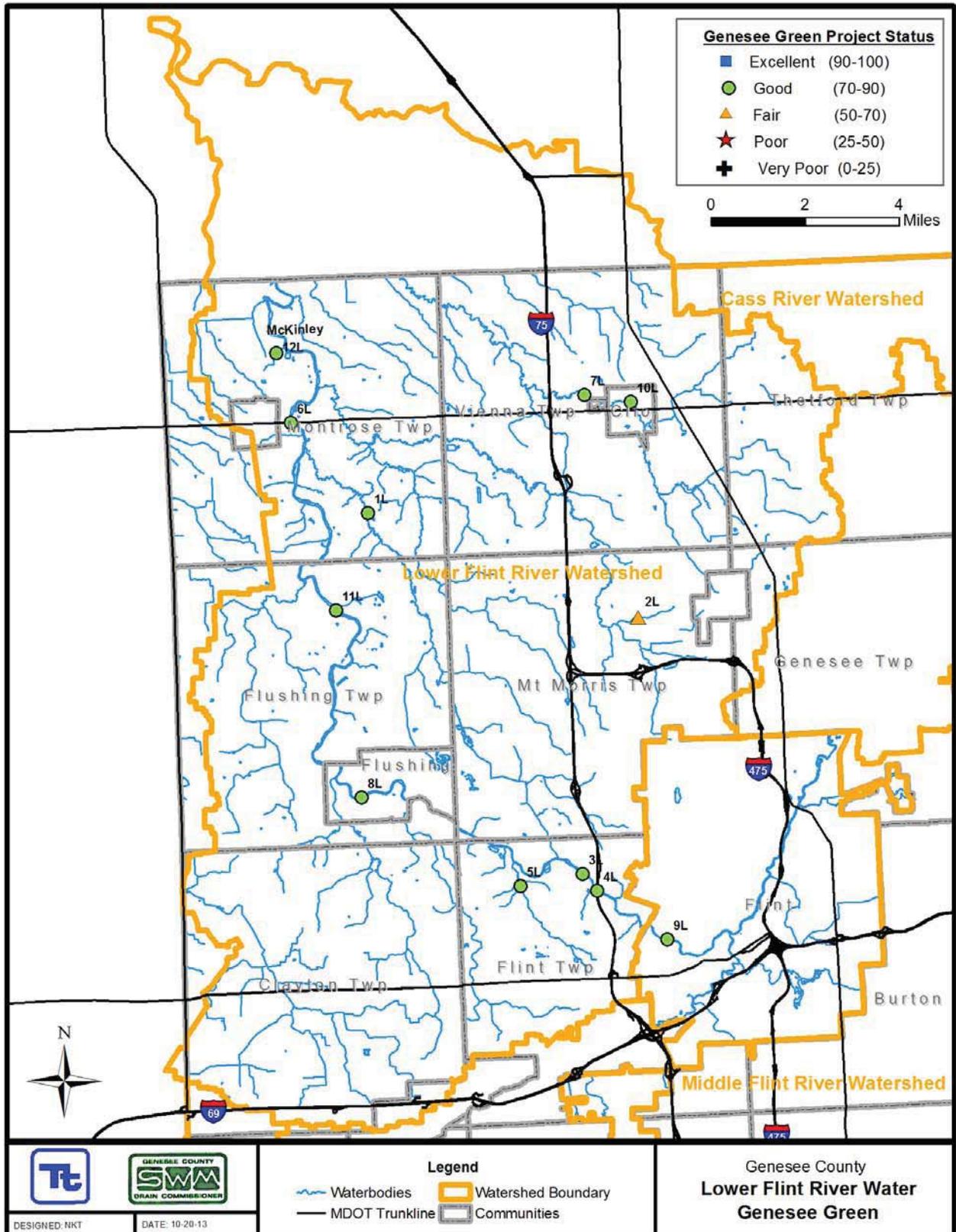


Figure 7-2: Genesee Green Results for the Middle Flint River Watershed

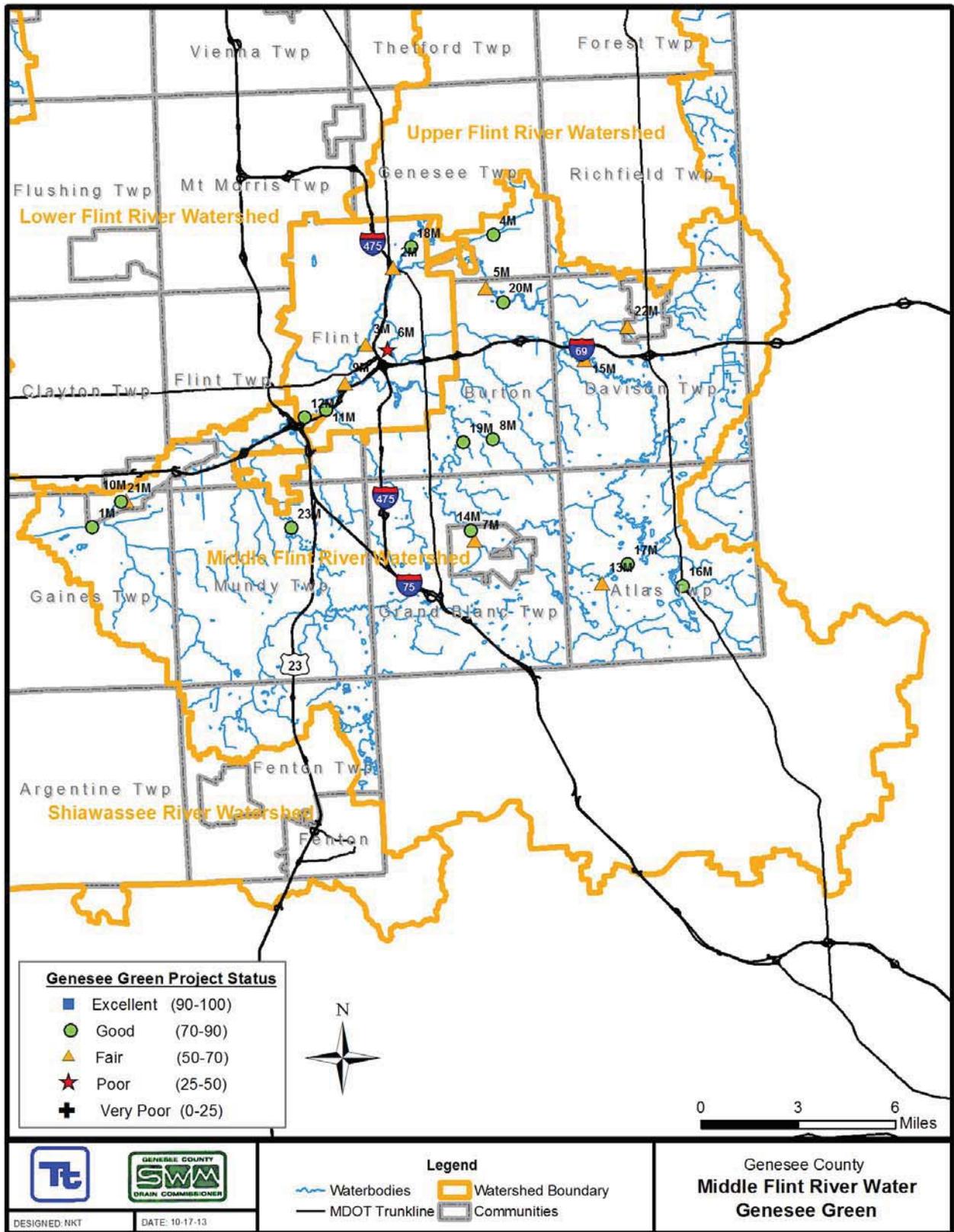


Figure 7-3: Genesee Green Results for the Upper Flint River Watershed

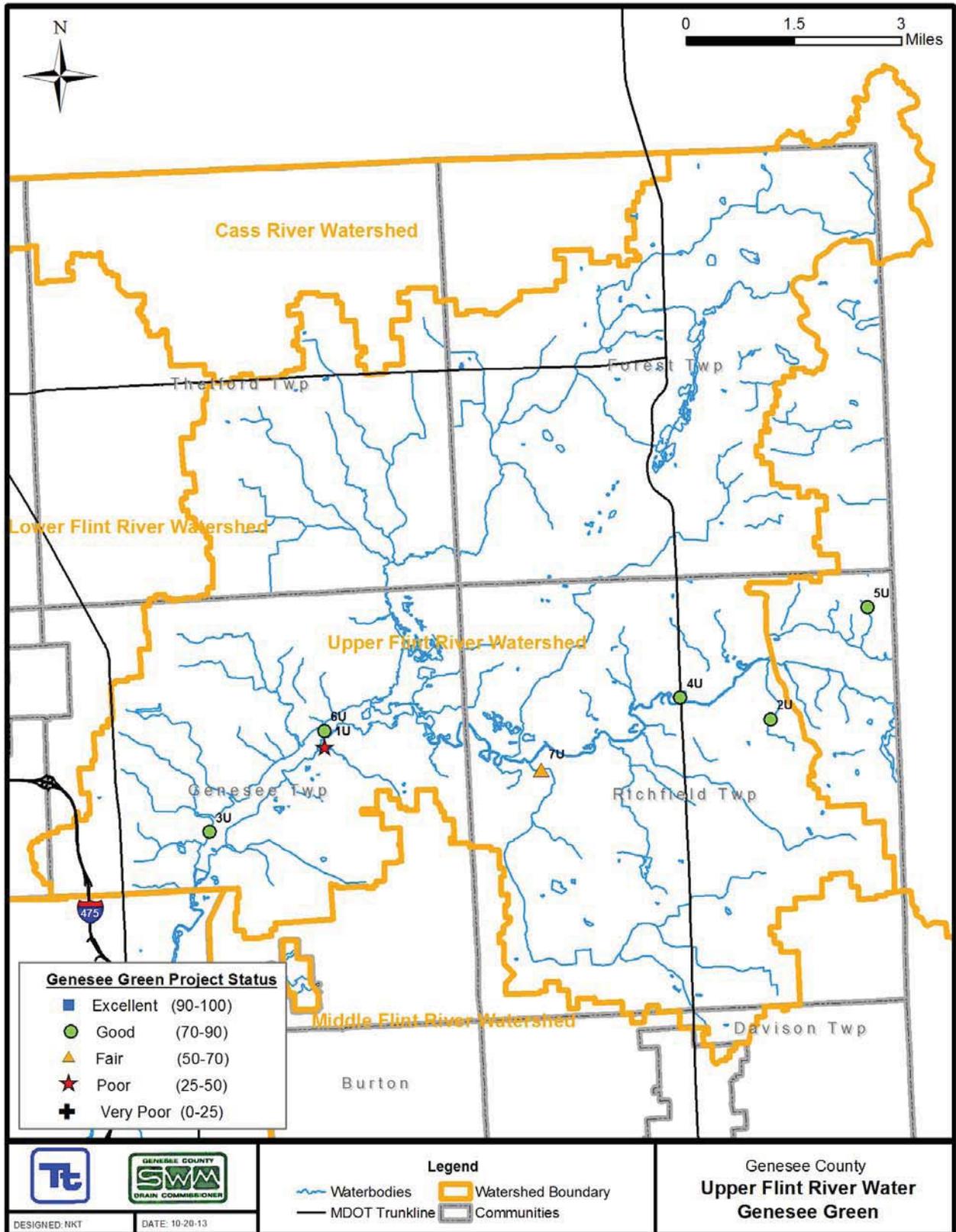
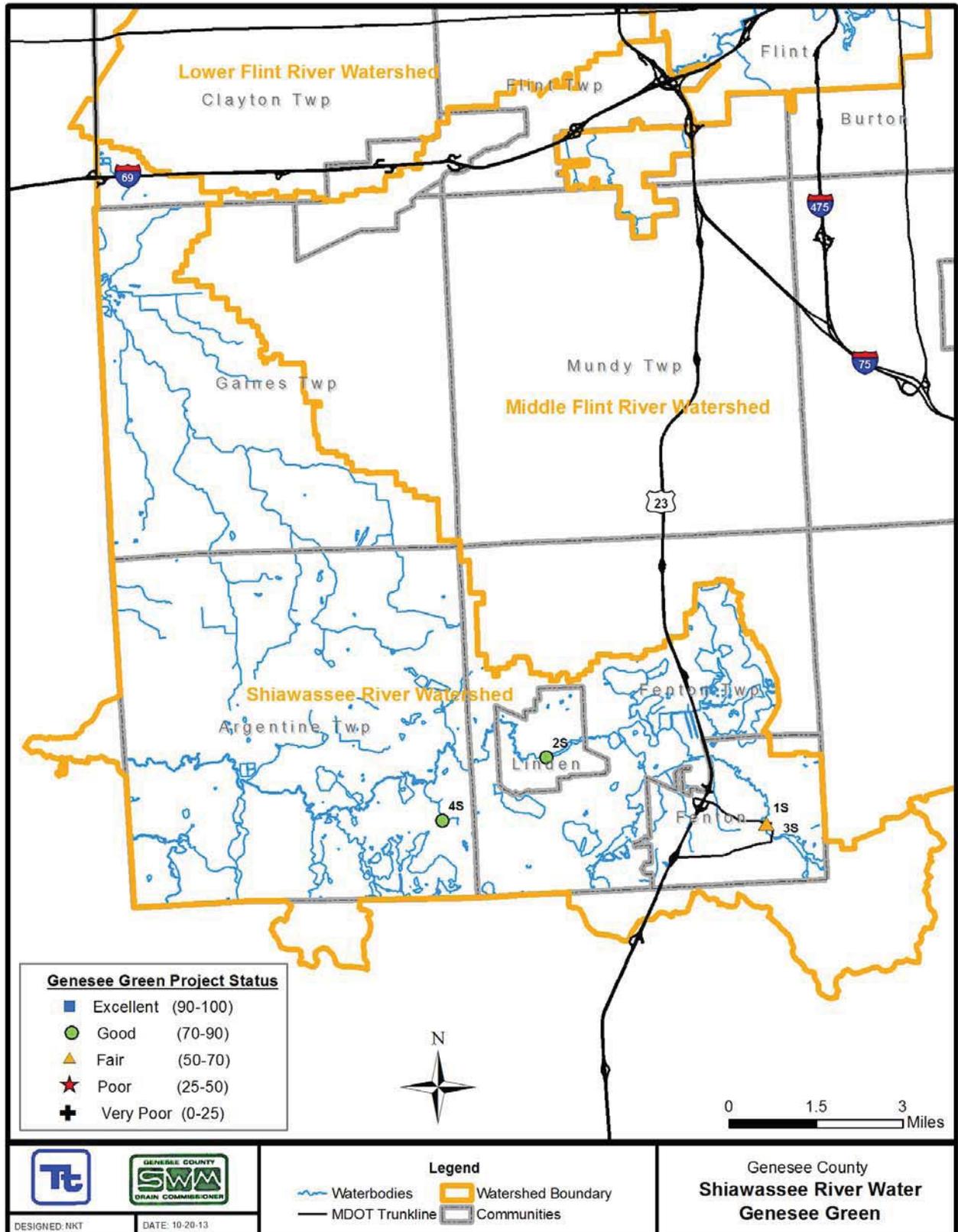


Figure 7-4: Genesee Green Results for the Shiawassee River Watershed



## 8. MACROINVERTEBRATE STUDY

Since 1999, the Flint River Watershed Coalition (FRWC) has executed a bi-annual Benthic Monitoring Program that has been performed to meet MDEQ requirements. This program has expanded from 18 to 30 sites since its inception.

This program is successful because volunteers who live in the watershed contribute two days, twice a year for training, sample collection and species identification. The scores for each site visit are averaged over the sample years and categorized as either Excellent (>48), Good (34 – 48), Fair (19 – 33.9), and Poor (<19). These scores not only give an indication of macroinvertebrate community health but also provide a good Water Quality Index value. Table 8-1 and Figures 8-1, 8-2, 8-3, and 8-4 summarize macroinvertebrate sampling results for the Lower, Middle, and Upper Flint River Watersheds and the Shiawassee River Watershed. Sites categorized as “poor” are identified in Table 8-1 with red font.

Two of the study sites received a Water Quality Index rating of “Excellent” while one site of the 21 sites studied showed a decline in water quality from “Fair” to “Poor” (red font).

Table 8-1: Macroinvertebrate Study Results

ID_No	Location	Sampled Years	Water Quality Index (WQI)	Water Quality Changes Last Period/Current Period
<b><i>Lower Flint River Watershed</i></b>				
A-L	Pine Run Headwaters	1999-2000, 2003-2013	Fair	No Change
B-L	Misteguay Creek Headwaters	1999-2000, 2004-2013	Good	Fair/Good
C-L	Flint River, Flushing	1999-2013	Good	Excellent/Good
D-L	Brent Run	1999-2003, 2005-2013	Good	Fair/Good
E-L	Brent Run Headwaters	1999-2000, 2004-2013	Fair	Poor/Fair
<b><i>Middle Flint River Watershed</i></b>				
A-M	Swartz Creek	1999-2013	Good	No Change
B-M	Thread Creek	1999-2013	Fair	No Change
C-M	Thread Creek Headwaters	1999-2013	Good	Fair/Good
D-M	Kearsley Creek	1999, 2001-2013	Good	No Change
E-M	Kearsley Creek Headwaters	1999-2003, 2005, 2007-2013	Good	Fair/Good
F-M	Gilkey Creek	1999-2013	Poor	No Change
G-M	Gilkey Creek Headwaters	2002-2013	Poor	Fair/Poor
H-M	Gilkey Creek Restoration (Applewood)	2009-2013	Fair	New Site
I-M	Gilkey Creek Restoration (Kearsley Park)	2009-2013	Good	Fair/Good
J-M	Swartz Creek Headwaters	2007-2013	Good	No Change
<b><i>Upper Flint River Watershed</i></b>				
A-U	Butternut Creek Headwaters	2000-2013	Good	Excellent/Good
B-U	Flint River, Richfield	2000-2003	Replaced	Replaced with Clark Drain Site
C-U	Clark Drain, Richfield Park	2009-2013	Good	No Change
D-U	Butternut Creek	1999-2013	Good	Fair/Good
<b><i>Shiawassee River Watershed</i></b>				
A-S	Argentine	2008-2013	Good	Fair/Good
B-S	Linden	2008-2013	Good	No Change

It should be noted that there was no discernible correlation between the Project GREEN Results (Section 7) and the Benthic Monitoring results. Since the Benthic Monitoring results reflect the macroinvertebrates' long-term exposure to their environment, the results are assumed to be more reflective of the overall health of the water body compared to the one-time sampling associated with Project GREEN (which is more focused on inspiring youth).

Figure 8-1: Macroinvertebrate Study Results for the Lower Flint River Watershed

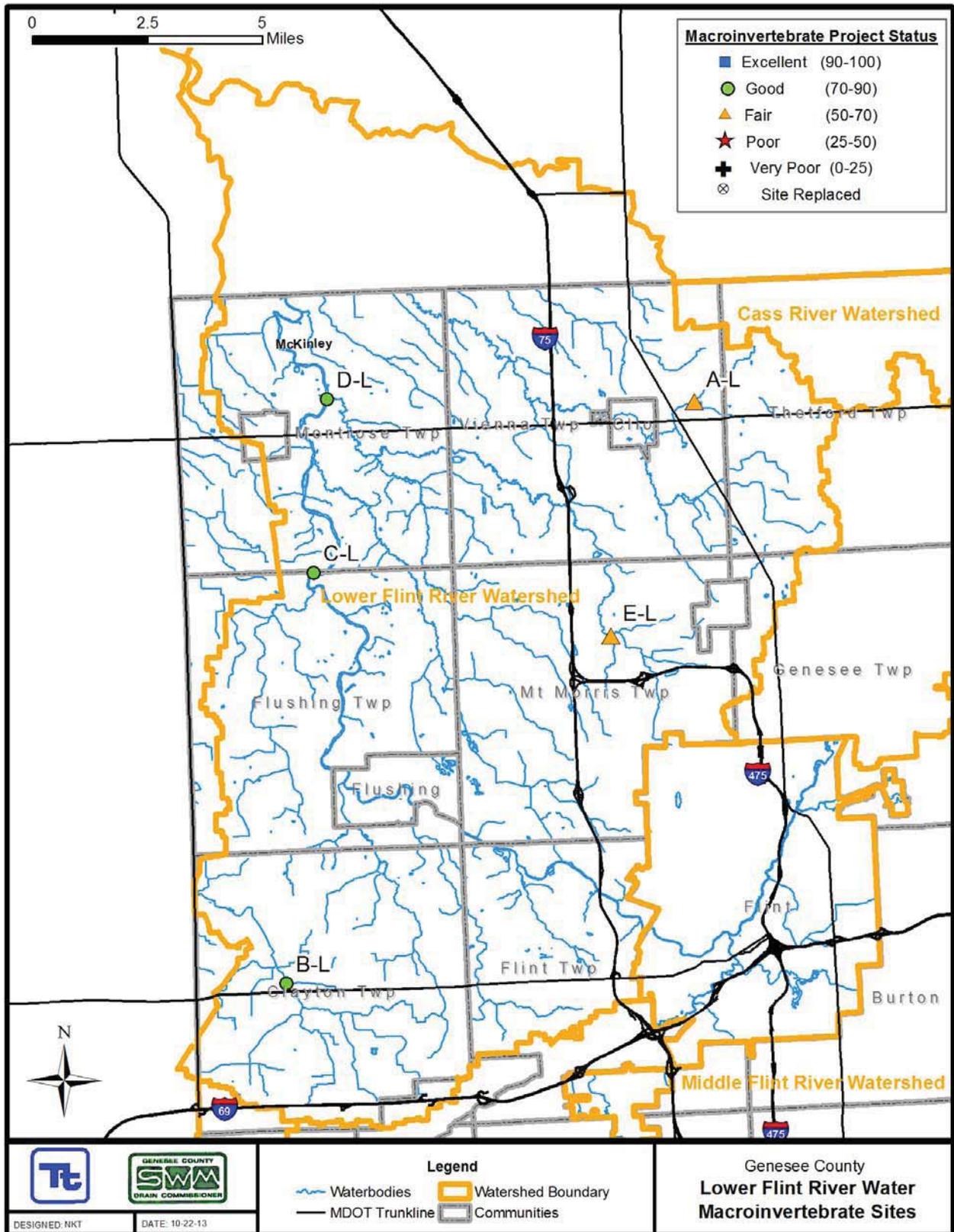


Figure 8-2: Macroinvertebrate Study Results for the Middle Flint River Watershed

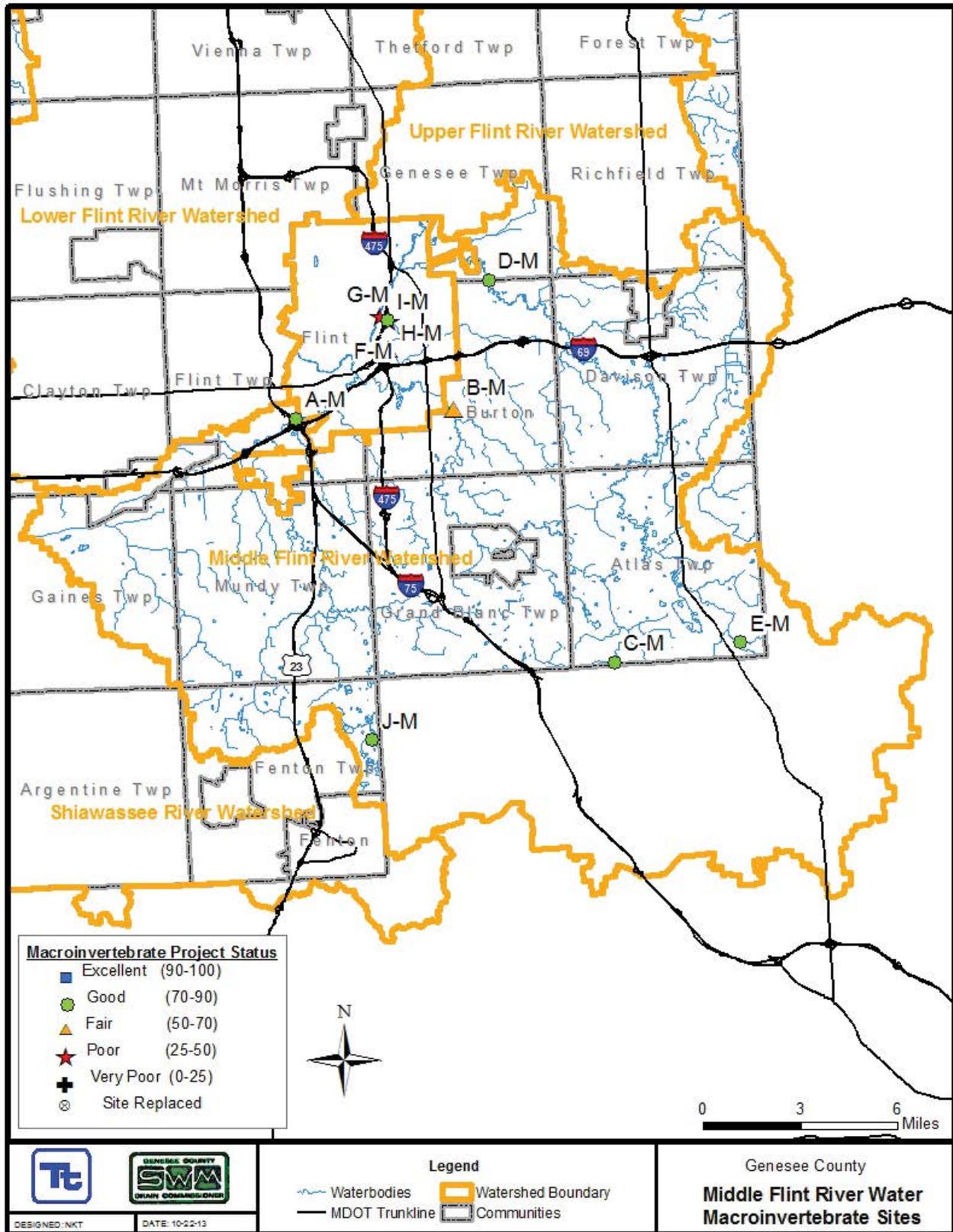


Figure 8-3: Macroinvertebrate Study Results for the Upper Flint River Watershed

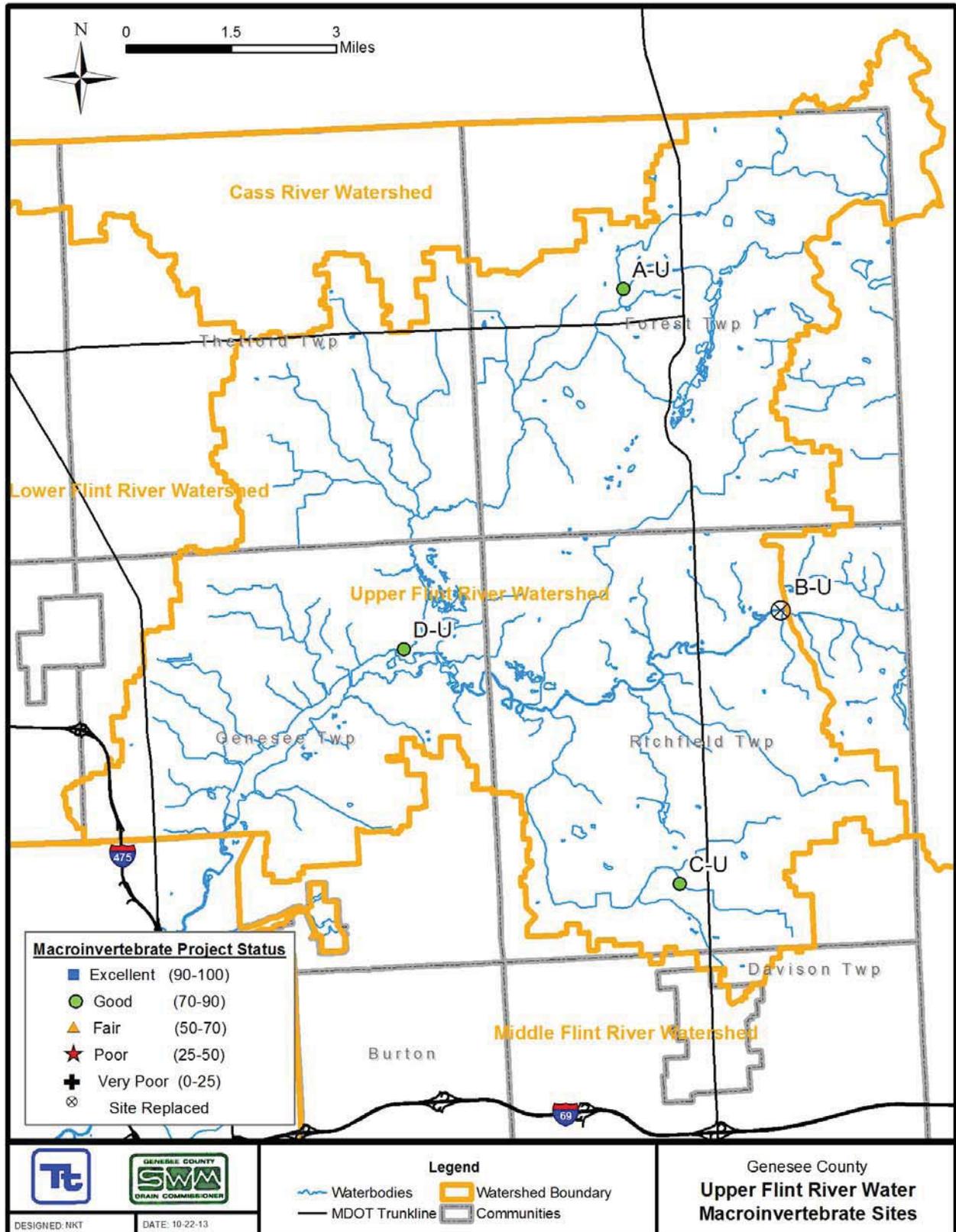
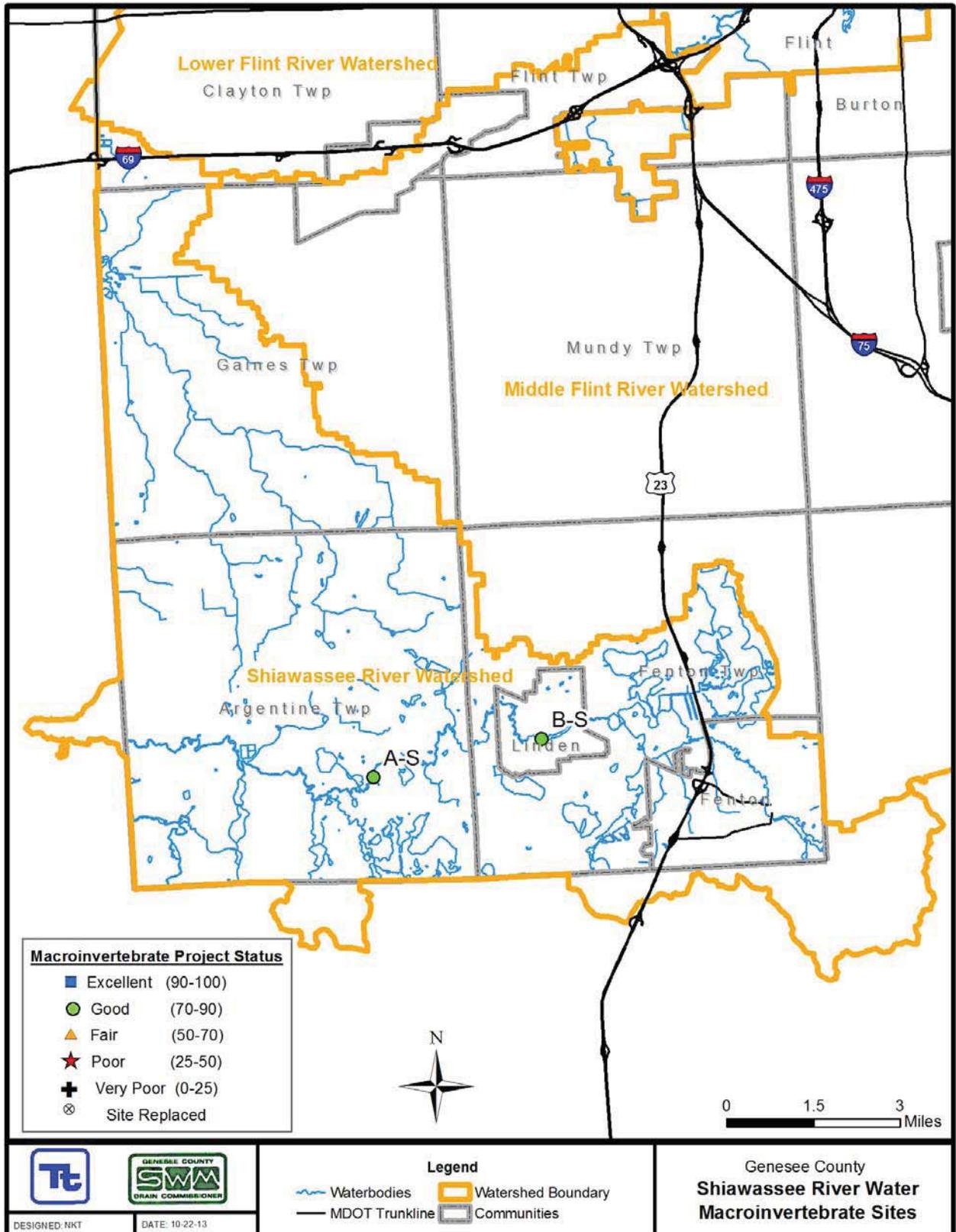


Figure 8-4: Macroinvertebrate Study Results for the Shiawassee River Watershed



## 9. ILLICIT DISCHARGE ELIMINATION PLAN (IDEP)

The purpose of the Illicit Discharge Elimination Plan (IDEP) is to establish a program to eliminate illicit discharges and connections, including the discharge of sanitary wastewater, to Genesee County's separate storm water drainage system. The County is required to conduct dry weather screening of all municipal separate storm sewer system (MS4) outfalls, also referred to as point source discharges (PSDs), to comply with their National Pollutant Discharge Elimination System (NPDES) permit.

This Section summarizes the IDEP activities including the illicit connections identified within each watershed and a list of PSDs identified during 2010-2011 IDEP field investigations. Also included are Phase II Permit application maps and tables showing PSDs for each municipality investigated.

Figure 9-1 shows the illicit discharge notification system process. During field investigations, crews investigate MS4 outfalls and private drains within the County drainage system. Each outfall is mapped and investigated at least once every five years. If dry weather flow is present at an outfall, the flow is sampled, analyzed, and tracked upstream to its source. When the pollution source is isolated, Genesee County works with the responsible party to eliminate the discharge.

During 2012-2013, IDEP field investigations were conducted in the following communities in addition to sites within the county owned by the Genesee County Drain Commission (GCDC):

- City of Burton
- Fenton Township
- Flushing Township
- Genesee County Drain Commission

### **City of Burton**

In 2012-13, 2 outfalls were investigated. No illicit discharges were found during this investigation period.

### **Flushing Township**

In 2012-13, 1 outfall was investigated. No illicit discharges were found during this investigation period.

### **City of Flushing**

In 2012-13, 10 outfalls were investigated and one illicit discharge was found during this investigation period.

### **Genesee County Drain Commission**

In 2012-13, 265 outfalls were investigated and seven outfalls were not found. No illicit discharges were found during this investigation period.

### **City of Swartz Creek**

In 2012-2013, 1 illicit discharge was found during this investigation period.

### **New Outfalls**

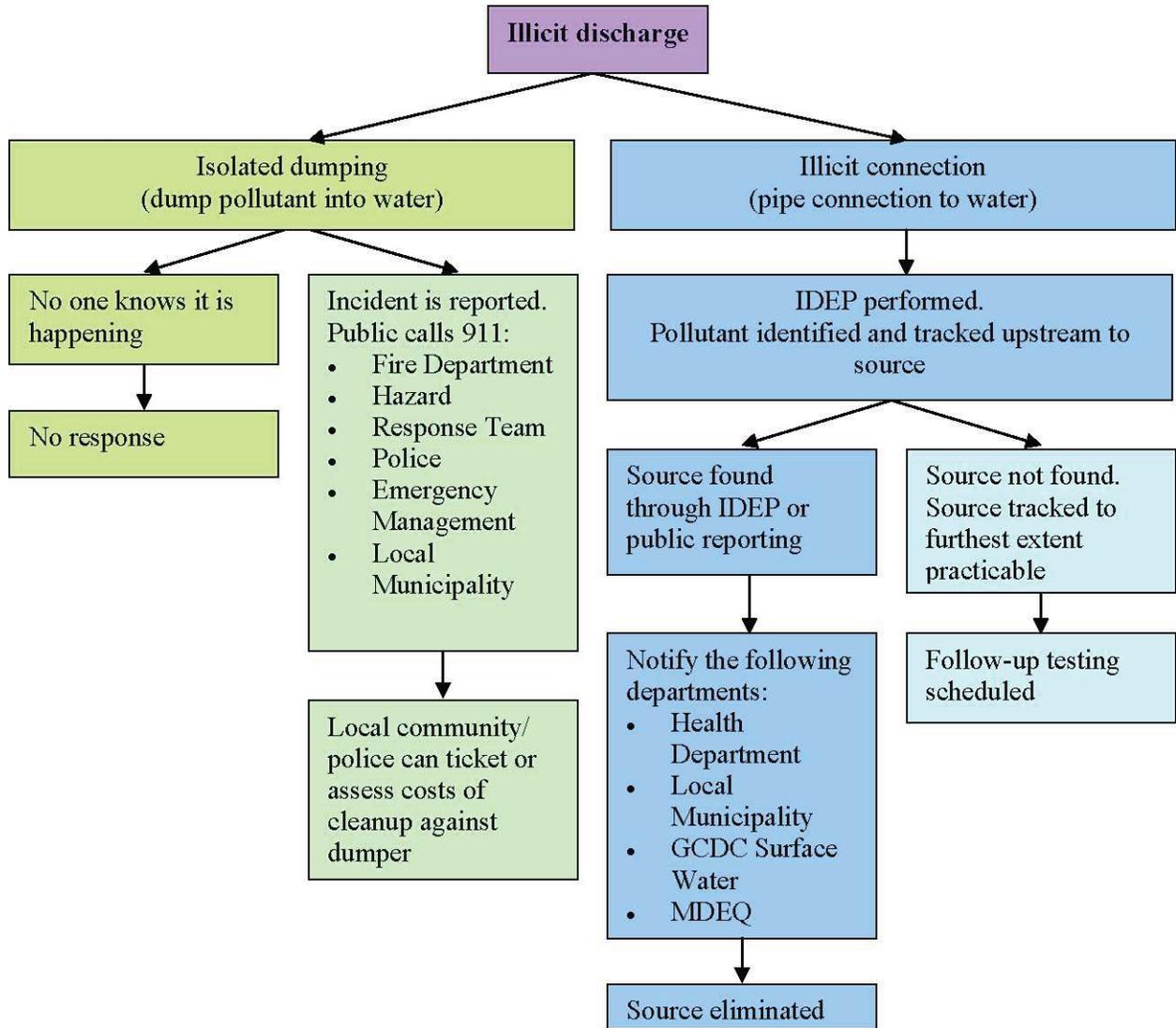
In April 2013, 281 new outfalls were authorized for investigation in 2012-2013 which are county outfalls. 143 were investigated, two were not found and 136 still need to be investigated.

Table 9-1: Total Number Outfalls Investigated Per Community  
June 2011-October 2013

<b>Total number of outfalls per community</b>				
<b>Community</b>	<b>Total outfalls</b>	<b>Already Investigated</b>	<b>Not Found/Abandoned</b>	<b>Need to be investigated</b>
GCDC	24	22	1	1
City of Fenton	80	71	9	0
City of Flushing	83	70	6	7
City of Mt. Morris	48	45	3	0
Fenton Twp	5	5		0
City of Clio	25	22	3	0
City of Linden	32	29	3	0
Genesee Twp	3	3		0
Mt. Morris Twp	3	3		0
Mundy Twp	2	2		0
Vienna Twp	7	7		0
GCDC-Sept 2011	65	62	2	1
City of Burton-Sept 2011	14	14		0
GCDC-April 2012	109	100	2	7
City of Burton-April 2012	94	90	2	2
City of Swartz Creek-April 2012	85	80	3	2
Fenton Twp-April 2012	1	1		0
Flint Twp-April 2012	6	6		0
Flushing Twp-April 2012	1	1		0
City of Burton-2012Fall	3	2		1
GCDC-2012Fall	177	122	1	54
GCDC-2013Spring	281	143	2	136
<b>Total</b>	<b>1148</b>	<b>900</b>	<b>35</b>	<b>211</b>

Note: Colors separate out when Tetra Tech received new outfalls to investigate from GCDC.

Figure 9-1: Illicit Discharge Notification System Process



## City of Flushing Illicit Discharge

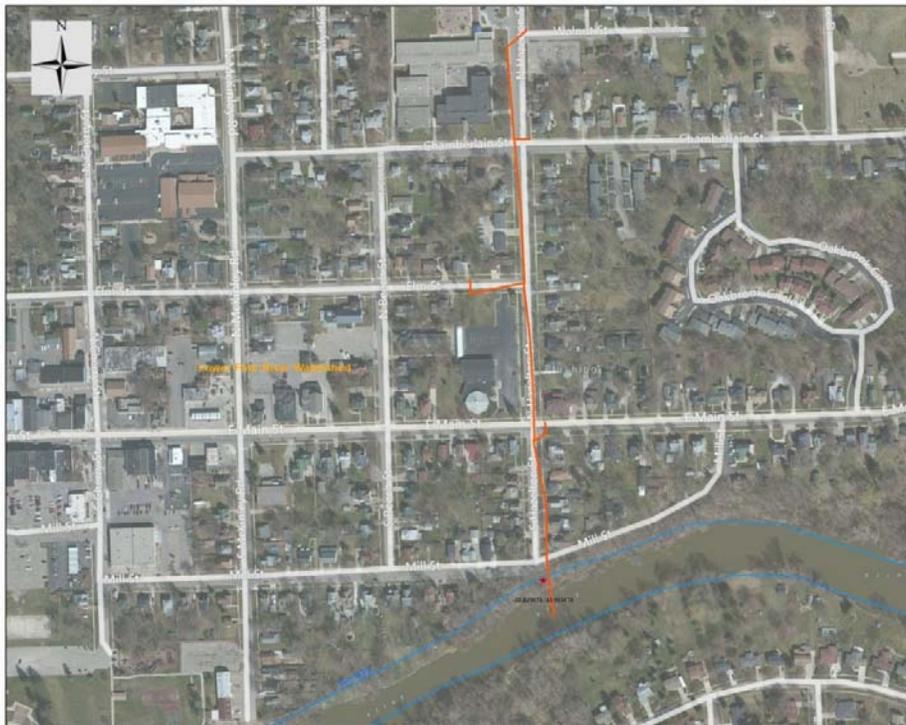
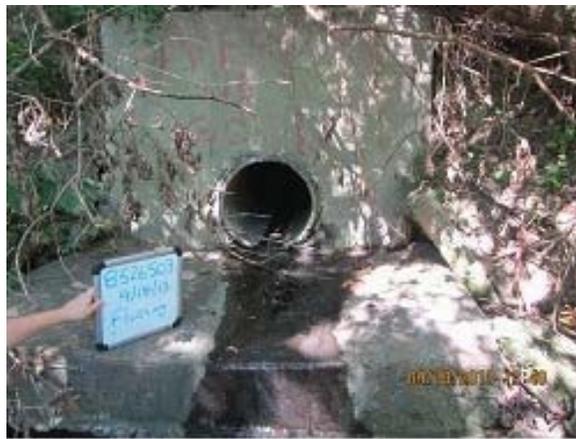
**City of Flushing: Outfall # 8526503**

**Latitude: 43.061676 Longitude: -83.849074**

On September 18, 2013, investigators visited the City of Flushing as part of the Genesee County Illicit Discharge Elimination Program. Dry weather flow was observed at outfall 8526502 at the end of Hazelton St. about 15ft down the embankment on the north bank of Flint River. The field crews observed sewage odor, bacterial sheen and sewage slime fungus in the pipe. Laboratory testing revealed elevated levels of *E.coli* of >10,000 ml/L in the sampled water.

### Status

Based on our observations and laboratory testing, it is recommended that Genesee County Drain Commission inform the City of Flushing of the illicit discharge entering the Flint River.



## City of Swartz Creek Illicit Discharge

Tetra Tech observed a milky-white substance coming from the Swartz Creek Middle School building, possibly soap, that was coming into the upstream manhole shown on the map and then flowing to West Branch of Swartz Creek at the outfall shown. The discharge was observed flowing into Swartz Creek for approximately 10 minutes before the flow out of the outfall pipe became clear and the plume dissipated.

On 8-14-13, Tetra Tech field staff notified us about soapy discharge into West Branch of Swartz Creek from Swartz Creek Middle School. On 9-12-13, we have conducted a dye test at cleaning room of the school. Dye test confirmed that waste water line from cleaning room is connected to storm sewer and then goes to West Branch of Swartz Creek. Swartz Creek School eliminated the illicit connection and re-routed waste water line from cleaning room to sanitary sewer. On 10-9-13, we have conducted a follow-up dye test and inspection and confirmed that illicit connection has been eliminated.



## 10. NEW STORM WATER POINT SOURCE DISCHARGES (PSD)

In the 2008 annual report, PSD points were identified on the permit application map by municipality. These maps have been updated in the 2010 report to reflect the change in management of the MS4 areas in the second permit cycle. In the past, PSD's were tracked by watershed. In 2009, municipal ownership (city, township, etc.) of PSD's was assigned by GCDC. Municipalities that were designated by GCDC as containing MS4 outfalls include:

- City of Burton
- City of Clio
- City of Davison
- City of Fenton
- City of Flushing
- City of Grand Blanc
- City of Linden
- City of Mt. Morris
- Davison Township
- Fenton Township
- Flint Township
- Flushing Charter Township
- Genesee Charter Township
- Mt. Morris Charter Township
- Mundy Charter Township
- Vienna Township
- Genesee County
  - o Agencies
  - o Nested Jurisdictions

The following tables and figures show the outfalls investigated. The section concludes with a summary of the follow-up investigations undertaken in 2012-2013. Outfalls investigated in previous reporting periods are summarized in past annual reports.

Summary of the follow-up investigations undertaken in 2012-2013.

The Drain Office Continues to do follow up work on dry weather flow testing this reporting cycle.

- 8727756 or 8727759 video storm line. Investigation ongoing

The Drain Office was contacted with X events of an illicit discharge to a storm system.

<b>Sample ID &amp; Location</b>	<b>BACKGROUND &amp; FOLLOW-UP INSPECTION RESULTS &amp; COMMENTS</b>
11355 E. Potter Rd Richfield Twp #35	On 3-14-13, Jeff Wright, Drain Commissioner was at the property and observed that owner using residential lot as automotive garage. On 3-25-13, BP inspected the site and walked along Black Creek and did not observe any trace of "oil sheen" in that section of drain. Also BP did not find any outlet pipe coming into drain. FILE CLOSED
5040 N. Dort Hwy Genesee Twp Sec-20	On 5-29-13, GCDC received a complaint from Stephanie Kammer, MDEQ about odor of gasoline from a storm sewer manhole at 5040 N. Dort Hwy. On 7-9-13, GCDC conducted a dye test and confirmed that floor drain of Martin Trucking Co. connected to on-site storm sewer and

	<p>then flows to county drain.</p> <p>On 9-11-13, GCDC conducted a follow-up inspection and confirmed that the floor drain has been plugged with cement mortar at the manhole. Illicit connection eliminated.</p> <p>FILE CLOSED</p>
6045 Lancaster Dr. Flint Twp Sec-18	<p>On 8-5-13, neighbor complained that stagnant water from basement of house at 6045 Lancaster Dr discharged into roadside drain.</p> <p>On 8-13-13, GCDC wrote to homeowner notifying that this is not acceptable practice and also indicate that in the future if similar situation arise then stagnant water has to be discharged into sanitary sewer. Twp was also notified.</p> <p>FILE CLOSED.</p>
Swartz Creek Middle School, City of Swartz Creek	<p>On 8-14-13, Tetra Tech Field staff notified GCDC about soapy discharge from a storm sewer originated from Swartz Creek Middle School into West Br of Swartz Creek drain. On 9-12-13, GCDC conducted a dye test and confirmed illicit connection to county drain. On 10-9-13, GCDC conducted a follow-up inspection and confirmed that illicit connection from storm sewer re-routed to sanitary sewer.</p> <p>FILE CLOSED</p>
8024 Seneca Rd Village of Goodrich	<p>On 9-13-13, GCDC conducted site inspection and dye test and confirmed that washing sink and floor drain connected to county drain. GCDC wrote a letter to homeowner to eliminate illicit connection from county drain and re-route to sanitary sewer.</p> <p>ON-GOING</p>
5199 Highwood Dr Mt. Morris Twp Sec-22	<p>On 9-23-13, GCDC conducted a site inspection and confirmed that Modern Concrete discharged cleanout water from a concrete truck mixer to a roadside curb basin. On 10-2-13, GCDC wrote to Modern Concrete not to discharge concrete truck cleanout into county drain in future.</p> <p>FILE CLOSED</p>
715 S. State Rd City of Davison	<p>6/5/2013 received call from City Davison. Concerned citizen reported an employee of a restaurant dumping a bucket of brown liquid into a storm drain. 6/5/2013 GCDC office visited site and spoke to manager. No evidence of dumping nor any odor.</p> <p>FILE CLOSED</p>
10286 W. Calkins Road Clayton #16	<p>7/18/2013: Resident called that someone ran ditch to septic tank dumping sewage into ditch. 7/18/13: Investigated. Swale/ditch dug. Ditch has been seeded and mulched. No evidence of connection to sanitary.</p> <p>FILE CLOSED</p>
Crystalwood Drive Davison #17	<p>10/4/2012: Resident reported he could smell sewage; odor coming from curb CB. 10/5/2012: investigated. Could smell sewage.</p> <p>10/25/2012: video's storm line. Narrowed to a possible 5 residences.</p> <p>INVESTIGATION ONGOING</p>
10133 Lapeer Rd Davison #15	<p>1/15/2013:Twp Called. Residence complaint about a car parked over a drain and leaking oil into the system. GCDC provided Technical information. Twp to do investigation. STATUS UNKNOWN</p>

Table 0-1: Genesee County Assigned Outfalls for 2012-2013

Outfall Number	Owner	Outlets To	Receiving Waterbody	Date Tested	Investigated (Yes/No)	Date Investigated
5506001	GCDC 0240	WOS/Open Drain	Burns & Vernon 0196	2013Spring	No	
5507505	GCRC	WOS/Open Drain	Lum & Ext 0069	2013Spring	Yes	7/1/2013
5512251	GCDC 0326	WOS/Open Drain	Porter Dr 0193	2013Spring	No	
5525251	GC Schools	WOS/Open Drain	Hogan Drain Tributary 0969	2013Spring	No	
5525751	GC Schools	WOS/Open Drain	Hogan Drain Tributary 0672	2013Spring	No	
5609501	GCRC	WOS/ Nat H2O	Indian Creek Tributary	2013Spring	Yes	9/10/2013
5613001	GCDC 1589	WOS/ Nat H2O	Swartz Cr	2013Spring	Yes	9/10/2013
5613002	GCDC 1589	WOS/ Nat H2O	Swartz Cr	2013Spring	Yes	9/10/2013
5613003	GCDC 1690	WOS/ Nat H2O	Swartz Cr	2013Spring	Yes	9/10/2013
5613004	GCRC	WOS/ Nat H2O	Swartz Cr	2013Spring	No	
5613005	GCDC 1589	WOS/ Nat H2O	Swartz Cr	2013Spring	No	
5613006	GCDC 1589	WOS/ Nat H2O	Swartz Cr	2013Spring	No	
5615251	GCRC	WOS/ Nat H2O	Lake Fenton	2013Spring	Yes	9/10/2013
5615252	GCDC 1418	WOS/ Nat H2O	Lake Fenton	2013Spring	Yes	9/10/2013
5616001	GCDC 1607	WOS/Lake	Loon Lake- Shiawassee	2013Spring	Yes	9/10/2013
5616251	GCDC 1607	WOS/Lake	Loon Lake- Shiawassee	2013Spring	Yes	9/10/2013
5616252	GCDC 0058	WOS/Lake	Loon Lake- Shiawassee	2013Spring	Yes	9/10/2013
5634251	GCDC 0867	WOS/Open Drain	Egyptian 0867	2013Spring	No	
5634252	GCDC 0867	WOS/Open Drain	Egyptian 0867	2013Spring	No	
5634754	GC School	WOS/Open Drain	Egyptian 0867	2013Spring	No	
5634755	GC School	WOS/Open Drain	Egyptian 0867	2013Spring	No	
5634756	GC School	WOS/Open Drain	Egyptian 0867	2013Spring	No	
5634757	GC School	WOS/Open Drain	Egyptian 0867	2013Spring	No	
5634758	GC School	WOS/Open Drain	Egyptian 0867	2013Spring	No	
5634759	GC School	WOS/Open Drain	Egyptian 0867	2013Spring	No	
6507755	GCRC	WOS/Open Drain	Terry Drain 0175	2013Spring	Yes	10/10/2013
6507756	GCRC	WOS/Open Drain	Terry Drain 0175	2013Spring	Yes	10/10/2013
6507757	GCDC 0657	WOS/Open Drain	Terry Drain 0175	2013Spring	Yes	10/10/2013
6508508	GCRC	WOS/Open Drain	Terry Drain 0175	2013Spring	Yes	10/10/2013
6508511	GCRC	WOS/Open Drain	Terry Drain 0175	2013Spring	Yes	10/10/2013
6508512	GCRC	WOS/Open Drain	Terry Drain 0175	2013Spring	Yes	10/10/2013
6508513	GCRC	WOS/Open Drain	Terry Drain 0175	2013Spring	Yes	10/10/2013
6511752	GCDC 0200	WOS/Open Drain	Alger Creek 0141	2013Spring	Yes	10/10/2013
6512501	GCDC 1043	WOS/Open Drain	Lum & Ext 0069	2013Spring	Yes	7/1/2013
6512502	GCRC	WOS/Open Drain	Lum & Ext 0069	2013Spring	Yes	7/1/2013
6512765	GCRC	WOS/Open Drain	Lum & Ext 0069	2013Spring	Yes	7/1/2013
6512766	GCRC	WOS/Open Drain	Lum & Ext 0069	2013Spring	Yes	7/1/2013
6512768	GCDC 1506	WOS/Open Drain	Lum & Ext 0069	2013Spring	No	
6516502	GCRC	WOS/Open Drain	Terry Drain 0175	2013Spring	Yes	10/10/2013
6516753	GCRC	WOS/Open Drain	Terry Drain 0175	2013Spring	Yes	10/10/2013
6517001	GCRC	WOS/Open Drain	Terry Drain 0175	2013Spring	Yes	10/10/2013

6517757	GCRC	WOS/Open Drain	Terry Drain 0175	2013Spring	Yes	10/10/2013
6521251	GCRC	WOS/Open Drain	Terry Drain 0175	2013Spring	No	
6521270	GCDC 0175	WOS/Open Drain	Terry Drain 0175	2013Spring	Yes	10/10/2013
6521272	GCRC	WOS/Open Drain	Terry Drain 0175	2013Spring	Yes	10/10/2013
6534756	GCDC 0984	WOS/Open Drain	Jones Creek 0984	2013Spring	No	
6607501	GCRC	WOS/Open Drain	Lum & Ext 0069	2013Spring	Yes	7/1/2013
6607809	GCRC	WOS/Open Drain	Lum & Ext 0069	2013Spring	No	
6607810	GCRC	WOS/Open Drain	Lum & Ext 0069	2013Spring	Yes	7/1/2013
6618304	GCRC	WOS/Open Drain	Lum & Ext drain 0069	2013Spring	Yes	7/1/2013
6618754	GCDC 0069	WOS/Open Drain	Lum & Ext 0069	2013Spring	No	
6618758	GCRC	WOS/Open Drain	Lum & Ext 0069	2013Spring	Yes	7/1/2013
6618759	GCRC	WOS/Open Drain	Lum & Ext 0069	2013Spring	Yes	7/1/2013
6624751	GCDC 1595	WOS/ Nat H2O	Swartz Creek	2013Spring	No	
6705022	GCRC	WOS/Open Drain	Gibson Drin 0423	2013Spring	No	
6710522	GCDC 0899	WOS/ Nat H2O	Thread Cr	2013Spring	No	
6710523	GCDC 1061	WOS/Open Drain	Thread Cr via 1061 ditch	2013Spring	No	
6713501	GCDC 1618	WOS/Open Drain	Bush 0007	2013Spring	No	
6717751	GCDC 0522	WOS/Open Drain	Gibson 0423	2013Spring	No	
6717753	GCDC 0150	WOS/Open Drain	Gibson 0423	2013Spring	No	
6717754	GCDC 0937	WOS/Open Drain	Gibson 0423	2013Spring	No	
6719513	GCDC 1221	WOS/Open Drain	Seaver Drain 0043	2013Spring	Yes	7/1/2013
6719514	GCDC 1221	WOS/Open Drain	Seaver Drain Br of 1218	2013Spring	Yes	7/1/2013
6719515	GCDC 1221	WOS/Open Drain	Seaver Drain Br of 1218	2013Spring	Yes	7/1/2013
6719523	GCDC 1221	WOS/Open Drain	Seaver Drain Br of 1218	2013Spring	Yes	7/1/2013
6719524	GCDC 1221	WOS/Open Drain	Seaver Drain 0043	2013Spring	Yes	7/1/2013
6719525	GCDC 1221	WOS/Open Drain	Seaver Drain 0043	2013Spring	Yes	6/24/2013
6719526	GCDC 1221	WOS/Open Drain	Seaver Drain 0043	2013Spring	Yes	6/24/2013
6719527	GCDC 1221	WOS/Open Drain	Seaver Drain 0043	2013Spring	Yes	6/24/2013
6719528	GCDC 1221	WOS/Open Drain	Seaver Drain 0043	2013Spring	Yes	6/24/2013
6719529	GCDC 1221	WOS/Open Drain	Seaver Drain 0043	2013Spring	Yes	6/24/2013
6719754	GCDC 1221	WOS/Open Drain	Seaver Drain 0043	2013Spring	Yes	7/1/2013
6719755	GCDC 1667	WOS/Open Drain	Seaver Drain 0043	2013Spring	Yes	7/1/2013
6719756	GCDC 1667	WOS/Open Drain	Seaver Drain 0043	2013Spring	Yes	7/1/2013
6723007	GCDC 1132	WOS/Open Drain	Perry Drain 1132	2013Spring	No	
6723501	GCDC 0710	WOS/Open Drain	Layman, Crosby Br of 0710	2013Spring	No	
6724001	GCDC 1558	WOS/Open Drain	Bush 0007	2013Spring	No	
6724751	GCRC	WOS/Open Drain	Bush 0007	2013Spring	Yes	6/24/2013
6724752	GCDC 1541	WOS/Open Drain	Bush 0007	2013Spring	No	
6724753	GCDC 1541	WOS/Open Drain	Bush 0007	2013Spring	No	
6725251	GCDC 1581	WOS/ Nat H2O	Bush 0007 (via watercourse)	2013Spring	No	
6729005	GCDC 1584	WOS/Open Drain	Eames 0864	2013Spring	No	
6729007	GCDC 1638	WOS/Open Drain	Eames 0864	2013Spring	No	

6729014	GCDC 1584	WOS/Open Drain	Seaver 0043	2013Spring	No	
6729015	GCDC 1584	WOS/Open Drain	Seaver 0043	2013Spring	Yes	7/2/2013
6729016	GCDC 1584	WOS/Open Drain	Seaver 0043	2013Spring	Yes	7/2/2013
6729017	GCDC 1584	WOS/Open Drain	Seaver 0043	2013Spring	Yes	7/2/2013
6729101	GCDC 1573	WOS/Open Drain	Seaver 0043	2013Spring	Yes	7/2/2013
6729102	GCDC 1573	WOS/Open Drain	Seaver 0043	2013Spring	Yes	7/2/2013
6729103	GCDC 1522	WOS/Open Drain	Seaver 0043	2013Spring	Yes	7/2/2013
6729104	GCDC 1522	WOS/Open Drain	Seaver 0043	2013Spring	Yes	7/2/2013
6729509	GCRC	WOS/Open Drain	Eames 0864	2013Spring	No	
6730251	GCRC	WOS/Open Drain	Seaver Drain 0043	2013Spring	Yes	Not Found
6730302	GCDC 1612	WOS/Open Drain	Seaver 0043	2013Spring	No	
6732001	GCRC	WOS/Open Drain	Eames 0864	2013Spring	No	
6732002	GCRC	WOS/Open Drain	Eames 0864	2013Spring	No	
6735251	GCDC 1637	WOS/Open Drain	Groat 0681	2013Spring	No	
6735252	GCDC 1637	WOS/Open Drain	Groat 0681	2013Spring	No	
6735253	GCDC 1637	WOS/Open Drain	Groat 0681	2013Spring	No	
6735254	GCDC 1637	WOS/Open Drain	Groat 0681	2013Spring	No	
6735255	GCDC 1637	WOS/Open Drain	Groat 0681	2013Spring	Yes	7/15/2013
6735256	GCDC 1461	WOS/Open Drain	Groat 0681	2013Spring	No	
6735257	GCDC 1461	WOS/Open Drain	Groat 0681	2013Spring	No	
6735258	GCDC 1461	WOS/Open Drain	Groat 0681	2013Spring	No	
6735259	GCDC 0681	WOS/Open Drain	Groat 0681	2013Spring	No	
6736001	GCDC 1637	WOS/Open Drain	Slack Lake 0063	2013Spring	Yes	7/16/2013
6736002	GCDC 1637	WOS/Open Drain	Slack Lake 0063	2013Spring	Yes	7/16/2013
6736003	GCDC 1637	WOS/Open Drain	Slack Lake 0063	2013Spring	Yes	7/15/2013
6736004	GCDC 1637	WOS/Open Drain	Slack Lake 0063	2013Spring	Yes	7/15/2013
6736005	GCDC 1637	WOS/Open Drain	Slack Lake 0063	2013Spring	Yes	7/15/2013
6736251	GCDC 1637	WOS/Open Drain	Slack Lake 0063	2013Spring	Yes	7/16/2013
6736501	GCDC 1637	WOS/Open Drain	Slack Lake 0063	2013Spring	Yes	7/15/2013
6736502	GCDC 1637	WOS/Open Drain	Slack Lake 0063	2013Spring	Yes	7/15/2013
6736503	GCDC 1637	WOS/Open Drain	Slack Lake 0063	2013Spring	Yes	7/15/2013
6736504	GCDC 1637	WOS/Open Drain	Slack Lake 0063	2013Spring	Yes	7/15/2013
6736505	GCDC 1637	WOS/Open Drain	Slack Lake 0063	2013Spring	Yes	7/15/2013
6736506	GCDC 1637	WOS/Open Drain	Slack Lake 0063	2013Spring	Yes	7/15/2013
6736507	GCDC 1637	WOS/Open Drain	Slack Lake 0063	2013Spring	Yes	7/15/2013
6736508	GCDC 1637	WOS/Open Drain	Slack Lake 0063	2013Spring	Yes	7/15/2013
6736751	GCDC 1637	WOS/Open Drain	Slack Lake 0063	2013Spring	Yes	7/16/2013
6736752	GCDC 1637	WOS/Open Drain	Slack Lake 0063	2013Spring	Yes	7/16/2013
6736753	GCDC 1637	WOS/Open Drain	Slack Lake 0063	2013Spring	Yes	7/16/2013
6736754	GCDC 1637	WOS/Open Drain	Slack Lake 0063	2013Spring	Yes	7/16/2013
6736755	GCDC 1637	WOS/Open Drain	Slack Lake 0063	2013Spring	Yes	7/16/2013
7502003	GCRC	WOS/Open Drain	Cole Creek 0764	2013Spring	Yes	10/1/2013

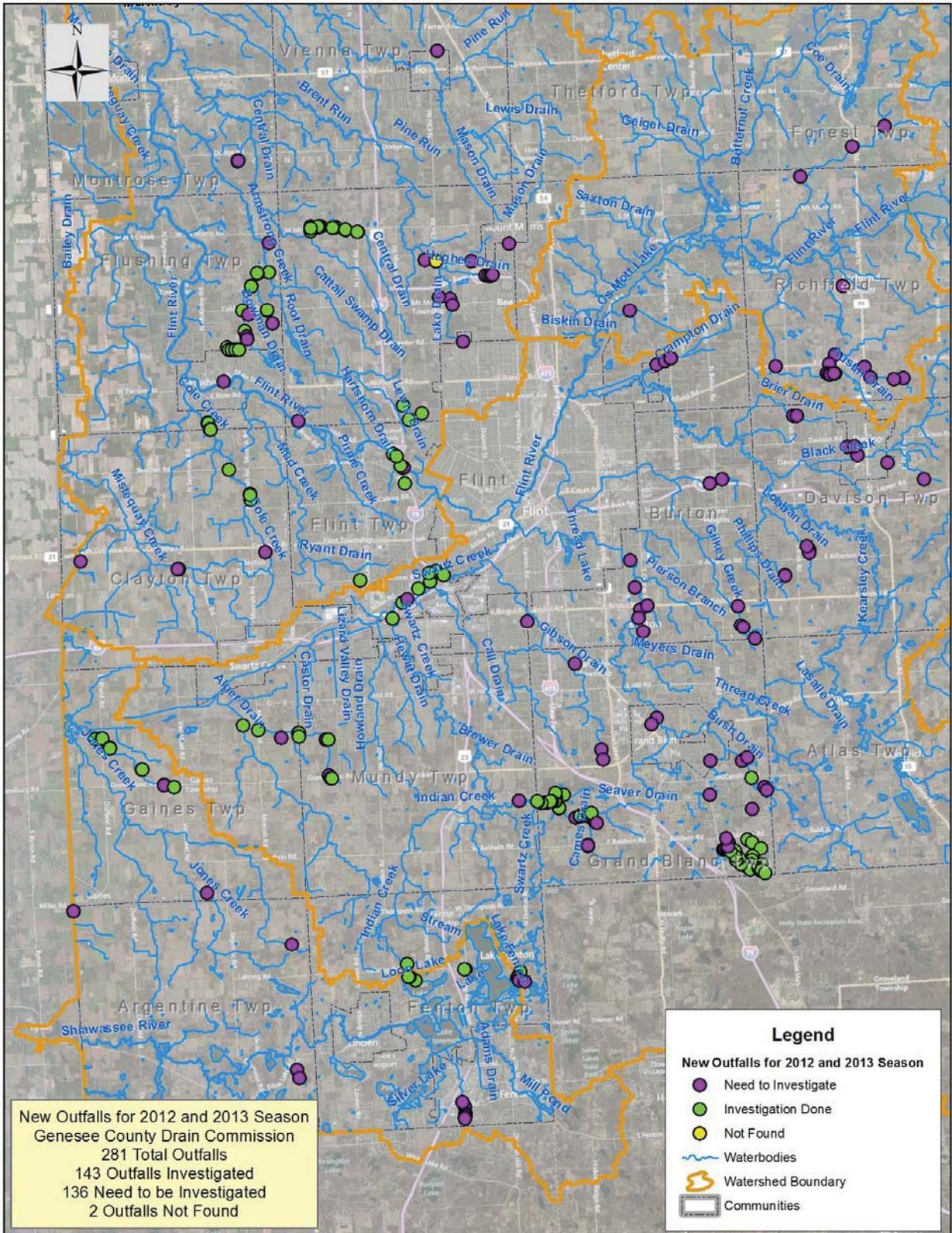
7502004	GCRC	WOS/Open Drain	Cole Creek 0764	2013Spring	Yes	10/1/2013
7511001	GCRC	WOS/Open Drain	Cole Creek 0764	2013Spring	Yes	10/10/2013
7511003	GCRC	WOS/Open Drain	Cole Creek 0764	2013Spring	Yes	10/10/2013
7511753	GCRC	WOS/Open Drain	Cole Creek 0764	2013Spring	Yes	10/10/2013
7511755	GCRC	WOS/Open Drain	Cole Creek 0764	2013Spring	Yes	10/10/2013
7512501	GCRC	WOS/Open Drain	Cole Creek 0764	2013Spring	Yes	10/10/2013
7519251	GCDC 0619	WOS/Open Drain	Misteguay Creek	2013Spring	No	
7522003	GC Schools	WOS/Open Drain	Smith Clayton Dr 0516	2013Spring	No	
7522012	GC Schools	WOS/Open Drain	Smith Clayton Dr 0516	2013Spring	No	
7524001	GCDC 0861	WOS/Open Drain	Cole Creek 0764	2013Spring	No	
7604754	GCRC	WOS/ Nat H2O	Flint River	2013Spring	Yes	10/1/2013
7604756	GCRC	WOS/ Nat H2O	Flint River	2013Spring	Yes	10/1/2013
7609256	GCDC 0439	WOS/ Nat H2O	Flint River	2013Spring	No	
7609257	GCDC 0600	WOS/ Nat H2O	Flint River	2013Spring	No	
7609751	GCRC	MDOT	Flint River Via MDOT/ GCDC	2013Spring	Yes	10/2/2013
7610004	GCDC 0166	WOS/ Nat H2O	Flint River	2013Spring	Yes	10/2/2013
7620751	GCDC 1434	WOS/Open Drain	Ryant Drain 0509	2013Spring	Yes	7/1/2013
7622751	GCDC 1396	MDOT	Swartz Creek	2013Spring	Yes	6/18/2013
7622752	GCDC 1396	MDOT	Swartz Creek	2013Spring	Yes	6/18/2013
7622753	GCDC 0398	WOS/Open Drain	Swartz Creek	2013Spring	Yes	6/19/2013
7627001	GCDC 1497	WOS/Open Drain	Swartz Creek	2013Spring	Yes	6/6/2013
7627251	GCDC 0445	WOS/Open Drain	Swartz Creek	2013Spring	Yes	6/18/2013
7628751	GCDC 1387	WOS/ Nat H2O	Swartz Creek	2013Spring	Yes	6/6/2013
7628752	GCDC 1413	WOS/ Nat H2O	Swartz Creek	2013Spring	Yes	6/6/2013
7628753	GCDC 1423	WOS/ Nat H2O	Swartz Creek	2013Spring	No	
7636252	GCDC 0040	C Burton pipe	Gibson drain 0423	2013Spring	No	
7711760	GCDC 0017	WOS/Open Drain	Gilkey Creek 0017	2013Spring	No	
7712505	GCDC 1139	WOS/Open Drain	Gilkey Creek 0017	2013Spring	No	
7721758	GCDC 0637	WOS/ Nat H2O	Thread Creek	2013Spring	No	
7727504	GCDC 1357	WOS/Open Drain	Thread Creek, howe Br 1357	2013Spring	No	
7728755	GCDC 0337	WOS/ Nat H2O	Thread Creek	2013Spring	No	
7733254	GCDC 0375	WOS/ Nat H2O	Thread Creek	2013Spring	No	
7733258	GCDC 0375	WOS/ Nat H2O	Thread Creek	2013Spring	No	
7733752	GCDC 0434	WOS/ Nat H2O	Thread Creek	2013Spring	No	
7736009	GCDC 0592	WOS/Open Drain	Gilkey Creek 0017	2013Spring	No	
7736503	GCDC 1524	WOS/Open Drain	Gilkey Creek 0017	2013Spring	No	
7736761	C Burton	WOS/Open Drain	Gilkey Creek 0017	2013Spring	No	
7736786	GCDC 1531	WOS/Open Drain	Gilkey Creek 0017	2013Spring	No	
7805007	GCDC 0736	WOS/Open Drain	Brier Creek 0130	2013Spring	No	
7805010	GCDC 0736	WOS/Open Drain	Brier Creek 0130	2013Spring	No	
7809303	GCDC 0631	WOS/Open Drain	Harvey Drain 0631	2013Spring	No	
7809304	Gc School	C of Davison	Harvey Drain 0631	2013Spring	No	

7809305	Gc School	C of Davison	Harvey Drain 0631	2013Spring	No	
7809306	Gc School	C of Davison	Harvey Drain 0631	2013Spring	No	
7810751	Gc School	C of Davison	Hock & Walterhouse 0091	2013Spring	No	
7814001	GCDC 0064	WOS/Open Drain	Black Cr, Cummings br of 0064	2013Spring	No	
7820509	GC School	WOS/Open Drain	Lobban Drain #0300	2013Spring	No	
7820511	GCDC 1515	WOS/Open Drain	Lobban Drain 0300	2013Spring	No	
7820514	GCDC 1515	WOS/Open Drain	Lobban Drain 0300	2013Spring	No	
7830255	GCDC 1426	WOS/Open Drain	Phillips drain 0319	2013Spring	No	
7830256	GCDC 1426	WOS/Open Drain	Phillips drain 0319	2013Spring	No	
7830257	GCRC	WOS/Open Drain	Phillips drain 0319	2013Spring	No	
7830258	GCRC	WOS/Open Drain	Phillips drain 0319	2013Spring	No	
8512251	GCDC 0227	WOS/ Nat H2O	Armstrong Creek	2013Spring	No	
8512509	GCRC	WOS/Open Drain	Bowman 0062	2013Spring	Yes	7/22/2013
8512780	GCRC	WOS/Open Drain	Root 0185	2013Spring	Yes	7/22/2013
8513000	GCRC	WOS/Open Drain	Bowman 0062	2013Spring	Yes	7/22/2013
8513001	GCRC	WOS/Open Drain	Bowman 0062	2013Spring	Yes	7/22/2013
8513002	GCRC	WOS/Open Drain	Bowman 0062	2013Spring	Yes	7/22/2013
8513003	GCRC	WOS/Open Drain	Bowman 0062	2013Spring	Yes	7/22/2013
8513504	GCRC	WOS/Open Drain	Bowman 0062	2013Spring	Yes	7/22/2013
8513505	GCRC	WOS/Open Drain	Bowman 0062	2013Spring	Yes	7/22/2013
8513751	GCRC	WOS/Open Drain	Cottrell 0601	2013Spring	Yes	7/22/2013
8513753	GCRC	WOS/Open Drain	Cottrell 0601	2013Spring	Yes	7/22/2013
8523754	GCDC 1540	WOS/Open Drain	Bowman, firman Br 0195	2013Spring	Yes	9/4/2013
8523755	GCDC 1540	WOS/Open Drain	Bowman, firman Br 0195	2013Spring	Yes	9/4/2013
8523756	GCDC 1540	WOS/Open Drain	Bowman, firman Br 0195	2013Spring	Yes	9/4/2013
8523757	GCDC 1540	WOS/Open Drain	Bowman, firman Br 0195	2013Spring	Yes	9/4/2013
8523758	GCDC 1540	WOS/Open Drain	Bowman, firman Br 0195	2013Spring	Yes	9/4/2013
8524001	GCRC	WOS/Open Drain	Bowman 0062	2013Spring	Yes	7/22/2013
8524002	GCRC	WOS/Open Drain	Bowman 0062	2013Spring	Yes	7/22/2013
8524003	GCDC 0566	WOS/Open Drain	Bowman, Johnson Br of 0566	2013Spring	No	
8524251	GCRC	WOS/Open Drain	Cottrell 0601	2013Spring	Yes	7/22/2013
8524252	GCRC	WOS/Open Drain	Cottrell 0601	2013Spring	Yes	7/22/2013
8524253	GCDC 0601	WOS/Open Drain	Cottrell 0601	2013Spring	No	
8524507	GC-School	WOS/Open Drain	Bowman 0062	2013Spring	Yes	7/22/2013
8524508	GC-School	WOS/Open Drain	Bowman 0062	2013Spring	No	
8526516	GC Schools	WOS/Open Drain	Bomen Drain 0062	2013Spring	No	
8534759	GCRC	WOS/Open Drain	Cole Creek 0764	2013Spring	Yes	10/1/2013
8534761	GCRC	WOS/Open Drain	Cole Creek 0764	2013Spring	Yes	10/1/2013
8535501	GCRC	WOS/Open Drain	Cole Creek 0764	2013Spring	Yes	10/1/2013
8535503	GCRC	WOS/Open Drain	Cole Creek 0764	2013Spring	Yes	10/1/2013
8535505	GCRC	WOS/Open Drain	Cole Creek 0764	2013Spring	Yes	10/2/2013
8535507	GCRC	WOS/Open Drain	Cole Creek 0764	2013Spring	Yes	10/2/2013

8605597	GCRC	WOS/Open Drain	Central Drain 0109	2013Spring	Yes	7/17/2013
8605599	GCRC	WOS/Open Drain	Central Drain 0109	2013Spring	Yes	7/17/2013
8605601	GCRC	WOS/Open Drain	Central Drain 0109	2013Spring	Yes	7/17/2013
8605609	GCDC 1440	WOS/Open Drain	Central Drain 0109	2013Spring	No	
8605611	GCRC	WOS/Open Drain	Central Drain 0109	2013Spring	Yes	7/17/2013
8605613	GCRC	WOS/Open Drain	Central Drain 0109	2013Spring	Yes	7/17/2013
8605614	GCRC	WOS/Open Drain	Central Drain 0109	2013Spring	Yes	7/17/2013
8605615	GCRC	WOS/Open Drain	Central Drain 0109	2013Spring	Yes	7/17/2013
8606751	GCRC	WOS/Open Drain	Central Drain 0109	2013Spring	Yes	7/17/2013
8606753	GCRC	WOS/Open Drain	Central Drain 0109	2013Spring	Yes	7/17/2013
8606757	GCDC 1645	WOS/Open Drain	Central Drain 0109	2013Spring	Yes	7/18/2013
8606761	GCRC	WOS/Open Drain	Central Drain 0109	2013Spring	Yes	7/18/2013
8606763	GCRC	WOS/Open Drain	Central Drain 0109	2013Spring	Yes	7/18/2013
8606764	GCDC 1645	WOS/Open Drain	Central Drain 0109	2013Spring	Yes	7/18/2013
8607251	GCRC	WOS/Open Drain	Central Drain 0109	2013Spring	Yes	7/18/2013
8607253	GCRC	WOS/Open Drain	Central Drain 0109	2013Spring	Yes	7/18/2013
8608251	GCRC	WOS/Open Drain	Central Drain 0109	2013Spring	Yes	7/17/2013
8608252	GCRC	WOS/Open Drain	Central Drain 0109	2013Spring	Yes	7/17/2013
8608253	GCRC	WOS/Open Drain	Central Drain 0109	2013Spring	Yes	7/17/2013
8609242	GCRC	WOS/Open Drain	Central Drain 0109	2013Spring	Yes	7/17/2013
8609244	GCRC	WOS/Open Drain	Central Drain 0109	2013Spring	Yes	7/17/2013
8610751	GCDC 0315	WOS/Open Drain	Lake 0057	2013Spring	No	
8610752	GCDC 1012	WOS/Open Drain	Lake 0057	2013Spring	Not Found	Not Found
8611762	GCDC 0110	WOS/Open Drain	Hannan 0110	2013Spring	No	
8612751	GCRC	C of Mt. Morris	?	2013Spring	No	
8613103	GCDC 0360	WOS/Open Drain	Hughes Dr 0024	2013Spring	No	
8613105	GCDC 0975	WOS/Open Drain	Hughes Dr 0024	2013Spring	Not Found	Not Found
8613106	GCDC 0024	WOS/Open Drain	Hughes Dr 0024	2013Spring	No	
8613247	GCDC 1159	WOS/Open Drain	Hughes Dr 0024	2013Spring	No	
8613248	GCDC 0349	WOS/Open Drain	Hughes Dr 0024	2013Spring	No	
8614503	GCDC 0462	WOS/Open Drain	Lake 0057	2013Spring	No	
8614504	GCDC 0420	WOS/Open Drain	Daily Drain 0420	2013Spring	No	
8623001	GCRC	WOS/Open Drain	Lake Drain 0067	2013Spring	No	
8623751	GCDC 0057	WOS/Open Drain	Lake Drain 0057	2013Spring	No	
8623752	GCDC 0057	WOS/Open Drain	Lake Drain 0057	2013Spring	No	
8631501	GCDC 0005	WOS/ Nat H2O	Flint River	2013Spring	No	
8633751	GCDC 0927	WOS/Open Drain	Hartshorn & Ext 0458	2013Spring	Yes	10/1/2013
8634501	GCDC 0334	WOS/Open Drain	Hartshorn & Ext 0458	2013Spring	Yes	10/2/2013
8634502	GCDC 0435	WOS/Open Drain	Hartshorn & Ext 0458	2013Spring	Yes	10/2/2013
8722001	GCRC	WOS/Open Drain	Carpenter Dr 0050	2013Spring	No	
8726501	GCDC 0171	WOS/Open Drain	Crampton Drain 0012	2013Spring	No	
8726502	GCRC	WOS/Open Drain	Crampton Drain 0012	2013Spring	No	

8726503	GCDC WWS	WOS/Open Drain	Crampton Drain 0012	2013Spring	No	
8727756	GCDC 0311	WOS/Open Drain	Crampton Drain 0012	2013Spring	No	
8727759	GCDC 0311	WOS/Open Drain	Crampton Drain 0012	2013Spring	No	
8727760	GCRC	WOS/Open Drain	Crampton Drain 0012	2013Spring	No	
8727761	GCRC	WOS/Open Drain	Crampton Drain 0012	2013Spring	No	
8727762	GCDC 0256	WOS/ Nat H2O	Crampton outlet	2013Spring	No	
8805251	GCDC 1247	WOS/Open Drain	Parker & Scothan 0036	2013Spring	No	
8816751	GCRC	WOS/Open Drain	Zufelt Drain 0100	2013Spring	No	
8828501	GCDC 0576	WOS/Open Drain	Cullen and Powers 0014	2013Spring	No	
8828502	GCRC	WOS/Open Drain	Cullen and Powers 0014	2013Spring	No	
8830751	GCRC	WOS/Open Drain	Cullen & Powers #0014	2013Spring	No	
8830752	GCRC	WOS/Open Drain	Cullen & Powers #0014	2013Spring	No	
8833008	GCDC 0127	WOS/Open Drain	Austin Drain 0160	2013Spring	No	
8833016	GCDC 0127	WOS/Open Drain	Austin Drain 0160	2013Spring	No	
8833018	GCDC 0127	WOS/Open Drain	Austin Drain 0160	2013Spring	No	
8833019	GCDC 0160	WOS/Open Drain	Austin Drain 0160	2013Spring	No	
8833020	GCDC 0127	WOS/Open Drain	Austin Drain 0160	2013Spring	No	
8833021	GCDC 0127	WOS/Open Drain	Austin Drain 0160	2013Spring	No	
8834004	GCDC 1343	WOS/Open Drain	Cullen and Powers 0014	2013Spring	No	
8834005	GCDC 0813	WOS/Open Drain	Cullen and powers #0014	2013Spring	No	
8834501	GCDC 1590	WOS/Open Drain	Cullen and Powers 0014	2013Spring	No	
8835501	GCDC 0014	WOS/Open Drain	Cullen and Powers 0014	2013Spring	No	
9535497	GCRC	WOS/Open Drain	Morrish & Francis Rd 0034	2013Spring	No	
9535499	GCRC	WOS/Open Drain	Morrish & Francis Rd 0034	2013Spring	No	
9536005	GCRC	WOS/Open Drain	Morrish & Francis Rd 0034	2013Spring	No	
9536007	GCRC	WOS/Open Drain	Morrish & Francis Rd Dr 0034	2013Spring	No	
9614532	GCDC 0816	WOS/Open Drain	Collins 0025	2013Spring	No	
9805001	GCDC 0857	WOS/Open Drain	Frost IC 0054	2013Spring	No	
9827758	GCRC	WOS/Open Drain	Parker Scothan Br 1 0437	2013Spring	No	
9833251	GCDC 1125	WOS/Open Drain	Parker & Scothan 0036	2013Spring	No	

Figure 0-1: Genesee County Assigned Outfalls for 2012-2013



## 11. SCHOOL STORMWATER DRAINAGE INVESTIGATIONS (Genesee County Nested Jurisdiction)

Field crews investigated schools stormwater drainage areas to identify school districts outfalls. Field crews would visit the school within school district and map out their catchbasins, open channels, detentions basin and figure out where the system would outlet to county drain, road ditch and municipal storm system. Table 11-1 shows the schools that were investigated during 2012-2013 reporting period.

Schools districts were investigated included:

- Atherton Community Schools
- Beecher Community Schools
- Bendle Public Schools
- Bentley Community Schools
- Carman Ainsworth Schools
- Clio Area Schools
- Fenton Area Schools
- Flint Community Schools
- Flushing Community Schools
- Genesee Intermittent Schools
- Grand Blanc Community Schools
- Linden Community Schools
- Mt. Morris Consolidated Schools
- Swartz Creek Community Schools
- Westwood Heights

Table 11-1: School Outfalls for 2012-2013

Owner	School Name	Notes	School ID	Urbanized Area
Atherton Comm Schools	Atherton Middle & High School		104	Yes
Atherton Comm Schools	Vern Van Elementary		103	Yes
Beecher Comm Schools	Undeveloped	Vacant Property	N/A	N/A
Beecher Comm Schools	Harrow Elementary	Vacant Building	42	
Beecher Comm Schools	Beecher Unknown Building	No Storm System	43	Yes
Beecher Comm Schools	Vacant parking lot & demo building	Vacant-No Storm System	41	Yes
Beecher Comm Schools	Undeveloped	Vacant Property	N/A	N/A
Beecher Comm Schools	Beecher High School		29	Yes
Beecher Comm Schools	Admin Building		29	Yes
Beecher Comm Schools	Beecher Tucker Elementary		32	Yes
Beecher Comm Schools	Beecher Bus Garage	Vacant Building	31	Yes
Beecher Comm Schools	Undeveloped	Vacant Property	N/A	N/A
Beecher Comm Schools	Undeveloped	Vacant Property	N/A	N/A
Beecher Comm Schools	Undeveloped	Vacant Property	N/A	N/A
Beecher Comm Schools	Library & Parking	Vacant Building	30	Yes
Beecher Comm Schools	Undeveloped	Vacant Property	N/A	N/A

Beecher Comm Schools	Beecher-Reiley Adult Education		28	Yes
Beecher Comm Schools	Beecher Middle School		27	Yes
Beecher Comm Schools	Dailey Elementary		27	Yes
Bendle Public Schools	South Bendle Elementary		99	Yes
Bendle Public Schools	Bendle High School & Admin		101	Yes
Bendle Public Schools	West Bendle Elementary		97	Yes
Bendle Public Schools	Special Education		102	Yes
Bendle Public Schools	Bendle Middle School	Vacant-No Storm System	100	Yes
Bendle Public Schools	Friel Elementary	No Storm System	98	Yes
Bentley Comm Schools	Middle & High School		106	Yes
Bentley Comm Schools	Barhitte Elementary		105	Yes
Carman Ainsworth	Ranking Elementary	Not in Urbanized Area	117	No
Carman Ainsworth	Undeveloped	Vacant Property	N/A	N/A
Carman Ainsworth	Undeveloped	Vacant Property	N/A	N/A
Carman Ainsworth	Carman Ainsworth MS & GIS E Knopf Learning Cen		116	Yes
Carman Ainsworth	Fenton Lawn Resource Center		76	Yes
Carman Ainsworth	Randels Elementary		79	Yes
Carman Ainsworth	Dye Elementary		59	Yes
Carman Ainsworth	Woodland Elementary		78	Yes
Carman Ainsworth	Admin Building		60	Yes
Carman Ainsworth	Stalker Community Cen- Pre K	No Storm System	61	Yes
Carman Ainsworth	Gladys Dillon Elementary		96	Yes
Carman Ainsworth	Carman Ainsworth High School		58	Yes
Carman Ainsworth	Carman Park School		75	Yes
Clio Area Schools	AC Edgerton Elementary		1	Yes
Clio Area Schools	Clio High School		2	Yes
Clio Area Schools	Admin/adult Ed/MS		3	Yes
Clio Area Schools	Bus Garage		4	Yes
Clio Area Schools	GA Lacure Elementary	Not in Urbanized Area	6	No
Clio Area Schools	GE Garner Elementary		5	Yes
Fenton Area Schools	Tomek Eastern Elementary		133	Yes
Fenton Area Schools	Fenton High School & Admin Building		136	Yes
Fenton Area Schools	State Road Elementary		135	Yes
Fenton Area Schools	Fenton Middle School		134	Yes
Fenton Area Schools	North Road Elementary		132	Yes
Flint Community Schools	Flint Head Start formly Manley Elementary		92	Yes
Flint Community Schools	Northern HS & Anderson Elementary		62	Yes
Flint Community Schools	Civic Park Elementary	Vacant Building	63	Yes
Flint Community Schools	King Elementary	Vacant Building	64	Yes
Flint Community Schools	Dort Elementary	Vacant Building	65	Yes
Flint Community Schools	Cook Elementary	Vacant Building	66	Yes
Flint Community Schools	Summerfield Elementary & Longfellow MS		67	Yes

Flint Community Schools	Durant - Tuuri - Mott Elementary		68	Yes
Flint Community Schools	Coolidge Elementary	Vacant Building	69	Yes
Flint Community Schools	Mott Adult Ed		70	Yes
Flint Community Schools	Eisenhower Elementary		71	Yes
Flint Community Schools	Southwestern Classical Academy		72	Yes
Flint Community Schools	Private-Christian Outreach	New Ownership	73	Yes
Flint Community Schools	Nethercut Elementary		74	Yes
Flint Community Schools	Private	New Ownership	77	Yes
Flint Community Schools	Doyle Ryder Elementary		83	Yes
Flint Community Schools	Homedale Elementary	Vacant Building	84	Yes
Flint Community Schools	Washington Elementary	Vacant Building	85	Yes
Flint Community Schools	Sarvis Cultural Conference Center		86	Yes
Flint Community Schools	Central Kitchen		86	Yes
Flint Community Schools	Central HS & Whittier MS	Vacant Building	87	Yes
Flint Community Schools	Pierce Elementary		88	Yes
Flint Community Schools	Bus Garage		89	Yes
Flint Community Schools	Scott Elementary & Unknown Facility		90	Yes
Flint Community Schools	Stewart Elementary	New Ownership-Church	91	Yes
Flint Community Schools	McKinley MS		94	Yes
Flint Community Schools	Cody Elementary	Vacant-No Storm System	93	Yes
Flint Community Schools	Freeman Elementary		95	Yes
Flint Community Schools	Unknown Facilities		95	Yes
Flint Community Schools	Admin Building		138	Yes
Flint Community Schools	Holmes MS & Brownell Elementary		36	Yes
Flint Community Schools	Merrill Comm Elementary	Vacant Building	40	Yes
Flint Community Schools	Carpenter Rd Elementary		45	Yes
Flint Community Schools	Wilkins Elementary	Vacant Building	34	Yes
Flint Community Schools	Garfield Edison School	Vacant Building	46	Yes
Flint Community Schools	Potter Elementary		48	Yes
Flint Community Schools	Bunche Community Elementary		39	Yes
Flint Community Schools	Northwestern High School		33	Yes
Flint Community Schools	Bryant Center	Vacant Building	37	Yes
Flint Community Schools	Williams Edison School	Vacant Building	47	Yes
Flushing Comm Schools	Undeveloped	Vacant Property	N/A	N/A
Flushing Comm Schools	Seymour Elementary		16	Yes
Flushing Comm Schools	Undeveloped	Vacant Property	N/A	N/A
Flushing Comm Schools	Flushing Jr High School		10	
Flushing Comm Schools	Flushing Middle School		9	
Flushing Comm Schools	Springview Elementary		15	Yes
Flushing Comm Schools	Elms Elementary		8	
Flushing Comm Schools	Undeveloped	Vacant Property	No	No
Flushing Comm Schools	Central Elementary		13	Yes

Flushing Comm Schools	Flushing Admin Building		12	Yes
Flushing Comm Schools	Flushing Jr HS & Adult Ed		14	Yes
Flushing Comm Schools	Bus Garage		11	Yes
Genesee School District	Genesee High School & Haas Elementary & Admin		56	Yes
GISD	Knoph Learning Center		116	Yes
GISD	Special Education Services		115	Yes
GISD	Skill Center S#03260	Was part of Flint now GISD	114	Yes
GISD	GISD Admin Building		114	Yes
GISD	Special Ed Skill Center		80	Yes
GISD	Legon		7	No
GISD	Marion Crouse Inst Center-Sp Ed		17	Yes
Grand Blanc Comm Schools	Cook Elementary		125	Yes
Grand Blanc Comm Schools	Grand Blanc Middle/High School/Admin		122	Yes
Grand Blanc Comm Schools	Transportation Building		118	Yes
Grand Blanc Comm Schools	Reid Rd Middle School		121	Yes
Grand Blanc Comm Schools	Anderson/McGrath Elementary		119	Yes
Grand Blanc Comm Schools	Reid Rd Elementary		121	Yes
Grand Blanc Comm Schools	Indian Hill Elementary		120	Yes
Grand Blanc Comm Schools	Undeveloped	Vacant Property	N/A	N/A
Grand Blanc Comm Schools	Grand Blanc Middle School		124	Yes
Grand Blanc Comm Schools	Middle School		124	Yes
Grand Blanc Comm Schools	Myers Elementary		123	Yes
Lake Fenton Comm Schools	Lake Fenton Middle School/Admin Building		130	Yes
Lake Fenton Comm Schools	Lake Fenton High School		129	Yes
Lake Fenton Comm Schools	Torrey Hill & West Shore Elementary		131	Yes
Linden Community Schools	Linden High School & Central Elementary		127	Yes
Linden Community Schools	Argentine Elementary		126	Yes
Linden Community Schools	Linden Elementary & Middle School		128	Yes
Mt. Morris Consolidated	Monetgue Elementary		19	Yes
Mt. Morris Consolidated	Central Middle School		21	Yes
Mt. Morris Consolidated	Admin Building		22	Yes
Mt. Morris Consolidated	Mt. Morris Jr High School		22	Yes
Mt. Morris Consolidated	Ball Fields		20	Yes
Mt. Morris Consolidated	Pinehurst Elementary		20	Yes
Mt. Morris Consolidated	Undeveloped	Vacant Property	N/A	N/A
Mt. Morris Consolidated	Johnson High School		18	Yes
Swartz Creek Comm Schools	Gaines Elementary	Not in Urbanized Area		No
Swartz Creek Comm Schools	Undeveloped	Vacant Property	N/A	N/A
Swartz Creek Comm Schools	Undeveloped	Vacant Property	N/A	N/A
Swartz Creek Comm Schools	Syring Elementary		111	Yes
Swartz Creek Comm Schools	Swartz Creek Middle School & Admin Building		112	Yes

Swartz Creek Comm Schools	Alternative High School & Admin Building		112	Yes
Swartz Creek Comm Schools	Dieck Elementary	Not in Urbanized Area	82	No
Swartz Creek Comm Schools	Elms Elementary		81	Yes
Swartz Creek Comm Schools	Morrish Elementary		113	Yes
Swartz Creek Comm Schools	Swartz Creek High School & Admin Building		112	Yes
Westwood Heights	Hamady Elementary	Part of GISD	24	Yes
Westwood Heights	Alt High School & Westwood Elementary	Part of GISD	23	Yes
Westwood Heights	Hamady High School & Middle School	Part of GISD	26	Yes
Westwood Heights	Gillespie Elementary	Part of GISD	25	Yes
Westwood Heights	Undeveloped	Part of GISD	N/A	N/A
Westwood Heights	Undeveloped	Part of GISD	N/A	N/A

Map of schools available in GIS upon Request.

## Appendix A

Our Water Newsletter

Website

[cleargeneseewater.org](http://cleargeneseewater.org)

[gcdcswm.com](http://gcdcswm.com)

Public Education Implementation Table

Riparian Workshop Information

Booth Results

Storm Drain Stenciling Details

GCD Program Details

Septic Brochure

FRWC Canoe Events

Speakers Bureau Details

GCD Education Program Brochure

Partner Newsletters

Other Water Programs

Genesee County Parks Programs

Articles



## **MDEQ**

### **June 13 / October 1 meetings**

On June 13 and October 1 the new permit advisory group met with the MDEQ to go over the new 2013-2017 permit. The biggest change for Genesee County Communities and Nested Jurisdictions is there is no more watershed permits. All new permits issued will be individual permits. Communities can still work together and combine services, but each permit will be custom to each permittee. Instead of filling out a brief application and then spelling out the details of your Certificate of Coverage (COC) in your Storm Water Pollution Prevention Initiative (SWPPI), now all those details will have to be included in the application process so each community permit can be customized. Recognizing that the application process will be much more labor intensive, the MDEQ has decided to phase in the permits over several years. Instead of applying for the new 2013 permit this year, the Flint River Watershed area will go through the application / permit process in 2014-15. This also means that your community will continue to be covered under the 2003 permit until the new permit takes effect some time in 2015.

### **SWPPI**

On June 11, 2012 the MDEQ sent the Drain office a letter with concerns and comments on the County's SWPPI that was resubmitted in Oct 2011. Our office and Tetra Tech met with Stephanie Kammer of the MDEQ and went over those concerns. Based on the letter and our meeting the County's SWPPI was revised and resubmitted in July. Once the County's SWPPI has been accepted, the local communities can expect to see a letter from the MDEQ to revise their SWPPI. Sue from the Drain Commissioner's Office will be available to assist with any SWPPI related concerns.

### **Annual Report**

On July 27, 2012 the MDEQ sent out a letter to permittees notifying them that effective October 1, 2012, the progress report for the NPDES PH II permit will change from annual to biennial (every other year). This is often referred to as the annual report. For continuity the Drain Commissioner's Office sent out questionnaires this October to the Communities and Nested Jurisdictions to report on their activities from Oct 1, 2011 to September 30, 2012. Permittees were requested to fill out the questionnaire and keep it for submission in 2013. Nested Jurisdictions were requested to fill out the questionnaire and submit it to the Drain Commissioner's Office. Next fall another annual questionnaire will be sent out and both this years and next's will then be submitted together to the State as the biennial progress report.

## **Public Education**

### **Public Education Booth**

Once again in August, we spent the week at the County Fair educating the public on water quality. Thank you to all the community volunteers that took a shift and help educate. This year we made a new arrangement with the Conservation district to provide staff to work the education booth both at the Fair and at other events. It has worked out great. Last year we were able to speak to 662 people, but with the beautiful weather and the additional staff to support the volunteers we were able to double that number and speak to over 1334 people at the fair. Also this fall we had a presence at the CRIM races for the first time and have had the booth at both the Flint and Grand Blanc Farmers Markets.

### **Riparian Meetings**

Once again we offered free workshops to riparian land owners. For those residents that live on the water, specifically this year those who live on the Swartz Creek, Misteguay Creek or the Lower Flint River, they may have different concerns than residents that do not live on the water. Over the years we have spoken to many riparian landowners that are concerned about bank erosion, nuisance animals such as beavers and their dams, and more recently garbage and debris stockpiling in the water. These workshops have provided us the opportunity to meet with residents in small groups and discuss their specific concerns, and possible solutions.

## **IDEP**

As we close on the 2011-12 fiscal year we have completed a significant portion of the IDEP dry weather screening. All of the Phase II permittees, except those listed below have had their outfalls mapped and dry weather screened. If an Illicit connection is confirmed a letter is sent to all affected parties, the property owner, the local community, the State of Michigan DEQ, and any other enforcement agencies such as the Health Department. Once the illicit connection is eliminated, the Drain Commissioner's Office will follow up to confirm the illicit connection has been eliminated.

An Illicit connection or an isolated dumping is often found through methods other than dry weather screening. Such as a resident can call reporting an incident, or an employee can witness a potential illicit connection while out in the field for another reason. Once you are notified of a potential illicit connection, a record must be kept even if you are not the enforcing authority. The monitoring and Mapping Subcommittee has created a spill notification form for your convenience. The form can be found on our website at the following address [http://www.gcdcswm.com/PhaseII/Permit\\_Forms/Permit\\_Form.htm](http://www.gcdcswm.com/PhaseII/Permit_Forms/Permit_Form.htm) or in the IDEP plan as an attachment. These records should be kept, so you can include them in your annual report.

Due to the number of outfalls involved, not all Genesee County and City of Burton outfalls have been mapped and dry weather screened.

As part of the IDEP mapping, all the nested jurisdictions under Genesee County have been sent a letter this month requesting maps of their storm sewer systems. Starting this fall the County through Tetra Tech will be scheduling on site physical inspections for nested jurisdictions to review the storm operation and maintenance procedures. This program will not affect Local communities.



The NPDES Ph II permit program had 2 types of permits. The jurisdictional permit and the watershed permit. Currently all Genesee County NPDES Ph II permittees have a watershed permit. Under the new permit cycle, the only permit available will be the Jurisdictional. This may change the interpretation on some of the current permit requirements. As has been the trend, this change to a jurisdictional permit will require each permittee to take more ownership of their individual permit. We will and can continue to work together, but as the permit holder the State holds the individual permittee responsible for all the requirements within their permit, regardless of who performs those requirements. The new permit cycle is 2013-2018, but since the State cannot process all the permittees in 2013, they are staggering the dates for application based on watersheds. For Genesee County communities, that means that in 2014 we will be reapplying for a new permit effective in 2015.

- **Fall 2013: New permit training by MDEQ**
- Winter 2013: Meetings with MDEQ
- April 1, 2014: Applications for new permit due
- Fall 2014: approval of application. Effective 2015

Although there will be few overall changes to how we implement the Ph II program, the new permit will have differences.

- February 13, 2013: The State sent out a letter to permittees, in regards to IDEP dry weather screening. Under the new permit, the permittee may ask for alternatives to the dry weather screening. If an alternative approach was approved under the new permit, there may be savings for communities with a large number of repetitive outfalls.
- Communities would only be responsible for testing the MS4's they own and operate within an urbanized area. The map on the back of this page shows the current urbanized area. This requirement will not affect the cities, but may affect a few of the Townships.

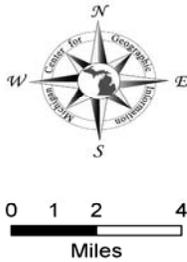
Stephanie Kammer of the MDEQ spoke to the Storm Water Advisory Group (SWAG) at the May 15 regular meeting. Topics included:

- Post construction controls.
- Permit Fee Appeal
- New Permit

The State of Michigan will be performing NPDES Ph II audits this year on City of Davison in April, Genesee County will begin in May and depending on the timing there may be a third audit of a local permittee this year. Additional audits will be held in 2014.

**Stephanie Kammer sent out an e-mail to the Communities. Those that wish to file a fee appeal request may see a reduction on their annual permit fees to the state.**

# FLINT URBANIZED AREA 2000 CENSUS



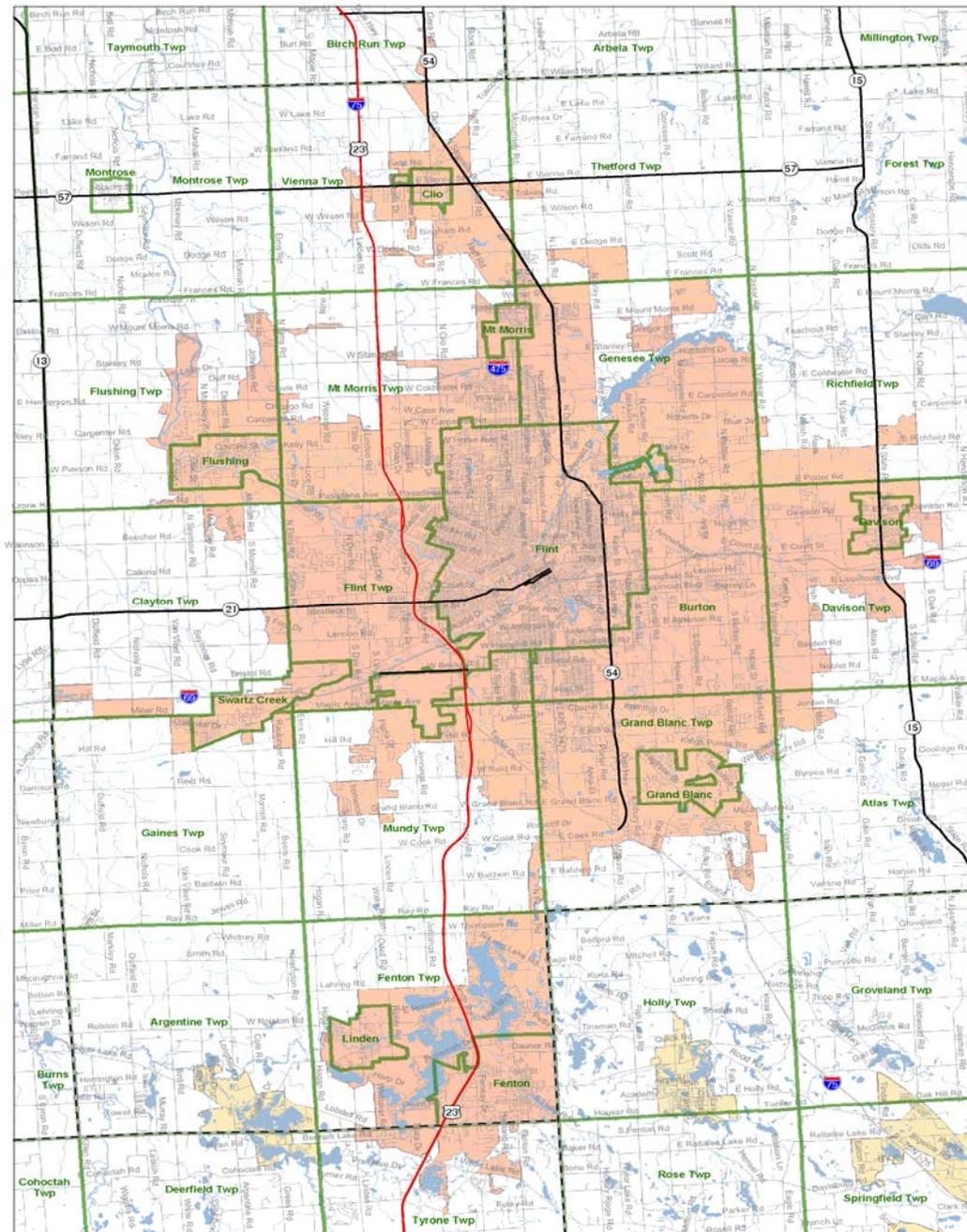
## GEOGRAPHY

- Urbanized Area (area of interest)
- Other UA or UC
- Lakes / Rivers
- Hydrography
- County Boundary
- Minor Civil Division
- Interstate Highway
- U.S. Highway
- State Highway
- Roads

Urban Area Population: 365,096



Produced by  
Michigan Center for Geographic Information  
Department of Information Technology  
May 2002



SOURCE: Urban Areas from U.S. Census Bureau TIGERLine, 2002.  
Basemap from Michigan Geographic Framework, 2002.

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**our water**  
Genesee County Community Water Quality Consortium

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Welcome to the *Our Water* website, your portal to all information related to Genesee County's clean water initiatives. Here you will find information about upcoming events, USEPA's Phase II program, maps of Genesee County's watersheds, tips for keeping our water clean, and much more...

**Who are we?**  
The Genesee County Community Water Quality Consortium is a collection of municipalities, school districts, county organizations, and non-profits charged with overseeing the "Our Water" public education activities. These committed people work to bring awareness, to educate, and to promote stewardship on ways to prevent stormwater pollution and keep our water clean. See the "Partners" section for more information about participating organizations.

And remember -  
Let's keep one thing perfectly clear, our water!

Remember, storm drains lead to our lakes and rivers!

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Helpful Links  
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PowerPoint Presentation  
Reporting

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Genesee County Community Water Quality Consortium



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**Our Water Overview**

In 2001, the communities of Genesee County partnered with the Genesee County Drain Commission to coordinate and apply for the required NPDES Phase II permits. Phase II is an EPA effort to protect, preserve, and improve our water resources. Phase II not only includes drain permitting but also has a public education component. When Genesee County communities were faced with meeting this mandate, they expressed their preference for the County to take the lead. Thus, Genesee County designated the Drain Commissioner's Office as the agency responsible for engaging in watershed management activities and establishing a system of stormwater management services under Act 342, Public Acts of Michigan, 1939. Although not all of the communities located within Genesee County are regulated under the NPDES Phase II program, all the communities have signed a contract with the Genesee County Drain Commission. Genesee County's public education component of the Phase II program has been branded the *Our Water Campaign*. Currently the Genesee County Water Quality Consortium, a collection of municipalities, school districts, county organizations and non-profits, is working to implement the *Our Water Campaign*.

**More Information**

- Overview
- What is NPDES?
- Why is NPDES needed?
- Who's Involved
- Decision-Making Structure
- Educational Components

- Contact Us
- Glossary of Terms
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**Upcoming Events**  
Oct 26, 2013 10 AM to 2 PM - HHW Collection day [Flyer](#)  
**Locations:**  
Davison HS, 1250 N. Oak Rd (HHW, e-waste, tires)  
Flint East- WSC, 3310 East Court St (HHW, e-waste, tires)

**Past Events**  
**Riparian Landowner Workshop** [Flyer](#) [Presentation Materials](#)  
Aug 26, 2013- Grand Blanc Library: 6:30 PM-8 PM  
Aug 28, 2013- Camp Copneconic: 6:30 PM-8 PM

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### Resources

- [What is a Watershed?](#)
- [For Businesses](#)
- [For Kids](#)
- [For Municipalities](#)
- [For Residents](#)
- [For Teachers](#)
- [Our Water "Seven Simple Steps to Clean Water" brochure](#)

- [Contact Us](#)
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### Partners

**Municipal**  
Genesee County has 31 municipalities.  
Link to all municipal governments and their contact information: [www.co.genesee.mi.us/municipalities.htm](http://www.co.genesee.mi.us/municipalities.htm)

**County**  
**Genesee County Administration**  
1101 Beach Street  
Flint, MI 48502  
Telephone Directory: [www.co.genesee.mi.us/telephone\\_directory.htm](http://www.co.genesee.mi.us/telephone_directory.htm)  
Website: [www.co.genesee.mi.us](http://www.co.genesee.mi.us)

**Genesee County Drain Commission**  
4608 Beecher Rd  
Flint, MI 48532  
Phone: (810) 732-1590  
Fax: (810) 732-1474  
After Hours Emergency: 810-732-2940  
Website: [www.godcswm.com](http://www.godcswm.com)

**State**  
**Michigan Department of Environmental Quality (MDEQ)**  
**Constitution Hall**  
525 West Allegan Street  
P.O. Box 30473  
Lansing, MI 48909-7973  
Phone: (517) 373-7917  
Staff Directory: [www.michigan.gov/deq/0,1807,7-135-3313\\_3682\\_3714-13151-,00.html](http://www.michigan.gov/deq/0,1807,7-135-3313_3682_3714-13151-,00.html)  
Website: [www.michigan.gov/deq/0,1807,7-135-3313\\_3682\\_3714-,00.html](http://www.michigan.gov/deq/0,1807,7-135-3313_3682_3714-,00.html)

**Non-profit/University**

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www.gdcswm.com

The Genesee County Drain Commissioner remains committed to the conservation and maintenance o - Internet...

http://www.gdcswm.com/default.htm

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The Genesee County Drain Commissioner remains co...

WELCOME  
To The  
**Genesee County Drain Commissioner**  
**Surface Water Management**

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[Our Water Program \(NPDES II\)](#)  
[Design Standards & Forms](#)  
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The Genesee County Drain Commissioner remains committed to the conservation and maintenance of existing natural areas, farmlands, and the redevelopment of our urban areas for the 21st Century. As part of the Commissioner's Goals, The Surface Water Management Division is working toward reducing impairment of our water resources caused by stormwater runoff while addressing the problems caused by flooding and inadequate drainage systems.

**Jeff Wright, Drain Commissioner**

The **Surface Water Management** Division operates and maintains the drainage systems created by Act 40 Public Acts of 1956 (Drain Code). There are currently over 1400 districts established within Genesee County. (Michigan Association of County Drain Commissioners produced a video about the role of Michigan the Drain Commissioners. Click [here](#) to view video.)

The Division also constructs and maintains those Lake Level Controls on rivers and water bodies within Genesee County as designated by the Board of Commissioners. There are currently 11 controls.

The Drain Commissioner is the designated county agency for stormwater management by the Board of Commissioner's and coordinates the efforts in the Watershed Management for the County under the NPDES Phase II requirements.

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NPDES Phase II - Internet Explorer, optimized for Bing and MSN

http://www.gcdswm.com/PhaseII/npdes\_pl

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NPDES Phase II

WELCOME  
To The  
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**Surface Water Management**



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**NPDES Phase II**

The Federal Clean Water Act required that municipalities identified by the EPA obtain stormwater permits under the **National Pollution Discharge Elimination System (NPDES)** permit program. In the State of Michigan the Michigan Department of Environmental Quality (MDEQ) manages that permit program. The first phase (Phase I) of the program affected municipalities with population in excess of 100,000. In Genesee County only the City of Flint met those requirements. With the development of Phase II of the program the municipalities asked that the Drain Commissioner coordinate an effort on their behalf to comply with the permit requirements.

In 2001 the Genesee County Board of Commissioners designated the Drain Commissioner the County Agency under **Act 342 of 1939** for the purpose of stormwater management. The communities of Genesee County along with the County entered into a contract to jointly develop and obtain the required permits.

[Genesee County Permit Overview](#) , published in [MACDC Pipeline](#)

[Watersheds](#)      [SWPPI's & Training](#)      [Survey Results](#)  
[Ph II Permit & Forms](#)   [Low impact Development Manual \(LID\)](#)   [Annual Reports](#)

[www.ClearGeneseeWater.org](http://www.ClearGeneseeWater.org)

**Subcommittees**

<u><i>Monitoring and Mapping</i></u> City of Fenton - Dan Czarniecki City of Montrose - Everett Persall City of Mt. Morris - Jake LaFursey City of Swartz Creek - Tom Svrcek Argentine Township - Bob Cole Davison Township - Kurt Soper Flushing Township - Terry Peck Gaines Township - Paul Fortino Mt. Morris Township - Gerald Deloney Village of Gaines - Thomas Keech Village of Lennon-Larry Widigan	<u><i>Public Education</i></u> City of Burton - Paula Zelensko City of Clio - William Kovi City of Davison - Michael Hart Clayton Township - Rick Caruso Flint Township - Karyn Miller Forest Township - Valerie Pace Mundy Township - Dave Guigear Thetford Township - Clyde How d Vienna Township - Bob Palmer Village of Otisville - David Tatro	<u><i>New Construction Standards</i></u> City of Flushing - Dennis Bow City of Grand Blanc - Matt Wurts City of Linden - Scott Fairbanks Atlas Township - Shirley Jones Fenton Township - Boronie Mathis Genesee Township - Steven Fuhr Grand Blanc Township - Mikki Hoffman Montrose Twp - Mark Emmendorfer Richfield Township - Joe Madore Village of Goodrich -
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\*Phase II communities are in **Bold**

Internet 75%

Delivery Mechanism / Activity	Public Education Topics	Target Audience(s)	Key Message	Standard of Effectiveness (recommended)	Mechanism Specific Audience (recommended)	Mechanism Specific Message(s) (recommended)	Milestone(s) (recommended)	Timetable / Timeline		Responsible Party	Cost (recommended)	Evaluation
								Development	Implementation			
Road/stream crossing and watershed signs	1) Personal watershed stewardship 2) Ultimate storm water discharge location	Public, Residents, Visitors	Educate on specific watershed. Waterbodies the public can affect.	Get 50% of people to know the stream names and that they are in a watershed	Drivers and passengers, visitors going by specific sign	Entering a watershed; specific waterbodies; and watershed website	Increase in number of people recognizing the watershed and waterbodies they live in or passing by	Signs have been installed beginning in 2008	will continue to install until reached 200 sites, approx 400 to 600 signs, then maintain existing signs	SWM/ Road Commission	\$3,000/yr	Measure the number of residents that went to the website based on the information on the sign; social survey response
Watershed Maps	1) Personal watershed stewardship 2) Ultimate storm water discharge location & potential impacts 3) Public reporting 4) Personal actions that can impact watershed	School Children, Teachers	Definition of a watershed - Educate on Specific Watershed the public can affect, purpose for protecting the watershed. Effects of human activities on waterways, illicit discharge, what is it? Promoting illicit discharge reporting.	Get 50% of students to know what a watershed is and which one they live in.	Teachers/classrooms	What is a watershed; specific waterbodies; and watershed website	Have maps posted in as many classrooms as possible and discussed in class.	Printed 2010/2011	Distribute to teachers for class use 2010-2013. Reprint and send out upon request after 2013	SWM/CAER	Development - \$780.00 Printing - \$3,000 Promotion - \$910.00/yr Distribution/workshop - \$5,200.00/per session	Number of teachers incorporating lessons into curriculum.
Benthic Monitoring Program	1) Personal watershed stewardship 2) Ultimate storm water discharge location	Residents, School Children	Ways that individuals can affect the watershed through their activities. What is the actual condition of our waters?	Maintain current level of sites monitored or expand that number.	Interested volunteers	Your efforts help us to better understand the watershed.	Consistent trends begin to paint a clearer picture of different reaches.	Program has been running for 10 years now.	Twice a year	SWM/FRWC to administer program	\$5,150/yr	No. of volunteers and sites surveyed. Use information to aid decision-making.
Project Green WQ monitoring Program	1) Personal watershed stewardship 2) Ultimate storm water discharge location & potential impacts 3) Public reporting 4) Personal actions that can impact watershed	School Children, Teachers	Ways that individuals can affect the watershed through their activities. What is the actual condition of our waters?	Maintain current level of participation or increase number of classrooms.	School children, teachers	Our actions have impacts on local waterways; how to act to better protect adjacent waterbodies.	Increased demand for the program	Program has been running for 12 years now. Last 4 under the FRWC	Yearly	SWM/FRWC to administer program	\$7,500/yr for sampling + private funds Up to \$5,000 for analysis	No. of participating schools and sites surveyed. Use information to aid decision-making. Increased public awareness - social survey.
Display Booth for events	1) Personal watershed stewardship 2) Ultimate storm water discharge location & potential impacts 3) Public reporting 4) Personal actions that can impact watershed	Public, public employees	Definition of a watershed - Ways that individuals can affect the watershed through their activities.	Residents adopt the recommended behavior changes.	Home owners, various associations and businesses	Same as "Seven Simple Steps"	Display at 6 functions a year	Developed	Ongoing training of volunteers	SWM/CAER	\$9,500/yr	- Answers to questions on the social survey - Other metrics such as "During catch basin cleanout determine the reduction in the amount of organic debris in the catch basin cleanout materials compared to the previous year."
Website: <a href="http://cleargenesee.water.org/">http://cleargenesee.water.org/</a>	1) Personal watershed stewardship 2) Ultimate storm water discharge location & potential impacts 3) Public reporting 4) Personal actions that can impact watershed 5) Waste management assistance 6) Septic system 7) Benefits of native vegetation 8) Management of riparian lands/maintenance	Public	Have messages on most topics.	Residents adopt the recommended behavior changes.	Permittees, home owners, associations, businesses	Same as key message	Number of hits per year increases.	Developed	Expand site as new material becomes available. Update as needed	SWM	100 hrs a year. Plus periodic costs for updates.	Number of hits on the site Number of times brochure is downloaded.
Conservation District presentation to school districts with Enviroscapes	1) Personal watershed stewardship 2) Ultimate storm water discharge location & potential impacts 3) Public reporting 4) Personal actions that can impact watershed	School Children, Teachers	What is a watershed - Importance of a riparian corridor, effects of human activities on waterways and wetlands.	Make presentation to at least 8000 students/ teachers per year	School children	Our actions have impacts on local waterways; how to act to better protect adjacent waterbodies.	Number of presentations per year.	Developed	Schedule presentations annually to reach at least 8000 students/year	SWM/ Conservation District	\$16,000/yr	- Number of presentations, - Answer questions on social survey - Improvement in other metrics
Catch basin stenciling program that includes door to door delivery of brochures	1) Personal watershed stewardship 2) Ultimate storm water discharge location & potential impacts 3) Public reporting 4) Personal actions that can impact watershed	Residents, schools, owners and employees of local businesses and industries, boy/girl scouts, volunteers groups	- Storm drains discharge to water bodies - Storm water discharged from separate storm sewer systems does not receive treatment prior to discharge - Impacts of storm water pollutants in the watershed - Knowledge of separate storm water drainage system in a neighborhood and the water body to which the storm water is discharged	Get 10% of the people in the watershed where the catchbasins were labeled to understand where there storm water goes and what the impacts are.	Homeowners; parties distributing brochures and stenciling	Same as key message	Stencil 1000 catch basins/yr - with residents receiving a brochure when stenciling is in their neighborhood	Program began in 2005; materials have been developed	Continue to deliver program plan and brochure in Jan 2010 - 2013	FRWC/CD & SWM maintenance dept.	\$5,300/yr	Phone or mail survey of residents' awareness of the watershed; number of residents that volunteer to stencil storm drains.

Delivery Mechanism / Activity	Public Education Topics	Target Audience(s)	Key Message	Standard of Effectiveness (recommended)	Mechanism Specific Audience (recommended)	Mechanism Specific Message(s) (recommended)	Milestone(s) (recommended)	Timetable / Timeline		Responsible Party	Cost (recommended)	Evaluation
								Development	Implementation			
Creation of an illicit discharge reporting mechanism (See IDEP plan for more information)	3) Public reporting	Public and public employees	What is an illicit discharge? How to report illicit discharge.	Eliminate known illicit discharges to storm drains and waterways	Municipal staff	Report illicit discharges or improper disposal of materials that threaten the water supply using the systems and forms created	Reporting mechanism for IDEP is being used by the communities.	System has been created and is in place	Train staff on procedure	Municipal DPW and/or Water and Sewer Dept. or WWS or Health Dept	Staff costs and phone line charges	Is the illicit discharge reporting mechanism being used.
Distribute brochures promoting the "seven simple steps"	1) Personal watershed stewardship 4) Personal actions that can impact watershed	Public and public employees	Actions everyone can take to improve water quality. Effects of residential waste on our waterbodies.	Residents adopt the recommended behavior changes.	All residents	Specific to each of the seven steps: Car Care, proper fertilizing, pet waste, water conservation, HHW, storm drains, earth friendly landscaping	Distribute 2500+ /yr	"Seven Simple Steps" brochure has been developed.	Continue to distribute "seven simple steps" through permittees/ events.	Permittees	\$1,000 every other year	- Answers to questions on the social survey - Other metrics such as "During catch basin cleanout determine the reduction in the amount of organic debris in the catch basin cleanout materials compared to the previous year."
Speakers	1) Personal watershed stewardship 2) Ultimate storm water discharge location & potential impacts 3) Public reporting 4) Personal actions that can impact watershed 5) Waste management assistance 6) Septic system 7) Benefits of native vegetation 8) Management of riparian lands/maintenance	Home owner associations, non-profit groups, rotary clubs...	What is a watershed - Actions everyone can take to improve water quality, effects of residential waste on our waterbodies; and other specific messages (7 simple steps) The talk is broken into segments by topic so each talk can be customized	Residents adopt the recommended behavior changes.	Home owners, various associations and businesses	Same as "Seven Simple Steps"	Address 10+ groups a year	Developed	Train new volunteers to give presentations as needed	CAER/ FRWC	\$2,040/yr	- Answers to questions on the social survey - Other metrics such as "During catch basin cleanout determine the reduction in the amount of organic debris in the catch basin cleanout materials compared to the previous year."
Articles on seven measures to be placed in newsletters, newspaper	1) Personal watershed stewardship 4) Personal actions that can impact watershed	Public, non-profit groups, public employees	What is a watershed - Actions everyone can take to improve water quality, effects of residential waste on our waterbodies; and other specific messages (7 simple steps)	Residents adopt the recommended behavior changes.	Homeowners, businesses, industries	Same as key message	Increase sense of community stewardship and actions taken to protect waterways.	Some have been developed; new articles will be to address timely issues.	Submit articles to group newsletters & newspaper for print	SWM	None	-Articles get published - Responses to the pending social survey
Advertise and distribute flyers about the Household Hazardous Waste Collection Day	5) Waste management assistance	Public, public employees, businesses	Identification of HHW (household hazardous waste), disposal locations and availability	Increase the number of residents dropping off HHW at events by 10%	Homeowners, businesses (painters, landscapers, etc.)	How and where to dispose of oil-based paint, pesticides, herbicides, etc.	Increase awareness of household hazardous waste and where and when it can be disposed	Develop advertisements/flyers for distribution twice a year	Develop advertisements/flyers for distribution twice a year	All Permittees/ HHW Committee	Cost of advertisement / flyers, staff time, and hazardous waste disposal costs	Track the number of residents and the amount of waste collected during Hazardous Household Waste Collection Days.
Educational materials for Homeowners With Septic Systems to be Given at "Time of Sale". Main Topic: Septic System Maintenance.	6) Septic system maintenance	Homeowners, public employees, realtors, haulers, inspectors	Proper septic system care and maintenance, how to recognize a system failure, impact of failure, where to go for assistance.	Educate septic system owners on proper care and maintenance, recognizing a failure and correcting	Septic system owners	How to properly maintain your septic system	Educate septic system owners on the proper care and maintenance of their systems and how to recognize failing systems.	Information has been developed. Delivery mechanism is being worked out.	Printing and distribute materials beginning in 2009 through communities & real estates agents.	SWM/CAER and TBD	300 - 500 hours *printing - \$3000.00 Mail/distribution - \$1500.00 (estimated until 2013)	Results of septic system owner survey.
River walks	1) Personal watershed stewardship 4) Personal actions that can impact watershed 8) Management of riparian lands	Public, landowners	Purpose for protecting the watershed, ways that individuals can affect the watershed through their activities, improving water quality and habitat and benefits to all.	Realize an increase in the use of the riparian corridor and a corresponding increase of volunteering/ stewardship of the waterbodies	Any resident	People that use the waterbodies for recreation are going to want to protect the waterbodies	Increase in volunteerism	Already ongoing	Schedule events for 2010 to 2013	SWM/FRWC	\$2,500/yr	- The number on new people participating in each event. - An increase in the plantings of native veg.
Canoe trips	1) Personal watershed stewardship 4) Personal actions that can impact watershed 8) Management of riparian lands	Public, landowners	Purpose for protecting the watershed, ways that individuals can affect the watershed through their activities, improving water quality and habitat and benefits to all.	Realize an increase in the use of the riparian corridor and a corresponding increase of volunteering/ stewardship of the waterbodies	Any resident	People that use the waterbodies for recreation are going to want to protect the waterbodies	Increase in volunteerism	Already ongoing	Schedule events for 2010 to 2013	SWM/FRWC	\$4,000/yr	- The number on new people participating in each event. - An increase in the plantings of native veg.

Delivery Mechanism / Activity	Public Education Topics	Target Audience(s)	Key Message	Standard of Effectiveness (recommended)	Mechanism Specific Audience (recommended)	Mechanism Specific Message(s) (recommended)	Milestone(s) (recommended)	Timetable / Timeline		Responsible Party	Cost (recommended)	Evaluation
								Development	Implementation			
Flushing nature park native vegetation presentations	7) Benefits of native vegetation	Public, groups	Using native plants, benefits to habitat and water quality	Realize an increase in the use of native plants	Public, groups	Go native – use native plant species to protect the environment by improving water quality and creating wildlife habitat	Adoption of native planting throughout the community	Already ongoing. Section on native species and invasive species has been added.	Schedule events for 2010 to 2013	Flushing nature park	Nature park staff time	The number of people attending presentations
Mail information to riparian landowners and promote workshop to landowners on landscape improvements to protect waterways.	7) Benefits of native vegetation 8) Management of riparian lands	Riparian landowners, developers, contractors	- Importance of riparian corridors - BMPs for riparian lands - Protection through use of conservation easements - Lawn maintenance for water quality - Landscaping for water quality - Shoreline stabilization techniques - Native vegetation alternative	Get 20% of residential riparian landowners to learn how to better manage the land.	Lake and stream associations, riparian land owners	How to properly manage and dispose of grass, leaf and animal wastes; how to improve your property to better protect adjacent waterbodies.	Educate the number of riparian land owners and related businesses in the knowledge of how to protect banks from erosion and water quality. Educate 25% by 2012 and 50% by 2015	1st mailing of information occurred in 2009.	Deliver all presentations by Dec 2015	SWM/CAER	Develop mail out info - \$365.00 (one time) Mailing - \$600.00/yr Develop workshop - \$1950.00 (one time) Deliver workshop - \$2,250.00 per time	Number of information packets mailed out. Results of survey given after each presentation Number of Landscape improvements
Workshop to landowners on landscape improvements to protect waterways.	7) Benefits of native vegetation 8) Management of riparian lands	Riparian landowners, developers, contractors	- Importance of riparian corridors - BMPs for riparian lands - Protection through use of conservation easements - Lawn maintenance for water quality - Landscaping for water quality - Shoreline stabilization techniques - Native vegetation alternative	Get 10% of riparian landowners at the workshop with problem banks to correct them by providing technical assistance	Lake and stream associations, riparian land owners	How to properly manage property to better protect adjacent waterbodies through vegetation, permitted improvements	Provide additional education for riparian land owners that want to improve property. Hold workshops in each subwatershed and assist 10% with physical changes.	1st mailing of information occurred in 2009.	Deliver all presentations by Dec 2015	SWM/CAER	Develop mail out info - \$365.00 (one time) Mailing - \$600.00/yr Develop workshop - \$1950.00 (one time) Deliver workshop - \$2,250.00 per time	Number of information packets mailed out. Results of survey given after each presentation Number of Landscape improvements
Presentations on proper disposal of medications and personal care products	4) Personal actions that can impact watershed 9) Entity specific pollutants	Public	Proper disposal of of HHW, specifically medications and personal care products	Get 20% of those educated to utilize HHW program to properly dispose of in landfill	Public	Proper disposal of HHW, specifically medications and personal care products	Educate 10% public on program. Increase use of HHW program	Done	Meetings done. Information on WWS website	Water and Waste Services (WWS)	Staff time	Attendance and website hits
Pub ed workshop on proper disposal of restaurant waste	9) Entity specific pollutants	Business owners	Proper disposal of kitchen waste	Get restaurant owners that have had attended workshop to properly dispose of restaurant waste	Business owners	Proper disposal of kitchen waste	Educate 20% restaurants on program	Have program developed by 2010/2011. Currently talk to each individually	Have workshops in 2011	WWS	Staff time and TBD workshop costs	Attendance to workshop
Operation and maintenance 1/2 day workshop for municipalities, entities and their contractors	9) Entity specific pollutants	Public employees, contractors	Good housekeeping practices and their impact on water quality.	Adoption and recording of goodhousekeeping practices	PowerPt and manual	How to properly manage and maintain public infrastructure and related activities	Educate 50% by 2011 and 100% by 2015; Have maintenance crews adopt maintenance protocols on property by 2013	Training is being developed	1st two sections will be spring 2010	SWM/Tetra Tech	\$6,000/yr	Pass MDNRE inspections

Public education actions managed and performed by contract partners not the PEP sub-committee.

Many of the Public Education actions are performed by other permittees or non-permittee partners. Each permittee is responsible to execute the permitted Public education efforts irregardless of who is actually doing the work.

## Taking care of your waterfront land will **save you money** because...

◆ Healthy waterfront land serves many functions including water filtration, storage of stormwater, flood control, protection of water quality, nutrient cycling, and protection of shorelines and stream banks. When these areas are compromised, expensive engineering solutions may be required, costing you more money in the future.

◆ Waterfront properties that are well-planned and are well-maintained or well-managed may sell for more than average market value.



G-4608 Beecher Rd.  
Flint, MI 48532

Let's make one thing  
Perfectly Clear.  
**our water**  
Genesee County Community Water Quality Consortium

## The Water's Edge

*How to protect your waterfront property and its value*



### Brought to you by the communities of Genesee County

We all know how important water is to us. It's just as important that the water banks are protected as well.

Follow the simple actions described in this brochure to avoid costly maintenance repairs in the future.

During a recent study, members of our field crew were approached by many landowners with questions about how to protect their waterfront property. This brochure was developed to address some of the questions you and your neighbors may have about soil or bank erosion.

Whether you have property next to a lake, river, or stream, you reap benefits from your waterfront land almost daily. Not only is your property value enhanced, but issues important to everybody including water quality, wildlife and fish habitat, and recreation use depend on your healthy, maintained waterfront land.

This brochure was written for the Genesee County *Our Water* Campaign, the public education effort of the Genesee County Water Quality Consortium. The Genesee County Water Quality Consortium is a collection of municipalities. These dedicated people work to bring awareness, to educate and to promote stewardship on ways to prevent stormwater pollution and keep our water clean. Funding for this newsletter was provided by the Genesee County Water Quality Consortium.

## Stabilize stream banks and shorelines.

The continued wearing away of soil and sediment from a stream bank or shoreline is called erosion. This process can be accelerated or slowed by the actions we take. Altering land to create open areas along rivers, lakes, and streams can quickly result in erosion of property along the banks. Not only is property lost every time it rains, but when too much soil or sediment enters the nearby lake, river, or stream, it can be considered a pollutant.

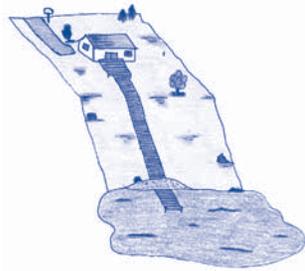
## To prevent erosion on your property and save yourself time and money, try these techniques to create a naturalized stream bank or shoreline...

### Build plant buffers.

Before your property was developed, your nearby lake, river, or stream was surrounded by native plants, trees, and shrubs that acted as natural water filters and held soil in place. Rooted plants such as wildflowers, shrubs, and trees can stabilize eroding or sensitive slopes.

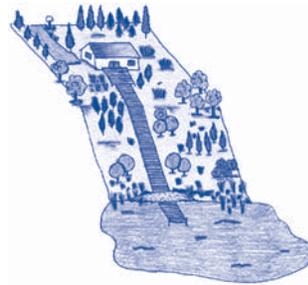
A good buffer strip is wide (30 feet), continuous, and dense with shorter plants nearer the water and taller plants and trees planted further away. Engineered structures like seawalls can reduce animal and plant habitat and are only recommended in erosion-prone locations.

To save yourself time and money, avoid mowing your lawn up to the edge of the water. Letting the lawn closer to the edge of the water grow tall with grasses and shrubs can help stabilize your stream bank or shoreline. Minimize disturbance at the edge of water.



The banks of this property will erode over time because there is little vegetation to keep the stream bank held together.

The banks of this property will not erode over time because there are plant buffers and deep roots to keep the stream bank held together.



### What is a plant buffer?

A plant buffer is a strip of trees, shrubs, and other plants along lakes, rivers, and streams that traps runoff before it flows into nearby water bodies. As water seeps through a plant buffer, the plants hold soil, filter out pollutants, regulate water flow, and moderate water temperatures.

### Not sure building a buffer is a good choice for your property? Consider these material costs:

- ◆ Maintaining an existing plant buffer = \$0
- ◆ Building a plant buffer = \$10 per foot
- ◆ Installing "riprap" (concrete blocks or large rocks along the edge of water) = \$30-40 per foot
- ◆ Installing a sea wall = \$65-100 per foot

The listed prices are simply cost estimates. Actual costs will depend on many factors including, location, availability of materials, permits, grading, labor, and maintenance.

**Keep it legal!** Make sure to obtain the proper permits before working along the water's edge. Check with the Michigan Department of Environmental Quality (1-800-662-9278) and your local township office to see if you need one.

### Minimize disturbance at the edge of water.

- ◆ If you have swimming area, try to make it as small as possible.
- ◆ Avoid pulling out aquatic plants. This will save you both time and effort! Plus, aquatic plants provide habitat for local organisms.
- ◆ Also consider mowing only a small trail from your property to your streambank or shoreline.

### Mow better and mulch clippings.

- ◆ Keep your grass cut high – set your lawnmower cutting height to 3" to hide clippings, help the grass develop deeper root systems, and defend against weeds and drought.
- ◆ Leave grass clippings on your lawn – they make great natural fertilizer. Leaving them will also save you bagging time!

Don't guess, soil test. A soil test will tell you what, if any, fertilizer is needed in your yard. Contact your Michigan State University Extension county office for more information.

### Cover bare spots on your lawn.

- ◆ Establish vegetation on all bare areas.
- ◆ Temporarily stabilize these areas with mulch to minimize erosion.

### Create porous walkways.

- ◆ Design paths that follow natural contours to reduce risk and create a more visually interesting landscape.
- ◆ Use porous paving material such as wood decking, bricks, or interlocking stones instead of asphalt or concrete.

### Reduce Runoff.

- ◆ Collect and reuse water in rain barrels to water trees, shrubs, and lawn, and save money.
- ◆ Install rain gardens in low areas where water collects.

### Remove invasive plants and go native.

- ◆ Use native, low maintenance plants like grasses, wildflowers, shrubs, and trees on your property. Native plants are better able to tolerate Michigan's climate, require less fertilizer and water, are more disease resistant, and will attract wildlife.
- ◆ Invasive plants should be removed and replaced with native vegetation. But first, make sure to know about the invasive plants you pull out – you might actually make the problem worse if you don't remove invasive plants properly.

### 5 Common Southeast Michigan Invasive Plants:

- ◆ Purple Loosestrife (*Lythrum salicaria*)
- ◆ Common Reed or Phragmites (*Phragmites australis*)
- ◆ Frogbit (*Hydrocharis morsus-ranae*)
- ◆ Eurasian Watermilfoil (*Myriophyllum spicatum*)
- ◆ Curly Leaf Pondweed (*Potamogeton crispus*)

Color images of these five common invasive plants can be found at the *Our Water* Campaign website:

[www.ClearGeneseeWater.org/invasiveplants](http://www.ClearGeneseeWater.org/invasiveplants)

Information for this riparian landowner's brochure was gathered from the following resources and was adapted for the needs of the Genesee County *Our Water* Campaign.

- ◆ Huron River Watershed Council, Get Buff! Shorelines need muscle to keep our water clean. Informational Handout.
- ◆ Lake County Stormwater Management Commission, Riparian Area Management: A Citizen's Guide. Informational Booklet, 2002.
- ◆ Michigan State University Extension, Home\*A\*Syst: Managing Shoreline Property to Protect Water Quality. Informational Booklet WQ-52, May 1999.
- ◆ Oakland County Drain Commission, Waterfront Wisdom: Healthy Habits for Clean Water. Informational Booklet.
- ◆ Oakland County Planning & Economic Development Services, Discovering your Community's Natural Asset. Informational Poster.
- ◆ University of Minnesota Extension Service, Protecting our Waters: Understanding Shoreline BMPs. Factsheets.
- ◆ Genesee County Water Quality Consortium, Seven Simple Steps to Clean Water. Informational Brochure, 2008.

# The Water's Edge

*How to protect your waterfront property and its value*

**FREE** workshops offered to waterfront landowners in the  
Shiawassee River and the Thread Creek Watersheds,

*brought to you by the communities of Genesee County.*

**August 26, 2013 - 6:30-8:00pm**

Grand Blanc District Library, 515 Perry Road, Grand Blanc MI 48439

**OR**

**August 28, 2013 - 6:30-8:00pm**

Camp Copneconic, (in the lounge across from the welcome center) 10407 North Fenton Road, Fenton Twp, MI 48430

## **Overview:**

Genesee County and the communities of Thread Creek, and Shiawassee River (and its tributaries) Watersheds are fortunate to have an abundance of lakes, rivers, streams, and creeks. Your waterfront land management practices, both good and poor, impact the value of your land and the health of our water. Simple actions taken today can protect your property and our water into the future.

The communities of Genesee County, in partnership with the Genesee County Drain Commissioner's Office, will be holding two educational workshops for waterfront landowners in these watersheds. These workshops will provide waterfront property owners with a range of low-cost and ecologically-sensitive practices for protecting waterfront property, reducing stream bank and shoreline erosion, and effectively managing stormwater. All workshops are the same, landowners need only to attend one of the workshops. By attending one workshop, participants will learn about a range of opportunities available to improve land management practices and save money. Participants will also walk away with the resources and contacts needed to assist them in protecting their waterfront property and restoring water quality. *Light refreshments will be served.*

## **Registration Information:**

Contact Jeffrey Johnson at (810) 230-8766 Ext 3 or [jeffrey.johnson@macd.org](mailto:jeffrey.johnson@macd.org) to register for ONE of these workshops.

Please RSVP by 5pm on August 21, 2013 – limited space is available.



Event Name: HOME AND GARDEN SHOW  
PERANI ARENA

Date: 04/07/2013

CITIES	NUMBERS	
Burton		14
Clio		3
Davison		
Fenton		
Flint		54
Flushing		10
Grand Blanc		4
Linden		3
Montrose		
Mt. Morris		1
Swartz Creek		6
<b>TOWNSHIPS</b>		
Argentine		3
Atlas		5
Clayton		3
Davison		6
Fenton		5
Flint		5
Flushing		3
Forest		2
Gaines		6
Genesee		12
Grand Blanc		15
Montrose		6
Mt. Morris		10
Mundy		5
Richfield		5
Thetford		
Vienna		1
<b>OTHER CO. IN ST</b>		23
<b>OTHER STATES</b>		6





# Information Booth: Data Collection

Event Name: FLINT FARMERS MARKET

Date: 06/29/13

CITIES	NUMBERS	
Burton	1	6
Clio		9
Davison		5
Fenton		5
Flint		43
Flushing		15
Grand Blanc		4
Linden		4
Montrose		
Mt. Morris		3
Swartz Creek	1	6
<b>TOWNSHIPS</b>		
Argentine		
Atlas		
Clayton		
Davison		
Fenton		
Flint		6
Flushing		
Forest		
Gaines		
Genesee		
Grand Blanc		5
Montrose		
Mt. Morris		
Mundy		1
Richfield		
Thetford		
Vienna		4
OTHER CO. IN ST		7
OTHER STATES		2

OTHER COUNTRY |



**Information Booth: Data Collection**

AUG 12  
Rae

Event Name: Genesee County Fair

Date: August 12 - 18, 2013

CITIES	NUMBERS
Burton	
Clio	
Davison	
Fenton	
Flint	
Flushing	
Grand Blanc	
Linden	
Montrose	
Mt. Morris	
Swartz Creek	
<b>TOWNSHIPS</b>	
Argentine	
Atlas	
Clayton	
Davison	
Fenton	
Flint	
Flushing	
Forest	
Gaines	
Genesee	
Grand Blanc	
Montrose	
Mt. Morris	
Mundy	
Richfield	
Thetford	
Vienna	
<b>OTHER CO. IN ST</b>	
<b>OTHER STATES</b>	

**Total** 182

TODAY IT RAINED MOST OF THE DAY!

8/13/2013

Event Name: Genesee County Fair

Date: August 12 - 18, 2013

CITIES	NUMBERS
Burton	<del>    </del> <del>    </del> <del>    </del>
Clio	<del>    </del> <del>    </del> <del>    </del>
Davison	<del>    </del> <del>    </del>
Fenton	
Flint	<del>    </del> <del>    </del> <del>    </del> <del>    </del> <del>    </del> <del>    </del>
Flushing	<del>    </del> <del>    </del>
Grand Blanc	
Linden	
Montrose	
Mt. Morris	
Swartz Creek	<del>    </del> /
<b>TOWNSHIPS</b>	
Argentine	
Atlas	<del>    </del>
Clayton	
Davison	<del>    </del>
Fenton	
Flint	<del>    </del>
Flushing	<del>    </del> <del>    </del>
Forest <i>Ortusville</i>	<del>    </del> <del>    </del>
Gaines	
Genesee	<del>    </del> <del>    </del> <del>    </del>
Grand Blanc	<del>    </del>
Montrose	
Mt. Morris	<del>    </del> <del>    </del> <del>    </del> <del>    </del>
Mundy	
Richfield	<del>    </del> <del>    </del>
Thetford	
Vienna	<del>    </del>
OTHER CO. IN ST	<del>    </del> <del>    </del> <del>    </del> <del>    </del> <del>    </del>
OTHER STATES	

**Total** 238



Information Booth: Data Collection

0 8/14

Event Name: Genesee County Fair

Date: August 12 - 18, 2013

CITIES	NUMBERS
Burton	
Clio	
Davison	
Fenton	
Flint	
Flushing	
Grand Blanc	
Linden	
Montrose	
Mt. Morris	
Swartz Creek	
<b>TOWNSHIPS</b>	
Argentine	
Atlas	
Clayton	
Davison	
Fenton	
Flint	
Flushing	
Forest	
Gaines	
Genesee	
Grand Blanc	
Montrose	
Mt. Morris	
Mundy	
Richfield	
Thetford	
Vienna	
<b>OTHER CO. IN ST</b>	
<b>OTHER STATES</b>	

**Total** 165



Information Booth: Data Collection

8/15

Event Name: Genesee County Fair

Date: August 12 - 18, 2013

CITIES	NUMBERS
Burton	
Clio	
Davison	
Fenton	
Flint	
Flushing	
Grand Blanc	
Linden	
Montrose	
Mt. Morris	
Swartz Creek	
<b>TOWNSHIPS</b>	
Argentine	
Atlas	
Clayton	
Davison	
Fenton	
Flint	
Flushing	
Forest	
Gaines	
Genesee	
Grand Blanc	
Montrose	
Mt. Morris	
Mundy	
Richfield	
Thetford	
Vienna	
OTHER CO. IN ST	
OTHER STATES	

**Total** 184



# Information Booth: Data Collection

8/16

Event Name: Genesee County Fair

Date: August 12 - 18, 2013

CITIES	NUMBERS
Burton	
Clio	
Davison	
Fenton	
Flint	
Flushing	
Grand Blanc	
Linden	
Montrose	
Mt. Morris	
Swartz Creek	
<b>TOWNSHIPS</b>	
Argentine	
Atlas	
Clayton	
Davison	
Fenton	
Flint	
Flushing	
Forest	
Gaines	
Genesee	
Grand Blanc	
Montrose	
Mt. Morris	
Mundy	
Richfield	
Thetford	
Vienna	
OTHER CO. IN ST	
OTHER STATES	

**Total** 174



Information Booth: Data Collection

Sat. August 17

Event Name: Genesee County Fair

Date: August 12 - 18, 2013

CITIES	NUMBERS
Burton	
Clio	
Davison	
Fenton	
Flint	
Flushing	
Grand Blanc	
Linden	
Montrose	
Mt. Morris	
Swartz Creek	
<b>TOWNSHIPS</b>	
Argentine	
Atlas	
Clayton	
Davison	
Fenton	
Flint	
Flushing	
Forest	
Gaines	
Genesee	
Grand Blanc	
Montrose	
Mt. Morris	
Mundy	
Richfield	
Thetford	
Vienna	
<b>OTHER CO. IN ST</b>	
<b>OTHER STATES</b>	

**Total** 153



# Information Booth: Data Collection

8/18/2013

Event Name: Genesee County Fair

Date: August 12 - 18, 2013

CITIES	NUMBERS
Burton	
Clio	
Davison	
Fenton	
Flint	
Flushing	
Grand Blanc	
Linden	
Montrose	
Mt. Morris	
Swartz Creek	
<b>TOWNSHIPS</b>	
Argentine	
Atlas	
Clayton	
Davison	
Fenton	
Flint	
Flushing	
Forest	1 (Oftsville)
Gaines	
Genesee	
Grand Blanc	
Montrose	
Mt. Morris	
Mundy	
Richfield	
Thetford	
Vienna	
<b>OTHER CO. IN ST</b>	
<b>OTHER STATES</b>	

**Total** 77



# Information Booth: Data Collection

Event Name: The Crim

Date: August <sup>22</sup> 2013

CITIES	NUMBERS
Burton	
Clio	
Davison	
Fenton	
Flint	
Flushing	
Grand Blanc	
Linden	
Montrose	
Mt. Morris	
Swartz Creek	
<b>TOWNSHIPS</b>	
Argentine	
Atlas	
Clayton	
Davison	
Fenton	
Flint	
Flushing	
Forest	
Gaines	
Genesee	
Grand Blanc	
Montrose	
Mt. Morris	
Mundy	
Richfield	
Thetford	
Vienna	
OTHER CO. IN ST	
OTHER STATES	

**Total** 328

FLINT CONT. |||



# Information Booth: Data Collection

Event Name: The Crim

Date: August <sup>23</sup> 2013

CITIES	NUMBERS
Burton	
Clio	
Davison	
Fenton	
Flint	90
Flushing	
Grand Blanc	
Linden	
Montrose	
Mt. Morris	
Swartz Creek	
<b>TOWNSHIPS</b>	
Argentine	
Atlas	
Clayton	
Davison	
Fenton	
Flint	
Flushing	
Forest	
Gaines	
Genesee	
Grand Blanc	
Montrose	
Mt. Morris	
Mundy	
Richfield	
Thetford	
Vienna	
OTHER CO. IN ST	
OTHER STATES	

**Total** 391

FLINT CONTS |||||



# Information Booth: Data Collection

Event Name: The Crim

Date: August 24, 2013

CITIES	NUMBERS
Burton	
Clio	
Davison	
Fenton	
Flint	
Flushing	
Grand Blanc	
Linden	
Montrose	
Mt. Morris	
Swartz Creek	
TOWNSHIPS	
Argentine	
Atlas	
Clayton	
Davison	
Fenton	
Flint	
Flushing	
Forest	
Gaines	
Genesee	
Grand Blanc	
Montrose	
Mt. Morris	
Mundy	
Richfield	
Thetford	
Vienna	
OTHER CO. IN ST	
OTHER STATES	

**Total** 115

Other Country | 1

Event Name: FLINT FARMERS MARKET

Date: 09/26/13

CITIES	NUMBERS
Burton	
Clio	
Davison	
Fenton	<del>    </del>
Flint	
Flushing	
Grand Blanc	
Linden	
Montrose	
Mt. Morris	
Swartz Creek	
<b>TOWNSHIPS</b>	
Argentine	
Atlas	
Clayton	
Davison	
Fenton	
Flint	
Flushing	
Forest	
Gaines	
Genesee	
Grand Blanc	
Montrose	
Mt. Morris	
Mundy	
Richfield	
Thetford	
Vienna	
<b>OTHER CO. IN ST</b>	
<b>OTHER STATES</b>	



**2013 Storm Drain Stenciling Comments/Feedback/Concerns:**

***Summarized by Stephanie Nummer, SDS Coordinator 2013***

The citizen response to the Storm Drain Stenciling project was quite positive. Several citizens were unaware of the fact that storm drains lead directly to waterways and to the Flint River; citizens also were not aware that dumping can pollute waterways.

In the City of Flint, there was one citizen who thanked us for our efforts and informed us that Montana Avenue by North Averill Street floods with rain. When stenciling this area volunteers noticed that the drains were clogged with leaves and other debris.

The eighth grade students that volunteered in Clio noted how the streets they stenciled were dirty and broken. They also found many drains that were clogged with leaves.

In Grand Blanc several citizens spoke with volunteers and many conversations were struck about how dumping could pollute the water ways. Neighbors in the area had no idea that dumping pollution down a storm drain goes directly to water ways and can eventually make it into our city drinking water. One set of neighbors didn't know that all of the water was connected and didn't realize that they get drinking water from a Michigan waterway.

This year the Flint River Watershed Coalition is sending "thank-you" notes to the volunteer organizations and hopes to get repeat interest from these groups next year.

We also have a great start for 2014. As of right now, there are three scheduled volunteer sessions in the first two weeks of October. In addition, there are three groups that we are working with to pin down an exact volunteering date, and we have one group interested in stenciling in the spring of 2014.

Overall the volunteers were enthusiastic about volunteering with the Storm Drain Stenciling project and said they would enjoy doing it again in the future. Many of the volunteers were excited to learn new information about the environment and ways that they can make a difference about pollution in the Flint River.

## FRWC - STORM DRAIN STENCILING

Program completion: 2012 - 2013				Detail for Invoice #212						
#	Date	Municipalities	Groups Participating	Volunteer Demographics	# of Adult	# of Children	Approx. # of Homes	Approx. # of Drains	Locations Requiring Storm Water Awareness	
1	10/4/2012	City of Flint	Private Home School Group	Not available	N/A	N/A	30	15	Woodcroft Estates, Miller Road and surrounding Swartz Crgek Golf Course	
2	7/26/2013	Grand Blanc Twp.	Norris Home School Group	Not available	N/A	N/A	97	15	Wishing Well Subdivison	
3	7/26/2013	Grand Blanc Twp.	Norris Home School Group & Watershed Interns.	Not available	N/A	N/A	52	12	Holly Springs Subdivison	
4	7/30/2013	City of Flint	Flint River Watershed Interns	City of Flint		0	2	20	7	Carriage Town
5	7/30/2013	City of Flint	Flint River Watershed Interns	City of Flint		0	2	130	30	CollegeCultural Neighborhood
6	8/9/2013	City of Flint	Flint River Watershed Interns	City of Flint		0	2	30	6	CollegeCultural Neighborhood
7	8/21/2013	City of Flint	Boys & Girls Club - DNR Workers	City of Flint		5	2	148	24	Wyoming Ave, Colorado Ave, Montana Ave, - Between Averill and Branch Rd
8	8/23/2013	City of Flint	Boys & Girls Club - DNR Workers	City of Flint		5	9	245	38	Henry St, Agree Ave, McClure Ave, Arizona Ave, Wyoming Ave, Colorado Rd - Between Western Rd and Branch Rd
9	9/25/2013	City of Clio (Vienna Twp.)	Clio-Carter 8th Grade Students	City of Clio		2	7	123	33	Poplar St, Clarion St, Rodger Lodge, Buttler St. and Cherry St
10	9/28/2013	City of Grand Blanc (Grand Blanc Twp.)	Nummer Family	Lake Orion, Pontiac and Independence Twp.		4	0	55	18	Via Catherina Dr. between Bella Vista Dr. and Joesph Dr; Joseph Dr. between Bella Vista Dr. and Via Catherina Dr.
<i>Set up After 10/1/2013 - To Be Included in Next Year's Plans and Reports</i>										
1	10/5/2013	Flushing (Flushing Twp.)	Girl Scout Troop	Pending	Pending	Pending	Pending	Pending	Pending	Location TBD
2	10/7/2013	Grand Blanc Twp. Flushing (Flushing Twp.)	Girl Scout Troop	Pending		2	8	Pending	Pending	Near McGrath Elementary - Exact location TBD
3	10/13/2013	Flushing (Flushing Twp.)	Girl Scout Troop	Pending	Pending	Pending	Pending	Pending	Pending	Location TBD
4	Pending	Pending	Girl Scout Troop 71019	Pending	Pending	Pending	Pending	Pending	Pending	Location TBD
5	Pending	Pending	Montrose High School - S.A.V.E	Pending	Pending	Pending	Pending	Pending	Pending	Location TBD
6	Pending	Pending	Montrose High School - National Honors Society	Pending	Pending	Pending	Pending	Pending	Pending	Location TBD
7	Spring 2014	Pending	Mott Park Volunteers	Pending	Pending	Pending	Pending	Pending	Pending	All of Mott Park Neighborhood



## Genesee Conservation District

1525 N. Elms RD. – Flint, MI 48532- Phone (810) 230-8766 Ext. 3

Fax (810) 230-8596 – [www.gettrees.org](http://www.gettrees.org)

**Your Natural Resource, *Resource!***

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**July 8, 2013**

In the months of April, May, and June the GCD continued facilitating weekly classes (**10** this quarter) at the Boys and Girls Club to promote and educate the youth about the “Our Water Program”, in compliance with the Storm Water Public Education Project – Youth Program. There have been multiple classes held every Friday educating **15 to 20 students per class per week**. Each week students play interactive games and have hands on activities that focus on watersheds, the quality and quantity of water on earth, conservation practices, and ways to identify and report non point source pollution.

June 11, 2013 single visits (**3** this quarter) to the Boys and Girls Club began with the teens. The teens will learn about quality and quantity of water on earth, conservation practices, ways to identify and report non point source pollution, and participate in activities that use their creative abilities to express what they have learned to the community, including Radio/TV PSA, songs, stage play, and storm drain stenciling. The teen program has been scheduled for 9 visits over the course of the summer educating **20 to 30 teens per week**.

June 17, 2013 multiple class visits (**2** this quarter) to U of M Flint began with students aged 7-12. The students will learn about quality and quantity of water on earth, watersheds, conservation practices, ways to identify and report non point source pollution, and the “Seven Simple Steps” to clean water. Classes are held weekly during the course of U of M’s early childhood development summer program educating **15 to 20 students per class per week**. Activities will include storm drain stenciling, a park clean up, interactive games, and participation in the community support initiative.

In class presentations have been held at:

**South Western Academy**  
1420 W 12th St. Flint, MI 48507  
10<sup>th</sup> & 11<sup>th</sup> Grade Humanities Science Classes  
April 18<sup>th</sup> 2013

**Riley Adult / Alternative High School**  
1149 Klein Beecher, MI 48505  
Students Aged 16 to 19  
April 22<sup>nd</sup> 2013

A total of **63** students were reached during these single class visits. They were educated on non point source pollution, the numerous ways we all need and use water, water conservation, and responsible environmental practices. The students were educated using an online game "The Environment Council" in which the students have to work together as city leaders and make environmentally sound decisions about water, water safety, water quality, economics and the citizens of their neighborhood, farm, park, and city. The students receive a score at the end of the game to track the success of their decisions. Once the activities were done the students received a brochure on the "Seven Simple Steps" to take home and share with their families.

The GCD staffed and attended three public events in compliance with the Storm Water Public Education Project - General Education Program:

**Home and Garden Show**  
April 6<sup>th</sup> & 7<sup>th</sup>, 2013 at Perani Arena – Flint  
A total of **539** individuals were reached at this event.

**Earth Day Celebration**  
April 13<sup>th</sup>, 2013 at U of M – Flint  
A total of **136** individuals were reached at this event.

**Flint Farmers Market**  
June 29<sup>th</sup>, 2013 at Farmers Market – Flint  
A total of **126** individuals were reached at this event.



## Genesee Conservation District

1525 N. Elms RD. – Flint, MI 48532- Phone (810) 230-8766 Ext. 3

Fax (810) 230-8596 – [www.gettrees.org](http://www.gettrees.org)

**Your Natural Resource, *Resource!***

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**September 30, 2013**

In the months of July, August, and September the GCD continued facilitating weekly classes (6 this quarter) at the Boys and Girls Club to promote and educate the youth about the “Our Water Program”, in compliance with the Strom Water Public Education Project – Youth Program. There have been multiple classes held every Friday educating **15 to 20 students per class per week**. Each week students play interactive games and have hands on activities that focus on watersheds, the quality and quantity of water on earth, conservation practices, ways to identify and report non-point source pollution and the “Seven Simple Steps” to clean water.

Single visits (5 this quarter) to the Boys and Girls Club were held with the teens. The teens learned about quality and quantity of water on earth, conservation practices, ways to identify and report non point source pollution, and participate in activities that use their creative abilities to express what they have learned to the community; including Radio/TV PSAs, songs, stage play, and storm drain stenciling. The teen program was administered over the course of the summer educating **20 to 30 teens per week**.

Multiple class visits (9 this quarter) to U of M Flint were held with students aged 7-12. The students learned about quality and quantity of water on earth, watersheds, conservation practices, ways to identify and report non-point source pollution, and the “Seven Simple Steps” to clean water. Classes were held weekly during the course of U of M’s “Growing Up Green” early childhood development summer program educating **15 to 20 students per class per week**. Activities included interactive games, shooting a PSA TV commercial with both classes, and participation in the community support initiative.

On site presentations have been held at:

**Freeman Elementary**

4001 Ogema Ave. Flint, MI 48507

2<sup>nd</sup> Grade class – September 19<sup>th</sup>, 2013

3<sup>rd</sup> Grade class – September 18<sup>th</sup>, 2013

4<sup>th</sup> Grade class – September 19<sup>th</sup>, 2013

5<sup>th</sup> Grade class – September 24<sup>th</sup>, 2013

6<sup>th</sup> Grade class – September 18<sup>th</sup>, 2013

**New Standard School**

2040 W. Carpenter Rd. Flint, MI 48505

2<sup>nd</sup> – 4<sup>th</sup> Grade

July 17<sup>th</sup>, 24<sup>th</sup>, 31<sup>st</sup>, & August 7<sup>th</sup>, 2013

**Montague Elementary**

344 W. Mt. Morris Rd. Mt. Morris, MI 48458

K – 5<sup>th</sup> Grade

July 16<sup>th</sup>, & 23<sup>rd</sup>, 2013

**Camp Copneconic**

10407 North Fenton Rd. Fenton Township, MI 48430

Students aged 8 – 12

July 16<sup>th</sup> & August 6<sup>th</sup>, 2013

**Crim Health and Fitness Summer Camp**

Max Brandon Park Flint, MI 48505

Students aged 5 – 15

July 30<sup>th</sup>, August 6<sup>th</sup>, 13<sup>th</sup>, & 20<sup>th</sup>, 2013

**Howard Estates**

1928 Howard Ave. Flint, MI 48503

Students aged 5 – 12

July 25<sup>th</sup>, July 30<sup>th</sup>

A total of **66** classes were held during this fiscal year, educating an average of **20 - 25** students per class during these single and multiple class visits. They were educated on non point source pollution, the numerous ways we all need and use water, water conservation, and responsible environmental practices. The students were educated using online games (**Discoverwater.org**), hands on activities (**Build your own Watershed**), and games that demonstrated the water cycle (**Water Cycle Relay Race**), filtering water (**Filter the Pollution**), storm water runoff, and non – point source pollution (**A-maze-ing Water**). The students were also allowed to share the knowledge and information they'd learned with others in the community (Community Support Initiative), using PSA commercials written by the students, "Water Deputy" graduation badges, and citations to issue as they deemed necessary.

A total of 8 storm drain stenciling projects were completed in compliance with the Storm Water Public Education Project – Storm Drain Stenciling:

**Youthquest – Montague Elementary School**

July 16, 2013

Red Maple Dr. – Read Ave. – Walnut St. – Spruce St. – Oak St. – Beach St.  
Mt. Morris, MI 48458

**Man UP Community Service**

July 26, 2013

Pinehill Pl. – Applehill Ct. – Redwood Dr. – Warner Rd. – Pinewood Ct. – Pinewood Dr.  
Flushing, MI 48433

**Boys & Girls Club**

July 26, 2013

McClure Ave. from Averill to Branch – Arizona Ave. from Branch to Averill  
Flint, MI 48506

**Howard Estates Kids Club**

July 30, 2013

Howard Estates Property  
Flint, MI 48503

**Crim Summer Camp**

August 20, 2013

Half of Max Brandon Park  
Flint, MI 48505

**Burton Area Jaycees**

September 25, 2013

Half of Max Brandon Park  
Flint, MI 48505

**Job Corps**

September 26, 2013

Tuxedo Ave. – Edith Ave. – Victoria Ave. – Simcoe Ave. – Barrie Ave. – Bloor Ave.  
Flint, MI 48507

**Job Corps**

September 30, 2013

Woodlawn Park Dr. – Brookside Dr. – Ridgelawn Ave. – Brookwood Dr.  
Flint, MI 48503

One article has been published in the Genesee Conservation District fall newsletter pertaining to the "Our Water" program which has been distributed to over **2,500** Genesee County residents.

The GCD staffed and attended five public events in compliance with the Storm Water Public Education Project - General Education Program:

**Genesee County Fair**

August 12<sup>th</sup> & 18<sup>th</sup>, 2013 at Genesee County Fair Grounds – Mt. Morris  
A total of **1,173** individuals were reached at this event.

**Crim Health and Fitness Expo**

August 22<sup>nd</sup> – 24<sup>th</sup>, 2013 at The Riverfront Conference Center – Flint  
A total of **834** individuals were reached at this event.

**Grand Blanc Farmers Market**

September 22<sup>nd</sup>, 2013 at Farmers Market – Grand Blanc  
A total of **71** individuals were reached at this event.

**Flint Farmers Market**

September 26<sup>th</sup>, 2013 at Farmers Market – Flint  
A total of **74** individuals were reached at this event.

**Applewood Harvest Fest**

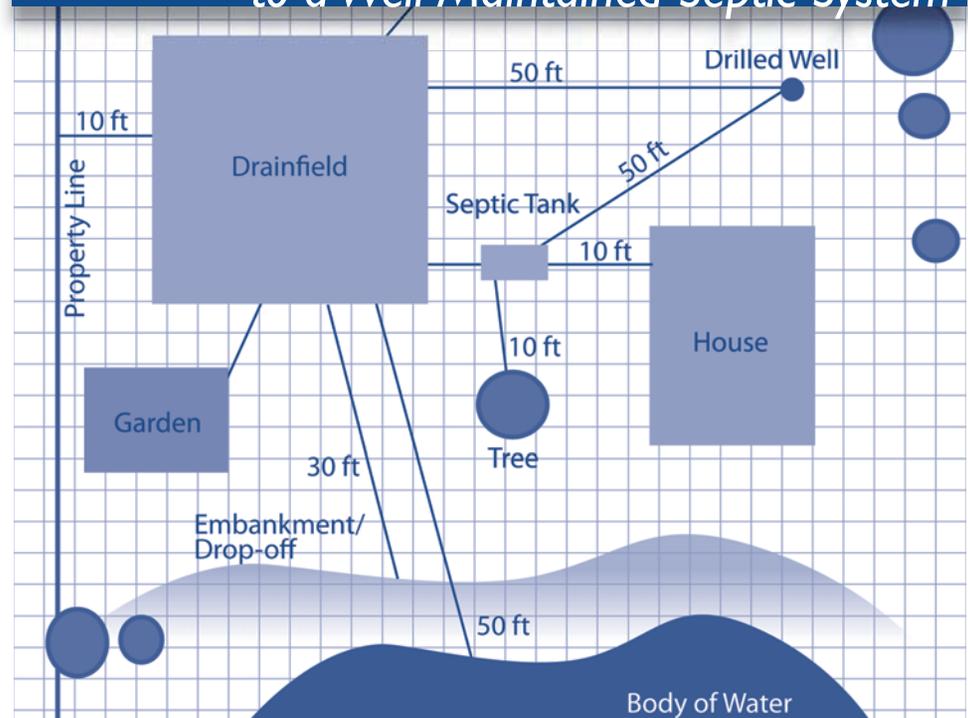
September 28<sup>th</sup>, 2013 at Applewood Estate – Flint  
A total of **416** individuals were reached at this event.

The GCD facilitated **2** riparian landowner workshops:

August 26<sup>th</sup>, 2013 – Grand Blanc District Library  
August 28<sup>th</sup>, 2013 – Camp Copneconic



## A Genesee County Homeowner's Guide to a Well-Maintained Septic System



Not sure if you have a septic system? Here are some questions to help you find out:

- 💧 Do your neighbors have septic systems? If so, it is likely that you also have a septic system.
- 💧 Do you get a bill from your town or city agency charging for sewer services? If so, it is likely that you DO NOT have a septic system.

Genesee County Health Department  
 Floyd J. McCree Courts and  
 Human Services Center  
 630 S. Saginaw St. ♡ Flint, MI 48502

Phone: 810-257-3603  
 Fax: 810-257-3147

## Congratulations on purchasing your new home!

The information in this booklet is designed to assist you, a septic system owner. Because your residence is connected to a septic system instead of a public sanitary system, you have the opportunity and responsibility to operate and maintain your own septic system. A properly maintained septic system positively influences the quality of our local water resources. By taking the useful, simple actions described in the following pages, small efforts at your residence can save you money and have large, lasting impacts on our lakes, rivers, and streams.

This guide will help you keep your septic system in working order. It will help you better understand how your septic system works and the steps that can be taken to keep a septic system functioning properly. Additionally, this guide provides you with the tools and resources to identify and fix a malfunctioning septic system.

## Why care about septic systems?

As a homeowner, you are responsible for maintaining your septic system. If your septic system is properly designed, built, and maintained, it can effectively treat your household wastewater, save you money, and keep our local water clean for many years. If a septic system is not properly maintained, a lot of costly damage could be done.

### A malfunctioning septic system can...

- ◆ Cost thousands of dollars to replace or repair
- ◆ Make selling your home very difficult
- ◆ Lower your property value or pose legal liability
- ◆ Spread infection and disease
- ◆ Contaminate groundwater that might be a source of drinking water
- ◆ Pollute nearby lakes, rivers, and streams

Remember, a septic system is not the same as a municipal sewer system. Septic systems have a limited life expectancy that can be shortened by not monitoring and properly maintaining it.

### Top 4 actions to ensure a septic system is properly maintained:

1. Inspect (every 3 years) and pump (every 3 to 5 years) your septic system.
2. Use water efficiently.
3. Refrain from dumping solids or hazardous household wastes down drains or into toilets.
4. Care for drainfields.

This booklet was written for the Genesee County Our Water Campaign, the public education effort of the Genesee County Water Quality Consortium. The Genesee County Water Quality Consortium is a collection of municipalities. These dedicated people work to bring awareness, to educate and to promote stewardship on ways to prevent stormwater pollution and keep our water clean. Funding for this newsletter was provided by the Genesee County Water Quality Consortium and the Genesee County Drain Commission.

Information for this septic system guide was gathered from the following resources and was adapted for the needs of the Genesee County *Our Water* Campaign.

- ◆ University of Minnesota Extension Service, Protecting our Waters: Understanding Shoreline BMPs. Factsheets.
- ◆ U.S. Environmental Protection Agency, A Homeowner's Guide to Septic Systems. Informational Guide, EPA-832-B-02-005, Dec 2002.
- ◆ Rouge River National Wet Weather Demonstration Project, DEMO Info: Septic Systems. Informational Handout.

## Helpful Resources

### What to do if your system fails

Check with a septic system professional or the Environmental Health Division of the Genesee County Health Department if you suspect your septic system is failing. Remember to have your septic system inspected by a professional at least every 3 years!

#### Contact Information for the Genesee County Health Department:

Floyd J. McCree Courts and Human Services Center  
630 S. Saginaw Street  
Flint, MI 48502-1540  
Phone: (810) 257-3603  
Fax: (810) 257-3147

Consult your local telephone directory for a listing of professional septic pumpers, installers, inspectors, and tank manufacturers.

### Reporting

- ◆ Report illegal dumping of hazardous materials into storm drains, local water bodies, or drainage ditches to 911 or the local police.
- ◆ If you would like to report a flooding ditch not caused by a roadway, contact the Genesee County Drain Commission, Office of Surface Water Management at (810) 732-1590.
- ◆ If you would like to report flooding caused by a culvert under a road or flooding on a road, contact the Genesee County Road Commission at (810) 767-4920.

### Household Hazardous Wastes

If you have household hazardous wastes that need to be properly disposed, look for one of the household hazardous waste collection days organized by the Genesee County Metropolitan Planning Commission.

### General Information

- ◆ Genesee County Drain Commissioner's Office: <http://www.gcdcwws.com>
- ◆ Genesee County Health Department: <http://www.gchd.us>
- ◆ Genesee County Our Water Campaign: <http://www.ClearGeneseeWater.org>

## How septic systems work.

Generally, septic systems have four main components:

### Septic systems are also called:

- ◆ On-lot system
- ◆ Onsite system
- ◆ Individual sewage disposal system
- ◆ Onsite sewage disposal system
- ◆ Onsite wastewater treatment system

### 1. A pipe from your home

All the wastewater produced in your home exits through a pipe that leads to the septic tank.

### 2. A septic tank

Your septic tank may be a watertight container that is buried somewhere on your property. Usually they are made of concrete, fiberglass, or polyethylene and hold your wastewater long enough to allow the different materials in your wastewater to settle or float to the top. Solids will settle to the bottom of the tank, while fats and oils will form a layer towards the top of

the tank. Between these two layers is the wastewater. T-shaped outlets, holding compartments, and screens keep sludge, solids, and oils from leaving the tank and traveling to the drain field.

### 3. A drainfield

When wastewater exits the septic tank, it goes into your drainfield for further treatment by the soil. The partially treated water from your septic tank gets pushed farther into your drainfield with the addition of new wastewater into your septic tank.

If your drainfield gets overloaded with too much liquid, from either overuse or a break in the system, it can flood, causing sewage to flow into groundwater. This creates backups in your plumbing fixtures and prevents treatment of wastewater.

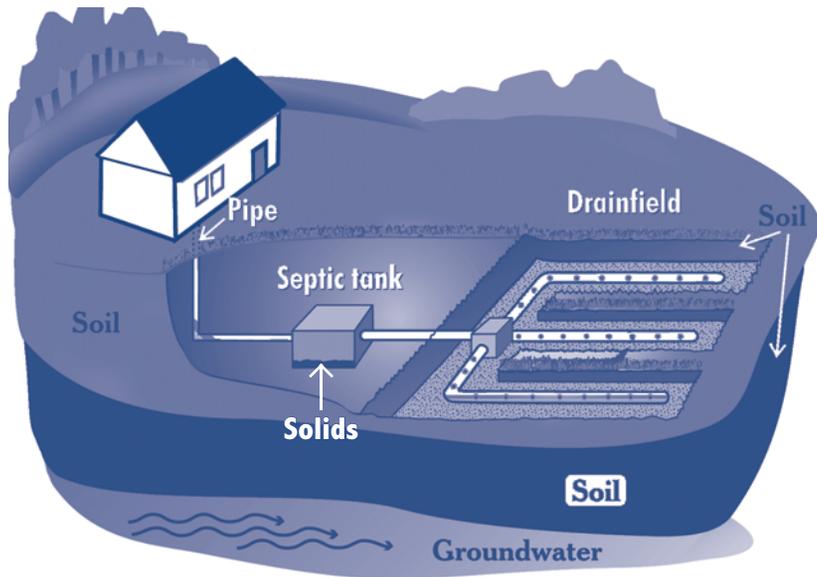
### 4. Soil with digesting microbes

When septic tank wastewater flows into your drainfield, it percolates into the soil. High quality soil has many useful micro-organisms in it that digest harmful bacteria, viruses, and nutrients commonly found in wastewater. This process is very similar, although on a smaller scale, to the one that occurs at a municipal waste water treatment plant.



**Do you know where your septic system is located?**

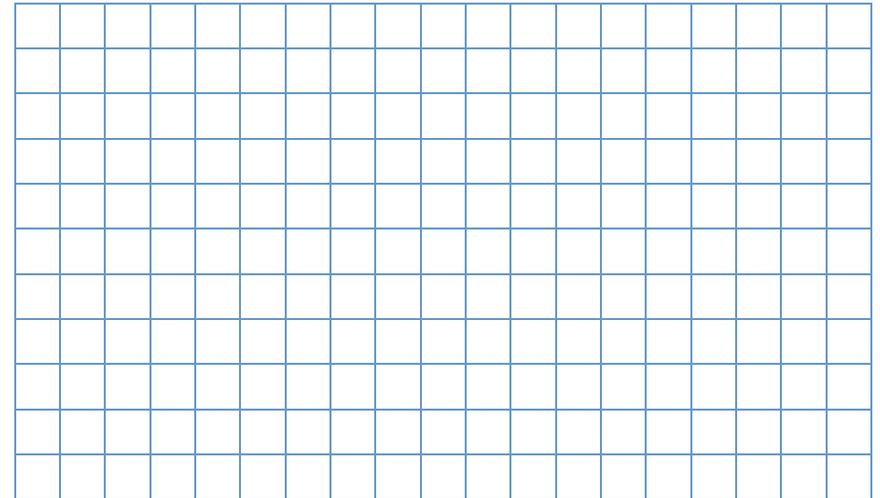
You may want to consult with an inspector or septic pumper to help you find the location of your septic system..



In some situations, effluent from a septic tank will not be dispersed to a traditional drainfield. Alternative systems in use today include sand filters, mounds, wetlands, gravel-less drainfields, pressure dosing, and aerobic units. Servicing requirements for these systems vary and should be obtained from your local sanitarian or septic system contractor.

**For your records: septic system layout and preventative maintenance table**

Use this grid to map your septic system, showing the relative location of your septic tank and drainfield in relation to your house and water well.



Use this table to keep track of your system repairs and tank pumping. Remember to have your tank pumped every three years.

Date	Work Done	Firm Doing Work	Phone Number	Costs	Notes
03/2009	Inspection	Joe Plumber	555-5555	\$75	Good job.



## How to tell if a septic system does not work.

Thankfully, it is fairly easy to tell if a septic system is not working properly.

Signs of system failure include:

- ◆ Odors, surfacing sewage, wet spots, or lush vegetation on or near the drainfield
- ◆ Plumbing or septic tank backups
- ◆ Slow-draining fixtures and toilets
- ◆ Gurgling sounds in the plumbing system
- ◆ Buildup of aquatic weeds or algae in lakes or ponds adjacent to your home
- ◆ Pooling water or muddy soil around a septic system or in the basement
- ◆ Presence of nitrates or bacteria in a drinking-water well
- ◆ Septic systems also fail when partially treated wastewater comes in contact with groundwater. This type of failure can be difficult to detect and can result in pollution of nearby wells, streams, or other water bodies.

### Common causes of system failure:

- ◆ Household hazardous wastes such as oil paints, solvents, and chemical cleaners dumped down drains
- ◆ Excessive use of household cleaners
- ◆ Draining a hot tub or pool into a septic tank or onto a drainfield
- ◆ Water purification systems that unnecessarily pump excess water into a septic system
- ◆ Frequent use of garbage disposals
- ◆ Improper design or installation
- ◆ Excessive use of water
- ◆ Improper or excessive cover or vegetation

### Expected costs for repairs and maintenance of your septic system:

- ◆ Inspecting a tank: less than \$80-300
- ◆ Pumping: \$185-\$375
- ◆ Uncover the tank: \$75-\$200
- ◆ Pumping out a chamber: \$10-\$250
- ◆ Replacing a drainfield: \$3,000-\$25,000
- ◆ Engineering a drainfield: \$10,000 and up

If septic systems are not properly maintained, the entire system may have to be replaced, costing lots of money.

## How to keep your septic system functioning properly.

You can keep your septic system functioning at its peak performance by following the four actions listed here.

### I. Inspect and pump septic systems

Keeping up-to-date on a system's inspection and pumping schedule can help keep the system functioning longer and better.

#### *Inspect regularly.*

- ◆ Have a septic system inspected by a professional every three years. Systems with electrical float switches, pumps, and mechanical parts need to be inspected more frequently. Remember to keep track of system repairs and tank pumping with maintenance records (see page 9 of this guide).

#### *Pump often.*

- ◆ Pump septic tanks regularly, usually once every three to five years. If a pumper suggests repairs, do so as soon as possible but first check with the local health department to see if you need a permit.

Four factors influence the frequency that tanks should be pumped: number of people in a household, amount of wastewater produced, volume of solids in the wastewater (using a garbage disposal increases the amount of solids), and septic tank size.

#### *Go natural.*

- ◆ Stay away from additives and "starters". It is unclear if they actually help and some may harm your system and contaminate groundwater. Periodic pumping is a much better way to ensure a system functions properly.

#### **\* Items recommended for an inspection:**

- ◆ Locating the system
- ◆ Uncovering access holes
- ◆ Flushing the toilets
- ◆ Checking for signs of backup
- ◆ Measuring scum and sludge layers
- ◆ Identifying any leaks
- ◆ Inspecting mechanical components
- ◆ Pumping the tank, if necessary

*\* There isn't a standard protocol for septic inspections. Check with your inspector to see what is included in their quote.*



## 2. Use water efficiently.

Excessive water use is one of the most common causes of septic system failure, so reducing water used for bathing, laundry, and flushing the toilet can greatly reduce the chances of system failure.

### *Go low flow.*

- ◆ Install low-volume toilets and low-flow shower heads.
- ◆ Replace old dishwashers, toilets, and clothes washers with high-efficiency versions.
- ◆ Only run the dishwasher and clothes machine when there is a full load.
- ◆ Avoid peak surges. Running water in your sink, shower, and toilet at the same time can cause a peak flow, overwhelming your septic system.

### *Maintain plumbing.*

- ◆ Identify and repair leaking pipes and dripping faucets to reduce water wastes.
- ◆ Check to make sure the toilet's reservoir isn't leaking into the bowl. Quickly check this by adding a few drops of food coloring to the reservoir before going to bed. Check to see if there is any trace of the food coloring in the bowl the next day.

## 3. Refrain from dumping household wastes down drains or into toilets.

The materials that go down drains or into toilets have a big impact on how well a septic system functions.

### *Avoid dumping.*

- ◆ Keep from flushing non-biodegradable materials like facial tissue, diapers, tampons, plastic, cooking fats, or oils down drains or toilets. They do not decompose easily, or at all, and may cause unwanted build-up in a septic tank.
- ◆ Never dispose chemicals by dumping them down drains. Chemicals will harm the micro-organisms in the soil of a drainfield.
- ◆ Keep the use of household chemicals and cleaners to a minimum. Consider using low cost, natural cleaning products. The products can be purchased at local grocery stores or made at home by combining one part water with one part vinegar.
- ◆ Dispose of hazardous household wastes properly. The county holds two hazardous household waste collection days—one in the fall and one in the spring.

### *Bypass the disposal.*

- ◆ Stay away from using the garbage disposal unit. Excessive use of garbage disposals can increase the volume of solids in a septic tank, requiring more frequent pumping.
- ◆ Throw away or make compost out of vegetable wastes, coffee grounds, eggshells, and other compostable kitchen wastes.

#### Examples of Hazardous Household Wastes

- |                         |                              |
|-------------------------|------------------------------|
| ◆ Batteries             | ◆ Paint thinner              |
| ◆ Pesticides/Herbicides | ◆ Aerosol cans               |
| ◆ Motor oil             | ◆ Mercury                    |
| ◆ Solvents              | ◆ Old prescription medicines |
| ◆ Oil-based paint       |                              |

## 4. Care for the drainfield.

The drainfield is an important part of a septic system and its proper maintenance is critical for effective treatment of wastewater.

### *Discharge into the tank.*

- ◆ Discharge all sewage waste from the house into the septic tank. Never allow solids or scum to leave the septic tank and enter the drainfield.
- ◆ Keep roof drains, sump pumps, rainwater, and other surface water drainage systems away from the drainfield. Flooding of the drainfield can slow down or stop treatment processes.

### *Plant grass and shallow roots.*

- ◆ Landscape over the drainage field with dense grass cover and other shallow-rooted plants. Keep trees away from the drainage field. Deep roots will tear field pipes apart overtime.
- ◆ Avoid impermeable or compacted surfaces over the drainfield such as concrete, asphalt, plastic, or compacted soil. Compacted soil can damage pipes, the tank, or other components of a septic system and may also keep the system from obtaining the necessary oxygen needed to complete the waste water treatment cycle.
- ◆ Keep the surface of the drainfield properly drained by slightly mounding soil over the drainfield and not stockpiling snow.

## 2013 EDUCATIONAL CANOE TOURS

1	25-May-13	Goodbye Spring, Hello Summer	Holloway Dam to Irish Road	7	Clarkston, Fenton, Flint, Flushing, Grand Blanc
2	15-Jun-13	Lazy Day Paddle	City of Flushing to Village of Montrose	14	Fenton, Flint, Flushing, Gaines, Lansing, Lapeer, Mayville, Swartz Cree Davison, Fenton, Flint, Flushing, Grand Blanc, Holly, Lansing, Lapeer, I
3	6-Jul-13	Dog Days of Summer Paddle	Irish Road to Mott Lake	20	Morris, Ortonville, Wolverine Lake
4	20-Jul-13	Sunny Day Paddle Summer Getaway with the	Village of Montrose to Birch Run	6	Davison, Fenton, Flushing, Grand Blanc, Vassar
5	3-Aug-13	Friends of the Flint River Trail	Vietnam Veterans' Park in Flint to Bray Road	13	Fenton, Flint, Flushing, Grand Blanc, Holly, Ortonville
6	17-Aug-13	Fun Times on the Flint River	University Avenue in Flint to River Road in Flushing	11	Fenton, Flint, Flushing, Grand Blanc
7	7-Sep-13	Welcome in Fall Paddle	Mitson Road in Flint Township to River Road Flushing	8	Fenton, Flint, Flushing, Indianapolis
8	21-Sep-13	Celebrate the Fall Colors	Taymouth Township to Seymour Road in Flushing	14	Fenton, Flint, Flushing, Grand Blanc, Holly, Metamore, Owosso

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Join Us For Some River Fun on Our Water Paddles!

Paddling Events are held on the first and third Saturdays of the month at 11:00 am, unless otherwise stated, and are \$10 per person if you are providing your own canoe/kayak, and \$15.00 per person if renting. This includes insurance and shuttle fees. Additional charges for some events depending upon shuttle service. A limited number of canoes and kayaks are available so register early!

**PADDLERS MUST contact Jaime Welch prior to event to make arrangements for shuttle/canoe/kayak/rental and to register at: jwelch@FlintRiver.org/ (810) 767-7140**



May, 2013

25th Holloway Dam to Irish Road Goodbye Spring, Hello Summer!  
Please note this paddle takes place on the 4th Saturday. Come enjoy the start of summer with our first paddle of the year!  
Location: Take I-69 to M-15 (Dawson exit). Go north on M-15 about 6.5 miles to Stanley Road. Go east (right) on Stanley Road about 1 mile to Oak Road, then go north about 1/2 mile to Carr Road. Take Carr Road 0.3 miles to launch at the base of the Holloway Dam

June, 2013

1st Riverview Park to Flushing Warm Weather is here!  
This is the perfect way to spend your weekend! This 2 1/2 hour paddle is along a relaxing stretch of the Flint River, just the perfect way to welcome summer.  
Location: Flushing Riverview Park on Cherry St. (behind A&W) to Flushing Township Nature Park. We will be meeting at 2 pm at Riverview Park.  
15th Flushing to Montrose Lazy Day Paddle  
Enjoy a lazy day of floating along the river. Prepare to enjoy a calm and relaxing 3 hour paddle awash with beautiful scenery.  
Location: Flushing Township Nature Park to Barber Memorial Park, just south of Vienna Road on Seymour Rd in Montrose.

July, 2013

6th Irish Rd to Mont Lake Dog days of Summer Paddle  
Escape the heat by taking a refreshing paddle on the river. This stretch is home to several Bald Eagles, if we are lucky we may see them during our 2 1/2 hour trip. Location: Just north of the Richfield Park entrance off of Irish Rd. (north of Richfield Rd.). Paddling to boat launch off of E. Stanley Rd. east of Genesee Rd.  
20th Montrose to Birch Run Sunny Day Paddle  
Enjoy the beauty of summer with a lovely paddle along the Flint River. Prepare to enjoy a calm and relaxing 2 1/2 hour paddle awash with beautiful scenery.  
Location: Montrose Barber Memorial Park, south of Vienna Road on Seymour Rd in Montrose.

August, 2013

3rd Gray Rd to Viet Nam Veterans Park Summer Getaway  
This is the perfect end your weekend! This 2 hour paddle is the perfect way to prepare for the coming work week ahead.  
Location: Gray Rd, north of Carpenter Road.  
17th University Ave to River Rd Fun Times on the Flint River  
Prepare to enjoy a relaxing paddle along the Flint River as you embark on this 3 hour paddle.  
Location: We will be meeting at River Road, one mile west of Elms and transporting from there.

September, 2013

7th Mitton to Flushing Welcome In Fall Paddle  
This is the perfect way to usher in fall! This 2 1/2 hour paddle is along a beautiful stretch of the Flint River, just the way to unwind from a long week.  
Location: Riverview Canoe Landing, at Mitton Blvd south of Flushing Rd.  
21st Flushing to Montrose Celebrate the Fall Colors  
Enjoy the last day of summer of celebrate the start of fall with a colorful paddle along the Flint River. Prepare to enjoy a calm and relaxing 3 hour paddle awash with beautiful scenery. Location: Flushing Township Nature Park to Barber Memorial Park, just south of Vienna Road on Seymour Rd in Montrose.

**American Canoe Association**  
Founded in 1890, The American Canoe Association (ACA) is a national nonprofit organization serving the broader paddling public. They provide education related to all aspects of paddling and stewardship. For more information visit: [www.americancanoe.org](http://www.americancanoe.org)  
If you plan to paddle more this year, you should look at the membership options. All FRCWC paddling events require one of the following memberships:  
- \$10 Event Membership (one activity canoeing, no member benefits)  
- \$30 Individual Club Membership/1 year (normally \$40)  
- \$60 Family (3 adults, unlimited) Club Membership/1 year (normally \$80)  
- \$15 Six month full membership with member benefits.



For more information, or to register, contact  
Jaime Welch, Program Coordinator at  
810-767-7140; [jwelch@FlintRiver.org](mailto:jwelch@FlintRiver.org)  
Pre-registration is required to attend

Flint River Watershed Coalition  
[www.FlintRiver.org](http://www.FlintRiver.org)  
400 N. Saginaw Street, Suite #233; Flint, MI 48902,  
810-767-6690  
Facebook: Flint River Watershed Coalition

## "Our Water Campaign" Speakers Bureau

Count	1-Jan-01	# Participants	Group	Comments and Notes
1	26-Oct-12	25	Students at Lakeville Middle School, in the Lakeville Community School District - 1 of 2	The students were excited to learn about a watershed. The presenter gave them a pop quiz at the end of the presentation asking them to give feedback about what they had learned. Students wanted to know how they could conserve water by drawing a tub of water to do dishes. They wanted to help the watershed by not littering.
1	26-Oct-12	25	Students at Lakeville Middle School, in the Lakeville Community School District - 2 of 2	Two presentations were made at Lakeville to two separate groups. For comments and notes, See the summary under 1 of 2.
1	19-Dec-12	26	East Side Business Association, Flint	The participants remembered that Jeff Wright had spoken to this group 6 to 8 weeks earlier, and could relate the FRWC presentation to the Drain Commissioner's talk.
1	1-Mar-13	500 +	Steelheaders Show	Although the Steelheaders Show takes place in a venue outside of Genesee County, numerous participants who visit our booth are from this county. We have been a regular at this event for many years, and our followers from Genesee County always look for us there.
1	9-Mar-13	28	Flushing Walleye Festival, Flushing	Participants were most interested in the water quality data. A stilt walker was interested in walking the Flint River Trail on stilts.
1	19-Mar-13	30	Flint Womens' Forum, Holiday Inn	Participants were overwhelmed by the presentation. They had a new found respect for the Flint River.
1	24-Mar-13	100 +	Mott Community College Volunteer Fair	
1	13-Apr-13	200	"Earth Matters" - Earth Day Conference, University of Michigan - Flint	
1	4-May-13	10	Chevy in the Hole - Community Art Project	
1	7-May-13	15	Grand Blanc Rotary	Focusing on the development in the Grand Blanc area, this presentation emphasized fertilizers and landscaping.
1	14-May-13	14	Swartz Creek 4H	The kids were excited about being part of the FRWC. They said that they would use rain water to water their new garden. They were shown a sample of benthic critters, and helped identify some of the bugs. They were interested in participating in our programs.
1	16-Jun-13	20	Flint Unitarian Church Youth group	
1	19-Jun-13	50	Flushing Summerfest Parade, Flushing	
1	23-Jun-13	100	Flint Unitarian Church full congregation	Based on the presentation, this group has now signed up to become a volunteer group for benthic monitoring and storm drain stenciling.
1	12-Aug-13	50+	Genesee County Fair, Genesee County Parks	One young girl made it a point to mention that her dad washes their car in the driveway. She promised to give brochures to him.
1	9-Sep-13	32	Joint meeting with the General Motors 'GM Cares' volunteers from the GM Flint Assembly plant	
1	18-Sep-13	27	West Flint Business Association, Flint Township	Most participants came from Flint Township, but there were some present from Flint, Swartz Creek, Mundy Township, and Clayton Township.
1	18-Sep-13	31	Michigan Education Association, Genesee County Chapter of Retirees	
1	20-Sep-13	45	City of Flint College and Cultural Neighborhood Association	
1	20-Sep-13	27	Democratic Club 225 Luncheon Group	Participants came from all over Genesee County, and were not concentrated in any one geographic area
1	20-Sep-13	8	Safe and Active Genesee Coalition	
<b>21</b>				



Youth volunteers participating in a local drain stenciling project

## Education and Outreach

### GCD Board of Directors

Nancy Szikszay,  
Chairwoman

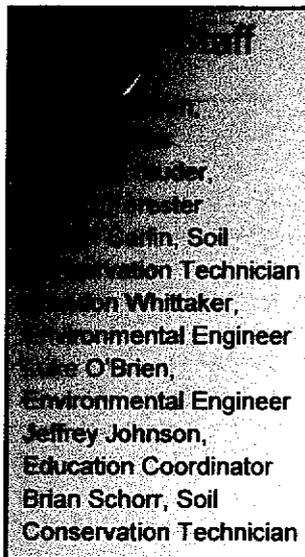
Darren Bagley, Vice-Chair

Jacky King, Treasurer

Erin Caudell, Director

Brad Hill, Director

Public Board meetings are held monthly on the second Wednesday at 6:00 p.m. in the USDA Service Center conference room



### USDA-NRCS Staff

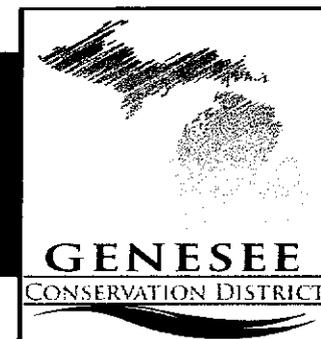
Jermaine Jenkins, District Conservationist  
Laura Jostock, Farm Bill Specialist

### GCD Funding Partners

GCD funding is made possible through fundraising efforts and the generous support of: Ruth Mott Foundation, Anna Paulina Foundation, USDA Forest Service, Genesee County Community Drain Commission, Genesee County Farm Bureau, Michigan Department of Agriculture and Rural Development, Michigan Department of Natural Resources, USDA Natural Resource Conservation Service.

Genesee Conservation District, in compliance with the USDA, prohibits discrimination in all of its programs and activities on the basis of race, color, national origin, gender, religion, age, disability, political beliefs, sexual orientation, and marital status or family status.

# Genesee Conservation District



**Awareness + Education =  
Making a Difference**

Providing a full spectrum of high quality, hands on activities, experiments, and demonstrations available to all Genesee County students, citizens and community organizations.

**Serving local natural resource needs in  
Genesee County since 1947**

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## Community Support Initiative

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This initiative is a 3 phase program. Designed along with a menu of activities to engage the youth of Genesee County, and motivate them to become active in their own community.

- **Awareness:** Youth will be informed on a few environmental issues facing Genesee County, such as surface water/ stormwater pollution, and the need to conserve water and other natural resources.
- **Education:** Students will learn what they can do to make a difference in and around their own home/community, using conservation, observation, and renewal practices.
- **Making A Difference:** All participants K-12 will be given the opportunity to either become a “Little Deputy” (K-2nd), “District Deputy” (3rd-6th), or create a public service announcement (PSA) for radio (7th-9th) or television (10th-12th).

In cooperation with the Genesee County Drain Commission (GCDC), the Genesee Conservation District (GCD) will educate students about the Seven Simple Steps to clean water.

Let's make one thing  
**Perfectly Clear.**

Genesee County Community Water Quality Consortium

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## Menu Of Activities

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**Storm Drain Stenciling:** This is a group activity for citizens of all ages. Participants will label storm drains in a selected area. The labels are meant to create awareness about the storm drains final destination. The labels also urge other citizens not to dump anything down the drains. Small and large groups are welcome.

**Freddy The Fish** is a hands on presentation/activity that will help students visualize the harmful effects that stormwater pollution can have on our lakes, rivers and the animals that use it as habitat.

**The Incredible Journey:** This hands on activity will teach students about the different states of water as it moves through the water cycle. This is meant to show that the same water has been recycled for millions of years and how important it is to conserve and care for water now.

**Water Fun For You:** Word puzzles, picture puzzles and creative assignments, designed to engage and educate students about the diverse number of living things that use water and the necessity for humans to use it wisely.

**Enviroscape Activity:** A model of a city used to show how everyday pollution ends up in our rivers and lakes. This is a interactive activity. Students will use household items to represent pollution, then using spray bottles “make it rain” and watch the flow of the stormwater through the cityscape into the river or lake.

**Foods Amazing Journey:** This interactive activity will help students understand and learn how food goes from the field or farm to the store. Students will also learn about the economics of farming, and the different occupations involved in getting food from the farm to the store.

**You Are The Farmer:** This activity will help students realize the importance of math in “real world” applications, while learning that farming is a business requiring many different math computations.

**Rain On:** A hands on experiment that gives a up close visual display of the water cycle. Students will be able to see evaporation, condensation, and precipitation, key elements in the water cycle and learn its importance.

**Usable Water:** A demonstration that will educate students on the locations of water on earth, and emphasize the need for water conservation. This activity will show the amount of water available for use and consumption by people and animals.

**Amazing Water:** A-maze-ing water is an interactive game where students are educated on urban runoff, stormwater pollution, nonpoint source pollution, storm drains and contaminants. Students take turns becoming water and going through a maze of “storm drains” on their way to the lake.

**StormWater Savvy:** This is a survey to pique the interest of the students taking it, on the subject of prevention. The survey will give them a score based on what they are or are not doing to help prevent stormwater pollution. Used with the “Seven Simple Steps” to clean water.

**Understanding Insects as Friends or Foes:** This engaging presentation will assist students in learning how to identify certain insects and the impact they have on farming. They will learn why there are “good” and “bad” insects, associated with farms. Students will also learn a few of the methods farmers use to control the bad insects.

**Water Treatment Model:** This is a model sewage treatment plant that will demonstrate to students the key concepts of water treatment. Students will get an inside look at some of the physical, chemical and biological processes that go on during water treatment at a real water management plant.

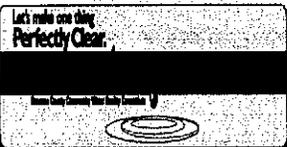


# Message from the Board Chair

Submitted by Nancy Szikszay

Seven simple steps to clean water...

1. Practice good car care.
2. Fertilize sparingly & carefully.
3. Clean up after your pet.
4. Save water.
5. Carefully store and dispose of household cleaners, chemicals, and oil.
6. Help keep pollution out of storm drains.
7. Choose earth friendly landscaping.



Genesee Conservation District (GCD) is taking a leadership role in the local, state, and federal effort to reduce the sediment moving from our ditches, streams, and rivers into the Saginaw Bay and the Great Lakes. Within this newsletter you will see articles from our staff and our new USDA-NRCS District Conservationist explaining their role in this important effort.

Some of them are working with the farmers and the owners of farm ground. Others are involved in the effort to educate the adults and children who are not connected to agriculture. There are many new faces in our office, so please stop in to meet us and hear more about what we are doing to keep our environment healthy.

Last year we distributed a resource assessment in an effort to find out what resource concerns were important to you, our constituents. We received very few of those back, so we are including

a revised document in this mailing. We have tried to make it easy for you to complete. Please take a few minutes and fill in the blanks and return it to us. You are welcome to remain anonymous. If you prefer to respond in an electronic format, that version is available at <https://www.surveymonkey.com/s/CSZZLHC>.

We offered two workshops connected to our city tree program this year and intend to continue offering workshops. If there is a workshop of interest to you, let us know. If it is feasible, we will offer it during the coming year.

GCD does not receive any stable funding from local, state, or federal governments. All of our funding comes from our spring and fall tree sales and the grants we write. Our employees and board members all believe in our mission and work long and hard hours to bring these programs to the residents of our county.

## A LOOK INSIDE:

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## MAEAP 3-System/3-Phase



The Michigan Agriculture Environmental Assurance Program (MAEAP) is an innovative, proactive program that helps farms of all sizes and all commodities voluntarily prevent or minimize agricultural pollution risks. Michigan is the second most agriculturally diverse state. As a result, a one-size-fits-all approach to environmental protection simply does not work on Michigan farms. MAEAP effectively overcomes this challenge by offering areas of concentration known as systems. Each system focuses on a different aspect of a farming operation. Farmers can become verified in all systems applicable to their farm. The systems are: Farmstead, Cropping, and Livestock. Within the three systems are three phases including: education, on-farm risk assessment, and third-party verification. There are many environmental, social, and safety benefits to becoming MAEAP verified. Call Bob Carlin at the GCD office to learn more, and visit [www.maeap.org](http://www.maeap.org) on the web.

## Phosphorus Reduction Funding

The U.S. Department of Agriculture has over \$1.5 million in conservation funds available for farmers in the targeted central Michigan watersheds. The funds are available to help farmers incorporate conservation activities that will reduce the amount of phosphorus reaching the Great Lakes.

"This funding will help farmers protect our state's most valuable natural resources, the Great Lakes," said State Conservationist Garry Lee. "Reducing the amount of phosphorus entering the Great Lakes will improve water quality, aquatic and wildlife habitat, and recreation."

The funding was provided through the Great Lakes Restoration Initiative and is available from the USDA Natural Resources Conservation Service (NRCS). Applications are ongoing with multiple deadlines. Phosphorus entering the Great Lakes from agricultural land and other sources contribute

to algal blooms that degrade water quality and aquatic habitat. Areas eligible for the funding include the Mid-Shiawassee River Watershed and the Kearsley, Swartz, and Thread Creeks Watershed. The two watersheds are located primarily in Genesee and Shiawassee counties with smaller portions in surrounding counties.

Producers can apply at their local USDA office for funding to implement conservation practices that reduce the amount of phosphorus entering groundwater from agricultural land. Some practices eligible for funding include cover crops, conservation crop rotation, windbreaks, prescribed grazing, nutrient management and residue and tillage management. Applications are selected on a competitive basis with highest scoring applications funded. Selected applicants will receive funding after conservation practices are applied.



### In Through the Out Door

It's a concept that is relatively simple--what goes in, must come out...somewhere. So when we put materials in our storm drains, good or bad, where is it ending up? It may surprise you to realize that the out door is most often our lakes and streams, without any filtration process in between. So let's work together to promote storm drain awareness, keep Our Water clean and clear, and make sure that what we're putting in our storm drains is what we're comfortable seeing come through the out door.



Student volunteers participating in a local drain stenciling project.

***Did you know? Storm drains and ditches lead directly to our streams, lakes, and rivers.***

### Dream Green

A *Green Job* is defined by the United Nations as "any job in agricultural, manufacturing, research and development (R&D), administrative, and service activities that contributes to preserving or restoring environmental quality." A 2004 study by the Renewable and Appropriate Energy Laboratory (RAEL) at UC Berkeley reported that the *Green Jobs* sector generates more jobs than the fossil fuel-based sector per unit of energy delivered across all

aspects! This means for the first time in history we have more opportunities in *Green Jobs* than in factory jobs or all other fuel-based energy sectors jobs.

As your children grow older and consider their future career endeavors encourage them to dream green. GCD supports *Green Jobs* and often offers continuing educational opportunities! Stay up to date on all *Green Job* opportunities by visiting our website at [www.gettrees.org](http://www.gettrees.org)!

## What Floats Your Boat

When it comes to water, we're all in the same boat. And who wants to get lost at sea? Certainly not me! That's why the Genesee Conservation District (GCD) and the Genesee County Drain Commission (GCDC) invite you to get on board, strap on a life jacket and participate in keeping our lakes and streams clean!

Whether you're aware of it or not, you are part of a watershed. More specifically, as residents of Genesee County you are part of the Flint River watershed, which encompasses 1,400 square miles and is home to over 600,000 people. As members of the community, you are likely to use the watershed for a variety of reasons, including a primary or secondary source of drinking water or a place to recreate. Also, the Flint watershed provides critical habitat for highly valuable and visible members of the aquatic community including small mouth bass, walleye and Northern pike.

Over the coming summer and fall months, GCD will help spread the word about how you can help improve water quality in our lakes and streams and keep Our Water CLEAN!

To help make a difference in your community and join us for an afternoon of storm drain stenciling or environmental education, contact Kristin Martinez, Education Outreach Coordinator, at [Kristin.martinez@macd.org](mailto:Kristin.martinez@macd.org) to promote awareness and encourage our neighbors to follow the seven easy steps to a healthy, happier aquatic ecosystem!

**Watershed Workshops**  
will be held in September.  
Check our website for dates,  
times, and locations.

Congratulations to Richard Winacoff of Swartz Creek, the winner of a conservation product (rain barrel) awarded for completing and returning the Swartz Creek Watershed Survey.



Memorial Trees



Consider a lasting tribute to a loved one by having a City of Flint street tree planted in their honor. Contact GCD today for more information.

## GLRI Initiative in the Watershed Update

In the GCD winter/spring newsletter, the effort to improve water quality in the Saginaw Bay by GCD, NRCS, and USGS was rolled out to readers. Since that article, several positive pieces of work have been accomplished.

To start this news update a few definitions need to be described to readers so that the terminology of the environment might be better understood. First, the concept of a watershed. A watershed is that geologic feature of the land that has water moving through it in a common direction. The water may be moving beneath the surface in aquifers or underground streams spread throughout the soil and rock profile of the land. Water also moves across the surface of the land in rivers and streams in a common direction toward the lake or sea.

Nutrients are those compounds that cause plant life to flourish. These nutrients primarily contained in soil sediment are nitrogen and phosphorus. These elements together are largely responsible for the eutrophication of Saginaw Bay. Eutrophication is the process where plant material ties up oxygen in the water, reaches maturity and dies. The decay of this material ties up oxygen in the water and potentially can cause a fish kill. If the process is allowed to continue over long time frames, a lake that is eutrophic will eventually become a bog and then become land. Much discussion is being made presently and data sought to determine if Saginaw Bay is eutrophic. While eutrophication is a natural process, human activities can greatly accelerate the process.

In early spring 2012 three auto sampling devices were installed on the Alger and Lum creeks. The samples obtained from these devices will give clear indication of the nutrient amounts in these waters. These nutrients eventually make their way through the watershed and end up in Saginaw Bay.

Removals of phosphate-based laundry detergents from store shelves and mandated industrial waste water pollution discharge permits have greatly reduced the amount of phosphorus present in watersheds. The phosphorus remaining in surface waters is generated by nonpoint source pollutants. These can be thought of as pollution from sources that can, to some extent, be controlled by humans and include agricultural fertilizer applications and leaking household sewer systems.

During the second quarter of 2012, producers in the watersheds were offered cost share money to implement conservation practices that will reduce soil erosion and nutrient loading of the watershed. These practices have a proven track record of positively impacting water quality. To date, 30 producers have filled out applications under GLRI funded practices, 20 farmers have been ranked for approval of cost share, and 14 farmers have had money approved for practices.

NAME _____ ORDER # _____												
<b>**TREES**</b>												
TYPE	VARIETY (bare root)	Age	SIZE	1	10	25	50	100	250	Quantity	Cost	
<b>CONIFERS</b>	White Pine	2-1	8-15"	\$3.75	\$18.75	\$37.50	\$56.25	\$75.00	\$140.63			
	Red Pine	2-1	8-15"	\$3.75	\$18.75	\$37.50	\$56.25	\$75.00	\$140.63			
	Norway Spruce	2-1	8-15"	\$3.75	\$18.75	\$37.50	\$56.25	\$75.00	\$140.63			
	Blue Spruce	2-1	8-15"	\$3.75	\$18.75	\$37.50	\$56.25	\$75.00	\$140.63			
	Concolor Fir	2-1	8-15"	\$4.50	\$22.50	\$45.00	\$67.50	\$90.00	\$168.75			
	Fraser Fir	2-1	8-15"	\$4.30	\$21.50	\$43.00	\$64.50	\$86.00	\$161.25			
	White Pine XL		2-3'		\$17.50	\$87.50	\$175.00					
Please remember to visit us at <a href="http://www.gettrees.org">www.gettrees.org</a> for more information about the fall tree species selected and products for sale!										<b>TREE Subtotal:</b>		
										State Sales Tax	x.06	\$
										Processing Fee	\$1.00	\$1.00
										<b>TOTAL</b>		\$

Tree Planting Site Selection Guide					
Species	Native	Growth	Light	Soil Conditions	Height at Maturity
White Pine	X	Fast	Full sun	Sandy loam soils. Will tolerate clays.	60'-100'
Red Pine	X	Fast/long-lived	Full sun	Well-drained sandy soils.	60'-90'
Norway Spruce		Moderate to fast	Full sun	Average soil conditions.	60'-100'
Blue Spruce		Moderate	Full sun	Moist, well-drained loam to sandy loam soils.	80'-100'
Concolor Fir		Slow	Shade	Grows well on most upland soils.	40'-70'
Fraser Fir		Moderate	Full to partial sun	Sand, clay, loam. Moist to damp.	30'-50'

Tree pick-up: Saturday, October 6<sup>th</sup>  
 9:00 a.m. – 3:00 p.m.  
 at For-Mar Nature Preserve  
 ~Reminders will be sent a week in advance~

Name	
Address	
City, State, Zip	
Phone	
Email	

<b>Charge your order:</b>			
Visa <input type="checkbox"/>	Master Card <input type="checkbox"/>	Discover <input type="checkbox"/>	
Expiration Date <input type="text"/> / <input type="text"/>			
Account Number			
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Name on card:			
Signature:			

Send orders by **September 29** to:

**Genesee Conservation District**  
**1525 N. Elms Road**  
**Flint, MI 48532**

Questions? Call us at (810) 230-8766 ext. 3





## Message from the Administrator

This newsletter offers articles addressing a range of environmental and natural resource topics meant to interest, inform, and inspire. To those who know us well and others unfamiliar with the District, we welcome you to peruse this publication to become better acquainted with what we do. We are passionate about our work and aspire to exceed your expectations in the services we provide.

A fundraising mainstay for conservation districts are tree sales. It is at this time of year when many of us have had enough of being cooped up indoors that we plan for spring and summer planting and

beautification projects. Within these pages you will find available for purchase a wide variety of trees and shrubs to satisfy.

This spring, Genesee Conservation District is proud to be partnering with Sloan/Longway to host a Family Science Day. Together we will provide fun, educational, and hands-on natural resources and environmental science activities. We invite you to join us on Saturday, April 20 from 1-4 p.m. at Longway Planetarium in the Flint Cultural Center for this free and open to the public event.

### Vegetable Garden Spring Calendar

#### MARCH

- Plan your garden space and order seeds
- Get a soil test once the ground has thawed

#### APRIL

- Once soil is dry prepare garden bed and apply fertilizer based on soil test recommendations
- Direct seed cool season crops (lettuce, carrots, onions, etc.)
- For a continuous harvest plant cool season crops again after two and four weeks

#### MAY

- Plant warm season crops and transplants after danger of frost has passed (late May)
- Begin harvest of early cool season crops
- Mulch around plants and between rows to conserve moisture and suppress weeds

#### JUNE

- Be on the look out for pests and diseases as temperatures rise



## MAEAP Update

Michigan Agriculture Environmental Assurance Program (MAEAP) is gaining momentum throughout the State. The program signed into law by Governor Snyder gives farmers protection from litigation for farming practices that comply with GAAMPS, the Generally Accepted Agricultural Management Practices. These practices are developed by the major land grant Universities. In Michigan, MSU is the leader in establishing the GAAMPS.

MAEAP is the method by which a farm's practices can be determined to be compliant with the GAAMPS. Using the tool of the A\*Syst, a booklet of standard questions, a Conservation District MAEAP technician will visit the farm and sit in a one-on-one format with the farm operator and discuss the A\*Syst booklet. Questions about the practices used on the farm are answered and ranked as low, medium or high environmental impact. The process is completely confidential and non-regulatory. Once practices that negatively impact the environment are known, the farmer and MAEAP technician can explore mitigating solutions. Most solutions can be funded with NRCS cost share money that in most cases provides funds to alleviate the potential problem. When it is established that the farm is being operated according to MAEAP standards, the MAEAP technician will call for verification. During verification, a third party audit is conducted by the verifier checking that MAEAP standards are being followed on the farm. Verification can be found for three systems: livestock, cropping, and farmstead.

A separate pool of NRCS cost share money earmarked for farms nearing verification has increased producer interest in MAEAP. Statewide, Governor Snyder has set a goal of 5,000 verifications be completed by 2015. To schedule a MAEAP A\*Syst contact Robert Carlin at 810-230-8766 ext. 102. Additional resources may be found at [www.maeap.org](http://www.maeap.org).

After a very successful sign up last year, Genesee Conservation District and USDA-Natural Resources Conservation Service (NRCS) are gearing up for 2013. The Environmental Quality Incentives Program, commonly referred to as EQIP, is the primary tool we are using to clean up waterways in Genesee County and the Saginaw Bay area.

EQIP is a program that considers conservation and production agriculture as having compatible goals. Through it, we are able to offer technical assistance and cost share to producers for the implementation of conservation practices. These practices support environmental quality along with the productivity of local farms.

The idea is to help farmers implement conservation practices on their land, such as cover crops and nutrient management plans. A cover crop is one of

several erosion reducing practices that work by both tying up nutrients and preventing sediment from washing off the land. Nutrient management plans help producers to apply only the nutrients that their crop needs, preventing excess fertilizer from making its way into streams. These practices, among many others, combine to have an enormous impact on the health of both the land and the water here in mid-Michigan.

Applications for EQIP are accepted year round and our staff is always available for assistance. For more information on NRCS programs, the watershed project, or to voice your comments and concerns, please contact one of our Soil Conservation Technicians: Brian Schorr or Robert Carlin, or the District Conservationist, Jermaine Jenkins. Reach us by phone at (810) 230-8766 extension 3.

## Bee Wise



Worldwide there are 20,000 species of bees, 4,000 species native to the U.S. Bees and other pollinators such as butterflies, moths, and hummingbirds are important in 35% of global crop production. While the non-native European honey bee is the most important crop pollinator in the U.S., native bees contribute \$3 billion worth of crop pollination here. Habitat information is available at the GCD office.

## Removing Dead Wood

In cooperation with the City of Flint, the District continues removing high-risk city street trees. Over the past couple of years more than 750 dead or diseased trees have been removed clearing the way to plant nearly 250 street trees.

Removed trees have been reclaimed and milled into lumber available for purchase in a variety of sizes and species from Genesee County Habitat for Humanity's ReStore perfect for your hobby and building projects. Send us pictures and tell us about your projects using this wood.

## Live Fish for your Pond, Lake or Stream

Harrietta Hills, a Michigan-based fish farm, is once again this year partnering with GCD to offer a Fish Day Event. We want your stocking project to be successful, so too does Harrietta Hills. They are available by phone or email for stocking recommendations. Harrietta Hills live game fish are a great addition to your pond or lake. Trout, hybrid sunfish (bluegill), largemouth bass, channel catfish, and yellow perch are terrific for fishing fun an ecological balance. Other species of game fish and minnows are available seasonally.

Fish Day Events are a convenient way to pick up small orders at a location convenient to you. Genesee Conservation District is hosting a fish day event scheduled for Saturday, May 18 from 11 a.m. to 1 p.m. Follow this link <http://www.harriettahills.com/fishdayevents.html> to place your advance online order or contact them by phone at (877) 389-2514.



ORDER #

2013 Spring Tree Sale Orderform

NAME	Species Common	Size	Single	Bundles of 5	Bundles of 10	Bundles of 25	Bundles of 50	Bundles of 100	Bundles of 250	Bundles of 500	Quantity	Cost	
Conifers	White Pine Transplants*	8-15"	Not Available	\$7.56	\$13.75	\$27.50	\$41.25	\$68.75	\$137.50	\$206.25			
	White Pine*	8-15"	Not Available	\$3.09	\$5.63	\$11.25	\$16.88	\$28.13	\$56.25	\$84.38			
	Red Pine Transplants*	6-18"	Not Available	\$10.31	\$18.75	\$37.50	\$56.25	\$93.75	\$187.50	\$281.25			
	White Cedar*	8-15"	Not Available	\$4.06	\$7.38	\$14.75	\$22.13	\$36.88	\$73.75	\$110.63			
	Horsely Spruce	10-16"	Not Available	\$2.41	\$4.38	\$8.75	\$13.13	\$21.88	\$43.75	\$65.63			
	Balsam Fir*	6-10"	Not Available	\$5.50	\$10.00	\$20.00	\$30.00	\$50.00	\$100.00	\$150.00			
	Tamarack*	12-18"	Not Available	\$8.25	\$15.00	\$30.00	\$45.00	\$75.00	\$150.00	\$225.00			
	Sugar Maple*	6-12"	Not Available	\$7.56	\$13.75	\$27.50	\$41.25	\$68.75	\$137.50	\$206.25			
	Red Maple*	12-18"	Not Available	\$8.42	\$15.31	\$30.63	\$45.94	\$76.56	\$153.13	\$229.69			
	Red Oak*	12-18"	Not Available	\$8.42	\$15.31	\$30.63	\$45.94	\$76.56	\$153.13	\$229.69			
	White Oak*	12-18"	Not Available	\$10.31	\$18.75	\$37.50	\$56.25	\$93.75	\$187.50	\$281.25			
	Black Walnut*	12-18"	Not Available	\$8.08	\$14.69	\$29.38	\$44.06	\$73.44	\$146.88	\$220.31			
	Tulip Poplar*	12-18"	Not Available	\$9.11	\$16.56	\$33.13	\$49.69	\$82.81	\$165.63	\$248.44			
	Sycamore*	12-18"	Not Available	\$8.42	\$15.31	\$30.63	\$45.94	\$76.56	\$153.13	\$229.69			
	Hybrid Poplar	12-18"	Not Available	\$10.31	\$18.75	\$37.50	\$56.25	\$93.75	\$187.50	\$281.25			
Deciduous	Callery Pear	12-18"	Not Available	\$7.73	\$14.06	\$28.13	\$42.19	\$70.31	\$140.63	\$210.94			
	Red Mulberry*	12-18"	Not Available	\$9.11	\$16.56	\$33.13	\$49.69	\$82.81	\$165.63	\$248.44			
	Sweet Gum	12-18"	Not Available	\$8.77	\$15.94	\$31.88	\$47.81	\$79.69	\$159.38	\$239.06			
	River Birch	12-18"	Not Available	\$8.42	\$15.31	\$30.63	\$45.94	\$76.56	\$153.13	\$229.69			
	Common Elm*	12-18"	Not Available	\$7.56	\$13.75	\$27.50	\$41.25	\$68.75	\$137.50	\$206.25			
	Flowering Dogwood*	12-18"	Not Available	\$10.34	\$18.44	\$36.88	\$55.31	\$92.19	\$184.38	\$276.56			
	Fraxinus*	12-18"	Not Available	\$9.97	\$18.13	\$36.25	\$54.38	\$90.63	\$181.25	\$271.88			
	Spicebush*	12-18"	Not Available	\$9.97	\$18.13	\$36.25	\$54.38	\$90.63	\$181.25	\$271.88			
	Common Witchhazel*	12-18"	Not Available	\$9.35	\$17.00	\$34.00	\$51.00	\$85.00	\$170.00	\$255.00			
	Highbush Cranberry	12-18"	Not Available	\$10.48	\$19.06	\$38.13	\$57.19	\$95.81	\$190.63	\$285.94			
	Shrubs												
	Big Bare Root												
Fruit													

Tree Sale Subtotals:

Tree Sale Totals:



# 2013 ANNUAL SPRING TREE SALE



Name	
Address	
City, State, Zip	
Phone	
Email	

All Tree Sale orders are due by 4:30pm Monday, April 15<sup>th</sup>, 2013.

**Charge your order:**

Visa     Master Card     Discover   

Expiration Date /

Account Number

Name on card: \_\_\_\_\_

Signature: \_\_\_\_\_



Please remember to visit us at [www.gettrees.org](http://www.gettrees.org) for more information about the spring tree species selected and about some of the other products for sale!

Contact us at 810-230-8766 ext 3

*Thanks again for supporting your local conservation office!*

Checks should be made out the Genesee Conservation District and mail back to 1525 N. Elms Road Flint, MI 48532. All Tree Sale orders are due by 4:30pm Monday, April 15<sup>th</sup>, 2013. Pick up is at For-Mar Arboretum on April 26<sup>th</sup> and 27<sup>th</sup> from 9:00am to 3:00pm. Pick up reminders will be mailed out to every order. Thanks for supporting your local Conservation District. Happy Planting!

Tree and Shrub Information Chart		Annual Growth			Soil Type			Soil Moisture				Light			Mature Size		Uses & Characteristics									
Species		Fast 15" and up	Medium 13-24"	Slow 12" or less	Sand	Loam	Clay	Dry to moist	Moist	Moist to wet	Wet	Full sun	Partial shade	Full shade	Height	Spread	Christmas trees	Erosion control	Fall color	Flowering	Lumber/Vaneer	Naturalizing	Reforestation	Shade	Wildlife	Windbreak
		Conifers	Balsam Fir		x	x	x	x	x		x	x		x	x	x	45-75'	20-25'	x						x	
Norway Spruce	x		x			x	x	x	x	x		x	x		40-60'	25-30'	x								x	x
Red Pine	x				x			x				x			50-80'	30'	x	x			x		x			x
Tamarack	x								x	x	x	x			50-75'	25'									x	
White Cedar				x		x	x		x	x	x	x	x		40-50'	10-20'					x				x	x
White Pine	x				x	x		x	x	x		x	x		80-100'	20-40'	x	x			x		x		x	x
Deciduous	Black Walnut		x	x		x	x	x	x			x			70-80'	50-75'					x		x	x	x	
	Callery Pear		x			x		x	x			x			35'	20'			x	x						
	Hybrid Poplar	x				x			x	x		x			40-50'	30'								x	x	
	Red Maple	x	x		x	x	x		x	x	x	x	x		60-75'	40'			x		x			x	x	x
	Red Mulberry	x			x	x	x	x	x			x	x		40-50'	40-50'								x	x	
	Red Oak	x	x		x	x	x	x	x					x	45'	60-75'					x		x	x		
	River Birch	x	x		x	x	x		x	x	x	x			40-60'	40-70'		x								
	Sugar Maple	x	x			x							x		60-75'	40-50'			x		x			x		
	Sweetgum	x	x		x	x	x	x	x	x	x	x			60-75'	40-50'			x		x					
	Sycamore	x	x			x			x	x		x	x		80'	60'					x			x		
	Tulip Poplar	x				x	x		x	x		x			70-90'	40'			x	x	x			x		
	White Oak		x	x			x		x			x			50-80'	50-80'					x			x		
Shrubs/Small trees	Common Lilac		x		x	x	x	x	x	x		x	x		8-15'	6-12'				x					x	
	Common Witchhazel		x		x	x		x	x			x			15-30'	15-25'				x						
	Flowering Dogwood		x		x	x	x		x	x		x	x		20'	20'				x				x	x	
	Fragrant Sumac			x	x	x	x	x	x			x	x		3-8'	6-10'				x		x				
	Highbush Cranberry			x	x	x	x	x	x				x		6-12'	6'						x			x	
	Spicebush			x		x	x		x	x		x	x	x	6-12'	15'				x		x			x	x
Fruit	Blueberries			x	x	x		x	x			x			6"-3"					x		x			x	
	Gala Twin Bee Apple			x		x		x	x			x			10-12'	6'-8'				x					x	
	Smoothie Apple			x		x		x	x			x			18-22'	8'-10'				x					x	
	Wolf River Apple			x		x		x	x			x			18-22'	8'-10'				x					x	

A good root system must be developed before trees and shrubs reach their indicated growth rates. Once planted or transplanted, most trees and shrubs grow slowly over the first three years and more rapidly after their root system becomes developed. General care, soils, weather, animal or other damage, wood, grass, and plant competition affect growth rates. More information can be found on our website [www.gettrees.org](http://www.gettrees.org). Website sources: Arbor Day Foundation, University of Illinois Extension, Ohio DNR, Michigan DNR, Michigan State Extension, Washtenaw CD.

**Brain Teaser**

1. What tree is America's National Tree?
2. What is Michigan's State tree?

1. Named as the U.S. National Tree in 2004, the oak tree is valued for its shade, beauty, and lumber. Over 60 species of oaks grow in our country.
2. Michigan's State tree is the white pine. Designated in 1955, white pines are the largest conifer and the only one to have five needles in each bundle.

# GLRI Initiative in the Watershed Update

Pollution entering the Flint River is an ongoing concern in Genesee County. This pollution damages our local waterways and affects every down stream community as it travels toward Saginaw Bay, where it accumulates. Modern regulations have helped to clean up industrial wastewater and some urban pollutant sources, but now the focus has turned to agricultural runoff.

Sediment, nitrogen and phosphorus are key pollutants that often originate on agricultural land. When these elements build up in the Saginaw Bay they literally fertilize the plants in the water, especially algae. As the plants grow and die they tie up oxygen, meaning that fish and other organisms can no longer survive. Eventually this process will destroy the value of our water for recreation, fishing, hunting, and even drinking.

GCD is working closely with the Natural Resource Conservation Service (NRCS) through the EQIP program, along with other partners to address these problems. With funding through the Great Lakes Restoration Initiative (GLRI) we have provided nearly \$2.5 million to Genesee County farmers who are now employing conservation and pollution reducing strategies.

The first statewide EQIP sign up is underway and we are currently working toward the completion of nearly 40 applications representing several thousand acres of crop and forest land.

We are anticipating a second EQIP sign up this spring that will be funded through GLRI. This sign up will likely target Swartz Creek and Kearsley Creek watersheds here in Genesee County. Producers in these watersheds are encouraged to apply.

## Community Tree Planting

In the fall of 2012, GCD offered a mini-grant opportunity for community groups to plant street trees in City of Flint owned right-of-ways. Six community groups were awarded funds to organize, coordinate, purchase materials, and plant trees. Volunteers clocked over 500 total hours while planting 120 street trees in October and November. Congratulations to all participants on a job well done!

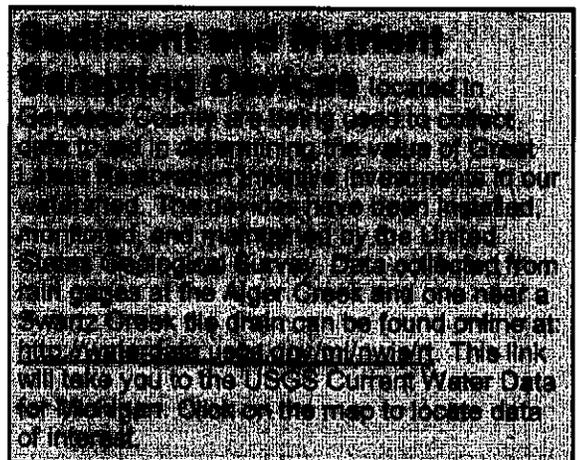
GCD will offer another round of community planting mini-grants this year. Contact us to request more information or to have your neighborhood considered for a similar project.



Chelan Street neighborhood tree planting volunteers organized by Chelan Street resident Shirley Milton (center).

## Environmental Education

classes are available to classrooms and youth groups in Genesee County. Sessions are specifically tailored to appeal to young people via hands-on activities covering a variety of concepts tied to state standards. Classes are available as stand alones or as a series of lessons. Contact GCD's Education/Outreach Coordinator, Jeff Johnson, for more information or to schedule an appointment.



## MAX BRANDON Our Park. Our Future!

Max Brandon Park is a unique feature to the City of Flint with 100+ acres of oak savanna. This jewel, the oak savanna, is a plant community with open grown oaks. In contrast to a forest with its closed canopy, an oak savanna canopy ranges from 10-50%. This type of habitat receives dappled sun and shade allowing growth of a wide diversity of flowering plants and grasses. In the Midwest where oak savannas were once abundant, they are now considered a threatened plant community. Numerous species of plants and animals dependent on this habitat are suffering from the loss; many are named on the Michigan Threatened and Endangered species list.

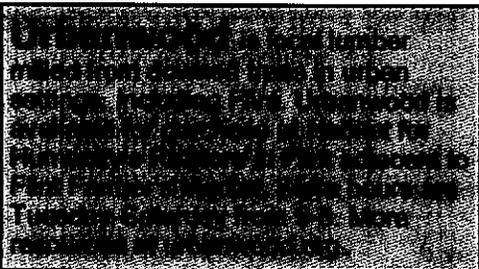


District Forester Margaret Studer, Friends of Max Brandon Park, and local silviculturalists (tree and forest experts) survey the park.

Unfortunately, due to the lack of parks and forestry funds, Max Brandon Park has become overgrown and undesirable species of trees and plants are out-competing and taking over. Much of the habitat can be restored simply by tree thinning and brushing. In 2012 the Genesee Conservation District applied and received a federal grant to restore the habitat of Max Brandon Park and perform much needed high risk tree maintenance and removals along the park paths and by the park playgrounds thereby improving both the habitat and safety for those using the park. It is Genesee Conservation District's vision that one day the City of Flint becomes a model for oak savanna restoration throughout the country.

**What is restoration??** Restoration is the practice of restoring land that has been degraded or destroyed back to its original and ideal state. This is done through proper forest management. **What to expect??** Genesee Conservation District's Forest Scientist will be working within the park to

identify high-risk trees and work on ideal restoration locations. Large equipment may be brought in to perform some of these tasks and residents will be notified when this will occur. **When will this be completed??** This project will be completed by April of 2014. **How can you help??** Residents can help in this restoration project by spreading the word and supporting the District and our partners at the Friends of Max Brandon Park in the combined effort to maintain and protect this unique and wonderful city park. **If I have questions who should I contact??** Remember that no question is a bad question! For any reason, please feel free to contact Genesee Conservation District by phone or email at (810) 230-8766 ext. 3 or at [genesecd@yahoo.com](mailto:genesecd@yahoo.com)

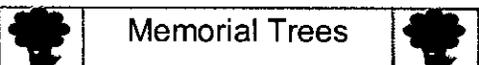


### 7 Simple Steps to Clean Water

- Practice good **car care**.
- **Fertilize** sparingly and carefully.
- Clean up after your **pet**.
- Save **water**.
- Carefully store and dispose of **household cleaners, chemicals, and oil**.
- Help keep pollution out of **storm drains**.
- Choose earth friendly **landscaping**.



MDNR is pleased to introduce the new HAP logo (left) that will be used in signage. The image depicts the look and feel of what the HAP program strives to do: connect hunters with hunting lands through mutually beneficial agreements with farmers and private landowners.

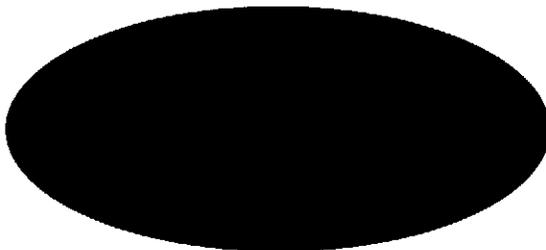


### Memorial Trees

Consider a lasting tribute to a loved one by having a City of Flint street tree planted in their honor. Contact GCD today for more information.



**Edible Flint Garden Starters** kits are being offered at \$15 each for gardens located in Genesee County. Kits include seeds and transplants designed for a 1,500 square foot garden, about 30 ft by 50 ft. To learn more or to purchase a kit, contact Deb Hamilton at MSU-Extension at 810.244.8547 or on the web at [www.edibleflint.org](http://www.edibleflint.org).



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**Genesee Conservation District**  
**1525 N. Elms Rd.**  
**Flint, MI 48532**

**Phone: (810) 230-8766 ext. 3**

**Fax: (810) 230-8596**

MAR 12 2013  
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Sue Kubic  
or current resident  
4608 Beecher Rd  
Flint MI 48532-2617

**YOUR Conservation  
Planning Team**

**GCD & NRCS STAFF**

- Angela Warren  
*Administrator*
- Margaret Studer  
*District Forester*
- Brandon Whittaker  
*Environmental Engineer*
- Jeffrey Johnson  
*Education/Outreach Coordinator*
- Brian Schorr  
*Soil Conservation Technician*
- Jermaine Jenkins  
*District Conservationist*
- Robert Carlin  
*Soil Conservation Technician*
- Luke O'Brien  
*Environmental Engineer*
- Laura Jostock  
*Farm Bill Specialist*
- Tom Wert  
*MAFAP Technician*

**GCD BOARD OF DIRECTORS**

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*Chairperson*

Darren Bagley  
*Vice Chair*

Jacky King  
*Treasurer*

Erin Caudell  
*Director*

Brad Hill  
*Director*

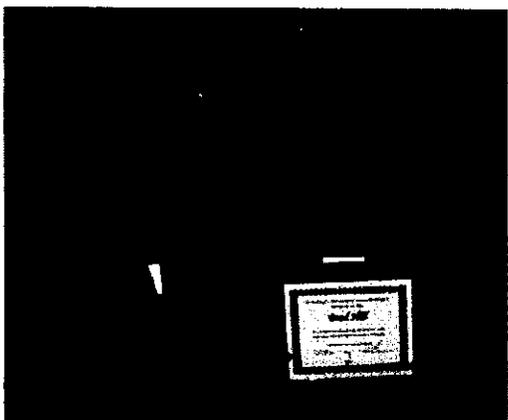
**Conservation Calendar**

- **March 9 Keep Genesee County Beautiful Leadership Conference**
- **March 20 Vernal equinox Spring begins**
- **April 13 Earth Day & Garden Celebration UM-Flint**
- **April 15 GCD spring tree orders due**
- **April 20 GCD and Sloan/Longway Family Science Day 1-4 p.m.**
- **April 26-27 spring tree sale pick-up at For-Mar**

All NRCS & District programs and services are offered on a nondiscriminatory basis with regard to race, color, national origin, religion, sex, age, marital status, sexual orientation, or handicap.



## Hill named Director of the Year by MACD



MACD President, Art Pelon, presents Brad Hill with the 2012 MACD Director of the Year award.

For his outstanding work and leadership in natural resource conservation, the Michigan Association of Conservation Districts (MACD) named Brad Hill, board member of the Genesee Conservation District (GCD) as the 2012 Director of the Year during the MACD Annual Convention, in November, 2012, held at the Best Western Plus – Hotel and Conference Center in Lansing. "Brad has a great passion for the environment and has volunteered considerable amounts of time as a director of GCD," said Angela Warren, Administrator for GCD. "Brad was instrumental in securing Great Lakes Restoration Initiative funding which has greatly assisted in establishing proven conservation practices throughout the county."

Brad has long been involved in natural resource conservation at the local, regional, and state levels. He spent several years supporting and advising watershed committees in the Saginaw Bay watershed before joining GCD. He has been tireless in his efforts and strong commitment to Michigan's natural resources, the work of Conservation Districts, and to establish GCD as a leader in environmental conservation in Genesee County.

**Michigan Association of Conservation Districts (MACD)**, is a non-profit organization that represents the interests of Michigan Conservation Districts and works to strengthen Districts through leadership, information and representation at the state level. Michigan's 78 Conservation Districts are the local providers of natural resource management services that help our citizens conserve their lands and our environment for a cleaner, healthier, economically stronger Michigan.

### USDA NRCS

In partnership with the District, the United States Department of Agriculture (USDA)-Natural Resources Conservation Service (NRCS) administers conservation management practices locally on the land as provided in the 2008 Farm Bill.

Staff are available to provide technical assistance to landowners and producers and to assist with the application process for cost share programs, which are accepted year-round. Implemented practices positively impact the environmental health of our natural resources.

### Calling All Artists:

What can you do with reclaimed wood?

Genesee Conservation District and Genesee County Habitat for Humanity are teaming up to present:

will highlight how reclaimed local trees can become useful objects and imaginative works of art. Whether you are a crafter, an artist, or a traditional woodworker, we hope that you'll share your talent and join in the excitement!

## Farmers protecting the environment



Did you know that Genesee County has nearly 1,000 farms in operation encompassing over 100,000 acres? It's true. According to the most recent US Agriculture Census data (2007) these farms' production market value is nearly \$59 million; chief among the crops is soybeans. Many of these farms are actively protecting the environment by voluntarily participating in the Michigan Agriculture Environmental Assurance Program, commonly referred to as MAEAP. With strong support from Governor Snyder, Michigan is a leader among the states in natural resource protection.

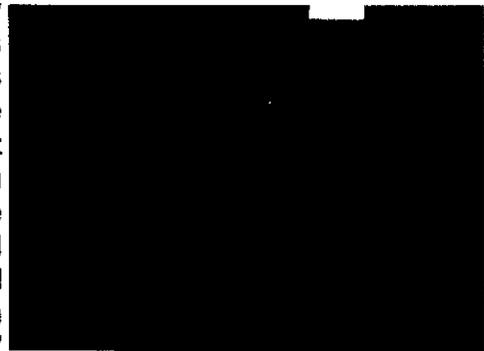
Becoming MAEAP verified is comprehensive and proactive—designed to reduce farmers' legal and environmental risks through a three-phase process: education, farm-specific risk assessment (A\*Systs), and on-farm verification that ensures the farmer has implemented environmentally sound practices.

At the local level, partners of MAEAP, Genesee County Farm Bureau and GCD, are collaborating to encourage participation in the program, with outreach efforts strengthened thanks to a Michigan Farm Bureau grant. A Conservation District MAEAP technician is available to work with farmers through the process. More at [meap.org](http://meap.org).



## Our Water Education Program is Flowing

On location, the District educates the community on the importance of clean water by using the Genesee County Drain Commission's "Our Water" Program. From school programs to community events to sports camps, reaching the intended audience, oftentimes youth, takes a special approach. "By putting words into actions that resonate with people, it gives them perspective to understand how we all play a role in water quality,"



said Jeff Johnson, GCD Education/Outreach Coordinator.

Recently, Johnson presented the Our Water Program to youth participants of the Mateen Cleaves basketball camp. In an engaging activity, Johnson demonstrated how improperly discarded trash, like candy and fast food wrappers left on the street, is pulled by rainwater into storm drains that lead directly to lakes, streams, and rivers. Further, he noted the importance of hydration to athletes; scoring points with the need for clean drinking water. More at [cleargenesewater.org](http://cleargenesewater.org).

### Seven Simple Steps to Clean Water

- Practice good car care.
- Fertilize sparingly and carefully.
- Clean up after your pet.
- Save water.
- Carefully store and dispose of household cleaners, chemicals, and oil.
- Help keep pollution out of storm drains.
- Choose earth-friendly landscaping.

GCD staff is offering a variety of hands-on science activities for the whole family. The activity was "Design a Drop of Rain" which was drawn at the regional MAEAP conservation package.

Tree Selection Guide	Species	Roots	Soils / pH	Soils Conditions	Height
	Balsam Fir	Moisture	Shallow roots	Moisture 4.0-6.0	Silt loams, stony loams, gravelly sands
Canadian Hemlock	Slow	Water depending	Moist to well drained 4.0-7.0	upland sandy loams, loamy sands, silt loams	60-100'
CoonCypri Fir	Moisture	horizontal roots	Well drained 4.5-7.0	well drained sandy or clay loam soils	40-60'
Northern White Cedar	Slow	shallow roots	Moist to well drained 4.0-7.0	shallow loam	70-80'
Norway Spruce	Fast	horizontal and lateral roots	Moist to well drained 4.0-7.5	Loamy sandy clay soils	40-60'
Red Pine	Moisture	horizontal roots	Well drained 5.0-8.0	dry sandy soils and gravelly ridges, low soil fertility	60-100'
White Pine	Fast	horizontal roots	Moist to well drained 4.0-8.0	Sandy to heavy textured soil	70-100'



# Genesee Conservation District Fall Tree Sale

Place your order by **September 20, 2013** for

**Tree Pick-up Friday, September 27, 2013 • 9am until 7pm at  
Genesee Conservation District Office • 1525 N. Elms Rd.  
Flint, MI 48532 • 810.230.8766 ext. 3**

Balsam Fir, Canadian Hemlock, Concolor Fir, Norway Spruce, Northern White Cedar, Red Pine, and White Pine 2 year old seedlings are available. Fill out the form below and submit it with payment to: Genesee Conservation District, 1525 N. Elms. Rd., Flint, MI 48532. Thank you for supporting the District through this fundraising event.

GCD is not responsible for orders not picked up on the scheduled distribution date. Survival rates are not guaranteed. **LIABILITY CEASES UPON DISTRIBUTION.**

Keep this portion. No invoice or reminder will be mailed.

SPECIES	SIZE	10	25	50	100	QTY	AMT DUE
Balsam Fir	5-10"	\$14.00	\$30.00	\$50.00	\$80.00	_____	\$ _____
Canadian Hemlock	6-12"	\$20.65	\$44.25	\$73.75	\$118.00	_____	\$ _____
Concolor Fir	5-12"	\$15.75	\$33.75	\$56.25	\$90.00	_____	\$ _____
Norway Spruce	9-15"	\$14.00	\$30.00	\$50.00	\$80.00	_____	\$ _____
Northern White Cedar	8-15"	\$21.00	\$45.00	\$75.00	\$120.00	_____	\$ _____
Red Pine	5-10"	\$15.75	\$33.75	\$56.25	\$90.00	_____	\$ _____
White Pine	6-14"	\$15.75	\$33.75	\$56.25	\$90.00	_____	\$ _____

Name \_\_\_\_\_

Order total \$ \_\_\_\_\_

Address \_\_\_\_\_

- Discount \$ \_\_\_\_\_

City \_\_\_\_\_ Zip \_\_\_\_\_

Sub-total \$ \_\_\_\_\_

Phone \_\_\_\_\_

+ 6% tax \$ \_\_\_\_\_

Email \_\_\_\_\_

**Total** \$ \_\_\_\_\_

Payment Method

Cash \_\_\_\_\_ Check \_\_\_\_\_ Credit Card \_\_\_\_\_

Credit Card Type Visa \_\_\_\_\_ Mastercard \_\_\_\_\_ Discover \_\_\_\_\_

Card Number \_\_\_\_\_

Expiration Date \_\_\_\_\_ Security Code \_\_\_\_\_



OFFICE USE ONLY

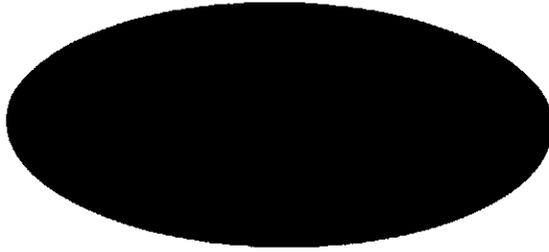
Order # \_\_\_\_\_

Date Received \_\_\_\_\_

Cash \_\_\_\_\_

Check # \_\_\_\_\_

CC Approv # \_\_\_\_\_



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- Jermaine Jenkins—District Conservationist
- John Bauer—Soil Conservation Technician
- Jeff Johnson—Education/Outreach Coordinator
- Laura Jostock—Soil Conservation Technician
- Luke O'Brien—Environmental Engineer
- Brian Schorr—Soil Conservation & Watershed Tech
- Dana Voorheis—Forestry Coordinator
- Brandon Whittaker—Environmental Engineer

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Brad Hill  
*Director*

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# Watershed

## REPORTER

PARTNERING TO PROTECT OUR NATURAL RESOURCES

APRIL 2013

### PARTNER, PROTECT, IMPROVE AND PROMOTE!

**REBECCA FEDEWA, EXECUTIVE DIRECTOR**



Rebecca Fedewa

I have a photo of the Flint River as the background on my laptop. It was taken last summer from a helicopter at about 500 feet, during a fundraising event we held in August. It's on my computer not just because it's a pretty picture, but because it's a great conversation starter. People see it, and invariably ask where it was taken. And generally, the asker is shocked when I happily exclaim that it is their very own Flint River.

As it turns out, I all too frequently run into folks who don't recognize the Flint River for the wonderful amenity it is to all of the communities that fall within it's nearly 1,400 square miles of watershed. There are as many reasons why as there are people in the watershed. But each day, the folks involved with the Flint River Watershed Coalition—volunteers, staff, board members, or other advocates—are working to advance our mission to protect, preserve, and improve this vital resource. Now I'd like to add one more verb to that statement: Promote!

Our river is beautiful! Our river is full of recreation opportunities! Our river provides important economic benefits to our community, in addition to serving as the backup water supply for thousands! Our river matters!!!

You can help us make sure that message gets out.

We have seen many changes in the last five or so years – there are new businesses focused on the river, more and more people are attending our

events, and more of our elected officials are taking a serious look at what they can do to improve their communities through river conservation and protection. We are so excited about this, but we know that our "Voice" for the Flint River needs to continue to expand. So that when people one day see an uncommonly beautiful picture of a river, they will say "Hey, that's the pedestrian bridge over the Flint River in Flushing!" or "I canoed that stretch just last week!" or "My kids and I walk on that trail a few times a week!" rather than "Oh, was that taken somewhere up north?"



Aerial view of Flint River

Photo: Gary Nickols

## THE FLINT RIVER CLEAN TEAM 2013

You are invited to join the Flint River Watershed Coalition in its mission to protect, preserve, and improve the Flint River watershed at our annual Flint River & Community Clean-Up Day! We will be collecting trash and natural debris from the river, its banks, and surrounding areas.

This year's clean-up will be held on April 27th from 9:00am-12:00pm. An updated list of clean-up sites, as well as other information is on our website: [www.flintriver.org](http://www.flintriver.org). Or visit our Facebook page and "Like" us to share this event with your friends or organization! Lunch is provided to all volunteers.

This is a great opportunity for all community



members, especially students and scouts in need of service hours. This is a fun day of environmental stewardship and community connectedness.

Find something truly unique or

unusual, and you could be a contender for the coveted Golden Gloves Award! Jeff Welch was 2012's winner with his Pfeiffer's Beer can circa 1955. What item will win this year's prize? Come and find out! Be a champion for the Flint River, and you could be the next winner!

No pre-registration is required to be a volunteer at the Flint River & Community Clean-Up. Just show up at your site on April 27. We do ask that groups of five or more call us in advance so that we can have enough supplies for everyone. If you have a large group, or are interested in sponsoring the clean-up, please contact Holly Rosser at (810) 767-9491 or send her an e-mail at [hrosser@flintriver.org](mailto:hrosser@flintriver.org).



400 N. Saginaw St., Ste. 233  
Flint, MI 48502  
810-767-6490

[www.FlintRiver.org](http://www.FlintRiver.org)

The Watershed Reporter is published quarterly by the Flint River Watershed Coalition. The Coalition is dedicated to promoting the importance of protecting our natural resources. It works closely with the public and private agencies and citizens' groups in carrying out its mission.

## FRWC Board of Directors

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FRWC Board Meetings are held  
the third Friday of the month.

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Newsletter design & layout by Jon Wood

## SUNDAY RIDES ARE COMING SOON

Spring has arrived, and it's time to get those bicycles tuned up, tires checked, and 'get stretching'; the bike riding season is upon us! As has occurred for the past 15 years, the Friends of the Flint River Trail will start the regular Sunday rides on the first Sunday in May (May 5th). They will continue at 2:00 PM EVERY Sunday through October from the Flint Farmers' Market. These are pleasant, leisurely rides of about 10-12 miles in length along the Flint River Trail. There is no need for advance registration: Just "show up and ride." Helmets are STRONGLY recommended. Light refreshments are available after each ride.

In addition, the FFRT schedules Saturday rides on other mid-Michigan trails within an hour's drive from Flint. This year, the rides will be on the third Saturday of each month, May through October. Our first ride will be on the Southern Links Trail from Columbiaville to Otter Lake, Millington and back. The total ride is about 20 miles with a brief rest stop in Millington. Questions about the rides can be directed to Jack Minore at [jacksonmin@aol.com](mailto:jacksonmin@aol.com) or to Bruce Nieuwenhuis at [bnbaton@gmail.com](mailto:bnbaton@gmail.com).

**Please join us** for the trail and river clean-up from 9am to noon on the last Saturday in April. We will meet at the Vietnam Veterans Park on the west side of the river, just south of E. Hamilton Ave. Teams will be dispatched from there to clean and groom the trail to prepare for the first Sunday ride on May 5th. Lunch will follow.



### OTHER RIDES

Watch for two new rides in Flint this year. On May 11th, the Crim will sponsor the inaugural "Tour de Crim," a 10 mile ride along the 'blue line' of the Crim Route. This is a non-competitive ride with some fun side attractions. And on June 8th, the Health Department will sponsor a family-friendly ride – with details yet to be announced.

## GET TO KNOW THE FLINT RIVER FROM THE VIP SECTION!

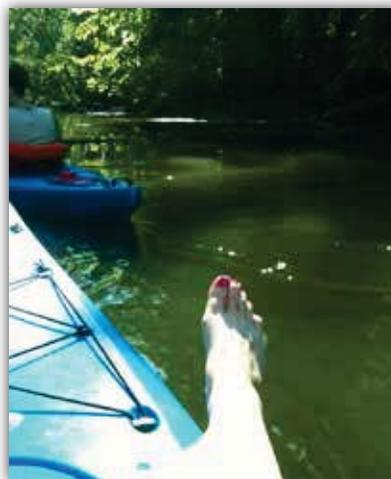
The Flint River is truly amazing and there is no better way to see it than from in a kayak or canoe floating down stream. Every year we meet people who think they have to go north to kayak. We love it when people come out and experience that "up north" feeling by floating down a river that is right in their own back yard. The Flint River has many views, from small rapids to lazy streams to calm lakes surrounded by birds that are just waiting for our paddlers to enjoy. You never know what you will see during our paddles, but we guarantee it will be an experience you won't soon forget. From bald eagles to turkeys to musicians playing the bagpipes, we have seen and heard many natural wonders during our trips. Just when we think we have seen

everything there is to see, the river pulls out another surprise for us.

Our paddles, as we call our canoe/kayak trips, are for all levels of experience. You don't even need to own your own kayak or canoe to come along! We can arrange for a rental if you need it and transportation is always provided. The FRWC paddles are part of the 'Our Water' program generously sponsored by the Genesee County Drain Commission.

Our first paddle is scheduled for Saturday, May 25th at 10 am from Holloway Dam to Irish Road, a truly gorgeous stretch of the river. **We will be holding two paddles a month from June through September, weather permitting.** Check

out our calendar or our paddles webpage for more information or contact Jaime Welch at 810-767-7140 or [jwelch@flinriver.org](mailto:jwelch@flinriver.org). Hope to see you on the river this summer!



# FIND YOUR FAVORITE PLACE IN THE WATERSHED

AMY McMILLAN, BOARD CHAIR



Amy McMillan

Spring 2013 made its official arrival at 7:02 a.m. on March 20. As a tried and true fan of any season that does not begin with a "W", I faithfully counted the days until spring returned pretty much since the beginning of the 2012 "W" season.

The Flint River Watershed is where I look to find the first signs of spring each year. I can count on seeing my first robins along the shores of Mott Lake, people breaking out their fishing poles up and down the Flint River, just testing the water and watching for walleye. The sound of water rushing under the little footbridge over the Kearsley Creek as it runs through my neighborhood

unrestrained by an icy crust? Music to my newly earmuff-free ears.

If you don't yet have a favorite place in the Watershed to greet spring in all of its green glory, make 2013 the year that you set out to explore the tremendous natural resource that is right here in our own backyard. Mark your calendar, put some air in your tires, and make plans to join the Friends of the Flint River Trail for a Sunday bike ride. Put on a PFD and register for one of the FRWC's paddling events. Head out to For-Mar, hike out into the woods, and hear the post-winter power of the Kearsley Creek as it rushes and roars under the footbridges that link the trails.

Still not sure where the best spot is to welcome spring? Give the friendly and informative Flint River Watershed Coalition staff a call or send us an email. The natural wonders of the watershed await!

## SPRING MONITORING

It is getting to be that time of year again! The weather is slowly warming up, grass is starting to turn green, and flowers are thinking about making an appearance. That means that monitoring season is almost here! Every spring and fall the FRWC spends two weeks doing water quality monitoring at 34 sites around the watershed. Volunteer monitors visit their spot and complete site assessments, including collecting benthic samples (such as dragonfly nymphs and caddisfly larvae). The samples are then taken back to one of our lab locations in Genesee or Lapeer County for identification, and those identifications are verified by our Master Identifiers. From that information we are able to tell how healthy our local streams are and identify problem areas. We also share our results with several local and state agencies. This information is available on our website under the Water Monitoring tab.

**We are always looking for volunteers.** This is a great way to make a difference in

the watershed and to get family and friends involved in protecting our precious waterways. To find out more, attend our training session on Thursday, April 11th with 2 times available, either 1-4 pm or 5-8 pm at Jack Abernathy Park in Davison. We will walk you through the process and show you where and what to look for, and then pair you up with an experienced monitor at one of our sites.

Our lab days for spring monitoring will be Sunday, April 21st, from 12-5 and Thursday, May 2nd from 12-6 in Genesee County and on Saturday, May 4th from 12-4 pm in Lapeer county. With 34 sites around the watershed, we are sure to have something close to you. Find out how your local stream scores and what is living under that seemingly calm

surface. Contact Jaime Welch at 810-767-7140 or [jwtelch@flintriver.org](mailto:jwtelch@flintriver.org) for information or to reserve a spot at the training session.



The FRWC is also pleased to announce that we have expanded our monitoring program, and are now studying the impact of road salting on our streams and how it is affecting the local ecology. We have started out with three sites that we visit twice a month all year long to take samples and assess the specific conductivity and chloride levels. We recently started this program, made possible by a grant from the University of Wisconsin, and are very excited to see what the data shows in the coming months.

If you are interested in finding out more about this new program or in volunteering, contact Jaime Welch for more information.

## WATERSHED PROJECT 2013



After a very successful sign up last year, the Genesee Conservation District and USDA-Natural Resources Conservation Service are gearing up for 2013. The Environmental Quality Incentives Program, commonly referred to as EQIP, is the primary tool we are using to clean up waterways in Genesee County and the Saginaw Bay area.

EQIP is a program that considers conservation and production agriculture as having compatible goals. Through it, we are able to offer technical assistance and cost share to producers for the implementation of conservation practices. These practices support environmental quality along with the productivity of local farms and are typically aimed at improving the value of our water, soil and wildlife habitat.

The first statewide EQIP sign up is already underway and we are

currently working toward the completion of nearly 40 applications representing several thousand acres of crop and forest land. Applications for EQIP are accepted year round and our staff is always available for assistance.

We are anticipating a second EQIP sign up this spring that will be funded through the Great Lakes Restoration Initiative. This sign up will likely target Swartz Creek and Kearsley Creek watersheds here in Genesee County. Informational meetings about this project will be held at the end of March, however specific dates have not been determined at this point.

For more information on NRCS programs, the watershed project or if you would like to attend one of our upcoming meetings, please contact one of our Soil Conservation Technicians: Brian Schorr ([brian.schorr@mi.nacdnet.net](mailto:brian.schorr@mi.nacdnet.net)) and Robert Carlin ([robert.carlin@mi.nacdnet.net](mailto:robert.carlin@mi.nacdnet.net)). Reach us by phone at (810) 230-8766 extension 3.

# 2013 VOICE OF THE RIVER



## ANNUAL GATHERING

PLACE-MAKING was the topic, and the PLACE to be in January was the 'Voice of the River' Annual Gathering!

Each year, the Flint River Watershed Coalition holds a celebration to thank our wonderful supporters and volunteers, and to give everyone a preview of the upcoming river happenings. Following this tradition, on January 31, 2013 the 'Voice of the River' Annual Gathering was held at the Stonegate Banquet Centre in Davison. Over 125 brave river enthusiasts risked the inclement weather to join us.



Our keynote speaker was Mr. Rodney Stokes, appointee of Governor Rick Snyder, leading the governor's initiative on CITY PLACEMAKING.

'Placemaking' is a mindset that emphasizes that economic development and community development go hand in hand. Mr. Stokes shared his regional experiences related this topic, and provided many examples of the importance of the Flint River and our watershed in the economic success of the surrounding communities and Michigan. He affirmed our conviction that the Flint River is an important PLACE to all of us.

Our partners from the Genesee Conservation District also joined us at the meeting to give a short presentation on what they are doing



in the watershed. It's gratifying when we can collaborate with other organizations in ways that provide benefits to both groups.

After the speeches, the Annual Gathering gave way to an important FRWC ritual, the presentation of awards to those who have had a positive impact in the watershed in the past year. The Joe Leonardi Leadership Award was presented to Steve Kress and Steve Smith, both of Lapeer. The dedication of these two individuals has been evidenced by their sustained volunteerism throughout the year by working with youth groups and the Lapeer Chapter on the canoe path clearing effort, by raising funds for the work, and maintaining



equipment. Their efforts in the watershed and in their communities showed true leadership and commitment. We were honored that they could be present to accept their award. The Dr. Gary Pace Volunteer of the Year Award was bestowed on one of our long term workers, Earl Gravlin. Earl was one of the first volunteers involved in the FRWC Stream Obstruction Removal Project. Since that effort started in 2005, Earl has put in well over 200 hours, all on a volunteer basis. We admire his skill and appreciate his generosity. The coveted 'Golden Gloves' were presented to Jeff Welch for the cleanup work that he did at the Flint Farmers' Market site. As part of the Flint River and Community Clean Up effort, Jeff accomplished something that no has done in 57 years – He pulled a Pfeiffers beer from the banks of the river. Jeff did a lot of research on the brand, but based on the condition of the can, he won't be partaking of this popular

Detroit beer that hasn't been brewed since 1955. Special recognition was given to Jeff Spinney, the intrepid pilot who donated his



time, expertise, and gas to help raise funds for the FRWC during our "Fun OVER The Flint River" fundraising event held in the summer. Oh, did we mention that he donated his helicopter too, so that our major donors could view the river from hundreds of feet over the watershed. Jeff deserved the recognition and appreciation that he received.

The Annual Gathering is a fifteen year tradition of the Flint River Watershed Coalition. It's our way of recognizing all those who partner with us in our river mission. We appreciate all those who participated in the event and who were so generous in our fundraising.

PLACE the last Thursday of January 2014 on your calendar for next year's event.



# MANY THANKS TO OUR FUND RAISING PARTNERS!

The fundraising at the Annual Gathering was a success also. We raised almost \$14,000 for our 2013 programs. These funds will help us carry out the promise that we all made at the meeting in January, to be a collective 'voice of the river.' Congratulations to everyone who was a successful bidder on our great auction offerings, and to those who purchased a chance to win \$269 in the 50/50 drawing. Everyone enjoyed the fundraising, and it certainly helped us out.

The Annual Gathering would not have been possible without the financial support of our Event Sponsors. They are:

## Pike- \$1,500 Supporter



**WASTE CONNECTIONS INC.**  
*Connect with the Future®*

## Pike - \$1,000 Supporter



**Jeff Wright,**  
*Genesee County Drain Commissioner*

## Walleye - \$500 Supporter



## Bass - \$250 Supporter



**Dr. Robert McAllister in loving  
memory of Donna K. McAllister**

**Jim & Andrea Ananich**



**ROWE PROFESSIONAL  
SERVICES COMPANY**



**WADE TRIM**

## Blue Gill - \$100 Supporter



**Atwood Stadium Authority**

**Ernest Carter**

**Deb Cherry,**

**Genesee County Treasurer**

**John and Penny Kreucher**



**Gerry & Shelly Masters**



**Steve's Plumbing & Heating  
Company, Inc.**

**Scott & Ahlissa Vaubel  
Vern's Collision & Glass**

Again this year we were challenged by an anonymous donor to raise \$2,000 during the silent auction. We were able to surpass our goal of \$2,000 and receive a generous 3:1 match on the revenues. Thank you to all our donors and bidders who helped us meet this challenge. Please thank our silent auction donors if you see them on the river, and make sure to support their business when you are looking for great products and services.

## Silent Auction Donors

*Marilyn Alvey, Shaklee Products*

*Jim Ananich*

*Dave Beaulieu*

*Ellen Brothers*

*Sharon Harrison Burris*

*Captain's Club at Woodfield Grand Blanc*

*David Churchill*

*Shannon Clark of Meinburg Wellness Advantage*

*Lauri Elbing*

*Duane Elling*

*Rebecca Fedewa*

*Flint River Watershed Coalition*

*Casey Foote*

*Friends of the Flint River Trail*

*Mike and Trudy Herriman*

*Steve Hester of Zoom Digital Media*

*Hoffman's Deco Deli & Cafe'*

*Congressman Dale Kildee*

*King Par Superstore*

*Michael and Virginia Knag of Thread Creek Farm*

*Cassie LeBeau of The Healing Garden*

*Amy McMillan*

*Dan McPhail*

*Jack Minore*

*John Mrozik,*

*Paul Owsinski*

*Greg and Pam Palinsky*

*Wade Pyles of Team Prudential Great Lakes Realty*

*Sabrina Race of Creative Cleaning*

*Suzanne & Holly Rosser*

*Heather Sisto*

*University of Michigan-Flint Rec Center*

*The Yoga Loft*

*Gabe Zawadzki*

# A GREAT START TO A GREAT YEAR

We have started the year out right, and we're going to keep at it. Our members are the reason for the success of FRWC programs. A contribution of any level helps put a monitoring volunteer IN the river, allows our bikers to enjoy the trail that runs BY the river, and provides the tools to educate the river enthusiasts of the future in the GREEN curriculum.

You are going to read a lot about our spring and summer programs in this edition of the Watershed Reporter. But there is no way that we could organize any activities without the financial support of our members. We want to recognize all of our new and renewing individuals and families who generously supported the FRWC since the last newsletter was publicized. They are:

Jennifer Acree  
 Kathleen Bach  
 Dave Beaulieu  
 Morgan Boyer  
 Benjamin Brock  
 Mr. and Mrs. Joseph Burroughs  
 Nancy Byder  
 Mary Christian\*  
 Deb Cherry,  
     Genesee County Treasurer  
 Matt Didier  
 Michael Freeman

Cheryl Gault\*  
 Debra Goulet\*  
 Mike Haley  
 Henry and Nancy Hanflik\*  
 Joel and Ann Harris  
 John Helsom and Edna Bick\*  
 Jeanne Pepper and Tom Herman\*  
 Holloway Lake Association  
 Raymond and Kathleen Kelly\*  
 James Kettler\*  
 Richard and Ann Kraft\*  
 John and Penny Kreucher  
 Joe and Lili Leonardi  
 Kay Lennerth  
 Riley McLincha  
 MIS Environmental Services,  
     Craig Kostus\*  
 Jack Nettleton  
 Mary Porte\*  
 Terry Reechko\*  
 Michael and Julianne Riha\*  
 Paul Roetter  
 Amy Shannon\*  
 Ron and Maureen Shoemaker  
 Debra Golden-Steinman

Taylor & Morgan, CPA, P.C.  
     (Jeans Friday)  
 Doug Weiland\*  
 William and Carol Welch  
 Dave Woolfenden

There are many ways that our supporters can become members of the Flint River Watershed Coalition. We accept contributions in the traditional way with cash and checks, but now, at any time during the year, members can use the convenience of the internet. By going to the FRWC website at [www.flintriver.org](http://www.flintriver.org) and pressing the 'Donate Now through Network for Good' button on the home page, credit card users can become new members or renew their membership in the Coalition. Starting this year, we can now take credit card information over the phone and process your membership through a secure payment option that allows you to receive an immediate confirmation by e-mail.

There are seven levels of membership available. Please contact any one of our Board members or staff if you are interested in membership or volunteer opportunities with the Coalition. Also, included with this newsletter is an application form. Please feel free to detach this and give it to an individual or business that may be interested in joining the FRWC. Or, call our offices and we will be glad to reach out to them on your behalf.

*\*Designates a membership of \$100 or greater.*

Become a member of FRWC now!

## MEMBERSHIP APPLICATION - APRIL 2013

name \_\_\_\_\_  
 organization \_\_\_\_\_  
 address \_\_\_\_\_  
 city/state/zip \_\_\_\_\_  
 phone (h) \_\_\_\_\_ (c) \_\_\_\_\_  
 email \_\_\_\_\_

\_\_\_\_\_ student \$10

\_\_\_\_\_ individual \$25

\_\_\_\_\_ family \$40

\_\_\_\_\_ river sponsor \$100

\_\_\_\_\_ river patron \$250

\_\_\_\_\_ watershed

protector \$500

\_\_\_\_\_ watershed

guarantor \$1000

\_\_\_\_\_ other

\$ \_\_\_\_\_

Some companies will match an employee contribution to an eligible charity or non-profit organization. Please check with your employer to obtain a matching gift form, if applicable.

Your support is sincerely appreciated. The Flint River Watershed Coalition is a not-for-profit organization with 501(c)(3) tax-exempt status. Your contribution is tax deductible.

**Please make checks payable to: Flint River Watershed Coalition or FRWC, 400 N. Saginaw Street, Suite 233 Flint MI 48502**





400 N Saginaw Street, Suite 233  
Flint, MI 48502

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Flint MI

## GEARING UP FOR GREEN!



The Flint River Watershed Coalition is pleased to announce that season GREEN (Global River Environmental Education Network), is in full swing!

Our teachers and mentors attended a Professional Development Day, March 22nd at Mott Community College. Here, teachers learned about the water quality tests that their students will use when they venture out to measure the health of the water within the Flint River watershed. Students and teachers will begin their testing the week of Earth Day, April 22nd, 2013. The finale to the GREEN season will

be at our annual Student Summit, held on May 17th from 8:00am-2:00pm at Kettering University.

At the Summit, students from Genesee, Lapeer, Saginaw, and Oakland counties will present their water quality findings to their peers and community members. Following their presentations, students take part in fun and educational break-out sessions. Sessions tentatively scheduled for this year include: Sewer CSI, Bee Keeping, Edible Plants, Fly-tying, a tour of the new developments at



the Chevy in the Hole site, and much more! The community is invited to come and see the student presentations and support their hard work in protecting the environment.

If you would like more information about GREEN, the Student Summit, or would like to volunteer, please contact Holly Rosser at (810) 767-9491 or by email at [hrosser@flinriver.org](mailto:hrosser@flinriver.org). Go GREEN and please visit our website for more information and updates!



# MAY

## Family Fun for Everyone!



### WEDNESDAY, MAY 1 Knee-High Naturalist: It's May!!!

*For-Mar*  
Enjoy a hike to see what's blooming and learn about May Day traditions.  
For children, all abilities, ages 3-6.  
**Time: 10-11:30am. Cost: \$3 per child.**  
*Pre-registration required by 4/29/13.*

### WEDNESDAY, MAY 1 Wild Adventures: Alien Invasion

*For-Mar*  
A Vanishing Acts Program  
Michigan has been invaded! We will learn about Michigan's invasive species, what makes a species invasive, and how they impact the environment.  
For youth, all abilities, ages 7-12.  
**Time: 10-11:30am. Cost: \$3 per child.**  
*Pre-registration required by 4/29/13.*

### THURSDAY, MAY 2 Knee-High Naturalist: It's May!!!

*For-Mar*  
Enjoy a hike to see what's blooming and learn about May Day traditions.  
For children, all abilities, ages 3-6.  
**Time: 10-11:30am. Cost: \$3 per child.**  
*Pre-registration required by 4/30/13.*

### SATURDAY, MAY 4 Vanishing Acts: Knocking at Our Back Door!

*For-Mar*  
New pests continue to threaten Michigan trees. What is the best way to handle them? By understanding what these new pests are capable of and how you can play a part in keeping them out of Michigan. An ounce of prevention is worth a pound of cure!  
For adults, all abilities, ages 16 and older.  
**Time: 10am-noon. Cost: \$10 per person.**  
*Pre-registration required by 5/2/13.*

9 years of experience studying them. Discover where and when to find salamanders and hunt for live creatures. Dress to hike and get muddy!  
For families, not recommended for children under 5 years of age.  
**Time: 2-5pm. Cost: \$3 per person.**  
*Pre-registration not required, but organized groups are asked to call ahead.*

### SUNDAY MAY 5 Monthly Birders Breakfast Club *For-Mar*

Come enjoy your morning coffee or tea with one of For-Mar's friendly birders. Learn about different bird varieties, birding tips, and go on a naturalist led birding hike. Great for beginning birders and those who have been birding for years. Please bring your own binoculars. A limited number of binoculars are available.  
For adults, all abilities, ages 16 and older.  
**Time: 8:30-10am. Cost: \$1.50 per person.**  
*Pre-registration required by 5/3/12.*

### MONDAY, MAY 6 Ultimate Dash Training Beginner/Intermediate

*Richfield County Park, Pavilion 4*  
**Time: 5-7pm. Please refer to page 2 for program details and cost.**

### WEDNESDAY, MAY 8 Knee-High Naturalist: Big, Tall, Short, Small

*For-Mar*  
Practice measurement while we learn about animals of all sizes.  
For children, all abilities, ages 3-6.  
**Time: 10-11:30am. Cost: \$3 per child.**  
*Pre-registration required by 5/6/13.*

### WEDNESDAY, MAY 8 Wild Adventures: Fantastic Flowers

*For-Mar*  
We will learn the parts of flowers and their functions during hands-on activities.

### WEDNESDAY, MAY 15 Wild Adventures: Let's Hear it for Herps!

*For-Mar*  
Is it a lizard or a salamander? We will be very hands-on while we learn about reptiles and amphibians along with their similarities and differences!  
For youth, all abilities, ages 7-12.  
**Time: 10-11:30am. Cost: \$3 per child.**  
*Pre-registration required by 5/13/13.*

### THURSDAY, MAY 16 The Mounds re-opens for the season.

*Mounds ORV Park*  
Think you have what it takes to conquer The Mounds? Think again!  
**Time: 8am-dusk. Please refer to page 2 for Mounds vehicle fees.**

### THURSDAY, MAY 16 Knee-High Naturalist: Defense, Defense!

*For-Mar*  
Test the fascinating ways animal defend themselves.  
For children, all abilities, ages 3-6.  
**Time: 10-11:30am. Cost: \$3 per child.**  
*Pre-registration required by 5/14/13.*

**THURSDAY, MAY 16  
Ultimate Dash  
Training Advanced**  
*E. A. Cummings Center, Control Building*  
**Time: 5-7pm. Please refer to page 2 for program details and cost.**

### FRIDAY, MAY 17 Endangered Species Day *For-Mar*

Join For-Mar Naturalists as we celebrate Endangered Species Day. Explore different endangered species from throughout the world and in your own backyard. Make an endangered species mask to take home. Drop in any time from 1-4pm.

### SATURDAY, MAY 18 Growing Gardeners: Gardening; It's For the Birds!

*For-Mar*  
What are some good plants to grow in your garden to help feed our feathered friends? Join us for a lesson on what plants and elements to include in your "bird garden" and help us plant one at For-Mar!  
For youth, all abilities, ages 7-12.  
**Time: 2-3:30pm. Cost: \$3 per child.**  
*Pre-registration required by 5/16/13.*

### SATURDAY, MAY 18 Natural Beauty

*For-Mar*  
Create your own products for a personal spa day using natural materials. Learn about aromatherapy and the use of plant materials for healthy living. Massage Therapist Lisa James from Directional Health, will be here to help you create your own massage oils and learn self-massage techniques. Come make-up free to enjoy relaxing facial treatments. Herbs that are discussed and used in the program will be available for purchase, courtesy of Walker's Farms.  
For ages 14 and older, all abilities.  
**Time: 6-9pm. Cost: \$18 per person.**  
*Pre-registration required 5/16/13.*

### SUNDAY, MAY 19 Happy Mudder's Day

*The Mounds ORV Park*  
Oh, is that your mommy calling? We're honoring all mothers and mudders today! The muddiest mom and the muddiest vehicle will each win a Mounds Annual Permit.  
For all moms and all vehicles.  
**Time: 4pm. Please refer to page 2 for Mounds vehicle fees.**

### SUNDAY, MAY 19 Adventures of a Wildlife Researcher: Sea Lamprey

*A Vanishing Acts Program*

**FRIDAY, MAY 24  
Bluebell, Buttercup, and Clo  
Beaches Open for the Season**  
For families, all ages and abilities.  
**Time: 8am-8pm daily. Cost: FREE!**

### FRIDAY, MAY 24 Peepers and Leapers

*For-Mar*  
Peep, Peep, Croak, Croak. Join biologist Teresa Yoder-Nowak, on a quest to count the frogs and toads of For-Mar. We'll learn to identify them, count them, and ways to help scientists protect them. Dress to hike and get muddy!  
For families, not recommended for children under 5 years of age.  
**Time: 6-8pm. Cost: \$3 per person.**  
*Pre-registration not required, but organized groups are asked to call ahead.*

### SATURDAY, MAY 25 For-Mar Eco-Photo Excursion

*For-Mar*  
Experience a Great Lakes Photo Tour: nature eco-photo tour or eco-photo excursion. Explore inspiring and scenic Great Lakes natural eco-systems at For-Mar Nature Preserve & Arboretum. Capture stunning images...with your own camera right from the start! Take advantage of over 50+ years of combined nature photography experience with naturalist photographer, Mark S. Carl; and digital photography expert, Bob Gzresiak. All photographers are welcome regardless of skill or experience! For more information about this program, if you have questions please contact: info@greatlakesphototours.com or 517.230.1655.  
For ages 16 and older.  
**Time: 10am-3pm. Cost: \$89 per person**  
*Pre-registration required by 5/15/13. Please register for this excursion at www.greatlakesphototours.com, look For-Mar under the Events tab.*

cities around the world and like most of us; the trees planted in our cities are expected to do more with less. Let's take a walk and learn how to identify some of these trees, along with their benefits and drawbacks. Bring a snack or sack lunch for this 4-hour outdoor excursion. For adults, ages 16 and older, all abilities. **Time: 9am-1pm. Cost: \$20 per person.** Pre-registration required by 5/30/13.

**SATURDAY, JUNE 1  
Who's My Baby?**

*For-Mar*  
Learn, recognize and match different animal parents to their babies. For individuals with cognitive disabilities. **Time: 10:30am-noon. Cost: \$2 per person.** Pre-registration required by 5/30/13.

**SATURDAY, JUNE 1  
National Trails Day**

*For-Mar*  
Get out and get active on For-Mar's 7.5 miles of trail during National Trails Day. Stop into the For-Mar Visitor Center to enjoy active living activities and let us know that you took part in the For-Mar "National Trails Day" event. For families, all ages and abilities. **Time: 10am-3pm. Cost: FREE!** Pre-registration not required.

**SATURDAY, JUNE 1  
Growing Gardeners:  
Very, Berry Gardens**

*For-Mar*  
What kinds of berries can we grow in our Michigan gardens? Join us for a lesson on what they are and how to grow them. Help us plant some in the For-Mar Children's Garden and pot one up to get your home berry garden growing!

**SUNDAY, JUNE 2  
Monthly Birders  
Breakfast Club**

*For-Mar*  
Come enjoy your morning coffee or tea with one of For-Mar's friendly birders. Learn about different bird varieties, birding tips, and go on a naturalist led birding hike. Great for beginning birders and those who have been birding for years. Please bring your own binoculars. A limited number of binoculars are available. For adults, all abilities, ages 16 and older. **Time: 8:30-10am. Cost: \$1.50 per person.** Pre-registration required by 5/31/13.

**MONDAY, JUNE 3  
Ultimate Dash Training  
Beginner/Intermediate**

*Bluebell Beach, Pavilion 1*  
**Time: 5-7pm.** Please refer to page 2 for program details and cost.

*For-Mar*  
Discover how worms live and how they help us. Make a "worm farm." For children, ages 3-6, all abilities. **Time: 10-11:30am. Cost: \$3 per child.** Pre-registration required by 6/3/13.

**WEDNESDAY, JUNE 5  
Wild Adventures: The  
Wonders of Wetlands**

*For-Mar*  
Discover the importance of wetlands when we explore the ponds and wetlands at For-Mar. Dress for the outdoors and expect to get your hands and feet dirty! For children, ages 7-12, all abilities. **Time: 10-11:30am. Cost: \$3 per child.** Pre-registration required by 6/3/13.

**WEDNESDAY, JUNE 5  
Ask an Expert: Mark  
Torregrossa, Weather  
Gardening**

*For-Mar*  
Learn from the weather man himself, Mark Torregrossa! He'll teach you just how to garden for the weather. Learn how to grow unique plants using the different microclimates in your own backyard. You may have hotter spots or protected spots that can grow plants you wouldn't normally expect here. Weather permitting; please dress for the weather. We'll be outdoors in the For-Mar gardens for a portion of this presentation. For ages 10 and older, all abilities. **Time: 6:30-7:30pm. Cost: \$3 per person.** Pre-registration required by 6/3/13.

**THURSDAY, JUNE 6  
Knee-High Naturalist:  
Wonderful Worms**

*For-Mar*  
Discover how worms live and how they help us. Make a "worm farm." For children, ages 3-6, all abilities. **Time: 10-11:30am. Cost: \$3 per child.** Pre-registration required by 6/3/13.

**THURSDAY, JUNE 6  
Ultimate Dash  
Training Advanced**

*Bluebell Beach, Pavilion 1*  
**Time: 5-7pm.** Please refer to page 2 for program details and cost.

**FRIDAY, JUNE 7 AND  
FRIDAY, JUNE 14  
Yoga in Nature**

*For-Mar*  
Looking for a good stretch and relaxation? Maybe you just want time away from everyday stress. Learn breathing techniques and posture control with certified Kripalu yoga instructor, Judy Freiheig. You will leave refreshed and excited for the next class. Class will be held indoors in case of bad weather. Wear layered, loose, comfortable clothing, bring your yoga mat or blanket.

Pre-registration required by 6/5/13.

**SATURDAY, JUNE 8  
9th Annual Kids Fishing Derby**

*Bluegill Boat Launch*  
Bluegill, Rock Bass, Perch, Walleye or Carp? What will you catch? Bring fishing gear if you have it; we'll supply the bait, the boats, the experts, and lunch! A limited number of rods and reels will be available for kids who don't have their own. Co-sponsored by the Flint River Valley Steelheaders and Fishing Tackle Grab Bag. For families, all ages and abilities. **Time: 9am-2pm. Cost: Purchase of an annual or daily pass required for entrance into the facility. Participation in the Fishing Derby is FREE!** Pre-registration not required. Please refer to page 2 for vehicle fees.

**SATURDAY, JUNE 8  
3rd Annual Mother  
Goose Hayride**

*For-Mar*  
Travel the trails by hayride or on foot and visit your favorite Mother Goose rhyme and storybook characters! For families, all ages and abilities. **Time: 10am-3pm. Rides leave hourly starting at 10am. Last ride leaves at 2pm. Cost: FREE!** Pre-registration not required, but organized groups are asked to call ahead. Maximum of 25 people per hayride, more trips will be added to accommodate.

**SATURDAY, JUNE 8  
SPROUT Family  
Friendly Bike Ride**

*Bluebell Beach, Pavilion 1*  
The SPROUT Coalition (Genesee County's Childhood Obesity Coalition) and SAGE (Sustainable Agriculture and Gardening Education) are presenting a Family Bike Ride! Start at Bluebell Beach and ride to the Flint Farmers' Market. SPROUT and Sage Coalition members and Friends of the Flint River Trail will join you on the ride.

Start at Bluebell Beach with Bicycle Safety workshops, Helmet Fitting, a Bicycle First Aid Station and a bicycle rodeo for the youngsters. Ride down the Flint River Trail and end up at the Flint Farmers' Market for nutrition education activities, cooking demonstrations, and healthy snacks! Then we'll ride back to Bluebell Beach. When you're done, you'll be able to brag that you rode a total of 12 miles! For families, recommended for kids age 10 and older.

**Time: 9am-2pm. Cost: FREE!** For additional information, call 810-768-7970. Riders will be asked to sign a waiver before the ride begins. Pre-registration not required.

**SUNDAY, JUNE 9  
DIY Green Craft Day: Wine**

**Ready, Set Grow!**

The weather is warm and the time is right! Get to know the many uses of seeds and how to get them to grow into plants. You'll even get to plant your own seed to get your garden started. For children, ages 4-6 and 7-12, all abilities.

**Cost: FREE!** Pre-registration suggested, but walk-ins welcome.

**WEDNESDAY, JUNE 19**

**10:30am-noon Linden County Park, Pavilion 2**  
**1:30-3pm Flushing County Park, Pavilion 1**

**THURSDAY, JUNE 20**

**10:30am-noon For-Mar**  
**1:30-3pm Davison Roadside Park Pavilion**

**FRIDAY, JUNE 21**

**10:30am-noon Buell Lake County Park, Pavilion 1**  
**1:30-3pm Bluebell Beach, Pavilion 1**

**SATURDAY, JUNE 22**

**11am-noon Richfield County Park, Pavilion**  
**1:30-3pm Wolverine Campground, behind the camp store**

**Gardens Outside the Plot: Vertical and Container Gardening**

Did you know that gardens can grow up, down, and all around? You don't need a yard to have a garden. We'll show you how and you'll get to build a trellis and pot up a se to take home!

For children, ages 4-6 and 7-12, all abilities.

**Cost: FREE!** Pre-registration suggested, but walk-ins welcome.

**WEDNESDAY, JUNE 26**

**10:30am-noon Linden County Park, Pavilion 2**  
**1:30-3pm Flushing County Park, Pavilion 1**

**THURSDAY, JUNE 27**

**10:30am-noon For-Mar**  
**1:30-3pm Davison Roadside Park Pavilion**

**FRIDAY, JUNE 28**

**10:30am-noon Buell Lake County Park, Pavilion 1**  
**1:30-3pm Bluebell Beach, Pavilion 1**

**SATURDAY, JUNE 29**

**11am-noon Richfield County Park, Pavilion**  
**1:30-3pm Wolverine Campground, behind the camp store**

**WEDNESDAY, JUNE 12  
Musical Performance by  
Rusty and Laurie Wright**

*For-Mar*  
Rusty and Laurie bring the "Blues" back **Time: 7-8pm. Cost: FREE!** Pre-registration not required. Rain location, inside the For-Mar Visitors Center.

**THURSDAY, JUNE 13  
Knee-High Naturalist: Frogs,  
Toads, and Salamanders**

*For-Mar*  
Dress for a walk to the pond so we can explore the world of amphibians. Make a toad house to take home. For children, ages 3-6, all abilities. **Time: 10-11:30am. Cost: \$3 per child.** Pre-registration required by 6/11/13.

**THURSDAY, JUNE 13  
Geocaching 101**

*Linden County Park, Clover Beach Pavilion*  
Join the Auto City Cachers for a beginner's course in Geocaching, an adventure game using GPS that combines technology with location-based gaming, social networking, treasure hunting, GPS navigation, and outdoor recreation. Geocaching is a worldwide game of hidden treasure. Bring a GPS if you have

what story-telling is and how it can be translated via visual arts. Note: This is a three session workshop. For youth, ages 11-15, all abilities. **Time: 6-8pm. Cost: FREE!**

**Visual Composition**

Using models and object placement, students will see the importance of understanding anatomy and still life to position them on paper in the most dynamic translation possible; technique introduction such as contour drawing, chalk/pastel application, and marker manipulation will be displayed for the students to see and do themselves. Note: This is a three session workshop. For youth, ages 11-15, all abilities. **Time: 1-3pm. Cost: FREE!**

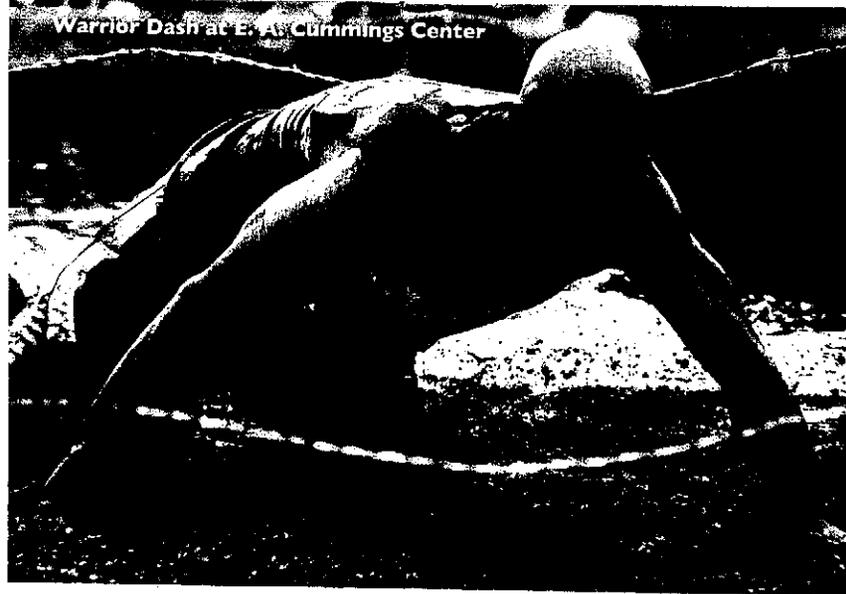
Pre-registration not required, but the workshop is limited to 12 participants.

**Session 3: Sunday, June 16: Final Production and Presentation - Gallery Showcase**

This final day of the workshop will revisit the lessons learned from the prior days; understanding the role that artists play in society past, present and future; showcase highlights of student works from the prior days and certificate presentation for completion of the workshop. Note: This is a three session workshop.

**For-Mar On The Road**

## Warrior Dash at E. A. Cummings Center



mention it's all FREE?  
For families, all ages and abilities.  
**Time: 7-8pm. Cost: FREE!**  
*Pre-registration not required.*

### MONDAY, JUNE 17 Summer Playground Program Starts!

Join us Monday-Friday, 11am-3:30pm at Bluebell Beach, Pavilion 1 or Davison Roadside Park Pavilion.

### TUESDAY, JUNE 18 Yippee, It's Summer!

*Flushing County Park, Pavilion 1*  
Summer vacation has just begun, but it won't be long before you're hearing, "I'm bored." We can cure that! Join us for free ice cream and a preview of all the FREE summer programs taking place in YOUR Genesee County Parks. Did we mention it's all FREE?

For families, all ages and abilities.  
**Time: 7-8pm. Cost: FREE!**  
*Pre-registration not required.*

### WEDNESDAY, JUNE 19 Citizen Science: Fruits of Your Labor, Help Plant an Orchard at For-Mar (Part I)

*For-Mar*  
Our first Citizen Science project is planning an orchard for For-Mar's Arboretum. In science speak, we're going to talk about the advantages of growing sustainable perennials; what we really mean is that we're going to talk about fruit bearing trees and plants! For families, recommended for children ages 8 and older, all abilities.  
**Time: 6:30-8pm. Cost: FREE!**  
*Pre-registration not required.*

**Time: 1-2pm. Cost: FREE!**  
*Pre-registration not required.*

### THURSDAY, JUNE 20 Geocaching 101

*Richfield County Park, Pavilion 3*  
Join the Auto City Cachers for a beginner's course in Geocaching, an adventure game using GPS that combines technology with location-based gaming, social networking, treasure hunting, GPS navigation, and outdoor recreation. Geocaching is a worldwide game of hiding and seeking treasure and is like a secret worldwide swap meet! Bring a GPS if you have one, but come even if you don't! We'll have some available for your use. For families, all ages and abilities.

**Time: 6:30-8:30pm. Cost: FREE!**  
*Pre-registration not required.*

### THURSDAY, JUNE 20 Theatre in Our Parks: Shakespeare's Much Ado About Nothing

*For-Mar*  
When triumphant soldiers arrive in Messina, they find romance among the ladies, but wicked plots threaten their love. Drama, humor and romance mark one of Shakespeare's greatest comedies. For families, all ages and abilities.  
**Time: 7pm. Cost: FREE!**  
*Pre-registration not required.*

**THURSDAY, JUNE 20  
Ultimate Dash  
Training Advanced**  
*Crossroads Village, Mason Tavern*  
**Time: 5-7pm. Please refer to page 2 for program details and cost.**

**Time: 10am-noon. Cost: \$3 per person.**  
*Pre-registration required by 6/20/13.*

### SATURDAY, JUNE 22 Ask an Expert Series: Jim Withers Honeybee Biology

*For-Mar*  
Jim Withers is back at For-Mar to talk about what life in a hive is really like. Come learn why Honeybees are so important and how they function as super organisms. For ages 12 and up, all abilities.  
**Time: 1-3pm. Cost: \$3 per person.**  
*Pre-registration required by 6/20/13.*

### SATURDAY, JUNE 22 Bluebell Bike Rides

*Bluebell Beach, Pavilion 1*  
**Learn to Ride a Bike Clinic** Learn to Ride Clinic is for youth who want to learn the correct way to ride a bicycle. Lesson will include how to wear a helmet properly, how to ride a two-wheel bike and how to ride in a single-file line. For youth, ages 7-12.

**Time: 2-3pm. Cost: FREE! Bikes and helmets are provided.**  
*Pre-registration not required, but limited to the first 10 participants.*

**Bike Riding for Teens** You'll learn the fundamentals of riding a bike safely. Starting from Bluebell Beach, we'll visit nearby points of interest while learning bicycle safety practices. For teens, ages 13-18.

**Time: 3-4pm. Cost: FREE! Bikes and helmets are provided.**  
*Pre-registration not required, but limited to the first 10 participants.*

### SATURDAY, JUNE 22 Great American Campout

*Buell Lake County Park, ball field at the back of the park*  
Try a mini-vacation and join us for one night of FREE camping! We'll even provide all the ingredients for s'mores! For families, all ages and abilities.  
**Time: 5pm-10am. Cost: FREE!**  
*Pre-registration required by 6/21/13. Limited to the first 50 families. Tents only!*

### SATURDAY, JUNE 22 Theatre in Our Parks: Shakespeare's Much Ado About Nothing

*Flushing County Park, Pavilion 5*  
When triumphant soldiers arrive in Messina, they find romance among the ladies, but wicked plots threaten their love. Drama, humor and romance mark one of Shakespeare's greatest comedies. For families, all ages and abilities.  
**Time: 7pm. Cost: FREE!**  
*Pre-registration not required.*

**Time: Noon-1pm. Cost: FREE!**  
*Pre-registration not required, but organized groups are asked to call ahead.*

### WEDNESDAY, JUNE 26 Citizen Science: Fruits of Your Labor, Help Plant an Orchard at For-Mar (Part II)

*For-Mar*  
It's time to dig! You helped us plan; now it's time to plant! We're adding an orchard to the collection at For-Mar Nature Preserve and Arboretum. For families, recommended for children age 8 and older, all abilities.  
**Time: 6:30-8pm. Cost: FREE!**  
*Pre-registration not required.*

### WEDNESDAY, JUNE 26 Rescue 911

*Flushing County Park, Pavilion 1*  
STAT EMS has partnered with local communities, the Genesee County Parks and Recreation Commission, and Hurley Medical Center, the region's only Level One Trauma Center, to teach kids all about Police, Fire, and EMS/First Aid Safety. Rescue 911 is fun, hands-on learning that gives children the knowledge, skills and confidence to protect themselves and react safely in emergency situations. Take part in programs like the Identification Kid and child safety/burn programs, as well as many others.

For children, ages 6 and older.  
**Time: 9am-1:30pm, check in begins at 8:30am. Cost: FREE!**

*To register, please visit [www.statems.net/community](http://www.statems.net/community) and indicate how many children you are registering. Children will be registered on a first come, first served basis and registration will be limited to 30 children per session. The event is FREE. Each child receives lunch and a graduation certificate upon completion of the program. For more information, please call Chris Watts at the Community Coordination Department, 810.238.7672, ext. 205.*

### WEDNESDAY, JUNE 26 WERQ™

*Linden County Park, Pavilion 4*  
WERQ™ (pronounced "work") is a fiercely fun dance fitness class based on today's pop, rock, and hip hop music taught by Certified Group Fitness Professional Katie Slaughter! All the moves used in the dances are inspired by the song lyrics and music videos. The class borrows its name from dance slang; when you perform the perfect dance move, you're "werqing it." Class starts with a dynamic warm-up to prepare you for 360 degree movement and previews the dance moves that will be used in the class. The cool-down uses yoga-inspired static stretching. For ages 14 and older, all abilities.  
**Time: 7-8pm. Cost: FREE!**

Join the Auto City Cachers for a beginner's course in Geocaching, an adventure game using GPS that combines technology with location-based gaming, social networking treasure hunting, GPS navigation, and outdoor recreation. Geocaching is a worldwide game of hiding and seeking treasure and is like a secret worldwide swap meet! Bring a GPS if you have one, but come even if you don't! We'll have some available for your use. For families, all ages and abilities.  
**Time: 6:30-8:30pm. Cost: FREE!**  
*Pre-registration not required.*

### SATURDAY, JUNE 29 Tree Defects

*For-Mar*  
A healthy tree is not always a sound tree. Looking at trees, we might see green leaves and good growth, but we often overlook defects that plague them. These defects can become problems down the road. Walk through For-Mar and learn how to identify some of the most common defects and what they might mean for your trees. For adults, ages 16 and older.  
**Time: 10-11am. Cost: \$5 per person.**  
*Pre-registration required by 6/27/13.*

### SATURDAY, JUNE 29 International Mud Day

*Bluebell Beach*  
Pigs love mud and so do we! Wear something old, bring a towel, and come prepared to slip, slide, and wallow in our mud pit! For families, all ages and abilities.  
**Time: 1-3pm. Cost: FREE!**  
*Pre-registration not required.*

### SATURDAY, JUNE 29 Nature's Nightlights

*For-Mar*  
Come learn about Nature's glow-in-the-dark creatures...the ones you can see at For-Mar, the ones that live deep in the ocean, and the ones scientists have created. We will look for glowing creatures at For-Mar and see a living glowing salamander. For families, recommended for children ages 5 and older, all abilities.  
**Time: 7-8:30pm. Cost: \$3 per person.**  
*Pre-registration not required, but organized groups are asked to call ahead.*

### SUNDAY, JUNE 30 Taxidermy Basics: Birds

*For-Mar*  
For-Mar Naturalist, April Payne will be teaching the basics of how to create taxidermy bird mounts and study skins. She will take participants through the step-by-step process of how taxidermy of birds is done. For ages 10 and older, all abilities.  
**Time: 1-3pm. Cost: \$3 per person.**  
*Pre-registration required by 6/28/13.*

about 24 hours a day." June  
 nglasses Day and we're  
 decorating a pair of shades  
 for all summer long!  
 ages and abilities.  
**Cost: FREE!**  
*Pre-registration not required.*

**JULY 2**  
**Monarchs and Me**  
 Linden County Park, Pavilion 1  
 Monarchs need houses and  
 are needed in your fairy or  
 a story. Then we'll build  
 houses to attract little visitors!  
 Ages 8 and older, all abilities.  
**Cost: FREE!**  
*Pre-registration not required.*

monarchs! Monarch Watch is an  
 ongoing citizen science project that  
 has been tracking monarch butterflies  
 across the country for the last ten years.  
 Come learn how to capture, rear, tag and  
 release caterpillars and butterflies. Help  
 us determine what butterfly species call  
 our parks home and create a graphic  
 display of the data we collect.  
 For families, recommended for children  
 ages 8 and older, all abilities.  
**Time: 6:30-8pm. Cost: FREE!**  
*Pre-registration suggested, but walk-ins welcome.*



## For-Mar's TRUCK FARM

### For or Not: Natural Forecasting

Do you need to water the garden? Come learn weather lore and the reasons  
 behind the weather. We'll teach you to use some of the things you have to  
 predict the weather in your own garden.

Ages 4-6 and 7-12, all abilities.  
*Pre-registration suggested, but walk-ins welcome.*

**JULY 3**  
 Linden County Park, Pavilion 2  
 Richfield County Park, Pavilion 1

**FRIDAY, JULY 5**  
 10:30am-noon Buell Lake County Park, Pavilion 1  
 1:30-3pm Bluebell Beach, Pavilion 1

**JULY 4**  
 Richfield County Park, Pavilion 5  
 11am-noon Wolverine Campground, behind the  
 camp store

**SATURDAY, JULY 6**  
 11am-noon Richfield County Park, Pavilion 5  
 1:30-3pm Wolverine Campground, behind the  
 camp store

### Planting Together! Companion Planting

Companion planting is the idea that plants have friends in the garden. They help each other  
 by providing food and attracting/deterring bugs. Come learn about companion  
 planting and how to take home to your garden.

Ages 4-6 and 7-12, all abilities.  
*Pre-registration suggested, but walk-ins welcome.*

**JULY 10**  
 Linden County Park, Pavilion 2  
 Richfield County Park, Pavilion 1

**FRIDAY, JULY 12**  
 10:30am-noon Buell Lake County Park, Pavilion 1  
 1:30-3pm Bluebell Beach, Pavilion 1

**JULY 11**  
 For-Mar  
 Davison Roadside Park Pavilion

**SATURDAY, JULY 13**  
 11am-noon Richfield County Park, Pavilion 5  
 1:30-3pm Wolverine Campground, behind the  
 camp store

### Beware! Animal Foragers

Some wildlife in order to grow. A few key players include bees and  
 butterflies that help with pollination and worms that provide soil aeration. Even so, you  
 can help your favorite flowers and carefully tended veggies becoming someone  
 else's by learning the ways that you can prevent unauthorized garden nibbling.

Ages 4-6 and 7-12, all abilities.  
*Pre-registration suggested, but walk-ins welcome.*

**JULY 17**  
 FRIDAY, JULY 19

out your family and friends!  
 For families, all ages and abilities.  
**Time: 7-8pm. Cost: FREE!**  
*Pre-registration not required.*

**WEDNESDAY, JULY 3**  
**WERQ™**  
 Linden County Park, Pavilion 4  
 WERQ™ (pronounced "work") is a fiercely  
 fun dance fitness class based on today's  
 pop, rock, and hip hop music taught by  
 Certified Group Fitness Professional Katie  
 Slaughter! All the moves used in the  
 dances are inspired by the song lyrics and  
 music videos. The class borrows its name  
 from dance slang; when you perform the  
 perfect dance move, you're "werqing it."  
 Class starts with a dynamic warm-up to  
 prepare you for 360 degree movement  
 and previews the dance moves that will  
 be used in the class. The cool-down uses  
 yoga-inspired static stretching.  
 For ages 14 and older, all abilities.  
**Time: 7-8pm. Cost: FREE!**  
*Pre-registration not required.*

**SATURDAY, JULY 6**  
**Citizen Science: NABA  
 Butterfly Count**  
 For-Mar  
 Join For-Mar naturalists for the 38th  
 annual NABA Butterfly Count. Counts  
 are used to track butterfly populations of  
 North America. May include the use of  
 personal vehicle to count various locations  
 throughout the Genesee County Parks.  
 Count starts at For-Mar.  
 For families, all ages and abilities.  
**Time: 9am-noon. Cost: FREE!**  
*Pre-registration not required, but organized  
 groups are asked to call ahead.*

**SATURDAY, JULY 6**  
**Crawling Caterpillars  
 Equals Winged Beauties**  
 For-Mar  
 Let's take a look at how butterflies transform.  
 For individuals with cognitive disabilities  
**Time: 10:30am-noon. Cost: \$2 per person.**  
*Pre-registration required by 7/4/13.*

**SUNDAY, JULY 7**  
**Monthly Birders Breakfast Club**  
 For-Mar  
 Come enjoy your morning coffee or tea  
 with one of For-Mar's friendly birders.  
 Learn about different bird varieties, birding  
 tips, and go on a naturalist led birding hike.  
 Great for beginning birders and those who  
 have been birding for years. Please bring  
 your own binoculars. A limited number of  
 binoculars are available.  
 For adults, all abilities, ages 16 and older.  
**Time: 8:30-10am. Cost: \$1.50 per person.**  
*Pre-registration required by 7/5/13.*

**MONDAY, JULY 8**  
**Ultimate Dash Training**  
 Beginner/Intermediate

Michigan animals need to survive in their ecosystems.  
**Agers 7-12** Michigan is made up of different ecosystems. Come learn about the importance  
 of each and the unique animals that call them home. Make a miniature animal ecosystem  
 to take home.  
 Programs for both age groups run simultaneously.  
**Cost: FREE! Pre-registration suggested, but walk-ins welcome.**  
**TUESDAY, JULY 2**  
 2-3pm Davison Roadside Park Pavilion  
**WEDNESDAY, JULY 3**  
 11am-noon For-Mar  
 2-3pm Richfield County Park, Pavilion 4  
**THURSDAY, JULY 4**  
 Happy Independence Day!  
 No Programs today.  
**FRIDAY, JULY 5**  
 11am-noon Flushing County Park, Pavilion 1  
 2-3pm Linden County Park, Pavilion 2  
**SATURDAY, JULY 6**  
 11am-noon Wolverine Campground,  
 behind camp store  
 2-3pm Creasey Bicentennial Park,  
 Sledding Hill Pavilion

### Dino Days

**Agers 3-6** Discover the exciting world of our Jurassic friends. Join a For-Mar naturalist for  
 dinosaur themed activities and a craft. Help us excavate our dinosaur fossils!  
**Agers 7-12** Dinosaurs of all shapes and sizes once roamed the Earth. Come learn about the  
 differences between several of these giant reptiles. Create your own fossil to take home.  
 Programs for both age groups run simultaneously.  
**Cost: FREE! Pre-registration suggested, but walk-ins welcome.**

**TUESDAY, JULY 9**  
 2-3pm Davison Roadside Park Pavilion  
**WEDNESDAY, JULY 10**  
 11am-noon For-Mar  
 2-3pm Richfield County Park, Pavilion 4  
**THURSDAY, JULY 11**  
 11am-noon Buell Lake County Park,  
 Pavilion 1  
 2-3pm Bluebell Beach, Pavilion 1

**FRIDAY, JULY 12**  
 11am-noon Flushing County Park, Pavilion 1  
 2-3pm Linden County Park, Pavilion 2  
**SATURDAY, JULY 13**  
 11am-noon Wolverine Campground,  
 behind camp store  
 2-3pm Creasey Bicentennial Park,  
 Sledding Hill Pavilion

### Wealthy Wetlands

**Agers 3-6** Wetlands are more than just full of mosquitoes. Come learn about the wonders  
 of wetlands. Start your own wetland garden to take home.  
**Agers 7-12** What is a wetland? You're invited to help us conduct an experiment to learn  
 about the importance of wetlands. Start your own wetland garden to take home.  
 Programs for both age groups run simultaneously.  
**Cost: FREE! Pre-registration suggested, but walk-ins welcome.**

**TUESDAY, JULY 16**  
 2-3pm Davison Roadside Park Pavilion  
**WEDNESDAY, JULY 17**  
 11am-noon For-Mar  
 2-3pm Richfield County Park, Pavilion 4  
**THURSDAY, JULY 18**  
 11am-noon Buell Lake County Park,  
 Pavilion 1  
 2-3pm Bluebell Beach, Pavilion 1

**FRIDAY, JULY 19**  
 11am-noon Flushing County Park, Pavilion 1  
 2-3pm Linden County Park, Pavilion 2  
**SATURDAY, JULY 20**  
 11am-noon Wolverine Campground,  
 behind camp store  
 2-3pm Creasey Bicentennial Park,  
 Sledding Hill Pavilion

### Fitting In

**Agers 3-6** Ever wonder why a skunk is black and white, why some salamanders have no  
 lungs, or why deer are more active at dawn and dusk? Explore these and other questions  
 as we learn about adaptations and how animals fit into their environment.  
**Agers 7-12** Ever heard of a Polarphant? We're talking about how animals fit into their  
 environment. Design your own imaginary animal made especially for the environment of

**WEDNESDAY, JULY 10**  
**WERQ™**

*Linden County Park, Pavilion 4*  
WERQ™ (pronounced "work") is a fiercely fun dance fitness class based on today's pop, rock, and hip hop music taught by Certified Group Fitness Professional Katie Slaughter! All the moves used in the dances are inspired by the song lyrics and music videos. The class borrows its name from dance slang; when you perform the perfect dance move, you're "werqing it." Class starts with a dynamic warm-up to prepare you for 360 degree movement and previews the dance moves that will be used in the class. The cool-down uses yoga-inspired static stretching. For ages 14 and older, all abilities.  
**Time: 7-8pm. Cost: FREE!**  
*Pre-registration not required.*

**WEDNESDAY, JULY 10**  
**Musical Performance by Sweet Willie Tea**

*For-Mar*  
Sweet Willie is BACK! Sweet Willie Tea is a genuine, bona-fide, one-man-band who performs Roots, Blues and Americana music. Bring your lawn chair or blanket and enjoy as Sweet Willie brings the gardens to life with his amazing talent. Rain location; inside the For-Mar Visitor Center. For families, all ages and abilities.  
**Time: 7-8pm. Cost: FREE!**  
*Pre-registration not required.*

**WEDNESDAY, JULY 10**  
**Citizen Science: It's Time To Get Wet, Help Survey Kearsley Creek (Part I)**

*For-Mar*  
Fish biologists conduct animal surveys of habitats in order to evaluate the health of that habitat. Join the For-Mar naturalists and an expert fish biologist to learn how and why these surveys are conducted. Then meet us again next week to get down and dirty (and wet!) doing science. For families, recommended for children

ages 8 and older, all abilities.  
**Time: 6:30-8pm. Cost: FREE!**  
*Pre-registration not required.*

**THURSDAY, JULY 11**  
**Ultimate Dash Training Advanced**

*Cummings Center, Control Building*  
**Time: 5-7pm. Please refer to page 2 for program details and cost.**

**THURSDAY, JULY 11**  
**Dig In: For-Mar's Truck Farm**

*Flint Public Library*  
Dig into the Summer Reading Program with a visit from For-Mar's Truck Farm. Visit with one of For-Mar's horticulturists and see how

**FRIDAY, JULY 12**  
**Theatre in Our Parks: Sleeping Beauty**

*Linden County Park, Clover Beach, top of hill*  
This classic fairy tale of the enchanted princess awakened by love's first kiss features fairies, kings, queens, music, dance and laughter. Perfect family fun! For families, all ages and abilities.  
**Time: 7pm. Cost: FREE!**  
*Pre-registration not required.*

**FRIDAY, JULY 12 & FRIDAY, JULY 19**  
**Yoga in Nature**

*For-Mar*  
Looking for a good stretch and relaxation? Maybe you just want time away from everyday stress. Learn breathing techniques and posture control with certified Kripalu yoga instructor, Judy Freiheig. You will leave refreshed and excited for the next class. Class will be held indoors in case of bad weather. Wear layered, loose, comfortable clothing, bring your yoga mat or blanket. For ages 9 and older, all abilities.  
**Time: 6-7pm. Cost: \$7 per person for a single class or \$12 per person for both classes.**  
*Pre-registration required by 7/10/13.*

**FRIDAY, JULY 12**  
**Outdoor Movie Night: Carnivorous Plants**

*For-Mar*  
A nerdy orphan, a flower shop, a strange and mysterious plant.... "Feed me, Seymour!" It's a plants eating people kind of world out there! Enjoy a song-filled and action packed evening of entertainment when a fictional man-eating carnivorous plant runs rampant. Bring a lawn chair or a blanket. For ages 16 and older, all abilities.  
**Time: 7-9pm. Cost: FREE!** There will be refreshments available for purchase.  
*No preregistration required.*

**SATURDAY, JULY 13**  
**Rookie Ranger Academy**

*Flushing County Park, Pavilion 5*  
Did you know that Genesee County Parks Park Rangers are certified police officers? That's just one thing you'll learn during the Rookie Ranger Academy. Other topics include park rules, gun safety, how to call 911, detective work, finger printing, handcuffing, how to handle emergency situations in the park, water safety, physical agility, emergency vehicles, traffic stops, and talking on the radio. You'll have a chance to win prizes and everyone will become a Rookie Ranger complete with a certificate! For youth ages 9-12 all abilities

**SATURDAY, JULY 13**  
**Kids Fishing Club**

*Buell Lake County Park, Fishing Dock*  
A bad day of fishing is better than a good day of doing just about anything else! Bring your rod and we'll supply the bait. We'll have a short lesson on things like tackle, casting, or fishing rules and then we'll fish! For kids, ages, 4-18, all abilities.  
**Time: 9-11am. Cost: FREE!**  
*Pre-registration not required.*

**SATURDAY, JULY 13**  
**Vanishing Acts: The Comeback Kids**

*For-Mar*  
Some of our most cherished trees have been hit hard by invasive pests and have been almost completely eliminated from

our ecosystem. Continuing efforts have been able to save these species and they are beginning to be reintroduced into our landscapes. Learn what has been done and how you can help!  
For adults, ages 16 and older, all abilities.  
**Time: 10-11am. Cost: \$5 per person.**  
*Pre-registration required by 7/11/13.*

**SATURDAY, JULY 13**  
**Ask an Expert Series: Bill Heyworth; Stingrays Are Sharks Too**

*For-Mar*  
Stingrays, there are at least 200 species of stingrays in the world and their stings can be painful and even deadly. Learn how Stingrays

**MONDAY, JULY 15**  
**Ultimate Dash Training Beginner/Intermediate**  
*Richfield County Park, Pavilion 4*  
**Time: 5-7pm. Please refer to page 2 for program details and cost.**

**TUESDAY, JULY 16**  
**Cooking Matters for Families**  
(6-Week Program, July 16-August 20)  
*Davison Roadside Park Pavilion*  
Cooking Matters for Families is a 6-week series that will empower families with the skills, knowledge and confidence to prepare healthy and affordable meals. With the help of our culinary and nutrition experts, Cooking Matters course participants learn how to select nutritious and low-cost ingredients and prepare them in ways that

provide the best nourishment possible for their families. Families will be provided a grocery bag full of supplies to take home so they can re-create the delicious meal.  
Cooking Matters for Families is partially funded with Federal funds from USDA's Supplemental Nutrition Assistance Program. For families, all ages and abilities.  
**Time: 6-8pm. Cost: FREE!**  
*Register for this program by calling 591-5134. Families are asked to commit to the entire 6-week program and class size is limited, so register early!*

**TUESDAY, JULY 16**  
**Cockadoodle Doo**



Flushing County Park

Professional Katie Slaughter! All the moves used in the dances are inspired by the song lyrics and music videos. The class borrows its name from dance slang when you perform the perfect dance move, you're "werqing it." Class starts with a dynamic warm-up to prepare you for 360 degree movement and previews the dance moves that will be used in the class. The cool-down uses yoga-inspired static stretching.  
For ages 14 and older, all abilities.  
**Time: 7-8pm. Cost: FREE!**  
*Pre-registration not required.*

**WEDNESDAY, JULY 17**  
**Citizen Science: It's Time To Get Wet, Help Survey Kearsley Creek (Part II)**

*For-Mar*  
Join us again this week and let's get down and dirty (and wet!) doing science! Bring your boots or waders and jump on in as we survey Kearsley Creek's aquatic species! Data collected will be added to other scientific findings about our area's parks. For families, recommended for children ages 8 and older, all abilities.  
**Time: 6:30-8pm. Cost: FREE!**  
*Pre-registration suggested, but walk-ins welcome.*

**THURSDAY, JULY 18**  
**Music in the Parks Concert**

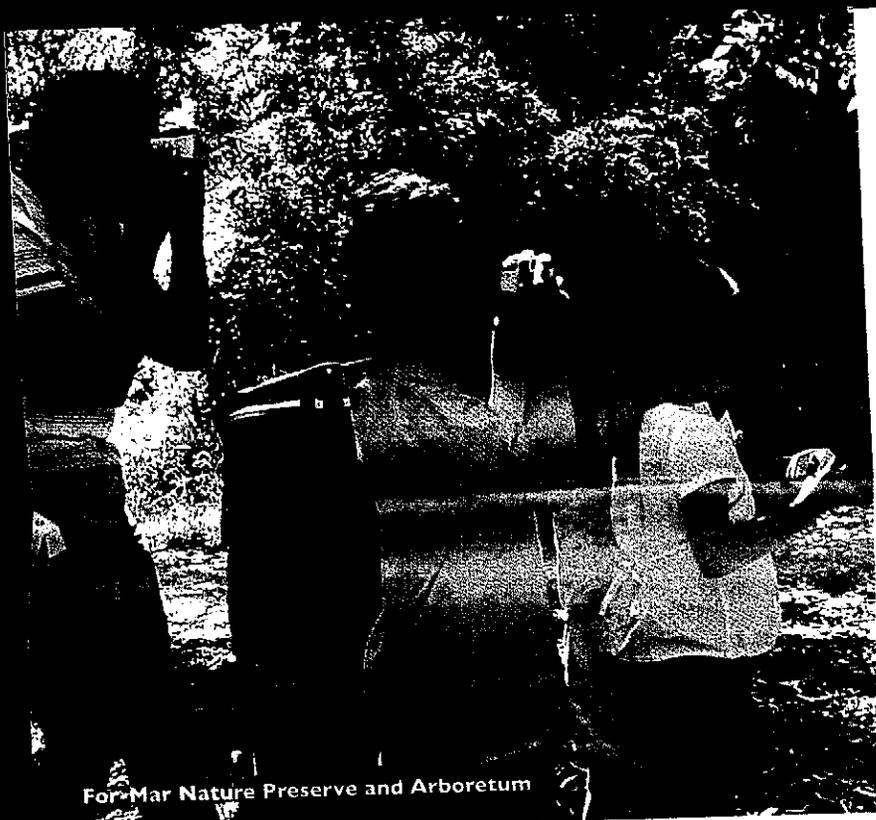
*Crossroads Village*  
Join the Flint Symphony Orchestra for the opening of the 2013 Music in the Parks series. Don't forget your lawn chair or blanket! Crossroads attractions will be open until the concert starts. Food will be available for purchase.  
For families, all ages and abilities.  
**Time: Crossroads Village opens at 5pm. The concert starts at 7pm. Cost: FREE!**  
*Pre-registration not required.*



# JULY

## Family Fun for Everyone!

Genesee Belle



For-Mar Nature Preserve and Arboretum

**FRIDAY, JULY 19**  
**Family Adventures in Nature (F.A.Ns): Get Outdoors and Cook**

*For-Mar*  
 Join Boy Scout Leader and For-Mar Naturalist, Lisa Kelley for a lesson in outdoor cooking! Did you know you can cook with fire, hot coals and even the sun? You'll even create your own outdoor solar

**SUNDAY, JULY 21**  
**Adventures of a Boy Scout: Log Cabin Restoration**

*For-Mar*  
 Want to learn what it takes to rebuild a rustic log cabin from the ground up? Soon to be Eagle Scout, Lucas Kelley completely rebuilt a YMCA log cabin and he's going to share his story.  
 For families, all ages and abilities. Great for

**TUESDAY, JULY 23**  
**Simply Safer Personal Defense Intro**

*Flushing County Park, Pavilion 1*  
 Personal Defense Connection will help you train your body and mind to defend yourself. You'll learn tips and techniques to put you in control of your safety and to defend against dangerous situations, along with an overview of our innovative and exclusive Simply Safer courses.  
 For ages 15 and older, all abilities.  
**Time: 6-8pm. Cost: FREE!**  
*Pre-registration not required. Limited to 24 participants.*

**WEDNESDAY, JULY 24**  
**Citizen Science: Amazing Monarch Migrations, Monarch Watch (Part II)**

*Goldenrod Disc Golf Course, north side of the parking lot*  
 Be part of the nationwide effort to capture and tag amazing migrating monarchs! Monarch Watch is an ongoing citizen science project that has been tracking monarch butterflies across the country for the last ten years. Come learn how to capture, rear, tag and release caterpillars and butterflies. Help us determine what butterfly species call our parks home and create a graphic display of the data we collect.  
 For families, recommended for children age 8 and older, all abilities.  
**Time: 6:30-8pm. Cost: FREE!**  
*Pre-registration suggested, but walk-ins welcome.*

**WEDNESDAY, JULY 24**  
**Mind Reading Is Impossible, Or Is It?**

*Davison Roadside Park Pavilion*  
 Minds tell on us all the time and thoughts can be influenced. Join along for a live

**SATURDAY, JULY 27**  
**Bluebell Bike Rides**  
*Bluebell Beach, Pavilion 1*

**Learn to Ride a Bike Clinic** The Learn to Ride Clinic is for youth who want to learn the correct way to ride a bicycle. Lesson will include how to wear a helmet properly, how to ride a two-wheel bike and how to ride in a single-file line.  
 For youth, ages 7-12.  
**Time: 2-3pm. Cost: FREE! Bikes and helmets are provided.**  
*Pre-registration not required, but limited to the first 10 participants.*

**Bike Riding for Teens** You'll learn the fundamentals of riding a bike safely. Starting from Bluebell Beach, we'll visit nearby points of interest while learning bicycle safety practices.  
 For teens, ages 13-18.  
**Time: 3-4pm. Cost: FREE! Bikes and helmets are provided.**  
*Pre-registration not required, but limited to the first 10 participants.*

**SATURDAY, JULY 27**  
**Warrior Dash**

*E.A. Cummings Center*  
 Warrior Dash will have participants jumping through fire, crawling through mud pits, climbing over vehicles and working their way through nine additional grueling obstacles. The first wave of the race will begin at 9am, followed by waves of 600 racers taking off to battle the course every half hour until the last group finishes.  
*Pre-registration required by Tuesday, July 23 at 11:59pm.*

**SUNDAY, JULY 28**  
**Warrior Dash**

*E.A. Cummings Center*  
 Warrior Dash will have participants jumping through fire, crawling through mud pits, climbing over vehicles and working

with an overview of our innovative & exclusive Simply Safer courses  
 For ages 15 and older, all abilities.  
**Time: 6-8pm. Cost: FREE!**  
*Pre-registration not required. Limit participants.*

**TUESDAY, JULY 30**  
**Cooking Matters for Families (Week 3)**

*Davison Roadside Park Pavilion*  
 Cooking Matters for Families is a 6 series that will empower families v the skills, knowledge and confiden to prepare healthy and affordable meals. With the help of our culinar nutrition experts, Cooking Matters participants learn how to select nu and low-cost ingredients and prep in ways that provide the best nourish possible for their families. Families be provided a grocery bag full of s to take home so they can re-create delicious meal.

Cooking Matters for Families is p funded with Federal funds from US Supplemental Nutrition Assistance For families, all ages and abilities  
**Time: 6-8pm. Cost: FREE!**  
*Register for this program by call 591-5134. Families are asked to the entire 6-week program and t limited, so register early!*

**TUESDAY, JULY 30**

**The Puzzling Environm**  
*Flushing County Park, Pavilion 1*  
 Magical Mad Scientist Mark Trip exciting experiments, audience p and clean clever comedy to show "everybody can do something" to small planet on which we live. He questions like, "Just how does yo routine unknowingly rob or replen earth? What commonplace things will have a place in a solar system?"

# AUGUST

Family Fun for Everyone!

Wolverine Campground

## For-Mar On The Road



Clayton Beach

**THURSDAY, AUGUST 1**  
**Ultimate Dash**  
**Training Advanced**  
 Bluebell Beach, Pavilion 1  
 Time: 5-7pm. Please refer to page 2 for program details and cost.

**FRIDAY, AUGUST 2 AND**  
**FRIDAY, AUGUST 9**  
**Yoga in Nature**  
 For-Mar  
 Looking for a good stretch and relaxation? Maybe you just want time away from everyday stress. Learn breathing techniques and posture control with certified Kripalu yoga instructor, Judy Freibeig. You will leave refreshed and excited for the next class. Class will be held indoors in case of bad weather. Wear layered, loose, comfortable clothing, bring your yoga mat or blanket. For ages 9 and older, all abilities.  
**Cost: \$7 per person for a single class or \$12 per person for both classes.**  
 Pre-registration required by 7/31/13.

**SATURDAY, AUGUST 3**  
**Car Tunes for Teens**  
 Flushing County Park, Pavilion 5  
 There's more to having a driver's license than just driving! You need to know how to keep your vehicle running smoothly and in tip-top shape. Join ASE Certified Master Mechanic Shane Schmitt for an introductory lesson on preventative vehicle maintenance.  
 For teens, ages 14-19.  
**Time: 10:30am-noon. Cost: FREE!**  
 Pre-registration not required. Limited to the first 10 participants.

**SATURDAY, AUGUST 3**  
**Fish Stories**  
 Buell Lake County Park, Fishing Dock and Pavilion 2  
 Let's take a trip to Buell Lake, catch some fish and tell big fish tales! Hopefully the big ones won't get away!  
 For individuals with cognitive disabilities.  
**Time: 10:30am-noon. Cost: \$2 per person.**  
 Pre-registration required by 8/1/13.

**SATURDAY, AUGUST 3**  
**Where Do The Children Play? Movie Viewing**  
 For-Mar  
 Visit For-Mar for a public viewing of the movie, Where Do The Children Play?, a thought provoking locally made movie documenting the change in how and where children spend their free time. We need to start a discussion about re-instilling the importance of play and nature into the daily lives of our children!  
 For adults, ages 16 and older, all abilities.  
**Time: 1-3pm. Cost: FREE!**  
 Pre-registration required by 8/1/13.

**SUNDAY, AUGUST 4**  
**Monthly Birders Breakfast Club**  
 For-Mar  
 Come enjoy your morning coffee or tea

### Look Up

**Ages 3-6** Clouds! Why are clouds important and what's their job? Make a happy raincloud to hang from your window.  
**Ages 7-12** Clouds, perhaps one of the most overlooked aspects of nature. Learn all about the mysterious world of cloud formations and how to recognize different cloud types with your own cloud viewer.  
 Programs for both age groups run simultaneously.  
**Cost: FREE!** Pre-registration suggested, but walk-ins welcome.

**THURSDAY, AUGUST 1**  
 11am-noon Buell Lake County Park, Pavilion 1  
 2-3pm Bluebell Beach, Pavilion 1  
**FRIDAY, AUGUST 2**  
 11am-noon Flushing County Park, Pavilion 1  
 2-3pm Linden County Park, Pavilion 2

**SATURDAY, AUGUST 3**  
 11am-noon Wolverine Campground, behind camp store  
 2-3pm Creasey Bicentennial Park, Sledding Hill Pavilion

## For-Mar's TRUCK FARM

### The Five Senses Garden

A five senses garden is designed to stimulate all of you! Come learn how easy it is to incorporate your ears, eyes, fingers, taste buds, and nose into an herb garden design. Put up an herb to get your five senses garden growing.  
 For children, ages 4-6 and 7-12, all abilities.  
**Cost: FREE!** Pre-registration suggested, but walk-ins welcome.

**WEDNESDAY, JULY 31**  
 10:30am-noon Linden County Park, Pavilion 2  
 1:30-3pm Flushing County Park, Pavilion 1  
**THURSDAY, AUGUST 1**  
 10:30am-noon For-Mar  
 1:30-3pm Davison Roadside Park Pavilion

**FRIDAY, AUGUST 2**  
 10:30am-noon Buell Lake County Park, Pavilion 1  
 1:30-3pm Bluebell Beach, Pavilion 1

**SATURDAY, AUGUST 3**  
 11am-noon Richfield County Park, Pavilion 5  
 1:30-3pm Wolverine Campground, behind the camp store

### Komeback Kids

**Ages 3-6** Explore the story of our nation's proud symbol, the bald eagle, a beautiful bird of prey. Discover how bald eagles went from levels of near extinction to thriving in Michigan.  
**Ages 7-12** The gray wolf was once an endangered species and has now made a great comeback. Come learn what the wolves need to survive. Retell their story with a simple craft.  
 Programs for both age groups run simultaneously.  
**Cost: FREE!** Pre-registration suggested, but walk-ins welcome.

**TUESDAY, AUGUST 6**  
 2-3pm Davison Roadside Park Pavilion  
**WEDNESDAY, AUGUST 7**  
 11am-noon For-Mar  
 2-3pm Richfield County Park, Pavilion 4

**FRIDAY, AUGUST 9**  
 11am-noon Flushing County Park, Pavilion 1  
 2-3pm Linden County Park, Pavilion 2

**SATURDAY, AUGUST 10**  
 11am-noon Wolverine Campground, behind camp store  
 2-3pm Creasey Bicentennial Park, Sledding Hill Pavilion

**THURSDAY, AUGUST 8**  
 11am-noon Buell Lake County Park, Pavilion 1  
 2-3pm Bluebell Beach, Pavilion 1

### A Flutter Garden: Butterfly Gardening

Butterflies are some of the most beautiful and interesting creatures on Earth and it's so easy to increase the number and variety of butterflies in your yard. Come learn about the plants that caterpillars like to eat and what to do to attract them.

### A Trashy Tale

# AUGUST

## Family Fun for Everyone!

Carpenter and Bray Roads



### WEDNESDAY, AUGUST 7

#### Cockadoodle Doo Chicken Show

*Davison Roadside Park Pavilion*  
Hens on Tour starring real live chickens, Bettlou Bantam, Rhonda Rhode Island Red and Friends. It's an evening of fascinating fowl facts and fabulous fun! For families, all ages and abilities.

**Time: 7-8pm. Cost: FREE!**  
*Pre-registration not required.*

### WEDNESDAY, AUGUST 7

#### Citizen Science: Bee Active in your Parks! Community Apiary (Part II)

*For-Mar*  
Now that we know how important pollinators are, let's see how many we have. Join the For-Mar naturalists in sampling For-Mar's property for different pollinator species. For families, recommended for children age 8 and older, all abilities.

**Time: 6:30-8pm Cost: FREE!**  
*Pre-registration suggested, but walk-ins welcome.*

### FRIDAY, AUGUST 9

#### Yoga in Nature

*For-Mar*  
Looking for a good stretch and relaxation? Maybe you just want time away from everyday stress. Learn breathing techniques and posture control with certified Kripalu yoga instructor, Judy Freiheig. You will leave refreshed and excited for the next class. Class will be held indoors in cases of bad weather. Wear layered, loose, comfortable clothing, bring your yoga mat or blanket.

For ages 9 and up, of all abilities.  
**Time: 6-7pm. Cost: \$7 per person.**  
*Pre-registration required by 8/7/13.*

### SATURDAY, AUGUST 10

#### Kids Fishing Club

*Buell Lake County Park, Fishing Dock*  
A bad day of fishing is better than a good day of doing just about anything else! Bring your rod and we'll supply the bait. We'll have a short lesson on things like tackle, casting, or fishing rules and then we'll fish!

For kids ages, 4-18, all abilities.  
**Time: 9-11am. Cost: FREE!**  
*Pre-registration not required.*

### SATURDAY, AUGUST 10

#### Vanishing Acts: Invasive Plant Walk

*For-Mar*  
Invasive plants can be found nearly everywhere, if you know what to look for. Take a walk with us and learn how to identify some of our areas' worst offenders and see their impact on our ecosystem.

For adults, ages 16 and older, all abilities.  
**Time: 10-11am. Cost: \$5 per person.**  
*Pre-registration required by 8/9/13.*

### SATURDAY AUGUST 10

#### Ask an Expert Series:

use again and again.  
For ages 9 and older, all abilities.  
**Time: 1-2:30pm. Cost: \$5 per person.**  
*Pre-registration required by 8/9/13.*

### MONDAY, AUGUST 12

#### Ultimate Dash Training Beginner/Intermediate

*Crossroads Village, Mason Tavern*  
**Time: 5-7pm. Please refer to page 2 for program details and cost.**

### MONDAY, AUGUST 12

#### Fairy Houses and Gnome Homes

*Linden County Park, Clover Beach Pavilion*  
Fairies and gnomes need houses and homes. Come dressed in your fairy or gnome best for a story. Then we'll build houses and homes to attract little visitors!

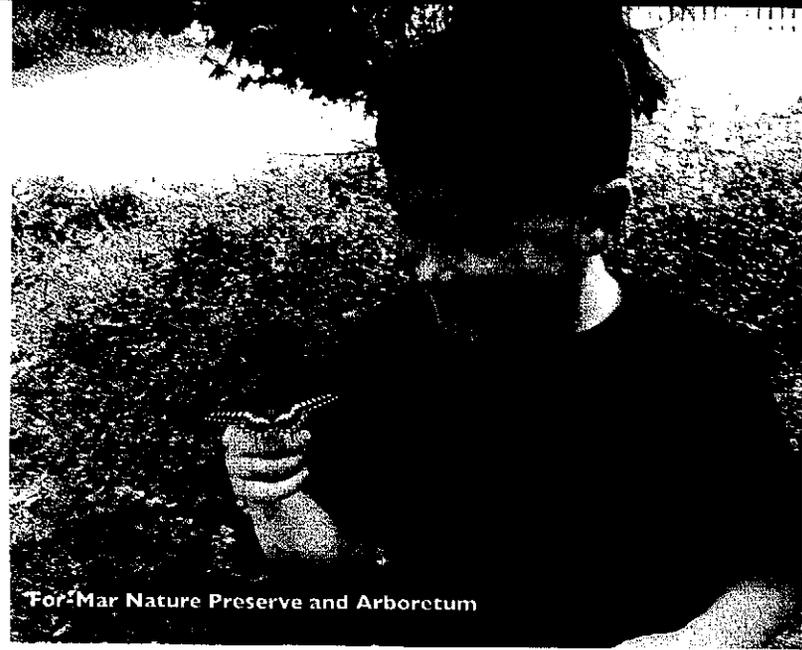
For families, all ages and abilities.  
**Time: 7-8pm. Cost: FREE!**  
*Pre-registration not required.*

### TUESDAY, AUGUST 13

#### Cooking Matters for Families (Week 5)

*Davison Roadside Park Pavilion*  
Cooking Matters for Families is a 6-week series that will empower families with the skills, knowledge and confidence to prepare healthy and affordable meals. With the help of our culinary and nutrition experts, Cooking Matters course participants learn how to select nutritious and low-cost ingredients and prepare them in ways that provide the best nourishment possible to their families. Families will also be provided a grocery bag full of supplies to take home so they can recreate the delicious meal. Cooking Matters for Families is partially funded with Federal funds from USDA's Supplemental Nutrition Assistance Program.

For families, all ages and abilities.



For-Mar Nature Preserve and Arboretum

### WEDNESDAY, AUGUST 14

#### Sideshow Science!

*Davison Roadside Park Pavilion*  
Newton's Laws of Motion, inertia, action and reaction, mass and acceleration, and much more! See sideshow Circus stunts and find out how they do that crazy stuff! Experience the exciting opening where a table cloth is pulled out, leaving the dishes behind (we hope!) to the "daring and deadly spinning dog dishes of death," (ok, they're plastic and couldn't hurt anyone, but it sure sounds cool!), gasp at the juggling glasses filled with water and quiver at the electric chair. You'll be amazed, entranced, and excited!

For families, all ages and abilities.  
**Time: 7-8pm. Cost: FREE!**

### SATURDAY, AUGUST 17

#### Bat Zone: LIVE Bats at For-Mar For-Mar

What's winged, a mammal, and visiting For-Mar? Bats!!! Bat Zone is bringing its LIVE Bat program to For-Mar today so you can find out just how important bats are to our environment. We'll even talk about how you can encourage bats into your own backyard.

For families, all ages and abilities.  
**Time: 1-2:30pm. Cost: \$3 per person.**  
*Pre-registration required by 8/15/13.*

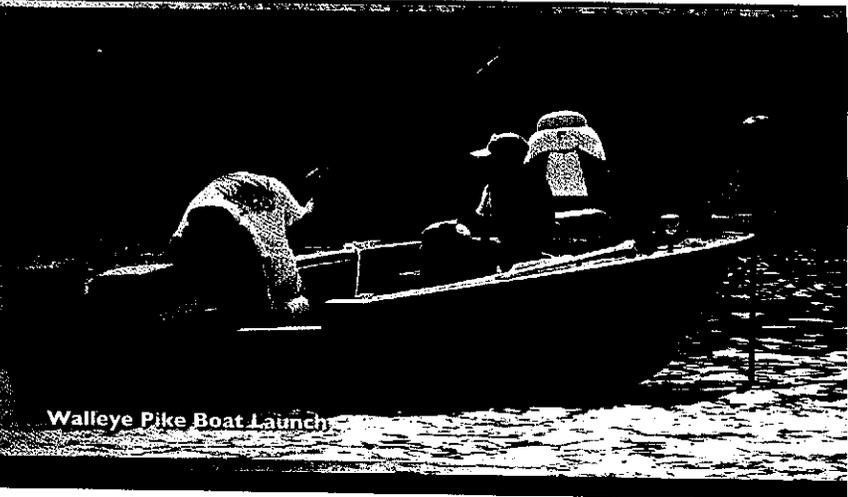
### SUNDAY, AUGUST 18

#### Adventures of a Birder: Exotic Birding Trips For-Mar



# AUGUST

## Family Fun for Everyone!



Walleye Pike Boat Launch

### Bike Riding for Teens

You'll learn the fundamentals of riding a bike safely. Starting from Bluebell Beach, we'll visit nearby points of interest while learning bicycle safety practices.

For teens, ages 13-18.

**Time: 3-4pm. Cost: FREE! Bikes and helmets are provided.**

*Pre-registration not required, but limited to the first 10 participants.*

### SUNDAY, AUGUST 25 3rd Annual Catfish for a Cause Fishing Tournament

*Walleye Pike Boat Launch*

Ninety-two fishermen helped improve the walleye fishery in the Holloway Reservoir by entering the 2nd Annual Catfish for a Cause Fishing Tournament and 108 lbs. of channel catfish no longer call the Holloway Reservoir home! Join the fun this year!

For families, all ages and abilities.

**Time: Registration begins at 6am and fishing starts at 7am. Weigh-in is at noon. Cost: There's no tournament entry fee, but purchase of a permit is required to enter the facility.**

*Pre-registration not required.*

*Please refer to page 2 for vehicle fees.*

### SUNDAY, AUGUST 25 Taxidermy Basics: Mammals

*For-Mar*

For-Mar naturalist, April Payne will be teaching the basics of how to create mammal mounts and study skins. She will take participants through the step-by-step process of how the taxidermy of mammals is done.

For ages 10 and up, all abilities.

**Time: 1-3pm. Cost: \$3 per person.**

*Pre-registration required by 8/23/13.*

### MONDAY, AUGUST 26

Flushing County Park's newest amenity, the ENERGI® Prime workout pad where we'll introduce you to how it works. ENERGI® Prime combines functional fitness and body-weight training to deliver a synergistic workout that connects all five of the body's major anatomical systems and exercises nearly all of its 206 bones and 600 muscles.

For ages 13 and older.

**Time: 7-8pm. Cost: FREE!**

*Pre-registration not required.*

### WEDNESDAY, AUGUST 28

#### Honeybee KIDS: Honeybee Family

*For-Mar*

Join us at the observation hive for a fun and interactive kid friendly honeybee program. For-Mar Bee Keeper Jim Withers will be on hand to answer questions.

For families, all ages and abilities.

**Time: Noon-1pm. Cost: FREE!**

*Pre-registration not required, but organized groups are asked to call ahead.*

### WEDNESDAY, AUGUST 28 For-Mar on the Road: Now Let's Celebrate!

*For-Mar*

Wow, what a fabulous summer! We're saying thanks and wrapping up our summer fun with a party! Join us as we say goodbye to summer and hello to fall with outdoor crafts, games and cupcakes all around!

For families, all ages and abilities.

**Time: 6:30-8pm. Cost: FREE!**

*Pre-registration required by 8/21/13.*

### WEDNESDAY AUGUST 28 Hacky Sack Workshop

preference. Eat whole or peel the outer layer and eat that so you can re-toast. Pretty easy, right? Did you know that the 1927 Girl Scout Handbook was the first publication to share a recipe for roasted marshmallows combined with chocolate bars and graham crackers, what we know as s'mores? Bring a chair or blanket; it's time to celebrate the gooey, sticky, yumminess of marshmallows!

For families, all ages and abilities.

**Time: 7-9pm. Cost: FREE!**

*Pre-registration not required.*



Richfield County Park

### TUESDAY, AUGUST 20 Cooking Matters for Families (Week 6)

*Dasvion Roadside Park Pavilion*

Cooking Matters for Families is a 6-week series that will empower families with the skills, knowledge and confidence to prepare healthy and affordable meals. With the help of our culinary and nutrition experts, Cooking Matters course participants learn how to select nutritious and low-cost ingredients and prepare them in ways that provide the best nourishment possible to their families. Families will be provided a grocery bag full of supplies to take home so they can re-create the delicious meal.

Cooking Matters for Families is partially

### WEDNESDAY, AUGUST 21 Citizen Science: Amazing Monarch Migrations, Monarch Watch (Part III)

*Richfield County Park, Pavilion 1*

Be a part of the nationwide effort to capture and tag amazing migrating monarchs! Monarch Watch is an ongoing citizen science project that has been tracking monarch butterflies across the country for the last ten years. Come learn how to capture, rear, tag and release caterpillars and butterflies. Help us determine what butterfly species call our parks home and create a graphic display of the data we collect.

For families, recommended for children age 8 and older. all abilities

Join your favorite spooky friends throughout

October as we celebrate the 25th anniversary of Halloween Ghosts & Goodies in the Village. Special anniversary activities will be held on October 5th and 6th. Take a walk through the enchanted forest and find your way through the straw maze. Enjoy a magic show and ride the famous Huckleberry Ghost Train Express! There's plenty of silly Halloween fun complete with trick-or-treating and doughnuts and candy for everyone!

Weekdays 5 to 9 pm  
October: 11, 18, 25 & 28-31

Weekends Noon to 9 pm  
October: 5-6, 12-13, 19-20 & 26-27

Village Tickets ..... \$10.00

Village/Train or Village/Belle ..... \$13.00

Village, Train & Belle .. \$16.00

Children 12 months and under are free.

Group rates are not available.

Note: The Genesee Belle will operate only on weekends.

For details and reservations go to [geneseecountyparks.org](http://geneseecountyparks.org) or call 800.648.PARK, ext. 6.

stomp, squash and throw them to show them who's the boss... better watch out, though, carrots could be next! Bring a lawn chair or blanket.  
For ages 16 and older, all abilities.  
Time: 7-9pm. Cost: FREE!! There will be refreshments available for purchase.  
Pre-registration not required.

**SATURDAY, SEPTEMBER 7  
Unique Trees of For-Mar**

For-Mar  
Maples, oaks, and ashes...oh not again! Are you tired of the same ole same ole? Well, let's take a look at a few less common landscape trees that will grow in our area. Ever hear of a Korean Mountain ash? I didn't think so. (P.S. Bring your walking shoes. You'll need them!)  
For adults, ages 16 and older, all abilities.  
Time: 10-11am. Cost: \$5 per person.  
Pre-registration required by 9/5/13.

**SATURDAY, SEPTEMBER 7  
Back to School Birds**

For-Mar, DeWaters Building, off Potter Rd.  
Visit the Foote Bird Museum to find out where birds go in the fall. Are they heading to school?  
For individuals with cognitive disabilities.  
Time: 10:30am-noon. Cost: \$2 per person.  
Pre-registration required by 9/5/13.

**SATURDAY, SEPTEMBER 7  
Growing Gardeners:  
Happy Healthy Herbs**

For-Mar  
Join us for a lesson on herbs: how to grow them and how to use them. Learn

**WEDNESDAY, SEPTEMBER 18  
Knee High Naturalist:  
Evening Series**  
For-Mar  
Here's your evening chance to join For-Mar's most popular preschool program! Kids will learn about nature through storytelling, arts and crafts, live animals and lots of hands-on play. Come be part of the fun!

For children, ages 3-6, all abilities.  
Time: 6-7:30pm. Cost: \$3 per child for 1 class or \$5 per child for the series.  
Pre-registration required by 9/9/13.

**WEDNESDAY, SEPTEMBER 11  
Wild Adventures:  
Evening Series**

For-Mar  
Everyone wants to be a Wild Adventurer! Here's an evening opportunity to become one in this nature based education class. Students will learn all about the great outdoors through hands-on experiments and activities.  
For youth, ages 7-12, all abilities.  
Time: 6-7:30pm. Cost: \$3 per child for 1 class or \$5 per child for the series.  
Pre-registration required by 9/9/13.

**THURSDAY, SEPTEMBER 12  
Knee-High Naturalist:  
Beetle Mania**

For-Mar  
There are lots of different kinds of beetles. Come dressed to hike and we'll go out in search of beetles and other insects.  
Ages children, ages 3-6, all abilities.  
Time: 10-11:30am. Cost: \$3 per child.  
Pre-registration required by 9/10/13.



**SATURDAY, SEPTEMBER 14  
Stepping back into  
For-Mar's History**

For-Mar  
Did you know that For-Mar was a family dairy farm before it became a Nature Preserve and Arboretum? Step back in time for a visit to the old Merkley family dairy farm for a glimpse of the past! Visitors will have the opportunity to try their hand at everything from butter making to hay baling and learning to milk a cow. This event is sure to teach everyone a new "old" skill.  
For families, all ages and abilities.  
Time: 10am-2pm. Cost: FREE!  
Pre-registration not required, but organized groups are asked to call ahead.

**SUNDAY, SEPTEMBER 15  
DIY Green Craft Day: Bulbs  
Indoors? The kind that bloom  
and make you light up!**

For-Mar  
During this Pinterest inspired program you will walk away with new recipe ideas and a handmade craft. This month's program includes bulbs planted in unique containers, great for gifts or your own home.  
For ages 9 and older, all abilities.  
Time: 1-2:30pm. Cost: \$5 per person.  
Pre-registration required by 9/13/13.

**WEDNESDAY, SEPTEMBER 18  
Knee-High Naturalist:  
Who Pooped in the Park?**

For-Mar  
Look at scat and other animal signs to discover who lives at For-Mar.  
For children, ages 3-6, all abilities.  
Time: 10-11:30am. Cost: \$3 per child.  
Pre-registration required by 9/16/13.

**WEDNESDAY, SEPTEMBER 18  
Wild Adventures:  
The Water Cycle**

For-Mar  
Explore the water cycle with activities and experiments led by For-Mar's naturalist.  
For youth, ages 7-12, all abilities.  
Time: 10-11:30am. Cost: \$3 per child.  
Pre-registration required by 9/16/13.

Pre-registration required by 9/17/13.

**WEDNESDAY, SEPTEMBER 18  
Wild Adventures:  
Evening Series**

For-Mar  
Everyone wants to be a Wild Adventurer! Here's an evening opportunity to become one in this nature based education class. Students will learn all about the great outdoors through hands-on experiments and activities.  
For youth, ages 7-12, all abilities.  
Time: 6-7:30pm. Cost: \$3 per child.  
Pre-registration required by 9/17/13.

**THURSDAY, SEPTEMBER 19  
Knee-High Naturalist:  
Who Pooped in the Park?**

For-Mar  
Look at scat and other animal signs to discover who lives at For-Mar.  
For children, ages 3-6, all abilities.  
Time: 10-11:30am. Cost: \$3 per child.  
Pre-registration required by 9/17/13.

**THURSDAY, SEPTEMBER 19  
Transform Your Yard Into A  
National Wildlife Federation  
Certified Wildlife Habitat**

For-Mar  
For-Mar did it, you can too! The National Wildlife Foundation (NWF) sponsors a program to certify your yard as designated wildlife habitat—complete with an official sign! Come learn the simple step-by-step process to becoming certified, with a focus on creating quality urban wildlife habitat in Southeast Michigan. Whether you rent a tiny apartment with a balcony, own a suburban home, or a 100-acre farm, you can establish an attractive sanctuary for wild creatures. By providing food, water, cover and places to raise young—your NWF certified yard will aid wildlife by restoring habitat in commercial and residential landscapes.  
For families, suggested for ages 10 and older, all abilities.  
Time: 6-7pm. Cost: FREE!  
Pre-registration not required.

**FRIDAY, SEPTEMBER 20  
Whooo's Out at Night?**

For-Mar  
Learn about the different critters that come out at night and how they have adapted to survive. Come prepared to hike the For-Mar trails in the dark and call for owls. Bring your own flashlight and we will provide the night vision protector.  
For everyone, all ages and abilities.  
Time: 7-9pm. Cost: \$3 per person.  
Pre-registration required by 9/18/13.



For-Mar Nature Preserve and Arboretum





Richfield County Park

**SATURDAY, SEPTEMBER 21  
Growing Gardeners:  
Flowers Forever**

*For-Mar*  
What kind of plant comes back year after year? Perennials do! We'll work in our perennial garden and you can help us plant seeds for new plants and also help divide some of our existing plants. You'll even pot up one of your own to help get your perennial garden started!  
For youth, ages 7-12, all abilities.  
**Time: 10:30am-noon. Cost: \$3 per child.**  
*Pre-registration required by 9/19/13.*

**SUNDAY SEPTEMBER 22  
Adventures of a Wildlife  
Biologist: Michigan Lizards**

*For-Mar*  
Wildlife Biologists Teresa Yoder-Nowak and Ernest Szuch from UM-Flint will be

at For-Mar to share their adventures in researching and studying Michigan Lizards, the six-lined racerunners.  
For ages 8 and older, all abilities.  
**Time: 1-2pm. Cost: \$3 per person.**  
*Pre-registration not required.*

**WEDNESDAY, SEPTEMBER 25  
Knee-High Naturalist:  
Harvesting Honey**

*For-Mar*  
Beekeeper Jim Wither will be visiting For-Mar for a live honey extraction demonstration and tasting.  
For children, ages 3-6, all abilities.  
**Time: 10-11:30am. Cost: \$3 child.**  
*Pre-registration required by 9/23/13.*

**WEDNESDAY, SEPTEMBER 25  
Wild Adventures:  
Harvesting Honey**

*For-Mar*  
Beekeeper Jim Wither will be visiting For-Mar for a live honey extraction demonstration and tasting.  
For youth, ages 7-12, all abilities.

**SATURDAY, SEPTEMBER 28  
Bluebell Bike Rides  
Learn to Ride a Bike Clinic**

*Bluebell Beach, Pavilion 1*  
The Learn to Ride Clinic is a bicycle program for youth who want to learn the correct way to ride a bicycle. Lessons include how to wear a helmet properly, how to ride a two-wheel bike and how to ride in a single-file line.  
For youth, ages 7-12.

**Time: 2-3pm. Cost: FREE! Bikes and helmets are provided.**  
*Pre-registration not required, but limited to the first 10 participants.*

**Bike Riding for Teens**  
Bike Riding at Blue Bell is a recreational activity designed just for teens! You'll learn the fundamentals of riding a bike safely. Starting from Bluebell Beach, we'll visit nearby points of interest while

learning bicycle safety practices.  
For teens, ages 13-18.  
**Time: 3-4pm. Cost: FREE! Bikes and helmets are provided.**  
*Pre-registration not required, but limited to the first 10 participants.*

**WEDNESDAY, OCTOBER 2  
Knee-High Naturalist:  
Leaves; Autumn's Painters**

*For-Mar*  
Explore fall's colorful changes with a story, games and a craft.  
For children, ages 3-6, all abilities.  
**Time: 10-11:30am. Cost: \$3 per child.**  
*Pre-registration required by 9/30/13.*

**WEDNESDAY, OCTOBER 2  
Wild Adventures: Have  
Seeds, Will Travel**

*For-Mar*  
Join us as we learn about the exciting life of a seed and its journey to becoming a plant!  
For youth, ages 7-12, all abilities.  
**Time: 10-11:30am. Cost \$3 per child.**

"famous wildlife" (i.e. Mickey Mouse, Barney, etc.) so we can learn the differences between real and pretend animals.

For children, ages 3-6, all abilities.  
**Time: 10-11:30am. Cost: \$3 per child.**  
*Pre-registration required by 10/7/13.*

**WEDNESDAY, OCTOBER 9  
Wild Adventures: Sights  
and Sounds of the Season**

*For-Mar*  
Fall is a beautiful time to be at For-Mar. Join us as we explore the trails while learning more about our senses and the senses of animals.

**Time: 10-11:30am. Cost \$3 per child.**  
*Pre-registration required by 10/7/2013.*

**THURSDAY, OCTOBER 10  
Knee-High Naturalist:  
Famous Wildlife**

*For-Mar*  
Children are asked to bring their favorite "famous wildlife" (i.e. Mickey Mouse, Barney, etc.) so we can learn the differences between real and pretend animals.

For children, ages 3-6, all abilities.  
**Time: 10-11:30am. Cost: \$3 per child.**  
*Pre-registration required by 10/8/13.*

**SATURDAY, OCTOBER 12  
Growing Gardeners: Flowers, A  
Program for Girl Scout Juniors**

*For-Mar*  
Flowers are so beautiful we bring them from the outside into our homes to add cheer to a room, but there is more to flowers than just good looks. Without them, plants could not make seeds, and bees would have nothing to drink. Girl Scout Juniors can earn their flower

badge and make a bouquet to give to their favorite person!  
For Girl Scout Juniors, all abilities.  
**Time: 10am-noon. Cost: \$5 per scout, includes the badge.**  
*Pre-registration required by 10/10/13.*

**SUNDAY, OCTOBER 13  
DIY Green Craft Day:  
From Yarn to Hat**

*For-Mar*  
You'll walk away with new ideas for recipes and handmade crafts when you attend this Pinterest inspired program! Today's DIY craft day will teach you the basics needed to create your own trendy hats.  
For ages 9 and older, all abilities.  
**Time: 1-2:30pm. Cost: \$5 per person.**  
*Pre-registration required by 10/11/13.*

**WEDNESDAY, OCTOBER 16  
Knee-High Naturalist:  
Animals Helping People**

*For-Mar*  
Animals give us food, clothing, and assist us with tasks. Discover how animals help

us for a lesson on vermicomposting indoors. Learn how to make your own indoor composting bin so you can turn your vegetable scraps into compost for your plants.

For youth, ages 7-12, all abilities.  
**Time: 10:30am-noon. Cost: \$3 per child.**  
*Pre-registration required by 10/17/13.*

**WEDNESDAY, OCTOBER 23  
Knee-High Naturalist: A  
Camel is a Mammal!**

*For-Mar*  
Learn about furry animals with backbones. Make a skeleton to take home.

For children, ages 3-6, all abilities.  
**Time: 10-11:30am. Cost: \$3 per child.**  
*Pre-registration required by 10/21/13.*

**WEDNESDAY, OCTOBER 23  
Wild Adventures:  
Dead or Alive?**

*For-Mar*  
Alive, non-living, or dead? What's the difference between these and why are all three important to the environment?

For youth, ages 7-12, all abilities.  
**Time: 10-11:30am. Cost \$3 per child.**  
*Pre-registration required by 10/21/13.*

**THURSDAY, OCTOBER 24  
Knee-High Naturalist: A  
Camel is a Mammal!**

*For-Mar*  
Learn about furry animals with backbones. Make a skeleton to take home.

For children, ages 3-6, all abilities.  
**Time: 10-11:30am. Cost: \$3 per child.**  
*Pre-registration required by 10/22/13.*

hydroponics in its simplest form, is growing plants by supplying all necessary nutrients in the plants' water supply rather than through the soil. Join us for a lesson on how this works and build your own hydroponics system to take home!

For youth, ages 7-12, all abilities.  
**Time: 10:30am-noon. Cost: \$3 per child.**  
*Pre-registration required by 10/24/13.*

**SATURDAY, OCTOBER 26  
2nd Annual For-Mar  
Haunted Trail**

*For-Mar*  
Oooooo... be prepared to be scared at For-Mar's Second Annual haunted hayride and trail. This year will be scarier than ever! Hayrides run at 8pm, 8:30pm and 9:30pm.

For ages 10 and older, all abilities.  
**Time: 8-10pm. Cost: \$5 per person.**  
*Pre-registration suggested due to limited space, but walk-ins are welcome. Maximum of 20 people per ride, more trips will be added to accommodate.*

**FRIDAY, OCTOBER 25  
Dash In the Dark  
5K Run/Walk**

*Richfield County Park, Playground Pavilion*  
Don't be scared! Join us for a Dash in the Dark around Richfield County Park. This 5K run/walk is for everyone; beginners to the most advanced runner/walkers. Wear your Halloween costume and dress in your glow in the dark best. Best-dressed wins a prize! Create a team, come solo, run for fun, or compete to win! All kinds of things can happen in the dark. Flashlights to be provided, but that may not stop the unexpected from happening. Do you dare to be part of the first-ever Dash in the Dark?





April 2013

## Welcome!

Well, here it is already, 1/3 of the way through 2013, and if you are anything like us, you've been very, very busy these past few months!



So far this year we've held our ninth annual KGCB Beautification Conference in March, completely rebuilt and launched our Website – kgcb.net, ventured into the social media stratosphere, and are now sending out our first newsletter. Whew – and we've only just begun to share the good news and work of Keep Genesee County Beautiful as

well as that of our invaluable and much appreciated volunteers!

We hope you'll find this periodic newsletter helpful. If you would like to receive more frequent updates, please sign-up for our e-Newsletter on our website at kgcb.net under the Newsletter tab. If you have suggestions for content in future editions, just give us a call at 810.767.9696.

## What's in a name?

You may have noticed we have not yet come up with a catchy name for our "blooming bulletin." OK, so while that's not too shabby, we are hopeful you may have a better idea for a snappy newsletter title. In fact, we are so optimistic that we have decided to hold a "Name that

Newsletter" contest. So, get your thinking cap on and come up with your best title.

Think you've got the winning entry? Great! Simply fill out the entry form below, clip it out, drop it in an envelope, and mail before the June 30, 2013 deadline.

If your entry is chosen, you'll receive a \$50 gift card to the Flint Farmer's Market - good luck!



**NAME:**  
\_\_\_\_\_

**ADDRESS:**  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**PHONE:**  
\_\_\_\_\_

**EMAIL:**  
\_\_\_\_\_

**NEWSLETTER TITLE:**  
\_\_\_\_\_

**Mail entry to:**  
Name That Newsletter Contest  
c/o Keep Genesee County Beautiful  
1509 E. Court Street  
Flint, MI 48503

## Beautification Conference “growing” larger, more successful each year

The ninth annual KGCB Beautification Conference & Awards Ceremony, held in March at the Harding Mott University Center on the campus of UM-Flint, was a huge success. Well over 300 Genesee County residents attended this year's event. Attendees had the opportunity to participate in various workshops ranging from how best to divide, propagate and collect seeds to getting a grip on plastic pollution.



This year's conference attendees received hands-on training, information, and lots of “giveaways” during the event.

The conference also included an information fair featuring 20 local organizations and businesses involved in clean up, beautification, and recycling activities and projects, as well as an awards ceremony honoring those involved in exceptional beautification projects throughout Genesee County during 2012.

“The beautification conference is the kick off to our programming every year and fulfillment of our mission to educate residents via workshops based on relevant community needs. We encourage participants by showcasing and awarding the best examples of community beautification. After they leave the

conference, we hope they become actively engaged in making visual improvements where they live, work and play,” said Karen West, Lead Consultant & Director at KGCB.

The following are the 2012 Keep Genesee County Beautiful Beautification Awards winners:

- Vienna Township Business Development Authority - *Business & Institution Award*
- Otisville Area Historical Association - *Business & Institution Award*
- Joanie Snyder - *Community Hero Award*
- Genesee County Parks & Recreation Commission, For-Mar Nature Preserve & Arboretum - *Innovation Award*
- Mann Hall Neighborhood Association - *Neighborhood Organization Award*
- Flora Roberts - *Urban Garden Award*
- Harvesting Earth Educational Farm - *Urban Garden Award*
- Fenton Area Public Schools World of Wonder Early Learning Programs - *Youth Garden Award*
- Dr. David Bowser, Lead Pastor at West Flint Church of the Nazarene - *Tall Oak Award*

## Planning, planting for a better tomorrow

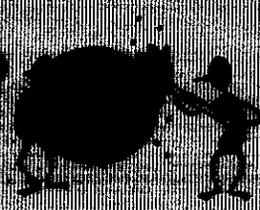
Join us at For-Mar Nature Preserve from 12-3pm for a FREE Arbor Day Open House. There will be activities and giveaways for you, your family, and the first-ever public viewing of the *Genesee County Trees Under Threat* display. The display focuses on the threats to our trees on a global and local level. Also, the Genesee County Arboretum has a variety of evergreen, deciduous, and palm trees, flowering trees/shrubs along with the larger 5'-6' trees for immediate impact. Seed dates are Friday, April 26th and Saturday April 27th. For more information call 810.230.8766 ext.3

## Cleanup Corner

**Earth Matters** – Motu Community College and the University of Michigan-Flint have partnered together to bring the Earth Matters Earth Day celebration to the Flint area, Saturday, April 13th. For more information, please visit [mcc.edu/earthday/earthday\\_schedule.php](http://mcc.edu/earthday/earthday_schedule.php)

**Flint Watershed Cleanups** – Clean Up Flint River Watershed Coalition, April 27. Events sites include: Genesee County; Flushing Riverview Park; Pierce Park; Holloway Dam Canal Access; Katherine Price Unity Park; Kearsley Park; Motu Park Neighborhood and Golf Course; Bendle School/Thread Lake; Burton; Vietnam Veterans Park; River Bank Park, Flint; McKinley Park, Flint; UM-Flint Campus; Farmers Market; and Flint River Trail. Call 810.767.6490 for more information.

**Spring Trail Clean Up** – Friends of the Flint River Trail. The cleanup is held the last Saturday in April. Volunteers meet at Veterans Park on James P. Cole Blvd. (just south of Hamilton) at 10:00 am. Lunch is provided following the cleanup at about 1:00 PM. Trash bags are provided but please bring your own work gloves and water.



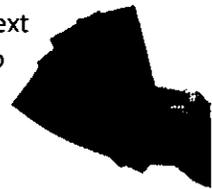
Grants Program and City of Flint Master Plan. Call 810.767.8304 or 810.766.7426 x 3027 for more information.

- **Neighborhoods Small Grants Program Mini-Grant** – Mini-grants between \$500-\$1,000 for neighborhood-level projects are now available. Call 810.767.8304 for more information.
- **Neighborhoods Small Grants Program Next Level Grant** – Grants starting from \$1,000 for neighborhood-level projects. Call 810.767.8304 for more information.



## Resources available for neighborhood projects

Looking for funding sources for your next neighborhood project? Look no further, the following agencies/organizations have grants and stipends available to help you beautify your community.



- **YOUR Neighborhood Inventory** - \$500 stipends for completing inventories of physical characteristics in Flint neighborhoods. Offered by a partnership between the Neighborhoods Small

## KGCB receives social media “makeover”

Keep Genesee County Beautiful strives to continually cultivate and add beauty throughout Genesee County. This year, we opted to take that approach with our social media presence by launching a new and improved Website that better meets the needs of our visitors. We have also created pages on Facebook, Twitter, YouTube and Pinterest. Check us out! Visit us online at [kgcb.net](http://kgcb.net). We welcome your comments/feedback.





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Flint, MI 48503

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4608 BEECHER RD  
FLINT MI 48532-2617



## Joining forces to Reduce/Reuse/Recycle in Flint



KGCB and Republic Services of Flint are joining forces in the fight to bring affordable, waste reduction and recycling services to you for your home recycling needs. Republic Services provides comprehensive recycling services for homes across the nation, and soon, thanks to this partnership, this much-needed service will be available in the Flint area. Please visit the *Waste Reduction and Recycling* page under the *Programs* tab on our website for more information as it becomes available.



## **BE PART OF THE SHIAWASSEE RIVER FLOATILLA!**

**Saturday, August 10, 2013**

**12noon – 4:30pm**

The Village of Holly and the City's of Fenton and Linden are jointly working together to promote the Shiawassee River Heritage Water Trail as a destination. Come on out and be part of the largest floatilla in southeastern Michigan!

We will be videotaping this event at 2pm on Lake Ponemah near Spoonz Lakeside Tavern. Maps will be provided on site. Volunteers will be in the lake to direct participants to the rallying point. HoverShotsAPV.com will be on the water with specialized Aerial Video and Photography equipment. This footage may be use for future promotional videos for our area! We need as many people to participate as possible so we have a great video shoot!!

Drop off location: Linden Mill Building  
201 N. Main Street  
Linden, MI 48451

Shuttle Service is available to park your vehicle at Hyatt Elementary School, 325 Stan Eaton Drive, Linden, MI.

Put in time: 12noon – 1:30pm

Video-taping: 2pm – 3pm

Take-out time: 3pm – 4:30pm

For those who need to rent a canoe or kayak

Heavner Canoe and Kayak Rental:

Web site: <http://www.heavnercanoe.com/>

Phone: 248-685-2379

They will provide equipment on site.

A \$5 donation is requested to help support the activities of the Keepers of the Shiawassee group.

For more information, please call: 810-735-6303 or via email at: [dlossing@gmail.com](mailto:dlossing@gmail.com)

RAIN DATE: August 17th, 2013, same times apply.

### **New Event- Ladies Day on the Lake- July 13<sup>th</sup> – Winner Announced**

There were 7 boats with approximately 35 ladies who attended our first annual Ladies Day event at the sandbar. The event was simple- just show up at the sandbar with as many as ladies that could fit on your boat. The lady with the most ladies on her boat was Tonya Hernandez with 10. 2<sup>nd</sup> Place went to Katie Falkenberg with 9 ladies. Tonya took home the prize of a \$100 Serendipity Day Spa Gift Card and a nice bottle of champagne! Look for this event to happen again next year!

### **Save the Date! 3rd Annual PST Skip Day**

Friday, August 30<sup>th</sup>...will be the day of our 3<sup>rd</sup> Annual PST Skip Day! The event will be located at the Sand Bar starting at 1pm. This is family friendly event will be held the Friday before Labor Day Weekend. So what is a PST Skip Day? Well, it is a day where you are supposed to be at work but you are out on the lake! See you out there!

# Flushing Life

The key to your community



## Heading to Harvest Fest

# Kayak or Canoe on the Flint

*'I watched an eagle soar above me and heard nothing but the wind in the trees, a chorus of bird song, insects chirping and the rippling water.'* —Lauri Elbing



**Kayaking along the Flint River brings an ever-changing landscape, and opportunities to watch wildlife, such as this blue heron.**

Photo courtesy of Andi Willman

by *Andi Willman*  
Community contributor

Summer time in Michigan always seems to fly by very quickly. Participating in warm weather sports and activities can heighten our enjoyment of this short season in our beautiful state. One outdoor pastime that has gained in popularity across the age groups is kayaking, and our family has truly jumped in with both feet!

Many years ago while spending time in the Caribbean, we became reacquainted with paddling sports. My husband and I grew up in the Scout programs and had both done a lot of canoeing as kids so didn't hesitate to get back on the water. Only recently did we discover that Michigan has so many idyllic places to kayak. This was reinforced when the Flushing library hosted a lecture and slide show by Michigan author Doc Fletcher who has penned several books about paddling in our state.

River kayaking takes one on journeys of ever-changing scenery and provides

many photo opportunities for camera enthusiasts. The Flint River's slower pace is well-suited to less-experienced paddlers and the frequent access sites are handy for shorter float trips. Paddlers must plan ahead and place a shuttle vehicle at the destination ramp downstream, but there are paddling groups in the area that provide this "livery service" for a reasonable fee during their scheduled float trips.

We recently joined the Flint River Watershed Coalition's Lazy Day Paddle, floating from Flushing to Montrose's Barber Memorial Park on a Saturday

morning. Our relaxing journey was so delightful that we plan to register for upcoming trips which are held the first and third Saturdays of each month.

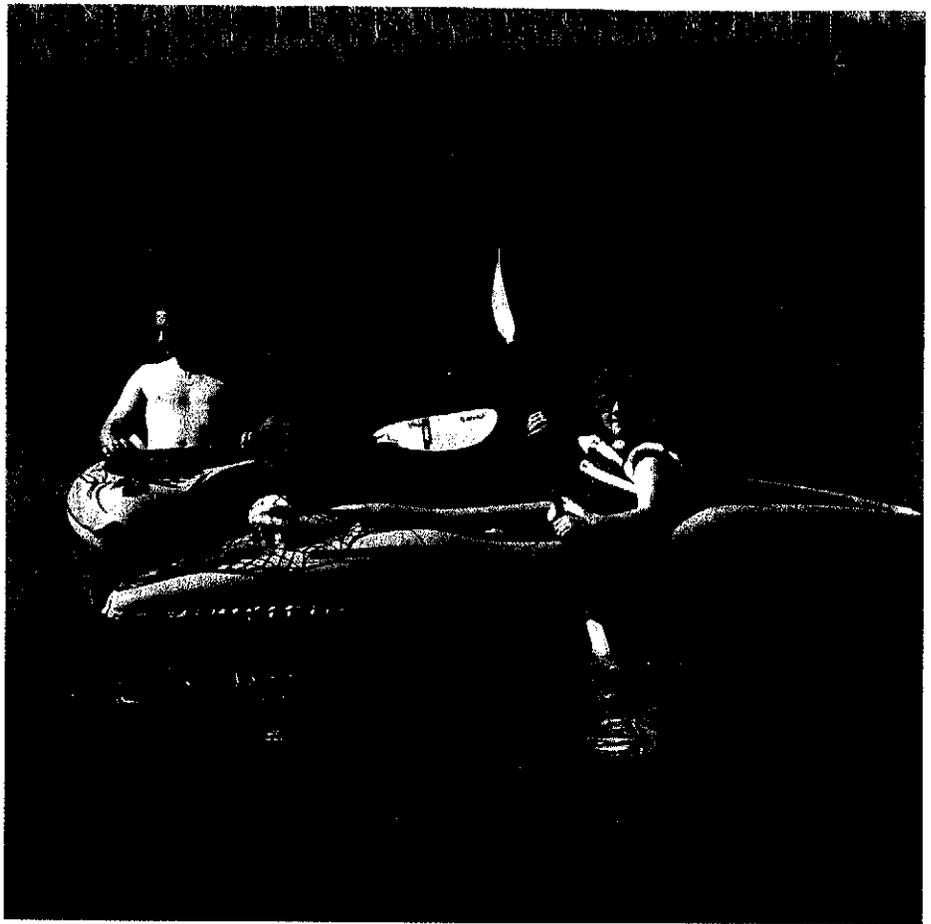
Flushing native Lauri Elbing, who is with The Nature Conservancy in Michigan, paddled with us and said "I watched an eagle soar above me and heard nothing but the wind in the trees, a chorus of bird song, insects chirping and the rippling water; I tried so hard to enjoy that moment and keep my mind in the present, but couldn't help reflecting on how much our river had transitioned in my lifetime. I'm so proud of and grateful to the leaders and citizens of the Flint area." She adds that she has kayaked a lot of rivers in Michigan, "but my favorites are definitely the Flint River and Detroit River because of all the beauty and wildlife to be experienced, but also to revel in the progress to restore the health of these spectacular urban rivers."

If you'd like to get a sample of kayaking without the planning and com-

mitment of a river trip, check out one of the many area lakes. Our preferences run to the “no wake” lakes because they are peaceful and the water is calm. Bodies of water like Mott Lake, which is part of the Flint River system, or Buell Lake naturally attract an assortment of wildlife and they’re very interesting to observe and photograph. My 11-year-old granddaughter, Sadie was an immediate fan and says, “Kayaking lakes is so cool because they’re all different and we see lots of wildlife. It’s really easy---- all you have to do is paddle and the lake leads you.”

We decided to buy our own kayaks last summer, knowing that this would encourage us to spend more time on the water. Kayaks are readily available in this area and there are weekly specials. Typical prices are \$139 to more than \$2000. I went the non-traditional route and investigated inflatable kayaks for several reasons. Not only did I want to be able to easily transport my boat by myself in my small car, but I also lacked storage space. I found the perfect solution with my Advanced Elements “Lagoon 1” which is a sporty little 19 pound kayak that I can inflate and tuck under one arm to carry to the water, as well as deflate, roll up, and pop into my trunk when I’m finished. All this for around \$350, delivered to my door. Shortly thereafter, we found an Intex Challenger for less than \$80.

I brag that I can put 2 kayaks, paddles, pumps, life jackets, beach chairs, and towels all in my trunk, load my family into the car (including our 12 year old Shih Tzu, Suki) and be on the water in 45 minutes. With our summer flying by, there’s just not a moment to waste.



**B.J. Coleman and his daughter Sadie Fisher enjoy the variety of calm, clear lakes in our area.**  
Photo courtesy of Andi Willman

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**Length in miles of the Flint River as it proceeds from the Shiawassee River to the Saginaw River. There are 28 access sites between Lapeer and Birch Run.**

The Department of Natural Resource states that Michigan has more than 11,000 inland lakes, and 36,000 miles of rivers and streams. Request a Canoeing Access Map from The Flint River Watershed Coalition at [flintriver.org](http://flintriver.org), or on Facebook. The Shiawassee River Heritage Water Trail guide details 13 access sites, paddle durations, and site amenities; it is available at [shiawassee.org](http://shiawassee.org). thanks to Friends of the Shiawassee River, Fenton Area Paddlers, and Headwaters Trails.

## KAYAKING IS FUN IN STATE PARKS

Our nearby State Parks, like Holly Recreation Area, Seven Lakes, and Sleepy Hollow have wonderful lakes and most offer kayak and canoe rentals. Currently, the Michigan Recreation Passport which is required for vehicles entering state parks, recreation areas, forests, and campgrounds, costs \$11 and is available at these sites. Larry Renner of Flushing says, “Purchasing the Recreation Passport is not only an investment in our state parks, but also a reminder to keep kayaking different lakes. I’m always in a good mood when I come off the water.” —*Andi Willman*

Tell us what you

**THINK@** [hibumagazine.com/survey](http://hibumagazine.com/survey)



**Never fear - we aren't in Florida. It's only an alligator-like log.**  
Photo courtesy of Andi Willman

READ  
REACT  
RESPOND

July 2013

# Three R's

A Publication of the Flushing Community Schools Board of Education

## Important Dates

### Board of Education Meetings Administration Building

July 16 - 5:00 PM  
August 13 - 7:00 PM  
August 27 - 7:00 PM  
September 10 - 7:00 PM

### Summer Reading & Math Celebration ECC

August 14 @ 11:00 AM

### Transportation Variances Due August 16

### High School Freshman Orientation Auditorium

August 26 @ 7:00 PM

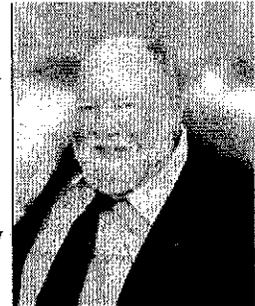
### First Day of School! September 3



## 2013 Alumni Hall of Fame Honoree

### Jim Dehlin – 1968 Flushing Graduate

Jim Dehlin, a 1968 Flushing graduate, was an outstanding athlete in both basketball and football for the Raiders. He enlisted in the U.S. Army, trained at Fort Benning, and became a second lieutenant. Jim was sent to Vietnam where he was wounded while leading a patrol. He spent a year in rehabilitation at the VA Hospital in Valley Forge, PA. Jim had a desire to fly airplanes, and he learned to pilot his own aircraft after training at a special pilot's school in Richmond, VA.



He returned to Michigan with his wife, Carol, and they took up residence in Higgins Lake. Jim began attending Kirtland Community College, which offered an Associate Degree in Aviation Mechanics. He was offered a job instructing in the program at Kirtland, and while doing so, Jim earned a Bachelor of Science Degree from Ferris State University in Technical Education and then received his Master's. His professional accolades include Kirtland Community College Alumnus of the Year, President of the Aviation Technology Education Council, and Aviation Maintenance Technician of the Year. Jim spent 17 years at Northern Michigan University, in Marquette, where he started the Aviation Technology Program. Upon his retirement, he was Associate Professor and Director of the Aviation Maintenance Program. Jim and Carol returned to Higgins Lake in 2008, building his dream log home so they could be closer to their children, Jesse and Kristin, as well as their daughter-in-law Lori and grandson Nicholas.

Jim became the first "Living Legend" of the Stormy Kromer Award in 2012, which is bestowed annually to a true American hero. Jim's son Jesse said it best, "He sought out roles in life where he could make a positive impact on people's lives, from small impacts as the head coach of little league teams, to larger impacts as a university professor where he continued to inspire young people to achieve their goals in life. He is proof that with the proper outlook on life, any obstacle can be overcome, anything can be achieved. Every day he inspires people, because if a guy with no legs can do it, so can you!"

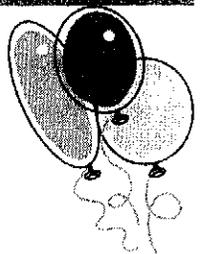
# High School

**The EAG (Environmental Action Group)** of Flushing High School held their annual *Flushing Float Canoe Trip* on June 1ST. Nearly two dozen students, teachers, and former students traveled 12 miles along the Flint River from Riverview Park to Barber Park in Montrose. FHS science instructors Quin Bartlett and Paul Taylor led the group on this three hour adventure. "People from our area travel all over Michigan in search of great canoeing and kayaking. I think some forget about the beautiful resources that we have right in our backyards."



## Summer Reading & Math Celebration

On **August 14TH** from **11:00AM-12:00PM**, you may bring your child to the Early Childhood Center, for some recognition and refreshments. Your child must bring their completed Summer Reading Calendar and/or Math worksheets to receive a small reward. Please RSVP by calling 810-591-1183 if you are able to attend. We will make sure we have enough treats for everyone!



Students who turn in their completed reading calendar with daily reading *and* have completed every math activity will receive a special "**Raider Super Star**" t-shirt. The t-shirts will be available at the August 14TH recognition activity.



## **New phone app guides paddlers from Holly to Owosso on Shiawassee River**

[Dana DeFever | ddefever@mlive.com](#) By [Dana DeFever | ddefever@mlive.com](#)

on May 20, 2013 at 7:00 AM, updated May 20, 2013 at 7:12 AM

HOLLY, MI – There's a new app that will make a trip kayaking along the Shiawassee River a little easier.

The iShiawassee app identifies areas along the Shiawassee River, including launches, parks, bridges, culverts and points where paddlers would have portage from Holly to Owosso. There is a map and GPS capabilities, along with tips from app creator Willi Gutmann's kayaking experiences.

"I paddled it so often, I know which turn and which hazard is where," said Gutmann, 48, of Warren. "Most recreational paddlers never take a map or compass when paddling."

Gutmann and his college friend Charles Rice worked on the app casually for a year. Apple approved the app last month and it will be available for \$1 May 21 on Apple iTunes.

Gutmann said the app is appropriate for both first-time Shiawassee River kayakers and paddlers who have made the trip down the river numerous times. He admits that sometimes when he's out on the river with friends and having a good time, he'll lose track of where he's at.

"Nobody knew about the Shiawassee River 10 years ago. I'm the guy that put it on Wikipedia," Gutmann said.

Gutmann fell in love with the Shiawassee River about 10 years ago through his friend Doug Lanyk.

"I love paddling the river. It has so many twists and turns. It's fun," Gutmann said.

Word about the app already is spreading through the area paddling community.

Sue Julian, president of Headwaters Trails, a nonprofit group that works with local municipalities to create new recreational opportunities along the Shiawassee River, said she's excited about the app's potential.

"We think this is going to be very useful for paddlers who have not been out on the river before," Julian said.

The river is readily available to a large population in southeast Michigan, she said. The app, she said, will serve as a great way to get the word out about the river and help people plan what they want to do while on the river.

"There are people who use the river in different ways. Some of them are looking for new adventures, some for lazy summertime paddle, others for a wildlife experience and some for a fishing spot," she said.

The app is not affiliated with Headwater Trails.

The app has the potential to help brand and turn the river and area into a destination place, said Linden Mayor David Lossing. With the wide use of smartphones, it's an easy way to communicate and market the river to people outside of the area.

"I can't wait to download the app and put it on my smartphone," said Lossing, who also paddles and is a strong promoter of the Shiawassee River.

Gutmann called iShiawassee a "tourism app" – comparing it to brochures that tourists may pick up when they're visiting a new city or region.

Gutmann said he wanted to make the app available before Memorial Day, so people could get it downloaded before they set out for the holiday weekend of paddling.

For more information about the iShiawassee app or Gutmann, visit his website at: <http://www.michigan-rivers.com/index.php>.

*Dana DeFever can be reached at 810-429-3919 or [ddefever@mlive.com](mailto:ddefever@mlive.com). You can also follow her on Twitter [@DanaDeFever](#) or subscribe to her on Facebook.*

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