



Genesee County Phase II Municipalities Annual Report

November 1, 2010 – October 31, 2011

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
MDNRE	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, 2010 to October 31, 2011 by Genesee County 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 the 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.

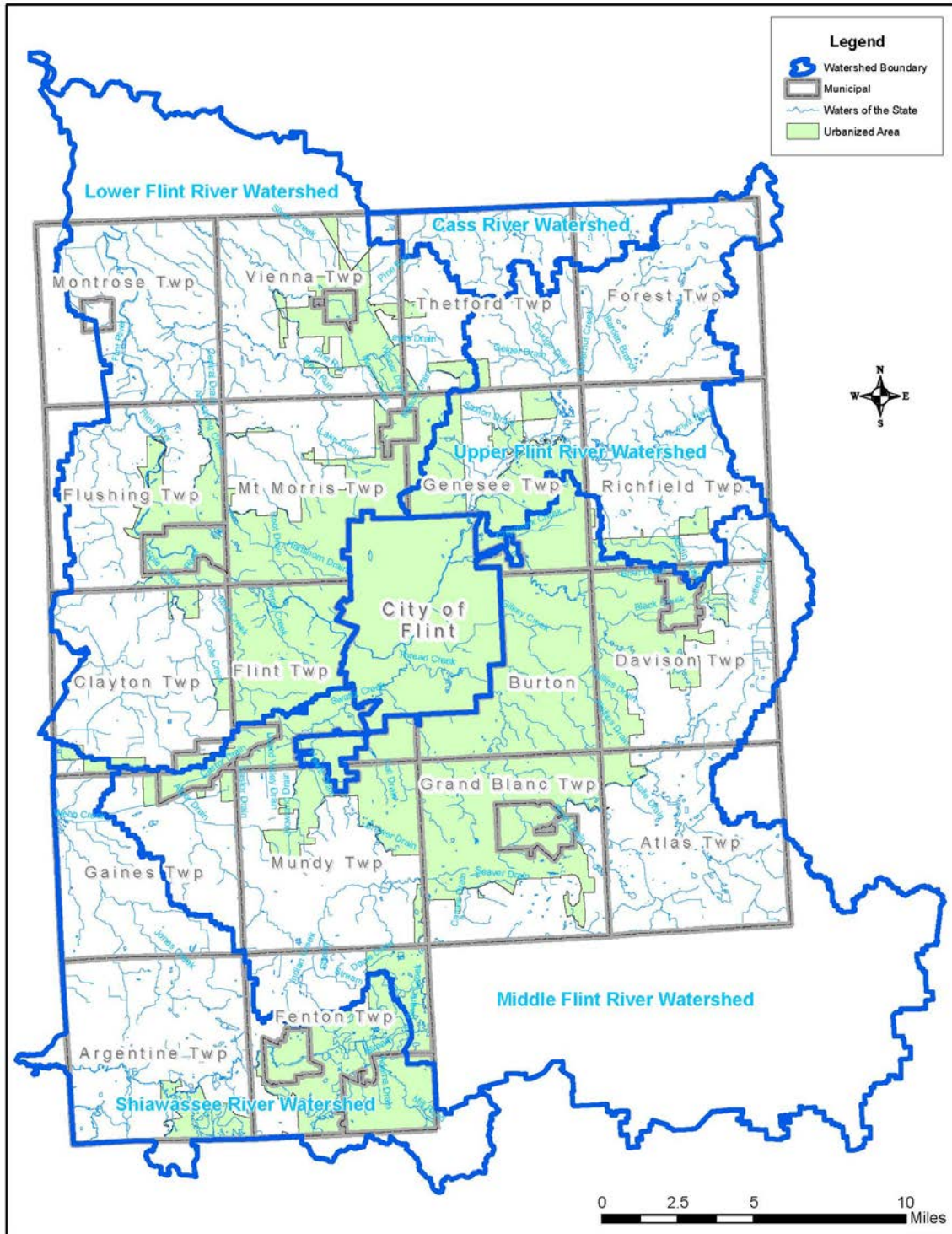
Watershed Delineation

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 (deferred)

Figure 1-1 shows the watershed boundaries. The Shiawassee River Watershed boundary was adjusted in 2005 to minimize overlap with effort proceeding in Livingston County. Also after discussions with MDNRE 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, many 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 1 community, In March 2010, they signed a 342 contract for public education services only.

Table 1-1: Contract Communities

City of Burton	City of Flint	City of Mount Morris
City of Clio	Flint Township	Mount Morris Township
City of Davison	City of Flushing	Mundy Township
Davison Township	Flushing Township	City of Swartz Creek
City of Fenton	Genesee Township	Vienna Township
Fenton Township	City of Grand Blanc	Genesee County
	City of Linden	

Nested Drainage System Agreements

The county has a nesting agreement with Bishop Airport.

The County has met with the schools and the MDNRE to come to an agreement that would allow the County to continue nesting the schools. The contract has been approved by lawyers and the schools are nested again.

Table 1-2: School Districts Interested in Nested Jurisdiction

School District	Within an urbanized area
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:

- November 17, 2010
- December 15, 2010
- January 19, 2011
- March 16 2011
- April, 20, 2011
- May 18, 2011
- September 21, 2011
- October 19, 2011

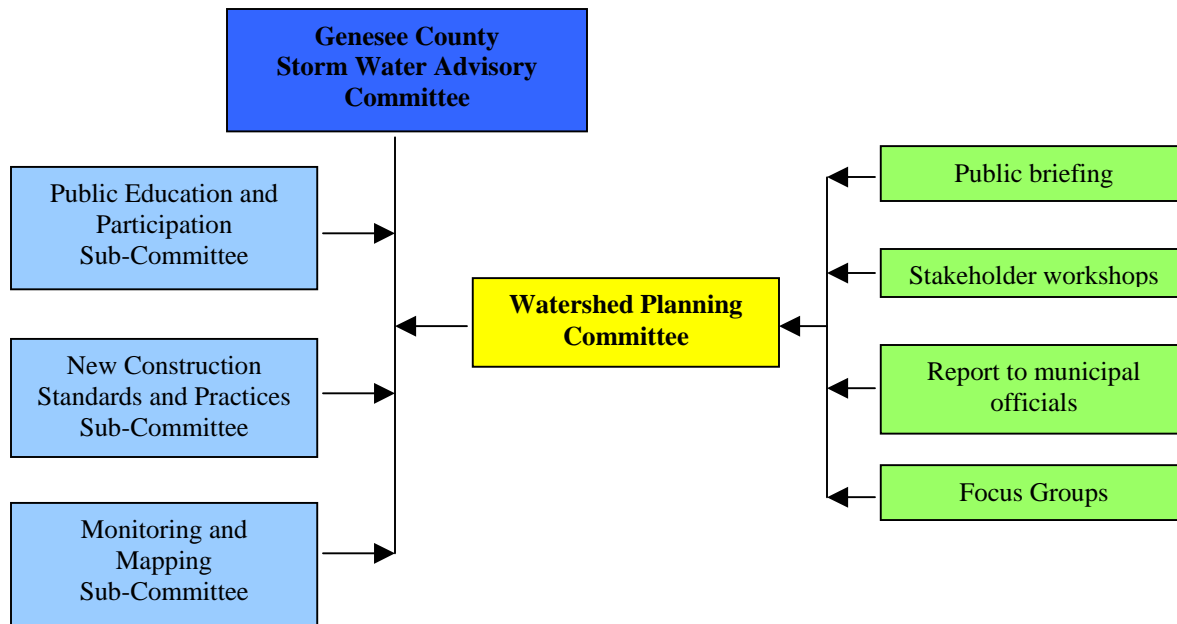


Figure 1-2: Watershed Planning Decision Making Flowchart

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 DNRE in 2008. In June 2009, permittees submitted their Storm Water Pollution Prevention Initiative (SWPPI) to the DNRE. The SWPPI contains action based on the WMP goals and objectives as well as 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 did not hold meeting during this reporting period, meetings are as-needed:

PE Membership included:

- **City of Burton – Paula Zelenko**
- **City of Clio – William Kovi**
- **City of Davison – Michael Hart**
- **City of Flint – Mike Brown**
- Clayton Township – Rick Caruso
- **Flint Township – Karyn Miller**
- Forest Township – Valerie Pace
- **Mundy Township – Dave Guigear**
- Thetford Township – Clyde Howd
- **Vienna Township – Bob Palmer**
- 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 MDNRE 2008-2013 guidance “Key Messages”.

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

Center for Applied Environmental Research: The PE Sub-Committee has been working with the University of Michigan-Flint Center for Applied Environmental Research (CAER) to coordinate, develop, and implement several elements of the PEP. Work during this permit cycle included:

- Coordinated and implement 3 riparian landowner workshops
- Program implementation with drain office
- Discussed the potential for a K-12 curriculum guide and in-service teacher training
- Staffed information booth at community events
- Planned, wrote, and designed newsletter with drain office
- Researched events suitable for Phase 2 education community outreach
- Researched, wrote, and designed septic system maintenance outreach materials
- Coordinated and maintained public education tools (watershed models, etc.)
- Researched “Our Water” campaign public relations and communications strategy
- Researched potential public service announcement television and radio spots

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:

- PowerPoint presentations on storm water education for adult audiences such as municipal officials, rotary clubs, neighborhood associations, lake associations, etc.
- Hosting up to 6 river walks on the Flint River, Shiawassee River, or tributaries:

4/6/11	Flint River, Flint River Trail	4 Attendees
6/29/11	Thread Creek Farm Walk	14 Attendees
7/13/11	Richfield Park Walk	13 Attendees
8/10/11	Gilkey Creek Trail Walk	13 Attendees
8/25/11	Max Brandon Park Walk	27 Attendees
8/25/11	Stepping Stone Falls Walk	15 Attendees
- Hosting canoe trips on the Flint River. There were four events that drew between 23-35 people.

7/9/11	Our Water Miston to Flushing Paddle	23 Attendees
7/13/11	Our Water Richfield Park Paddle	24 Attendees
7/22/11	Our Water Irish to Mott Lake Paddle	29 Attendees
8/20/11	Our Water Montrose Paddle	35 Attendees
6/21/11	Our Water Fall Paddle GYP	Postponed Weather



- Project Global Rivers Environmental Network (GREEN) Educational Program through the M&M Sub-Committee (See Section 7). Participation from:
 - 3 School Districts
 - 50-60 Classrooms
 - 400 plus Students
 - 33 Mentors
 - 6 Presenters
 - 21 sites covered in Genesee County
 - 7 sites covered in other counties
 - 1,300 monitors participating
- During this reporting period, FRWC published its newsletter, *The Watershed Reporter*, in December 2010 and Spring, Summer, and Fall of 2011. These can be found in Appendix A.

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. CAER worked with the Public Education and Participation Sub-Committee to develop, host and update the www.ClearGeneseeWater.org webpage. The “Our Water” webpage was posted in July 2006.

Updates to the webpage began in October 2008 and include a new masthead, additional informational tabs and links on the homepage, easy-to-follow navigation, and an events calendar. Updates occurred as needed throughout the reporting period.

Beginning in 2008, web site hosting was taken over by the Drain Commissioner’s Office. During this permit cycle there was between 480 and 700 hits per month for a total of 3661 hits from unique IP addresses.

“Our Water” Newsletter: There has been 1 newsletter in August 2011 and 3 community updates produced this reporting period. 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.

Materials and Presentation for Riparian Land Owners: An informational brochure was previously developed and used as a mail invite to one of three free workshops within the Upper Flint, Butternut Creek, Pine Run, Silver Creek and Brent Run Watersheds. Copies of the brochure were made available to the interested communities to distribute. Also Brochures were made available for distribution at the booth events. The brochure contained information on basic stream bank stabilization techniques. The free workshop was the first of many similar workshops that will be hosted in Genesee County throughout the coming years as part of the *Our Water Campaign*. For an example of the brochure mailer, see Appendix A.

Locations:

- Upper Flint and Butternut (Otisville/Richfield)
 - Forest Twp Hall
- Pine Run and Silver Creek (Clio)
 - Rogers Lodge Community Center
- Brent Run (Mt. Morris)
 - Mt. Morris Township Hall

In addition, we have look into grant opportunities to work with riparian land owners on implementing environmentally-friendly landscaping improvements that take water quality into consideration.

Good Housekeeping training: to comply with training requirements in the 2008-2013 permit, The Drain Commissioner’s Office along with Tetra Tech held 3 training classes on Good Housekeeping BMPs. April 8,

2010, May 6, 2010 and **November 4, 2010**. This training was offered to all Communities within Genesee County, County Agencies, Nested Jurisdictions and their contractors. Within the next reporting cycle we would like to get this training on a disc or online.

Speaker Materials and Presentations: An educational PowerPoint presentation was developed by CAER and the PE committee 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. In 2009/2010, seventeen presentations were made. These are summarized in Appendix A.

Brochures: In the last permit cycle, an educational brochure was developed to provide information about EPA’s seven mandated elements of stormwater education. 5,000 brochures were printed in November 2006, and 10,000 reprints were made in 2009. The brochures are given away actively at events (see information booth heading below), handed out at activities and many have been passively picked up by the public at local community centers. Each municipality is also given brochures to distribute for public use and will report their activities under separate cover.

Newsletter Articles and Tip Cards: Several of the communities in Genesee County requested that the PE Subcommittee develop and distribute prepared articles to be used in community and non-profit organization newsletters. CAER worked with SEMCOG in the last permit cycle to adapt several newsletter articles for the Flint River Watershed. Informational packets with compiled information, such as CDs with articles on them and tip cards, etc., were mailed to municipalities for use on their website, in their newsletter, etc. FRWC adopted articles from our website and placed them in two of their newsletters this year.

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 and have been printed. Copies have been given to the Genesee County Health Department to distribute as well as made available to interested communities for distribution. (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 additional promotional giveaways (premiums) in 2010 to further stormwater 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 stormwater-related question. This allows the booth staff/volunteers to engage the public in conversation and give them an educational brochure.

Household Hazardous Waste: Educate and promotion of the HHW program is done at the Fair, but Genesee County and several of the communities participate or support this program. Twice a year in the spring and fall there are household hazardous waste and electronic waste collections. There is a permanent site on the City of Flint Property and the other site rotates around the county, sponsored on either a school site or a township hall site. Collection results are not available at this time. Will be reported in the next reporting cycle. See Appendix A for promotion flyers.

Rain Barrel and Compost Bin Sale: Genesee County Metropolitan Planning Commission held a Compost bin and rain barrel sale on June 4 of 2011 to residents. See Appendix A for flyer.

River Cleanup: FRWC hosts and coordinates a River Cleanup every May throughout Genesee County along the rivers. In kind and financial support is provided by communities and the County. Predominantly staff time and garbage removal is provided by local municipalities and the Genesee County Parks and Rec.

Stewardship Programs: Besides the Canoe trips and River walks that our partner FRWC does (reported above) there are other stewardship programs going on throughout Genesee County. Within the last couple of years Genesee has got 2 canoe liveries on the Flint River that take out canoe groups all summer long. Also there is a Fall color tour planned in the Shiawassee River by another group. See Appendix A for article. The increased use of the Rivers directly correlates the increase in stewardship.

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. A tri-fold display board will be added to the display at a later date. Educational activities were also developed to help engage people at public events.



The booth is staffed by volunteer municipal officials and staff or by CAER staff when necessary. 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.

- 1) Earthday Do not have attendee numbers from CAER
- 2) Genesee County Fair (Mt. Morris, MI) August 15-21, 2011
Attendees See 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 Enviroscapes for their own education program (see next section.) The FRWC also keeps one of the Enviroscapes for their own education program.



The other two models are available for use by teachers in their classrooms, but we would like to increase their use. In the last reporting period, we began meeting with the Genesee Intermediate School District (GISD) about a program to train teachers on the model to build enthusiasm.

Genesee County Conservation District (GCCD) Education Program: GCDC contracted with the Genesee County Conservation District (GCCD) to provide stormwater education services to school-aged children on behalf of the Phase II permittees. During 2010-11, GCCD reached over 8,700 participants in the Phase II communities through educational activities correlated to the Michigan Department of Education Standards and Benchmarks and the Phase II Storm Water Education Elements (see Appendix A).

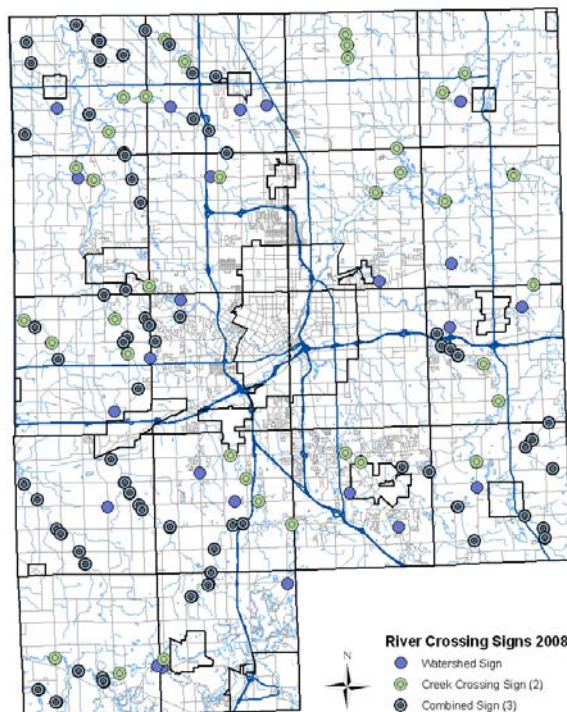
The program can be taught at any site, but the Conservation District’s primary instructor has also set up a unique classroom in the garage of his Gaines Township property that features a restored wetland. Here, he welcomes classes, scout troops, and other groups to take the program as a field trip.

The Enviroscape model is the primary focus of the Conservation District’s education program. Because of the large request for presentations from kindergarten through second grade, a less technical alternative was also needed. In 2008, the Conservation District developed a program called the Water Cycle Game. It is played by individual water droplets, the students, who travel through the water cycle. The water droplet’s journey is marked with different colored beads at each station that kids pick up to put on their water cycle bracelet. In the end, they take home their bracelet and some information for their parents. See appendix A for the first 3 quarters results. August through October will be available in the next reporting period.

Watershed Signs: In cooperation with the Genesee County Road Commission (GCRC), the PE committee began installing 24X30 watershed signs throughout the Shiawassee and Flint River Watersheds in late 2006. Stream/river crossing identification signs have also been placed to increase public awareness. Although no new signs were added during this reporting period, repairs to existing signage was made.



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 - Flows to River”. Since November 1, 2006 volunteers and County staff are able to paint approximately 500 stencils per year on Genesee County Roads. The PE Sub-Committee have developed and printed doorknob hangers to educate residents adjacent to the stenciling locations.

This reporting cycle the GCDC has purchased additional stencils and paint, and was able to purchase 200 metal storm drain markers to place permanently on “E” covers (Beehive covers) in the ditches or behind the curbline.

- As part of preventive maintenance, the Genesee County Drain Commissioner’s Surface Water Maintenance crew has a goal to place several hundred stencils throughout the county each year.
- FRWC used previous benthic monitoring result to help select areas for the storm drain stenciling program
- The conservation district also has volunteer groups out doing stenciling within neighborhoods.



Local Watershed Maps: The PE Sub-Committee has been working with the GISD since 2008 to develop and distribute educational material to science teachers within the nested school districts. These materials are intended to meet the new curriculum requirements for grades K-12. The watershed maps for teachers is complete, See Appendix A. During the next reporting cycle they will be printed and distributed to teachers throughout Genesee County.

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. This project has been in existence for fifteen years in Genesee County under the direction of the GISD. In 2003, the FRWC was asked to be the coordinator of the GREEN in the Flint River Watershed. 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.

Macroinvertebrate Monitoring Program: Since 1999, the FRWC has executed a bi-annual Benthic-Monitoring Program that has been performed to meet MDNRE requirements. This program has expanded from 18 sites to 30+ since its inception. 18 of those sites 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: An evaluation plan for the PEP is being developed. The evaluation plan will focus on monitoring outputs and outcomes of the education program. Currently, CAER 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.) CAER, 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 stormwater impacts on local waterways.

Areas that need :

- Staffing constraints does not allow enough time dedicated solely to education efforts
- Have had contract issues with certain partners

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.

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 no meetings but did meet with the MDEQ in October of 2010 to discuss the Ordinance and BMP manual requirements. The revised Ordinance and BMP manual based on that meeting was submitted to the MDEQ for review. We received some clarification on this matter in May 2010 and can proceed again with this process.

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

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. We met with the MDEQ On October 11, 2010 to discuss some issues. Revisions were made and the Ordinance and BMP manual were resubmitted. Subsequently the 2008-13 permit was withdrawn, causing confusion. In May we requested an update on the review. Although the State "will take no formal action on the alternative approach we submitted they do not see any problems with approving the updated post construction information as meeting the 2003 permit requirements".

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 done 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.

The goals of 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 as the County agent (City of burton is the Municipal Agent in their community) on behalf of Part 91of Public Act 451 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.

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 have not been officially approved by the State or adopted by the communities they are not included in this report.

4. MONITORING AND MAPPING SUB-COMMITTEE ACTIVITIES

The Monitoring and Mapping (M&M) Sub-Committee did not meet during this reporting period:

M&M Membership included:

- **City of Fenton – Dan Czarnecki**
- City of Montrose – Everett 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 – Larry Green**
- 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. ROAD-STREAM CROSSING SURVEY

No activity occurred during this reporting period.

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 MDNRE. Key activities for the Swartz Creek Watershed Project include physical inventory, public involvement, and public education.

Follow up

FRWC has submitted a proposal for an implementation grant for the Swartz Creek WMP through the Great lakes Initiative. Unfortunately their grant was not chosen for funding. They are planning to reapply in 2010-11.

Kearsley Creek Watershed Project

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

Gilkey Creek

The Gilkey Creek Watershed Plan has been granted 319 status by the MDNRE. 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.

Follow up

The Genesee County Drain Commissioner's Office has submitted a proposal for an implementation grant for the Gilkey Creek WMP through the Great lakes Initiative. Through the Drain Code, the GCDC has an active petition project that would provide a great opportunity to add water quality improvements to a drain project. Unfortunately their grant was not chosen for funding. Because of timing of the drain project, there was the decision not to reapply.

7. GENESEE GREEN

Project Green, now referred to as Genesee GREEN, has grown in Genesee County from approximately 100 students in 1990 to an excess of 3600 in 2011. 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. During the last reporting period, participation included:

57	Participating Educators
103	Classrooms
3,600+	Students
34	Mentors
20	Presenters

Schools are also encouraged to participate in a summit, where students are able to present their findings. On May 13, 2011, a student summit was held at Mott Community College and students 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.

Table7-1: Water Quality Index Calculation Chart

Test Parameter	Q-Value	Weighting Factor	Total
1. Dissolved oxygen	Q _{DO}	0.17	0.17 x Q _{DO}
2. Fecal coliform	Q _{FC}	0.16	0.16 x Q _{FC}
3. pH	Q _{pH}	0.11	0.11 x Q _{pH}
4. Biochemical oxygen demand	Q _{BOD}	0.11	0.11 x Q _{BOD}
5. Temperature	Q _T	0.11	0.11 x Q _T
6. Total phosphate	Q _P	0.10	0.10 x Q _P
7. Nitrates	Q _N	0.10	0.10 x Q _N
8. Turbidity	Q _{Turb}	0.08	0.08 x Q _{Turb}
9. Total solids	Q _{TS}	0.07	0.07 x 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 discernable 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 2010-2011, 7 sites were visited.

Table7-2: Genesee Green Results

ID_No	Location	Sampled Years	Water Quality Index (WQI)
Lower Flint River Watershed			
1L	Armstrong Creek at Dodge Road	2006-07, 2011	Good
2L	Craven and Benson Drain off Mt Morris Road	2007	Fair
3L	Mill Street Bridge	1993, 1998-2009	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	2001-07, 2008	Good
7L	Clio Bike Path at Jennings Road	2007, 2009	Fair**
8L	Flushing Park at Pavilion #2	2001-02, 2005	Good
9L	Mott Golf Course Bridge at hole #6	1993, 1998-2000, 2010	Good
10L	Pine Run at Clio Park	2006, 2009	Good
11L	North of Flushing at Mt. Morris Bridge	1998	Good

12L	Seymour Rd. North of Farrand Rd.	2009	Good
<i>Middle Flint River Watershed</i>			
1M	Swartz Creek at Hill Road Bridge	2005-06, 2009	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, 2009, 2010, 2011	Good
5M	Downstream from For-Mar Nature Center	2005	Fair
6M	Gilkey Creek behind Central High School	1991-92, 1994, 2002, 2009	Poor**
7M	Immediately west of the Farmer's Market	2004-06	Fair
8M	Pierson Drain at Atherton HS	2007	Good
9M	Swartz Creek at Happy Hollow	1993-94, 2002, 2004	Fair
10M	Swartz Creek at Swartz Creek M.S.	2005-06	Fair
11M	Swartz Creek at Van Slyke Road	2002	Fair
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	2005-06	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	2006-07, 2008-2010	Good*
19M	Thread Creek at Bristol Rd.	2008, 2009, 2010	Fair
20M	Upstream of For-Mar Nature Center	2004, 2006-2008, 2009	Fair
<i>Upper Flint River Watershed</i>			
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, 2003-07, 2008-2010	Fair**
<i>Shiawassee River Watershed</i>			
1S	Platform south of Main Street Bridge in Fenton	1992, 1996, 1998-99, 2001-02, 2004	Fair
2S	Linden Mill Pond (Shiawassee River)	2007, 2008-10	Good
3S	Fenton Mill Pond (Shiawassee River)	2009	Fair
<i>Unknown Watershed</i>			
1UNK	Unlisted Location	2009	Good

*Improved since previous sampling event

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

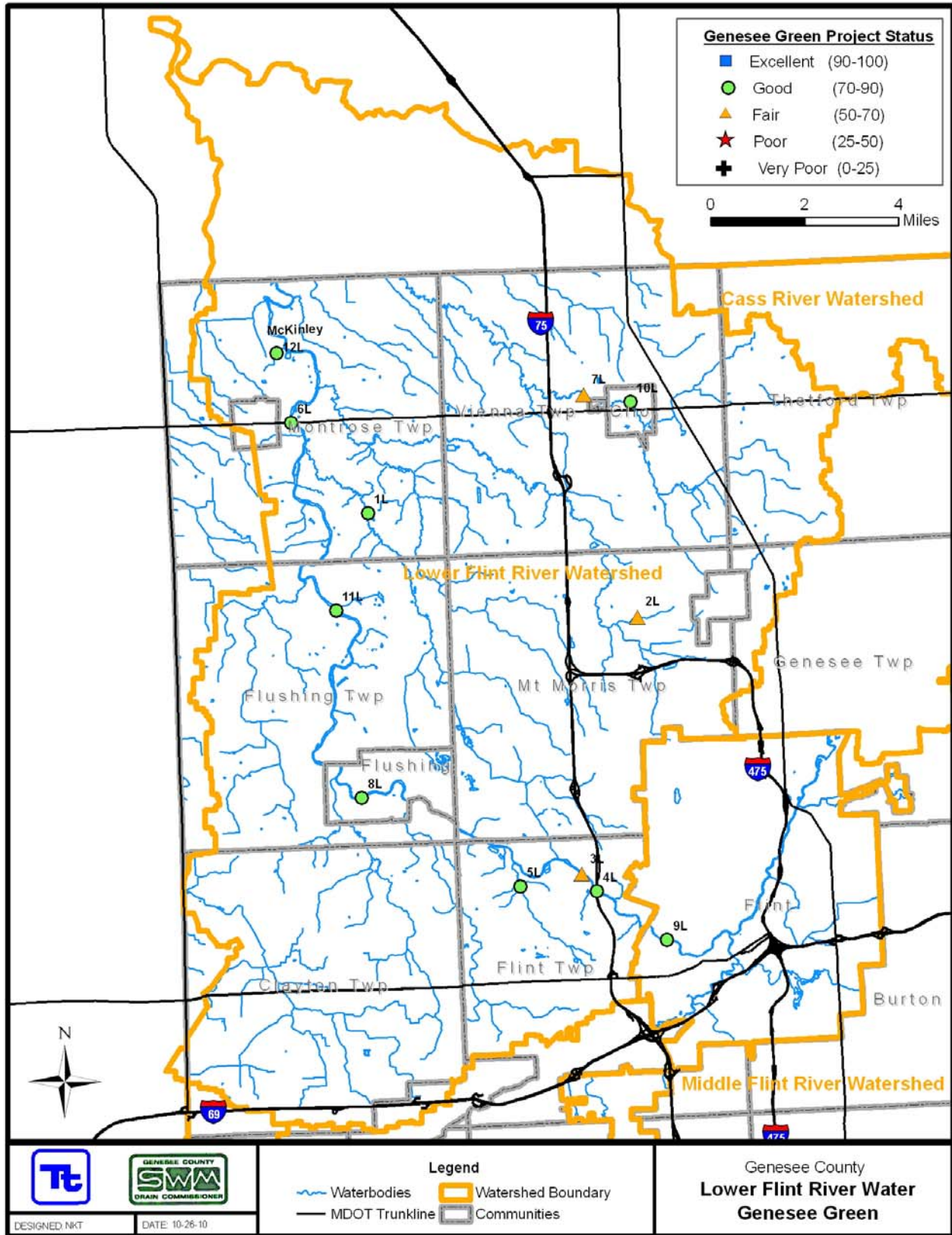


Figure 7-2: Genesee Green Results for the Middle Flint River Watershed

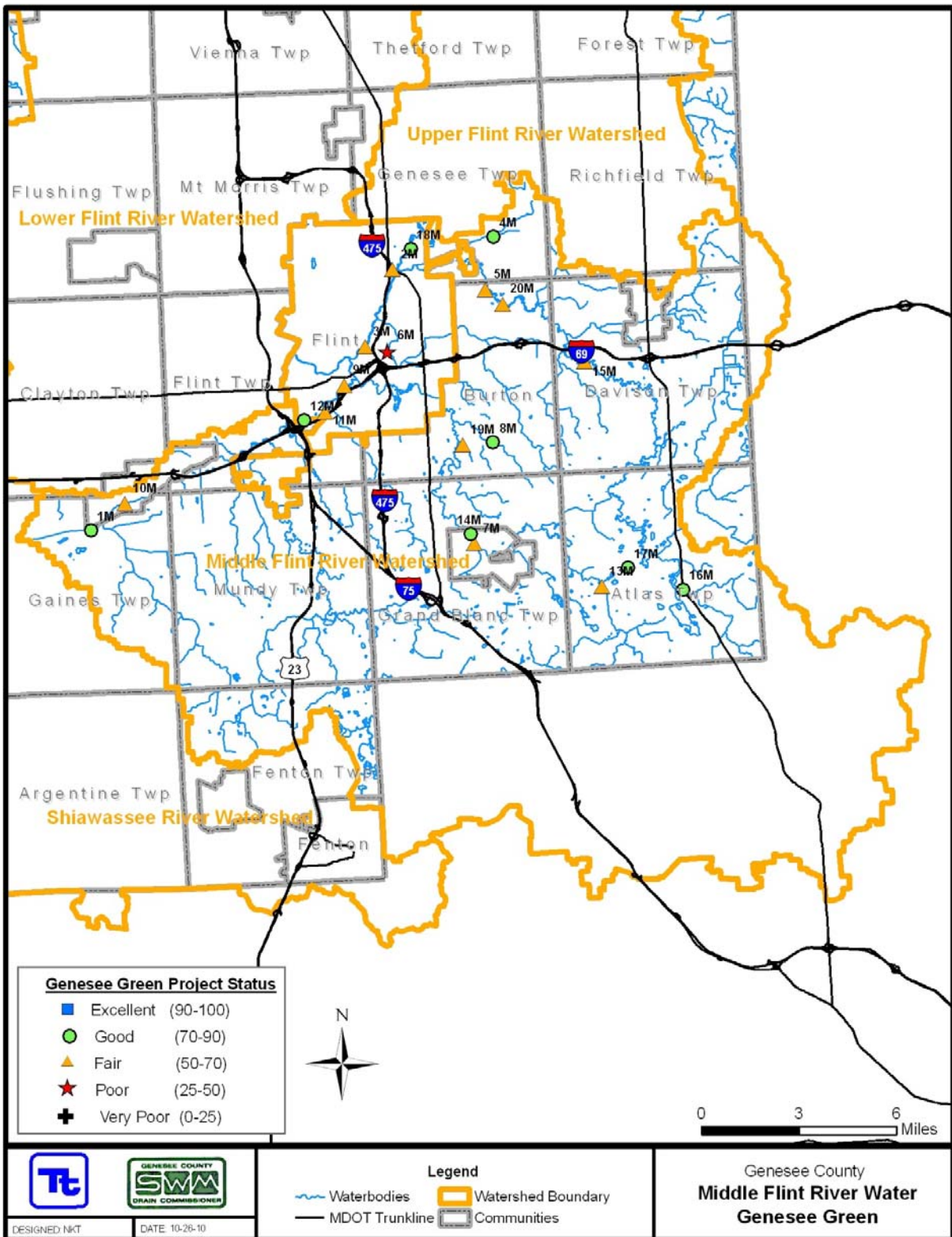


Figure 7-3: Genesee Green Results for the Middle Flint River Watershed

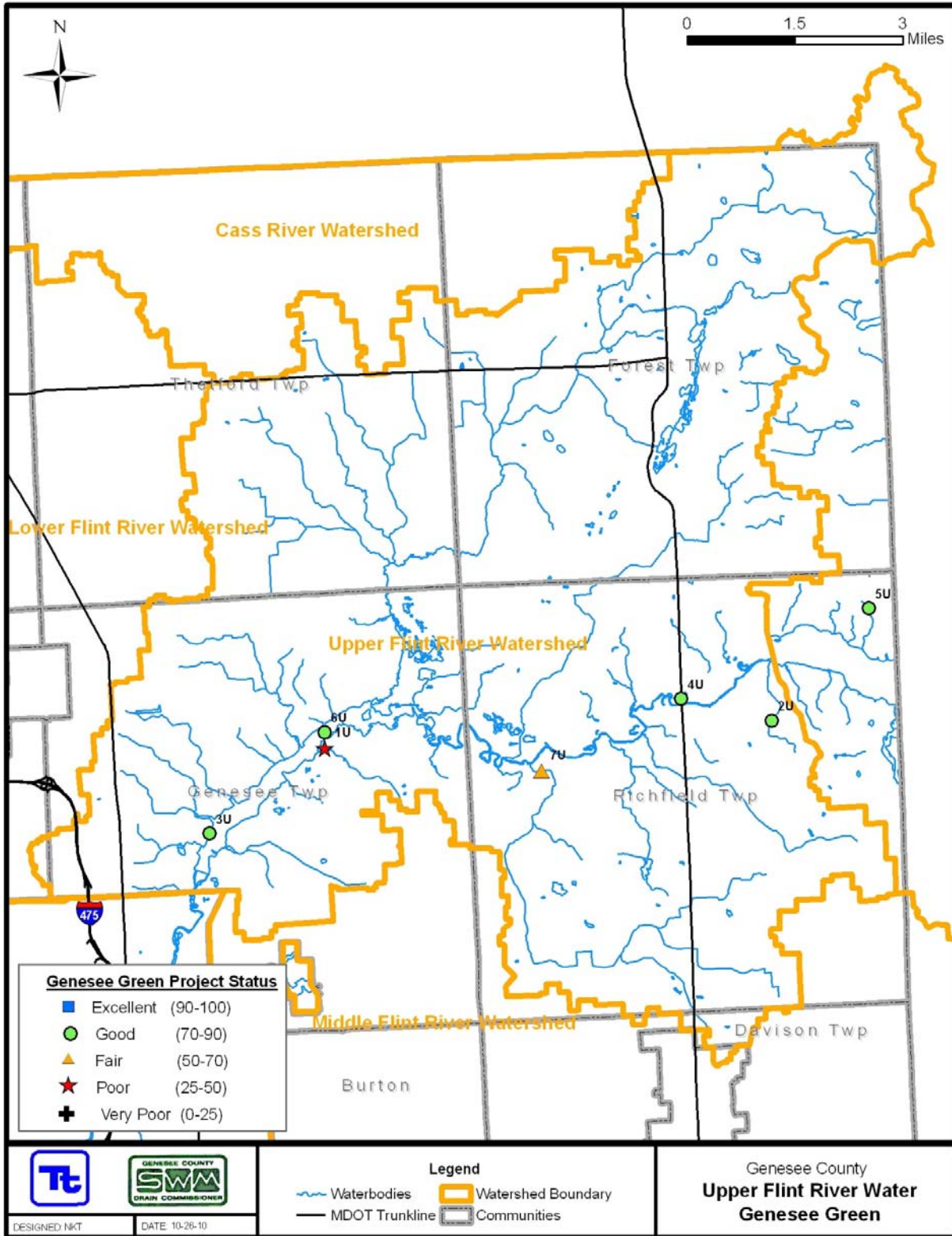


Figure 7-4: Genesee Green Results for the Upper Flint River Watershed

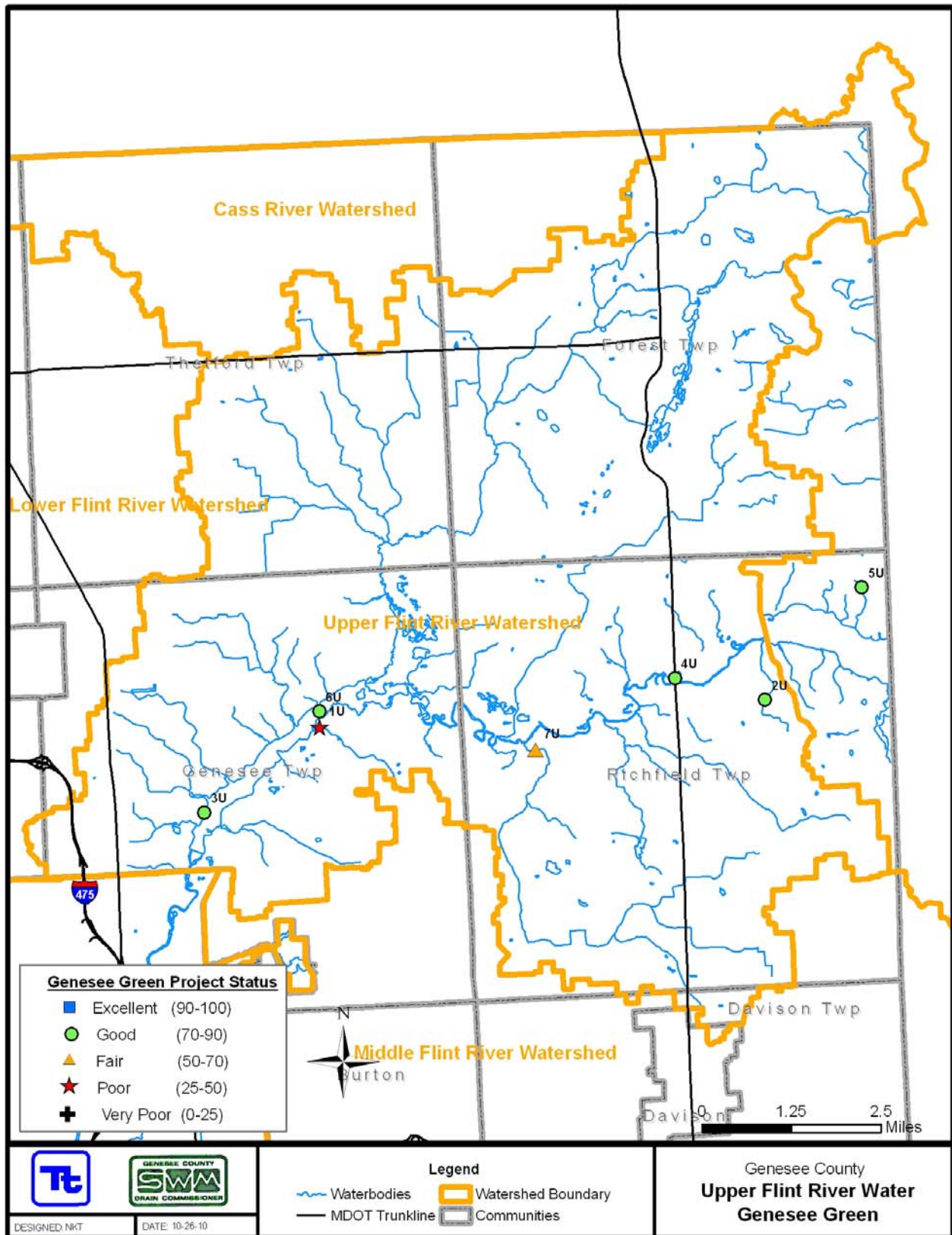
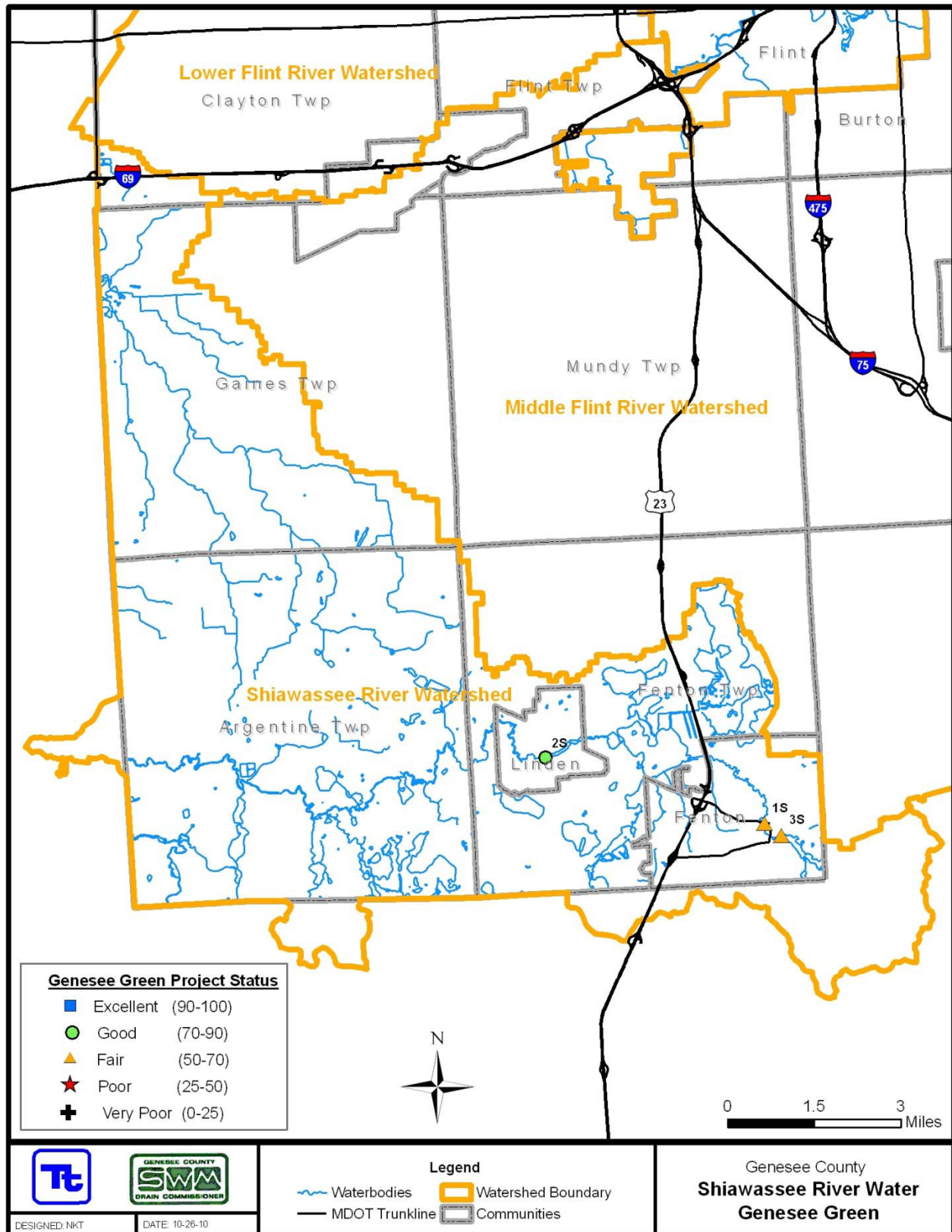


Figure 7-5: Genesee Green Results for the Shiawassee River Watershed





Flint River GREEN

(Global Rivers Environmental Education Network)

The Flint River Watershed Coalition, with our partners, coordinates an applied curriculum for middle and high school students that have a positive impact on the environment, now and into the future.

Using scientific methods, students conduct various tests to assess the health of a local river or stream. Students then work to identify any environmental problems, research the causes of the problem, and develop solutions to improve the health of their stream. Beyond merely identifying the environmental issue, the class works to make positive changes in practices or policies that allowed the problem to emerge in the first place.

Professional mentors from agencies across the watershed contribute to student learning and awareness. Prior mentors have come from General Motors, the Genesee County Drain Commissioner's office, City of Flint, the Center for Applied Environmental Research at UM-Flint, TetraTech, Flint River Watershed Coalition, Sierra Club, and Delphi.

In Genesee, Lapeer, and Oakland counties, the work done in Flint River GREEN compliments the on-going monitoring project that the Watershed Coalition has conducted for several years. It also provides information for use by the Genesee County Drain Commissioner in fulfilling responsibilities relative to storm water runoff concerns and abatement.

The Watershed Coalition currently has over 30 classrooms in a number of Genesee County school districts involved in Flint River GREEN. In 2009, FRWC started expanding this program beyond the Genesee County boarder starting with Brandon Middle School in Oakland County. This program has been expanded to include North Branch and Lapeer Community schools for the 2010 season.

The Flint River Watershed Coalition partners with Earthforce and the Genesee and Lapeer Intermediate School Districts to run Flint River GREEN. The Genesee County Community Water Quality Consortium's *Our Water* campaign, General Motors, the Royal Bank of Canada, and the Raymond C. & Anne T. Johnson Family Foundation generously support this program.

For additional information, contact Suzanne Lossing, Education & Outreach Coordinator for the Flint River Watershed Coalition at (810) 767-9491 slossing@FlintRiver.org; or visit one of the following websites: Flintriver.org Earthforce.org

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 MDNRE 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 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). Data for 2011 is currently being analyzed and will be updated in the 2011-2012 annual report.

Table 8-1: Macroinvertebrate Study Results

ID_No	Location	Sampled Years	Water Quality Index (WQI)	Water Quality Changes Last Period/Current Period
<i>Lower Flint River Watershed</i>				
A-L	Pine Run Headwaters	1999-2000, 2003-2010	Fair	No Change
B-L	Misteguay Creek Headwaters	1999-2000, 2004-2010	Fair	No Change
C-L	Flint River, Flushing	1999-2010	Excellent	Fair/Excellent
D-L	Brent Run	1999-2003, 2005-2010	Fair	Good/Fair
E-L	Brent Run Headwaters	1999-2000, 2004-2010	Fair	Poor/Fair
<i>Middle Flint River Watershed</i>				
A-M	Swartz Creek	1999-2010	Good	Fair/Good
B-M	Thread Creek	1999-2010	Fair	No Change
C-M	Thread Creek Headwaters	1999-2010	Good	No Change
D-M	Kearsley Creek	1999, 2001-2010	Good	No Change
E-M	Kearsley Creek Headwaters	1999-2003, 2005, 2007-2010	Fair	No Change
F-M	Gilkey Creek	1999-2010	Poor	Good/Poor
G-M	Gilkey Creek Headwaters	2002-2010	Fair	Good/Fair
H-M	Gilkey Creek Restoration (Applewood)	2009-2010	Fair	New Site
I-M	Gilkey Creek Restoration (Kearsley Park)	2009-2010	Fair	New Site
<i>Upper Flint River Watershed</i>				
A-U	Butternut Creek Headwaters	2000-2010	Excellent	Good/Excellent
B-U	Flint River, Richfield	2000-2007	Replaced	Replaced with Clark Drain Site
C-U	Clark Drain, Richfield Park	2009-2010	Good	New Site
D-U	Butternut Creek	1999-2010	Fair	Fair
<i>Shiawassee River Watershed</i>				
A-S	Argentine	2008-2010	Fair	New Site
B-S	Linden	2008-2010	Good	New Site

It should be noted that there was no discernable 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

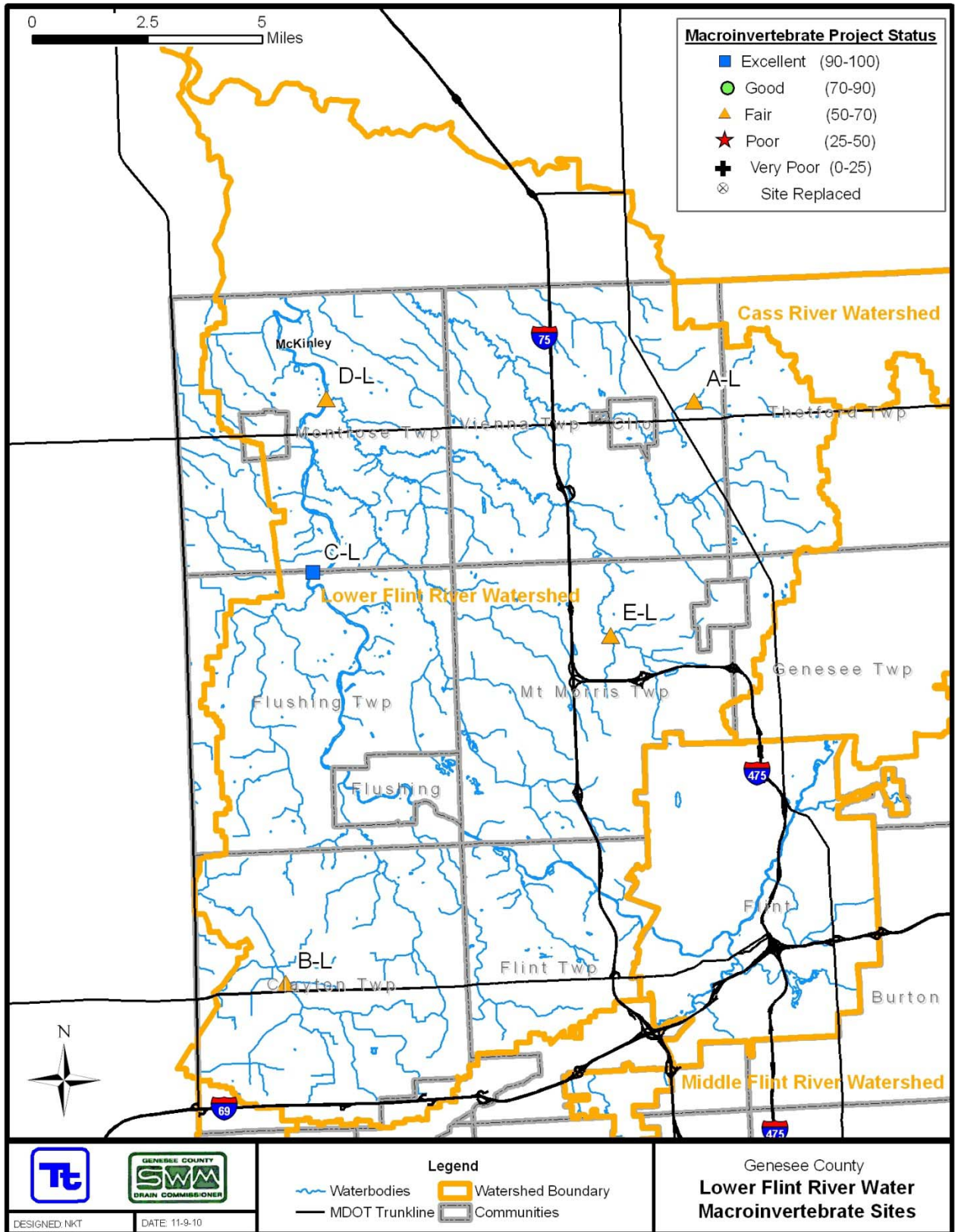


Figure 8-2: Macroinvertebrate Study Results for the Middle Flint River Watershed

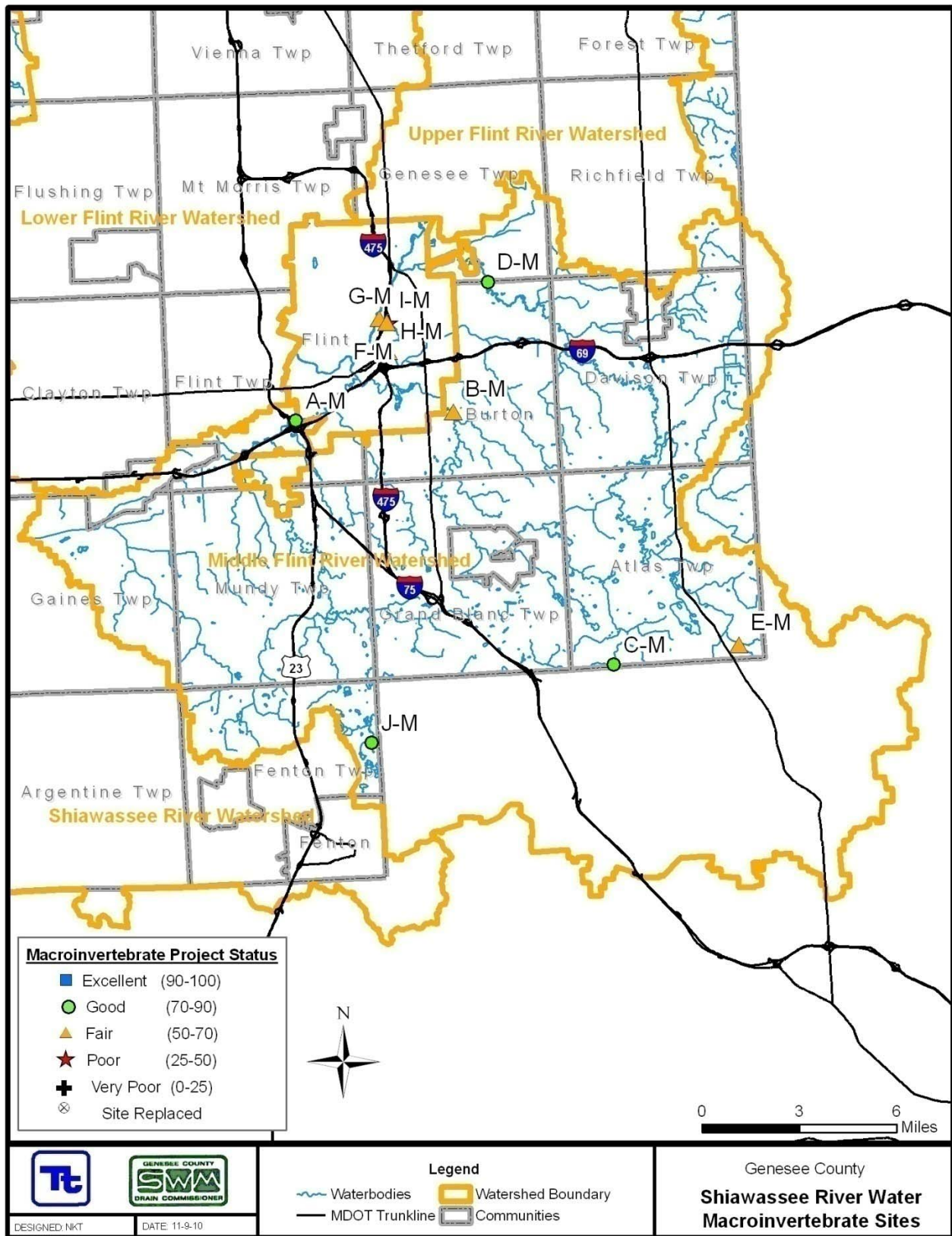


Figure 8-3: Macroinvertebrate Study Results for the Upper Flint River Watershed

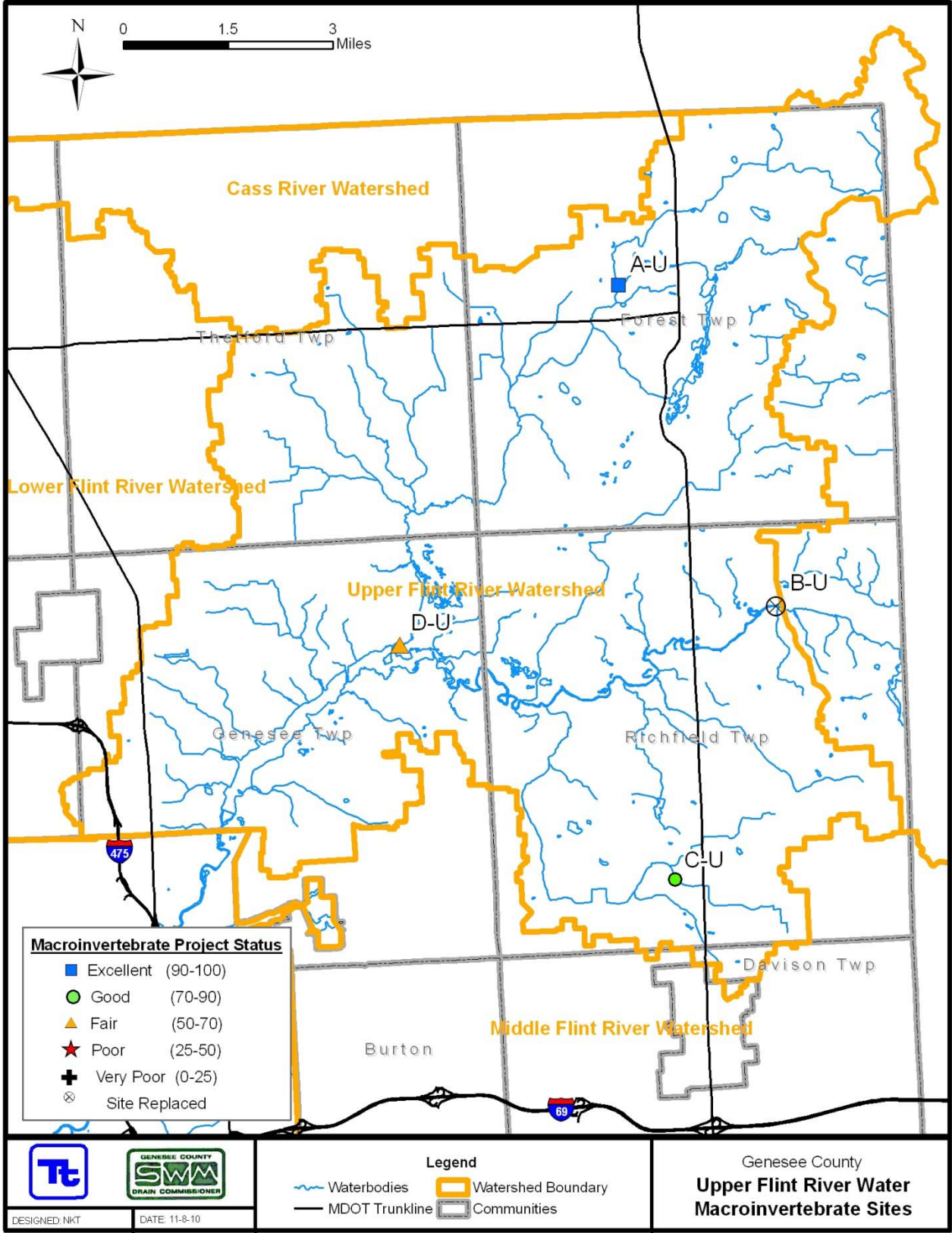
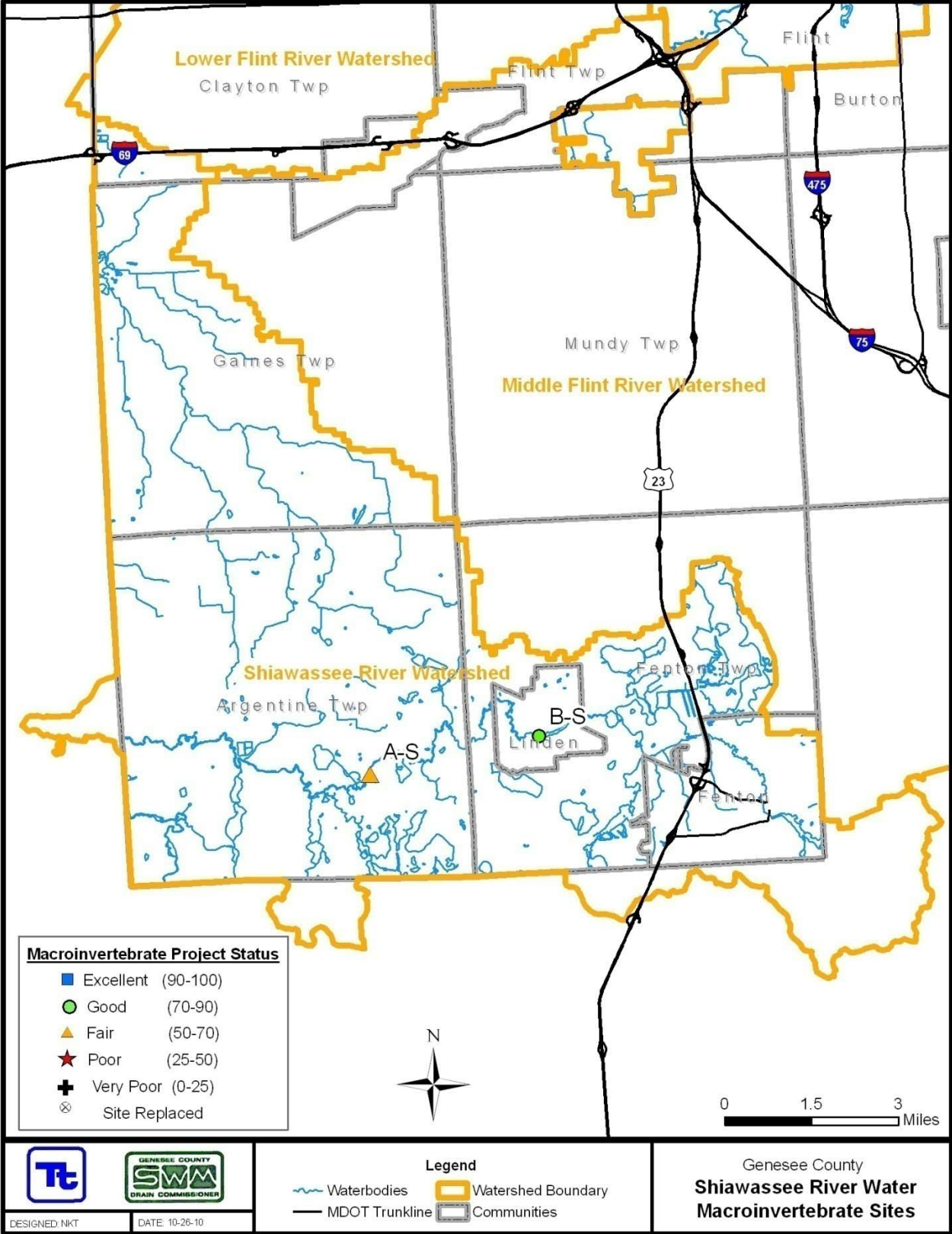


Figure 8-4: Macroinvertebrate Study Results for the Shiawassee River Watershed



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 2010-2011, 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 Clio**
- **City of Fenton**
- **City of Flushing**
- **City of Linden**
- **City of Mt. Morris**
- **Fenton Township**
- **Genesee Township**
- **Mt. Morris Township**
- **Mundy Township**
- **Vienna Township**

City of Clio

In 2010-2011, 22 outfalls were investigated and 3 were not found in the City of Clio. No illicit discharges were found in the City during this reporting period.

City of Fenton

In 2010-11, 68 outfalls were investigated, 7 outfalls were not found, 7 outfalls required further investigation, and 3 outfalls were found to be abandoned.

City of Flushing

In 2010-11, 82 outfalls were investigated, 3 outfalls were found to have E. coli contamination greater than 10,000 counts per 100 ml sample and require follow up investigation, and 6 outfalls were not found.

City of Linden

In 2010-11, 31 outfalls were investigated and 3 outfalls were not found. No illicit discharges were found in the City during this reporting period.

City of Mt. Morris

In 2010-11, 45 outfalls were investigated and 3 outfalls were not found. No illicit discharges were found in the City during this reporting period.

Fenton Township

In 2010-11, 5 outfalls were investigated. No illicit discharges were found in the Township during this reporting period.

Genesee Township

In 2010-11, 3 outfalls were investigated. No illicit discharges were found in the Township during this reporting period.

Mt. Morris Township

In 2010-11, 3 outfalls were investigated. No illicit discharges were found in the Township during this reporting period.

Mundy Township

In 2010-11, 2 outfalls were investigated. No illicit discharges were found in the Township during this reporting period.

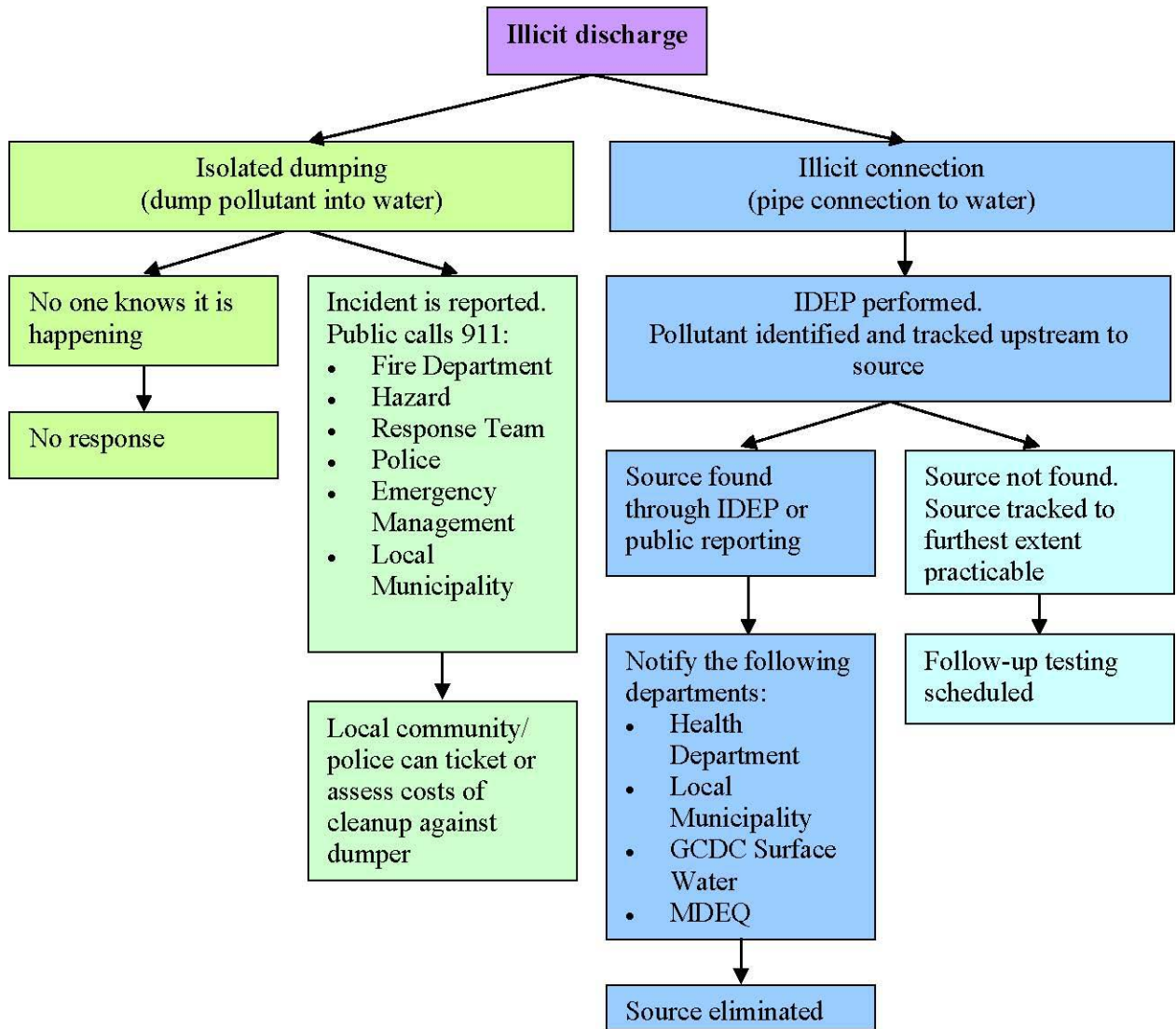
Vienna Township

In 2010-11, 7 outfalls were investigated. No illicit discharges were found in the Township during this reporting period.

GCDC

In 2010-11, 24 outfalls were investigated. No illicit discharges were found during this reporting period.

Figure 9-1: Illicit Discharge Notification System Process



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 Clio
- City of Fenton
- City of Flushing
- City of Linden
- City of Mt. Morris
- Fenton Township
- Flushing Charter Township
- Genesee Charter Township
- Genesee County Drain Comm.
- Mt. Morris Charter Township
- Mundy Charter Township
- Vienna Township

The following tables and figures show the outfalls investigated. The section concludes with a summary of the follow-up investigation undertaken in 2010-2011.

The Drain Office Continues to do follow up work this reporting cycle.

8833002- follow-up eliminated possibility of illicit discharge. Investigation closed

11269 Bristol Road has been identified as an illicit connection. All appropriate parties notified. Disconnection and follow up to be done next reporting cycle.

7134 Atherton Road has been identified as an illicit connection. All appropriate parties notified. Disconnection and follow up to be done next reporting cycle.

Table 10-1: GCDC Known Outfalls Investigated in 2011

OutfallNum	Owner	OutletsTo	Latitude	Longitude	Receiving Waterbody	Date Investigated
6723006	GC property	C of Grand Bl	0	0		
7502251	GCDC 0400	GCDC 0464	0	0	Messmore & Cronk	6/14/2011
7718001	GCB&G14	C of Flint	0	0	C of Flint- Flint River	9/12/2011
7718002	GCB&G	C of Flint	0	0	C of Flint- Flint River	
7718003	GCB&G7	C of Flint	0	0	C of Flint- Flint River	6/27/2011
7718004	GCB&G7	C of Flint	0	0	C of Flint- Flint River	6/27/2011
7718005	GCB&G11	C of Flint	0	0	C of Flint- Flint River	8/1/2011
7718006	GCB&G05	C of Flint	0	0	C of Flint- Flint River	
7718501	GCB&G15	C of Flint	0	0	C of Flint- Flint River	9/12/2011
7718502	GCB&G15	C of Flint	0	0	C of Flint- Flint River	
7718503	GCB&G15/14	C of Flint	0	0	C of Flint- Flint River	
7718504	GCB&G15	C of Flint	0	0	C of Flint- Flint River	
7729503	GCB&G3	GCDC	0	0	C of Flint- Flint River	8/15/2011
7729504	GCB&G3	GCDC	0	0	C of Flint- Flint River	8/15/2011
7734501	GCB&G2	C of Burton	0	0	C of Flint- Flint River	
8522507	GCDC 0353	GCDC 0353	0	0	Flint River	6/7/2011
8526001	GCDC 0147	C of Flushing	0	0	Flint River	
8527260	GCDC 0233	Nat Watercourse	0	0	Flint River	6/7/2011
8534012	GCDC 1503	GCDC 0764	0	0	Cole Creek	
8535755	GCDC 0400	GCDC 0400	0	0	Messmore & Cronk	6/14/2011
8536501	GCDC 1536	GCDC 0464	0	0	Messmore & Cronk	6/14/2011
8536502	GCDC 1536	GCDC 0464	0	0	Messmore & Cronk	6/14/2011
9635761	GCDC 0159	Nat Watercourse	0	0	Benjamin Run	
9635763	GCDC 0159	Nat Watercourse	0	0	Benjamin Run	

Figure 10-1: GCDC (City of Burton) Known Outfalls Investigated in 2011

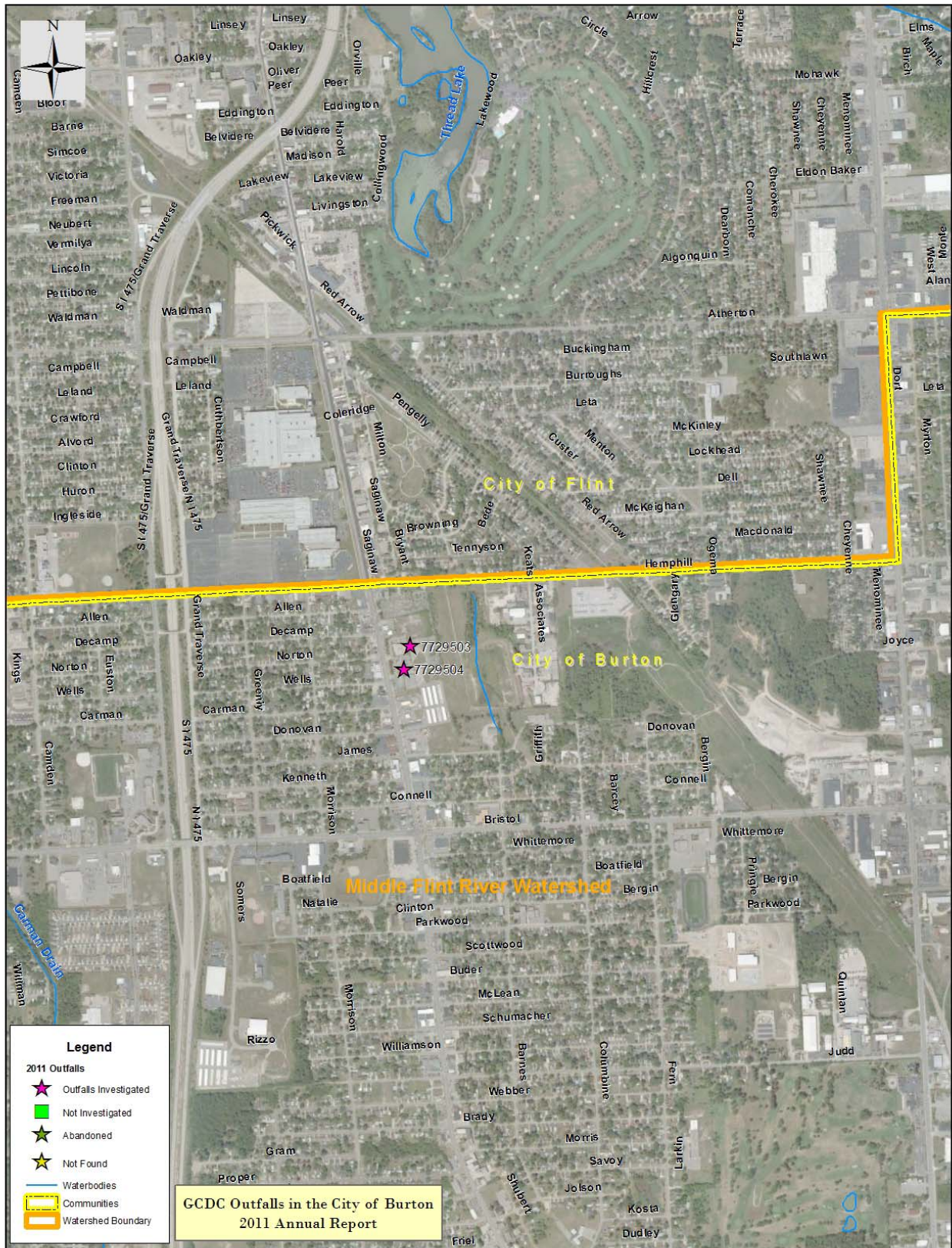


Figure 10-2: GCDC (City of Flushing & Township) Known Outfalls Investigated in 2011

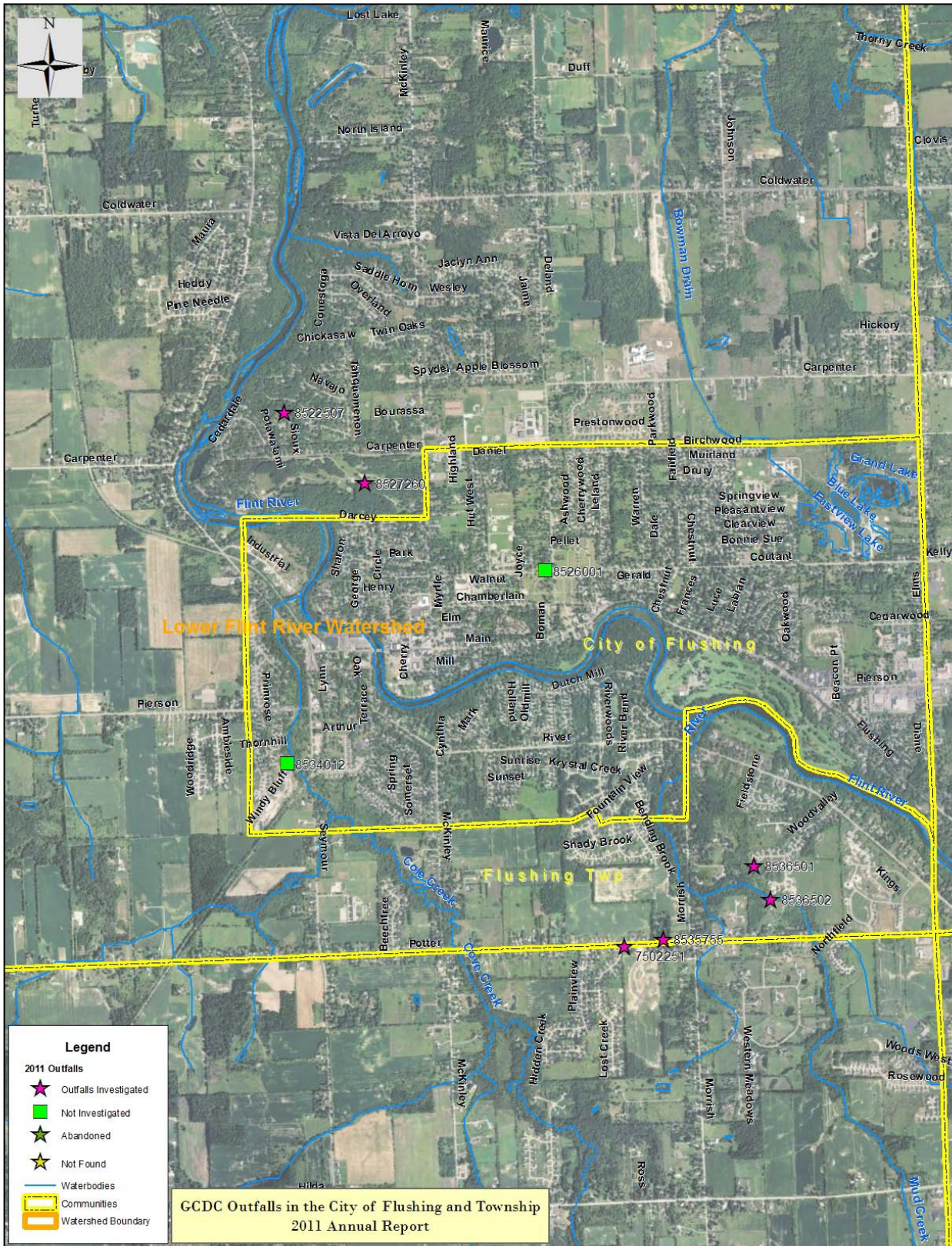


Figure 10-3: GCDC (City of Flint) Known Outfalls Investigated in 2011



Figure 10-4: GCDC (City of Grand Blanc) Known Outfalls Investigated in 2011



Figure 10-5: GCDC (Vienna Township) Known Outfalls Investigated in 2011

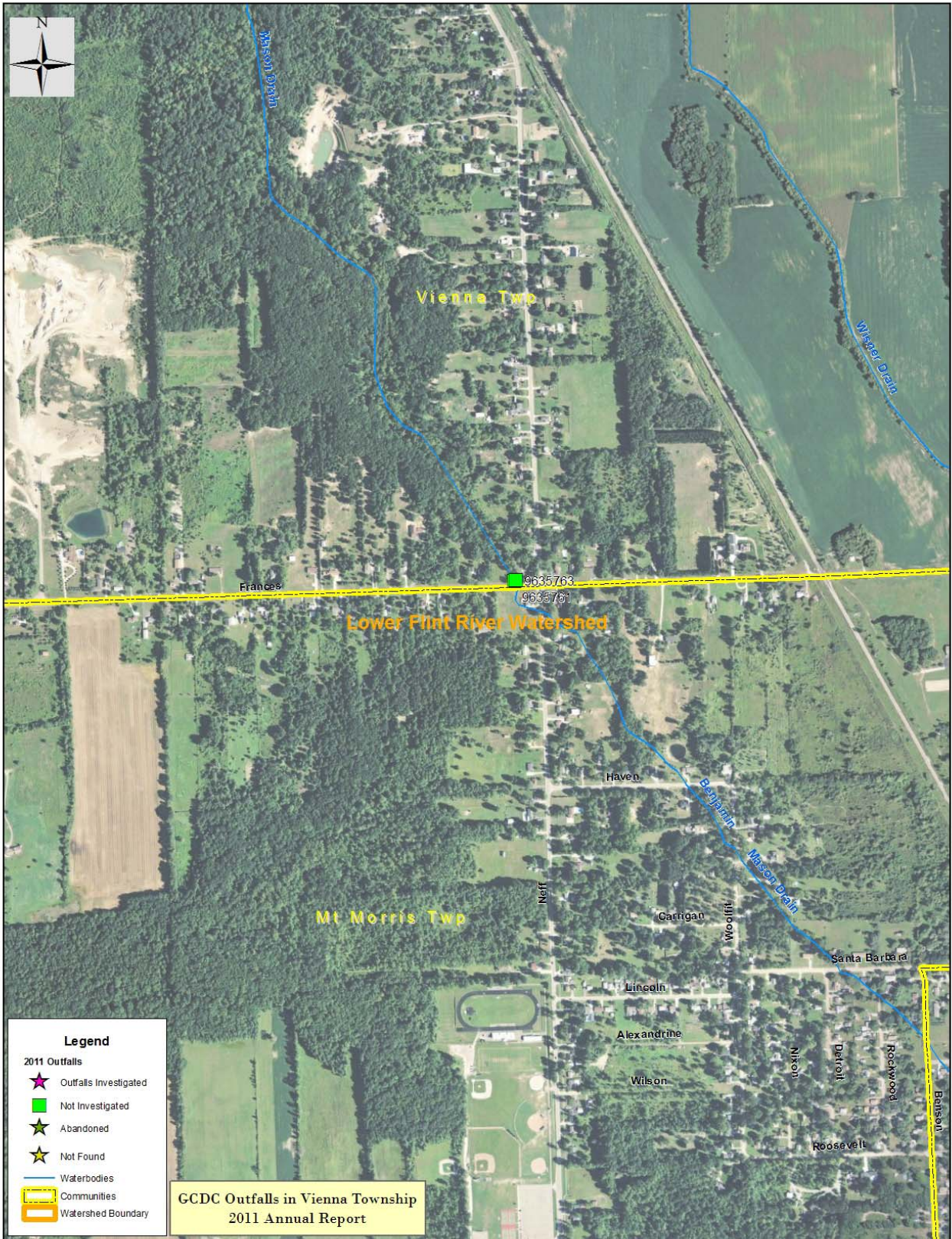


Table 10-2: City of Clio Known Outfalls Investigated in 2011

OutfallNum	Owner	OutletsTo	Latitude	Longitude	Receiving Waterbody	Date Investigated
9614502	C of Clio	Nat Watercourse	43.178	-83.7323	Pine Run	7/26/2011
9614523	C of Clio	Pine Run	43.179	-83.733	Pine Run	7/26/2011
9614524	C of Clio	Nat Watercourse	43.18	-83.7343	Pine Run	7/26/2011
9614525	C of Clio	Nat Watercourse	43.18	-83.7344	Pine Run	7/26/2011
9614530	C of Clio	Nat Watercourse	43.184	-83.7328	Collins Drain	7/27/2011
9614531	C of Clio	Nat Watercourse	43.184	-83.7312	Collins Drain	7/27/2011
9615509	C of Clio	Nat Watercourse	43.18	-83.7517	Pine Run	Not Found
9615513	C of Clio	Nat Watercourse	43.18	-83.7485	Pine Run	9/8/2011
9615754	C of Clio	Nat Watercourse	43.18	-83.7388	Pine Run	8/18/2011
9615757	C of Clio	Nat Watercourse	43.18	-83.735	Pine Run	7/26/2011
9615758	C of Clio	Nat Watercourse	43.18	-83.7349	Pine Run	7/26/2011
9615759	C of Clio	Nat Watercourse	43.18	-83.7369	Pine Run	7/27/2011
9615759A	C of Clio	Pine Run	43.18	-83.7363	Pine Run	7/27/2011
9615760	C of Clio	Pine Run	43.18	-83.7356	Pine Run	7/27/2011
9615761	C of Clio	Nat Watercourse	43.18	-83.7368	Pine Run	7/27/2011
9615765	C of Clio	Nat Watercourse	43.18	-83.7409	Pine Run	9/8/2011
9615770	C of Clio	Nat Watercourse	43.178	-83.7431	Pine RunTributary	7/27/2011
9615771	C of Clio	Rail Road	43.179	-83.739	Pine Run	7/27/2011
9615772	C of Clio	Railroad	43.182	-83.7398	Pine Run	Not Found
9615773	C of Clio	Railroad	43.181	-83.7394	Pine Run	Not Found
9622005	C of Clio	MDOT	43.177	-83.7424	Pine RunTributary	8/18/2011
9623013	C of Clio	Nat Watercourse	43.175	-83.7313	Benjamin Run	8/18/2011
9623016	C of Clio	Wetland	43.174	-83.7301	Pine Run	8/18/2011
9623017	C of Clio	Nat Watercourse	43.175	-83.7258	Pine Run	8/18/2011
9623501	C of Clio	Nat Watercourse	43.17	-83.7293	Benjamin Run	8/18/2011

Table 10-3: City of Fenton Known Outfalls Investigated in 2011

OutfallNum	Owner	OutletsTo	Latitude	Longitude	Receiving Waterbody	Date Investigated
5623507	C of Fenton	Wetland	42.817	-83.7201	Shiawassee River	8/16/2011
5623752	C of Fenton	Wetland	42.813	-83.7144	Shiawassee River	8/16/2011
5623754	C of Fenton	?????	42.817	-83.7138	Lake Fenton	8/16/2011
5625002	C of Fenton	Wetland	42.81	-83.7019	Shiawassee River	8/25/2011
5625506	C of Fenton	Nat Watercourse	42.802	-83.7058	Shiawassee River	8/25/2011
5625507	C of Fenton	Nat Watercourse	42.8	-83.706	Shiawassee River	8/25/2011
5625508	C of Fenton	Nat Watercourse	42.801	-83.706	Shiawassee River	8/25/2011
5625509	C of Fenton	Nat Watercourse	42.8	-83.7058	Shiawassee River	8/25/2011
5625510	C of Fenton	Nat Watercourse	42.799	-83.7071	Shiawassee River	8/2/2011
5625511	C of Fenton	Nat Watercourse	42.799	-83.7082	Shiawassee River	8/2/2011
5625513	C of Fenton	Nat Watercourse	42.805	-83.7065	Shiawassee River	8/25/2011
5625751	C of Fenton	Wetland	42.804	-83.687	Shiawassee River	
5625752	C of Fenton	Wetland	42.8	-83.6869	Shiawassee River	
5626005	C of Fenton	Adams Drain	42.805	-83.7238	Adams Drain	
5626007	C of Fenton	Adams Drain	42.805	-83.7237	Adams Drain	6/28/2011
5626251	C of Fenton	Nat Watercourse	42.806	-83.7086	Shiawassee River	9/14/2011
5626255	C of Fenton	Wetland	42.812	-83.7133	Shiawassee River	9/14/2011
5626256	C of Fenton	Nat Watercourse	42.809	-83.7125	Shiawassee River	9/14/2011
5626262	C of Fenton	Wetland	42.812	-83.7141	Shiawassee River	9/14/2011
5626265	C of Fenton	Nat Watercourse	42.808	-83.7119	Shiawassee River	Not Found
5626266	C of Fenton	Wetland	42.81	-83.7124	Shiawassee River	
5626267	C of Fenton	Nat Watercourse	42.806	-83.7087	Shiawassee River	8/2/2011
5626268	C of Fenton	Wetland	42.805	-83.7087	Shiawassee River	8/23/2011
5626501	C of Fenton	Wetland	42.804	-83.723	Adams Drain	6/28/2011
5626502	C of Fenton	GCDC 0124	42.803	-83.7233	Adams Drain	6/28/2011
5626503	C of Fenton	GCDC 0124	42.801	-83.7262	Adams Drain	6/28/2011
5627002	C of Fenton	Shoreline	42.806	-83.742	Lake	Not Found
5627253	C of Fenton	Wetland	42.806	-83.7302	Egyptian Drain	8/2/2011
5627760	C of Fenton	GCDC 0867	42.8	-83.7346	Egyptian Drain	6/27/2011
5627761	C of Fenton	GCDC 0867	42.801	-83.7341	Egyptian Drain	6/27/2011
5627762	C of Fenton	GCDC 0867	42.802	-83.7339	Egyptian Drain	6/27/2011
5627763	C of Fenton	GCDC 0867	42.802	-83.7339	Egyptian Drain	6/27/2011
5627764	C of Fenton	GCDC 0867	42.804	-83.7347	Egyptian Drain	6/27/2011
5627765	C of Fenton	GCDC 0867	42.804	-83.7335	Egyptian Drain	6/27/2011
5634001	C of Fenton	GCDC 0867	42.794	-83.7404	Egyptian Drain	6/27/2011
5634002	C of Fenton	GCDC 0867	42.795	-83.7379	Egyptian Drain	6/27/2011
5634003	C of Fenton	GCDC 0867	42.795	-83.7387	Egyptian Drain	6/27/2011
5634004	C of Fenton	GCDC 0867	42.795	-83.7396	Egyptian Drain	6/27/2011
5634005	C of Fenton	GCDC 0867	42.79	-83.7444	Egyptian Drain	6/27/2011
5634006	C of Fenton	GCDC 0867	42.79	-83.7445	Egyptian Drain	6/27/2011

OutfallNum	Owner	OutletsTo	Latitude	Longitude	Receiving Waterbody	Date Investigated
5634255	C of Fenton	GCDC 0867	42.796	-83.7327	Egyptian Drain	6/28/2011
5634259	C of Fenton	GCDC 0867	42.796	-83.7324	Egyptian Drain	6/28/2011
5634501	C of Fenton	MDOT	42.786	-83.7408	Egyptian Drain	
5634751	C of Fenton	GCDC 0867	42.79	-83.7321	Egyptian Drain	6/28/2011
5634752	C of Fenton	GCDC 0867	42.79	-83.7325	Egyptian Drain	6/28/2011
5634753	C of Fenton	GCDC 0867	42.79	-83.7326	Egyptian Drain	6/28/2011
5635001	C of Fenton	GCDC 0124	42.794	-83.7198	Adams Drain	9/14/2011
5635003	C of Fenton	GCDC 0124	42.796	-83.7198	Adams Drain	Not Found
5635251	C of Fenton	GCDC 0124	42.796	-83.7156	Adams Drain	Not Found
5635501	C of Fenton	GCDC 0124	42.79	-83.7215	Adams Drain	
5635502	C of Fenton	GCDC 0124	42.788	-83.7244	Adams Drain	6/28/2011
5636001	C of Fenton	Nat Watercourse	42.796	-83.7068	Shiawassee River	8/2/2011
5636005	C of Fenton	Nat Watercourse	42.796	-83.7067	Shiawassee River	8/23/2011
5636006	C of Fenton	Nat Watercourse	42.795	-83.7067	Shiawassee River	8/23/2011
5636010	C of Fenton	Nat Watercourse	42.795	-83.7046	Shiawassee River	8/23/2011
5636011	C of Fenton	Nat Watercourse	42.794	-83.7045	Shiawassee River	8/23/2011
5636017	C of Fenton	Shoreline	42.794	-83.7041	Shiawassee River	9/12/2011
5636018	C of Fenton	Shoreline	42.794	-83.7031	Shiawassee River	9/12/2011
5636023	C of Fenton	Shoreline	42.795	-83.7011	Shiawassee River	9/12/2011
5636024	C of Fenton	Shoreline	42.794	-83.6995	Shiawassee River	8/23/2011
5636026	C of Fenton	Shoreline	42.792	-83.6972	Shiawassee River	9/12/2011
5636030	C of Fenton	Nat Watercourse	42.798	-83.7065	Shiawassee River	8/2/2011
5636031	C of Fenton	Nat Watercourse	42.798	-83.7067	Shiawassee River	8/2/2011
5636032	C of Fenton	Nat Watercourse	42.797	-83.7068	Shiawassee River	Abandoned
5636033	C of Fenton	Nat Watercourse	42.797	-83.7069	Shiawassee River	8/25/2011
5636034	C of Fenton	Shoreline	42.794	-83.703	Shiawassee River	Abandoned
5636035	C of Fenton	Shoreline	42.794	-83.702	Shiawassee River	9/12/2011
5636036	C of Fenton	Shoreline	42.795	-83.7016	Shiawassee River	9/12/2011
5636037	C of Fenton	Shoreline	42.795	-83.7012	Shiawassee River	9/12/2011
5636038	C of Fenton	Shoreline	42.794	-83.6995	Shiawassee River	Abandoned
5636039	C of Fenton	Nat Watercourse	42.795	-83.7051	Shiawassee River	8/23/2011
5636040	C of Fenton	Nat Watercourse	42.795	-83.7049	Shiawassee River	8/23/2011
5636253	C of Fenton	Wetland	42.794	-83.694	Shiawassee River	Not Found
5636254	C of Fenton	wetland	42.794	-83.6939	Shiawassee River	Not Found
5636255	C of Fenton	wetland	42.794	-83.6951	Shiawassee River	7/14/2011
5636256	C of Fenton	wetland	42.793	-83.6934	Shiawassee River	7/14/2011
5636257	C of Fenton	wetland	42.792	-83.693	Shiawassee River	Not Found
5636258	C of Fenton	Wetland	42.791	-83.6909	Shiawassee River	7/14/2011
5636752	C of Fenton	Wetland	42.791	-83.6896	Shiawassee River	7/14/2011
5636753	C of Fenton	Wetland	42.788	-83.694	Shiawassee River	9/12/2011

Figure 10-7: City of Fenton Known Outfalls Investigated in 2011

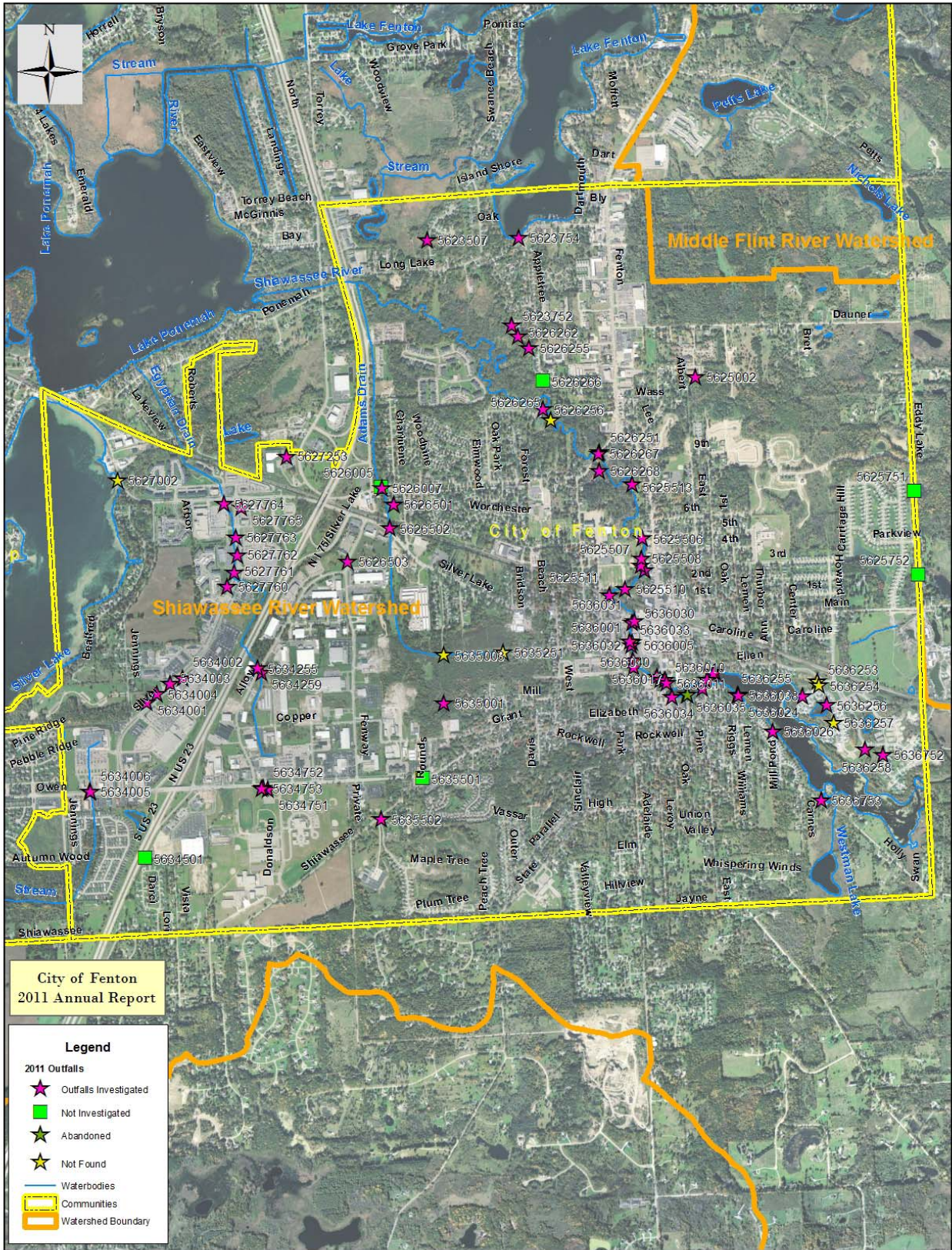


Table 10-4: City of Flushing Known Outfalls Investigated in 2011

OutfallNum	Owner	OutletsTo	Latitude	Longitude	Receiving Waterbody	Date Investigated
8534009	C of Flushing	Nat Watercourse	43.056	-83.8645	Cole Creek	
8534007	C of Flushing	GCDC 0764	43.058	-83.8643	Cole Creek	
8523751	C of Flushing	GCDC 0195	43.075	-83.8331	Bowman, Firman Branch	6/14/2011
8525001	C of Flushing	GCDC 0280	43.067	-83.8307	Flint River	6/15/2011
8525002	C of Flushing	GCDC 0280	43.067	-83.8283	Flint River	6/15/2011
8525003	C of Flushing	GCDC 0280	43.067	-83.8266	Flint River	6/15/2011
8525004	C of Flushing	GCDC 1431	43.067	-83.8255	Flint River	6/15/2011
8525005	C of Flushing	GCDC 0280	43.068	-83.8255	Flint River	6/15/2011
8525006	C of Flushing	GCDC 0280	43.069	-83.8255	Flint River	6/15/2011
8525007	C of Flushing	GCDC 0280	43.07	-83.8255	Flint River	6/14/2011
8525008	C of Flushing	GCDC 0280	43.071	-83.8255	Flint River	6/14/2011
8525009	C of Flushing	GCDC 0062	43.074	-83.8255	Boman Drain	6/14/2011
8525010	C of Flushing	GCDC 1431	43.071	-83.823	Flint River	6/15/2011
8525011	C of Flushing	GCDC 0062	43.075	-83.8284	Boman Drain	6/14/2011
8525501	C of Flushing	GCDC 0426	43.062	-83.8261	Flint River	
8525502	C of Flushing	GCDC 0426	43.061	-83.8238	Flint River	10/12/2011
8525503	C of Flushing	GCDC 1431	43.062	-83.823	Flint River	6/21/2011
8525751	C of Flushing	GCDC 1431	43.066	-83.821	Flint River	
8525752	C of Flushing	GCDC 0312	43.06	-83.8173	French Drain	10/12/2011
8526251	C of Flushing	GCDC 0195	43.075	-83.8385	Bowman, Firman Branch	6/15/2011
8526252	C of Flushing	GCDC 0303	43.07	-83.8355	Bowman, Firman Branch	6/14/2011
8526501	C of Flushing	Nat Watercourse	43.061	-83.8439	Flint River	
8526502	C of Flushing	Nat Watercourse	43.062	-83.8473	Flint River	
8526503	C of Flushing	Nat Watercourse	43.062	-83.8489	Flint River	
8526507	C of Flushing	Nat Watercourse	43.061	-83.8421	Flint River	
8526509	C of Flushing	Nat Watercourse	43.061	-83.8432	Flint River	
8526511	C of Flushing	Nat Watercourse	43.061	-83.849	Flint River	
8526513	C of Flushing	Nat Watercourse	43.061	-83.8498	Flint River	
8526514	C of Flushing	Nat Watercourse	43.065	-83.8457	Flint River Tributary	6/21/2011
8526515	C of Flushing	Nat Watercourse	43.063	-83.8439	Flint River Tributary	Not Found
8526516	C of Flushing	Nat Watercourse	43.063	-83.8439	Flint River Tributary	9/7/2011
8526517	C of Flushing	Nat Watercourse	43.063	-83.8438	Flint River Tributary	9/7/2011
8526751	C of Flushing	Nat Watercourse	43.061	-83.8406	Flint River	
8526752	C of Flushing	Nat Watercourse	43.065	-83.8382	Flint River	
8526753	C of Flushing	Nat Watercourse	43.065	-83.8361	Flint River	
8526754	C of Flushing	Nat Watercourse	43.064	-83.8345	Flint River	
8526770	C of Flushing	Nat Watercourse	43.06	-83.8365	Flint River Tributary	6/21/2011
8526771	C of Flushing	Nat Watercourse	43.06	-83.837	Flint River Tributary	6/21/2011
8526772	C of Flushing	Nat Watercourse	43.06	-83.8361	Flint River Tributary	Not Found
8527256	C of Flushing	Nat Watercourse	43.067	-83.8618	Flint River	

OutfallNum	Owner	OutletsTo	Latitude	Longitude	Receiving Waterbody	Date Investigated
8527257	C of Flushing	Nat Watercourse	43.07	-83.8596	Flint River Tributary	6/7/2011
8527258	C of Flushing	GCP&R	43.071	-83.8551	Schillman Drain	6/7/2011
8527259	C of Flushing	GCRC	43.075	-83.853	Cheney Drain	6/7/2011
8527501	C of Flushing	Nat Watercourse	43.062	-83.8635	Cole Creek	
8527502	C of Flushing	Nat Watercourse	43.064	-83.8648	Cole Creek	
8527503	C of Flushing	Nat Watercourse	43.065	-83.8655	Cole Creek	
8527504	C of Flushing	GCDC 0764	43.066	-83.8631	Cole Creek	9/8/2011
8527696	C of Flushing	Nat Watercourse	43.063	-83.8646	Cole Creek	
8527758	C of Flushing	Nat Watercourse	43.062	-83.8572	Flint River	9/7/2011
8527765	C of Flushing	Nat Watercourse	43.063	-83.8564	Flint River	9/7/2011
8527769	C of Flushing	Nat Watercourse	43.064	-83.8579	Flint River	
8527772	C of Flushing	Nat Watercourse	43.064	-83.8593	Flint River	
8527780	C of Flushing	Nat Watercourse	43.063	-83.8571	Flint River	9/7/2011
8527781	C of Flushing	Nat Watercourse	43.061	-83.8573	Flint River	9/7/2011
8527784	C of Flushing	Nat Watercourse	43.062	-83.8568	Flint River	Not Found
8527861	C of Flushing	Nat Watercourse	43.06	-83.8543	Flint River	9/7/2011
8527862	C of Flushing	Nat Watercourse	43.06	-83.8526	Flint River	
8527866	C of Flushing	Flint River	43.06	-83.853	Flint River	9/7/2011
8527868	C of Flushing	Flint River	43.06	-83.8529	Flint River	
8534001	C of Flushing	GCDC 0764	43.06	-83.8632	cole creek	9/8/2011
8534010	C of Flushing	Nat Watercourse	43.059	-83.8639	Cole Creek	
8534011	C of Flushing	GCDC 0764	43.058	-83.8625	Cole Creek	
8534251	C of Flushing	Wetland	43.055	-83.8617	Cove Creek	6/7/2011
8534252	C of Flushing	Wetland	43.055	-83.8596	Cole Creek	Not Found
8534254	C of Flushing	Nat Watercourse	43.053	-83.857	Cole Creek	
8534256	C of Flushing	GCDC 0764	43.055	-83.8592	Cole Creek	Not Found
8534257	C of Flushing	Nat Watercourse	43.059	-83.8534	Flint River	
8535012	C of Flushing	Nat Watercourse	43.055	-83.8456	Flint River Tributary	6/20/2011
8535013	C of Flushing	Nat Watercourse	43.054	-83.8462	Flint River Tributary	6/20/2011
8535252	C of Flushing	Nat Watercourse	43.057	-83.8387	Flint River Tributary	6/21/2011
8535253	C of Flushing	Nat Watercourse	43.055	-83.8397	Flint River Tributary	6/20/2011
8535254	C of Flushing	Nat Watercourse	43.055	-83.8414	Flint River Tributary	6/21/2011
8535255	C of Flushing	Nat Watercourse	43.054	-83.8391	Flint River Tributary	6/20/2011
8535256	C of Flushing	Nat Watercourse	43.054	-83.838	Flint River Tributary	6/20/2011
8535257	C of Flushing	GCDC 0464	43.054	-83.8347	Messmore & Cronk	6/20/2011
8535751	C of Flushing	Nat Watercourse	43.052	-83.8379	Flint River Tributary	6/21/2011
8535752	C of Flushing	Nat Watercourse	43.052	-83.842	Flint River Tributary	Not Found
8535753	C of Flushing	Nat Watercourse	43.053	-83.8417	Flint River Tributary	6/20/2011
8535754	C of Flushing	Nat Watercourse	43.053	-83.842	Flint River Tributary	6/20/2011
8536002	C of Flushing	Nat Watercourse	43.057	-83.8239	Flint River	
8536010	C of Flushing	Nat Watercourse	43.054	-83.8313	Messmore & Cronk	6/21/2011

OutfallNum	Owner	OutletsTo	Latitude	Longitude	Receiving Waterbody	Date Investigated
8536260	C of Flushing	Nat Watercourse	43.055	-83.8194	Flint River	10/12/2011
8536261	C of Flushing	GCDC 0426	43.055	-83.816	French Drain	10/12/2011

Table 10-5: City of Linden Known Outfalls Investigated in 2011

OutfallNum	Owner	OutletsTo	Latitude	Longitude	Receiving Waterbody	Date Investigated
5617510	C of Linden	GCDC 1521	42.829	-83.7801	Shiawassee, Spring Meadows Br	Not Found
5617511	C of Linden	GCDC 1521	42.826	-83.7817	Shiawassee, Spring Meadows Br	8/1/2011
5617512	C of Linden	GCDC 1521	42.826	-83.7819	Shiawassee, Spring Meadows Br	8/1/2011
5619750	C of Linden	Nat Watercourse	42.813	-83.7909	Shiawassee River	8/1/2011
5619751	C of Linden	Nat Watercourse	42.812	-83.7927	Shiawassee River	8/1/2011
5620001	C of Linden	Nat Watercourse	42.823	-83.7836	Shiawassee River	8/16/2011
5620002	C of Linden	Nat Watercourse	42.823	-83.7836	Shiawassee River	8/16/2011
5620251	C of Linden	Nat Watercourse	42.82	-83.7725	Shiawassee River	8/11/2011
5620257	C of Linden	Nat Watercourse	42.819	-83.7714	Shiawassee River	8/16/2011
5620258	C of Linden	Nat Watercourse	42.82	-83.7725	Shiawassee River	8/11/2011
5620501	C of Linden	Nat Watercourse	42.816	-83.7825	Shiawassee River	8/8/2011
5620502	C of Linden	Nat Watercourse	42.816	-83.7825	Shiawassee river	8/8/2011
5620503	C of Linden	Nat Watercourse	42.816	-83.7823	Shiawassee River	8/8/2011
5620504	C of Linden	Nat Watercourse	42.816	-83.7822	Shiawassee River	8/8/2011
5620505	C of Linden	Nat Watercourse	42.818	-83.7842	Shiawassee River	8/16/2011
5620506	C of Linden	Nat Watercourse	42.816	-83.7843	Shiawassee River	8/8/2011
5620513	C of Linden	Nat Watercourse	42.817	-83.7773	Shiawassee River	8/11/2011
5620514	C of Linden	Nat Watercourse	42.816	-83.7817	Shiawassee River	8/8/2011
5620515	C of Linden	Nat Watercourse	42.816	-83.7814	Shiawassee River	8/8/2011
5620516	C of Linden	Nat Watercourse	42.816	-83.7821	Shiawassee River	8/8/2011
5620517	C of Linden	Nat Watercourse	42.816	-83.7817	Shiawassee River	8/8/2011
5620518	C of Linden	Nat Watercourse	42.816	-83.7816	Shiawassee River	Not Found
5620519	C of Linden	Nat Watercourse	42.816	-83.783	Shiawassee River	8/8/2011
5620520	C of Linden	Shiawassee	42.816	-83.7837	Shiawassee River	8/8/2011
5620522	C of Linden	Nat Watercourse	42.816	-83.7775	Shiawassee River	8/8/2011
5620524	C of Linden	Nat Watercourse	42.816	-83.7829	Shiawassee River	8/8/2011
5620527	C of Linden	Nat Watercourse	42.816	-83.7808	Shiawassee River	Not Found
5620753	C of Linden	Nat Watercourse	42.818	-83.7738	Shiawassee River	8/11/2011
5620755	C of Linden	Nat Watercourse	42.819	-83.7736	Shiawassee River	8/11/2011
5621501	C of Linden	RR	42.817	-83.7656	Shiawassee River	8/11/2011
5621502	C of Linden	GCRC	42.811	-83.7635	Shiawassee River	8/11/2011
5630251	C of Linden	Lake	42.807	-83.7933	Byram Lake Drain	8/16/2011

Figure 10-9: City of Linden Known Outfalls Investigated in 2011



Table 10-6: City of Mt. Morris Known Outfalls Investigated in 2011

OutfallNum	Owner	OutletsTo	Latitude	Longitude	Receiving Waterbody	Date Investigated
8706507	C of Mt Morris	GCDC 0159	0	0	Benjamin Run Tributary	9/13/2011
8601767	C of Mt. Morris	GCDC 0159	43.124	-83.7044	Benjamin Run Tributary	9/13/2011
8601768	C of Mt. Morris	GCDC 0159	43.123	-83.7035	Benjamin Run Tributary	7/20/2011
8601769	C of Mt. Morris	GCDC 0159	43.123	-83.703	Benjamin Run Tributary	7/20/2011
8601754	C of Mt. Morris	GCDC 0159	43.123	-83.703	Benjamin Run Tributary	7/20/2011
8601755	C of Mt. Morris	GCDC 0159	43.122	-83.7027	Benjamin Run Tributary	7/20/2011
8601756	C of Mt. Morris	GCDC 0159	43.122	-83.7023	Benjamin Run Tributary	7/20/2011
8601757	C of Mt. Morris	GCDC 0159	43.122	-83.7025	Benjamin Run Tributary	Not Found
8601758	C of Mt. Morris	GCDC 0159	43.121	-83.7015	Benjamin Run Tributary	7/20/2011
8601759	C of Mt. Morris	GCDC 0159	43.121	-83.7005	Benjamin Run Tributary	Not Found
8601760	C of Mt. Morris	GCDC 0159	43.121	-83.6996	Benjamin Run Tributary	7/20/2011
8601761	C of Mt. Morris	GCDC 0159	43.121	-83.6986	Benjamin Run Tributary	7/20/2011
8601762	C of Mt. Morris	GCDC 0159	43.121	-83.6976	Benjamin Run Tributary	9/13/2011
8601763	C of Mt. Morris	GCDC 0159	43.122	-83.6977	Benjamin Run Tributary	9/13/2011
8601764	C of Mt. Morris	GCDC 0159	43.122	-83.6951	Benjamin Run Tributary	Not Found
8601765	C of Mt. Morris	GCDC 0159	43.122	-83.6946	Benjamin Run Tributary	7/19/2011
8706501	C of Mt. Morris	GCDC 0159	43.122	-83.6943	Benjamin Run Tributary	7/19/2011
8601766	C of Mt. Morris	GCDC 0159	43.122	-83.6946	Benjamin Run Tributary	7/18/2011
8706502	C of Mt. Morris	GCDC 0159	43.122	-83.6923	Benjamin Run Tributary	9/13/2011
8706503	C of Mt. Morris	GCDC 0159	43.123	-83.6914	Benjamin Run Tributary	9/13/2011
8706504	C of Mt. Morris	GCDC 0159	43.123	-83.6901	Benjamin Run Tributary	7/19/2011
8706505	C of Mt. Morris	GCDC 0159	43.123	-83.6899	Benjamin Run Tributary	7/19/2011
8706506	C of Mt. Morris	GCDC 0159	43.122	-83.69	Benjamin Run Tributary	7/19/2011
8707001	C of Mt. Morris	GCDC 0216	43.116	-83.6928	Benjamin Run Tributary	7/18/2011
8707002	C of Mt. Morris	GCDC 0216	43.116	-83.6928	Benjamin Run Tributary	7/18/2011
8707003	C of Mt. Morris	GCDC 0216	43.114	-83.6902	Benjamin Run Tributary	7/18/2011
8612261	C of Mt. Morris	GCDC 0216	43.118	-83.6962	Benjamin Run Tributary	7/20/2011
8612262	C of Mt. Morris	GCDC 0216	43.118	-83.6961	Benjamin Run Tributary	7/20/2011
8612263	C of Mt. Morris	GCDC 0216	43.118	-83.6958	Benjamin Run Tributary	7/20/2011
8612264	C of Mt. Morris	GCDC 0216	43.118	-83.696	Benjamin Run Tributary	7/20/2011
8612265	C of Mt. Morris	GCDC 0216	43.118	-83.6976	Benjamin Run Tributary	7/19/2011
8612266	C of Mt. Morris	GCDC 0216	43.118	-83.6977	Benjamin Run Tributary	7/19/2011
8601770	C of Mt. Morris	GCDC 0216	43.119	-83.6982	Benjamin Run Tributary	7/19/2011
8601771	C of Mt. Morris	GCDC 0216	43.119	-83.6981	Benjamin Run Tributary	7/19/2011
8612267	C of Mt. Morris	GCDC 0216	43.119	-83.6981	Benjamin Run Tributary	7/19/2011
8612268	C of Mt. Morris	GCDC 0216	43.119	-83.6978	Benjamin Run Tributary	7/19/2011
8612269	C of Mt. Morris	GCDC 0216	43.119	-83.6978	Benjamin Run Tributary	7/19/2011
8612270	C of Mt. Morris	GCDC 0216	43.119	-83.6978	Benjamin Run Tributary	7/19/2011
8612251	C of Mt. Morris	GCDC0013	43.118	-83.7043	Craven & Benson, Branch #1	9/13/2011
8612252	C of Mt. Morris	GCDC0013	43.117	-83.7042	Craven & Benson, Branch #1	7/18/2011

OutfallNum	Owner	OutletsTo	Latitude	Longitude	Receiving Waterbody	Date Investigated
8612253	C of Mt. Morris	GCDC0013	43.117	-83.7042	Craven & Benson, Branch #1	7/18/2011
8612254	C of Mt. Morris	GCDC0013	43.116	-83.7018	Craven & Benson, Branch #1	7/18/2011
8612255	C of Mt. Morris	GCDC0013	43.116	-83.7018	Craven & Benson, Branch #1	7/18/2011
8612256	C of Mt. Morris	GCDC0013	43.116	-83.7018	Craven & Benson, Branch #1	7/18/2011
8612257	C of Mt. Morris	GCDC0013	43.117	-83.7018	Craven & Benson, Branch #1	7/18/2011
8612258	C of Mt. Morris	GCDC0013	43.115	-83.7018	Craven & Benson, Branch #1	7/18/2011
8612259	C of Mt. Morris	GCDC0013	43.117	-83.7018	Craven & Benson, Branch #1	7/18/2011
8612260	C of Mt. Morris	GCDC0013	43.114	-83.7018	Craven & Benson, Branch #1	7/18/2011

Figure 10-10: City of Mt. Morris Known Outfalls Investigated in 2011

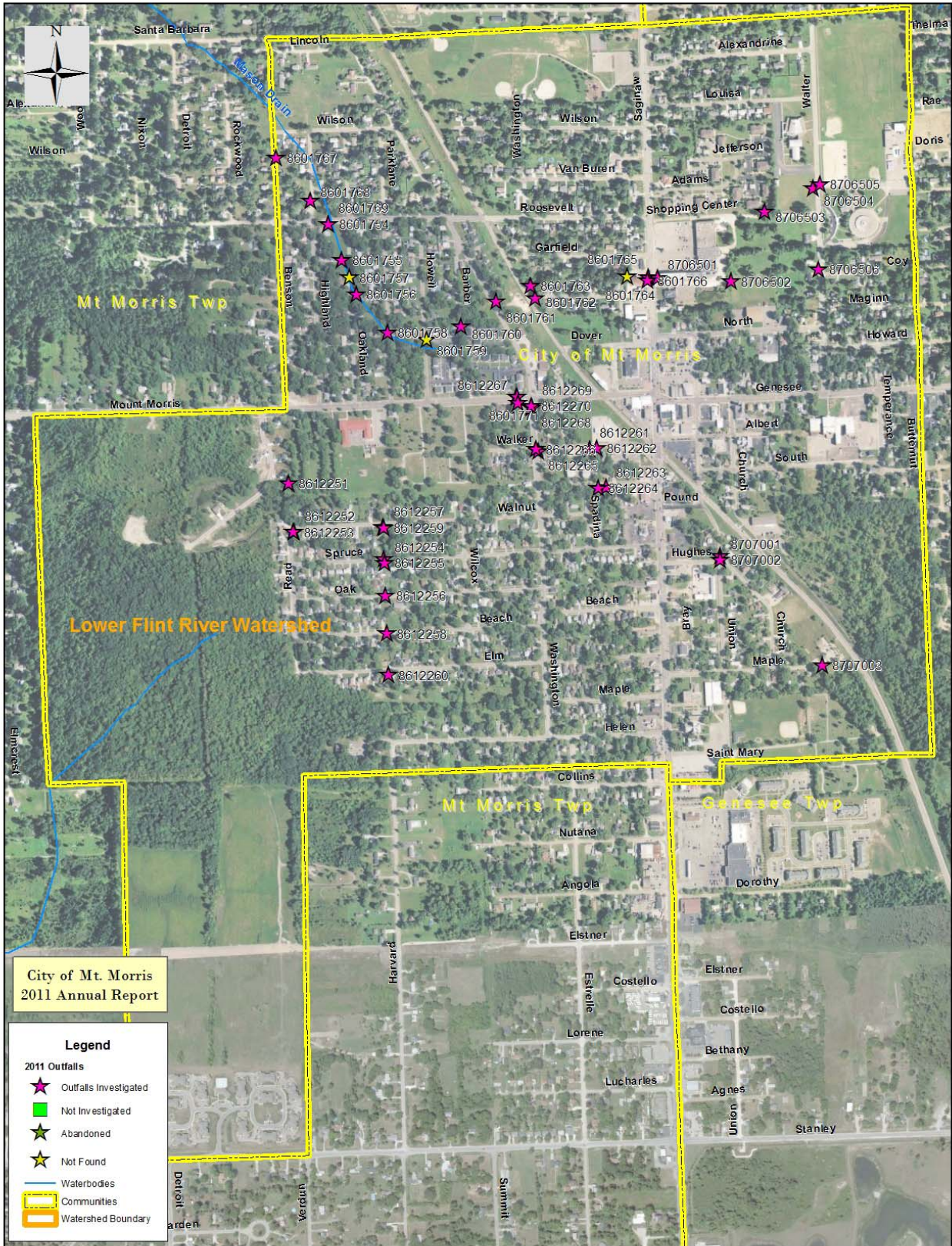


Table 10-7: Fenton Township Known Outfalls Investigated in 2011

OutfallNum	Owner	OutletsTo	Latitude	Longitude	Receiving Waterbody	Date Investigated
5611252	Fenton Twp	Wetland	42.854	-83.7166	Lake Fenton	7/14/2011
5611253	Fenton Twp	Wetland	42.855	-83.7163	Lake Fenton	7/14/2011
5611254	Fenton Twp	Wetland	42.855	-83.7163	Lake Fenton	7/14/2011
5611255	Fenton Twp	Wetland	42.855	-83.7167	Lake Fenton	7/14/2011
5632251	Fenton Twp	GCRC	42.789	-83.7703	Egyptian Drain	7/14/2011

Table 10-8: Genesee Township Known Outfalls Investigated in 2011

OutfallNum	Owner	OutletsTo	Latitude	Longitude	Receiving Waterbody	Date Investigated
8711003	Genesee Twp	Nat Watercourse	43.113	-83.6157	Green Arbor Drain	8/15/2011
8711504	Genesee Twp	Nat Watercourse	43.112	-83.6151	Green Arbor Drain	8/15/2011
8735504	Genesee Twp	GCRC	43.051	-83.6085	Kearsley Creek	8/15/2011

Figure 10-12: Genesee Township Known Outfalls Investigated in 2011

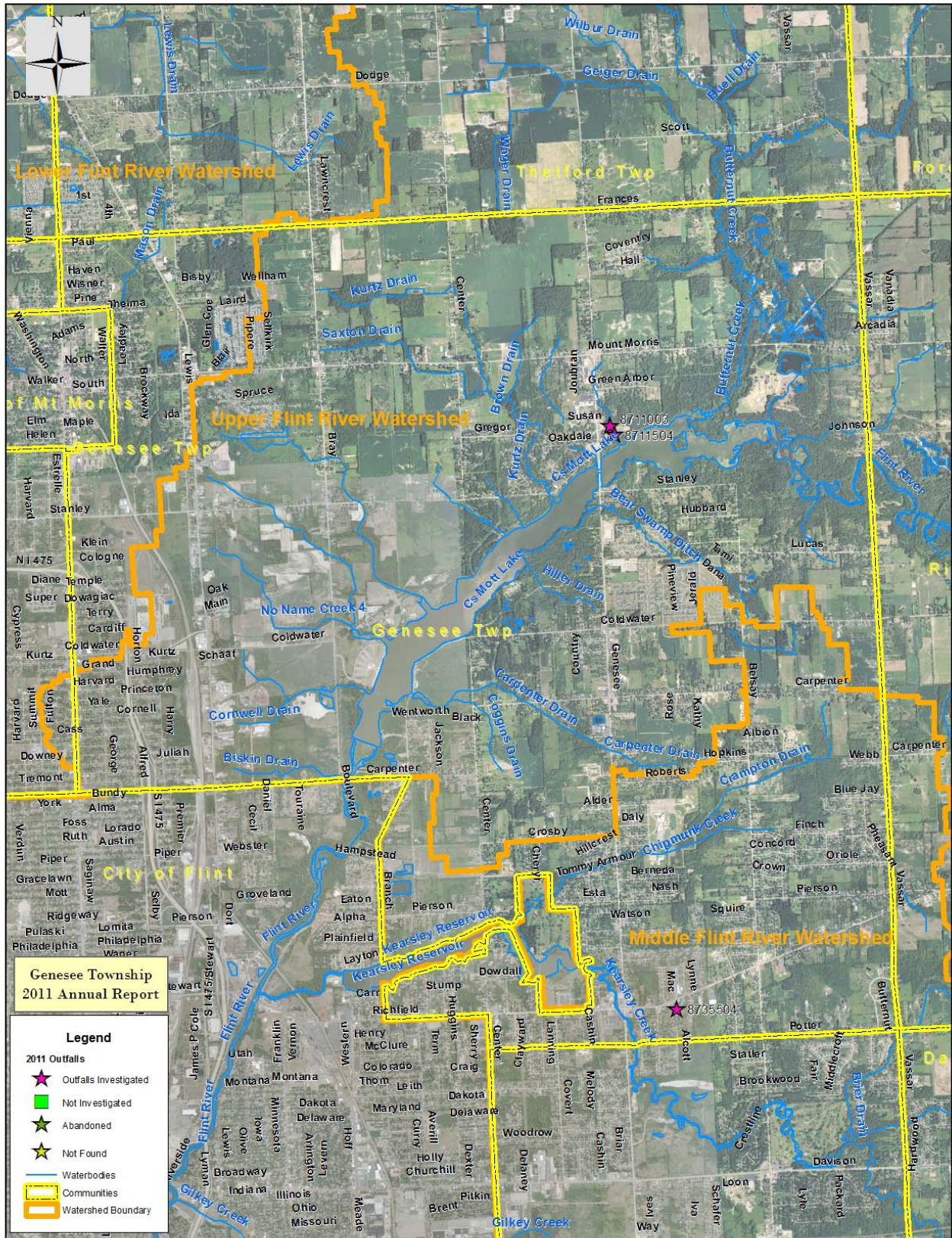


Table 10-9: Mt. Morris Township Known Outfalls Investigated in 2011

OutfallNum	Owner	OutletsTo	Latitude	Longitude	Receiving Waterbody	Date Investigated
8622251	Mt. Morris Twp	GCDC 0420	43.089	-83.738	Daly Drain	8/15/2011
8627501	Mt. Morris Twp	GCDC 0358	43.064	-83.7531	Hartshorn, Branch #1	8/15/2011
8627502	Mt. Morris Twp	GCDC 0358	43.065	-83.7531	Hartshorn, Branch #1	9/13/2011

Figure 10-13: Mt. Morris Township Known Outfalls Investigated in 2011

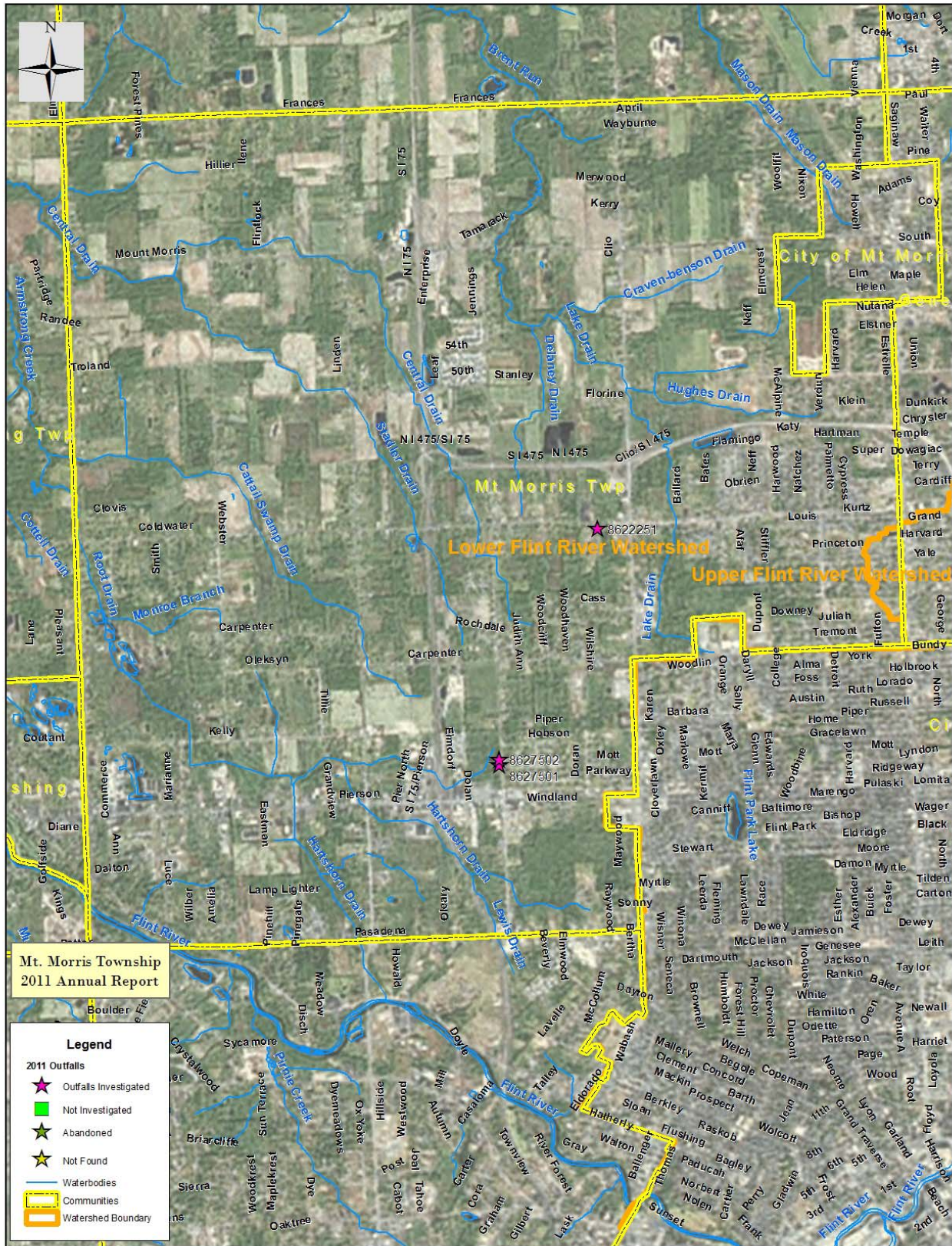


Table 10-10: Mundy Township Known Outfalls Investigated in 2011

OutfallNum	Owner	OutletsTo	Latitude	Longitude	Receiving Waterbody	Date Investigated
6609255	Mundy Twp	GCDC 0018	42.943	-83.7535	Hewitt Drain	8/15/2011
6615501	Mundy Twp	McCullum Drain	42.919	-83.7488	McCullum Drain	8/15/2011

Figure 10-14: Mundy Township Known Outfalls Investigated in 2011

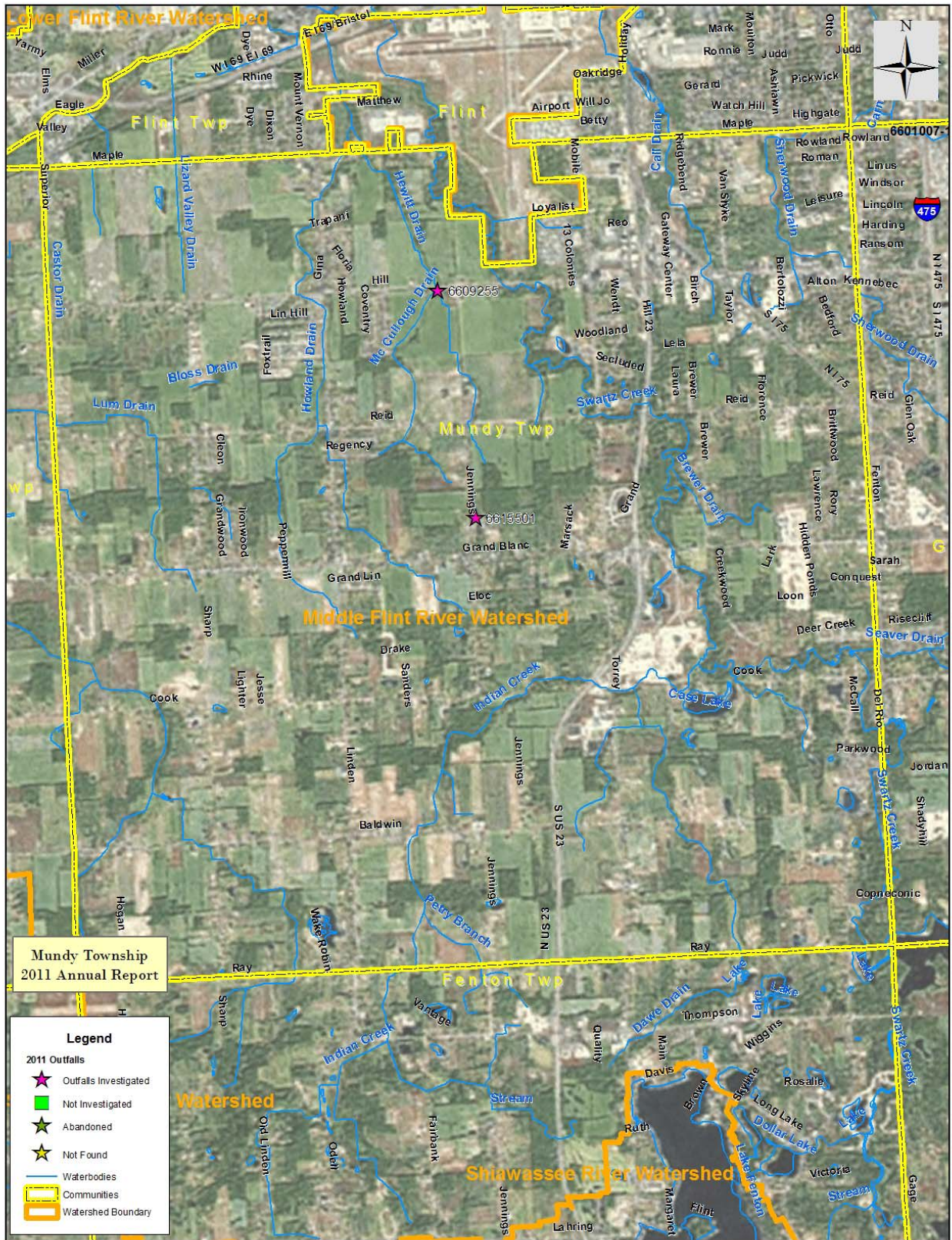
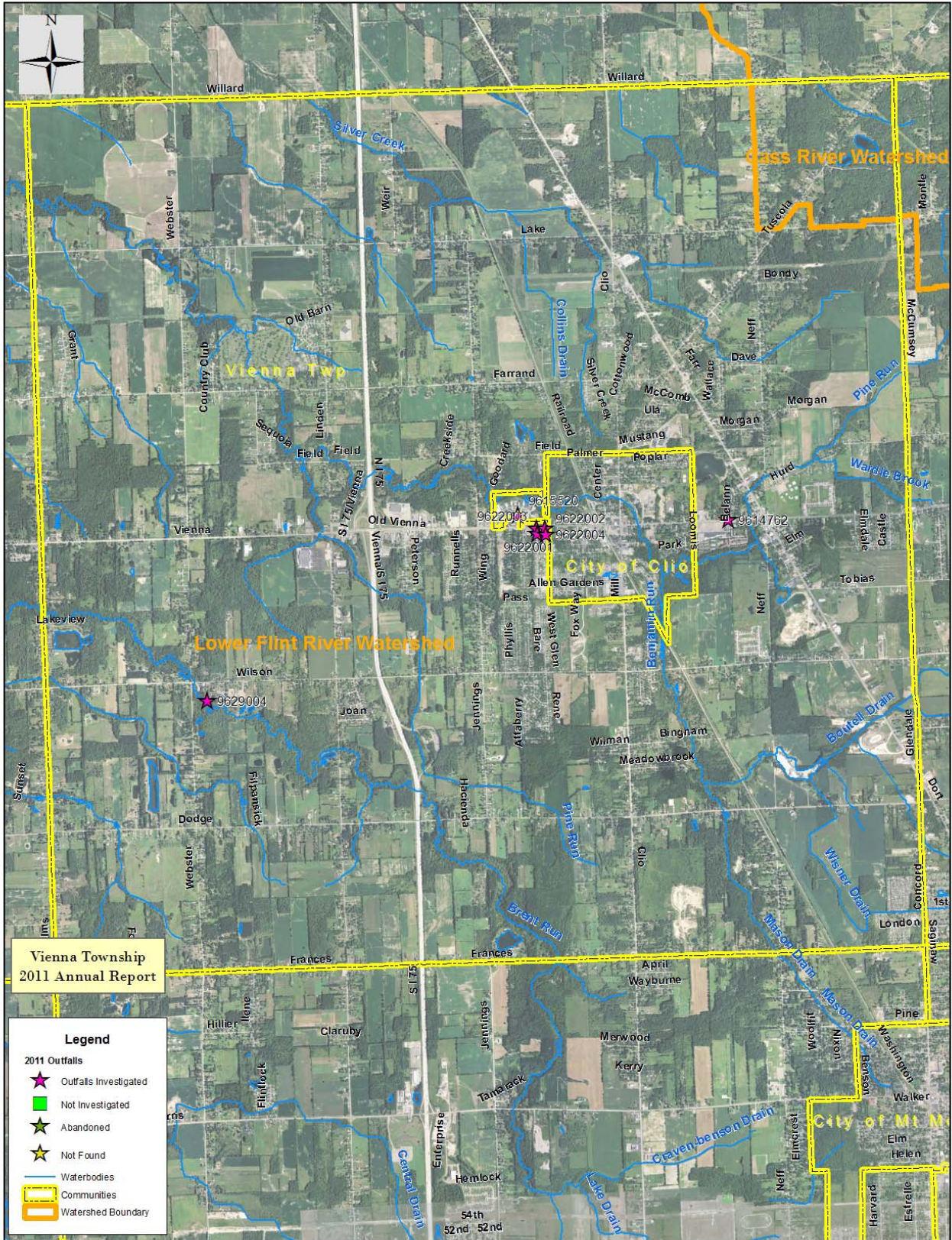


Table 10-11: Vienna Township Known Outfalls Investigated in 2011

OutfallNum	Owner	OutletsTo	Latitude	Longitude	Receiving Waterbody	Date Investigated
9614762	Vienna Township	MDOT	43.178	-83.7199	Pine Run & Tryon Drain	7/26/2011
9615520	Vienna Township	City Clio	43.179	-83.7487	Pine Run	7/26/2011
9622001	Vienna Township	MDOT	43.177	-83.7462	Haven & Dexter Street Outlet	7/26/2011
9622002	Vienna Township	MDOT	43.177	-83.745	Haven & Dexter Street Outlet	7/26/2011
9622003	Vienna Township	GCRC	43.177	-83.7461	Haven & Dexter Street Outlet	7/26/2011
9622004	Vienna Township	GCRC	43.177	-83.745	Haven & Dexter Street Outlet	7/26/2011
9629004	Vienna Township	Nat Watercourse	43.161	-83.7919	Brent Run	7/27/2011

Figure 10-15: Vienna Township Known Outfalls Investigated in 2011



Appendix A

Our Water Newsletters
Riparian Landowner Information
Speaker Presentation List- FRWC
Septic System Booklets
Tip Cards
Shiawassee Canoe Article
County Fair Results
Conservation District Education Synopsis
HHW flyers
Compost/ Rain Barrel Flyer
River Cleanup Sites
Watershed Maps
Genesee County Parks and Recreation Programs
FRWC Newsletters

Project GREEN
Benthic Monitoring Results



Update on the Lawsuit

2008 permit: within 60 days of the 08' permit being issued, there were over 70 challenges filed against it.

Before it can go to a court of Law it must go through the State Executive Branch. The case was assigned an Administrative Law Judge (ALJ), who holds a court-like proceeding called a Contested Case Hearing (CCH). Contesting parties were requested to select a representative plaintive and refine the issues to be contested. The CCH was halted by order of Circuit Court until the resolution of a related lawsuit (Adair vs. Board of Education).

Meanwhile since the ALJ cannot deal with Constitutional issues nor invalidate Rules, the City of Riverview filed a Class Action Complaint in May of 09' alleging violations of existing State law including Headley. The Court ruled to certify the case as a Class Action. Eight Communities joined suit and all other Phase II permittees were members of the "Class" unless they opted out. Letters were sent to all Phase II permittees in Feb 2010.

July 2010, the Adair vs. Board of Education lawsuit was resolved. This suit directly addressed the Headley Amendment. The Court's ruling supports the communities claims in regards to the CCH and the Class Action Lawsuit.

The MDNRE withdrew (not revoked) their 2008 permit in an attempt to dismiss the CCH. The ALJ has ordered a formal motion and briefs from both parties. Currently both cases are still pending.

All Phase II Communities received a letter from the MDNRE in December 2010, notifying them that the 2008 permit has been withdrawn. How does this impact Phase II permittees?

What we know; The MDEQ (Switched back from the MDNRE) had a meeting on December 20, 2010 to discuss the following items:

- The 2008 permit has been withdrawn.
- Permittees that did not contest the 2008 permit will revert to the 2003 permit.
 - Due dates have reverted to 2003 permit.
- The 2008 SWPPI that was submitted is valid.
 - Permittees can request in writing to modify their 2008 SWPPI if there is something in it that they feel will be difficult for them to complete.
- MDEQ is targeting 1 to 1.5 yrs before a new permit will be issued.
 - They are assembling a state-wide advisory committee. (volunteers are welcome)
 - That is if the new EPA rules are not due to be issued at the same time.
- They are considering all options.
 - Including just having a jurisdictional permit that expires and renewed on a five-year rotating basis.
- The MDEQ will continue with community/permittee audits as planned.

Subsequently Sue Kubic from the Drain Office had spoken to Stephanie Kammer from the MDEQ. As of January 11th Stephanie sent the Following e-mail:

Well, after meeting last week internally, I think it would be best for us to hold off discussing this issue for the time being. DEQ will be sending out a letter to all MS4 permittees detailing compliance issues and how to proceed under the 2003 permit. We expect that letter to go out by the end of the month. After you receive that letter, we can set up a time to discuss any additional or specific questions you may have moving forward with implementation under the old permit.

Regardless of what the state decides there are some upcoming requirements that have to be submitted:

- First Progress Report (previously annual report) June 1, 2011
- Storm Sewer System Map. June 1, 2011
- Storm Sewer Ordinance

A Look Back....

A lot of work was done in 2010. Here is a synopsis of some of that work.

A Good Housekeeping Training was developed for employees and contractors of Phase II communities. The workshop was held 3-times last year (April 8th, May 6th and November 4th). The last training was recorded so we can develop a training video.

Under the 2008 permit the State required communities / agencies that have facilities (maintenance yards, fueling tanks, onsite fleet maintenance, etc.) to have a Storm Water Pollution Prevention Plan (SWPPP) and a State licensed storm water operator. At the April 8th training we also hosted the MDEQ industrial training for those communities that wanted to have employee(s) trained as storm water operator(s).

The **Best Management Practices Subcommittee** finished the Storm Water Ordinance and BMP manual. Both documents were sent to Stephanie Kammer for review. The Drain Office staff and volunteer members of the BMP committee went to Lansing to meet with MDEQ staff to resolve the remaining issues. Currently we do not have anything from MDEQ in writing that the Ordinance and Manual are acceptable. Due to requirements in the 2008 permit being withdrawn we are currently waiting for the February letter from the State to see if or how it will affect the ordinance requirements. No matter what the State determines our SWPPI(s) require a Storm Water Ordinance.

The **Monitoring and Mapping Subcommittee** is overseeing the development of the annual / progress reports and the dry weather testing for the Illicit Discharge Elimination Program (IDEP)

The **Public Education Subcommittee** set the budget and approved the various education efforts that went on throughout the year. Some of which are:

- Over 8000 students received watershed education through an interactive model called an enviroscape.
- Hundreds of Students participated in Project GREEN through 44 teachers that take students out to local watercourses where they do chemical testing on the Flint and Shiawassee River Tributaries. Not only do they learn about water but they come together at a Symposium in May to present and discuss their results.
- Almost 1000 residents got some watershed education at the Our Water information table at the County Fair.
- There were 4 Creek walks and 6 canoe events on the Flint River or it's tributaries this year. Getting people on or in the water and caring about it. I have heard many people tell me that they did not realize that the Flint River was this nice. Also within the last year because of increased demand there are now 2 canoe liveries on the Flint River, up from 0.
- Developed a Septic System Booklet for new homeowners.

Alphabet Soup... What do those letters Mean?

SWPPP: Storm Water Pollution Prevention Plan: A plan outlining what kind of facilities you have, what materials, chemicals, processes you have on site. How they are protected from contaminating surface water and how would your facility respond if the surface water is contaminated.

SWPPI: Storm Water Pollution Prevention Initiative. This is the enforceable document that each permittee prepares that outlines how they are going to comply with the NPDES Phase II Permit.

COC: Certificate of Coverage. Letter from State allowing the permittee to discharge storm water from the outfalls they own and maintain. This letter has due dates for permit requirements.

NPDES: National Pollution Discharge Elimination System. Federal mandate requiring Governmental Agencies to acquire a permit to discharge storm water. Currently only communities / agencies with a minimum population or population density are required to have a permit.



*Protecting and improving the watersheds
 within and around Genesee County*

UPDATE

All Phase II Communities received a letter from the MDNRE in December 2010, notifying them that the 2008 permit has been withdrawn. Follow up letters went to all Phase II communities Feb, 2011.

Sue from the Drain Commissioner's Office and Steve from Tetra Tech had a phone conference with Stephanie Kammer of the MDEQ on March 17th 2011. Ms. Kammer followed up this meeting with an e-mail summarized below.

	<u>2003 COC</u>	<u>2011 Compliance</u>
<u>Middle Flint River</u>		
WMP update (or det not to revise) due:	March 1, 2007	March 1, 2013? or potentially due in 2011
SWPPI update (or det not to revise) due:	Sept 1, 2007	Sept 1, 2011
<u>Lower Flint River</u>		
WMP update (or det not to revise) due:	Sept 1, 2007	Sept 1, 2011
SWPPI update (or det not to revise) due:	March 1, 2008	March 1, 2012
<u>Upper-1 Shiawassee River</u>		
WMP update (or det not to revise) due:	March 1, 2008	March 1, 2012
SWPPI update (or det not to revise) due:	Sept 1, 2008	Sept 1, 2012
<u>Upper Flint River</u>		
WMP update (or det not to revise) due:	Sept 1, 2008	Sept 1, 2012
SWPPI update (or det not to revise) due:	March 1, 2009	March 1, 2013

Annual Report = **November 1, 2011** this should include all activities since your last report (Last 3-years). *Under the 2008 permit the report was due June 1, 2011.*

Since the 2008 SWPPI included an alternative approach for post const. that was not approved, the entire SWPPI is not approved. This means that you now need to follow your last approved plan under the 2003 permit. You have the opportunity to modify the SWPPI and submit for approval if you would like to follow the 2008 SWPPI or some hybrid in between. I think that you could do this when your first SWPPI update is due (Sept 2011) but I am double-checking on this.

Note: We do not have any correspondence until this e-mail that the 2008 SWPPI is not approved. Because the work we are doing, Specifically IDEP, does not match the 2003 SWPPI, we are going to have to make some changes to the 2008 SWPPI and resubmit for approval. Although only the Middle Flint Communities need to submit by September 2011, it is the plan to have everyone update the SWPPIs at the same time.

IDEP: Finally, I am checking on how we will be determining compliance for discharge points based on the 2003 requirements. *As stated above, the approved IDEP plan under the 2003 permit does not match the 2008 approved IDEP plan. To stop what we have been doing for the last 2 ½ years and start over would be a waste of both time and finances. Also to change how we do IDEP at this time would require us to modify the 342 Contract.*

A Look Forward....

Watershed Management Plans and SWPPI review meeting: May 3rd, 2011 at 10:30 am, GCDC trailer

The watershed management plans have to be reviewed to determine if they need to be updated. As outlined in the Public Participation Plan, We are holding a stakeholder meeting.

Spring is here

This is the time to start thinking about going out and doing your **ANNUAL INSPECTIONS OF YOUR STORM SYSTEMS** to see if they need maintenance. Remember to record your efforts. If you own a facility such as a DPW, vehicle maintenance garage, fuel tanks on property you own, then this is the time to have your storm water operator to go through your SWPPP and make sure it up to date.

Handouts

As part of public education each community has been given various handouts to make available to the public. (See you SWPPI for individual commitments) If you are out of handouts we are happy to provide you more copies of the following education information:

- 7 simple steps to cleaner water
- Riparian Landowner Education
- Spetic System Booklet
- Dump No Waste doorhanger

Upcoming Events

May 13th: Flint River GREEN student Summit. Students all over Genesee County, have done water quality testing on the Flint River, The Shiawassee River and their Tributaries and come together at the Summit to present their findings.

May 21st. River Cleanup from 10am – 2pm.
U of M Flint Campus
Vietnam Veterans Park
Flushing Riverview Park
Holloway Dam
... and other locations along the Flint River and its tributaries

River walks throughout Genesee Co.

June 29th
August 10th
August 24th

Canoe Trips throughout Genesee Co.

June 21st
July 9th
July 13th
August 20th
September 23rd

Contact slissing@flinriver.org for more information on events

Alphabet Soup... What do those letters Mean?

SWPPP: Storm Water Pollution Prevention Plan: A plan outlining what kind of facilities you have, what materials, chemicals, processes you have on site. How they are protected from contaminating surface water and how would your facility respond if the surface water is contaminated.

SWPPI: Storm Water Pollution Prevention Initiative. This is the enforceable document that each permittee prepares that outlines how they are going to comply with the NPDES Phase II Permit.

COC: Certificate of Coverage. Letter from State allowing the permittee to discharge storm water from the outfalls they own and maintain. This letter has due dates for permit requirements.

NPDES: National Pollution Discharge Elimination System. Federal mandate requiring Governmental Agencies to acquire a permit to discharge storm water. Currently only communities / agencies with a minimum population or population density are required to have a permit.



- o December 2010: the 2008 permit has been withdrawn. Revert to 2003 permit
- o February 2011: follow up letters sent out to phase II communities
- o March 2011: Drain Commissioner's Office, Tetra Tech had a phone conference with MDEQ that was followed up with an e-mail summarizing permit requirements.
- o Pending permit requirements resulted in holding May 3rd meeting.

MAY 3rd MEETING SUMMARY

Go through the approved Watershed Management Plan (WMP). Submitted in February 2008. According to March 2011 e-mail we will have to update and resubmit WMP or determine that no update is needed and each permittee submit a letter.

Look at SWPPI for 2003- permit cycle verses 2008 permit cycle. The 2003- permit cycle SWPPI is approved but will need to be updated and resubmitted.

The 2008- IDEP plan had been changed to comply with State. The 2003- IDEP plan does not match what is currently being done. IDEP plan will have to be amended to match what is being done and each permittee submit revised plan to State.

Discuss the Pending Storm Water Ordinance. What is required in 2008 permit versus what was committed to in the 2003 SWPPI. GCDC office has requested MDEQ to complete review of Ordinance. Our schedule is on hold until we hear from them. It was decided that we would have a BMP sub-committee meeting once we have heard from the MDEQ on this matter.

AFTER MAY 3rd EMAIL FROM MDEQ

You will not have to update the WMPs. DEQ has decided that under the 2003 permit, there is no requirement to update the WMPs and SWPPIs every two years. Therefore, you will not have a requirement to update these documents unless they are specifically found to be in noncompliance with the permit. This would usually be determined during the audit process.

As far as your question regarding the SWPPI update. We will be taking no formal action on the alternative approaches that were submitted last year. If you would like to supplement the alternative approach (or any other implementation items) in place of what was included in the SWPPI developed under the 2003 permit, you must modify the SWPPI and submit the entire document for review and approval. Based on my knowledge of what was submitted last year for post construction control, I do not see any problems with approving the updated post construction information as meeting the 2003 permit requirements.

Again, you would have to submit the IDEP as part of a modified SWPPI for us to approve.

Until the modified SWPPI is submitted and approved, you are required to implement according to your previously approved SWPPI. Therefore, you should try to submit the updated SWPPIs as soon as possible (this is different than what I had thought previously).

All documents used during this meeting are available <http://www.gcdcswm.com/PhaseII/>

What is NPDES and why are you involved?

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

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

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



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

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

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

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

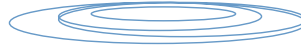
You, through the *Our Water* program, support our partner the Flint River Watershed Coalition and Flint River GREEN - Earthforce, the Genesee Intermediate School District, General motors and a handful of others - to coordinate this applied curriculum. In Genesee County, the work done for Flint River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



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



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



Why you received this newsletter

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

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

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

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



Photo: Chesapeake Bay Program

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

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

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

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

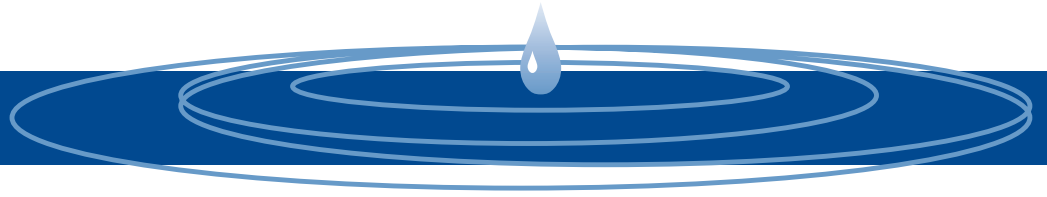
In addition to getting assistance with your first time on the river or trying out new nature trails along the river, you will also learn about some of Genesee County's water quality concerns. Led by a knowledgeable educator, you will learn more about our

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

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



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



Sub-Committees oversee construction, monitoring and public education

Construction Standards and Practices (CSP) Sub-Committee:

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

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

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

Public Education and Participation (PEP) Sub-Committee:

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

How the Genesee Intermediate School District partners with us

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

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

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

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



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



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

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



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

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

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



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

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

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

To learn of other LID case studies, visit the SEMCOG LID database:

<http://www.semco.org/Data/lid.cfm>

pollution and climatic stress.

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

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

Source: *Huron Pines*

Many Our Water Resources Available For Educators

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

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



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

Upcoming Events

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

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.



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

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.

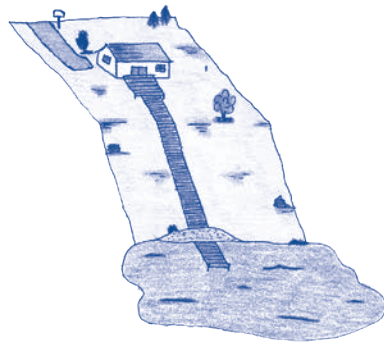
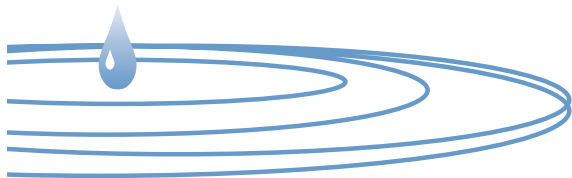
To prevent erosion on your property and save yourself time and money, try these techniques to create a naturalized stream bank or shoreline...

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 morsusranae*)
- ◆ 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

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, May1999.
- ◆ 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 Brent Run, Butternut Creek, Pine Run, Silver Creek and the Upper Flint River Watersheds,

brought to you by the communities of Genesee County.

July 20, 2011 — 6:30-8:00pm

Forest Township Hall Banquet Center, 130 East Main Street, Otisville, MI 48463

July 27, 2011 — 6:30-8:00pm

Mt. Morris Township Hall Auditorium, G-5447 Bicentennial Drive, Mt. Morris, MI 48458

August 3, 2011 — 6:30-8:00pm

Rogers Lodge Community Center, 219 Rogers Lodge Drive, Clio, MI 48420

Overview:

Genesee County and the communities of Brent Run, Butternut Creek, Pine Run, Silver Creek and the Upper Flint River 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 three educational workshop 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 streambank and shoreline erosion, and effectively managing stormwater. Landowners need only to attend one of the three 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 Barb Urlaub at (810) 424-5486 or urlaubb@umflint.edu to register for ONE of these workshops.

Please RSVP by 5pm on July 15th for the July 20th workshop and by 5pm on July 22nd for the other two workshops – limited space is available.

How protected is your stream bank or shoreline?

Take this short quiz to see how it measures up.

Check off the practices that are already done on your property.

Do you...

- Establish vegetation on all bare areas of your property
- Develop a beach site with minimal shoreline alteration or have no beach site
- Plant native trees and shrubs
- Retain a natural area of grass, trees, and shrubs next to your streambank or shoreline
- Learn about invasive plants before removing them
- Plant deep rooted plants, shrubs, and trees
- Reduce paved or covered areas; use gravel instead of paving driveways/walkways
- Install rain gardens in low areas where water collects
- Collect and use rainwater to water trees, shrubs, and lawn
- Use mulch around trees and plants
- Consider existing natural characteristics of property before designing shoreland development
- Use a variety of native species in new plantings

How protected is your stream bank or shoreline?

If you checked off...	Your stream banks are...
More than 10	Fantastic
Between 7-9	Great
Between 4-6	Showing signs of wear
3 or less	Eroding quickly



Riparian Landowner Workshops – 2011

The Water's Edge: How to protect your waterside property and its value

Come to one of three FREE workshops offered to waterside landowners in the Brent Run, Butternut Creek, Pine Run, Silver Creek and Upper Flint River Watersheds, brought to you by the communities of Genesee County.

Overview:

Genesee County and the communities of Brent Run, Butternut Creek, Pine Run, Silver Creek and Upper Flint River Watersheds are fortunate to have an abundance of lakes, rivers, streams and creeks. Your waterside 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 three educational workshops on July 20, 27 and August 3 for waterside landowners in the Brent Run, Butternut Creek, Pine Run, Silver Creek and Upper Flint River Watersheds. The workshops will provide waterside property owners with a range of low-cost and ecologically-sensitive practices for protecting waterside property, reducing stream bank and shoreline erosion and effectively managing storm water. By attending one of these three workshops, participants will learn about a range of opportunities available to improve their land management practices and save money. Participants will also walk away with the resources and contacts needed to assist them in protecting their waterside property and restoring water quality.

Stakeholder Identification:

The Genesee County Drain Commissioner's Office will identify riparian landowners in the Brent Run, Butternut Creek, Pine Run, Silver Creek and Upper Flint River Watersheds using GIS.

Locations:

- Upper Flint and Butternut (Otisville/Richfield) (July 20)
 - Forest Twp Hall
- Pine Run and Silver Creek (Clio) (August 3)
 - Rogers Lodge Community
- Brent Run (Mt. Morris) (July 27)
 - Mt. Morris Township Hall

Outline for all three workshops, 6:30-8pm:

Throughout: emphasis on economic benefits

- I. Sue Kubic (30 minutes)
 - a. Context and background
 - i. Introductions
 - ii. Problem statement – why we are doing this
 - iii. Phase II program overview – direct them to our website
 - iv. What is a watershed?
 - b. Our Water educational message
 - i. Managing yard, home, and animal waste
 - ii. Water friendly lawn care
 - iii. Maintaining boats and other vehicles
 - iv. Minimizing stormwater runoff
 - v. Septic tank maintenance
- II. Second Speaker (40 minutes) – embedded with examples and pictures
 - a. Why we want to stabilize streambanks and shorelines
 - i. To save money in the long-term
 - ii. Keeps waterside landowners from losing land through erosion
 - iii. Streambank/shoreline protection
 - iv. Runoff control
 - b. Quick overview on the variety of techniques for stabilizing the streambanks and shorelines (hard and soft) to give context. Include examples (the ones listed below are not necessarily the examples needed, but something similar to show range of options...please include live plantings, though)
 - i. Bank Shaping
 - ii. Engineered structures (hard armoring), when needed and not needed
 1. Riprap revetments, Breakwaters?, Groins?, Gabions?
 - iii. Bioengineering
 1. Vegetated geogrids, brush mattress, tree revetments, coconut fiber roll, etc.
 - iv. Live Plantings
 1. Vegetation – buffers
 2. Live stakes
 3. Branch Packing
 4. Live fascines
 - v. The best technique will depend on your situation—the size and location of your stream or shoreline, and the cause and severity of the erosion. In many cases, the best approach is to use a combination of techniques. Many of the previously mentioned stabilization techniques may require the consultation of an expert, however, there are solutions that can be easily implemented without the input of others: vegetated buffers.
 - c. Emphasis on vegetative buffers – overview of buffers
 - i. What are they?
 - ii. Do I have a buffer?

1. Good opportunity to engage audience in thinking about their own property – pictures will be helpful.
 - iii. Benefits of buffers
 1. Used preventatively, can save money in the long term
 2. Relatively easy to establish and maintain
 3. Visually attractive
 4. Potential to repair itself when damaged
 5. Pollutant attenuation/nutrient uptake capacity
 6. Habitat for fish and wildlife
 - iv. Types of buffers (not inclusive list, use best judgment as to the best ones to list)
 1. Filter strips
 2. Riparian forest buffers
 3. Shelter belts?
 4. Contour grass strips - maybe
 - v. How to establish buffers
 1. Establishing management zones
 2. Sizing – widths
 3. Plant choice
 - a. Soil testing/local conditions
 - b. Native versus non-native
 - i. Examples of long grasses that look nice, perennials, etc.
 - d. Quick Summary
 - e. Next steps/Resources available
- III. Speaker (10 minutes)
- a. Legalities
 - i. Riparian rights
 - ii. Relevant ordinances
 - iii. Permits (when they are and aren't required)
 1. DEQ permit
 2. Soil Erosion permit (unless from Grand Blanc and/or City of Burton in which case you should contact the municipality)
- IV. Questions/Discussion (10 minutes)



**The Water's Edge: Waterfront
Property Owner's Workshop**

AGENDA

July 20, 6:30-8:00pm

Forest Township Hall

Brought to you by the communities of Genesee County

6:30-7:00pm

Introductions, Context and Background Information

Presented by: Sue Kubic, Project Engineer, Genesee County Drain
Commissioner's Office

7:00-7:40pm

Stream Bank and Shoreline Stabilization

- Why stabilize?
- Vegetated Buffers

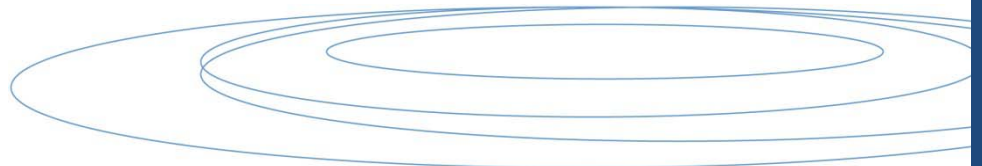
Presented by: Benjamin Wickerham, Genesee County
Conservation District and Brad Hill, Genesee County Conservation
District

7:40-7:50pm

When do you need a permit?

7:50-8:00pm

Questions/Discussion





**FLINT RIVER
WATERSHED COALITION**

INV

400 N. Saginaw Street
Suite 233
Flint, MI 48502
Phone 810 767-6490
www.flintriver.org

Ph 2 - pub Ed

Bill To:

ATTN: Sue Kubic
Genesee County Drain Commissioner's Office
4608 Beecher Rd.
Flint, MI 48532

DESCRIPTION

**Our Water Campaign Public Education
Presentation Program (Speakers Bureau)**

This invoice is issued to the Genesee County Drain Commissioner's Office for presentations and speeches made by the Flint River Watershed Coalition between October 1, 2010 and September 30, 2011.

Invoice Details: Presentations with Phase II Communities (max. 17 @ \$120 each)

2010

#	Month	Day	Present	Group
1.	10	5	17	Women's National Forum & Garden Club Flint, Davison
2.	10	14	34	Swartz Creek Kiwanis Club Swartz Creek (note: gave big credit to GCDC for signs)
3.	10	15	24	Valley School-Lower School Parents and Students at Richfield Park Davison, Flint, Flushing, Richfield Twp., Swartz Creek, Fenton
4.	11	11	19	Genesee Chapter of Michigan Association of Retired School Personnel Genesee County at Large

2011

5.	2	9	8	Nepessing Group Presenter Clio, Mt. Morris, Richfield Twp., Lapeer, Davison, Flint, Linden
6.	3	3	57	Flint Classical Academy & Southwestern Career Fair, ISD Flint, Burton
7.	3	17	8	Grand Blanc Optimist Club Grand Blanc, Grand Blanc Twp.
8.	3	31	18	Davison Optimist Club Davison, Davison Twp.
9.	3	31	12	Flushing Rotary Flushing
10.	4	11	93	Mott Park Neighborhood Assoc. Flint
11.	4	16	12	Annual Earth Day & Garden Celebration Flint, Davison, Grand Blanc,
12.	4	21	25	Genesee County Master Gardeners Meeting Genesee County at Large
13.	5	2	10	Flint River Paddlers Community Mtg. Flushing, Swartz Creek
14.	5	19	35	Kiwanis Club, Swartz Creek Swartz Creek
15.	6	21	27	South Side Business & Resident Association Flint
16.	8	4	18	Summer Youth Initiative Group Clio, Davison, Flint, Grand Blanc, Mt. Morris, Otisville
17.	8	13	3	Applewood: Inspiring Hope & Pride in Flint Grand Blanc, Burton (walked in rain)

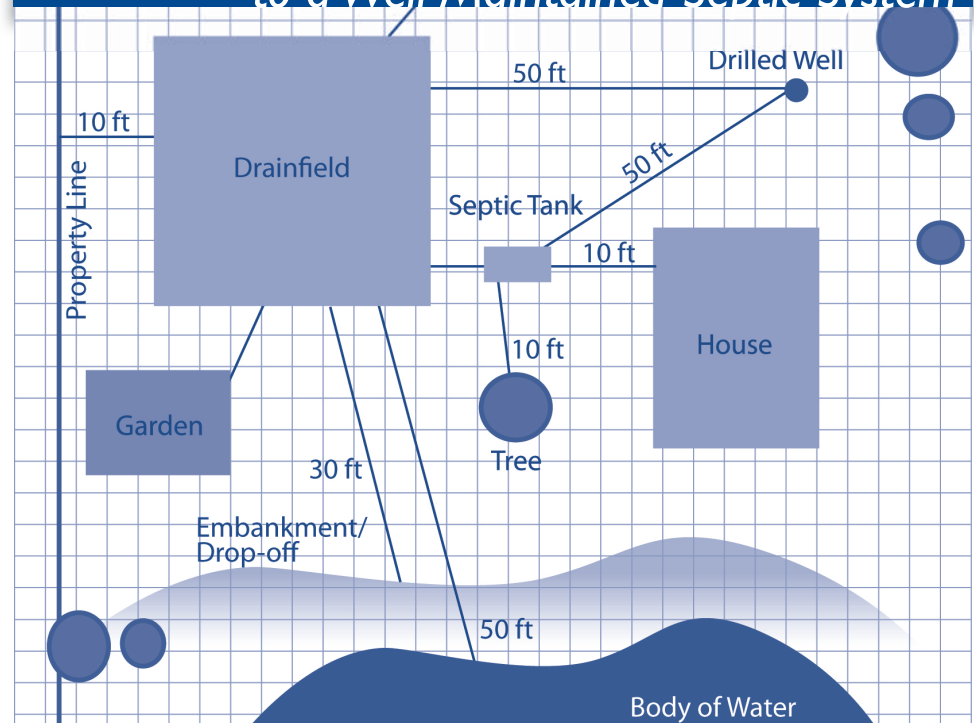
Make all checks payable to **Flint River Watershed Coalition**

For Questions regarding this invoice, contact Sue Lossing or Edie Westoff (810) 767-6490.

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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.

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.

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.

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.

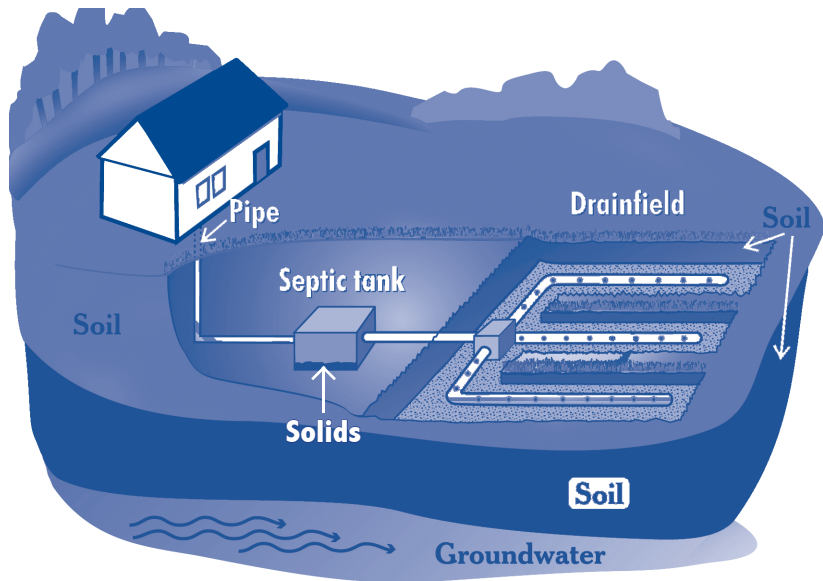
4. Soil with digesting microbes

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?

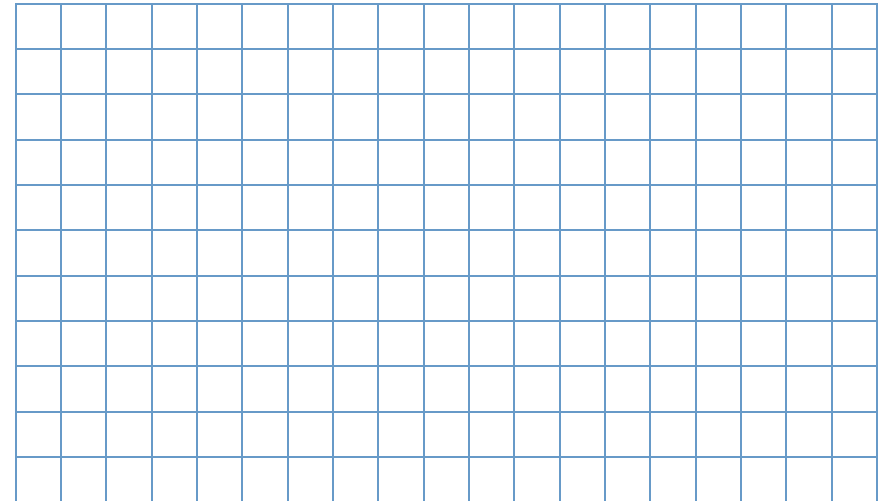
You may want to consult with an inspector or septic pumper to help you find the location of your septic system..



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 waste.
- ◆ 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.

5. Carefully store & dispose of household cleaners, chemicals, & oil.

Did you know that many household products are dangerous to our kids, pets, and the environment? These materials pollute our waterways if washed or dumped into storm drains or roadside ditches.

Identify it. Be aware of household products that can harm kids, pets, and the environment. The words “danger,” “caution,” or “toxic” indicate that you need to be careful in how you use and dispose of the product.

Less is better.

Reduce waste and save money by purchasing only the materials you need. When possible, choose less toxic alternatives. For example, try cleaning your windows with vinegar and water.



Store properly.

Keep unused products in their original containers with label intact. Select cool, dry storage areas that are away from kids, pets, and wildlife.

Disposal is key. Never dump motor oil, chemicals, and other toxic materials down storm drains, sinks, or on the ground. Contact your local community for disposal locations, guidelines, and dates.



Remember, storm drains lead to our lakes and rivers!

6. Keep pollution out of storm drains.

Storm drains and roadside ditches lead to our lakes and streams. So, any oil, pet waste, leaves, or dirty water from washing your car or other outside activities that enters a storm drain eventually gets into our lakes and streams.

Sweep it. Do you have extra fertilizers, grass clippings, or dirt on your driveway? Sweep it back onto your lawn. Hosing your driveway sends the pollutants into storm drains that lead to our lake and rivers.



Keep it clean. Whether in the street or in your yard, remember to keep leaves, grass clippings, trash, and fertilizers away from storm drains.

Only rain in the drain. Never dump motor oil, chemicals, pet waste, dirty or soapy water, or anything else down the storm drain. Once down the storm drain, all of these materials pollute our lakes and rivers!

Label it. Volunteer to label storm drains in your neighborhood to inform residents that they flow directly to our lakes and streams. Encourage friends and neighbors to contact their local community for more information on storm drain stenciling programs.

For further information call the Genesee County Drain Commissioner's office at (810) 732-1590 or go to www.cleargenesee.org.

The Genesee County Water Quality Consortium is a partnership of governmental agencies from the county, cities, townships and villages that work with nonprofit organizations and individuals to protect the water resources of our communities.

7. Choose earth-friendly landscaping.

Did you know you can protect your kids, pets, and the environment from the harmful effects of herbicides and pesticides by choosing earth-friendly landscaping? The chemicals in herbicides and pesticides pollute our waterways if washed from our lawns and gardens into storm drains and roadside ditches.

Go native. Select plants native to Michigan. Native plants are better able to tolerate Michigan's climate, require less fertilizer and water, and are more disease resistant.

Variety is the spice of life. Use a wide variety of plants to help control pests and minimize the need for pesticides.

Water wisely. Lawns need about one inch of water per week. Use a rain gauge and water only when necessary, instead of on a fixed schedule.

Use mulch. Place a thick layer of mulch (e.g., 4 inches) around trees and plants. This helps retain water, reduce weeds, and minimizes the need for pesticides. Make your lawn cheaper and easier to maintain by mowing high (3 inches is the rule). Tall grass promotes root growth and shades out weeds. Let grass clippings fall back on the lawn. Clippings recycle nutrients back into the soil, so fertilizer needs can be reduced by 25% or more!



Rake it or leave it. Follow your community's leaf pick-up guidelines. Avoid raking leaves into storm drains or roadside ditches. Try mowing leaves into your lawn - they also make a good fertilizer!

Use less for pests. Use pesticides and herbicides sparingly. Limit application of these chemicals to problem areas only.

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



Seven simple steps to clean water

1. Practice good **car care**.

2. **Fertilize** sparingly & caringly.

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.



Remember, storm drains lead to our lakes and rivers!

1. Practice good car care.

Did you know there are over 4 million vehicles in Southeast Michigan? Practicing good car care helps protect our lakes and streams. How? Storm drains and roadside ditches lead to our lakes and streams. If dirty water from washing our cars or motor fluids are washed or dumped into the storm drain or roadside ditches, it pollutes our local waterways.

Make a date. Car wash facilities treat their dirty water before discharging it to our lakes and streams. So, make a date to take your car to a car wash.

Wash it on the grass. If you wash your car at home, consider washing it on the lawn. Or, if you can't use the lawn, try to direct the dirty water towards the lawn and away from the storm drain.

Minimize it. Reduce the amount of soap you use or wash your car with plain water.

Maintain it. Keep your vehicle properly tuned. Use the owner's manual to guide decisions about how often it is necessary to change fluids such as oil and antifreeze.

Take advantage of business expertise. Consider taking your vehicle to the shop to have the oil and other fluids changed. These businesses have the ability to recycle the used materials and clean up accidental spills.

Recycle. If you choose to change your oil and other fluids yourself, label the waste containers. Then, take them to your community's household hazardous waste collection day or to a business that accepts used oil. Never dump used oil, antifreeze, or other fluids on the ground or down the storm drain.



2. Fertilize sparingly & caringly.

Storm drains found in our streets and yards empty into our lakes and streams. So, when we fertilize our lawn we could also be fertilizing our lakes and streams. While fertilizer is good for our lawn, it's bad for our water. Fertilizer in our lakes and streams cause algae to grow. Algae can form large blooms and use oxygen that fish need to survive. With 1.5 million homes in Southeast Michigan, all of us need to be aware of the cumulative effects of our lawn care practices.

Sweep it. Fertilizer and grass clippings left on sidewalks and driveways wash into storm drains. So, save money – and our lakes and streams – by sweeping fertilizer and grass clippings back onto the lawn.

Hire smart. Select a lawn service that uses organic fertilizers or offers a slow-release nitrogen, low or no phosphorus option. Request a soil test to ensure the right amount is applied.

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.

Buy low. Choose a fertilizer with low or no phosphorus. Most lawns already contain enough phosphorus. Excess phosphorus causes algae blooms in our lakes!

Go slow. Select an organic or slow-release fertilizer. Check the label. A slow-release fertilizer is one with at least half of the nitrogen in "water insoluble" form. Slow-release fertilizers provide a steady supply of plant nutrients over an extended period of time.

Make fertilizer-free zones. Keep fertilizer applications at least 20 feet away from the edge of lakes, streams, or storm drains.

3. Clean up after your pet.

Did you know that pet waste has bacteria that can make our lakes and rivers unsafe for swimming and other recreational activities? That happens when pet waste left on sidewalks or yards gets washed into storm drains or roadside ditches that lead directly to our lakes and rivers.

Prompt and proper disposal. Whether in your yard or on a walk, promptly dispose of your pet's waste in the trash or down the toilet where it will be properly treated. When pet waste is left behind, it washes into storm drains and ditches. From there it heads straight to your local lakes and rivers taking harmful bacteria with it.

Watch instead of feed. Watch and enjoy the ducks and geese, but avoid feeding them. Feeding ducks and geese may seem harmless, but, in fact, can be harmful to our water. Feeding waterfowl causes them to become more dependent on humans which, in turn, creates unnaturally high populations and more animal waste. This waste contains bacteria that pollutes our parks and lakes.



Spread the word. Tell others how they can help protect our lakes and rivers. Also, work cooperatively with your local government to install signs, bag dispensers, and trash cans in convenient public places to remind visitors to clean up after their pets.



4. Save water.

When we over water our lawns, the excess water carries pollution into storm drains and ditches that lead directly to our rivers and lakes. In fact, did you know that each of us uses 77 gallons of water a day?

Water wisely. Generally, your lawn needs about an inch of water a week. Over watering lawns results in shallow-rooted plants that are less tolerant of heat and drought, and more prone to disease. Avoid over watering by using a rain gauge and watering only when necessary, instead of on a fixed schedule.

Improve your aim. Adjust your sprinklers to water only your lawn and plants – not your driveway, sidewalk, or street.

Use mulch. Place a thick layer of mulch (e.g., 4 inches) around trees and plants. This helps retain water, reduce weeds, and minimize the need for pesticides.

Sweep it. Clean sidewalks and driveways with a broom, instead of a hose. You'll save water and keep unwanted pollutants out of the storm drain.

Put rainwater to work. Use rainwater to water your plants. Direct downspouts toward your plants and green areas or collect water with rain barrels for use later.

Mow high. Make your lawn cheaper and easier to maintain by mowing high (3 inches is the rule). Tall grass promotes root growth and shades out weeds. Let grass clippings fall back on the lawn. Clippings recycle nutrients back into the soil, so fertilizer needs can be reduced by 25% or more!

Rake it or leave it. Follow your community's leaf pick-up guidelines. Avoid raking leaves into storm drains or roadside ditches. Try mowing leaves into your lawn - they also make a good fertilizer!

Use less for pests. Use pesticides and herbicides sparingly. Limit application of these chemicals to problem areas only.

Remember, ditches drain to our lakes and rivers!

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Online Support
Event Management

LOW-PRICED products & services
built for your small business.

CHECK IT OUT »

Constant Contact

Sign in | Register for free

Sign in with Facebook

Site Search Search Local Business Listings

Search for keywords, people, locations, obituaries, Web ID and more.

- Home
 - News
 - Business
 - Sports
 - Entertainment
 - Living
 - Interact
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Lions rally from behind, beat Vikings in OT, 26-23



Michigan lags nation in income, college degrees

Home > Flint Entertainment

Fall color tour scheduled along the Shiawassee River in Holly, Fenton

Published: Sunday, September 25, 2011, 7:20 PM



By Dana DeFever | The Flint Journal
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Network Security Appliances

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2

FENTON, Michigan — Kayak and canoe enthusiasts will celebrate the beauty of autumn during the seventh annual Fall Color Tour on Oct. 1.

The tour, which is hosted by Headwaters Trails, will take off from Holly's Waterworks Park, 602 South Broad St., between 1 p.m. and 2 p.m. and paddle to either Strom or Bush parks in Fenton.

Meanwhile, other activities will take place in Bush Park during Celebrate the Shiawassee. The event takes place from 2-6 p.m. and is open to the public.

Nancy Muffley, a programmer with Southern Lakes Parks and Recreation, said the Shiawassee River is an untapped resource for entertainment in the area. People interested in getting involved and trying their hand at either kayaking or canoeing can at this event, she said.

"(This will) put people in another position to enjoy nature and enjoy Fenton," Muffley said.

The event will feature live music, children's activities, kayak demonstrations, information about the river and Keepers of the Shiawassee and refreshments.

A dedication ceremony for the park's recently installed kayak/canoe launches will take place at 4 p.m.

The event is sponsored by Fenton Rotary, Southern Lakes Parks and Recreation, Headwaters Trails, Fenton Downtown Development Authority and Keepers of the Shiawassee.

Muffley said those interested in paddling along the river, but who don't have a boat, can rent them through Heavners of Milford and can contact them through Headwaters Trails website, www.headwaterstrailsinc.org.

Details: Southern Lakes Parks and Recreation, 810-714-2011, or www.headwaterstrailsinc.org.

Sponsored By:



If You Haven't Had A DUI, You Are Being Ripped Off By Not Using This One Ridiculously Easy Trick

Your auto insurance company is hiding discounts from you. Why? Because if everyone knew this one trick, they would save an average of \$455/year. That's \$455 more in your pocket and \$455 less in theirs. Find out what your lowest monthly payment could be.

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46-55	56-65	66-75	Over 75

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- 6 Mayor Dayne Walling will join Friends of the Flint River Trail on bike ride
- 5 What's your favorite R.E.M. tune?

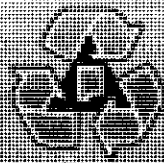


Information Booth: Data Collection

Event Name: Genesee County Fair

Date: August, 2011

CITIES	NUMBERS
Burton	41
Clio	34
Davison	17
Fenton	1
Flint	86
Flushing	9
Grand Blanc	11
Linden	6
Montrose	6
Mt. Morris	8
Swartz Creek	29
TOWNSHIPS	
Argentine	8
Atlas	9
Clayton	2
Davison	39
Fenton	5
Flint	42
Flushing	30
Forest	21
Gaines	4
Genesee	62
Grand Blanc	10
Montrose	4
Mt. Morris	28
Mundy	7
Richfield	28
Thetford	12
Vienna	22
OTHER CO. IN ST	72
OTHER STATES	9
2011 Total	662

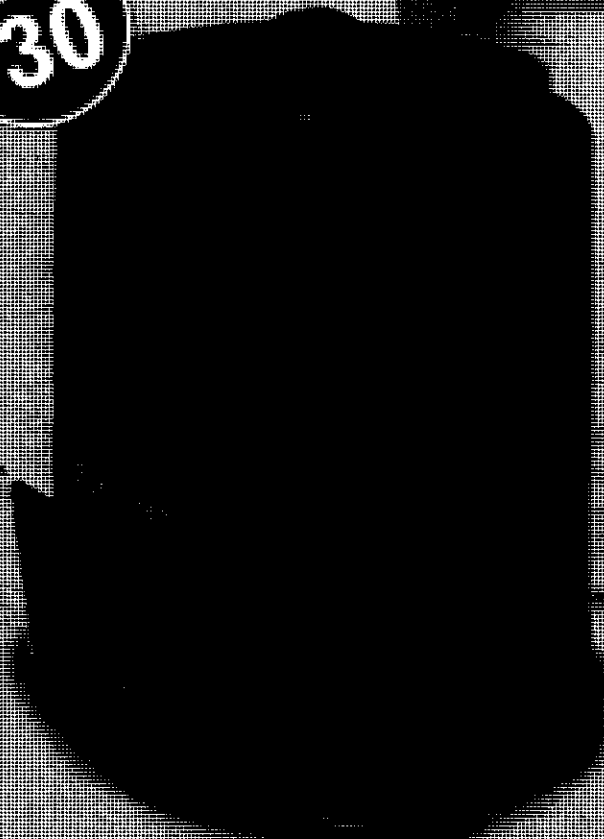


RECYCLE

Genesee County Metropolitan Planning Commission
will be holding a

compost bin and rain barrel sale

\$150 value
\$30



\$150 value
\$45



FreeGarden EARTH

\$30

- Large 11 gallon capacity rain barrel
- Manufactured in the USA
- Durable polyethylene construction
- Self-watering capabilities
- Fits under most standard gutters
- Includes water filter

FreeGarden RAIN

\$45

FreeGarden RAIN

- 11 gallon capacity rain barrel
- Manufactured in the USA
- Durable polyethylene construction
- Self-watering capabilities
- Fits under most standard gutters
- Includes water filter

FreeGarden EARTH

- Large 11 gallon capacity rain barrel
- Manufactured in the USA
- Durable polyethylene construction
- Self-watering capabilities
- Fits under most standard gutters
- Includes water filter

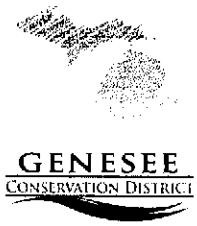
ONE DAY ONLY

SATURDAY, JUNE 4, 2011
9AM - 3PM RAIN OR SHINE

Courtland Center Mall Parking Lot
4109 E. Court Street, Burton, MI 48509
(Sale at west end of lot, near Center Road)

- Limited Quantities
- Taxes Included
- Cash • Check
- Visa • Mastercard • Discover

For more information on this event, contact the
Genesee County Metropolitan Planning Commission at
920-225-2028 or by email to info@genesee-mpc.com



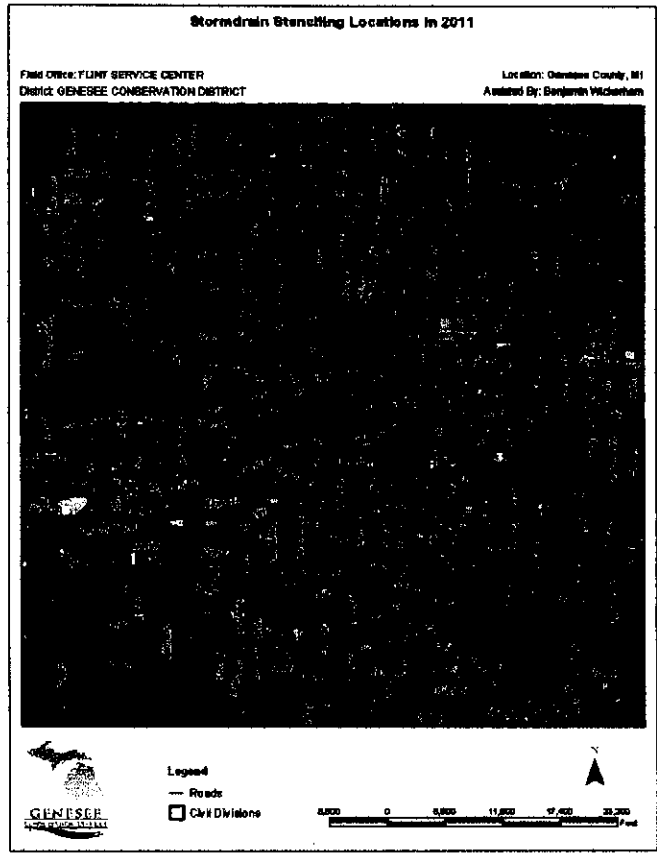
GENESEE CONSERVATION DISTRICT
 1525 NORTH ELMS ROAD
 FLINT, MI 48532
 PHONE: 810-230-8766 EXT. 131
 FAX: 810-230-2404

GCD Water Quality Education Program Report

Narrative Status Report:

The third quarter of the FY2011 educational program was the most active time period to date with fitting many schoolchildren engagements in during the last two months of the 2011 school year. New partnerships have continued to be formed and word-of-mouth continues to spread the news of the water quality educational service we offer through the support of the "Our Water" Program. Some of the new educational partnerships that GCD developed this quarter to fill the gaps left by the 2011 cancellations of the 4-C's Children's Services Fair and Project RED (rural education days) include outreach with the Genesee County Metropolitan Planning Committee, working with U of M-Flint Outreach Department, and implementing a "Water Quality" programming track at the For-Mar Nature preserve. These entities have been great to work with due to the fact that they can provide free promotion and advertisement for the education programs.

In addition to educational activities and programs, GCD also began the summer season of Storm drain Stenciling during the 3rd quarter. So far, GCD has held three stenciling events: one in Burton with a girl scout troop and two in Flint Township with a cub scout group and a church summer camp. More stenciling days are expected in the fourth quarter. *See map below for current geographical distribution of the neighborhoods stenciled by GCD in 2011:*





GENESEE CONSERVATION DISTRICT

1525 NORTH ELMS ROAD

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Current and future plans for the GCD educational program (sponsored by the "Our Water" program) include:

- Develop and provide more educational handouts for children that visit the USDA service center.
- Hold an educational workshop targeted at the local agricultural community.
- Partner with U of M-Flint on a series of educational workshops targeted at riparian landowners.
- Participate in U of M-Flint "Discovering PLACE" education program as an educator.
- Continue programming at For-Mar nature preserve.
- Continue to pursue reaching out to the Flushing Twp Nature Park to develop education programs.
- Continue partnering with local youth and scout groups to implement Storm drain Stenciling.
- Plan & implement of a demonstration rain garden at the USDA Service Center.
- Roll out a summer educational series at Genesee County Farmer's Markets.
- Attend week long Genesee County fair for water quality outreach & education.

Page two and three details the current list of educational accomplishments in FY2011 for the Water Quality Education program administered by GCD and sponsored by Genesee County Drain Commissioner and the "Our Water" program:

Deliverables Tracking:

Month	Event	School children reached	Adults reached
October	10-25-10 Montrose Orchards "SKIP" day	300	13
November	11-18-10 Carmon Ainsworth H.S. - talk on watershed management	28	2
	11-18 GreenTeam/"Earth Force" student watershed monitoring presentation/mtg	33	6
	11-22 Central Elementary story & activity	25	2
December	12-3-10 Fox 66 Green Team Mtg.	0	6
	12-5 Water stewardship discussion with FCCN Youth Group	18	1
	12-10 Flint Children's Museum	26	16
	12-21 "Tuesday's with" GISD - am	160	5
	12-21 Beecher Ecology Club visit-pm	12	2
January	1-11-11 Flushing 7 th grade visit/ Parker	30	2
	1-14 Fox 66 Green Team Mtg.	0	7
	1-27 Kuehn Haven M.S. wetlands story (x2)	48	3
February	2-3-11 GCD Annual Meeting	1	10
	2-11 Workshop planning meeting	0	3
	2-14 Marion Crouse Instructional Center - wetlands story	18	2
	2-23 Bendle Careers Fair	124	4
	2-26 Pheasants Forever Banquet	4	107
March	3-3-11 GISD water conservation topics	36	3
	3-5 KSCB Conference education booth	6	240
	3-5 GCFB "Vegas night" info booth	5	57
	3/11-3/13 Walleye fest. educational booth	89	320
	3-17 Beekeeping/pollinator workshop	3	28
	3-16 Project GREEN mentor training	0	2
	3-29 Beecher alternative work day	42	2
April	4-1-11 Green Team Meeting	0	8
	4-7-11 SERA presentation	2	40
	4-16-11 U of M-Flint Earth Day Event	350	500



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	4-16-11 King's Global Earth Day Event	14	6
	4-21-11 Burton Stormdrains w/ scouts	52	20
	4-22-11 Flushing Commerce Earth Day E	36	40
	4-26-11 Lakeville M.S. monitor mentoring	45	2
	4-27-11 GISD visit	5	2
	4-30-11 Arbor Day edu. event @ For Mar	70	33
May	5-2-11 Tree talk/demo w/ Rankin/Riley/Flu	77	3
	5-6-11 Raingarden visit w/ Flshng Eco Club	4	1
	5-6-11 Science Friday present @ U of M	40	5
	5-21-11 Cub Scouts Pack #33 Stenciling	24	12
	5-26-11 Communities Take Root	90	8
June	6-4-11 Water conservation ed. @ Courtland	15	60
	6-4-11 District outreach @ fish sale	1	9
	6-7-11 Richfield Academy Field visit	125	10
	6-18-11 For Mar Water Cycle program	12	8
	6-24-11 a.m. Sunset Appt. stenciling	7	6
July	7-8-11 Fox 66 Green Team meeting	0	5
	7-9-11 For Mar Water Pollution program	3	5
TOTALS		1,985	1,626
		3606/8000 =45% of FY11 goal	

Household Hazardous Waste & Electronic Waste Collection Day!

Saturday, May 21, 2011

10:00 a.m. - 2:00 p.m.

Things you should bring...

Aerosol cans
Antifreeze
Fluorescent light bulbs
- compact and tube
Batteries
- household and car
Gasoline
Household pesticides
Herbicides, Fertilizers
Mercury
Used oil

Oil-based paint
Old prescriptions
Paint thinners
Tires - up to 7*
**No tractor or semi tires and they must be off the rim.*

Television Sets
Computer Monitors
Laptops & Notebooks
Printers & Copiers
DVD & VCR Players
Fax Machines
Cell Phones
Video Cameras
Stereo Equipment

Things you should NOT bring...

Commercial waste
Explosive material
Industrial waste
Latex paint

Medical waste
Radioactive material
TV Consoles

For more information or to volunteer, call:

Genesee County
Recycle Hotline:
(810) 762-7744
or Keep Genesee County
Beautiful :
(810) 767-7184



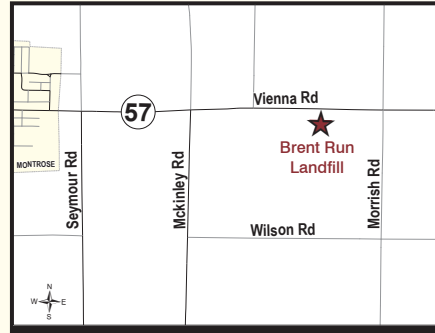
Household Hazardous Waste & Electronic Waste Collection Day!



Facility locations...



Genesee Area Skill Center
G-5081 Torrey Rd
Flint, MI 48507
10:00 a.m. - 2:00 p.m.
Both HHW & E-Waste



Brent Run Landfill
8247 W. Vienna Rd
Montrose, MI 48457
10:00 a.m. - 2:00 p.m.
Both HHW & E-Waste



**Flint East -
Water Service Center - HHW**
3310 East Court Street, Flint MI
10:00 a.m. - 2:00 p.m.
Goodwill Industries - E-Waste
501 S. Averill Ave., Flint MI
10:00 a.m. - 2:00 p.m.

Coordinated by the Household Hazardous Waste Consortium of Genesee County including the Genesee County Metropolitan Planning Commission, Keep Genesee County Beautiful, General Motors Environmental Staff in Flint, UAW Local 599, Goodwill Industries, and Fox 66 Green Team. Trash services provided by Waste Management. Major support provided by the Genesee County Board of Commissioners, the City of Flint, Montrose Township, Waste Connections Inc., and several local units of government.



GENESEE COUNTY
METROPOLITAN PLANNING COMMISSION
RECYCLE

Household Hazardous Waste & Electronic Waste Collection Day!

Saturday, October 08, 2011
10:00 a.m. - 2:00 p.m.

Things you should bring...

Aerosol cans
Antifreeze
Fluorescent light bulbs
- compact and tube
Batteries
- household and car
Gasoline
Household pesticides
Herbicides, Fertilizers
Mercury
Used oil

Oil-based paint
Old prescriptions
Paint thinners
Tires - up to 7*
**No tractor or semi tires and they must be off the rim.*

Television Sets
Computer Monitors
Laptops & Notebooks
Printers & Copiers
DVD & VCR Players
Fax Machines
Cell Phones
Video Cameras
Stereo Equipment

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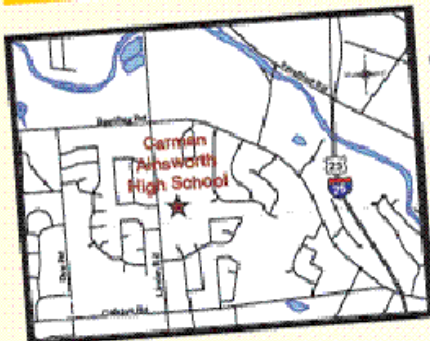
Genesee County
Recycle Hotline:
(810) 762-7744
or Keep Genesee County
Beautiful:
(810) 767-9696



Household Hazardous Waste & Electronic Waste Collection Day!



Facility locations...



Carman-Ainsworth High School
G-1300 N. Linden Rd
Flint, MI 48532
10:00 a.m. - 2:00 p.m.
Both HHW & E-Waste



FLINT EAST - WATER SERVICE CENTER - HHW
3310 East Court Street, Flint MI
10:00 a.m. - 2:00 p.m.
Goodwill Industries - E-Waste
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Coordinated by the Household Hazardous Waste Consortium of Genesee County including the Genesee County Metropolitan Planning Commission, General Motors Environmental Staff in Flint, UAW Local 599, Goodwill Industries, 5R Processors and Keep Genesee County Beautiful. Trash services provided by Waste Management. Major support provided by the Genesee County Board of Commissioners, the City of Flint, and several local units of government.



How you can help keep our water clean

There are seven simple steps to clean water. How many of these seven simple steps did you do this week?

1. Practice good car care.

Have you ever noticed a rainbow colored puddle on a parking lot or the street? The rainbow colors that you see are caused by



petroleum products like oil and gas. Car oil does not mix with water; it sits on top of water. Cars leak

oil when they are broken. A single drop of oil can pollute many gallons of water! To keep our water clean, keep cars fixed.

2. Fertilize sparingly & carefully.

Storm drains found in streets and yards go into our lakes and streams. So, when we fertilize our lawn we could also be fertilizing our lakes and streams. Fertilizer is good for our lawn, but it is bad for our water.

3. Clean up after your pet.

Did you know that pet waste has bad bacteria in it that can make animals and humans sick? To keep our water clean, pick up the waste from your pets and put it in the trash.



4. Save water.

When we put too much water on our yards, the extra water carries pollution into storm drains that lead to our rivers and lakes.

Remember, storm drains lead to our lakes and rivers!

5. Choose earth-friendly landscaping.



The chemicals we put on our lawns and gardens to kill weeds can pollute our lakes and rivers if washed into storm drains.

6. Carefully store & dispose of household cleaners, chemicals, & oil.

Did you know that many household cleaners and chemicals can be dangerous to us, our pets, and the environment if they are not thrown away properly? These materials pollute our waterways if washed or dumped into storm drains.



7. Keep pollution out of storm drains.

Storm drains and roadside ditches lead to our lakes and streams. So, any oil, pet waste, leaves or dirty water from washing your car that enters a storm drain will get into our lakes and streams.



The car oil I spill on the parking lot and the napkin I drop in the street are not a lot. When added to everyone else's spills and litter, it adds up to create a big problem!

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

www.cleargenesewater.org

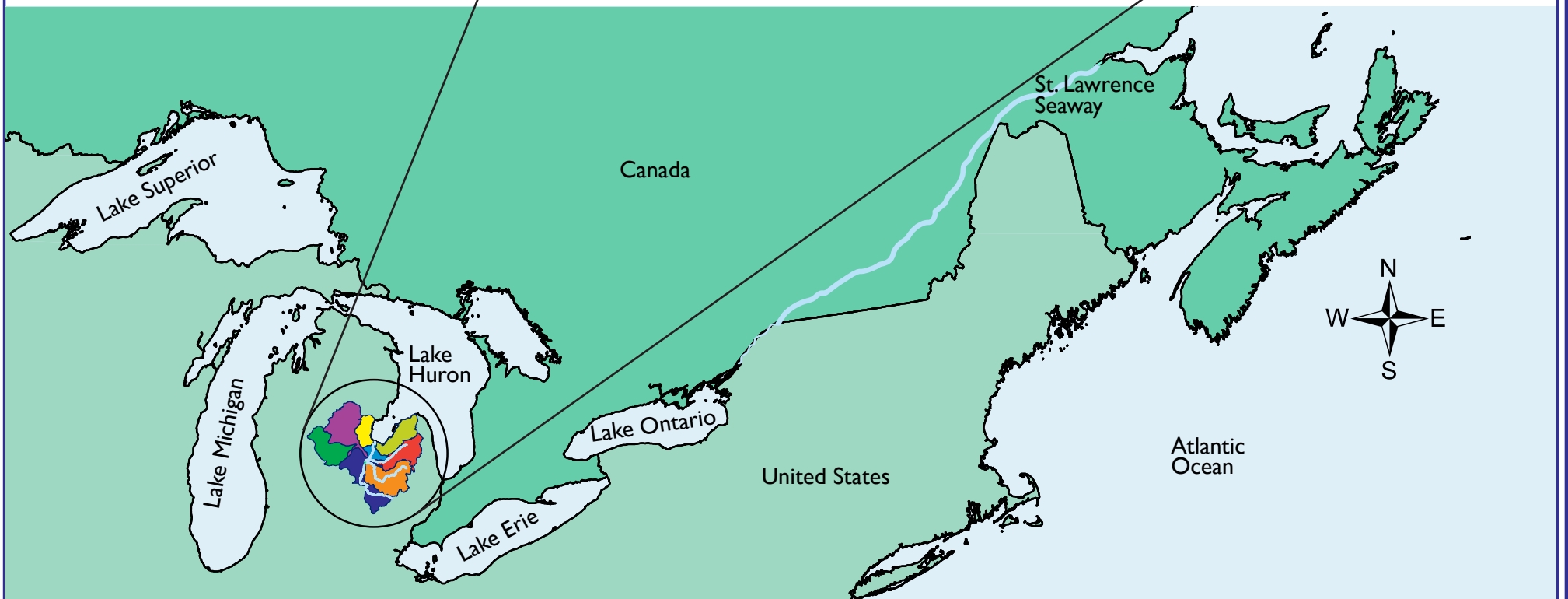
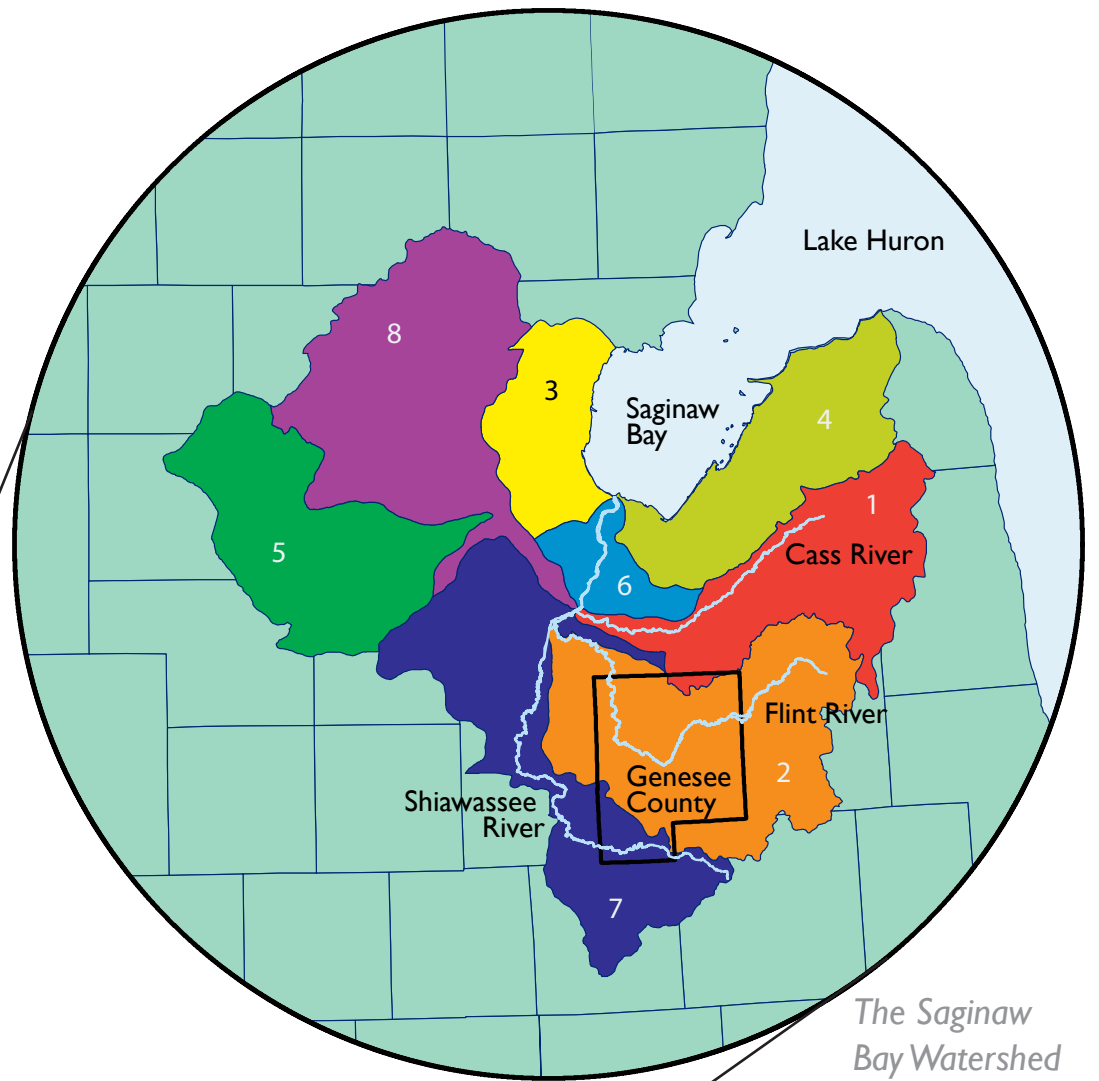


Oceans, Lakes and Rivers Are Connected

A watershed is the area of land that drains water into a particular river, lake or even ocean. Everything we do on the land effects "Our Water." When rain falls to the ground, it travels over top of land or underground into lakes, rivers, streams and creeks.

This is the Saginaw Bay Watershed. The Saginaw Bay Watershed is made up of many smaller watersheds. Can you find the Flint River? The Flint River Watershed is one of the smaller watersheds that together with other watersheds, like the Cass River or Shiawassee River Watersheds, help form the Saginaw Bay Watershed. The Flint River Watershed is part of the Saginaw Bay Watershed, which is part of the larger Lake Huron Watershed.

The Flint River Watershed covers most of Genesee County. There are two other major watersheds in Genesee County: the Shiawassee River Watershed and the Cass River Watershed. Can you find the Shiawassee River Watershed at the Southwest corner of Genesee County and the Cass River Watershed in the North?



Legend

	Michigan Counties		1 Cass River Watershed
	Genesee County		2 Flint River Watershed
	Water		3 Kawkawlin-Pine River Watershed
	Canada		4 Pigeon-Wiscoggin River Watershed
	United States		5 Pine River Watershed
			6 Saginaw River Watershed
			7 Shiawassee River Watershed
			8 Tittabawassee River Watershed

Watersheds fit together like little bowls inside of bigger ones. The Flint River drains into the Saginaw River and the Saginaw River drains into the Saginaw Bay. Therefore, the Flint River is part of the Saginaw Bay Watershed. Saginaw Bay is part of the Lake Huron. Lake Huron drains to Lake Erie, then to Lake Ontario, then through the St. Lawrence River and finally all the way to the Atlantic Ocean! Now that you know how water travels from Genesee County to the Atlantic Ocean, can you trace the path on this map?



What Is Your Watershed Address?

The Flint River Watershed is made up of smaller watersheds called sub-watersheds. They are shown on this map in different colors. Can you find the sub-watershed where your city or town is located?

How Do Watersheds Get Their Name?

A watershed is the area of land that drains water into a particular river, lake or even ocean. Watersheds are named after the lake, stream or river where that area of land's water drains into. For example, the Flint River Watershed is called that because the Flint River is the water body where that watershed drains to. Similarly, the Gilkey Creek Sub-Watershed is called that because that particular area of land drains to the Gilkey Creek.

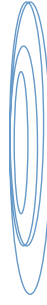
What Watersheds Do You Live In?

We are all a resident of a watershed, just like we are residents of a county and town in Michigan. Every one of us has a watershed address. In Genesee County, we are part of a big watershed called the Great Lakes Basin, the Saginaw Bay Watershed and either the Flint River, Cass River or Shiawassee River Watersheds. We also live within a sub-watershed of the Flint River, Cass River or Shiawassee River Watersheds.

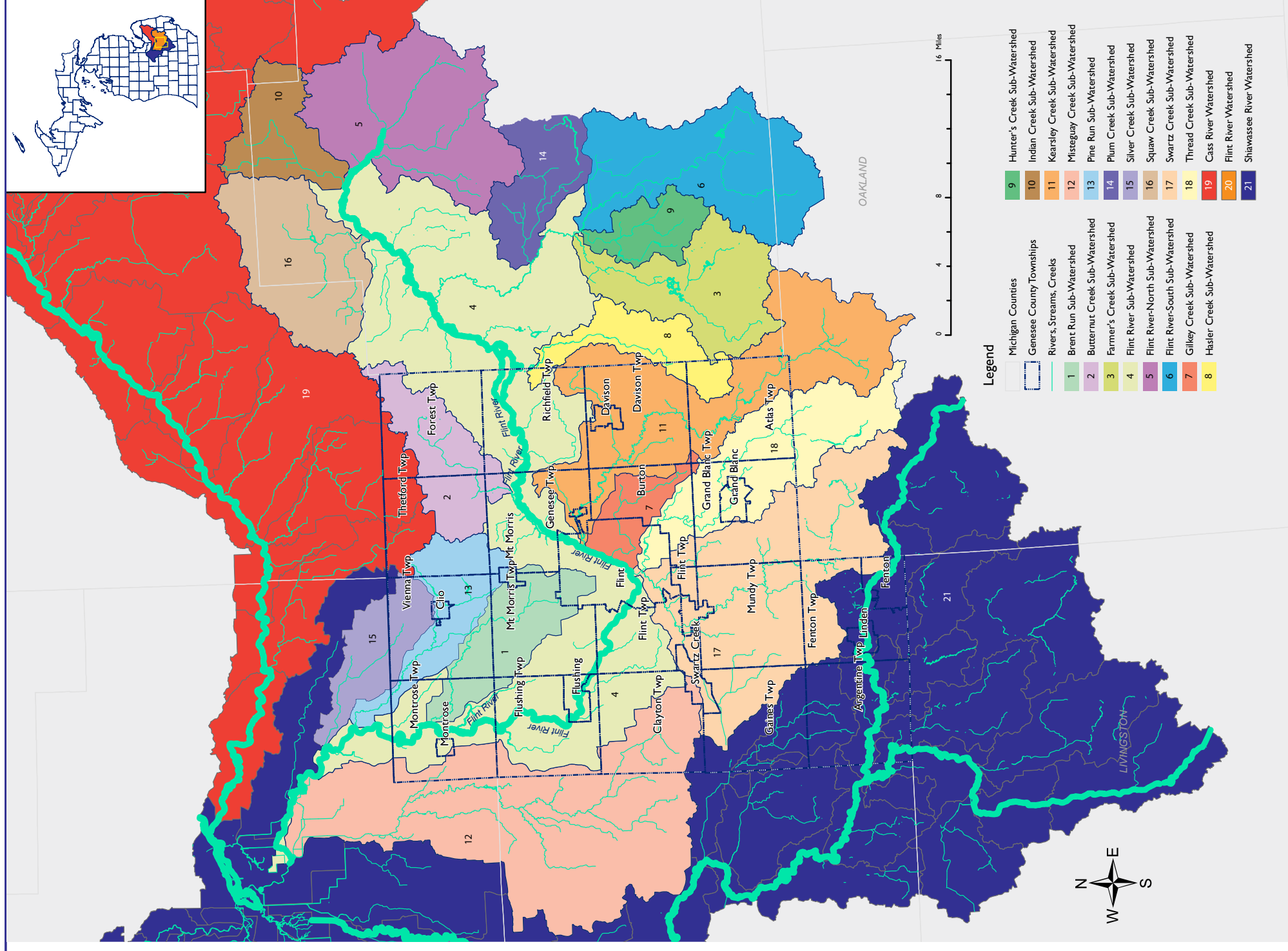
Use this space to write down your watershed address.

Street Address	Watershed Address
Country: United States	Ocean: Atlantic Ocean
Region: Great Lakes	Major Water Body: Great Lakes
State: Michigan	Major Bay: Saginaw Bay, Lake Huron
County: Genesee	Large River: Flint/Shiawassee/Cass River
Town/City: _____	Tributary River/Creek: _____

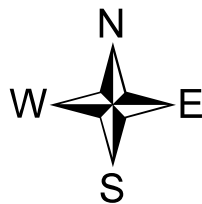
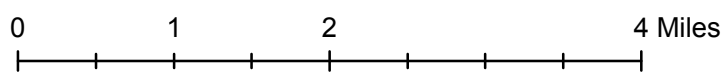
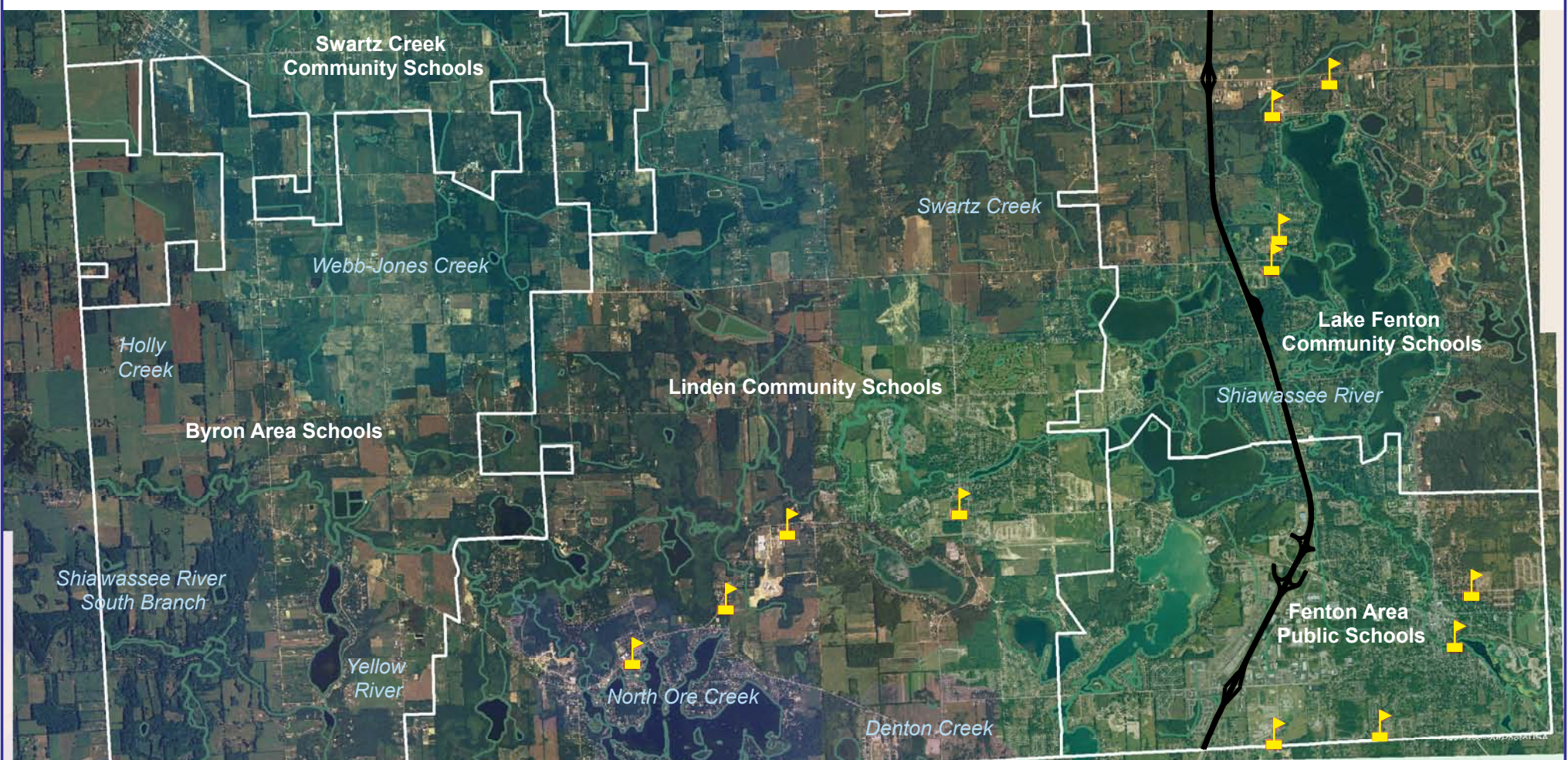
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our water
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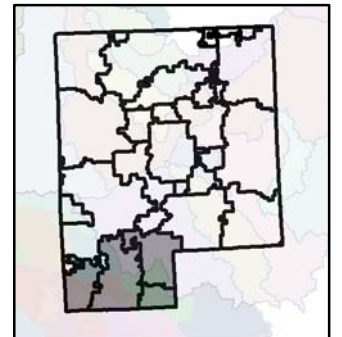


In What Sub-Watershed Is Your School Located?



Legend

- Major Roads
- 🚩 Schools
- ▭ School Districts
- Lakes, Rivers, Streams



This map shows your school. Can you find it?
Are there any nearby rivers, streams or creeks?

In what sub-watershed is your school located?

As townships, towns and cities grow, more roads and parking lots have to be built. However, when it rains or snows, pavement does not soak up water. Do you see any paved parking lots or roads outside your school?

Unfortunately, as clean rain or snow melt (also called storm water) flows over pavement or the ground, it picks up and carries with it pollution like dirt, litter, oil, leaves and animal waste into storm drains. Where does storm water go after it flows into a storm drain?

The storm water that enters storm drains flows directly to our lakes, rivers and streams, carrying all the pollution it has picked up along the way. Common pollutants that wash into our lakes, rivers and streams in storm water include:

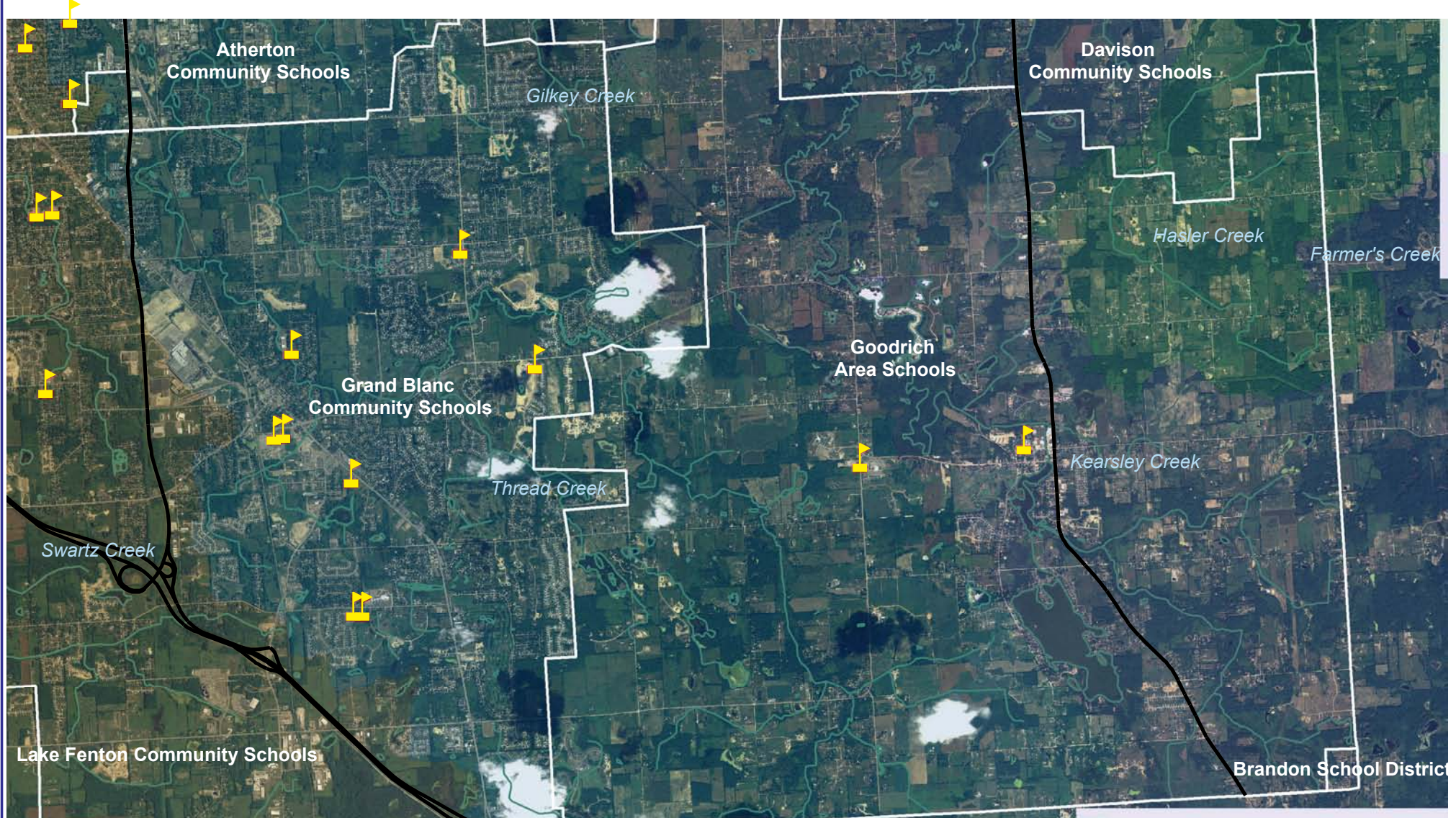
- Car fluids such as motor oil or gas
- Chemicals used to kill weeds or fertilizers to grow lawns and gardens
- Pet wastes
- Litter
- Soil from bare ground where vegetation has been removed or killed

When polluted storm water enters our lakes and rivers, it can cause many problems:

- The plants and animals that live nearby may become sick.
- The humans who drink the water or use it for swimming may become sick.
- The humans who live next to water may notice a bad odor or excessive growth of algae.
- The humans or animals that eat the fish from that polluted water might get sick.

This is why we need to work together and follow the seven simple steps to keep our water clean!

In What Sub-Watershed Is Your School Located?



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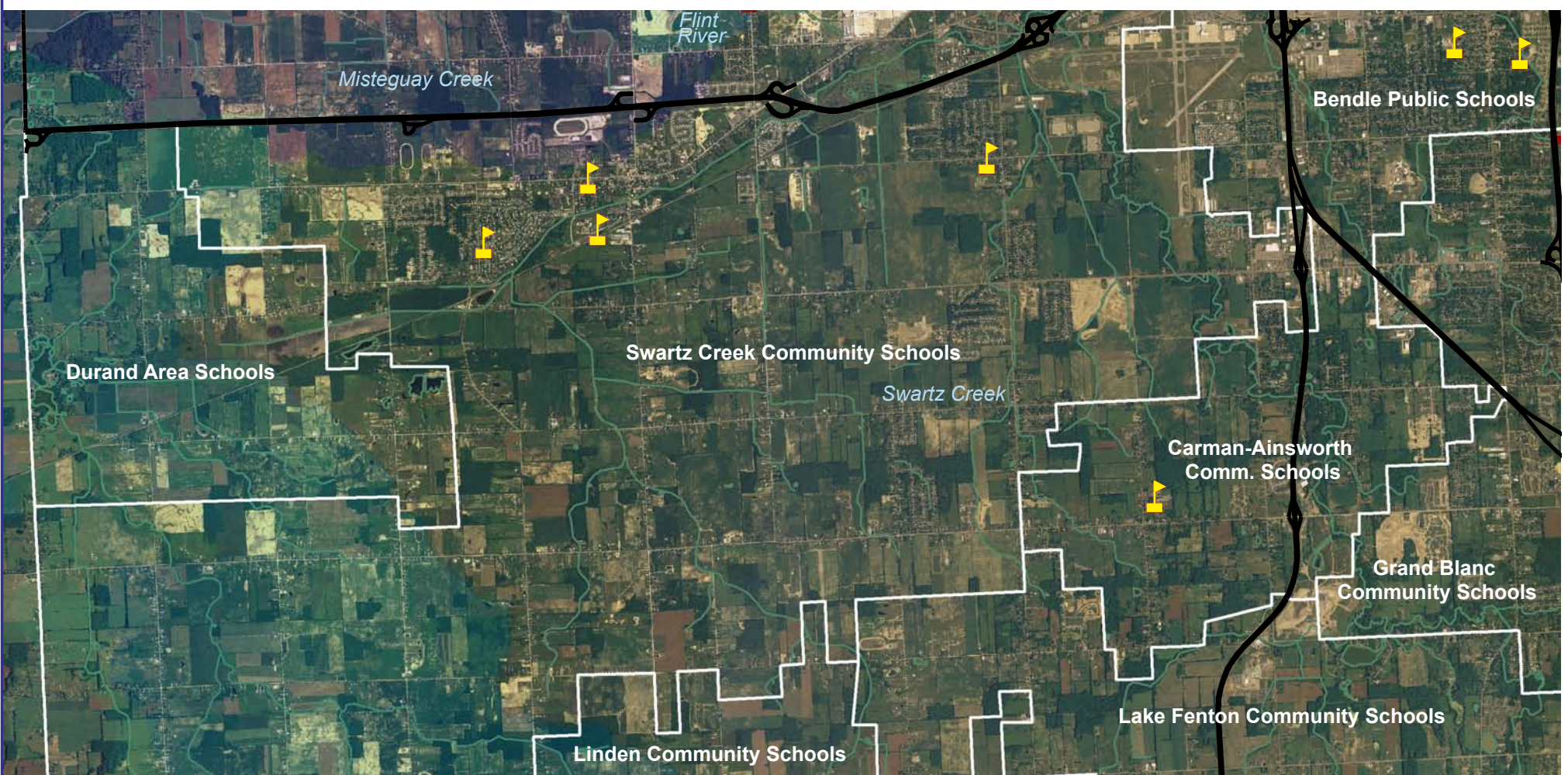
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www.cleargenesewater.org

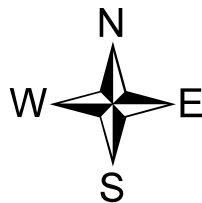
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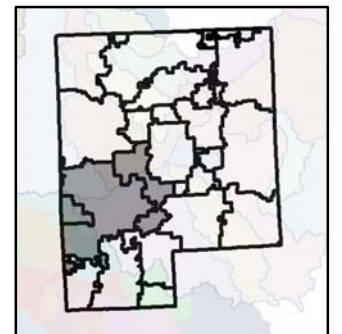


0 1 2 4 Miles



Legend

- Major Roads
- Schools
- School Districts
- Lakes, Rivers, Streams



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As townships, towns and cities grow, more roads and parking lots have to be built. However, when it rains or snows, pavement does not soak up water. Do you see any paved parking lots or roads outside your school?

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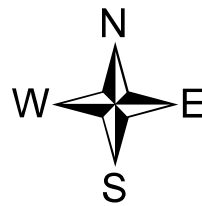
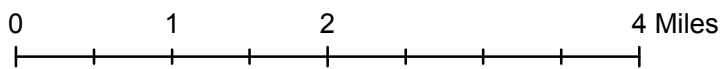
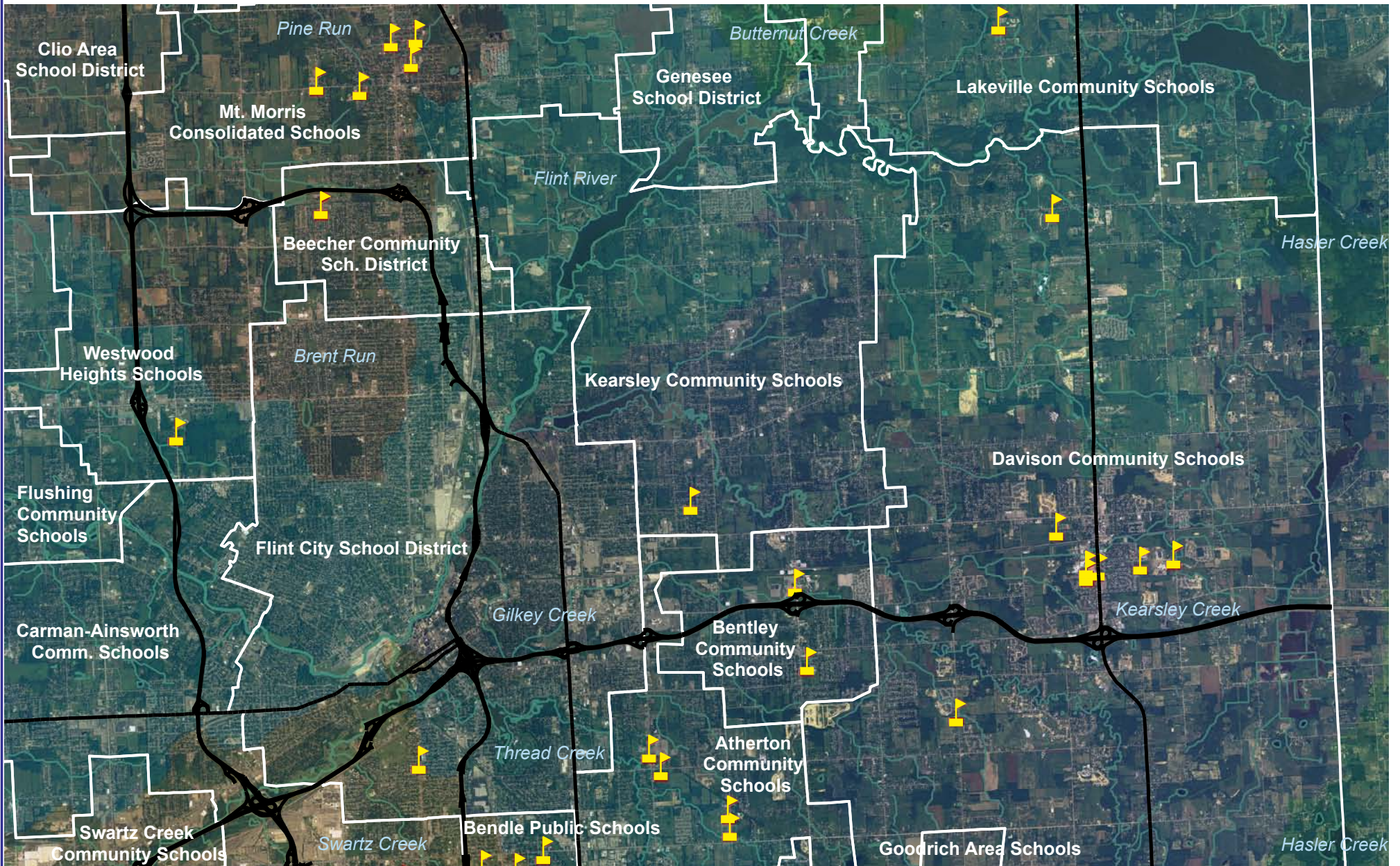
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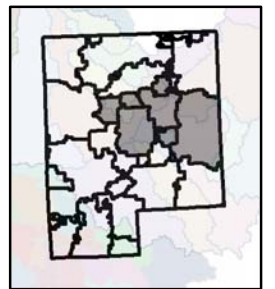


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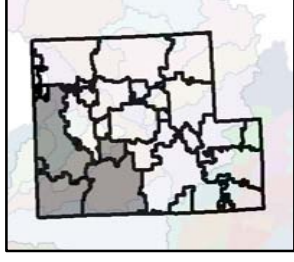
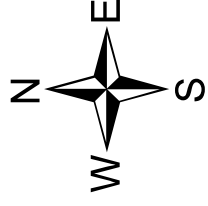
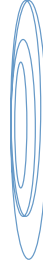
Unfortunately, as clean rain or snow melt (also called storm water) flows over pavement or the ground, it picks up and carries with it pollution like dirt, litter, oil, leaves and animal waste into storm drains. Where does storm water go after it flows into a storm drain?

The storm water that enters storm drains flows directly to our lakes, rivers and streams, carrying all the pollution it has picked up along the way. Common pollutants that wash into our lakes, rivers and streams in storm water include:

- Car fluids such as motor oil or gas
- Chemicals used to kill weeds or fertilizers to grow lawns and gardens
- Pet wastes
- Litter
- Soil from bare ground where vegetation has been removed or killed

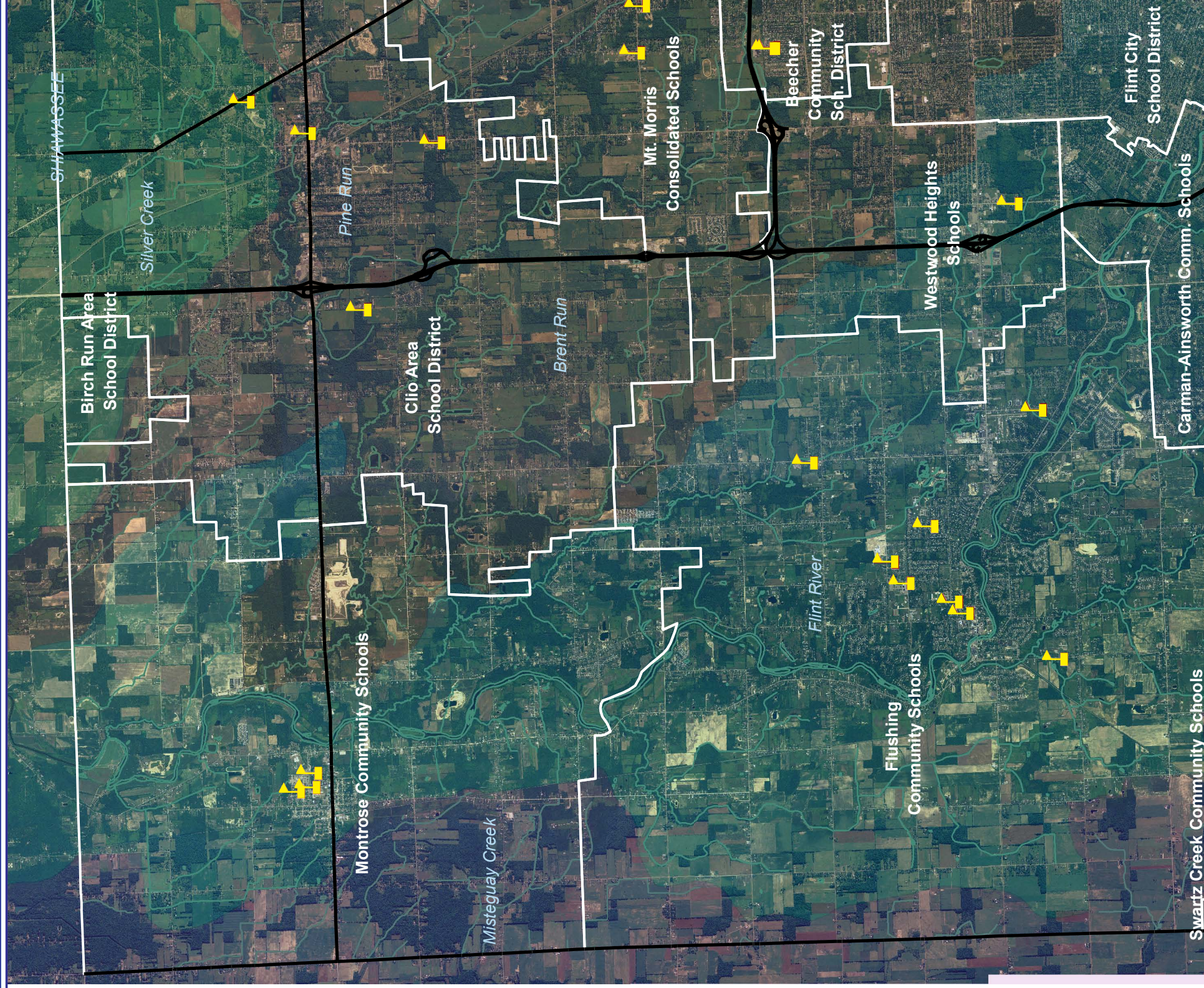
When polluted storm water enters our lakes and rivers, it can cause many problems:

- The plants and animals that live nearby may become sick.
- The humans who drink the water or use it for swimming may become sick.
- The humans who live next to water may notice a bad odor or excessive growth of algae.
- The humans or animals that eat the fish from that polluted water might get sick.

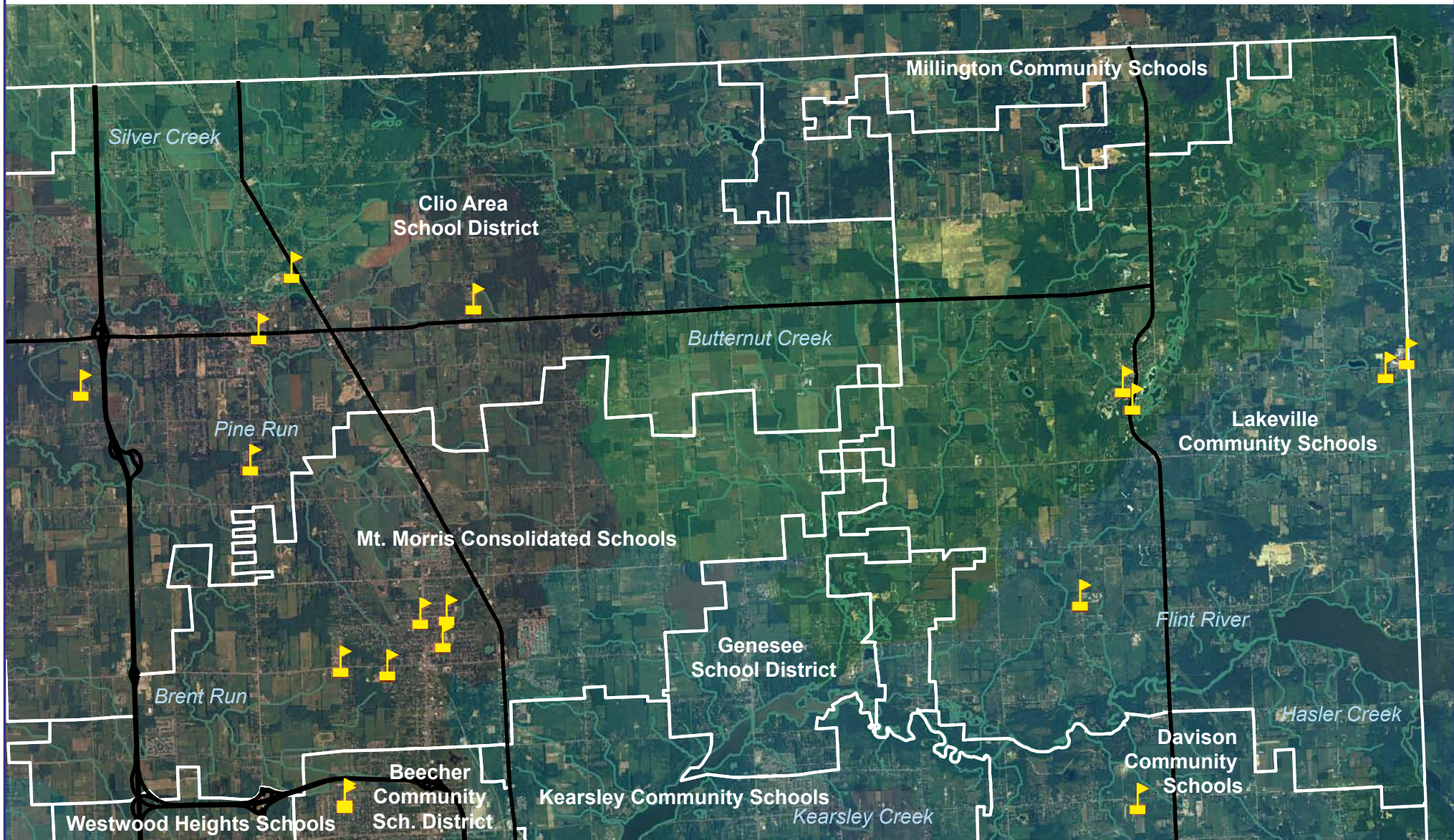


Legend

- Major Roads
- 📍 Schools
- ▭ School Districts
- Lakes, Rivers, Streams



In What Sub-Watershed Is Your School Located?



This map shows your school. Can you find it?
Are there any nearby rivers, streams or creeks?

In what sub-watershed is your school located?

As townships, towns and cities grow, more roads and parking lots have to be built. However, when it rains or snows, pavement does not soak up water. Do you see any paved parking lots or roads outside your school?

Unfortunately, as clean rain or snow melt (also called storm water) flows over pavement or the ground, it picks up and carries with it pollution like dirt, litter, oil, leaves and animal waste into storm drains. Where does storm water go after it flows into a storm drain?

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- The plants and animals that live nearby may become sick.
- The humans who drink the water or use it for swimming may become sick.
- The humans who live next to water may notice a bad odor or excessive growth of algae.
- The humans or animals that eat the fish from that polluted water might get sick.

This is why we need to work together and follow the seven simple steps to keep our water clean!

www.cleargenesewater.org

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



Charter the Genesee Belle for Your Special Occasion!



The Genesee Belle Paddlewheel Riverboat is available for wedding ceremonies, receptions and parties of 50 to 80 guest.

Ten (10) banquet-style rectangular tables and eighty (80) chairs are available for use, and restroom facilities occupy the lower level.

A canopy covers the upper level deck of the Genesee Belle, which is furnished with small patio tables and chairs.



The Genesee Belle may be rented for chartered cruises, at the capacity of 149 people, for the rate of \$475 for the first hour and \$225 for every additional hour.

To learn how you can charter the Genesee Belle for your special occasion or group go online at geneseecountyparks.org or call: 810.736.7100, ext. 6, or 800.648.PARK, ext. 6.

GENESEE COUNTY PARKS
Get away. Right away.
geneseecountyparks.org

GENESEE COUNTY PARKS
Get away. Right away.

2011 Cruise Schedule Genesee Belle Paddlewheel Riverboat



Friday & Sunday Evening Summer & Fall Lunch

Lunch cruise reservations can be made online at:
geneseecountyparks.org

Cruises depart from
Stepping Stone Falls
5161 Branch Road, Flint

Please be advised that smoking is not permitted on the Genesee Belle.

WELCOME

The Genesee Belle Paddlewheel Riverboat is a replica of the riverboats that traveled down the mighty Mississippi River during the era of Mark Twain. The Belle's upper deck offers cool summer breezes and unobstructed sightseeing. The Belle's enclosed lower deck is surrounded by windows that offer a stunning view of Mott Lake and is climate-controlled in the summer and fall months. The Genesee Belle offers three summer cruises: Sunday Evening, Wednesday Lunch, and Friday Evening.



All Genesee Belle cruises depart from Stepping Stone Falls, which is located at 5161 Branch Road, Flint. For all cruises, please arrive 15 minutes prior to departure. To learn more about the Genesee Belle Paddlewheel Riverboat, its cruise schedule and special charters visit geneseecountyparks.org.

Beat the Heat Evening Cruises

Every Friday & Sunday

July 8 - August 28

\$2.50/adults

\$1.50/12 yrs. and younger

7:00 pm—7:45 pm

The Friday and Sunday Evening Cruise tickets can only be purchased one (1) hour prior to the cruise at Stepping Stone Falls' concession window. Children must be accompanied by an adult.

Summer & Fall Lunch Cruises

Wednesdays

12 Noon-1 pm

July 6 and 20

October 5, 12, 19, and 26

For a unique dining experience, take a cruise on the Genesee Belle and enjoy the peace and serenity of beautiful Mott Lake as you enjoy a delicious lunch! Make your lunch reservations online at geneseecountyparks.org or call 810.736.7100, ext. 6, or 800.648.PARK, ext. 6.



Lunch Choices:

Pasta Salad

Chicken Salad

This yummy light lunch is \$15.95 per person includes your choice of one of two entrée selections, non-alcoholic beverage, chips, cookie, and the boat ride.

Reservations are required in advance for the Lunch Cruise and can be made online and are accepted until the preceding Wednesday, based on availability. Make your reservations online at geneseecountyparks.org or call 810.736.7100, ext. 6, or 800.648.PARK, ext. 6.



geneseecountyparks.org



A Year's Worth of Activities to Celebrate For-Mar's 40th Anniversary.

OCTOBER 2010

SATURDAY, OCTOBER 16

Fall Color Rides with Forbes!

Take a ride through For-Mar with Forbes Merkley and his tractor. Enjoy the fall colors and learn a little about the history of For-Mar. For families, all ages.

Time: 9 am, 11 am and 1 pm.

Cost: FREE!

Pre-registration not required, but organized groups are asked to call ahead.

20 person limit per ride. First come first served.

SATURDAY, OCTOBER 16

CrimFit Family Event

Ultimate Frisbee

For families, all ages.

Time: 10 am - 11 am. Cost: FREE!

Pre-registration not required, but organized groups are asked to call ahead.

SATURDAY, OCTOBER 23

Fall Color Rides with Forbes!

Take a ride through For-Mar with Forbes Merkley and his tractor. Enjoy the fall colors and learn a little about the history of For-Mar. For families, all ages.

Time: 9 am, 11 am and 1 pm.

Cost: FREE!

Pre-registration not required, but organized groups are asked to call ahead.

20 person limit per ride. First come first served.

SATURDAY, OCTOBER 30

Nature's Heroes

Halloween Hayride!

Take a hayride with Paul Bunyan and meet some of his friends; Smokey Bear, Captain Planet and many more. Kids are encouraged to wear their Halloween costumes for this family friendly excursion. For families, all ages.

Time: 9 am, 11 am and 1 pm.

Cost: FREE!

Pre-registration not required, but organized groups are asked to call ahead.

20 person limit per ride. First come first served.

NOVEMBER 2010

SATURDAY, NOVEMBER 6

Webelos Scouting Outing:

Tracking Historical

Merit Badge

In honor of the 100th anniversary of the Boy Scouts of America, come meet other scouts and earn your Tracking (originally called "stalking") Historical Merit Badge.

For children, ages 7-12.

Time: 11am - 12:30pm.

Cost: FREE!

Pre-registration required by 11/4/10.

Minimum 4 - 40 maximum

SATURDAY, NOVEMBER 13

Webelos Scouting Outing:

Pathfinding Historical

Merit Badge

In honor of the 100th anniversary of the Boy Scouts of America, come meet other scouts and earn your Pathfinding Historical Merit Badge.

For children, ages 7-12.

Time: 11am - 12:30pm.

Cost: FREE!

Pre-registration required by 11/11/10.

Minimum 4 - 40 maximum

SATURDAY, NOVEMBER 20

CrimFit Family Event

Nature Hike

For families, all ages.

Time: 10am - 11am. Cost: FREE!

Pre-registration not required, but organized groups are asked to call ahead.

DECEMBER 2010

WEDNESDAY, DECEMBER 1

Online Photography Contest

Kick Off

Have a stunning photo taken while visiting For-Mar? Enter your lovely photos in For-Mar's Flickr photo contest. Submissions will be taken until December 31, 2010. Public votes in January and the winners will have their photos on display at For-Mar starting on January 29, 2011.

Details: 810-789-8567

SATURDAY, DECEMBER 4

Holiday Walk

Join us for a family friendly fun way to celebrate the 40th holiday season at For-Mar. Building and grounds will be open for an evening filled with activities and entertainment for the entire family. For families, all ages.

Time: 5 pm - 9 pm. Cost: FREE!

Pre-registration not required, but organized groups are asked to call ahead.

SATURDAY, DECEMBER 11

Holiday Walk

Join us for a family friendly fun way to celebrate the 40th holiday season at For-Mar. Building and grounds will be open for an evening filled with activities and entertainment for the entire family.

For families, all ages.

Time: 5 pm - 9 pm. Cost: FREE!

Pre-registration not required, but organized groups are asked to call ahead.

SATURDAY, DECEMBER 18

CrimFit Family Event

Indoor Fitness

For families, all ages.

Time: 10am - 11am. Cost: FREE!

Pre-registration not required, but organized groups are asked to call ahead.

JANUARY 2011

SATURDAY, JANUARY 1 THROUGH

SATURDAY, JANUARY 22

Online Photography

Contest Voting

Come share your input and vote in the For-Mar Flickr Photo Contest. Winning photos will be displayed at For-Mar starting on January 29, 2011.

Details: 810-789-8567

SATURDAY, JANUARY 15

CrimFit Family Event

Outdoor Winter Physical Activity

For families, all ages.

Time: 10am - 11am. Cost: FREE!

Pre-registration not required, but organized groups are asked to call ahead.

SATURDAY, JANUARY 29

Photography Contest

Winners Revealed

View the winning photographs from For-Mar's Flickr photo contest.

For families, all ages.

Time: 2 pm - 3:30 pm.

Cost: FREE!

Pre-registration not required, but organized groups are asked to call ahead.

FEBRUARY 2011

SATURDAY, FEBRUARY 5

F.A.N.s (Family Adventures in Nature):

Snow Animal Making

Competition

Bring your family, friends or co-workers out for an afternoon of fierce competition. The best snow animal wins! Judging promptly at 3:30 pm. Don't forget to bring your own shovels and brooms.

For families, all ages.

Time: 2 pm - 3:30 pm.

Cost: FREE!

Pre-registration not required, but organized groups are asked to call ahead.

SATURDAY, FEBRUARY 12

For-Mar's Wedding Package Challenge

Love nature as much as you love your sweetie! Take the tree-hugging challenge and you may win the wedding package of your dreams.

For adults, ages 18 and older.

Time: Begins 10am. Cost: FREE!

Pre-registration required by 2/10/11.

SATURDAY, FEBRUARY 19

CrimFit Family Event

Outdoor Winter Physical Activity

For families, all ages.

Time: 10am - 11am. Cost: FREE!

Pre-registration not required, but organized groups are asked to call ahead.

MARCH 2011

SATURDAY, MARCH 5

Forbes Merkley Sugar

Bush Walk

Join Forbes as he shows you how to tap maple trees and make maple syrup.

For families, all ages.

Times: 10 am - 11:30am, repeated from 1:30pm - 3 pm.

Cost: FREE!

Pre-registration not required, but organized groups are asked to call ahead.

SATURDAY, MARCH 12

Forbes Merkley Sugar

Bush Walk

Join Forbes as he shows you how to tap maple trees and make maple syrup.

For families, all ages.

Times: 10 am - 11:30am, repeated from 1:30pm - 3 pm.

Cost: FREE!

Pre-registration not required, but organized groups are asked to call ahead.

SATURDAY, MARCH 19

CrimFit Family Event

Indoor Yoga

For families, all ages.

Time: 10am - 11am. Cost: FREE!

Pre-registration not required, but organized groups are asked to call ahead.

SATURDAY, MARCH 26

BEEgidders Workshop

Get started with a new hobby by learning the basic care and maintenance of a bee hive with local beekeepers.

For adults, ages 16 and older.

Time: 10 am - 12pm. Cost: FREE!

Pre-registration by 2/24/2011.



For-Mar at 40.

APRIL 2011

SATURDAY, APRIL 16

CrimFit Family Event

Running/Walking

For families, all ages.

Time: 10am - 11am. Cost: FREE!

Pre-registration not required, but organized groups are asked to call ahead.

SATURDAY, APRIL 30

Horticulture: Arbor Day Celebration

Join us as we plant a tree for the 40th anniversary of For-Mar. The tree will be dedicated to Forbes and Martha Merkley, whose foresight has made For-Mar possible. Displays and hands-on activities for kids and adults alike. For families, all ages.

Time: 12 pm to 3 pm. Cost: FREE!

Pre-registration not required, but organized groups are asked to call ahead.

MAY 2011

SATURDAY, MAY 7

Stroller Hike

Join us at the Dewater's building for a stroll around the barrier-free paved trail. Wind your way through the trees with your special tot for a fun, sensory filled experience. For families, all ages.

Time: 10 am - 10:30am.

Cost: FREE!

Pre-registration not required, but organized groups are asked to call ahead.

SATURDAY, MAY 14

Mother's Day Wildflower Walk with Martha Merkley

Visit with Martha Merkley as she shares her favorite wildflowers growing throughout the Preserve. For families, all ages.

Time: 10 am - 11:30am.

Cost: FREE!

Pre-registration not required, but organized groups are asked to call ahead.

SATURDAY, MAY 21

CrimFit Family Event

Outdoor Fitness

For families, all ages.

Time: 10 am - 11 am. Cost: FREE!

Pre-registration not required, but organized groups are asked to call ahead.

JUNE 2011

SATURDAY, JUNE 4

Kite Day

Learn about nature's wind power with kite making and flying in For-

Mar's Arboretum.

For families, all ages.

Time: 10 am - 12 pm. Cost: FREE!

Pre-registration not required, but organized groups are asked to call ahead.

SATURDAY, JUNE 11

Family Picnic

Bring your family and a picnic basket to For-Mar for some family entertainment, we'll provide the ice cream!

For families, all ages.

Time: 11 am - 2 pm. Cost: FREE!

Pre-registration not required, but organized groups are asked to call ahead.

SATURDAY, JUNE 18

CrimFit Family Event

Family Fitness Relay

For families, all ages.

Time: 10 am - 11 am. Cost: FREE!

Pre-registration not required, but organized groups are asked to call ahead.

SATURDAY, JUNE 25

Horticulture: The Edible Landscape

Have you ever looked at your landscape as a sustainable food source? Most of us have not and by default we often overlook Mother Nature's delicacies. Take a walk with Greg Kruszewski, permaculturist and organic gardener, as he guides us through the edible landscape at For-Mar. For adults, ages 16 and older.

Time: 2 pm - 3 pm. Cost: FREE!

Pre-registration is recommended, but not required.

JULY 2011

SATURDAY, JULY 9, 10

Horticulture: Container Gardening Challenge

Container gardening is a practical way to grow flowers and vegetables in small spaces. Besides being practical, these small gardens can be works of art! Bring in your "work of art" (your container garden) and enter it in our community wide challenge. Prizes for both kids, ages 15 and under, and adults, ages 16 and older. Schedule:

Container Drop off - Friday, July 8, from 12 pm to 3 pm.

Public viewing and judging -

Saturday, July 9 and Sunday July 10, from 8 am to 3 pm.

For families, all ages.

Cost: FREE!

SATURDAY, JULY 16

CrimFit Family Event

Family Water Relay

For families, all ages.

Time: 10 am - 11 am. Cost: FREE!

Pre-registration not required, but organized groups are asked to call ahead.

SATURDAY, JULY 23

Wildflower Walk with Martha Merkley

Visit with Martha Merkley as she shares her favorite wildflowers growing throughout the Preserve. For families, all ages.

Time: 10am - 11:30am.

Cost: FREE!

Pre-registration not required, but organized groups are asked to call ahead.

SATURDAY, JULY 30

Horticulture: 40th Anniversary Shade Garden Walkthrough

In honor of For-Mar's 40th anniversary we installed a new shade garden. This garden, designed by Brad Meehle from Eye On Design, features a collection of shade tolerant perennials and shrubs, both native and introduced. Join Brad as he walks us through his latest design.

For adults, ages 16 and older

Cost: FREE!

AUGUST 2011

SATURDAY, AUGUST 6

Stroller Hike

Join us at the Dewater's building for a stroll around the barrier-free paved trail. Tots will begin leaning about forest animals with songs and finger play.

For families, all ages.

Time: 10am - 10:30am.

Cost: FREE!

Pre-registration not required, but organized groups are asked to call ahead.

SATURDAY, AUGUST 13

Horticulture: Vertical Gardening

Vertical gardening is a wonderful way to garden and beautify your home. Join us as we take a look at what it takes to create this exciting new garden style

For adults, ages 16 and older

Cost: FREE!

Pre-registration not required, but recommended.

SATURDAY, AUGUST 20

CrimFit Family Event

Running/Walking

For families, all ages.

Time: 10 am - 11 am. Cost: FREE!

Pre-registration not required, but organized groups are asked to call ahead.

SATURDAY, AUGUST 27

GPS Scavenger Hunt

Bring a GPS unit, family members, and your hiking shoes on a wild goose chase for clues and prizes. For families, all ages.

Time: 10am - 12pm. Cost: FREE!

Pre-registration not required, but organized groups are asked to call ahead.

SEPTEMBER 2011

SATURDAY, SEPTEMBER 10

Mother Goose Hayride

Take a ride through For-Mar to visit famous characters from Mother Goose's rhymes and stories.

For families, all ages.

Time: 9 am, 11 am and 1 pm.

Cost: FREE!

Pre-registration not required, but organized groups are asked to call ahead.

20 person limit per ride. First come first served.

SATURDAY, SEPTEMBER 17

CrimFit Family Event

Nature Hike

For families, all ages.

Time: 10 am - 11 am. Cost: FREE!

Pre-registration not required, but organized groups are asked to call ahead.

SATURDAY, SEPTEMBER 24

Horticulture: Espalier

Espalier is the method of growing trees and shrubs against a flat surface, often a trellis or wall. This is a great way to grow your favorite fruit tree when you have little to no space. Great for small lots and urban areas.

For adults, ages 16 and older

Cost: FREE!

Pre-registration not required, but recommended.

**GENESEE
COUNTY
PARKS**

Get away. Right away.

Genesee County Parks
Reservation Department
810.736.7100, ext. 6
or 800.648.7275, ext. 6
Mon. - Fri. 8:00am - 5:00pm

- With over 11,000 acres of Michigan at its best, the 21 Genesee County Parks make it easy to get away right away.
- Most Genesee County Parks open at 8 a.m. - seven days a week, 365 days a year.
- Anywhere you can walk in a Genesee County Park, you can also jog or run with the exception of For-Mar Nature Preserve & Arboretum.
- Safety matters. That's why motorized vehicles are prohibited on all walking trails.
- Get started.
- Over half of all pets are overweight. A walk in the park just might do your pet a world of good.
- Dogs are allowed in the parks (except upon beaches and For-Mar) while on a leash of less than six feet in length.
- Pick up after your dog. Plastic grocery bags and great poop scoopers. Tie them up and dispose of them in convenient trash barrels.
- Keep your dog on a leash no longer than 6 feet when walking in Genesee County Parks.

8 trails, endless possibilities, a healthier you.

Richfield County Park
2 miles that leads you across the Flint River ... and back again.
6322 N. Insh Rd. in Davison
Open 8:00 am to sunset daily



Linden County Park
Two trails in one between Byram Lake and Pine Lake.
15349 S. Linden Rd. in Linden
Open 8:00 am to sunset daily



Flushing County Park
A mile loop that brings you along the banks of the Flint River.
4417 N. McKinley Rd. in Flushing
Open 8:00 am to sunset daily



Bluebell Boat Launch
Say hi to the gulls and boaters as you follow the 1.5 mile trail. Entrances on Coldwater Rd. and Genesee Rd. south of Stanley Rd.
Open 24 hours a day, 365 days a year



Stepping Stone Falls
Genesee County's most photogenic way to get in shape.
5161 Branch Rd. in Flint
Open 8:00 am to sunset daily



For-Mar Nature Preserve & Arboretum
One of Mid-Michigan's most beautiful places to get away.
2142 N. Genesee Rd. in Burton
Call 810.736.7100 for hours and programs



Buell Lake County Park
Where the great outdoors is as close as a neighborhood park.
14098 Genesee Rd. in Clio
Open 8:00 am to sunset daily



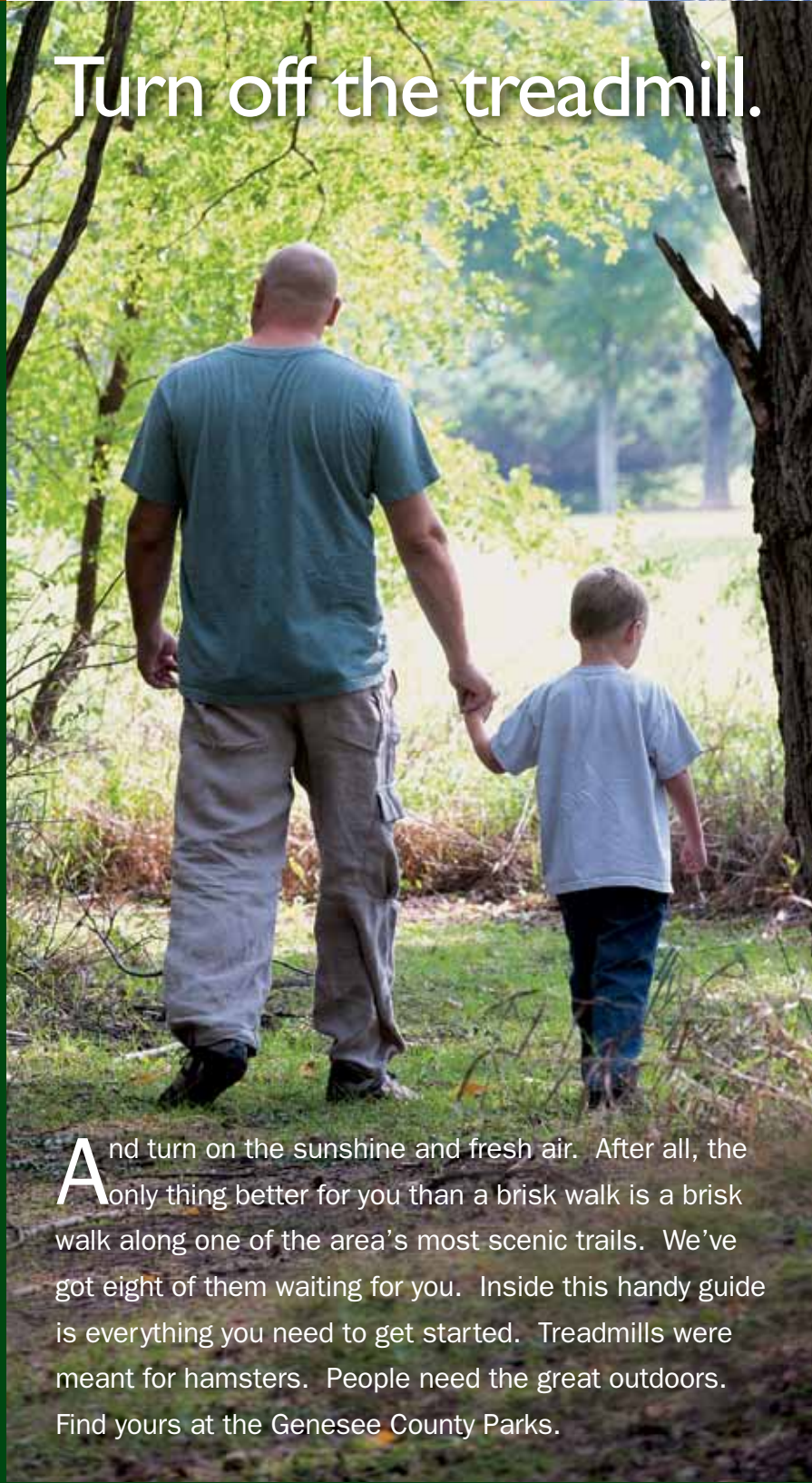
Bluebell Beach
A scenic treat along the shores of Mott Lake. 5500 Bray Rd. in Flint
Call 810.736.7100 for beach hours/dates



Get out. Get active.

- A 2003 report showed that the four million Michigan adults who are physically inactive generated costs of nearly \$8.9 billion in 2002. These costs are borne largely by employers, through health insurance premiums and lost productivity, and through Medicaid payments.
- Michigan ranks 3rd worst among the states for obesity, almost certainly due to excessive caloric consumption and state residents not following one of the key national standards for healthy diets.
- In Michigan 13% of high school students were at risk for becoming overweight. (Youth Risk Behavior Survey, 2001)
- As of 2002, in Michigan approximately 62% of adults were either overweight or obese.

Turn off the treadmill.



And turn on the sunshine and fresh air. After all, the only thing better for you than a brisk walk is a brisk walk along one of the area's most scenic trails. We've got eight of them waiting for you. Inside this handy guide is everything you need to get started. Treadmills were meant for hamsters. People need the great outdoors. Find yours at the Genesee County Parks.

Healthy living starts with the first step.

Your mom knew the secret to a healthier you: Go out and play.



And the experts agree: The best thing you can do for your health is get active. A brisk walk, jog or run for 30 minutes five days a week is all it takes to get started.

At Genesee County Parks, we offer eight trails designed to give you a fun, friendly – and close to home – way to get out of the house and into the best shape of your life.



It turns out, a healthier – and happier – you is just around the corner. At your Genesee County Parks.

Administrative Office
5045 Stanley Road, Flint MI 48506
genesee-countyparks.org
800.648.PARK



Walking Trails



genesee-countyparks.org
800.648.PARK

On Branch Road, North of Carpenter Road



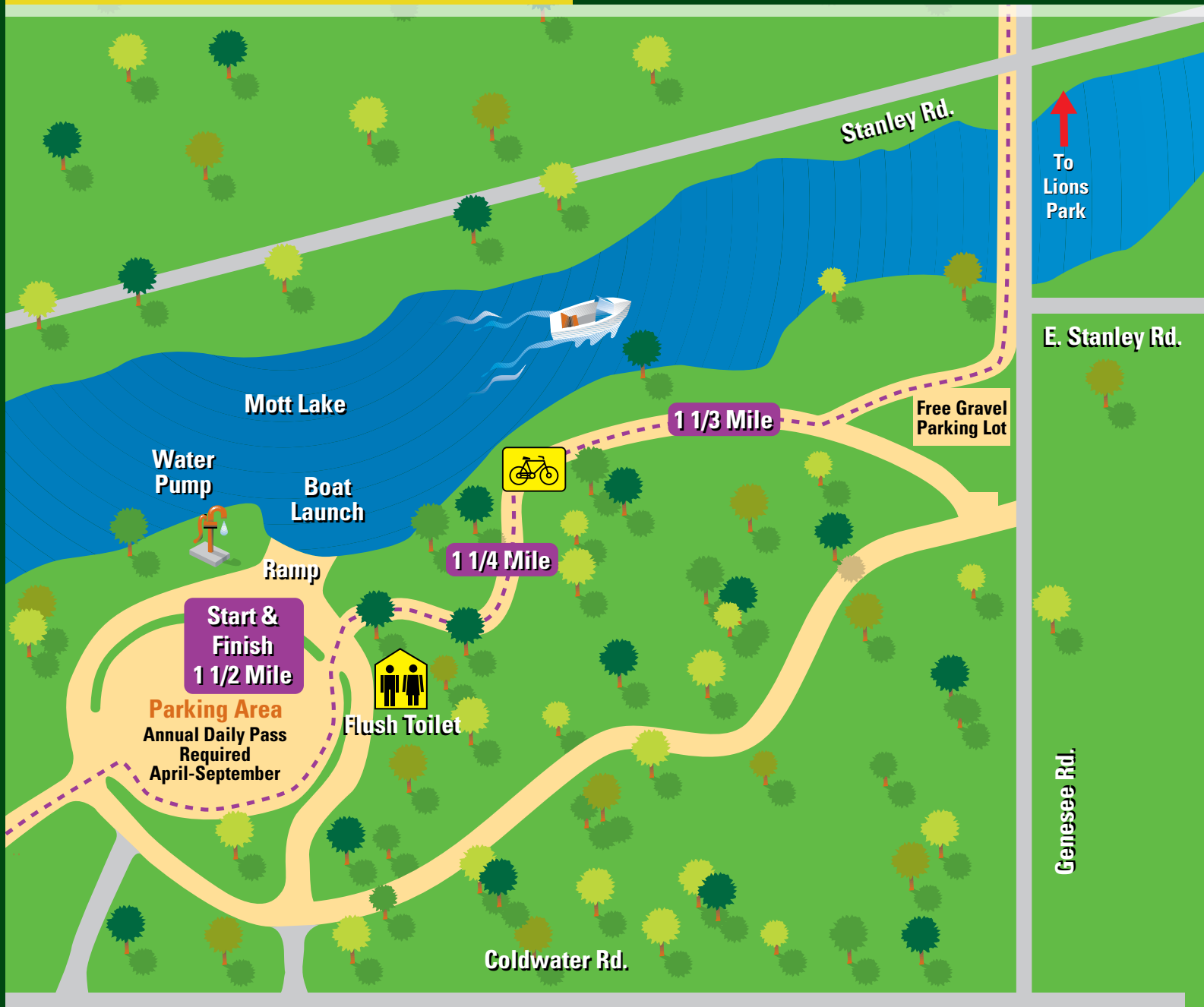
STEPPING STONE FALLS 2/3 MILE TRAIL

On Bray Road, north of Carpenter Road



BLUEBELL BEACH 5/8 MILE TRAIL

BLUEGILL BOAT LAUNCH 1 1/2 MILE TRAIL



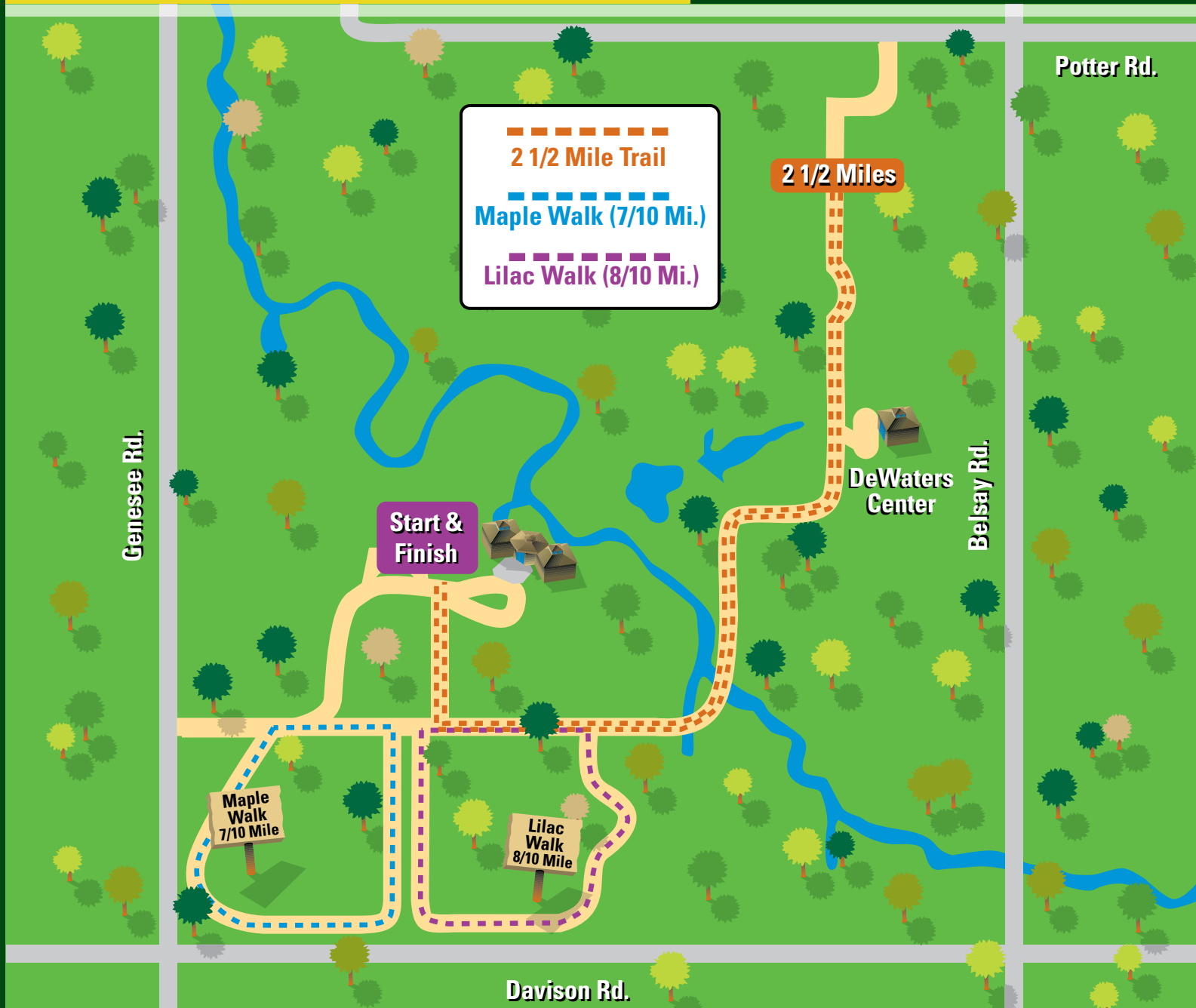
Entrance on Coldwater Road and Genesee Road

BUELL LAKE COUNTY PARK 1 MILE TRAIL



On Genesee Road, north of Vienna (M-57) Road

FOR-MAR NATURE PRESERVE & ARBORETUM TRAILS



On Genesee Road, north of Davison Road

No Dogs Allowed - Biking or Running on Gravel Road Only
For more For-Mar trail info, visit geneseecountyparks.org

RICHFIELD COUNTY PARK 2 MILE TRAIL



On Irish Road, north of Coldwater Road

LINDEN COUNTY PARK 1 1/2 MILE TRAIL



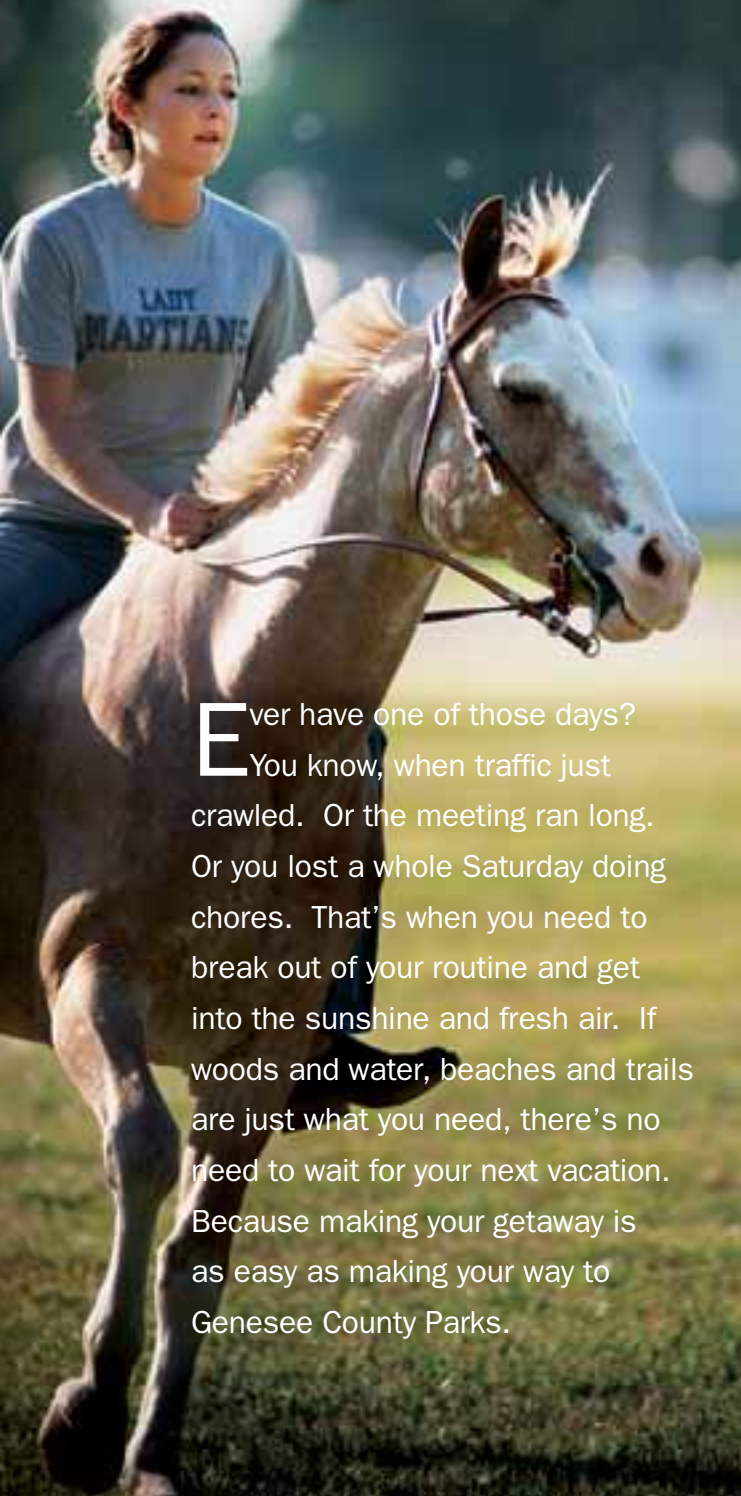
On Linden Road, south of Silver Lake Road

FLUSHING COUNTY PARK 1 MILE TRAIL



On McKinley Road, just south of Carpenter Road

Sometimes you need a getaway.



Ever have one of those days? You know, when traffic just crawled. Or the meeting ran long. Or you lost a whole Saturday doing chores. That's when you need to break out of your routine and get into the sunshine and fresh air. If woods and water, beaches and trails are just what you need, there's no need to wait for your next vacation. Because making your getaway is as easy as making your way to Genesee County Parks.



Yes, we take reservations.

Visit geneseecountyparks.org any time day or night. Or call 810.736.1000, ext. 6, Monday - Friday, 8:00 am - 5:00 pm

Crossroads Village & Huckleberry Railroad

Summer, Halloween and Christmas programs
Coldwater Road Chapel
Village Gazebo
Millstreet Warehouse and Dining Room

Pavilions

Reservations must be made at least 10 days in advance.

Bluebell Beach County Park
Buell Lake County Park
Davison Roadside County Park
Flushing County Park
Linden County Park
Richfield County Park

Genesee Belle Paddlewheel Riverboat

Summer and fall lunch cruises
Beat the Heat cruises
Charters

Wolverine Campground

For-Mar Public Naturalist Programs

Everett A. Cummings Center

Elba Equestrian Complex

Weddings at Genesee County Parks locations

Stepping Stone Falls
For-Mar Nature Preserve and Arboretum
Richfield County Park
Crossroads Village & Huckleberry Railroad
Genesee Belle Paddlewheel Riverboat



geneseecountyparks.org
800.648.PARK

**GENESEE
COUNTY
PARKS** 
Get away. Right away.

GENESEE COUNTY PARKS
Get away. Right away.

Great Getaway Guide



geneseecountyparks.org
800.648.PARK

Get away. Right away.

Michigan's #1 county park system.

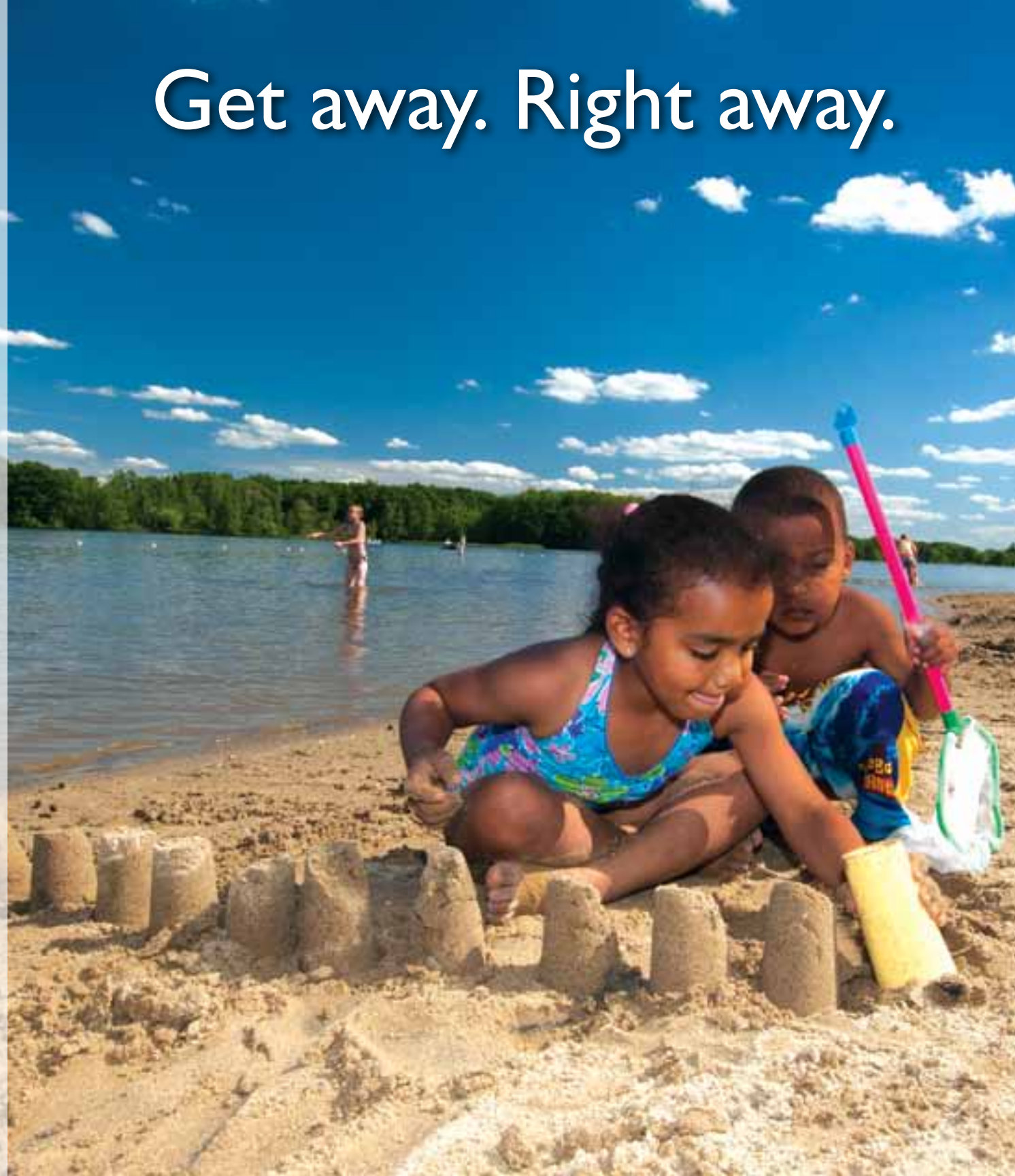
With 11,000 acres of beautiful countryside just around the corner, Genesee County Parks is where Mid-Michigan goes when it needs to get away. From Mott Lake to the For-Mar Nature Preserve and Arboretum, Bluebell Beach to The Mounds ORV park, there's no other place in the state that offers so much natural diversity so close to home.

21 parks, endless fun.

If you can't find fun at Genesee County Parks, you can't find fun anywhere. Just about all the ways people play in the great outdoors are right here at the 21 Genesee County Parks. Canoe the Flint River. Take a hike among rare trees at the For-Mar Nature Preserve and Arboretum. Take your family to Wolverine Campground. Take an ORV out to The Mounds. Or take a horse to the Elba Equestrian Complex. When you need to take yourself as soon as possible to your Genesee County Parks.

Make some history of your own.

Need a break from the rush of daily life? Go back to a time when things were a whole lot simpler. Crossroads Village is an authentic Great Lakes town from the turn of the last century, with over 30 historic structures – lovingly restored – and a thriving community just waiting to welcome you. Take a ride on the world-famous Huckleberry Railroad with someone you love, catch a live performance at the Colwell Opera House or learn a trade from one of our craftspeople. Some folks call it living history. At Crossroads Village, we just call it the time of your life.





Plan your getaway.

For your convenience.

- Make reservations online for campsites, park pavilions, special programs, Crossroads Village, Huckleberry Railroad and Genesee Belle cruises. Just go to geneseecountyparks.org.

- Getting onto the water is easy. Just use one of five boat launches.

- Most parks offer restroom facilities. Because you never know when nature might call.



Safety first, your fun lasts.

- The water at all three Genesee County Parks beaches is tested regularly by the Genesee County Health Department.

- Alcoholic beverages are not permitted in any of the Genesee County Parks.

Four seasons of fun.

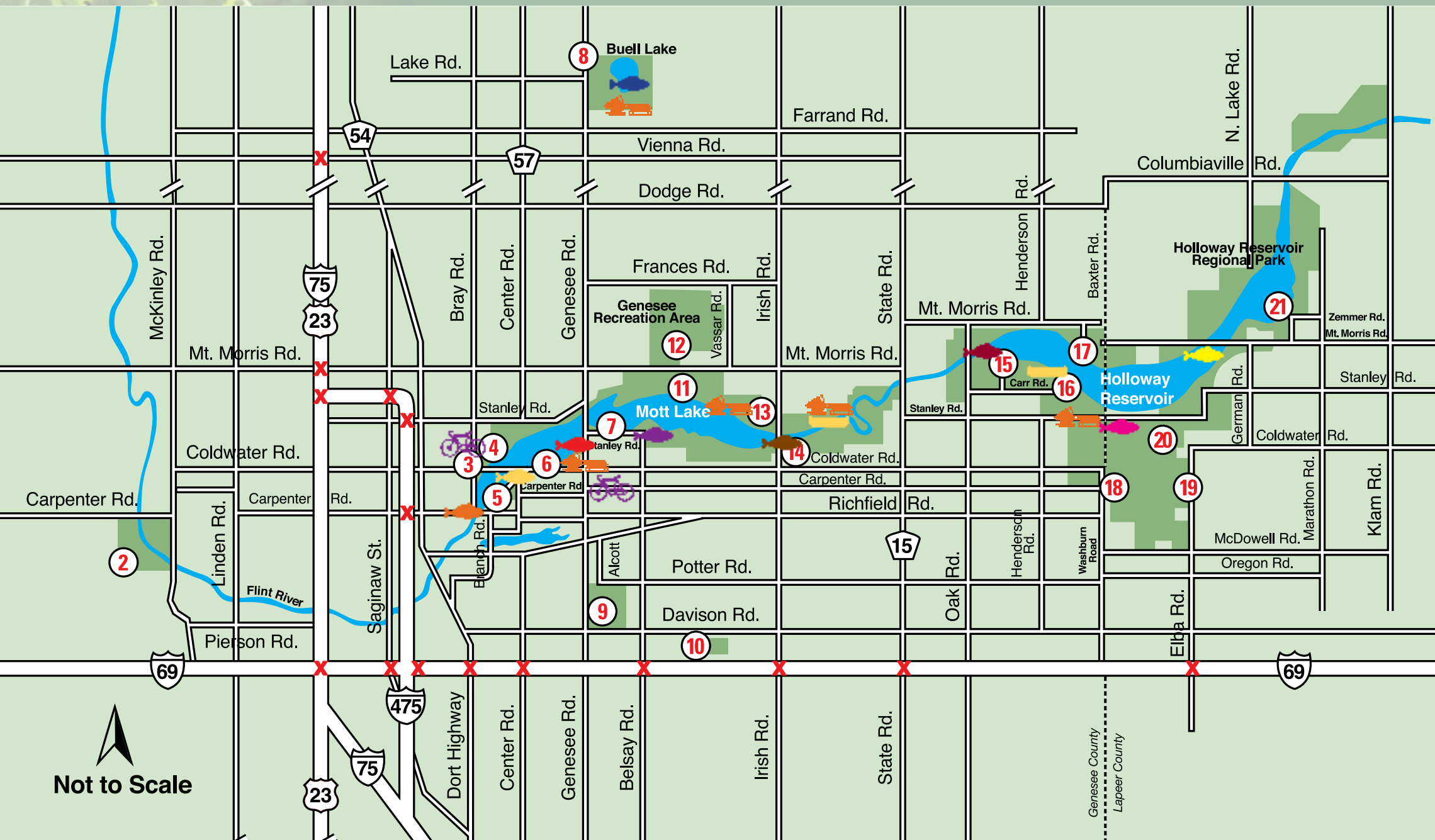
- Winter sports enthusiasts can enjoy miles of cross-country skiing and snowmobile trails as soon as the ground is frozen and there's a 3" base of snow. To learn where snowmobiling is permitted, consult the directory on the reverse side.

- Free and low-cost programs are offered year round at most Genesee County Parks.

- Give Goldenrod Disc Golf Course in Davison a visit. Before you go, download the official scorecard by going to geneseecountyparks.org.

Our partner for your health.

- Genesee County Parks is proud to partner with the Crim Fitness Foundation to help you "cultivate fitness as a community and family value." For more information, visit geneseecountyparks.org.



Not to Scale

KEY

- | | | | | | |
|---|-------------------|---|-------------------------|---|------------------------------|
|  | Bicycle Path Area |  | Buell Lake |  | Irish Road & Flint River |
|  | Canoe Launch Area |  | Carpenter & Bray Roads |  | Below Holloway Reservoir Dam |
|  | Snowmobile Areas |  | Branch Road |  | Stanley Road Tubes |
|  | County Park Areas |  | Genesee & Stanley Roads |  | Mt. Morris Road Bridge |
|  | Expressway Exits |  | Stanley Road | | |



Get Away. Right Away.
 Enjoy all of these
 Parks and Activities

	Ball Diamonds	Beach	BMX	Boat Launch	Camping	Canoe Launch	Cross Country Skiing	Disc Golf	Fishing	Pavilions	Picnic Areas	Playground	Restrooms	Sledding	Snowmobile Areas	Splash Pad	Tennis Courts	Trails	Wildlife Areas
1 LINDEN COUNTY PARK (CLOVER BEACH ON BYRAM LAKE) 15349 S. Linden Road, Linden 8:00 am to sunset daily - 135 acres	●	●				●				●	●	●	P M	●	●		●	W R	
2 FLUSHING COUNTY PARK 4417 N. McKinley Road, Flushing 8:00 am to sunset daily - 105 acres	●					●				●	●	●	P				●	W R B	
3 BLUEBELL BEACH & FLINT RIVER BIKE PATH 5500 Bray Road, Flint The Flint River Bike Path is .8 miles of paved trail linking Carpenter Road & Bluebell Beach. Splash Pad - Zero Depth		●							●	●	●	●	M			●		W B	
4 CROSSROADS VILLAGE AND HUCKLEBERRY RAILROAD 6140 Bray Road, .5 miles south of Stanley Road. Call 810.736.7100 for operating dates and rates. Historical 1860s village with 34 structures, steam railroad and paddlewheel riverboat.													M						
5 STEPPING STONE FALLS & PICNIC AREA 5161 Branch Rd., .3 miles north of Carpenter Road. Open daily May-Sept. 8:00 am - 11:00 pm, Sun.-Thurs., 8:00 am - 12 midnight, Fri. & Sat. Open daily Sept.-Dec. 8:00 am - 9:30 pm. Genesee Belle Departure Site.											●		M					W R B	
6 BLUEGILL BOAT LAUNCH Entrances on Coldwater Road at Center Road and Genesee Road south of Stanley Road. 24-hours daily, year around				●					●		●		M		●			W B	
7 ADMINISTRATIVE HEADQUARTERS 5045 Stanley Road, Flint, 810.736.7100 8:00 am - 5:00 pm Monday-Friday Houses the administrative offices of parks staff, park rangers and the reservation ticket office staff.													M						
8 BUELL LAKE COUNTY PARK 14098 Genesee Road, Clio 8:00 am to sunset daily - 213 acres	●			●					●	●	●	●	P V		●			W R B	
9 FOR-MAR NATURE PRESERVE AND ARBORETUM AND FORBES & MARTHA MERKLEY VISITOR CENTER 2142 N. Genesee Rd., Burton. For more information, visit our website or call 810.789.8567 or 810.736.7100. Visitor's Center, Wed.-Sun., 8:00 am - 5:00 pm Preserve, Wed.-Sun., 8:00 am to sunset						●							M					W H	●
10 DAVISON ROADSIDE COUNTY PARK 6160 Davison Road, Burton 8:00 am to sunset daily - 4 acres										●	●	●	P	●				W	

GENESEE  COUNTY PARKS
Get away. Right away.

Wolverine Campground

2011 Season

May 25 to September 6



Camping • Hiking • Fishing • Swimming

7698 N. Baxter Road • Columbiaville, MI 48421

Online Reservations

geneseecountyparks.org

2012 Reservations Accepted January 3, 2012

Telephone Reservations



800.648.PARK, ext. 6

810.736.7100, ext. 6

The Watershed Reporter

Nurturing Our Vision

From Executive Director Rebecca Fedewa



There's a saying, "What once was old is new again." And if you visited our website recently, you will see a big change! As we launch this next generation of **FlintRiver.org**, it seems to me that, in many ways, the adage is a fitting description of the Flint River Watershed Coalition.

FRWC was created in 1997 with the idea of local people coming together to provide a "voice" for the watershed, of supporting and defending this wonderful, vital resource in Genesee and Lapeer counties. Over the years, that vision has become a reality. The watershed's health has improved dramatically, thanks to FRWC members who monitor and test the waterways; remove trash and minimize

pollution; and work with businesses, community leaders and homeowners to ensure safe, responsible development in the watershed.

Our members' diligence and support have also helped spark remarkable growth in recreational and educational activities throughout the watershed. Perhaps more than ever before, families are paddling, fishing, biking and learning along the waterway's many pools and streams. And FRWC has increasingly become recognized throughout the region as an authentic, reliable and committed convener, advocate and resource on all issues related to the watershed.

Today, that "old" work of FRWC is new again. We've reaffirmed our belief that

maintaining the watershed as a healthy, fun resource is the community's right, as well as its responsibility. We've renewed our pledge to provide people with the tools – such as the expanded resources of this Web site – to turn the dream of a restored watershed into reality. And we have the fresh determination and commitment to make it all happen.

Join us in that vision by becoming an FRWC member or renewing your existing membership, and by participating in FRWC programs, events and activities. Together, we'll create an even bolder voice for the watershed, one that is strong and clear, and whose message of "welcome" never grows old.

HOLIDAY GIVING

Not sure what to get that certain someone on your holiday gift list? How about a gift membership to the FRWC? Show the people in your life that you care by helping to protect, preserve, and improve THEIR beautiful Flint River Watershed. Gift memberships can come in any denomination over \$25. We will send you or your recipient a membership certificate suitable for gift giving. As a new member to the FRWC, your loved one will begin to receive our quarterly newsletter, weekly email updates, notification of fun events in the watershed, and the knowledge that their gift is going toward direct action in their community. Gifts of \$100 or more also receive a FRWC ball cap.

Holiday gifts can be purchased via our website's "Donate Now" button at www.flintriver.org – please indicate that this is a gift membership and provide the recipients contact info. You also can send a check to our office, or simply call or stop by.

Happy Holidays from the FRWC board and staff!!





400 N. Saginaw St. Ste. 233
Flint MI 48502
810-767-6490
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 with private agencies and citizens' groups in carrying out its mission.

**FRWC
Board of Directors**

Board Chairman

Jack Minore

Executive Director

Rebecca Fedewa

Board of Directors

- Jim Ananich
- Darren Bagley
- Irene Bashore
- Linda Berker
- Duane Elling
- Brad Hill
- S. Olof Karlstrom
- Bob McCallister
- Amy McMillan
- Brent Nickola
- Diane Peplinski
- Bill Welch

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

**Printed locally at a Union Shop
on Recycled Paper with 40%
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Please Recycle!**



newsletter design & layout by Jon Wood

10 Questions With...

Amy M. McMillan
Director: Genesee County Parks and Recreation Commission



1. Why are you a member of /work for/ volunteer for the FRWC?

The FRWC plays an absolutely critical role in protecting, preserving, and advocating for the Flint River Watershed and the Genesee County Parks and Recreation Commission is one of the largest landowners in the watershed. As the Genesee County Parks Director, I believe that our the partnership with the FRWC is a tremendous resource.

2. What FRWC programs do you participate in?

We participate in a number of partnership initiatives with the FRWC, but I think the annual river clean-up is one of the most important ones.

3. When did you first get involved in the FRWC?

Believe it or not, I was actually one of the original board members when the FRWC was created.

4. What's your favorite part of the watershed?

There are so many beautiful places throughout the watershed and I have a "favorite" in each park, but I think my most favorite is the part of the river just upstream of the Genesee County Parks boat launch on Stanley Road, just about where the Cummings Center is on the north bank. It's amazingly gorgeous and peaceful there.

5. What is the most interesting thing you have seen in the watershed (wildlife, garbage, someone doing something unexpected, etc.)

A bald eagle fishing in Mott Lake, right outside of my office.

6. What's your favorite river (any river) memory?

A few years ago, we were doing some filming to create some television spots featuring Genesee County Parks visitors, so we were went to each of the areas we wanted to film and looked for park visitors who might be willing to be in the spots. There was a woman wearing the most

beautiful straw hat who was fishing on the shore of Mott Lake between Stepping Stone Falls and Bluegill Boat Launch who agreed to participate and, when we turned on the camera and asked her to tell us why she was fishing there, she said "I've been fishing here for 40 years because it soothes my soul." I just loved that she found such solace in that spot and I always think of her whenever I am there.

7. What worries you most about the watershed?

I believe that worrying is not a very productive use of limited time and resources, but I do find some of the untrue, out-dated, and persistently negative perceptions about the watershed really frustrating.

8. What gives you the most hope?

I find it really hopeful that the business community is really beginning to understand that health of the watershed and the contributions that it makes to the quality of life throughout the County, including in downtown Flint, is an important economic development tool for our entire region.

9. If you could change one thing to help improve the watershed, what would it be?

I'd love to be able to wave a magic wand and bring into existence all of the amazing plans for reclamation of the entire Chevy-in-the-hole site.

10. What is your river/watershed/ environmental/conservation hero?

My river - watershed - environmental - conservation heroes are the people who love the river / watershed enough to do the "little" things that make a big difference: the people that pick up their own bait containers and the ones others leave behind when they are shore fishing, the neighborhood associations that participate in annual clean-ups, the parents who instill a sense of wonder and responsibility toward the watershed in their children.

Looking Ahead

Jack Minore

I will be stepping down as the Watershed Board Chair following our January Annual meeting. It has been enormously rewarding to serve, and - of course - I intend to remain on the Board and to



Jack Minore

continue supporting the great work of the Flint River Watershed Coalition. I want to take this opportunity to thank the hundreds of volunteers who have made our various programs successful in recent years: we could not be effective in the clean-ups, water quality monitoring, Flint River GREEN, and all of our outreach efforts if it were not for your support and commitment. THANK-YOU!

Our staff has been wonderful to work with - and they have done an excellent job in directing our programs. All of us owe them our thanks and appreciation for their efforts and commitment.

Thanks, also, to the many people who have supported us with their memberships and other financial contributions. Finally, I appreciate the support of my Board colleagues!

NOW, as I wind down my service as Board Chair, I want to exhort all of the Board, members, volunteers and staff to do just a little more! The Watershed's future is of critical importance and the ability to sustain our operations is threatened by the tough economy and by the many competing needs in society. Your extra hour or two; your extra contribution; your advocacy on behalf of good water and environmental practices; and, yes, your 'watchdog' efforts for your local and state office-holders is important.

THANK-YOU in advance for your continued support of the Flint River Watershed Coalition!

Outdoor Fun: Learning About Our Water

2010 was an enjoyable year for the Our Water paddles and river walks. Whether it was walking along the river or letting the current carry you along, over 150 people had fun learning about the watershed.

River Walks began in April on the Flint River Trail. This walk provided walkers with first-hand view of urban effects on the Flint River.



Summer fun - Paddling with your pooch!

Many walkers later participated in the Friends of the Flint River Trail (FFRT) annual Spring trail cleanup in April. While celebrating summer, walkers learned about river diversity during the Clio Ice Cream walk. Other walks included Barber Memorial Park, Flushing River Trail, For-Mar Nature Trails, Richfield Park Walk and Potluck, and the Gilkey Creek Restoration Presentation Walks in conjunction with the Ruth Mott Foundation - Applewood Estate. We are already planning our 2011 season of River Walks, so check our website soon for dates and locations.

Paddlers of all ages joined us on the river this year, having fun while developing a first-hand connection to the river and the importance of our efforts to protect, preserve, and improve the Flint River watershed. With support from the Our Water program, the FRWC provided canoes and kayaks to many first time

participants who otherwise would not have been able to join us on the river. Parents, young kids, teenagers, single adults, and avid paddlers all enjoyed the peaceful river and nice views. Our youngest participant was a three-year-old riding along with his grandmother and brother at the Fresh Water Forever event in the Flushing Township Nature

Park.

"I had no idea the Flint

River was this nice," commented Carol Mattoon, which is something we hear frequently from our participants! Carol paddled with us on the Flint River in the Flushing to Montrose stretch. In fact, Carol had

such a good time, she joined us again for our fall paddle from Irish Road to Mott Lake, where she noted that the Flint River reminded her of the rivers up north. Check our website calendar for 2011 dates! You don't want to miss out on all the fun!



Walking or biking the trails is a great way to enjoy the watershed!

THURSDAY 12/16



Ty Stone

7pm: The Machine Shop in Flint

with



and

Concilio

Ty Stone is currently on tour and opens for Kid Rock. He has generously offered to play a benefit show for the FRWC. Suggested donation of \$15 is welcome, Tickets are \$5 with all proceeds going to the FRWC. Please contact cfoote@flintriver.org for more information.

the machine shop
3539 S Dort Hwy. Flint



Fall Events

We would like to extend a special thanks to Robb & Tamra Klaty and the Fenton Winery and Brewery for hosting two marvelous events to benefit the Flint River Watershed Coalition this fall.

The Klaty's hosted a gathering in their home that brought over 50 Watershed supporters together for a casual evening of good food and conversation, and a silent auction featuring works by photographer Grace Sauve and jewelry donated by Vintage Jewelers. We welcomed 37 new members to the Watershed Coalition that night.

The Fenton Winery and Brewery played host to 74 FRWC members for a tasting of locally produced (and delicious!) wines and

beers. We again held a silent auction, this time featuring the art of Ernest Carter and additional jewelry pieces from Vintage Jewelers. Our attendees included 41 new members of the FRWC. We sincerely appreciate the hosts of these events, and are pleased to welcome all our new members to the FRWC.

See you at our next event, a benefit concert performed by Ty Stone at the Machine Shop on December 16th. Check the ad on this page for details on this fun filled evening of great music!!



Robb & Tamra Klaty

The FRWC extends many thanks to our newest corporate donors:



Founded in 2001, The Ichthus Foundation was established to be a corner stone in the lives of young adults and youth encouraging drug and alcohol free lifestyles. Their passion is to offer clean entertainment to thousands of young adults throughout in Mid-Michigan and beyond.

Vintage Jewelry is located in the Macy's wing of the Genesee Valley Center or at flintvintage.com. They carry a full stock of unique vintage and estate gold and silver pieces as well as casual outerwear identical to the pieces carried at such stores as Hollister or American Eagle.



Metropoulos Amplification has developed a reputation for building some of the finest point-to-point hand-wired Marshall plexi replicas in the world. Cloning even the smallest of details, these amps do what was once thought impossible: Resurrect some of the most sought-after, hard-to-find amps in the world.

Giving Thanks for FRWC Members

The Summer and Fall activities that we organized this year helped us reach out to many individuals and groups who were interested to learn more about the Flint River, were motivated to join us on the river or the trails, or were just glad to meet at one of our fundraisers. We sincerely appreciate those who participated with us in the past few months, and want to take a moment to recognize those who became new members.

Please welcome these fellow members of the FRWC:

Jennifer Acree
Aaron Adkins
Eric Allison
Leanne Barkus
Brian Bates
Karimah Brown
Thomas and Janice Bryant
Caleb Bullen
Amy Burtrum
Lisa Campbell
Teresa Cummings
Caleb DeHart
Linda Dent
Iugenia Edwards
Jade Edwards

Jan Elmore
Melissa Emke
Glenn Fischer
Alyce Fischer
Josh and Jennifer Foote
Friends of Southern Links
Rails to Trails
Jason Galvas
Kimberly Glavin
Grand Blanc City School,
3rd and 4th Grade
Matt Hanna
Marcie Hemgesberg
Kristen Irwin
Isaac's Grocery, Swartz
Creek
Jeff Kingzette and Laurie
Slade
Yener Kandogan
Les and Liz Kannon
Katrina Khouri
Robb and Tamra Klaty
Heidi Klochack and Family
Elaine Kremposky
Betty Krynske
Tim Larkin
Katie Leoni
Marianne Leppanen
Phil and Olivia Lewis
Pat Litwiller
Mary Ann McCarthy
Kyle McCree

Lisa Metropoulis
Keonte Mitchell
Rafael Mojica
Kim Moon
Matt Moreau
Joyce Morris
Ron and Jeanne Newton
Nathaniel Olin
Anthony Pannech
Buzz Purcell
Bill and Mary Ann Reising
Cheryl Rentschler
Art Reyes
Thressa Robbins
Vicki Sacharski
Shannon Sankey
Carie Sarver
Grace Sauve
Denise Schloegel
Cathy Schultz
Shaun Smakal
Elizabeth Smith
Bob and Cathy Smith
Brenda Taverniti
Andrea Thornton
John and Catherine
Tremaine
Vern's Collision, Michael
Herriman
Michele Vincent
Christopher White

Dorothy Wicks
Wayne Wodtke
Mike and Christina Wright
Robert Zang

Besides developing new friendships, we value the ongoing affiliation and support of the following individuals who renewed their membership in the past couple of months:

Mark Bilodeau
Nancy Byder
John Cherry and Pam Faris
Kiersten DeKorne
John Hayes
Cathy Lancaster
Wally McLaughlin
Riley McLincha
Mark Thornton
Christine Waters

Our members are important to us. Please let us know if you have ideas or suggestions about how we may be better stewards of the membership contributions that you have made. To join the ranks of our members, or to give a gift membership, turn to page 6 for more information. Have a great winter!

The Spencer Agency is a full service advertising agency providing clients nationwide with creative concepts, specialized to company's exact needs, to make them stand out among the rest. Their professional staff is experienced in all areas of media, marketing, and the production. Let them do the same for your organization.



Wellness Massage Therapy and Yoga will be donating \$2 of every massage and gift card sold during the month of January to the FRWC. They specialize in Therapeutic massage, Thai massage, and yoga. Get your relax on in January by calling (810) 630-8000.

Special Thanks to Vern's Collision who recently joined the FRWC and paid for the purchase of two rain barrels. "The staff at Vern's Collision wants to thank all the volunteers that give so much of themselves to make our community a better place to live."



Water Monitoring Update

In September, a total of 30 volunteer monitors attended one of three FRWC MiCorps trainings designed to bring our monitors up to speed on this exciting program and process. This fall season, 31 monitors collected data from one or more sites in Genesee and Lapeer Counties. We sincerely appreciate their time and effort! Since 1999, FRWC has been coordinating this effort to report on the health of our rivers and streams.



Two of the many dedicated volunteers that help monitor our water quality

Also going through a complete change this fall season was the process for identifying the collected macroinvertebrates (aka: creek critters). MSU-Extension provided the use of their facilities, and under the direction of FRWC

Board member Darren Bagley, "expert identifiers" began to identify our samples to the taxonomic level of "Family," going one step further than the "Order" level we had identified in the past. Ten sites in total were taken to the Family level.

Monitoring results are posted on the FRWC website, FlintRiver.org; and are shared with the Genesee County Drain Commission. FRWC is able to expand on this program thanks to the support of the Great Lakes Commission (GLC). The FRWC is a current recipient of a two-year Volunteer Stream Monitoring grant provided by the GLC through contract by the Michigan DNRE.

MiCorps Approved!

FRWC's Water Monitoring program underwent a complete transition this past fall season to join the State of Michigan's Michigan Clean Water Corps (MiCorps) program. Created by executive order by Governor Granholm, the MiCorps program was formed to assist the Department of Natural Resources & Environment in collecting and sharing water quality data for use in water resources management and protection programs. The data collected by FRWC's trained, volunteer monitors will become part of the State's MiCorps Data Exchange Network. Visit the MiCorps website and retrieve data uploaded from water monitoring programs statewide.



Membership Application

YES! I am pleased to become a member of the Flint River Watershed Coalition:

HOLIDAY 2010

Name _____
 Address _____
 Organization _____
 City, State, Zip _____
 Telephone (H) _____ (C) _____
 Email _____

Enclosed are membership dues for:

- | | | | |
|--|--------|--|---------|
| <input type="checkbox"/> Student | \$ 10 | <input type="checkbox"/> River Patron | \$ 250 |
| <input type="checkbox"/> Individual | \$ 25 | <input type="checkbox"/> Watershed Protector | \$ 500 |
| <input type="checkbox"/> Family/Group | \$ 40 | <input type="checkbox"/> Watershed Guarantor | \$ 1000 |
| <input type="checkbox"/> River Sponsor | \$ 100 | | |

I have enclosed an additional gift of \$ _____.

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.

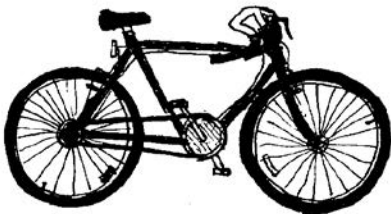
Your support is sincerely appreciated. The Flint River Watershed Coalition is a not-for-profit organization with 501 (c) (3) tax-exempt status. Your contribution is tax deductible. Please make checks payable to:
Flint River Watershed Coalition or FRWC
400 N. Saginaw Street, Suite 233
Flint, MI 48502

CALENDAR OF EVENTS

MONTH	DATE/DAY	TIME	EVENT
DEC	16 THU	7pm	TY STONE Benefit concert at The Machine Shop
	17 FRI	830am	FRWC Board Meeting
JAN	27 THU	6pm	FRWC Annual Meeting: Dinner and Auction
	SAVE THE DATE!! SAVE THE DATE!! SAVE THE DATE!!		
FEB	15 TUE	7pm	Lapeer Chapter, FRWC Meeting
	18 FRI	830am	FRWC Board Meeting
MAR	3-6 FRI-SUN		*Flint River Valley Steelheaders Boat & Fishing Show, Birch Run
	5 SAT	MORNING	*Keep Genesee County Beautiful Conference
	11-13 FRI-SUN		*Flushing Walleye Festival
	15 TUE	7:30pm	Lapeer Chapter, FRWC Meeting
APR	15 FRI	8:30am	FRWC Board Meeting
	16 TUE	8am-3pm	*Annual Earth Day & Garden Celebration
	19 TUE	7pm	Lapeer Chapter, FRWC Meeting
	30 SAT	TBD	Spring Monitoring

* denotes FRWC Community Table Events; Volunteers Welcome

FFRT NEWS



For most of us, bike riding season is just about over! A few hardy souls will continue to ride throughout much of the winter – but, except for that trip to Florida or other sunny spots, most

of us are hanging up the bikes for the season. FFRT Sunday rides will commence again on the first Sunday in May – following a trail clean-up at the end of April - JUST in advance of the Flint River and Community clean-up in May.

This season we had first-time riders on at least 25 of the 27 Sunday rides, and our riders came (as usual) from over 40 different zip codes. We were delighted to ride new trails - the Kettering Trail and the Southern Links Trail in Columbiaville. We look forward to a new trail in Flint Township next year. Finally, we are proud that Michigan now tops all states in the number of miles of open trails!

It's the stationary bike now to keep in shape until that first nice day in March (?) when the bike will come off the garage rafters and back on the road again!

**Having Fun with
Community Engagement
Contact Us
Now for 2011!**

The Our Water program supports FRWC's efforts to provide educational presentations about the Flint River watershed. It is hard to say what we enjoy most—meeting and making connections with groups, or sharing information about the watershed, our programs, and our fun activities. We always come back excited about the people we have met and the awareness we have shared. FRWC presentations provide an opportunity for people to understand their watershed while learning simple steps that help protect, preserve and improve our water. If you are interested in having the FRWC at your meeting or event, contact Sue Lossing at 810 767-9491



FLINT RIVER
WATERSHED COALITION

400 N. Saginaw Street
Suite 233
Flint, MI 48502

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Flint, MI

FRWC Annual Meeting and Silent Auction

Save the Date!



with
Special Guest Speaker

Rich Bowman

Director of Government Relations at
the Nature Conservancy in Michigan



The auction features items of beautiful
art and jewelry made by local artisans!

Thursday, January 27th, 2011
Davison Country Club

9512 Lippincott Blvd, Corner of M-15 and Lippincott, just south of I-69

Friends and guests are welcome to attend

Cost is \$30 per person

RSVP by January 24th, 2011 at 810 767-6490 or ewesthoff@flintriver.org

Watershed

R E P O R T E R

PARTNERING TO PROTECT OUR NATURAL RESOURCES

SUMMER 2011



Rebecca Fedewa

It's been a wild and wooly spring in the Flint River Watershed! And while I don't think it's actually true, it feels like we had only 3 or 4 days when it DIDN'T rain during the month of May. Some areas experienced flooding, but thankfully we were spared much of the harsher weather experienced in other parts of the state and country. But nevertheless, it often felt like Mom Nature had it out for us this year. Luckily, we have a dedicated cast of volunteers, program participants, and staff who managed throughout the spring to stay positive and have a successful season of spring programs. THANK YOU to everyone who came out (often multiple times) for monitoring, GREEN, and our Flint River and Community Clean Up. You are all an inspiration!

The heavy rains did bring some impressive flows to the entire watershed. And in mid-May, we shared the beauty of our river and its zippy flows with noted Michigan outdoors author Doc Fletcher. Doc was in town to write a chapter about paddling on the Flint River for his next book. On a day that recorded almost 5,000 cubic feet per second (cfs), we

A NEW CHAPTER FOR THE FLINT RIVER

REBECCA FEDEWA, EXECUTIVE DIRECTOR

set off from the River Road launch in Flushing for a swift paddle to Barber Memorial Park in Montrose, with a brief stop at Flushing's Riverview Park where Major George Kozan presented Doc with a key to the city. Normally, when I've paddled or waded this stretch of river, I can see the bottom and the flows are a much more leisurely 400 – 500 cfs. As the relative novice of the group, I can tell you my nerves were more than a little jangled just looking at the river

(I should note that I never would have attempted this paddle had I not been with ten very experienced canoe and kayakers, and was properly outfitted

high flows.)

Once out on the river, the proverbial sailing was surprisingly smooth; to the point that we all could snap some photos and even record a little video (check out our Flickr site!). Doc and his wife Maggie learned all about this particular stretch of the Flint River, and we all had a wonderful time taking in the views and just enjoying time floating down this spectacular river. We finished our trip in about 2.5 hours; a trip that normal might take closer to four! Everyone made it out of the river safe and dry, then we capped off the trip with lunch at Jack's Place in Downtown Flushing. And just

so we were sure to remember who was really in charge, after lunch we were greeted with what else but a massive rain storm that resulted in some of the worst flooding we saw all season and an almost doubling of the flows in the river. That trip was timed just about perfectly!

Please join me in thanking Doc

for visiting our beautiful corner of the world. His next book is scheduled to be released around the new year. I can't wait to share the Flint River with the world!



Doc and Maggie Fletcher enjoying a speedy float down the Flint River

with the right gear and lifejacket courtesy of Greg Palinski, who was instrumental in organizing the entire trip. Always take care when getting out on the river - including wearing your lifejacket - especially during



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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 with private agencies and citizens' groups in carrying out its mission.

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Carol Van Buren

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

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Please Recycle!



newsletter design & layout by Jon Wood

10 QUESTIONS WITH... STEVE HESTER, FRWC BOARD MEMBER

1. Why are you a member of /work for/volunteer for the FRWC?

Because our best natural resource has had such a bad reputation. I want people to appreciate the fact we have this beautiful river running thru the middle of our city.

2. What FRWC programs do you participate in?

So far, the Flint River Clean-up with more to come...

3. When did you first get involved in the FRWC?

About 10 years ago

4. What's your favorite part of the watershed?

The part with the Big Fish in it! You Know... that part.

5. What is the most interesting thing you have seen in the watershed (wildlife, garbage, someone doing something unexpected, etc.)

People in a canoe FULL of garbage - Huge Smiles on their faces!

6. What's your favorite river (any river) memory?

I put on a rubber survival suit once on the rifle river-Inflated it and floated the river with a paddle. If I came upon people-I announced myself as the "Incredible Floating Man" It was fun. I never claimed I was sane, you know...

7. What worries you most about the watershed?

That people will not see what we have.

8. What gives you the most hope?

The people that DO see what we have

9. If you could change one thing to help improve the watershed, what would it be?

More safe Canoe Access

10. What is your river/watershed/environmental/conservation hero?

Gideon Gerhardt, The man who went to fish the pine river in 1925, found a barrier and led us to today's laws regarding river access and navigability.



Steve Hester

'OUR WATER' WALKS AND PADDLES

It's a great time of year to get out and enjoy YOUR Flint River Watershed! If you aren't sure where to go, or are interested in meeting up with other river enthusiasts, join us for one or more "Our Water" paddles or river walks. These free walks and low cost paddles are scheduled across the Genesee County portion of the Flint River Watershed, offering participants a wide choice of opportunities to have fun and learn a bit about this great resource flowing right through our back yard. Visit our website calendar for details on each trip.

- **Wednesday, June 29th - 10 AM**
Thread Creek Farm
- **Saturday, July 9th – Summer**
Picnic Paddle
- **Wednesday, July 13th – 10 AM**
Richfield County Park

- **Wednesday, August 10th – 10 AM**
Gilkey Creek Trail
- **Saturday, August 20th – Time**
TBD: Blueberry Paddle
- **Wednesday, August 24th –**
7PM Stepping Stone Falls
- **Evening Walk: Friday, September**
23rd – Time TBD

The Our Water program is supported by the Genesee Community Water Quality Consortium. This program provides fun opportunities to enjoy the river while guiding participants through simple steps we all can take to keep it healthy.

If interested in participating in the Our Water walks or paddles, please contact Suzanne Lossing at:

slossing@flinriver.org
or 810-767-6490.



Brent Nickola

WHERE IS YOUR 'HOME WATER'?

As I was walking towards the river for the first fishing adventure of the year, I literally felt the stresses of life leaving my body. As I descended into the floodplain, I said out loud, "home water." The notion of home water refers to a stretch of river that an individual has developed such a fondness for that it becomes part of who they are. It is the place we

retreat to wash away the small things in life or to ponder significant questions. For an angler, it's a stretch of river so well know that it can be waded in darkness with only the sound of the river and the shape of the riverbed to guide them. For paddlers, it is a section of water where you know what is around the next meander and therefore can be prepared to enter the river bend with confidence. Simply put, home waters are the stretches of river that we KNOW WELL.

I suspect that many of you have "home waters" in stretches of the Flint River. If you don't have any home water, I encourage

you to get out on the Flint River and start your search. For those of you that do have these places, I ask you to do two things. First, share the story of your home water with me and our staff. Your stories are important to us as they are some of the most powerful tools we have in protecting and improving our watershed. Secondly, take someone to your home water this year. Share with them the knowledge you have of that section and encourage them to find a section of home water to call theirs. Imagine the impact of having hundreds of people with affection for hundreds of stretches of our river.

I recently had the chance to teach Andy Aguirre, a young Iraq War vet, the art of fly fishing in one of my home waters. He was excited to learn the new sport and I was excited to share my home water with him. As we walked out of the floodplain that night, I could witness his pride in the fish he had caught. As he talked about his catch, I could only think to myself, I had the best catch of the night. I just caught a future river advocate.

Mi Casa es su Casa,
Brent Nickola
Board Chair

NEWS FROM THE FRIENDS OF THE FLINT RIVER TRAIL

BY JACK MINORE

Most readers of the newsletter know that the Friends of the Flint River Trail (FFRT) hosts weekly bicycle rides every Sunday, May through October, starting at 2:00 PM at the Flint Farmers' Market. These are leisurely pleasant no-drop rides of about 13-18 miles in length – generally going to either Blue Bell Beach or Stepping Stone Falls – with some variations.

Everyone is invited: there is no registration and no dues required. Just "show up and ride". (Helmets are strongly encouraged!) There is a new (virtually completed) extension of the Flint River Trail – west from downtown past Kettering University and on to the west city limits at McLaren Hospital. It's about three miles in length.

On the second Saturday of each month, we lead rides on other mid-

Michigan Trails – generally within an hour's drive from Flint. July 9th we will ride the Lansing River Trail – one of the finest urban trails anywhere. The following months we will ride the Bay City Trail (Aug 13); the Chippewa Valley Trail in Midland (Sept 10); and the Kensington / Island Lake Trails from Milford (Oct 8). These rides all start at the local trailhead at 10:00 AM.

A hearty, dedicated band of riders observed the May 18th 'Ride of Silence' in the cold and pouring rain; and another group lobbied for better cycling support with legislators on 'Bicycle Advocacy Day' in Lansing. If you are interested in riding, contact:

Bruce Nieuwenhuis
bnbaton@gmail.com
or Jack Minore
jacksonmin@aol.com



NO DUMPING

DRAINS TO RIVER

Sewer systems and storm drains are not the same. Storm drains were designed to be the fastest and most efficient way of getting rainwater off streets and parking lots. Many people mistakenly believe that storm drains connect to sewer treatment systems instead of flowing directly into our creeks, rivers, and lakes.

Stenciling storm drains in your community may discourage people from putting harmful items and trash in the drains. While stenciling, volunteers also distribute door tags to area residents to raise awareness of simple things we all can do to help our watershed. Tools, materials, brochures and instruction are provided by FRWC through the Our Water program.

Any groups looking to participate in Storm Drain Stenciling as a service projects can contact Sue Lossing, FRWC Education & Outreach Coordinator at (810) 767-9491 or SLossing@FlintRiver.org

GROWING GREEN

Thanks to our many supporters and partners, we had our largest Flint River GREEN ever. This year, 57 teachers and over 3,500 students participated in this hands-on, real-life watershed education program. While students enjoy getting out of the classroom, they are learning real world water testing skills and developing their critical thinking ability, while providing valuable data to their community on the health of their local river or stream.

And even though they are having fun, the impact of the GREEN program is immediate. When students were asked what they learned, most



Students had a great time while learning at the GREEN Summit

answered as a Mt. Morris 7th grade student did, "That I can make an impact." Or a Northern High School junior who answered, "That our river isn't as unhealthy as I thought. I also learned that there are simple things I can do to make a difference."

Flint River GREEN goes beyond simple water quality testing, however. Another valuable aspect of the program is the mentors that join each classroom. Our mentors assist teachers and offer students their perspective on their particular environmental career, serving as a role model for students interested in making environmental science a career.

"We had a great time this year working with local schools to conduct river sampling. Flint River GREEN continues to provide General Motors an excellent opportunity to connect with students and teach them about the environment and potential careers in science."

--John Maksimchuk III

The growth of this program would not be possible without the support from our partners and funders. This year with the tremendous support from the Genesee Intermediate School District, we brought on six teachers from Grand Blanc schools and enhanced the program in Davison and the Flint Schools. We currently have a wait-list of teachers who want to bring this program to their students. For more information about this program, please contact Suzanne Lossing, Education & Outreach Coordinator.

(810) 767-9491 or
SLossing@FlintRiver.org

FROGS SWAMP THE FRG STUDENT SUMMIT!

On Friday, May 13th, waves of frogs in neon green t-shirts flooded the halls of Mott Community College's Gorman Science Building. Over 400 of our Flint River GREEN students from all over the watershed presented the results of their testing and recommendations for ways to improve the health of the watershed. In addition, 17 environmental professionals donated their time to hold educational break out sessions for students and teachers covering topics that varied from bee keeping to monitoring our sewer systems. Thank you to the following agencies for your participation: Michigan State University Extension, Michigan Department of Environmental Quality, Sloan/Longway Museum, City of Flint Waste Water Treatment Center, Mid-Michigan Bee Club, Edible Flint, Chatfield Schools, Lapeer Community Schools, Earth Force, Genesee County Parks, Flint River Wild Ones, Sierra Club, and the Flint River Watershed Coalition.



Bright Green "Frog" Tshirts were the order of the day!

FRWC LAPEER CHAPTER UPDATE

Our Lapeer River cleanup crew managed to fill half a dumpster and pull out one contender for the golden glove despite the super high water levels. Our crew wrestled a giant culvert with visions of golden gloves glory at the Hunters Creek site. This is the same site where, years before the golden glove award was created, we captured a waterlogged snowmobile. Arggh! Rotary Park and East Annrook, both on the South Branch, got totally skipped since no one had scuba gear with them. The Home Depot site on Farmers Creek got the most action

thanks to a new site coordinator, Sarah McCarter, and 24 members of the Jr. National Honor Society at Chatfield School. The flood plain there was indeed flooded, (highest I've ever seen it) but lots of trash waiting for the right trickle or breeze to enter the river was rescued from the high banks. Many of our volunteers returned to Wild Lapeer to eat local organic farm food and participate in a variety of free programs including a Watershed trailer from the Saginaw Bay RC& D, pond dipping for waterlife, and free canoe rides on the Old Lapeer

State Home(Oakdale) pond. For many Wild Lapeer participants, canoeing with four friendly baby beavers was the highlight of the day. We are especially pleased to again have Rick Rhein Disposal provide a dumpster, and thankful for a new business sponsor, Peddles to Paddles, a bike/canoe rental facility in Columbiaville. Our next meeting will be June 21, at the new River Pavilion on Farmers Creek created with universal access funds from the Kellog foundation and The Lapeer County Community Foundation.

EXTENDING MANY THANKS TO THOSE WHO HELP THE FRWC CONTINUE TO BUILD A STRONG MEMBERSHIP

As we close out our very busy spring season, and 'flow' into our summer activities, we are very pleased to welcome many new and renewing members to the Flint River Watershed Coalition. Members are such a valued source of financial support and volunteerism. You may have seen many of these families and individuals at our GREEN, Cleanup, or monitoring events this spring. Now they can join us for our walking and paddling activities this summer. Please welcome them when you see our members on the river.

Many people became new members via our on line link to the secure payment option called 'Donate for Good'. From our website, both Mona Younis of Burton and Gregory Hamman of Grand Blanc joined the FRWC at the River Sponsor level. Richard Whitlock and Alexandra Severn also joined the organization from the convenience of their own computer.

This secure site helps us in many ways, and can save you a stamp. Check out this on line payment option.

Several of our nearby friends joined the FRWC in response to an appeal that we mailed to residents of the Gilkey Creek area. We have done many studies of the quality and health of the Gilkey, and provided our neighbors near the creek with a thorough outline of our findings. If you care to have a copy of the Gilkey Creek habitat analysis, please call our offices. In the meantime, look for the following Flint residents and welcome them as our newest members from the area: *Paul and Reba Walling, Ron and Jessie Sirna, Joseph Burroughs, and Joel and Ann Harris.*

Many people responded to membership

renewal notices that we sent this spring. Renewing members include Matthew and Bonnie Mrasek, John and Loretta Brissaud of Flushing, RaeAnn Gatenby, and Jack Nettleton. Carl Haas and Carol Heidemann of Columbiaville also sent in their renewal. Carl and Carol have been key volunteers in the clearing of the south branch section of the river. They work hard, and take care of most of the equipment maintenance that is required to make the clearing activity run smoothly. Jarrett Lewis renewed at the River Sponsor level. He has been a long term member, and we appreciate his support. Rob Jewell of Flint has also been a long standing member. Renewing member Denny Crispell is one of our long term volunteers. He has been a great source of help with our benthic monitoring programs, and with our storm drain stenciling endeavors. You have probably seen him in some of our on line photos. Two of our newest board members, and one of our long standing board leaders made generous membership payments. We consider their financial commitment to be an important reflection of their personal commitment to the organization. We are looking forward to many years of leadership, guidance, and governance from Steve Hester and Andy Leavitt who joined the FRWC board in January. Renewing his River Sponsor membership is Brad Hill of Flushing. As a long standing board member, Brad provides leadership in many of our programs, most notably in the area of watershed management planning.

Following is a complete list of new and renewing members of the FRWC since the publication of the last Watershed Reporter:

John and Loretta Brissaud
Joseph Burroughs
Denny Crispell
Flushing Rotary
RaeAnn Gatenby
Carl Haas and Carol Heidemann
Greg Hamman
Joel and Ann Harris
Steve Hester
Brad Hill
Rob Jewell
Andrew Leavitt
Jarrett Lewis
Monica Mihailuk
Matthew and Bonnie Mrasek
Jack Nettleton
Mary Powell
Alexandra Severn
Ron and Jessie Sirna
Reba and Paul Walling
Richard Whitlock
Mona Younis

Lastly, we were much honored to receive a generous anonymous donation from one of our longstanding members. They have requested that their membership payment be kept confidential, and we'll certainly respect their wishes. But, we still want to say THANKS. Large contributions are sincerely appreciated by the staff, volunteers, and board members of the FRWC.

Financial support from the community in the form of membership payments is important to the Flint River Watershed Coalition. We value every member, and appreciate every dollar. Thank you so much to all!

FRWC MEMBER APPLICATION - SUMMER 2011

name _____
 organization _____
 address _____
 city/state _____
 phone _____
 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**

VOLUNTEERS HELP MAKE SPRING MONITORING A SUCCESS

Another Spring Monitoring season has come and gone, and this one was one for the books! With record rain fall this spring, high water levels and fast moving currents, our lab dates had to be pushed back not once, but twice! Luckily, we have some awesome volunteers here at the FRWC, some of whom visited their sites multiple times, to help us get our sites monitored. To everyone who participated in our monitoring season, thank you!

Our water monitoring program occurs every spring and fall, and is a vital tool in tracking the health of the watershed. It is a testament to the dedication of our staff and volunteers that even when faced with the challenges of this spring season, we persevered and get almost every site monitored. Our Monitors completed Stream Habitat Assessments and collected macro invertebrates at each stream, which were then taken



Collecting macro invertebrates.

back to the lab and identified. Each site is then “scored” depending on the type and amount of specimens collected. Some macro invertebrates are more sensitive to changes in their environment than others, and identifying what macro invertebrates live in a particular stream plays a large part in determining how healthy (or not healthy) that stream is. The scores are evaluated, and compared to previous seasons, giving an accounting of the ongoing health of every stream that we monitor. These results are available to

view on our website, www.flinriver.org.

This was my first season heading this program, and I was constantly in awe of the wonderful volunteers and their “can-do” attitude. They took the weather and



Casey Foote helps out with monitoring.

its accompanying complications in stride, and the willingness of everyone involved to do whatever was necessary was amazing! I knew that we had some awesome people involved with the FRWC, but getting to see it in action was impressive. Our volunteers span all ages (from 8 years on up), and it was great to see so many different people willing to come out and get involved in a vital (and fun) way to monitor the watershed.

With the goal of having all of our monitors become MiCorps certified, a training session was held in April, and we had a great turnout. These training sessions are a great way for first time monitors to see what water monitoring is all about, as well as an opportunity for experienced monitors to become certified if they are not already, or as a quick refresher course before heading out into the streams. Everyone who attended got a chance to learn about what is involved in being a water monitor, as well as a chance to get in the river and see how much fun monitoring really is. After a walkthrough of the monitoring process, our attendees brought

their finds back to the lab and identified what they found under the experienced eye of Darren Bagley. If you missed this training session, don't worry, we will have another training session prior to our fall monitoring season, and the dates will be posted on our website and in our newsletters.

Once our spring season began, two lab dates were held to allow monitors to identify their samples, and have their identifications verified by the MSU Master Gardeners. Those results are then compiled, and the data published on our website, as well as submitted to both the Genesee County Drain Commission and the State of Michigan where they

are utilized in tracking the health of our watershed from season to season.

If you are interested in finding out more or would like to get involved, contact Jaime Welch at 810-767-7140 or at jwelch@flinriver.org. You can also visit our water monitoring page located on our website at: <http://flinriver.org/blog/programs/water-monitoring>, for information about water monitoring, to see all the sites we monitor, and view the scores from past seasons. Or visit us on Facebook and on Flickr to see pictures and videos from our monitoring seasons. See you in the fall!



Lots of volunteers make the day fun!

CALENDAR OF EVENTS

DON'T MISS OUT ON TIME-SENSITIVE INFORMATION!

SUBSCRIBE TO OUR WEEKLY E-NEWSLETTER, "THE RIPPLES" BY VISITING US ONLINE AT WWW.FLINTRIVER.ORG OR CALL THE OFFICE: 810-767-6490
ALSO, YOU CAN BECOME OUR "FAN" ON FACEBOOK BY SEARCHING FLINT RIVER WATERSHED COALITION.

MONTH	DATE/DAY	EVENT
JUNE	18 SAT	Boats, Bikes, and Bricks triathlon (FRCA)
	21 TUE	Lapeer FRWC Chapter Meeting
	21 TUE	Our Water Paddle: Stepping Stone Falls to Vietnam Veterans Park
	29 WED	Our Water Walk: Thread Creek Farm
JULY	9 SAT	Our Water Our Water Picnic & Paddle: Picnic at Flushing Riverview park, ~Paddle from Mitson to Flushing~
	11 SAT	FFRT Bike Ride: Saginaw Valley Trail
	13 WED	Our Water Walk & Potluck: Richfield Park Celebrating "Our Water"
	13 WED	Our Water Paddle: *Holloway to Richfield Park
	15 FRI	FRWC Board Meeting
	16 SAT	Kearsley Creek River Clean Up, Ortonville (rescheduled May 21st Clean Up)
	16 SAT	Holly Recreation Paddle
	19 TUE	Lapeer FRWC Chapter Meeting
23 SAT	Paddle: East & West Graham Lakes	
AUGUST	10 WED	Our Water Walk: The Gilkey Trail: Court Street to Kearsley Park
	13 SAT	Applewood Garden Day: Inspiring Hope & Pride in Flint
	13 SAT	Flushing's Taste of the Trail
	13 SAT	FFRT bike ride Bay City Trail
	14-21 SUN-SUN	Genesee County Fair
	16 TUE	Lapeer FRWC Chapter Meeting
	17 WED	Minnow Races at the Genesee Co. Fair
	19 FRI	FRWC Board Meeting
	20 SAT	Our Water Paddle: Celebrate Blueberries & Fresh Water: Montrose
	2 WED	Our Water Walk: Stepping Stone Falls Evening Walk
26-27 FRI-SAT	CRIM Expo.	
SEPT	10 SAT	FFRT bike ride: Chippewa Nature Center
	16 FRI	FRWC Board Meeting
	20 TUE	Lapeer FRWC Chapter Meeting
	23 FRI	Our Water Paddle: Fall/Autumn Paddle: Irish Road to Mott Lake

JOIN US EVERY SUNDAY - the Friends of the Flint River Trail hosts bike rides every Sunday, 2 PM, from the Farmers' Market.

Thanks to Our Newest Supporter

At the Flint River Watershed Coalition we are all about making and growing our partnerships with those who share our vision of being 'a voice of the river'. One of our newest partners, Mr. Michael Herriman of Vern's Collision, Inc has been a valuable source of financial and program support. You read an article about Mike and his rain barrels in the last issue of the Watershed Reporter. Since the publication of that newsletter, we received a generous donation in the amount of \$100.00 from Mike to fund

the purchase of two rain barrels that we presented to the local Master Gardeners group. When we delivered the rain barrels to the group, we used the opportunity to educate these interested environmentalists about our great natural resource, the Flint River.

Thanks to Mike for helping us make this happen. We look forward to our growing partnership with our friends at Vern's Collision and Glass.

Vern's Collision is a locally owned collision and glass shop located at

2409 Davison Road in Flint. Founded in 1972, Vern's Collision Inc. serves all of Genesee County, providing quality auto body repair and auto glass services. Their services include auto body repair, auto glass and mirror replacement, and custom spray-on bed liners.

If you would like to support this company, give them a call at (810) 232-6751, or consult the website at www.vernscollision.com.



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RECLAIMING THE HEALTH OF THE FLINT RIVER WATERSHED

Because of you, the annual Flint River & Community Cleanup has become the largest community cleanup effort in our watershed. Thank you! With the help of river steward Paul Remington, Todd Barden, and the City of Clio we added two new sites to our clean up effort. And with the Flint River Corridor Alliance (FRCA) we partnered to clean up Riverbank Park. In total, our volunteers worked at 16 sites across the watershed, collecting hundreds of bags of garbage that otherwise would still be in our rivers and streams.

The expansion of our volunteer appreciation luncheon in downtown Flint also helped make this a year to remember. Building on the great partnership with the Carriage Town Historic Neighborhood Association to host this event, this year The Spencer Agency's Patrick Bradway and Josh Spencer joined Carriage Town to host the biggest party yet, with live music, great food, additional participants, and Fresbee fun to downtown Flint. "People can work together and be a part of positive change," said Patrick Bradway. He was happy to see the diversity of the

groups who collaborated to help Flint's Cleanup and celebration happen. Given the outstanding outcome of the day, it wasn't surprising how highly motivated



Thanks to ALL the volunteers that came out for the cleanup!!

people were, many asking "when can we do this again?"

Clean up isn't limited, however to our annual event. Our FRWC Chapters are active other times of the year making a huge impact in all of our communities. The Friends of the Flint River Trail (FFRT) members kick off the season with the annual cleanup along the trail on the last Saturday in April. The Lapeer FRWC Chapter conducts stream maintenance during the summer, using the annual

Flint River & Community Cleanup as their first event. They had a successful cleanup this year followed by the Wild Lapeer festival enjoyed by many. To maximize volunteer efforts in the headwaters of Kearsley Creek (our natural trout stream), the Kearsley Creek Chapter has claimed Saturday, July 16th as this year's River Cleanup Day. So, if you missed receiving your 2011 annual Flint River & Community Cleanup t-shirt you have another chance to join the efforts. Last year, Ortonville participated for the first time and lots of garbage was retrieved from the watershed. They would like to do more this year with your help.

Our efforts would not happen without support from people like you. Please join us in making these waves of change even bigger. Often, opportunities pop up at the last minute, so we use email, Facebook, and our weekly electronic newsletter to keep volunteers up to date. Be sure to sign up for our listserv from our website and "like" us on Facebook to get all the latest updates.

Watershed

R E P O R T E R

PARTNERING TO PROTECT OUR NATURAL RESOURCES

FALL 2011

A RIVER RUNS THROUGH IT

REBECCA FEDEWA
EXECUTIVE DIRECTOR

The Flint River and its watershed are many things to many different people.

To some, it's the watershed - a clearly outlined area on a map, for which we can cite certain statistics:

~We cover more than 1,358 square miles

~Our watershed encompasses portions of 7 counties

~Within our borders you will find 20 cities and villages and 58 townships.

To others, it's the Flint River itself. A waterway that is frequently mistaken as dangerous or polluted, but in reality is a thriving system filled with beauty and a wide variety of recreation and economic opportunities.

And to more, it is a smaller tributary—Swartz Creek, Kearsley Creek, Farmers Creek—where kids (and kids at heart) spend afternoons catching fish or frogs, but are often overlooked as an integral part of the Flint River system.

And for many, it is all of these things.

But most importantly, the Flint River and its tributaries are the defining characteristic of the communities that almost three quarters of a million people call home. Our river system is increasingly strong and healthy, and it can (and should!) play a key role in maintaining and restoring the vitality of all of our communities, whether you are in New Lothrop, Davison, Flint, Metamora, North Branch, or any of



FRWC Executive Director Rebecca Fedewa examines a river rock for signs of living creatures

the other 15 cities in our watershed.

It is our collective right to have clean and healthy waterways in our communities, but it will take all of us working together to ensure that the river continues to improve and prosper. If you are receiving this newsletter, you more than likely have taken that first, second or hundredth step to protect, preserve, and improve the Flint River and its watershed. I'd like to take this opportunity to thank you for all you do! I hope you continue with us as we turn the "voice of the Flint River" into a full-fledged chorus.

EDITORIAL COMMENT JACK MINORE

It was Thomas Jefferson who stated that "The Price of Freedom is Eternal Vigilance." I suggest a current paraphrase: "Eternal Vigilance is the price of clean water!"

Candidates and office holders in both major political parties have repeatedly used the phrase, 'job-killing' in referring to various environmental regulations. One would completely eliminate the Federal Environmental Protection Agency; another cites the need for fewer regulations for oil drilling; many propose drilling in

pristine areas or National Parks; virtually all support the tar-sands oil pipeline; etc.

Many office holders support cutting funds for many environmental programs at both the state and Federal levels. In our state, a bill would forbid any environmental regulations greater than those at the Federal level.

IF we are to protect our environment – and, especially, our water resources – ALL OF US need to speak up and make our voices heard for the protection of our greatest natural resource – fresh water!



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Please Recycle!



newsletter design & layout by Jon Wood

10 QUESTIONS WITH... DEREK BRADSHAW FRWC BOARD MEMBER



Derek Bradshaw

1. Why are you a member of /work for/volunteer for the FRWC?

I was impressed with the overall professional commitment of the staff in effecting change in the watershed.

2. What FRWC programs do you participate in?

As I am a brand new member I have yet to participate in any of the wonderful programs, but am very excited about the river clean-ups and how we can partner with the Household Hazardous Waste collections that I oversee.

3. When did you first get involved in the FRWC?

I first became involved with FRWC in the spring of 2010.

4. What's your favorite part of the watershed?

The water, of course. Well, the shed's kinda nice too. Both.

5. What is the most interesting thing you have seen in the watershed (wildlife, garbage, someone doing something unexpected, etc.)

Shopping carts!. It is 5 miles from the nearest Meijer.

6. What's your favorite river (any river) memory?

My favorite river memory was the first time I went "canoeing" on the Rifle River in northern Michigan. Back home, canoeing is quite a serious & taxing sport (canoeing/camping for multiple days w/ plenty of gear to haul around). The laid back style of canoeing on the Rifle (six-pack and some bungee cords) was a welcomed retreat from back home.

7. What worries you most about the watershed?

The average Joe's misunderstanding of the interconnectedness of it all. A quart of oil here, or a pesticide application there all ends up underwater somewhere. Simple education can go a long way in this business.

8. What gives you the most hope?

Active organizations like the FRWC, with an active volunteer base who are ready and willing to help change along.

9. If you could change one thing to help improve the watershed, what would it be?

Local planning structure. Important decisions are made everyday for close knit communities, but impact so many downstream! Planning on a regional/ watershed basis makes so much sense.

10. What is your river/watershed/environmental/conservation hero?

My man, David Suzuki. I grew up watching his weekly show "The Nature of Things" on the CBC Network.

What is your favorite way to connect with the FRWC online?





*Brent Nickola
FRWC Board Chair*

BEST FISHING TRIP EVER

Several years ago I attempted to share fishing the Flint River with my father. Unfortunately the day was a bust. I could not put my finger on what the problem was that day. We were not catching fish and my Dad had no enthusiasm to fish the river. It turned out that he was suffering from heart disease and would end up in the hospital that evening to undergo heart surgery. Not a good fishing day!

On a Saturday in this past July I woke up and did my usual routine. Make the coffee, feed my daughter and surf the web for a little bit. I checked a website to see how high the river was and was delighted to discover the river had finally dropped to a fishable level. All the signals were there for a stellar fishing day. The weather was right, the river was right, and I knew I needed to take my Dad fishing.

We launched our boat and it took Dad about an hour to get the hang of things. Eventually he hooked into his first Flint River smallmouth, a respectable 14 inch female. Dad soon hooked up on a dozen or more fish. He was absolutely amazed by the fishery in the Flint. "Wow, I never knew that

such a good fishery was this close to my home," he said after several more fish. Before the day was over Dad had boated over 40 fish including several trophies. The largest fish of the day was a 20 inch bruiser that drug our canoe into a bolder field and nearly caused us to capsize. What a hoot!



Dad with the 20 inch smallmouth that almost capsized our canoe

The Flint River delivered once again and I made a river advocate out of another person. It is amazing to me how people still don't understand what a healthy and great river we have in our community. The day after the trip I spoke with my mother

and asked her if my Dad had said anything about the trip. Her response? "Best fishing trip ever." No small complement from a guy who has chased fish all over the Great Lakes, including parts of northern Canada.

We have a great river here folks, let's be proud of it and thanks for helping us to protect it.

COCA-COLA GIVES BACK TO COMMUNITY

Earlier this year, in conjunction with the Company's 125th anniversary, local Coca-Cola associates broke ground on a community garden at the Flint Distribution Center.

The garden will provide local residents access to fresh produce, free of charge. The project included the use of repurposed Coca-Cola syrup barrels to create a sustainable water supply for the vegetation.

In conjunction with the plantings, Coca-Cola associates distributed 125 rain barrels to area residents. The barrels are repurposed Coca-Cola syrup barrels, retrofitted for residential rain harvesting use in home gardens, schools and community gardens. The use of Coca-Cola rain barrels helps to support the Company's goal to safely return to nature and our communities an amount of water equivalent to what is used in their production. Collecting storm water in rain barrels also helps stem the amount of runoff that occurs in urban areas and reduce harmful effects to the river basin.

"As we celebrate 125 years, we are proud to continue to support the community in which we do business through employee engagement and sustainable initiatives such as the community garden," said Jeff Chase, Coca-Cola Flint Distribution Center Manager.

Coca-Cola is committed to sustainable and responsible growth, and recognizes the health of our business is directly linked to the health of the environment. As a result, the company's focus is on areas where they have the most significant impact and the most potential to make positive contributions: water

stewardship, sustainable packaging, and energy efficiency and climate protection.

Since 2005, Coca-Cola has saved more than 3 billion gallons of water through reduction efforts across all facilities in the U.S., hitting these targets through technologies such as water reclaim systems, replacement of water rinsers with air rinsers, dry lube technology and others.

Additionally, Coca-Cola supports more than 50 community watershed projects around the country. These projects return an estimated 13% of our product volume back to nature. The company's goal for 2011 is to increase this replenishment volume to 17%.



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Region Communications
Director
Great Lakes Region

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SUNDAY RIDES STILL POPULAR

The Sunday rides along the Flint River Trail have continued to be popular in what I believe is the fifteenth year of the Friends of the Flint River Trail program. Every single Sunday this summer, we have had one or more new, first-time, riders – and our riders have come from about 25 different zip codes so far. The rides start at 2:00 PM from the Flint Farmers' Market – EVERY Sunday May through October. Our real goal is to introduce riders to the trail so that they will be comfortable riding the trail on their own time and own schedules. In addition, we lead rides on various other trails around mid-Michigan every 'Second Saturday' of our ride months. In partnership with other



groups, we are strong advocates for trail improvements and expansion. Labor Day week-end we had three new families – including five children ages about 9-14 join us: it's a great family outing for a Sunday afternoon. Groups who might want to arrange a 'special ride' are welcome to contact leaders Bruce Nieuwenhuis (bnbaton@gmail.com) or Jack Minore (jacksonmin@aol.com). In addition to the rides, several members of our group have put in regular volunteer hours mowing, cleaning and trimming along the trail to make for a more pleasant ride. Watch for our major clean-up the last Saturday in April – prepping the trail for our first 2012 ride – the first Sunday in May!

IS IT GOOD? OR BAD??

A question we are frequently asked of the Flint River. The answer: It depends on all of us! This summer we had many individuals like you working to protect, preserve and improve the Flint River Watershed. We also had a large number of families having healthy fun on (and in) the Flint River.

Good?

Yes! The overwhelming majority of the Flint River watershed is healthy and vibrant. Participants in our summer



Sue Lossing (front) provides students with hands on storm drain education

Our Water programs saw this first hand through our various fun, healthy, educational activities. Paddlers coasted easily along the Flint River and enjoyed all the beautiful sights along

the way. Some stopped paddling to swim in the river while others took pleasure with the multiple bald eagle sightings. Others spotted birds such as kingfishers and great blue herons along with the occasional fisherman.

As paddler *M a d o n n a Aubrey* stated "I finished in less than 3 hours – had a great morning – I could have gone another 3 hours."

Bad? Storm water runoff can carry contaminants left on our

lawns, streets, and parking lots directly to our streams via our system of storm drains. The Our Water Storm Water Awareness program informs residents of simple things people like you can do to easily prevent this contamination.

CITY OF FLINT TO TERMINATE LEAF PICK UP PROGRAM

Flint residents traditionally rake their leaves into the street for collection by the city. Due to budget cuts, this service will NOT be offered this year. We understand this poses a dilemma for area residents, but we strongly encourage you to not simply rake into the street anyway. Leaves left in the gutter not only create an eyesore in our neighborhoods, but also could result in significant nutrient contamination to the Flint River. Alternatives for homeowners include:

- Bagging your leaves - compost collection will continue through the end of November.
- Mowing them into your lawn (consider it free fertilizer, and some research has shown maple leaves serve as an herbicide to spring dandelions)
- Composting them in your own pile, garden, and flower beds.

A Google search that contains the search term "what to do with leaves" will provide ample guidance for all of the above. Connect with us on Facebook, and tell us what you are doing with your leaves this fall.

This summer, members of the Genesee Regional Chamber of Commerce's Summer Youth Initiative team focused on providing storm drain education to over 200 residents around Thread Lake. We are looking for your help to conduct similar outreach in Gilkey Creek and Thread Creek sub-watersheds. Sign on now to help make a difference. Join the Storm Water Awareness Team by contacting Sue Lossing: (810) 767-9491; SLossing@FlintRiver.org

LAPEER HAPPENINGS

Thanks to John Jill, the store manager at Rowleys Tires and Automotive Services in Lapeer for disposing of a batch of tires removed from the South Branch by 7th grade Chatfield Students.

Thanks to the Lapeer Sunrise Kiwanis for sponsoring a "river day" for Lapeer Community School students in the Federal Free and Reduced Lunch program. These students learned about the FRWC, our relationship with the river, and took a canoe trip with Kiwanis mentors on the Rotary to Saginaw section of the South Branch. For most of these 4th-6th grade students, it was their first time canoeing and an opportunity they normally wouldn't have access to.

Thanks to the Lapeer Juvenile Probate Program for their participation in our canoe pathway project. In their most recent effort, two staff members and five high school students removed logjams in four hour session on the South Branch. They worked very hard and were able to appreciate the tremendous effort that our local Rotary/DNR /Lapeer Chapter partnership provides each season. Some of these students also participated in the Spring Cleanup and are competing for the Golden Glove Award! We look forward to our working partnership with this program.

And a special thanks to our members, providing the support and resources to make the three previous projects happen. We are building community, we are giving voice to this river, we are making a difference!

MEMBERSHIP CONNECTIONS

We continue to reach out and connect with many individuals, families, and groups who share our passion to be a 'voice of the river'. Join us in thanking our most recent new and renewing members of the Flint River Watershed Coalition. These are the hard core supporters who demonstrated their commitment by making a financial contribution to support our mission. We are happy to welcome the following individuals and families to the FRWC for another great year. We cannot be successful without our members -- YOU.

- Linda Johnson Barnes**
- Linda Berker and Donald James**
- Mark Bilodeau**
- Morgan Boyer**
- Derek Bradshaw**
- Ruth Brown**
- Casey Foote**
- Earl Gravlin**
- Ben and Karen Howells**
- Joel Rash**
- James and Mary Jane Richardson**
- Maureen and Ron Shoemaker**
- Allan Taylor**
- Fred and Alyce Townsend**
- Jeff and Jaime Welch**
- Norman Wing**

We would like to call special attention to the many members

who hail from the southern stretches of the watershed. We are always glad to meet and renew connections in that area. When you cross the river in Ortonville, Lapeer, or Goodrich, say hello to your neighbors. You'll know an FRWC member when you see them – they'll be sporting a look of appreciation for the wonderful natural resource that we all share. Members from these southern watershed communities include: Derek Bradshaw, Fred and Alyce Townsend, Linda Berker, Donald James, Maureen and Ron Shoemaker, and Earl Gravlin.

There are many ways to submit your membership payment to the FRWC. There is a membership application in this newsletter, you can get a welcome brochure at any of our events, or you can link to our secure on line payment option from our website. Lastly, you can call our offices at 810-767-6490 and we'll be glad to hook you up!

However you become a member of the Flint River Watershed Coalition, make sure you connect with your fellow river friends through the fellowship of the FRWC. When you look through the newsletter and review the summaries of all of our summer events and our plans for the fall, it's these types of activities that your membership sponsors.

See you on the river this fall!

FRWC MEMBER APPLICATION - FALL 2011

name _____
 organization _____
 address _____
 city/state _____
 phone _____
 email _____

_____ STUDENT \$10	_____ WATERSHED
_____ INDIVIDUAL \$25	_____ PROTECTOR \$500
_____ FAMILY \$40	_____ WATERSHED
_____ RIVER SPONSOR \$100	_____ GUARANTOR \$1000
_____ RIVER PATRON \$250	_____ 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**

MAKING NEW FRIENDS WHILE BENTHIC MONITORING

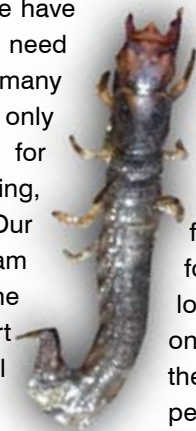
JAMIE WELCH

This past spring marked my first season coordinating the water quality monitoring program. To say my first season was a “trial by fire” would be putting it mildly. We had record setting rain, overflowing creeks, and water levels that made it impossible to monitor some of our sites. But every time I think back to last season, I have one memory that sticks with me. I was monitoring with my husband Jeff and FRWC development director Casey Foote. We were about halfway down the stream collecting when Jeff announced that this was the best job on the planet. Not only were we doing something tangible to protect our local waters, but we got to play in the water and collect cool critters while doing so. Standing in the middle of the stream on a beautiful spring morning, I had to agree.

One of the biggest misconceptions we hear about the Flint River is that it is dirty, polluted, or in worse condition than it really is. We have spots in the watershed that need improvement, but there are many more areas that are not only beautiful, but are perfect for fishing, kayaking, canoeing, wading, and swimming. Our water monitoring program helps us track the health of the entire watershed and report back to you on the overall health of our river.

We monitor twice a year—every spring and fall—and track each stream’s score from season to season. At the end of each season

just a couple of critters that monitors made friends with last spring!



our monitoring committee meets to review the data collected and assess each site, including comparing the scores from the previous seasons. If we find a site is declining, we investigate to find out why and what can be done to help that site improve.

None of this would be possible without the dedication of our volunteer monitors. Monitoring is a fun process, and easy to learn. Trainings are held each season for new monitors as well as a refresher course for our more experienced volunteers. If you are interested in learning more about monitoring, this is a perfect opportunity.

Monitoring labs this season are Thursday, September 29th and Saturday, October 1st, from 12-5 in Lapeer and in Flint. These labs are where our monitors bring the critters they collected at the stream for identification. Each lab has an expert or two on hand to help with identification and verify your samples. We also have our “Master Identifiers” again this season who will conduct more detailed identification which ultimately tells us more about the stream you just sampled. Feel free to stick around and see what they find! This program has something for everyone, from the person who loves getting out into nature to the one who enjoys being in the labs using the microscopes to get up close and personal to their critters.

So what are you waiting for? Contact Jaime Welch at jwelch@flinriver.org or 810-767-7140 to volunteer or to find out more information about this program.

CREATING MEMORIES THAT LAST A LIFETIME ON THE FLINT RIVER

Remember early outdoor moments when you were a kid? Have you ever said “I remember when...?” This summer, through the Our Water program, we were fortunate to create many of these moments for our members. Here is a collection of stories from the summer.

During the Montrose to Birch Run paddle, Grandpa Brad and his grandkids could be heard laughing as they spent as much time playing in the water as they did in the canoe. They spotted clams, fish, and learned about the caddisfly cases stuck on rocks that were pulled from the river. (A good indication of a healthy stream-caddisfly with cases are sensitive to poor water quality.)

Five members of the Wisenbaugh family, the youngest age 7, split themselves between two canoes and did wonderfully! They joined people from Fenton, Swartz Creek, Burton, Holly, Clarkston, Birch Run, and Rochester Hills. They enjoyed being able to safely recreate on this local, available, and affordable resource.

This year the Romankewiz family not only joined us on the Our Water walks and paddling events, but took their participation one step further and volunteered for our storm drain stenciling program. Thanks to their efforts and with the assistance of two Sierra Club members, over 100 Burton residents in the Thread Creek sub-watershed received storm water awareness information and simple things they can do to keep contaminants from entering Thread Creek.

Check us out for fall events and to put your interests in for 2012 Our Water programs! Contact Sue Lossing at (810) 767-9491; SLossing@FlintRiver.org

CALENDAR OF EVENTS

DON'T MISS OUT ON TIME-SENSITIVE INFORMATION!

SUBSCRIBE TO OUR WEEKLY E-NEWSLETTER, "THE RIPPLES" BY VISITING US ONLINE AT WWW.FLINTRIVER.ORG OR CALL THE OFFICE: 810-767-6490
ALSO, YOU CAN BECOME OUR "FAN" ON FACEBOOK BY SEARCHING FLINT RIVER WATERSHED COALITION.

MONTH	DATE/DAY	EVENT
SEPT	22 THU	MiCorps Water Monitoring Training
	23 FRI	Order Deadline: Genesee Conservation District Tree Sales
	23 FRI	Flint River Paddlers: Fall Equinox Autumn Paddle
	24 SAT	Applewood: Fall Harvest Festival
	25 SUN	FFRT Sunday Bike Ride
	28 WED	Lapeer FRWC Chapter: Conservation Efforts for River Preservation & Paddling
	29 THU	MiCorps Water Monitor Day & Lab Date I
30 FRI	Order Deadline: Lapeer Conservation District Tree Sales	
OCTOBER	1 SAT	MiCorps Monitoring Day & Lab Date II
	2 SUN	FFRT Sunday Bike Ride
	5 WED	Lapeer FRWC Chapter: Conservation Efforts for River Preservation & Paddling
	5 WED	Genesee Belle: October Lunch Cruise, Stepping Stone Falls, Cost/Registration
	6 THU	Six Rivers Regional Land Conservancy: Flint River Paddle/Lapeer
	8 SAT	FFRT 2nd Saturday Bike Ride
	8 SAT	Genesee & Lapeer Conservation District Tree Pick-up
	8 SAT	Household Hazardous Waste Collection Day (Carman/Ainsworth HS & Flint East Water Center)
	9 SUN	FFRT Sunday Bike Ride
	12 WED	Lapeer FRWC Chapter: Conservation Efforts for River Preservation and Paddling
	12 WED	Genesee Belle: October Lunch Cruise, Stepping Stone Falls, Cost/Registration
	16 SUN	FFRT Sunday Bike Ride
	18 TUE	Lapeer Chapter, FRWC Meeting
	19 WED	Lapeer FRWC Chapter: Conservation Efforts for River Preservation and Paddling
	19 WED	Genesee Belle: October Lunch Cruise, Stepping Stone Falls, Cost/Registration
	21 FRI	FRWC Board Meeting
	23 SUN	FFRT Sunday Bike Ride
	26 WED	Genesee Belle: October Lunch Cruise, Stepping Stone Falls, Cost/Registration
29 SAT	Sierra Club Hike: Lapeer State Game Area & Center Cranberry Bog	
30 SUN	FFRT Sunday Bike Ride: Last Scheduled Ride for the Season	
NOV	5 SAT	Keep Genesee County Beautiful: Tree Tenders Urban Tree Planting
	15 TUE	Lapeer Chapter, FRWC Meeting
	18 FRI	FRWC Board Meeting
JAN	16 MON	FRWC Community Watershed Service Training (MLK Day)
	26 THU (tentative)	Celebrate! FRWC Annual Meeting: Dinner and Auction



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MEMBERS AND VOLUNTEERS PROVIDE ESSENTIAL BUILDING BLOCKS

The Flint River Watershed would like to sincerely thank all of our members and volunteers! Your donations have helped make this year's Flint River GREEN program our most successful ever! We mentored over 3,500 young students by helping them conduct scientific water testing on the Flint River. Students presented their collected data at the student summit and made recommendations on how they can help protect, preserve, and improve the Flint River.

Contributions from sponsors and individual donors enabled us to organize the spring cleanup this year where we successfully removed over 40 tires, 150 bags of trash and other large items that included an old boat, fencing and building materials, carpeting, and shopping carts from the banks of the river.

We have put your money to work locally by conducting our benthic monitoring

program this spring and fall. We track the health of the river that is vital to our local environment. This data is utilized

Our success as an organization is due to great members like you who believe in our mission, that the Flint River is a valuable asset in our community to protect, preserve, and improve.

by state and local officials, and is posted on our website so you can track the health of the river in your area.

As you can see, your membership dollars translate into real action and benefit for your local Watershed.

Please consider our request when we ask you to upgrade or renew your membership.

As a society we are becoming increasingly aware of the importance of supporting our local community. Please consider contributing to the Flint River Watershed Coalition today!

The Flint River Watershed Coalition draws together concerned citizens, local government, businesses, educational institutions, and people like you who feel the Flint River and its tributaries

are a vital resource to protect, preserve, and improve. The Coalition serves as the Voice that speaks for the entire Flint River drainage basin. We invite you to join the FRWC and consider making a tax deductible contribution to the Flint River Watershed today!

Flint River GREEN Student Summit 2011

May 13, 2011

Mott Community College—Gorman Science Building



FLINT RIVER
WATERSHED COALITION



History of GREEN and the FRWC

The Global Rivers Environmental Education Network—GREEN—provides youth the educational opportunities to understand, improve and sustain the water resources in their communities. GREEN empowers young people to learn more about water quality within their watershed and use their findings to create lasting solutions.

This award-winning program teaches middle and high school-aged youth essential academic skills including critical thinking, teamwork, problem solving and decision making. GREEN provides educators with innovative resources including a network of support, an online watershed exploratory tool, water monitoring equipment, technical manuals and action guides. Today, GREEN programs flourish in every state and a number of countries. From the original idea by one group of students, GREEN has grown into a global network of educators and students working to improve their watersheds and in 1999 became an Earth Force program.

Locally, the Flint River GREEN project connects mentors from our sponsors, General Motors and the City of Flint, as well as other environmental professionals with middle and high school students throughout the watershed. The students conduct stream monitoring every year. For more information on Flint River GREEN, visit www.flintriver.org.

The Flint River Watershed Coalition (FRWC) was formed in the fall of 1997 and is a collaboration between educational institutions, local government, local business, environmental groups, and concerned citizens who feel strongly that the Flint River and its tributaries are a vital resource we all need to protect. The FRWC was incorporated as a non-profit 501(c)3 organization in August of 1998.

Staff: Rebecca Fedewa, Executive Director
Email: rfedewa@flintriver.org

Edythe Westhoff, Business Manager
Email: ewesthoff@flintriver.org

Jaime Welch, Program Assistant
Email: jwelch@flintriver.org

Sue Lossing, Education/Outreach Coordinator
Email: slossing@flintriver.org

Casey Foote, Development Director
Email: cfoote@flintriver.org

Core Beliefs

We are committed to improving and maintaining environmental quality in the Flint River watershed.

We are committed to environmental education.

We value input and participation from our entire community.

We value a positive approach to people and problem solving.

Flint River Watershed Coalition Board Members

Jim Ananich

Darren Bagley, Secretary

Irene Bashore

Linda Berker

Derek Bradshaw

Duane Elling

Steve Hester

Brad Hill

S. Olof Karlstrom

Andrew Leavitt

Dr. Robert McAllister, Treasurer

Amy McMillan, Board Vice Chair

Jack Minore

Brent Nickola, Board Chair

Diane Peplinski

Carol VanBuren



Flint River Watershed Coalition

400 N. Saginaw St., Suite 233, Flint, Michigan 48502

Phone: (810) 767-6490 <http://www.flintriver.org>

YES, I want to join the FRWC! Partnering to protect, preserve, and improve the Flint River Watershed.

Enclosed is my membership amount:

\$10 Student/Limited Income

\$25 Individual

\$40 Family/Friend

\$100 River Sponsor

\$250 River Patron

\$500 Watershed Protector

\$1,000+ Watershed Guarantor

*****SPECIAL*** \$5.00 membership for 1 year – for GREEN participants!**

NAME _____

ORGANIZATION _____

ADDRESS _____

CITY/STATE/ZIP _____

PHONE _____

Please circle one **WORK HOME CELL**

EMAIL _____

Expert Presentations

Session 1: 8:34 a.m. -- 9:15 a.m.

Auditorium: Student Presentations

1108	<i>Meeting Macro-invertebrates</i>	FRWC Monitors
1210	<i>Edible Plants</i>	Peter McCreedy, Ecology Directory Chatfield Schools
3202	<i>Be Heard-- Be An Environmental Citizen</i>	Ashley Miller-Helmholdt, Earth Force
3204	<i>Sewer CSI</i>	Thad Domick, Dawn Welsh, Eric Brubaker, Tom Hutchings—City of Flint Water Pollution Control Specialists
3207	<i>Bees, Beekeeping & Honey</i>	Jim Dodder, Genesee County Beekeeper
3208	<i>Catching Monstrous Fish by Knowing the Bugs they Eat</i>	Andrew Neeson, Educator Lapeer Community Schools

Session 2: 9:20 a.m. -- 10:05 a.m.

Auditorium: Student Presentations

1104	<i>A Green Get Away -- Right Away</i>	Heather Johnson, Genesee County Parks & Recreation
1105	<i>Water Issues and Recycling</i>	Brian Garhoski, Michigan Dept. of Environmental Quality
1106	<i>Paddling the Flint River from Head to Toe</i>	Riley McLincha, Watershed Enthusiast
1108	<i>Meeting Macro-invertebrates</i>	FRWC Monitors
3202	<i>Eating Through Edible Flint</i>	Erin Caudle and Edible Flint Members
3204	<i>Sewer CSI</i>	Thad Domick, Dawn Welsh, Eric Brubaker, Tom Hutchings—City of Flint Water Pollution Control Specialists
3207	<i>Rats in the Drinking Water</i>	Darren Bagley, 4-H Youth Development Coordinator, MSU-E

Session 3: 10:10 a.m. -- 10:55 a.m.

Auditorium: Student Presentations

1104	<i>A Green Get Away -- Right Away</i>	Heather Johnson, Genesee County Parks & Recreation
1105	<i>Water Issues and Recycling</i>	Brian Garhoski, Michigan Department of Environmental Quality
1108	<i>Meeting Macro-invertebrates</i>	FRWC Monitors
1210	<i>Edible Plants</i>	Peter McCreedy, Ecology Directory Chatfield Schools
3202	<i>Eating Through Edible Flint</i>	Erin Caudle and Edible Flint Members
3207	<i>Bees, Beekeeping & Honey</i>	Jim Dodder, Genesee County Beekeeper
3208	<i>Catching Monstrous Fish by Knowing the Bugs they Eat</i>	Andrew Neeson, Lapeer Community Schools

Session 4: 11:00 a.m. -- 11:45 a.m. (Lunch A also)

Auditorium: Student Presentations

1104	<i>A Green Get Away -- Right Away</i>	Heather Johnson, Genesee County Parks & Recreation
1108	<i>Meeting Macro-invertebrates</i>	FRWC Monitors
1210	<i>Edible Plants</i>	Peter McCreedy, Ecology Directory Chatfield Schools
3207	<i>Rats in the Drinking Water</i>	Darren Bagley, 4-H Youth Development Coordinator, MSU-E

Session 5: 11:50 a.m. -- 12:35 p.m. (Lunch B also)

Auditorium: Student Presentations

1104	<i>Be Native: Flint River Wild Ones</i>	Rebecca Gale-Gonzales, Flint River Wild Ones
1105	<i>Paddling the Flint River from Head to Toe</i>	Riley McLincha, Watershed Enthusiast
1108	<i>Take A Hike</i>	Sierra Club Hikers
3202	<i>Eating Through Edible Flint</i>	Erin Caudle and Edible Flint Members
3207	<i>Bees, Beekeeping & Honey</i>	Jim Dodder, Genesee County Beekeeper
3208	<i>Catching Monstrous Fish by Knowing the Bugs they Eat</i>	Andrew Neeson, Lapeer Community Schools

Session 6: 12:40 p.m. -- 1:25 p.m.

1108	<i>Take A Hike</i>	Sierra Club Hikers
1210	<i>Water Worlds</i>	Laurie Bone, Sloan Museum & Longway Planetarium
3202	<i>Be Heard-- Be An Environmental Citizen</i>	Ashley Miller-Helmholdt, Earth Force
3204	<i>Sewer CSI</i>	Thad Domick, Dawn Welsh, Eric Brubaker, Tom Hutchings—City of Flint Water Pollution Control Specialists
3207	<i>Rats in the Drinking Water</i>	Darren Bagley, 4-H Youth Development Coordinator, MSU-E
3208	<i>Catching Monstrous Fish by Knowing the Bugs they Eat</i>	Andrew Neeson, Educator Lapeer Community Schools

Flint River GREEN 2010-2011

Participating Schools

Atherton High School

Teacher: Matt Hyslop
Mentors: GM-John Maksimchuk III and John Hinze, David Hellen, Quaker Chemical

Beecher Middle School

Teacher: Don Hammand
Mentor: Darren Bagley, MSU-E

Bentley High School

Teacher: Debroah Willett
Mentor: Cheryl Hobson

Birch Run Middle School

Teacher: Tammy Daenzer
Mentor: Ashley Miller-Helmholdt, Earthforce

Brandon Middle School

Teacher: Dave Green
Mentor: Rick McAvinchey, Forestry Specialist

Carmen Ainsworth High School

Teacher: Julie Lawrence
Mentor: Irene Bashore, GM

Chatfield School - Lapeer

Teachers: Bill Kraly, Jean Block, Robert Kurtz, and Karla Pretty
Mentors: Sue Lossing, FRWC, John Maksimchuk III, GM

Clio-Carter Middle School

Teachers: Chip McCallum, Ryan Nemi
Mentor: Aaron Bagwell, Quaker Chemical

Davison Middle School

Teachers: Jodie Kosaris, Michelle McKinnon, Chris Talcott
Mentor: Irene Bashore, GM

Fenton-A.G. Schmidt Middle School

Teacher: Lynn Behr
Mentor: Brent Wilson, GM

Flint Northern High School

Teachers: Nadina Aversa, William Bell
Mentor: Ashley Miller-Helmholdt, Earthforce

Flint Classical Academy

Teachers: Jarrett Trombley, Robert Ryan
Mentor: Irene Bashore, GM

Flint Holmes Middle School

Teachers: Chris Ochodnicki and Tasnisha Brooks
Mentor: Rebecca Fedewa, FRWC

Flint Southwestern Academy

Teacher: Lynn Louchart-Keefer
Mentor: Irene Bashore, GM

Flushing High School

Teacher: Paul Taylor
Mentor: Heather Griffin, UM Flint Alumni

Goodrich Middle School

Teacher: Cindy Rivet, Craig Salter
Mentors: Pier Bollini, Al Putney, Delphi Flint; John Bradburn, GM

Grand Blanc Middle School – East

Teachers: Deb Lacki, Kris Neale, Deb Wilson
Mentors: GM Group- John Maksimchuk III

Grand Blanc Middle School – West

Teacher: Katie Gutteridge, Elizabeth Lemerond, Vicki Skrisson
Mentor: GM Group-John Maksimchuk III

Kearsley-Armstrong Middle School

Teachers: April York, Cindy Sierra
Mentor: John Moldovan, GM Retiree

Lake Fenton High School

Teachers: Joe Grigas, Ken Roy
Mentor: Dan Harrett, GM Retiree

Lakeville Middle School

Teachers: Josh Henley, Andrea Thelen
Mentors: Ben Wickerham, Genesee Soil Conservation District

Lapeer Community High School

Teacher: Donald Shaver
Mentor: John Moldovan, GM Retiree

Lapeer East Senior High School

Teacher: Cheryl Butterfield
Mentor: Sue Lossing, FRWC

Linden Middle School

Teacher: Charlene Nester
Mentor: Bill Welch, FRWC

Montrose Kuehn-Haven Middle School

Teacher: Linda Jordan
Mentor: Sue Kubic, Genesee County Drain Commission

Mt. Morris Junior High School

Teacher: Bekah D'Haene, Kim McCormick
Mentor: Tom Jones, Genesee County Drain Commission

North Branch High School

Teacher: Carrie Wenta
Mentor: Diane Peplinski, FRWC

North Branch Middle School

Teacher: Julie Tumblyn
Mentor: Diane Peplinski, FRWC

Rolland-Warner Middle School – Lapeer

Teacher: Kelly Reach
Mentor: James Emmerling

St. John Vianney Catholic School

Grade 8
Teacher: Elizabeth Petrides
Mentor: Tom Hutchens, Flint Water Pollution Control

Swartz Creek Middle School – Grade 8

Teacher: Brandolyn Forbes, Alicia Benn
Mentors: Dennis Weiler, GM Retiree
Marv Asbury, GM SPO

The Valley School

Sue Lossing, FRWC
Mentor: Dawn Welsh, Flint Waste Water Treatment

Westwood Heights – Hamady High

Teacher: Tammy Wylie
Mentor: Eric Brubaker, Flint Water Pollution Control

Zemmer Junior High School – Lapeer

Teachers: Kelly Reach, Kelly Gartrell
Mentor: John Bradburn, GM

What is a Watershed?

A watershed is an area of land which drains into a particular body of water. Just as when you pour water in a bathtub it all ends up in the drain, when it rains or snows on the surface, that water flows to a particular body of water. That water can flow both above the ground through lakes, streams, and wetlands, or below the ground through groundwater and springs.

The Flint River Watershed is...The Flint River has 1,639 total river miles—over 753 of those river miles have water in them all the time. The Flint River Watershed is made up of 18 smaller watersheds (such as Kearsley Creek or Swartz Creek) and encompasses more than 1,358 square miles—59 townships, 43 school districts, 25 cities and villages, 25 county commission districts, 9 state house districts, 7 state senate districts, 7 counties, and 4 U.S. House districts. For a map of the watershed, see the back page of this program.

The Flint River Watershed is home to more than 600,000 people, nearly half of whom drink groundwater affected by the Flint River. Over 250,000 more people use the River as the backup supply for drinking water. Thousands live along its banks and even more recreate on the river and its associated lakeside beaches.

The Flint River and its tributaries are an important resource for fish and wildlife and provides spawning habitat for small mouth bass, walleye, Northern pike, and other Saginaw Bay fisheries. The upper stretches of Thread Creek, Kearsley Creek, and the south branch of the Flint River are designated as cold water fisheries by the Michigan Department of Natural Resources. The high quality of these streams also means they face the most threat to degradation from development and other land use practices.

Sauk, Ojibwa, later Chippewa, and Ottawa Indians originally populated the Flint River Watershed. The Native American name for this river was *Pewonigowink*, meaning "river of fire stone." European settlement brought fur traders, trading posts, trapping, farming, and lumbering. As the forests were depleted, manufacturing became the primary economic driver of the area.

What does this mean for you? As part of the Flint River Watershed, anything you do can flow downstream and potentially harm your neighbors. We are all connected by the water that flows past us, over our yards and streets, and into the storm drains and roadside ditches. What you do at your home, in your car, your place of work or at your school, and at the places you play all can have an important effect on the Flint River.

GREEN and Earth Force Watershed STEM Initiative

Earth Force is an environmental education and service-learning program that engages young people in learning and taking action on local environmental issues.

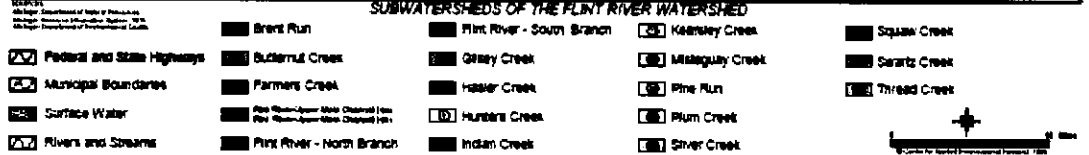
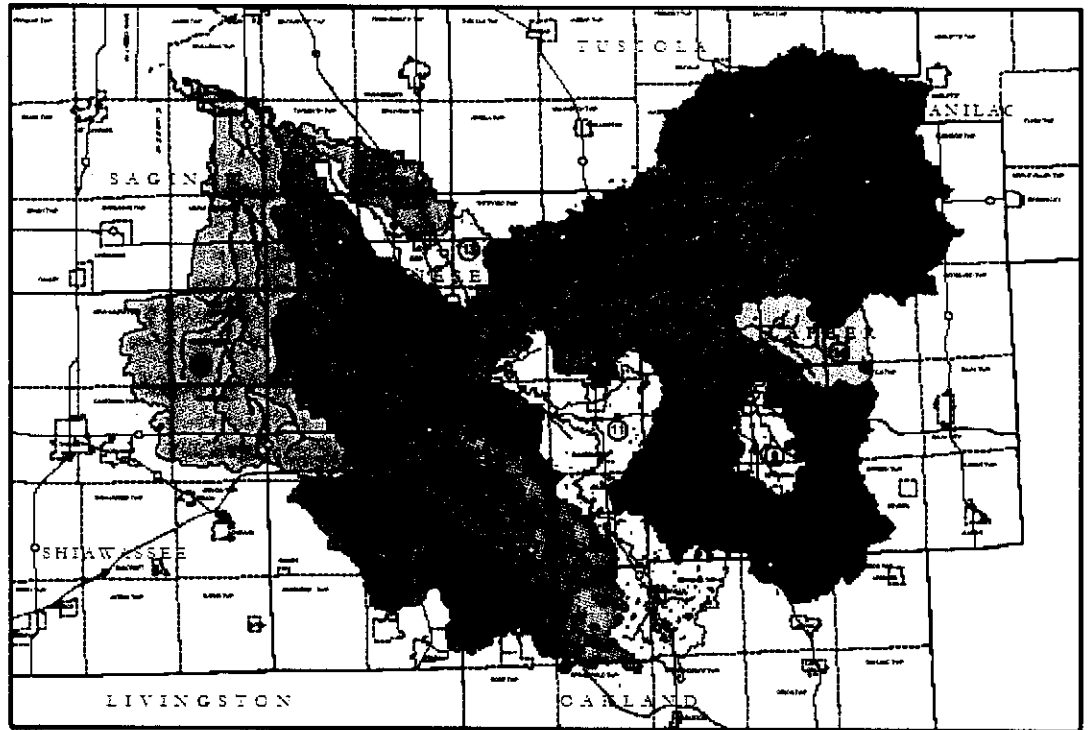
In 2008, Genesee ISD and Flint River GREEN joined the Earth Force Watershed STEM Initiative (WSI). WSI engages students active in Flint River GREEN with environmental stewardship. Through the WSI, teachers combine STEM and civic education into service learning projects. Students investigate watershed problems in their community and engage with leaders to solve those problems. Students in the WSI have a deeper understanding of scientific issues, expand their civic skills, and are more likely to act as community problem solvers. In 2010, Earth Force and Flint River Watershed Coalition joined with Lapeer ISD to bring Flint River GREEN to three Lapeer ISD schools—bringing 13 new teachers and their students to the Flint River GREEN Program and Earth Force Watershed STEM Initiative.

For information on EarthForce visit www.earthforce.org

Student Presentation Schedule

Session 1 8:35—9:05	Session 2 9:20—10:05	Session 3 10:10—10:55	Session 4 11:00—11:45	Session 5 11:50—12:35	Session 6 12:40—1:25
Swartz Creek MS (Benn, Forbes)	Clio/Carter MS (McCollum, Niemi)	Linden MS (Nester)	Grand Blanc MSE (Wilson, Lacki, Neale)	Atherton HS (Hyslop)	North Branch MS (Tumblin)
Flint Classical Academy (Ryan)	LakeVille MS (Henley, Thelen)	St. John Vianney (Petrides)	Davison MS (Kosiara, McKinnon, Talcott)	Flint Northern HS (Aversa, Bell)	Mt. Morris JH (D'Haene, McCormick)
	Kearsley/Armstrong (Yorks, Sierra)	Birch Run MS (Daenzer)	Beecher HS (Hammond)	North Branch HS (Wenta)	
				Hamady HS (Wylie)	

FLINT RIVER WATERSHED



Thank You!

- To the Students.* We value your hard work and your dedication to this project.
- To the Teachers.* You bring science to life for your students.
- To the Presenters.* Thank you for taking time to be a part of the GREEN Student Summit.
- To the Mentors.* Thank you for your dedication to educating our young people.

A Special Thank You!

Larry Casler, GAMSC Director, Genesee Intermediate School District
 Lisa Hook, Project Coordinator, Genesee Intermediate School District
 James Emmerling, LCMSC Director, Instructional Training Supervisor, Lapeer County Intermediate School District.

Sponsors and Supporters of Flint River GREEN

On behalf of the Flint River Watershed Coalition we would like to recognize and thank our program partners and sponsors. FRWC continues to partner with Earth Force/GREEN and Genesee and Lapeer ISD to bring educational and community problem solving activities to our educators.





Flint River GREEN

2011 Annual Report



Director's Notes:

FRWC's History with GREEN
Support for Program
Collaboration to Provide Program
Dedication of Committee, Staff, Teachers
and Mentors
Accommodating Teacher's needs to
Support Student Learning





GREEN Program Overview

Since 1989, the Flint River Watershed Coalition, with our partners, has coordinated an applied curriculum for middle and high school students geared to have a positive impact on the environment, now and into the future. This integrative program was developed by University of Michigan professor Dr. William Stapp and one of his assistants, Mark Mitchell and named Global Rivers Environmental Education Network or “GREEN.”

Students in the GREEN program conduct water quality tests based on the nine protocols selected by the National Sanitary Foundation. The summation of these tests results in a numerical water quality index (WQI) used to compare water quality from river to river, and year to year.

The success of this program is a reflection of the value it brings to everyone.

- **Teacher Support:** Teachers are provided the opportunity for training, tools and resources to provide a hands-on learning experience that compliments science curriculum.
- **Student Education:** Utilizing, science, mathematics, engineering, technology, and social studies; students learn first-hand about their local watershed.
- **Mentoring:** Local environmental professionals are paired with teachers and classrooms to provide assistance and an insight to local environmental careers.
- **Student Information Sharing:** The Student Summit provides the opportunity for students to present their data and environmental recommendations. Students are able to question and compare data from other areas of the watershed.
- **Collaborative Sharing of Data:** The community and the Genesee County Drain Commission benefit through the collaborative sharing of data. This data is made available to the Genesee County Drain Commission and on the FRWC website.

During Flint River GREEN, I Learned:

“About point source and non-point source pollution.”

Eighth Grade Student,
Swartz Creek Middle School

What Would I Do Differently?:

“Recycle bottles, and stop throwing paper/trash out the window.”

Ninth Grade Student,
Hamady Junior High School



Flint River GREEN History

In the Flint River watershed, the GREEN program started with the Flint Community Schools and for many years was labeled “**Project GREEN.**” As this program grew and incorporated additional Genesee County school districts, student participation increased from approximately 100 students in 1989 to over 1,200 in 2004. To reflect this growth and Genesee County funders, the title was changed to “**Genesee GREEN.**”

In 2009, this program hit a new milestone by expanding beyond Genesee County to include Brandon Middle School students from Oakland County. To reflect this and potential future growth, the program was aptly re-named “**Flint River GREEN.**”

Additional funding sources in 2010 provided the means for teachers from Lapeer County, including three teachers from North Branch Schools to join this program. In 2011 two teachers from Birch Runs schools received training to offer the GREEN program to their middle and high school students.

"What is a Watershed?"

In 2011, 57 teachers offered this program to over 3,600 students. Since 1989 over 20,000 students have studied watershed education. Students have enjoyed gaining knowledge of their local watershed and environmental careers in their area. The data obtained is shared and available to the community.

During Flint River GREEN, I Learned:

“How to check the quality of the water & important factors that affect the water. Both positively & negatively.

Teacher,
Swartz Creek Middle School

What Would I Do Differently?:

“Be more careful with water usage.

Teacher,
Swartz Creek Middle School,



Teacher Dedication and Coordination

In Genesee County, the GREEN program began with five teachers from the Flint Community Schools. In 2009, the GREEN program hit two milestones with 39 teachers participating and breaking beyond the county border to include students from Brandon Community Schools.

Future collaboration with supporters provided the opportunity to incorporate teachers from Lapeer County in 2010 and further support teachers in Genesee County and Brandon Schools. Over 3,600 students received quality education in 2011 through the assistance and patients of 57 Flint River GREEN teachers from 27 school districts.

List of Teachers/Districts for 2011

Atherton High School
Matt Hyslop

Beecher Middle & High School
Don Hammond

Bendle High School
Todd Barden

Bentley High School
Deborah Willett

Birch Run Middle & High School
Jan Pollard
Tammy Daenzer

Brandon Middle School
Dave Green

List of Teachers/Districts for 2011 ~ Continued

Carman/Ainsworth High School
Julie Lawrence

Chatfield School
Bill Kraly
Jean Block
Karla Pretty
Robert Kurtz

Clio Carter Middle School
Chip McCallum
Ryan Nemi

Davison Middle School
Jodie Kosaris
Michelle McKinnon
Chris Talcott

Fenton A.G. Schmidt Middle School
Lynn Behr

Flint Classical Academy
Jarrett Trombley
Robert Ryan
Teresa Krawczyk, Asst. Teacher

Flint Northern Commencement
Academy
Nadina Aversa
William Bell

Flint-Holmes Found.Middle School
Tanisha Brooks
Chris Ochodnick

Flint Southwestern Academy
Lynn Louchart-Keefer, Asst. Teacher

Flushing High School
Paul Taylor

Goodrich Middle School
Cindy Rivet
Craig Salter

Grand Blanc Middle School
Katie Gutteridge (West)
Deb Lacki (East)
Elizabeth Lemerond (West)
Kris Neale (East)
Vickie Skrisson (West)
Deb Wilson (East)

Kearsley Armstrong Middle School
Cindy Sierra
April Yorks

Lake Fenton High School
Joe Grigas
Ken Roy

Lakeville Middle School
Andrea Thelen
Josh Henley

Lapeer Community High School
Donald Shaver

Lapeer East Senior High School
Cheryl Butterfield

Linden Middle School
Charlen Nester

Montrose Hill McCloy Middle School
Linda Jordan

Mt. Morris Jr. High School
Bekah D'Haene
Kim McCormick

North Branch Middle & High School
Carrie Wenta
Julie Tumblin

Rollard-Warner Middle School
Kelly Reach

St. John Vianney Catholic School
Elizabeth Petrides

Swartz Creek Middle School
Alicia Benn
Brandolyn Forbes

The Valley School
Suzanne Lossing

Westwood Heights Hamady High School
Tammy Wylie

H.B. Zemmer Jr. High School
Karen Hale
Kelly Reach

During Flint
River GREEN,
I Learned:

*“How much
students
need to learn
about our
watershed.”*

Teacher,
Swartz Creek
Middle School

What Would
I Do
Differently?:

*“Teach Water
Quality more
frequently.”*

Teacher,
Davison Middle
School

During Flint River GREEN, I Learned:

“I learned how turbidity can affect pollution and how other tests affect turbidity”.

Eighth Grade Student
Grand Blanc East Middle School



2011 Environmental Mentors

Mentors play a valuable role helping teachers prepare their students for fieldwork, the testing, and interpreting their results.

Marv Ashbury, General Motors, CCA Swartz Creek
Darren Bagley, 4-H Coordinator, Michigan State University, Extension Center
Aaron Bagwell, Quaker Chemical
Irene Bashore, General Motors, Flint Assembly
Pier Bollini, Former Delphi Automotive Systems
John Bradburn, General Motors Global Environmental Programs
Eric Brubaker, City of Flint Water Pollution Control Division
Thad Domick, City of Flint Water Pollution Control Division
James Emmerling, Lapeer County & Genesee Intermediate School Districts
Rebecca Fedewa, Flint River Watershed Coalition
Rob Fenn, General Motors Flint Engine Operations
Heather Griffin, Flushing Twp. Nature Park
Dan Harrett, General Motors Retiree
David Hellen, Quaker Chemical
John Hinze, Quaker Chemical
Cheryl Hobson, Retired GREEN Teacher
Tom Hutchings, City of Flint Water Pollution Control Division
Saed Isaac, Alumni; University of Michigan Flint
Tom Jones, Genesee County Drain Commission
Susan Kubic, Genesee County Drain Commission
Suzanne Lossing, Flint River Watershed Coalition
John Maksimchuk III, General Motors, Flint Metal Center
Rick McAvinchey, Wildlife Biologist
Katie McGlashen, Genesee Parks & Recreation, Park Naturalist
Ashley Miller-Helmholdt, Earth Force
John Moldovan, General Motors Retiree
Diane Peplinski, Flint River Watershed Coalition
Al Putney, Former Delphi Automotive Systems
Nicole Raymond, Genesee Intermediate School District
Dennis Weiler, General Motors Retiree
Bill Welch, Flint River Watershed Coalition
Dawn Welsh, City of Flint Water Pollution Control Division
Ben Wickerham, Genesee Soil Conservation District
Brent Wilson, General Motors Grand Blanc Weld Tool Center/Flint Tool & Die



During Flint River GREEN,
I Learned:

*“How to do
many of the
tests that I’ve
never heard
of.”.*

Seventh Grade
Student
Hamady Junior
High School

Flint River GREEN Advisory Team

The Flint River GREEN Advisory Team brings valuable diversity and insight to help form the collaborative effort that is essential to provide the GREEN program to area schools.

Flint River Watershed Coalition:

Brent Nickola, Board Chair
Rebecca Fedewa, Executive Director
Darren Bagley, FRWC Education Committee Chairperson; 4-H Coordinator,
MSU-Extension Officer
Suzanne Lossing, Education & Outreach Coordinator

Environmental Engineers

Eric Hakel, Environmental Consulting Services
John Moldovan, GM Retiree
John Maksimchuck, III; GM Environmental Engineer
Irene Bashore, GM

Genesee Intermediate School District

Larry Casler, Director of Education & Learning
Lisa Hook, Project Coordinator
Cheryl Hobson, Retired Educator
Teresa Krawczyk, Teacher

Lapeer County Intermediate School District

James Emmerling, Instructional Training Supervisor

Earth Force

Alyssa Hawkins, Vice President of Programs
Jan Sneddon, Director of Community Partnerships

During Flint River GREEN, I Learned:

"I learned about different job fields, fish, and pollution and how to prevent it.

Eighth Grade Student
LakeVille Middle School

What I Would Do Differently?

"Eat healthier, don't pollute our water, clean the river often.

Eighth Grade Student,
Mt. Morris Junior High



Student Summit

On May 13, 2011, students presented their Flint River GREEN findings to the community during the Student Summit. The summit was hosted by Mott Community College (MCC) where students had the opportunity to attend a variety of educational sessions conducted by professionals from a variety of environmental fields. Our appreciation to the many organizations that provided educational service, mentoring, and support for this program.

Presentations:

A Green Get Away - Right Away

Rosemary Thiebault, Genesee County Parks & Recreation

Be Heard - Be An Environmental Citizen

Ashley Miller-Helmholdt, Earth Force

Be Native: Flint River Wild Ones

Rebecca Gale-Gonzalez, Flint River Wild Ones

Bees, Beekeeping & Honey!

Jim Dodder, Genesee County Bee Keeper

Catching Monstrous Fish by Knowing the Bugs They Eat

Andrew Neeson, Environmental Educator, Lapeer Community Schools

Eating Through Edible Flint

Edible Flint Members and Erin Caudell, Program Specialist, Ruth Mott Foundation
Applewood Estate



**During Flint River GREEN,
I Learned:**

“That there are many foods you can eat raw. Bees make antibiotics. You can kayak along the coast of Michigan. Rats are in your water.”

Seventh Grade Student,
Birch Run Middle School

Presentations ~ Continued

Edible Plants

Peter McCreedy, Ecology Director, Chatfield Schools

Meeting Macroinvertebrates!

FRWC Monitors: Denny Crispell, Tracie Lockwood, Mike Haley

Paddling the Flint River from Head to Toe!

Riley McLincha, Watershed Enthusiast

Rats in Your Drinking Water

Darren Bagley, MSU-E Extension Educator & 4-H Youth Development

Sewer CSI

Dawn Welsh, Tom Hutchings, Thad Domick, and Eric Brubaker, Water Pollution Control Specialists, City of Flint Waste Water Treatment Center

Take A Hike

Sierra Club Members Denny Crispell and Mike Haley

Water Issues and Recycling

Brian Garhoski, Michigan Department of Environmental Quality

Water Worlds

Laurie Bone, Sloan Museum & Longway Planetarium



Testing Location:

- Thread Creek at Bristol Rd.
- I-475 Retention Stream & Drain
- Richfield Park
- Kearsley Creek behind M.S.
- Upstream of For-Mar Nature Center
- Pine Run at Clio Park
- Black Creek, Jack Abernathy Park
- Fenton Mill Pond (Shiawassee River)
- Flint River W. of Johnson AAA School
- Gilkey Creek behind Central H.S.
- Mill Street Bridge
- Linden Rd. & Flushing Rd.
- Armstrong Creek at Dodge Road
- Bear Swamp at Genesee Road
- Thread Creek Burpee at Vassar Rd.
- Crampton Drain / Chipmunk Creek
- Coe Drain Lake Outlet, N. of H.S.
- Linden Mill Pond (Shiawassee River)
- Seymour Rd. North of Farrand Rd.
- Barber Memorial Park, near M-57
- Clio Rd. & Stanley Rd. in Mt. Morris
- Mott Park
- Swartz Creek at Hill Rd. Bridge
- Gilkey Creek, near Ballenger Hwy.
- Clio Bike Path at Jennings Rd.

Participating School

- Atherton H.S.
- Beecher M.S.
- Bentley H.S.
- Brandon M.S.
- Carman-Ainsworth H.S.
- Carter M.S., Clio
- Davison M.S.
- Fenton M.S.
- Holmes Academy, Flint
- Whittier Classical, Flint
- Flint Northern H.S.
- Flint Northern H.S.
- Flushing H.S.
- Genesee M.S.
- Goodrich M.S.
- Armstrong M.S., Kearsley
- Lakeville M.S.
- Linden M.S.
- Montrose H.S.
- Montrose M.S.
- Mt. Morris Jr. H.S.
- St. John Vianney, M.S.
- Swartz Creek M.S.
- The Valley School
- Westwood Heights, Hamady H.S.

2009 Q-Value Score

- 79
- **
- 59
- **
- 70
- 70
- 62
- 67
- 79
- 49
- 79
- 72
- 73
- 42
- 85
- 83
- **
- 88
- 82
- 68
- 58
- 75
- 76
- 69
- 64

1991-2009 *Average

- 77
- **
- 70
- **
- 72
- 74
- 62
- 67
- 63
- 68
- 67
- 72
- **
- **
- 85
- 74
- **
- 89
- 74
- 68
- 58
- 75
- 71
- 69
- 69

Q-Value Ratings:

- 100 - 90 Excellent Water Quality
- 89 - 70 Good Water Quality
- 69 - 50 Medium or Average Water Quality
- 49 - 25 Marginal Water Quality
- 24 - 0 Poor Water Quality

* Note: The average is calculated from reported scores between the years 1991 to 2009. Some sites are newer and therefore did not have many earlier scores reported. For individual scores, visit website: <http://www.geneseegreen.org/history.php> and select the "View Data" link.

** Values Not Available



THANK YOU to our sponsors for bringing
Flint River GREEN to our classrooms.

City of Flint, Water Pollution Control Dept.

Donna's Donuts

Earth Force

Environmental Solutions

Flint River Watershed Coalition

General Motors

Genesee County Drain Commission

Genesee Intermediate School District

Lapeer County Intermediate School District

The Raymond C. & Anne T. Johnson Family Foundation

Michigan State University, Extension

Mott Community College, Science & Math Dept.

University of Michigan, Flint; Center for Applied
Environmental Research

**“We make a living
by what we do,
but we make a life
by what we give.”**

Winston Churchill



FLINT RIVER GREEN *SETS RECORD NUMBERS!*

Under the coordination of the Flint River Watershed Coalition (FRWC), and with the support of school districts and teachers, the Flint River GREEN Committee busted student and teacher numbers - setting the record for this national program.

Through collaboration with other organizations and with support from the Genesee and Lapeer County Intermediate School Districts, this program has been available to more students and teachers than ever before.

A total of 57 Teachers provided quality, hands-on instruction to over 3,600 students in our watershed. Students came from 1 of 4 counties, and from one of 27 school systems.

A total of 32 Environmental Professionals shared their expertise to mentor students in one or more school districts.

Thank you supporters for helping to make this happen!



During Flint River GREEN, I learned:
"About the environment, and more ways to keep it clean. I also learned that the Flint River isn't as dirty as everyone thinks."
- Eighth Grade Student, 2011





*Partnering to protect, preserve and improve
the Flint River Watershed*

Flint River Watershed Coalition
400 N. Saginaw Street, Suite #233
Flint, Michigan 48502
www.FlintRiver.org

20 Sch #		School	Race	Gender	Male	Female	Grades	HS	MS	Other	Status	Before GREEN: Flint River is clean and healthy	Before GREEN: I can make a difference in the health of the river	Before GREEN: I understand how a river may become polluted	Before GREEN: I want to do things to help the environment	Before GREEN: I know about jobs in the environme ntal field	After GREEN: Flint River is clean and healthy	After GREEN: I can make a difference in the health of the river	After GREEN: I understand how a river may become polluted	After GREEN: I want to do things to help the environment	After GREEN: I know about jobs in the environme ntal field	My Favorite Session(s)
3	1	Atherton HS	White	F		1	10th	1			Student	1	2	2	4	2	3	3	4	4	2	A Green Get Away-Right Away
4	2	Atherton HS	White	F		1	11th	1			Student	1	2	2	3	3	2	3	4	3	4	A Green Get Away-Right Away
5	3	Atherton HS	White	F		1	11th	1			Student	1	2	2	2	1	3	3	3	4	3	A Green Get Away-Right Away
7	5	Atherton HS	White	M	1		11th	1			Student	1	2	4	2	4	1	2	4	3	4	School Presentations
8	6	Atherton HS	White	M	1		11th	1			Student	1	2	2	2	1	3	4	4	3	4	Edible Plants
141	5	Northern HS	Afr. Am	F		1	11th	1			Student	2	3	3	3	3	3	3	3	3	3	Rats in the Drinking Water
142	1	Northern HS	Afr. Am	F		1	11th	1			Student	1	3	2	4	1	3	4	4	4	2.5	Eating through Edible Flint
143	2	Northern HS	Afr. Am	M	1		11th	1			Student	3	4	4	3	4	3	4	4	3	4	Blank
144	3	Northern HS	Afr. Am	M	1		11th	1			Student	2	4	3	4	3	3	4	4	4	4	Eating through Edible Flint
145	4	Northern HS	Afr. Am	M	1		11th	1			Student	3	4	4	4	4	3	4	4	4	4	Eating through Edible Flint
6	4	Atherton HS	White	F		1	12th	1			Student	2	3	3	3	2	1	4	4	4	3	Take a Hike
9	7	Atherton HS	White	M	1		12th	1			Student	3	4	4	1	4	3	4	4	4	4	Take a Hike
133	1	NB HS	Hispanic	M	1		12th	1			Student	3	2	4	1	3	3	2	4	1	3	Edible Plants
134	2	NB HS	White	M	1		12th	1			Student	3	2	3	3	3	4	3	4	4	4	Edible Plants
28	6	Clio Carter MS	White	M	1		3rd			1	Teacher of stu	3	4	4	4	3	2	x	4	4	3	blank
90	1	Kearsley MS	Afr. Am	F		1	6th		1		Student	2	2	2	2	2	3	3	3	3	3	Take a Hike
91	2	Kearsley MS	White	F		1	6th		1		Student	2	1	3	2.5	2	3	2	4	3.5	3	Edible Plants
92	3	Kearsley MS	White	F		1	6th		1		Student	2	1	2	3	2	3	4	4	4	3	Edible Plants
93	4	Kearsley MS	White	F		1	6th		1		Student	3	1	2	2	1	3	4	4	4	3	Edible Plants
94	5	Kearsley MS	White	F		1	6th		1		Student	2	2	2	3	3	2	3	3	3	3	Take a Hike
98	9	Kearsley MS	White	M	1		6th		1		Student	3	3	2	3	1	3	4	3	3	3	Catching Monstrous Fish
99	10	Kearsley MS	White	M	1		6th		1		Student	2	1	2	1	1	3	3	4	3	2	Sewer CSI
74	1	Hamady MS/HS	(2) Afr. Am.; White	F		1	7-9th		1		Teacher	3	3	1	1	2	2	1	1	1	2	Sewer CSI
1	1	? (J. Mozader)	White	M	1		7th		1		Student	3	4	4	3	2	3	4	4	4	4	Stream Walk
12	10	Birch Run MS	White	F		1	7th		1		Student	2	4	3	4	2	1	4	4	4	3	Bees, Beekeeping and Honey
13	1	Birch Run MS	White	F		1	7th		1		Student	x	x	x	x	x	4	x	x	x	x	Edible Plants or Bees
14	2	Birch Run MS	White	F		1	7th		1		Student	1	3	2	3	1	3	4	4	3	2	Edible Plants
15	3	Birch Run MS	White	F		1	7th		1		Student	4	3	2	3	1	1	3	3	4	3	Edible Plants
16	4	Birch Run MS	White	F		1	7th		1		Student	4	4	1	1	1	2	4	4	4	4	Edible Plants
37	1	Davison MS	Asian	F		1	7th		1		Student	1	4	3	4	4	2	4	4	4	4	Edible Plants
38	2	Davison MS	Other	F		1	7th		1		Student	2	4	4	4	3	3	4	4	4	3	Edible Plants
39	3	Davison MS	other	F		1	7th		1		Student	3	4	4	4	3	3	4	4	4	3	Edible Plants
40	4	Davison MS	White	F		1	7th		1		Student	3	4	2	1	3	4	4	4	1	4	Edible Plants
41	5	Davison MS	White	F		1	7th		1		Teacher	4	4	4	4	4	4	4	4	4	4	Edible Plants
42	6	Davison MS	White	F		1	7th		1		Student	1	1	3	3	1	3	3	4	4	4	Edible Plants
43	7	Davison MS	White	M	1		7th		1		Student	3	3	3	3	2	4	4	4	4	3	Eating through Edible Flint
44	8	Davison MS	White	M	1		7th		1		Student	1	4	3	2	1	4	4	4	4	4	Edible Plants
75	2	Hamady MS/HS	Afr. Am	F		1	7th		1		Student	2	3	x	3	4	3	2	x	4	2	Water Issues & Recycling
76	3	Hamady MS/HS	Afr. Am	F		1	7th		1		Student	2	1	4	1	3	2	1	4	1	3	Blank
77	4	Hamady MS/HS	Afr. Am	F		1	7th		1		Student	2	1	3	2	4	3	3	4	4	4	Catching Monstrous Fish
78	5	Hamady MS/HS	Afr. Am	F		1	7th		1		Student	2	4	3	4	3	4	4	4	4	4	Water Issues & Recycling
79	6	Hamady MS/HS	Afr. Am	F		1	7th		1		Student	3	3	3	4	2	4	4	3	4	3	Bees, Beekeeping and Honey
89	16	Hamady MS/HS	White	F		1	7th		1		Student	4	3	4	3	4	2	3	3	2	2	Bees, Beekeeping and Honey
95	6	Kearsley MS	White	F		1	7th		1		Student	2	1	2	4	1	3	4	4	4	3	Take a Hike
96	7	Kearsley MS	White	F		1	7th		1		Student	2	1	4	2	1	3	4	4	3	2	Sewer CSI
100	11	Kearsley MS	White	M	1		7th		1		Student	2	2	3	3	1	2	3	4	3	3	Sewer CSI
101	12	Kearsley MS	White	M	1		7th		1		Student	1	1	3	2	1	3	4	4	3	4	Take a Hike
102	13	Kearsley MS	White	M	1		7th		1		Student	1	2	3	4	1	3	3	4	4	2	Eating through Edible Flint
103	14	Kearsley MS	White	M	1		7th		1		Student	1	3	4	4	2	2	4	4	4	1	Water Worlds
104	15	Kearsley MS	White	M	1		7th		1		Student	3	4	3	3	2	3	4	4	4	4	Take a Hike
107	3	LakeVille MS	White	F		1	7th		1		Student	2	2	3	3	2	3.5	3	4	3	2.5	Fish & Bugs
108	4	LakeVille MS	White	F		1	7th		1		Student	2	4	3	4	1	3	4	4	4	4	Bees, Beekeeping and Honey
109	5	LakeVille MS	White	F		1	7th		1		Student	2	3	3	4	1	2.5	4	4	4	3	Bees, Beekeeping and Honey
110	6	LakeVille MS	White	F		1	7th		1		Student	2	3	4	3	2	2	4	4	4	3	Catching Monstrous Fish
111	7	LakeVille MS	White	F		1	7th		1		Student	2	2	4	2	2	2	3	4	4	3	Catching Monstrous Fish
114	10	LakeVille MS	White	M	1		7th		1		Student	2	3	4	4	4	4	4	4	4	4	Catching Monstrous Fish

115	11	Lakeville MS	White	M	1	7th	1	Student	4	3	2	3	2	2	4	4	4	4	Water Issues & Recycling; and Edible Flint
116	12	Lakeville MS	White	M	1	7th	1	Student	x	x	x	x	x	2	3	4	3	3	Catching Monsterous Fish
117	13	Lakeville MS	White	M	1	7th	1	Student	2	2	3	2	2	3	3	4	4	4	Catching Monsterous Fish
118	14	Lakeville MS	White	M	1	7th	1	Student	2	3	3	2	4	3	3	3	3	3	Catching Monsterous Fish
119	15	Lakeville MS	White	M	1	7th	1	Student	2	3	2	2	4	3	3	4	4	4	Catching Monsterous Fish
120	16	Lakeville MS	White	M	1	7th	1	Student	1	3	4	4	3	2	4	4	4	4	Fishing & Rats in the Drinking Water
121	1	Mt. Morris Jr. High	Afr. Am	F	1	7th	1	Student	1	1	2	2	1	2	3	4	3	4	Edible Plants
122	2	Mt. Morris Jr. High	Blank	M	1	7th	1	Student	2	1	2	3	2	4	3	4	3	2	Catching Monsterous Fish
123	3	Mt. Morris Jr. High	White	F	1	7th	1	Student	3	3	4	3	2	3	4	4	4	4	Take a Hike
124	4	Mt. Morris Jr. High	White	F	1	7th	1	Student	2	3	4	3	1	3	4	3	4	4	Edible Plants
125	5	Mt. Morris Jr. High	White	F	1	7th	1	Student	1	3	4	4	3	2	4	4	4	3	Rats in the Drinking Water
130	10	Mt. Morris Jr. High	White	M	1	7th	1	Student	2	2	3	1	1	4	3	3	2	2	Rats in the Drinking Water
131	11	Mt. Morris Jr. High	White	M	1	7th	1	Student	1	3	4	4	4	2	4	4	4	4	Rats in the Drinking Water
132	12	Mt. Morris Jr. High	White	M	1	7th	1	Student	2	3	3	3	2	4	4	4	4	3	Catching Monsterous Fish
135	3	NB MS	White	F	1	7th	1	Student	3	4	4	4	3	3	4	4	4	3	A Green Get Away-Right Away
136	4	NB MS	White	F	1	7th	1	Student	2	4	4	4	4	2	4	4	4	4	A Green Get Away-Right Away
137	1	NB MS	White	F	1	7th	1	Student	3	3	2	3	3	3	3	3	4	4	I didn't have a favorite but the most interesting one was bees, beekeeping & honey.
138	2	NB MS	White	M	1	7th	1	Student	2	4	3	3	3	1	4	4	3	3	Bees, Beekeeping and Honey
139	3	NB MS	White	M	1	7th	1	Student	4	4	4	2	3	4	4	4	2	3	Catching Monsterous Fish
2	2	(? no school-Lampe)	White (2) Afr. Am/White	F	1	8th	1	Student	2	4	3	3	3	2	4	3	3	4	Bees, Beekeeping and Honey
17	1	Classical Academy	Afr. Am	F	1	8th	1	Student	1	3	3	3	2	3	3	3	3	3	Rats in the Drinking Water
18	2	Classical Academy	Afr. Am	F	1	8th	1	Student	1	3	4	2	2	3	3	4	1	3	I have only been to one so far so I am going to have to say Bee Keeping
19	3	Classical Academy	Afr. Am	F	1	8th	1	Student	1	4	4	4	2	3	4	4	4	2	Bees, Beekeeping and Honey
20	4	Classical Academy	Afr. Am	F	1	8th	1	Student	2	3	3	3	2	3	3	4	3	3	Bees, Beekeeping and Honey
22	6	Clio Carter MS	White	F	1	8th	1	Student	2	4	1	4	1	3	4	4	4	4	Paddling in the Flint River
23	1	Clio Carter MS	White	F	1	8th	1	Student	3	4	4	2	1	3	4	4	4	3	The Flint River From Head to Toe
24	2	Clio Carter MS	White	F	1	8th	1	Student	2	2	4	4	2	3	3	4	4	4	Catching Monsterous Fish
25	3	Clio Carter MS	White	F	1	8th	1	Student	3	3	2	3	2	3	3	4	4	3	Paddling in the Flint River
29	7	Clio Carter MS	White	M	1	8th	1	Student	3	4	3	4	3	4	4	4	4	4	Paddling in the Flint River
30	8	Clio Carter MS	White	M	1	8th	1	Student	2	2	3	2	1	3	3	4	4	3	The Flint River From Head to Toe
31	9	Clio Carter MS	White	M	1	8th	1	Student	2	2	3	4	4	3	3	4	4	4	Eating through (5th Session)
32	10	Clio Carter MS	White	M	1	8th	1	Teacher	1	2	3	4	3	3	4	4	4	4	All were great -- Monster Fish, Bug Samples, Riley's Kayakaing
33	11	Clio Carter MS	White	M	1	8th	1	Student	3	3	3	3	3	4	4	4	4	4	Paddling in the Flint River
34	12	Clio Carter MS	White	M	1	8th	1	Student	3	4	4	3	1	3	4	x	4	3	Paddling in the Flint River
35	13	Clio Carter MS	White	M	1	8th	1	Student	3	3	2	3	2	3	3	4	4	3	Paddling in the Flint River
36	14	Clio Carter MS	White (2) Am. Ind./White	M	1	8th	1	Student	2	4	3	4	2	3	4	4	4	4	Paddling in the Flint River
45	1	GB E MS	Asian	F	1	8th	1	Student	2	4	4	3	2	3	4	4	4	3	Stream Walking
46	2	GB E MS	? Blank	F	1	8th	1	Student	3	4	4	3	2	3	4	4	3	2	Hmmm. All of them.
47	3	GB E MS	Afr. Am	F	1	8th	1	Student	2	3	3	3	3	2	3	3	3	3	The Water Testing
48	4	GB E MS	Afr. Am	M	1	8th	1	Student	2	3	2	3	2	3	2	3.5	3	3	Turbidity (not a session)
49	5	GB E MS	Asian	M	1	8th	1	Student	2	2	2	2	2	1	1	1	1	1	The presentation part where other schools show what data they got.
50	6	GB E MS	Hispanic	F	1	8th	1	Student	2	3	2	2	1	2	3	4	4	2	Stream Walking
51	7	GB E MS	Hispanic Middle Eastern	M	1	8th	1	Student	2	1	2	2	1	3	4	3	3	2	Our School Presentation! And to hear/learn what other schools did.
52	8	GB E MS	Other	F	1	8th	1	Student	3	3	4	3	1	3	3	4	3	1	Meeting Mac (Session 1)
53	9	GB E MS	Other	M	1	8th	1	Student	3	2	3	3	2	3	3	3	3	2	Meeting Mac (Session 1)
54	10	GB E MS	White	F	1	8th	1	Student	2	2	2	2	2	3	3	3	3	3	Stream Walking
55	11	GB E MS	White	F	1	8th	1	Student	3	3	4	3	2	3	3	4	3	2	Water Issues (Session 2)
56	12	GB E MS	White	F	1	8th	1	Student	2	3	3	3	3	1	3	3	3	3	Stream Walking
57	13	GB E MS	White	F	1	8th	1	Student	1	3	3	2	3	2	3	3	3	3	Stream Walking
58	14	GB E MS	White	F	1	8th	1	Student	3	2	3	4	1	4	3	2	4	3	Meeting Macro-Invertebrates
59	15	GB E MS	White	F	1	8th	1	Student	x	x	x	x	x	3	3	3	3	2	Blank
60	16	GB E MS	White	F	1	8th	1	Student	3	1	4	3	3	3	1	4	3	3	Measuring the Chemicals??? (not a session)
61	17	GB E MS	White	F	1	8th	1	Student	2	3	4	3	3	2	3	4	3	3	Turbidity (not a session)
62	18	GB E MS	White	F	1	8th	1	Student	3	2	2	3	1	3	3	4	3	1	Meeting Mac (Session 1)
63	19	GB E MS	White	F	1	8th	1	Student	3	3	4	3	2	3	3	4	3	2	Meeting Mac (Session 1)
64	20	GB E MS	White	F	1	8th	1	Student	3	3	3	3	2	3	4	4	4	4	Paddling in th (Session 2)
65	21	GB E MS	White	M	1	8th	1	Student	3	3	3	3	2	3	4	4	4	4	Stream walking
66	22	GB E MS	White	M	1	8th	1	Student	2	1	2	2	1	3	3	4	3	2	

67	23	GB E MS	White	M	1		8th	1	Student	2	2	2	1	1	3	3	3	1	1	School Presentations
68	24	GB E MS	White	M	1		8th	1	Student	3	2	3	3	1	3	3	3	3	2	Stream walking (my only session as of taking this survey)
69	25	GB E MS	White	M	1		8th	1	Student	2	3	3	3	2	3	4	4	4	3	Stream Walking
70	26	GB E MS	White	M	1		8th	1	Student	4	4	4	4	4	4	4	4	4	4	Stream Walking
71	27	GB E MS	White	M	1		8th	1	Student	1	3	3	3	2	2	3	3	3	2	School Presentations
72	28	GB E MS	White	M	1		8th	1	Student	2	2	2	3	2	1	3	3	3	2	Blank
73	29	GB MS	White	M	1		8th	1	Student	1	4	3	3	2	1	4	4	3	2	Our Slide Show
80	7	Hamady MS/HS	Afr. Am	F	1		8th	1	Student	1	3	4	3	3	3	3	3	3	3	Finishing and being able to relax.
81	8	Hamady MS/HS	Afr. Am	F	1		8th	1	Student	2	4	x	4	4	3	4	x	4	4	Bees, Beekeeping and Honey
82	9	Hamady MS/HS	Afr. Am	M	1		8th	1	Student	3	4	3	3	2	3	4	3	3	2	Edible Plants
86	13	Hamady MS/HS	Other	F	1		8th	1	Student	3	4	2	4	1	3	4	4	4	4	Catching Monsteroous Fish
87	14	Hamady MS/HS	Other	F	1		8th	1	Student	1	3	4	3	2	2	4	4	4	2	Sewer CSI
97	8	Kearsley MS	White	F	1		8th	1	Student	2	2	4	3	3	3	3	4	3	3	Take a Hike
105	1	LakeVille MS	Blank	F	1		8th	1	Student	4	3	3	3	2	4	4	3	3	4	Edible Plants
106	2	LakeVille MS	Nat. Am.	F	1		8th	1	Student	2	3	3	3	2	2.5	4	4	4	3	Eating through Edible Flint
112	8	LakeVille MS	White	F	1		8th	1	Student	3	3	3	3	3	3	3	3	3	3	Catching Monsteroous Fish
113	9	LakeVille MS	White	F	1		8th	1	Student	2	3	4	4	3	3	3	4	4	4	Eating through Edible Flint
126	6	Mt. Morris Jr. High	White	F	1		8th	1	Student	2	3	4	3	3	3	4	4	3	4	Rats in the Drinking Water
127	7	Mt. Morris Jr. High	White	F	1		8th	1	Student	1	2	4	3	1	3	4	4	4	3	Rats in the Drinking Water
128	8	Mt. Morris Jr. High	White	F	1		8th	1	Student	3	4	4	3	3	3	4	4	4	4	Rats in the Drinking Water
140	4	NB MS	White (3) Am.	M	1		8th	1	Student	2	2	2	2	2	2	3	3	3	3	Blank
146	5	St. John Vianney	In; Afr. Am;	F	1		8th	1	Student	2	4	3	4	2	x	x	x	x	x	The Food One
147	1	St. John Vianney	In; Afr. Am;	F	1		8th	1	Student	1	2	3	3	1	3	4	4	4	4	Water Worlds
148	2	St. John Vianney	Afr. Am	F	1		8th	1	Student	4	3	1	1	4	2	1	1	1	2	Meeting Macro-Invertebrates
149	3	St. John Vianney	Afr. Am	M	1		8th	1	Student	1	3	1	2	1	3	3	1	1	4	Water Worlds
150	4	St. John Vianney	Hispanic	F	1		8th	1	Student	2	4	4	4	3	x	x	x	x	x	The Food One
151	5	St. John Vianney	White	F	1		8th	1	Student	3	2	2	3	2	4	3	3	3	3	Bees, Beekeeping and Honey
152	6	St. John Vianney	White	F	1		8th	1	Student	2	3	4	3	2	3	4	4	3	3	Water Worlds
153	7	St. John Vianney	White	F	1		8th	1	Student	1	3	3	3	2	2	3	3	4	4	Catching Monsteroous Fish
154	8	St. John Vianney	White	F	1		8th	1	Student	2	3	4	3	3	x	x	x	x	x	Edible Plants
155	9	St. John Vianney	White	F	1		8th	1	Teacher	3	3	4	4	2	3	3	4	4	3	Rats in the Drinking Water
157	2	SwCrk MS	Hispanic	F	1		8th	1	Student	2	4	4	3	1	4	4	4	3	3	Edible Plants
158	3	SwCrk MS	Nat. Am.	F	1		8th	1	Student	1	4	4	4	4	1	4	4	4	4	Bees, Beekeeping and Honey
159	4	SwCrk MS	Other	F	1		8th	1	Student	3	4	3	2	3	3	4	4	3	x	Edible Plants
160	5	SwCrk MS	Other	F	1		8th	1	Student	2	3	4	2	4	3	3	4	3	4	Bees, Beekeeping and Honey
161	6	SwCrk MS	White	F	1		8th	1	Student	2	3	3	2	3	3	3	3	2	3	Meeting Macro-Invertebrates
162	7	SwCrk MS	White	F	1		8th	1	Student	2	3	3	3	2	2	3	3	3	2	For-Mar
163	8	SwCrk MS	White	F	1		8th	1	Student	3	x	x	x	x	3	3	3	3	3	Edible Plants
164	9	SwCrk MS	White	F	1		8th	1	Student	3	3	3	3	3	3	4	4	3	3	Edible Plants
165	10	SwCrk MS	White	F	1		8th	1	Student	3	3	3	3	2	3	4	3	4	3	Edible Plants
166	11	SwCrk MS	White	F	1		8th	1	Student	2	3	3	3	3	2	4	4	4	3	Bees, Beekeeping and Honey
167	12	SwCrk MS	White	F	1		8th	1	Student	3	4	4	4	2	3	4	4	4	3	Eating through Edible Flint
168	13	SwCrk MS	White	F	1		8th	1	Student	2	1	2	3	1	3	4	3	3	4	Meeting Macro-Invertebrates
169	14	SwCrk MS	White	F	1		8th	1	Student	3	4	3	2	1	3	4	4	4	4	Edible Plants
170	15	SwCrk MS	White	F	1		8th	1	Student	2	3	3	2	1	2	4	4	3	3	Paddling in the Flint River
171	16	SwCrk MS	White	F	1		8th	1	Student	2	4	4	4	4	2	4	4	4	4	Edible Plants
172	17	SwCrk MS	White	F	1		8th	1	Student	2	x	3	4	2	3	x	4	4	3	Edible Plants
173	18	SwCrk MS	White	F	1		8th	1	Student	3	3	3	3	2.5	3	3	3	3	2.5	Edible Plants
174	19	SwCrk MS	White	F	1		8th	1	Student	3	2	3	4	3	2.5	4	4	4	3	Turbidity (not a session)
175	20	SwCrk MS	White	F	1		8th	1	Student	2	1	2	2	3	4	4	3	3	3	Edible Plants
176	21	SwCrk MS	White	F	1		8th	1	Student	3	4	3	3	3	3	4	4	4	3	Meeting Macro-Invertebrates
177	22	SwCrk MS	White	F	1		8th	1	Student	1	2	2	1	1	1	4	3	3	2	Edible Plants
178	23	SwCrk MS	White	F	1		8th	1	Student	3	4	4	4	2	3	4	4	4	4	Edible Plants
179	24	SwCrk MS	White	F	1		8th	1	Student	3	3	4	3	2	3	4	4	3	2	Edible Plants
180	25	SwCrk MS	White	F	1		8th	1	Student	2	3	4	2	4	3	3	4	3	4	Bees, Beekeeping and Honey
181	26	SwCrk MS	White	F	1		8th	1	Student	3	3	3	3	2	3	4	4	3	3	Edible Plants
182	27	SwCrk MS	White	F	1		8th	1	Student	3	3	3	3	3	3	4	4	4	4	For-Mar

183	28	SwCrk MS	White	F		1	8th		1	Student	3	4	3	2	1	3	4	4	4	4	Edible Plants						
184	29	SwCrk MS	White	F		1	8th		1	Student	2	3	4	3	3	3	3	4	3	3	Rats in the Drinking Water						
185	30	SwCrk MS	White	F		1	8th		1	Student	4	3	3	4	4	3	4	4	4	4	Edible Plants						
186	31	SwCrk MS	White	F		1	8th		1	Teacher	1	3	2	3	3	3	4	4	3	4	Rats in the Drinking Water						
187	32	SwCrk MS	White	F		1	8th		1	Teacher	1	2	1	3	3	4	4	4	4	4	Blank						
188	33	SwCrk MS	White	F		1	8th		1	Student	1	4	4	4	3	3	4	4	4	4	Eating through Edible Flint						
189	34	SwCrk MS	White	M	1		8th		1	Student	3	4	2	3	3	3	3	2	3	3	Edible Plants						
190	35	SwCrk MS	White	M	1		8th		1	Student	2	4	3	4	2	2	4	4	4	3	Edible Plants						
191	36	SwCrk MS	White	M	1		8TH		1	Student	3	2	3	3	3	3	3	4	4	4	Edible Plants						
192	37	SwCrk MS	White	M	1		8th		1	Student	2	3	3	3	2	1	4	4	3	4	Edible Plants						
10	8	Atherton HS	White	M	1		9th	1		Student	3	3	4	2	2	4	4	4	3	3	A Green Get Away-Right Away						
83	10	Hamady MS/HS	Afr. Am	M	1		9th	1		Student	3	4	4	4	3	3	4	4	4	4	Sewer CSI						
84	11	Hamady MS/HS	Indian	F		1	9th	1		Student	1	2	3	3	3	3	2	3	3	3	Catching Monstrous Fish						
88	15	Hamady MS/HS	Other	M	1		9th	1		Student	2	4	4	3	3	2	3	4	3	4	Catching Monstrous Fish						
85	12	Hamady MS/HS	Blank	F		1	Blank		1	Blank	2	3	4	4	2	2	4	3	4	3	Catching Monstrous Fish						
156	1	SwCrk MS	Blank	Blank	Blank	Blank	Blank		1	Student	2	3	4	3	3	3	3	4	4	3	Rats in the Drinking Water						
11	9	Atherton HS	White	M	1		HS	1		Teacher	2	2	3	3	2	3	4	4	4	4	Blank						
21	5	Classical Academy	White	F		1	x		1	Teacher	2	3	2	x	x	3	3	4	x	x	Blank						
26	4	Clio Carter MS	White	F		1	x		1	Parent	4	2	2	1	3	4	2	2	1	3	Blank						
27	5	Clio Carter MS	White	F		1	x		1	er of stud	3	4	4	4	3	3	4	4	4	3	Meeting Macro-Invertebrates						
129	9	Mt. Morris Jr. High	White	F		1	x		1	Teacher	4	4	4	4	4	4	4	4	4	4	My student's presentation.						
											63	128	19	166	7	Total:	425	542	571	552	436	531	643	679	637	587	
											Total Response Sheets:					192	192	192	192	192	192	192	192	192	192		
											Number of Questions Left Blank (x):					-3	-5	-5	-5	-5	-3	-6	-7	-5	-6		
											Total Response to Question:					189	187	187	187	187	189	186	185	187	186		
											Average (Total/Responses):					2	3	3	3	2	3	3	4	3	3		



FLINT RIVER WATERSHED COALITION

Partnering to protect, preserve, and improve the Flint River watershed.
Flint River Watershed Coalition
 400 N. Saginaw Street, Suite 233
 Flint, MI 48502
 810-767-6490

# of Sites	Current #	Previous #	Site Name	Site Location	Score	Habitat Assessment	Monitors at Site
1	7	10	Flint River, Flushing	Flushing Twp T8NR5ES3	Poor*	Yes	2
2	8	9	Swartz Creek	Flint Twp T7NR7E	Poor*	Yes	10
3	9	13	Gilkey Creek	City of Flint T7NR7E	11.1	Yes	2
4	10	11	Thread Creek	Burton Twp T7NR7ES20	Poor*	Yes	4
5	11	12	Kearsley Creek (For-Mar)	Burton Twp T7NR7ES2	Poor*	Yes	3
6	12	6	Butternut Creek	Genesee Twp T8NR7ES12	Poor*	Yes	4
7	15	15B	Brent Run	Montrose Twp T9NR5ES15	Poor*	Yes	2
8	20	8B	Misteguay Creek Headwaters	Clayton Twp T7NR5ES8	Poor*	Yes	3
9	21	15B	Brent Run Headwaters	Mt. Morris Twp T8NR6ES23	Poor*	Yes	2
10	22	9B	Swartz Creek Headwaters	Fenton Twp T5NR6ES6	22.5	Yes	3
11	23	11B	Thread Creek Headwaters	Grand Blanc Twp T6NR8ES32	Poor*	Yes	2
12	24	12B	Kearsley Creek Headwaters	Atlas Twp T6NR8ES36	Poor*	Yes	2
13	25	13B	Gilkey Creek Headwaters	Burton Twp T7NR7ES1	31.8	Yes	2
14	26	6B	Butternut Creek, Headwaters	Forest Twp T9NR8ES16	52.3	Yes	2
15	30	7B	Pine Run Headwaters	Vienna Twp T9NR6ES13	50.7	Yes	3
16	31	20	Shiawassee River Argentine	Argentine Twp T5NR5ES20	Poor*	Yes	3
17	32	21	Shiawassee River Linden	Fenton Twp T5NR6ES19	Poor*	Yes	4
18	33	16R	Clark Drain, Richfield Park	Richfield Twp T8NR8ES16	23.2	Yes	3

Score Ratings:	
> 48 = Excellent	10-33.9 = Fair
34-48 = Good	< 19 = Poor