



Genesee County Phase II Municipalities Annual Report

November 1, 2009 – October 31, 2010

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



TABLE OF CONTENTS

LIST OF TABLES	ii
LIST OF FIGURES	iii
LIST OF ACRONYMS	iv
1. NPDES PERMIT REQUIREMENTS AND ADMINISTRATION	1
2. PUBLIC EDUCATION AND PARTICIPATION SUB-COMMITTEE ACTIVITIES	6
3. CONSTRUCTION STANDARDS AND PRACTICES SUB-COMMITTEE ACTIVITIES	16
4. MONITORING AND MAPPING SUB-COMMITTEE ACTIVITIES	18
5. ROAD-STREAM CROSSING SURVEY	19
6. 319 NONPOINT SOURCE GRANT PROJECTS	29
7. GENESEE GREEN	34
8. MACROINVERTEBRATE STUDY	42
9. ILLICIT DISCHARGE ELIMINATION PLAN (IDEP)	48
10. NEW STORM WATER POINT SOURCE DISCHARGES (PSD)	51
APPENDIX A: PUBLIC EDUCATION MATERIAL	
PEP Plan	
FRWC Articles on Our Water Programs	
Fair Booth Data	
Riparian Brochure	
Homeowner Septic Brochure	
Conservation District Presentation Breakdown	
APPENDIX B: MONITORING & MAPPING MATERIALS	
APPENDIX C: PERMITTEE MPPP SUMMARY	

LIST OF TABLES

Table 1-1: Contract Communities.....	3
Table 1-2: School Districts Interested in Nested Jurisdiction.....	3
Table 2-1: Breakdown of GCCDistrict Water Quality Presentations in Fiscal Year 2010	11
Table 5-1: Road-Stream Crossing Action Methodology	21
Table 5-2: Results of the Road Stream Crossing Assessments.....	23
Table 6-1: Designated Use Attainment/Threats Below Ray Road	30
Table 6-2: Pollutant, Source, and Cause of Nonpoint Source Pollutants	31
Table 7-1: Water Quality Index Calculation Chart.....	35
Table 7-2: Genesee Green Results	35
Table 8-1: Macroinvertebrate Study Results	42
Table 10-1: GCDC Known Outfalls Investigated in 2010.....	52
Table 10-2: City of Burton Known Outfalls Investigated in 2010	55
Table 10-3: City of Davison Known Outfalls Investigated in 2010	57
Table 10-4: Davison Township Known Outfalls Investigated in 2010	60
Table 10-5: City of Grand Blanc Known Outfalls Investigated in 2010	61

LIST OF FIGURES

Figure 1-1: Genesee County Watershed Boundaries	2
Figure 1-2: Genesee County Watershed Boundaries	5
Figure 2-1: River Crossing Signs Placed as of October 2008	13
Figure 7-1: Genesee Green Results for the Lower Flint River Watershed.....	37
Figure 7-2: Genesee Green Results for the Middle Flint River Watershed.....	38
Figure 7-3: Genesee Green Results for the Upper Flint River Watershed	39
Figure 7-4: Genesee Green Results for the Shiawassee River Watershed.....	40
Figure 8-1: Macroinvertebrate Study Results for the Lower Flint River Watershed	44
Figure 8-2: Macroinvertebrate Study Results for the Middle Flint River Watershed	45
Figure 8-3: Macroinvertebrate Study Results for the Upper Flint River Watershed.....	46
Figure 8-4: Macroinvertebrate Study Results for the Shiawassee River Watershed	47
Figure 9-1: Illicit Discharge Notification System Process	50
Figure 10-1: GCDC Known Outfalls Investigated in 2010	54
Figure 10-2: City of Burton Known Outfalls Investigated in 2010.....	56
Figure 10-3: City of Davison Known Outfalls Investigated in 2010.....	59
Figure 10-4: Davison Township Known Outfalls Investigated in 2010.....	60
Figure 10-5: City of Grand Blanc Known Outfalls Investigated in 2010.....	63
Figure 10-6: Illicit Discharges Requiring Further Investigation.....	64

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, 2009 to October 31, 2010 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.

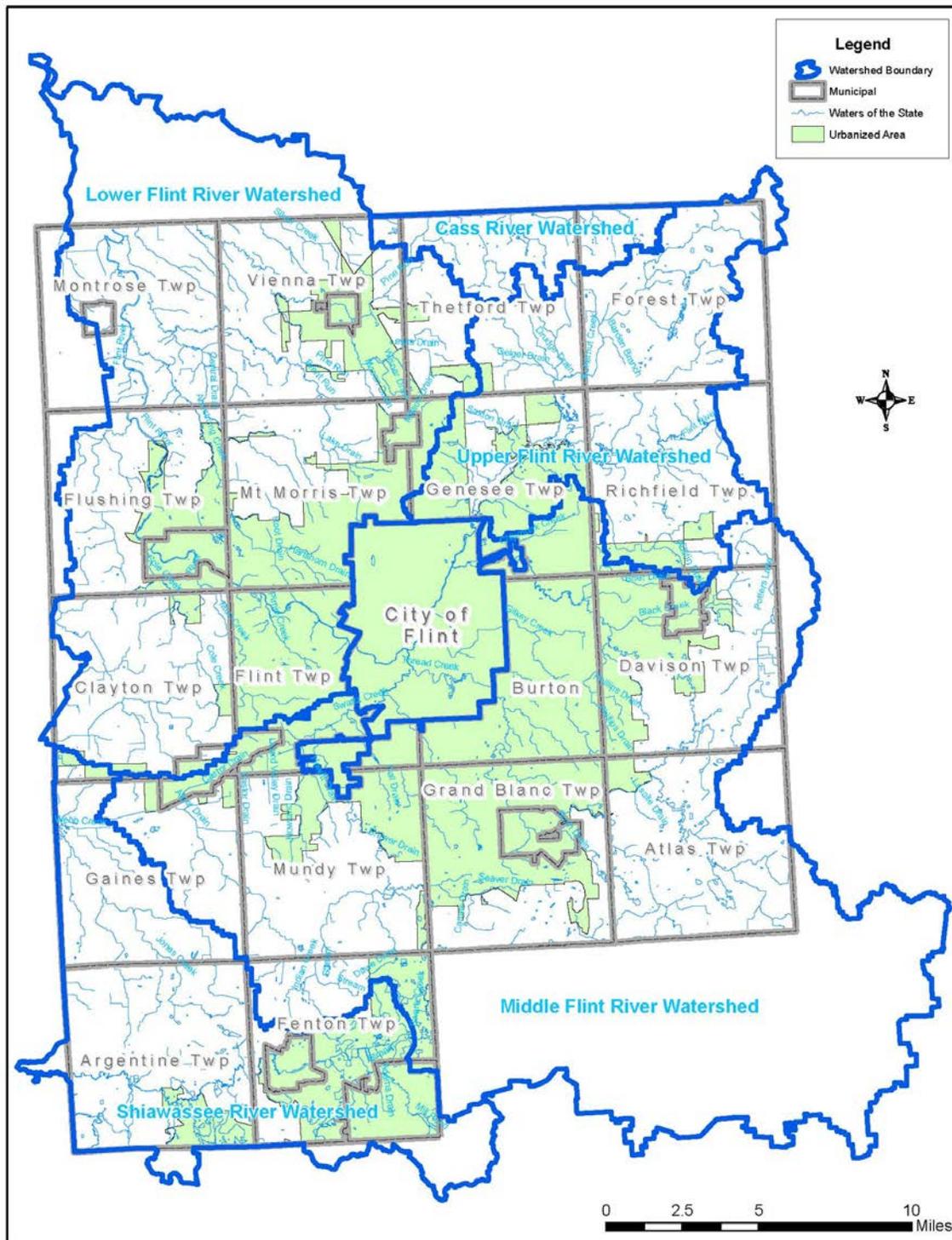


Figure 1-1: Genesee County Watershed Boundaries

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.

Charter Schools and Private Schools are not required to participate, and are not nested. These schools of choice do not need to sign an agreement because they do not own property: they rent it from a corporation they formed as a group. Private Schools are not considered Governmental entities and are not subject to the NPDES Ph II permit.

Genesee County Storm Water Advisory Committee

The Genesee County Storm Water Advisory Committee (SWAC) includes Genesee County and its 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 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:

- December 16, 2009
- January 20, 2010
- February 17, 2010
- March 17, 2010
- April, 21, 2010
- May 19, 2010
- September 15, 2010
- October 20, 2010

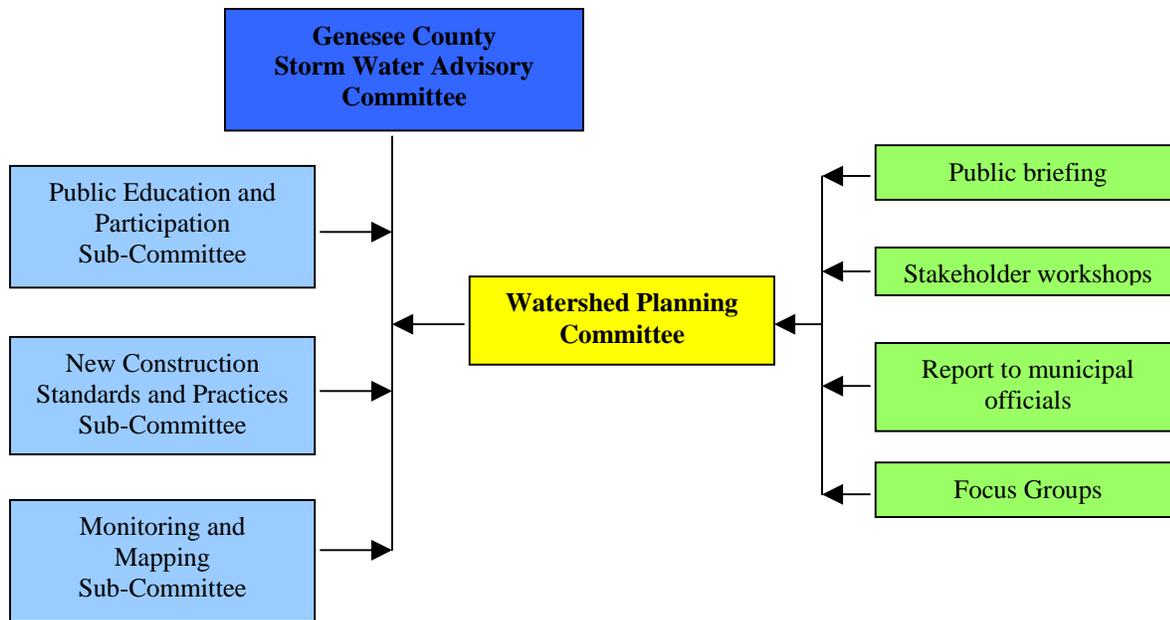


Figure 1-2: Genesee County Watershed Boundaries

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 held two meetings during this reporting period:

- February 23, 2010
- June 15, 2010
- September 22, 2009
- October 12, 2010

PE Membership included:

- **City of Burton – Charles Smiley**
- **City of Clio – William Kovi**
- **City of Davison – Kevin Frasier**
- **City of Flint – Mike Brown**
- Clayton Township – Denis Milem
- **Flint Township – Karyn Miller**
- Forest Township – Valerie Pace
- **Mundy Township – Dave Guigear**
- Thetford Township – Julie Parson
- **Vienna Township – Bob Palmer**
- Village of Otisville – David Tatro

Bolded Members are Phase II Communities

Their purpose included implementation of the Public Education Plan (PEP) and assigned objectives in the draft action plan (section 8 of the Watershed Management Plan). The PEP plan was revised to match the MDNRE 2008-2013 guidance “Key Messages”. See Appendix A. The actual implementation did not change. Because City of Flint has signed a contract for Public Ed, education efforts, including those we contract through our partnership have been extended into the City of Flint.

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:

- Conducted research and provided examples of riparian landowner workshop materials
- Coordinated and implemented a riparian landowner workshop reaching 14 waterfront property owners
- Program implementation with drain office
- Discussed the potential for a K-12 curriculum guide and in-service teacher training
- Created K-12 lesson plans for stormwater education activities and service-learning opportunities
- Redesigned the “Our Water” website and transferred the website account to the drain office
- Attended meetings at the drain office
- Re-designed the “Our Water” brochure and sent to drain office for editing
- Recruited volunteers and booth materials for the Genesee County Fair
- Staffed information booth at six 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:

4/14/10	Flint River, Flint River Trail	13 Attendees
5/26/10	Flushing River Walk	6 Attendees
6/17/10	Montrose River Walk	8 Attendees
7/28/10	For-Mar River Walk	9 Attendees
7/28/10	Clio River Walk	14 Attendees
8/18/10	Richfield Park River Walk	7 Attendees
- Hosting canoe trips on the Flint River. There were five events that drew between 13-50 people.

4/22/10	Riverview Park to FTNP	15 Attendees
6/21/10	FTNP to Montrose Paddle	13 Attendees
7/21/10	FTNP to Montrose Paddle	27 Attendees
8/7/10	Fresh Water Forever Paddle	50 Attendees
9/23/10	Our Water Fall Paddle	17 Attendees



- 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 the Spring, Summer, and Fall of 2010. 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. The website had tens of thousands of hits this reporting period. Of those over 8500 were from unique IP addresses.

“Our Water” Newsletter: There have been no newsletters published during this reporting period. The last newsletter had been in Jul 2009. Due to changes to the permit there are plans to have community updates as well as newsletters in the next reporting period. The main purpose of the newsletter was to summarize work accomplished in 2008 and to introduce concepts such as Low Impact Development (LID).

Materials and Presentation for Riparian Land Owners: An informational brochure was developed and served as a mail invite to a free workshop within the Kearsley Creek Watershed in the last reporting period. There were no additional mailing planned for this reporting period. 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.

The next workshop is scheduled for 2011 and will be held for waterfront property owners in the Upper and Lower Flint River Watersheds. In addition, it is our wish to get a grant funding or donation of time for a landscape architect or designer to work with riparian land owners on environmentally-friendly landscaping improvements.

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. Appendix A has the attendance lists.

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 during this permit cycle. The brochures are given away actively at events (see information booth heading below), 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.

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. See Appendix A.

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 in the last reporting period. 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.

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) Flint River Valley Steelheaders Expo: May 2010

Attendees 200+

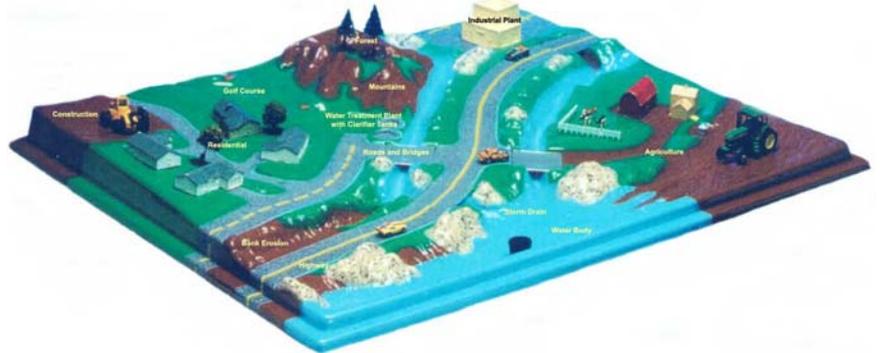
2) Annual Earth Day and Garden Celebration (Mott Comm. College) April 24, 2010

Attendees 500+

- 3) Flushing Walleye Festival, May 2010
Attendees 150+
- 4) Keep Genesee County Beautiful Conference, May 2010
Attendees 200+
- 5) Volunteer Expo, April 10, 2010
Attendees
- 6) Ortonville Creekfest, June 5, 2010
Attendees 65
- 7) Flushing Art in the Park, June 5, 2010
Attendees
- 8) Genesee County Fair (Mt. Morris, MI) August 11-17, 2010
Attendees 774*
- 9) Applewood Fall Harvest, MSUE Tent, October 5, 2010
Attendees 9

*Data on who volunteers spoke to by community in Appendix A

Enviroscape: GCDC has four “Enviroscape” interactive models that demonstrate how pollutants can reach bodies of water. The Conservation District keeps one of the Enviroscape models for their own education program (see next section.) The FRWC also keeps one of the Enviroscape models 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. Discussions continue to go well and we hope to see greater use of the model in years to come.

During this reporting period, thousands of people viewed the model. Enviroscape Model presentations by FRWC included:

Date	Event	Headcount
8/16/10	Genesee County Fair education booth	117

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, 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. Below is a list of the presentations made in 2010:

Table 2-1: Breakdown of GCCDistrict Water Quality Presentations in Fiscal Year 2010

<u>Month</u>	<u>Event</u>	<u>School aged children reached:</u>	<u>Parents/adults reached:</u>
October	10-3-09 Applewood Fall Harvest Day	1,237 (demographics not recorded)	
	10-6-09 Lakeville Middle School Watershed activity	28	1
	10-21-09 Montrose Orchards School Group Hay Ride Tour	47	48
November	11-19-09 Beecher High Ecology Club School Visit	20	3
	11-20-09 Myer Elementary Career Fair (Grand Blanc)	150	5
	11-24-09 Planning Mtg. for Flushing Alt. Education Nature Walk	0	2
December	12-02-09 Fenton Girl Scout Troop Meeting	18	5
	12-04-09 Mtg. for storm drain marking	0	3
	12-20-09 Beecher Alternative High School Presentation (2 classes)	36	3
	12-20-09 Lakeville Middle School 6 th grade class (pm) Water Game	30	1
	12-21-09 Lakeville Middle School 6 th grade class (am) Water Game	29	1
January	1-21-10 New Beecher Ecology Club Activity	25	2
	1-25-10 Sproutsides Gardens Meeting	1	19
	1-27-10 Grand Blanc H.S. Chem+Phys Class	45	1
	1-29-10 Flint Childrens Museum AM	100	47
February	2-5 Flint Childrens Museum AM	112	8
	2-8-10 Area STEM Meeting	0	39
	2-9-10 Lakeville M.S.–Water Unit Class (x2)	59	1
	2-12-10 Planning Mtg. W/ North Face	0	2
	2-17-10 Montrose H.S. Teach the Teacher	0	3
	2-19-10 Flint Childrens Museum AM	140	10
March	3-4-10 Swartz Creek Kiwanis Club	0	42
	3-6-10 Keep Genesee County Beautiful Conference	63	257
	3-11-10 Genesee Project GREEN meeting	0	24
	3-12,13,14-2010 Flushing Walleye Festival	100	300
	3-29, 30-2010 South Bendle Elementary	81	3
	3-31-10 4-C Child Care Services Fair, Burton	1,200	800
April	4-1-10 South Bendle 1 st Grade water education activities	81	3
	4-5-10 League of Women Voters Presentation	0	38
	4-16-10 Project RED at Reid Elementary in Grand Blanc	255	5

	4-20-10 South Bendle activities, continued	81	3
	4-22-10 Earth Day Event @ Riverview Park	12	38
	4-24-10 Earth Day Celebration at U-M Flint	140	460
	4-27-10 Davison Central Elementary 3 rd grade Assembly	110	2
	4-1-10 South Bendle 1 st Grade activities	81	3
	4-5-10 League of Women Voters Presentation	38	0
May	5-20-10 Bentley Elementary 2 nd grade presentation	46	2
June	6-1-10 thru 6-30 display at Children's Museum	550 (demographics not recorded)	
	6-12-10 Storm drain stenciling w/ cub scouts (x2)	8	1
	6-22-10 Life in the Water presentation w/ parks and rec commission	17	8
	6-25-10 Storm Drain stenciling w/ earth team volunteers	4	0
July	7-1-10 Life in the Water presentation w/ parks & rec. at Richfield	7	4
	7-13-10 Life in the Water Presentation w/ Parks & Rec at Bluebell Beach	3	3
	7-28/29-10 Stormdrain stenciling with Flint Workshop Center Church summer camp boys group (x2)	48	4
	7-31-10 Life in the Water presentation w/ Parks & Rec. at Buell Lake	1	2
August	8-16 thru 8-21 Watershed Educational Trailer at Genesee County Fair	600 (demographics not recorded)	
	8-16/20-10 Genesee County Fair Education booth (Enviroscape and Scavenger Hunt activities)	90	27
	8-25-10 Stormdrain stenciling with Flint Workshop Center Church members	0	8
	9-18-10 "Bringing it Home" event at Perani Arena	58	300+
	9-25-10 Fall Harvest Fest at Applewood	425 (demographics not recorded)	
<u>FY2010 Breakdown</u>		<u>6,176</u>	<u>2,541</u>
<u>FY2010 Total</u>		<u>8,717</u>	
<u>Annual Goal</u>		<u>8,000</u>	
<u>% reached of goal reached</u>		<u>109%</u>	

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. No new signs were added during this reporting period. Existing signs were maintained. Sixty percent of the people who were asked if they have seen the signs answered yes during the survey taken at the County Fair in August 2009.



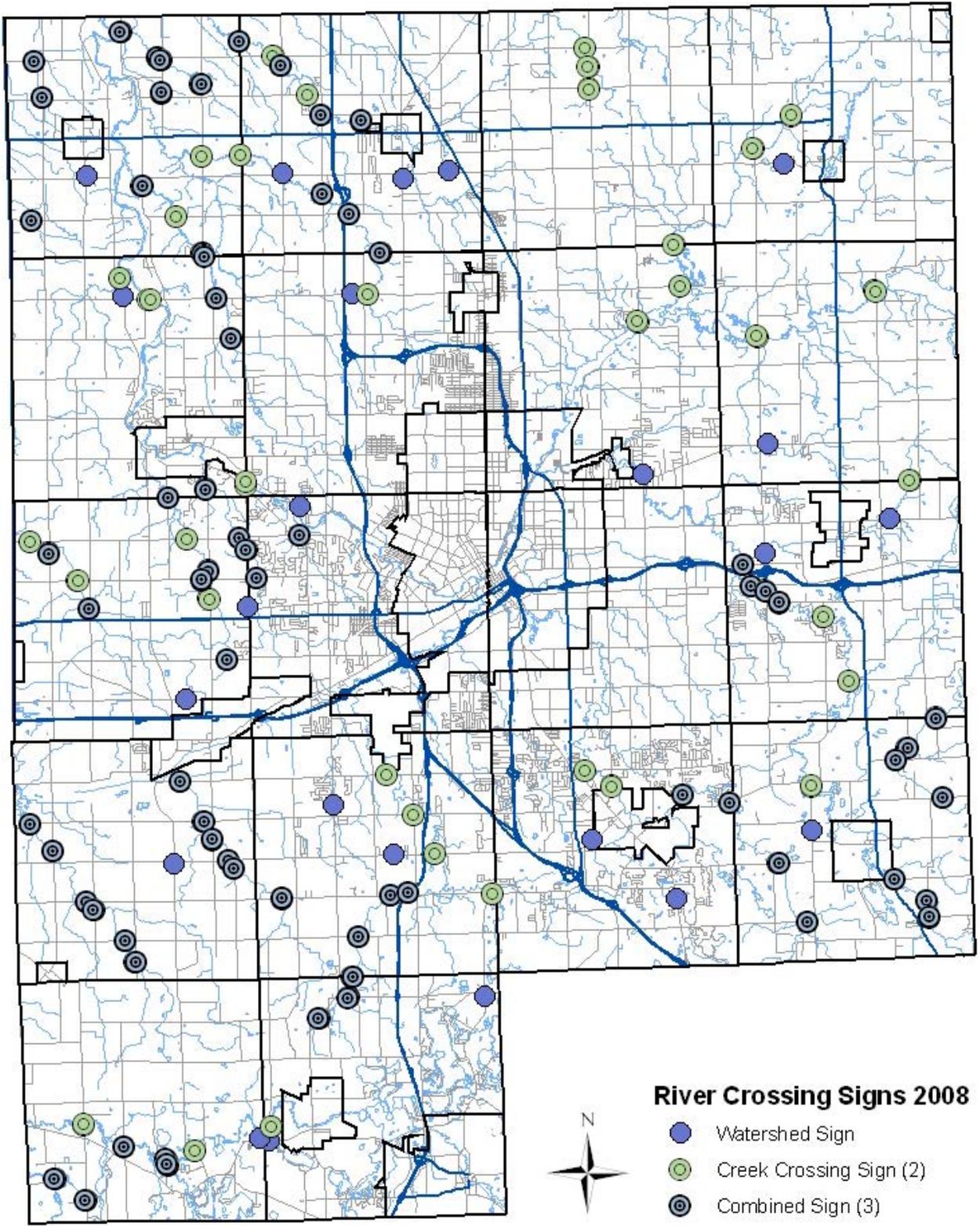


Figure 2-1: River Crossing Signs Placed as of October 2008

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.

- 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
- During this reporting period, there have been 10 neighborhoods with stencils placed near catch basins in public roads.



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 Team continues to work out the best way to align programs and materials with these new requirements and to ensure their delivery to the appropriate teachers. The PE Sub-Committee already developed watershed maps and CAER circulated a mock-up of the classroom map last winter for comment. CAER has also planned to conduct a series of focus groups with teachers in the 2009-2010 school year to ensure the classroom maps meet the needs of the teachers. Upon approval, the map will be made available on the website and printed and distributed to the GISD, teachers, and other Phase II partners. Watershed maps are still in development at this time.

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. 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:

- Program is up and running
- Many of the materials are available
- Stenciling program delivered
- Brochures delivered
- Booth (for outside events) delivered

Areas that need :

- (Partners) CAER and Tetra Tech assigned specific deliverables
- 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 meetings on the following dates:

- June 22, 2010
- September 22, 2010
- As well as “committee of the whole” meetings to support the new design standards.

CSP Membership included:

- **City of Flushing – Dennis Bow**
- **City of Grand Blanc – Matt Wurtz**
- **City of Linden – Jim Letts**
- Atlas Township – Shirley Jones
- **Fenton Township – Bonnie Mathis**
- **Genesee Township – David Stephens**
- Grand Blanc Township – Mikki Hoffman
- Montrose Township – Mark Emmendorfer
- Richfield Township – Joe Mador
- Village of Goodrich –

Bolded Members are Phase II Communities

The focus in these meetings was on finishing the draft Storm Water Ordinance, and continuing work on the BMP Manual.

STORM WATER ORDINANCE

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

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

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

When the ordinances are adopted, there will be a fundamental change in how development occurs. Currently, the Genesee County Drain Commissioner (GCDC) Surface Water Management (SWM) reviews approximately 70 percent of the site plans either because a county drain is directly involved and must be reviewed or the local Community has required a review 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 at the MDNRE for review they are not included in this report.

4. MONITORING AND MAPPING SUB-COMMITTEE ACTIVITIES

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

October 2009

M&M Membership included:

- **City of Fenton – Dan Czarnecki**
- City of Montrose – Frank Crosby
- **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

During June, July and August of 2007 and August of 2008, a team of consultants from Tetra Tech and Wade Trim conducted a visual assessment of road stream crossings in the Lower and Middle Flint River and Shiawassee River Watershed. The crews investigated 184 road-stream crossings along the rivers. Survey locations are presented in Figure 1-1. The river assessment identified the bottom substrate, type of bank vegetation, and surrounding land use. Water quality monitoring was not conducted during the road-stream crossing surveys.

Figure 1-2, during investigations field crew were recording physical habitat of each road stream crossing which included:

- Background information
- Percentage of substrate
- River morphology was present or abundant
- Physical appearance identifying if aquatic plants, floating algae, filamentous algae, bacterial sheen/slimes, turbidity, oil sheen, foam and trash.
- Instream Cover
- Stream Corridor
- Adjacent land use
- Road Crossing Information
- Potential Sources (crop related sources, grazing related sources, intensive animal feeding operations, highway/road/bridge maintenance and runoff, channelization, dredging, removal of riparian vegetation, bank and shoreline erosion/modification/destruction, flow regulation/modification (Hydrology), Upstream Impoundment, Construction, Urban runoff, land disposal, on-site wastewater systems, silviculture, resource extraction, recreational/tourism activities, debris in water, industrial point source, and natural sources).



Each crew attended a half day training session to familiarize them with the methodology. The methodology was developed by the MDNRE and is presented in an April 2000 document titled “Stream Crossing Watershed Survey Procedure.”



Jones Creek & Reid Rd. Downstream



Webb Creek & Reid Rd

Data Analysis

The data is summarized by actions that would be required to improve the watershed condition. For the purposes of this analysis all road stream crossing data as entered into the database was assumed to be accurate. Further investigation of the sites will be required prior to the implementation of the corrective action to identify the nature and extents of the problem.

The actions include:

1. Improving Canoeing and Recreation
2. Streambank Stabilization
3. Stabilize Disturbed Ground
4. Decrease Embeddedness
5. Increase Shade Cover
6. Establish 30 Foot Riparian Buffer
7. Establish 100 Foot Riparian Buffer
8. Trash Clean Up
9. IDEP Investigations

The methods for summarizing the data and a list of preliminary tasks are provided in Table 5-1 for each of the actions.



Atherton Drain & Cook Rd.



Harding Drain & VanVleet Rd.

Table 5-1: Road-Stream Crossing Action Methodology

Action	Criteria	Follow-Up Tasks
1. Improve Canoeing and Recreation	If a stream channel was observed to be wider than 25 feet, deeper than 3 feet, and woody debris and logs were present, the site was identified as a problem.	Remove logs and debris in a habitat sensitive manner.
2. Streambank Stabilization	Streambank erosion identified at a site as either moderate or heavy was identified as a problem.	Have a professional revisit the site and determine the extent and cause of the erosion. Stabilize the bank using soil bioengineering techniques.
3. Stabilize Disturbed Ground	If disturbed ground was identified during the survey on either the right or left bank then the site was identified for additional work.	Have a professional revisit the site and verify the existence of a problem. Stabilize the disturbed ground
4. Decrease Embeddedness	Channels observed as having a substrate composed of greater than 80 percent silt or sand were identified as having a potential embeddedness problem.	Determine the cause of embeddedness problems. Stabilize the problem areas.
5. Increase Shade Cover	The site was determined to be impacted if the volunteers noted these three observations: Lack of aquatic plant cover Lack of overhanging vegetation Stream canopy cover was less than 25 percent or was not noted.	Professional observation indicated that sites most likely exist and will fall under the tasks for increasing riparian buffers.
6. Establish 30-ft Riparian Buffer	Areas where a buffer was identified as being 30 feet or less were identified as a problem.	Establish a 30 foot wide buffer.
7. Establish 100-ft Riparian Buffer	Areas where a buffer was identified as being between 30 and 100 feet in width were identified.	Establish a 100 foot wide buffer.
8. Trash Clean Up	Volunteers were able to identify whether trash was not present, present, or abundant. Reaches requiring cleaning were assumed to include any reaches with trash present or in abundance.	Visit the site and clean up the trash. For long term purposes, coordinate with existing river clean up programs to extend the program to these areas.
9. Illicit Discharges Investigations	Illicit discharges investigations are additional investigations of pollutant sources to the water body. These may include nutrients, sewage, animal wastes, sediment, oil, or any discharges from point sources. The observations collected from the road/stream crossing survey were reviewed for the following parameters and conditions: Abundant aquatic plants Abundant floating algae Abundant filamentous algae Abundant bacteriological slime Abundant turbidity Present or abundant oil sheens Present or abundant foam Septic tanks ruled as a moderate or high priority pollutant source Industrial point sources identified as a moderate or high priority pollutant source Municipal point sources identified as a moderate or high priority pollutant source	Have a professional revisit the site and verify the existence and nature of the problem. Stop the illicit discharge or remove the illicit connection.

Results

Summarized in Table 5-2 are the results of the road stream crossing assessments. The “X” in the table signifies that the collected data for the site met the criteria indicated in Table 5-1. The results are then extrapolated to the rest of the watershed as a means of estimating the magnitude of problems throughout the watershed. Road-stream assessments were completed at approximately 38 percent (116 out of 299) in the Lower Flint River Watershed, 36 percent (106 out of 291) in the Middle Flint River Watershed and 43 percent (40 out of 92) Shiawassee River Watershed of the crossings in the watershed. Each assessment considered upstream and downstream conditions independently and therefore there are an assumed 598 (299*2) in Lower Flint River Watershed, 582 (291*2) in Middle Flint River Watershed and 184 (92*2) in Shiawassee River has possible sites within the watershed for statistical purposes.



Jones Creek & Cook Rd. Upstream



Harding Drain & Van Vleet Rd.



Moore Drain & Corunna, M-13

Table 5-2 Results of the Road Stream Crossing Assessments

LOCATION INFORMATION				RESULTS										
Sta #	Direction	Date	Waterbody Name	Location	Watershed	1. Improve Canoeing and Recreation	2. Streambank Stabilization	3. Stabilize Disturbed Ground	4. Decrease Embeddedness	5. Increase Shade Cover	6. Establish 30-ft Buffer	7. Establish 100-ft Buffer	8. Trash Clean Up	9. Illicit Discharge Investigations
PORTER-1	U/S	8/13/08	Porter Drain	Baldwin Morrish-Seymour	Shiawassee River	-	-	-	X	-	X	-	-	-
PORTER-1	D/S	8/13/08	Porter Drain	Baldwin Morrish-Seymour	Shiawassee River	-	-	-	X	-	X	-	-	-
PORTER-3	U/S	8/13/08	Porter Drain	Porter & Seymour Rd	Shiawassee River	-	-	-	X	-	X	-	-	X
PORTER-3	D/S	8/13/08	Porter Drain	Porter & Seymour Rd	Shiawassee River	-	-	-	X	-	X	-	-	X
PORTER-5	U/S	8/13/08	Porter Drain	Van Vleet Cook & Baldwin	Shiawassee River	-	-	-	X	-	X	-	-	-
PORTER-5	D/S	8/13/08	Porter Drain	Van Vleet Cook & Baldwin	Shiawassee River	-	-	-	X	-	X	-	-	-
JONES-1	U/S	8/13/08	Jones Creek	Nichols Cook-Baldwin	Shiawassee River	-	-	-	X	X	X	-	-	X
JONES-1	D/S	8/13/08	Jones Creek	Nichols Cook-Baldwin	Shiawassee River	-	-	-	X	-	X	-	-	X
JONES-3	U/S	8/13/08	Jones Creek	Jones Creek-Cross Cook Rd	Shiawassee River	-	-	-	X	-	X	-	-	-
JONES-3	D/S	8/13/08	Jones Creek	Jones Creek-Cross Cook Rd	Shiawassee River	-	-	-	X	X	X	-	-	-
ATHERTON-1	U/S	8/13/08	Atherton Creek	Duff & Nichols Cook Rd	Shiawassee River	-	-	-	X	-	X	-	-	-
ATHERTON-1	D/S	8/13/08	Atherton Creek	Duff & Nichols Cook Rd	Shiawassee River	-	-	-	X	-	X	-	X	-
CORRIGALL-1	U/S	8/13/08	Corrigan	Corrigan & Cook Rd Cross	Shiawassee River	-	-	-	X	-	X	-	-	-
CORRIGALL-1	D/S	8/13/08	Corrigan	Corrigan & Cook Rd Cross	Shiawassee River	-	-	-	X	-	X	-	-	-
CORRIGALL-3	U/S	8/13/08	Corrigan	Corrigan & Grand Blanc Rd	Shiawassee River	-	-	-	X	-	X	-	-	-
CORRIGALL-3	D/S	8/13/08	Corrigan	Corrigan & Grand Blanc Rd	Shiawassee River	-	-	-	X	-	X	-	-	X
JONES-5	U/S	8/13/08	Jones Creek	Jones & Duffield Rd	Shiawassee River	-	X	-	X	-	-	X	-	-
JONES-5	D/S	8/13/08	Jones Creek	Jones & Duffield Rd	Shiawassee River	-	-	-	X	-	X	-	-	-
JONES-7	U/S	8/13/08	Jones Creek	Duff & Nichols	Shiawassee River	-	-	-	X	-	-	-	-	-
JONES-7	D/S	8/13/08	Jones Creek	Duff & Nichols	Shiawassee River	-	-	-	X	-	-	X	-	-
TERRY-1	U/S	8/13/08	Terry Drain	Terry Drain @ Grand Blanc Rd	Shiawassee River	-	-	-	X	-	-	-	-	X
TERRY-1	D/S	8/13/08	Terry Drain	Terry Drain @ Grand Blanc Rd	Shiawassee River	-	-	-	X	-	X	-	-	X
TERRY-3	U/S	8/13/08	Terry Drain	Nichols Ried@Grand Blanc Rd	Shiawassee River	-	-	-	X	-	-	-	-	-
TERRY-3	D/S	8/13/08	Terry Drain	Nichols Ried@Grand Blanc Rd	Shiawassee River	-	-	-	X	-	-	-	-	-
WEBB-1	U/S	8/13/08	Webb Creek	Webb Creek-cross Nichols Rd	Shiawassee River	-	-	-	X	-	-	-	-	X
WEBB-1	D/S	8/13/08	Webb Creek	Webb Creek-cross Nichols Rd	Shiawassee River	-	-	-	X	-	-	-	-	X
WEBB-3	U/S	8/13/08	Webb Creek	Duffield-Nichols	Shiawassee River	-	-	-	X	X	-	-	-	-
WEBB-3	D/S	8/13/08	Webb Creek	Duffield-Nichols	Shiawassee River	-	-	-	X	-	-	-	-	-
JONES-9	U/S	8/13/08	Jones Creek	Duffield-Nichols	Shiawassee River	-	-	-	X	-	-	X	-	-
JONES-9	D/S	8/13/08	Jones Creek	Duffield-Nichols	Shiawassee River	-	-	-	X	-	-	-	-	-
WEBB-5	U/S	8/13/08	Webb Creek	Webb Drain & Duffield Rd	Shiawassee River	-	-	-	X	-	X	-	-	X
WEBB-5	D/S	8/13/08	Webb Creek	Webb Drain & Duffield Rd	Shiawassee River	-	-	-	-	-	X	-	-	X

Table 5-2 Results of the Road Stream Crossing Assessments

Sta #	Direction	LOCATION INFORMATION				RESULTS								
		Date	Waterbody Name	Location	Watershed	1. Improve Canoeing and Recreation	2. Streambank Stabilization	3. Stabilize Disturbed Ground	4. Decrease Embeddedness	5. Increase Shade Cover	6. Establish 30-ft Buffer	7. Establish 100-ft Buffer	8. Trash Clean Up	9. Illicit Discharge Investigations
TERRY-5	U/S	8/13/08	Terry Drain	Terry Drain @Reid Rd Crossing	Shiawassee River	-	-	-	X	-	X	-	-	-
TERRY-5	D/S	8/13/08	Terry Drain	Terry Drain @Reid Rd Crossing	Shiawassee River	-	-	-	X	-	X	-	-	-
DAV-1	U/S	8/12/08	Davidson Drain	Davidson Drain @ Hill Rd	Shiawassee River	-	-	-	X	-	-	-	X	-
DAV-1	D/S	8/12/08	Davidson Drain	Davidson Drain @ Hill Rd	Shiawassee River	-	-	-	X	-	X	-	-	X
DAV-3	U/S	8/12/08	Davidson Drain	Duffield Rd. S. of Miller, N of Hill	Shiawassee River	-	-	-	X	-	-	-	X	-
DAV-3	D/S	8/12/08	Davidson Drain	Duffield Rd. S. of Miller, N of Hill	Shiawassee River	-	-	-	X	-	X	-	-	-
DAV-5	U/S	8/12/08	Davidson Drain	Miller Rd. Duffield=Nichols	Shiawassee River	-	-	-	X	-	-	-	-	X
DAV-5	D/S	8/12/08	Davidson Drain	Miller Rd. Duffield=Nichols	Shiawassee River	-	-	-	X	-	-	-	-	X
Number of occurrences						0	1	0	38	3	22	8	1	16
Percentage of occurrences						0.0%	2.6%	0.0%	97.4%	7.7%	56.4%	20.5%	2.6%	41.0%
Extrapolate to (93*2): 182 sites throughout the watershed						0	5	0	181	14	105	38	5	76
PEN-1	U/S	8/13/08	Penoyer Drain	Duffield-Beecher & Porter	Lower Flint River	-	-	-	X	-	X	-	-	-
PEN-1	D/S	8/13/08	Penoyer Drain	Duffield-Beecher & Porter	Lower Flint River	-	-	-	X	-	X	-	-	-
MIST-1	U/S	8/13/08	Mistiguay Creek	M-13 from Beecher/Porter	Lower Flint River	-	-	-	X	X	X	-	-	-
MIST-1	D/S	8/13/08	Mistiguay Creek	M-13 from Beecher/Porter	Lower Flint River	-	-	-	X	X	X	-	-	-
MIST-3	U/S	8/13/08	Mistiguay Creek	Beecher between M-13/Duffield	Lower Flint River	-	-	-	X	X	X	-	-	-
MIST-3	D/S	8/13/08	Mistiguay Creek	Beecher between M-13/Duffield	Lower Flint River	-	-	-	X	X	X	-	-	-
MIST-5	U/S	8/13/08	Mistiguay Creek	Duffield between Beecher & Calkins	Lower Flint River	-	-	-	X	X	X	-	-	-
MIST-5	D/S	8/13/08	Mistiguay Creek	Duffield between Beecher & Calkins	Lower Flint River	-	-	-	X	X	X	-	-	-
MIST-7	U/S	8/13/08	Mistiguay Creek	Calkins between Duffield, Nichols	Lower Flint River	-	-	-	X	-	X	-	-	-
MIST-7	D/S	8/13/08	Mistiguay Creek	Calkins between Duffield, Nichols	Lower Flint River	-	-	-	X	-	X	-	-	-
HARD-1	U/S	8/13/08	Branch of Harding Drain	Calkins, Van Viet/Nichols	Lower Flint River	-	-	-	X	-	X	-	-	-
HARD-1	D/S	8/13/08	Branch of Harding Drain	Calkins, Van Viet/Nichols	Lower Flint River	-	-	-	X	-	X	-	-	-
HARD-3	U/S	8/13/08	Branch of Harding Drain	Van Vleet -Calkin/Corunna	Lower Flint River	-	-	-	X	X	X	-	-	-
HARD-3	D/S	8/13/08	Branch of Harding Drain	Van Vleet -Calkin/Corunna	Lower Flint River	-	-	-	X	X	X	-	-	-
OTTA-1	U/S	8/13/08	Ottaway Drain	Van Vleet between Calkin/Corunna	Lower Flint River	-	-	-	X	X	X	-	-	-
OTTA-1	D/S	8/13/08	Ottaway Drain	Van Vleet between Calkin/Corunna	Lower Flint River	-	-	-	X	X	X	-	-	-
MIST-9	U/S	8/13/08	Mistiguay Creek	Corunna Rd Between Nichols/Van Vleet	Lower Flint River	-	-	-	-	-	X	-	-	-
MIST-9	D/S	8/13/08	Mistiguay Creek	Corunna Rd Between Nichols/Van Vleet	Lower Flint River	-	-	-	X	-	-	-	-	-
MIST-11	U/S	8/13/08	Mistiguay Creek	Nichols between Calkins/Corunna	Lower Flint River	-	-	-	X	X	X	-	-	-

Table 5-2 Results of the Road Stream Crossing Assessments

LOCATION INFORMATION				RESULTS										
Sta #	Direction	Date	Waterbody Name	Location	Watershed	1. Improve Canoeing and Recreation	2. Streambank Stabilization	3. Stabilize Disturbed Ground	4. Decrease Embeddedness	5. Increase Shade Cover	6. Establish 30-ft Buffer	7. Establish 100-ft Buffer	8. Trash Clean Up	9. Illicit Discharge Investigations
MIST-11	D/S	8/13/08	Mistegay Creek	Nichols between Calkins/Corunna	Lower Flint River	-	-	-	X	X	X	-	-	-
HARD-5	U/S	8/13/08	Harding Drain	Nichols, Between Calkins/Corunna	Lower Flint River	-	-	-	X	-	X	-	-	-
HARD-5	D/S	8/13/08	Harding Drain	Nichols, Between Calkins/Corunna	Lower Flint River	-	-	-	X	-	X	-	-	-
CUTIN-1	U/S	8/13/08	Cutin Drain	Corunna Rd between Nichols/Duffield	Lower Flint River	-	-	-	-	-	X	-	-	-
CUTIN-1	D/S	8/13/08	Cutin Drain	Corunna Rd between Nichols/Duffield	Lower Flint River	-	-	-	X	-	-	X	-	-
MOORE-1	U/S	8/13/08	Moore Drain	Duffield, Calkin/Corunna	Lower Flint River	-	-	-	X	-	X	-	-	-
MOORE-1	D/S	8/13/08	Moore Drain	Duffield, Calkin/Corunna	Lower Flint River	-	-	-	X	X	X	-	-	-
MOORE-3	U/S	8/13/08	Moore Drain	Corunna, M-13/Duffield	Lower Flint River	-	-	-	X	-	X	-	-	X
MOORE-3	D/S	8/13/08	Moore Drain	Corunna, M-13/Duffield	Lower Flint River	-	-	-	X	-	X	-	-	X
BOW 1	U/S	5/22/07	Bowman Drain	Across from 7526 Coldwater Rd	Lower Flint River	-	-	X	X	-	X	-	-	X
BOW 1	D/S	5/22/07	Bowman Drain	Across from 7526 Coldwater Rd	Lower Flint River	-	-	-	X	-	X	-	-	-
BOW 2	U/S	5/22/07	Bowman Drain	Carpenter Rd.	Lower Flint River	-	-	-	X	-	X	-	-	-
BOW 2	D/S	5/22/07	Bowman Drain	Carpenter Rd.	Lower Flint River	-	-	-	X	-	X	-	-	-
CAT 1	D/S	5/23/07	Cattail Drain	Carpenter E. of Linden	Lower Flint River	-	-	-	X	-	X	-	X	X
CAT 1	U/S	5/23/07	Cattail Drain	Carpenter E. of Linden	Lower Flint River	-	-	-	X	-	X	-	X	X
CAT 2	U/S	5/23/07	Cattail Drain	Cattail Swamp & Linden	Lower Flint River	-	X	-	X	-	X	-	X	-
CAT 2	D/S	5/23/07	Cattail Drain	Cattail Swamp & Linden	Lower Flint River	-	-	-	X	-	X	-	-	-
BOW 3	D/S	5/23/07	Bowman Drain	Sunnyside Drive	Lower Flint River	-	-	-	X	X	X	-	X	X
BOW 3	U/S	5/23/07	Bowman Drain	Sunnyside Drive	Lower Flint River	-	-	-	-	X	-	-	-	-
BOW 4	U/S	5/24/07	Bowman Drain	Bowman Dr at Johnson Rd	Lower Flint River	-	-	-	X	-	X	-	-	-
BOW 4	D/S	5/24/07	Bowman Drain	Bowman Dr at Johnson Rd	Lower Flint River	-	-	-	X	-	X	-	-	-
BOW 5	U/S	5/24/07	Bowman Drain	Bowman Dr at Stanley Rd	Lower Flint River	-	-	-	X	-	X	-	-	-
BOW 5	D/S	5/24/07	Bowman Drain	Bowman Dr at Stanley Rd	Lower Flint River	-	-	-	X	X	X	-	-	-
ARM 101	U/S	5/24/07	Armstrong Drain	Armstrong Drain at Stanley Rd.	Lower Flint River	-	-	-	X	-	X	X	-	X
ARM 101	D/S	5/24/07	Armstrong Drain	Armstrong Drain at Stanley Rd.	Lower Flint River	-	-	-	X	-	X	-	-	X
CAT 2	U/S	5/31/07	Cattail Drain	Cattail Drain and Carpenter Rd	Lower Flint River	-	-	-	X	-	X	-	-	-
CAT 2	D/S	5/31/07	Cattail Drain	Cattail Drain and Carpenter Rd	Lower Flint River	-	-	-	X	-	X	-	-	-
CAT 3	U/S	5/31/07	Cattail Drain	Cattail Drain at Webster Rd	Lower Flint River	-	-	-	X	-	X	-	-	-
CAT 3	D/S	5/31/07	Cattail Drain	Cattail Drain at Webster Rd	Lower Flint River	-	X	-	X	-	X	-	-	-
CAT 4	U/S	6/11/07	Cattail Drain	Cattail Drain at Mt. Morris Rd	Lower Flint River	-	-	-	X	-	X	-	-	-
CAT 4	D/S	6/11/07	Cattail Drain	Cattail Drain at Mt. Morris Rd	Lower Flint River	-	-	-	X	-	X	-	-	-
CEN 103	U/S	6/12/07	Central Drain	Frances Rd east of Morrish	Lower Flint River	-	X	-	-	-	X	-	X	-

Table 5-2 Results of the Road Stream Crossing Assessments

Sta #	Direction	LOCATION INFORMATION			RESULTS								
		Waterbody Name	Location	Watershed	1. Improve Canoeing and Recreation	2. Streambank Stabilization	3. Stabilize Disturbed Ground	4. Decrease Embeddedness	5. Increase Shade Cover	6. Establish 30-ft Buffer	7. Establish 100-ft Buffer	8. Trash Clean Up	9. Illicit Discharge Investigations
CEN 103	D/S	Central Drain	Frances Rd east of Morrish	Lower Flint River	-	X	-	X	-	-	-	-	-
CEN 101	U/S	Central Drain Trib	Elms intersection	Lower Flint River	-	-	-	X	-	-	-	-	-
CEN 101	D/S	Central Drain Trib	Elms intersection	Lower Flint River	-	-	-	X	-	X	-	-	-
ROOT 1	D/S	Root Drain	Oleksyn Intersection	Lower Flint River	-	-	-	X	-	X	-	-	X
ROOT 309	U/S	Root Drain	Kelley/root intersection	Lower Flint River	-	-	-	X	X	-	-	-	X
ROOT 309	D/S	Root Drain	Kelley/Root intersection	Lower Flint River	-	-	-	X	X	-	-	-	X
ROOT 2	U/S	Root Drain	Kelley/Root intersection	Lower Flint River	-	-	-	X	-	-	-	-	-
ROOT 2	D/S	Root Drain	Kelley/Root intersection	Lower Flint River	-	-	-	X	-	-	-	-	-
ROOT 3	U/S	Root Drain	Carpenter Rd/Root Drain	Lower Flint River	-	-	-	X	-	X	-	X	-
ROOT 3	D/S	Root Drain	Carpenter Rd/Root Drain	Lower Flint River	-	-	-	X	-	-	-	-	X
MON 101	U/S	Monroe Drain	Webster Rd. 1/4 mile N of Carpenter	Lower Flint River	-	-	-	X	-	X	-	-	X
MON 101	D/S	Monroe Drain	Webster Rd. 1/4 mile N of Carpenter	Lower Flint River	-	-	-	X	-	X	-	-	X
ROO 105	U/S	Root Drain	Coldwater RD. JUST e OF Elms Rd.	Lower Flint River	-	-	-	X	-	X	-	X	X
ROO 105	D/S	Root Drain	Coldwater RD. JUST e OF Elms Rd.	Lower Flint River	-	-	-	X	X	-	-	X	X
STA 107	U/S	Stadler Drain	Coldwater Rd. just W of I-75	Lower Flint River	-	-	-	X	-	-	-	-	X
STA 107	D/S	Stadler Drain	Coldwater Rd. just W of I-75	Lower Flint River	-	-	-	X	-	-	-	-	X
CAT 103	U/S	Cattail Drain	Central drain and Webster Rd. crossing	Lower Flint River	-	-	-	X	X	-	-	-	-
CAT 103	D/S	Cattail Drain	Central drain and Webster Rd. crossing	Lower Flint River	-	-	-	X	X	X	-	-	-
STA 101	U/S	Stadler Drain	Webster Rd. 1/2 mile N of Coldwater	Lower Flint River	-	-	-	X	-	X	-	-	-
STA 101	D/S	Stadler Drain	Webster Rd. 1/2 mile N of Coldwater	Lower Flint River	-	-	-	X	-	X	-	-	-
CEN 107	U/S	Central Drain	Mt. Morris Rd. W of Webster	Lower Flint River	-	-	-	X	-	X	-	-	-
CEN 107	D/S	Central Drain	Mt. Morris Rd. W of Webster	Lower Flint River	-	-	-	X	-	X	-	-	-
CEN 105	U/S	Central Drain	Mt. Morris Rd. E of Elms Rd.	Lower Flint River	-	-	-	X	-	-	-	-	X
CEN 105	D/S	Central Drain	Mt. Morris Rd. E of Elms Rd.	Lower Flint River	-	-	-	X	-	X	-	-	-
CEN 103	U/S	Central Drain	Elms Rd. N of Mt. Morris	Lower Flint River	-	-	-	X	-	X	-	-	-
CEN 103	D/S	Central Drain	Elms Rd. N of Mt. Morris	Lower Flint River	-	-	-	X	-	X	-	-	-
CEN 101	U/S	Central Drain	Elms S of Frances Rd.	Lower Flint River	-	-	-	X	-	X	-	-	-
CEN 101	D/S	Central Drain	Elms S of Frances Rd.	Lower Flint River	-	-	-	X	X	-	-	-	-
CEN 109	U/S	Central Drain	Mt. Morris between Webster and Linden	Lower Flint River	-	-	-	X	-	X	-	-	X
CEN 109	D/S	Central Drain	Mt. Morris between Webster and Linden	Lower Flint River	-	-	-	X	-	X	-	-	X
COT 101	U/S	Cottell Drain	Coldwater W of Elms	Lower Flint River	-	-	-	X	-	X	-	-	X
COT 101	D/S	Cottell Drain	Coldwater W of Elms	Lower Flint River	-	-	-	X	-	X	-	-	X

Table 5-2 Results of the Road Stream Crossing Assessments

LOCATION INFORMATION				RESULTS										
Sta #	Direction	Date	Waterbody Name	Location	Watershed	1. Improve Canoeing and Recreation	2. Streambank Stabilization	3. Stabilize Disturbed Ground	4. Decrease Embeddedness	5. Increase Shade Cover	6. Establish 30-ft Buffer	7. Establish 100-ft Buffer	8. Trash Clean Up	9. Illicit Discharge Investigations
BRE 101	D/S	7/13/07	Brent Run	Mt. Morris	Lower Flint River	-	-	-	X	-	-	X	-	-
BRE 101	U/S	7/13/07	Brent Run	Mt. Morris	Lower Flint River	-	-	-	X	-	X	X	-	-
CRA 101	U/S	7/13/07	Craven-Benson	S of Mt. Morris @ Clio	Lower Flint River	-	-	-	X	-	X	-	-	-
CRA 101	D/S	7/13/07	Craven-Benson	S of Mt. Morris @ Clio	Lower Flint River	-	-	-	X	-	X	X	-	X
HUG 101	U/S	7/13/07	Hughes Drain	Clio Rd N of Stanley	Lower Flint River	-	-	-	X	-	X	-	-	-
HUG 101	D/S	7/13/07	Hughes Drain	Clio Rd N of Stanley	Lower Flint River	-	-	-	X	-	X	-	X	-
HUG 103	U/S	7/13/07	Hughes Drain	Stanley E of Clio	Lower Flint River	-	X	-	X	-	X	X	X	-
HUG 103	D/S	7/13/07	Hughes Drain	Stanley E of Clio	Lower Flint River	-	X	-	X	-	X	X	X	-
FLI 101	U/S	7/13/07	Flint River	Mt. Morris	Lower Flint River	-	-	-	X	-	X	X	X	X
FLI 101	D/S	7/13/07	Flint River	Mt. Morris	Lower Flint River	-	-	-	X	-	X	-	-	X
CEN 201	U/S	7/13/07	Central Drain	Webster N of Mt. Morris	Lower Flint River	-	X	-	X	-	X	-	-	-
CEN 201	D/S	7/13/07	Central Drain	Webster N of Mt. Morris	Lower Flint River	-	-	-	X	-	X	-	-	-
FLI 103	U/S	7/13/07	Flint River	Main St in Flushing	Lower Flint River	-	-	-	X	-	X	-	-	X
FLI 103	D/S	7/13/07	Flint River	Main St in Flushing	Lower Flint River	-	-	-	X	-	X	-	-	X
BRE 103	U/S	7/13/07	Brent Run	Between Jennings and Flushing	Lower Flint River	-	-	-	X	-	-	X	-	X
BRE 103	D/S	7/13/07	Brent Run	Between Jennings and Flushing	Lower Flint River	-	-	-	X	-	-	X	-	X
HAR 101	U/S	7/18/07	Hartshorn	Jennings near Pasadena	Lower Flint River	-	-	-	X	-	X	X	X	-
HAR 101	D/S	7/18/07	Hartshorn	Jennings near Pasadena	Lower Flint River	-	-	-	X	-	-	X	-	-
HAR 103	U/S	7/18/07	Hartshorn	Pasadena West of Linden	Lower Flint River	-	X	-	X	-	X	X	-	-
HAR 103	D/S	7/18/07	Hartshorn	Pasadena West of Linden	Lower Flint River	-	-	-	X	-	X	-	-	-
HAR 105	U/S	7/18/07	Hartshorn	Linden South of Pasadena	Lower Flint River	-	-	-	X	-	X	-	-	-
HAR 105	D/S	7/18/07	Hartshorn	Linden South of Pasadena	Lower Flint River	-	-	-	X	-	X	-	-	-
HUG 105	U/S	7/18/07	Hughes Drain	Stanley E of Clio	Lower Flint River	-	-	-	X	-	X	-	-	X
HUG 105	D/S	7/18/07	Hughes Drain	Stanley E of Clio	Lower Flint River	-	-	-	X	-	X	-	-	X
DEL 101	U/S	7/18/07	Delaney Drain	Stanley E of Jennings	Lower Flint River	-	-	-	X	-	X	-	-	X
DEL 101	D/S	7/18/07	Delaney Drain	Stanley E of Jennings	Lower Flint River	-	-	-	X	-	X	X	-	X
CEN 301	U/S	7/18/07	Central Drain	Stanley next to I-75	Lower Flint River	-	-	-	X	-	X	-	-	X
CEN 301	D/S	7/18/07	Central Drain	Stanley next to I-75	Lower Flint River	-	-	-	X	-	X	-	-	X
LAK 101	U/S	7/18/07	Lake Drain	Coldwater between Clio and Ballard	Lower Flint River	-	X	-	X	-	X	-	-	-
LAK 101	D/S	7/18/07	Lake Drain	Coldwater between Clio and Ballard	Lower Flint River	-	X	-	X	-	X	-	-	-
CEN 303	U/S	7/18/07	Central Drain	Linden S of Mt. Morris	Lower Flint River	-	-	-	X	-	-	-	-	-
CEN 303	D/S	7/18/07	Central Drain	Linden S of Mt. Morris	Lower Flint River	-	-	-	X	-	-	X	-	X

Table 5-2 Results of the Road Stream Crossing Assessments

LOCATION INFORMATION				RESULTS										
Sta #	Direction	Date	Waterbody Name	Location	Watershed	1. Improve Canoeing and Recreation	2. Streambank Stabilization	3. Stabilize Disturbed Ground	4. Decrease Embeddedness	5. Increase Shade Cover	6. Establish 30-ft Buffer	7. Establish 100-ft Buffer	8. Trash Clean Up	9. Illicit Discharge Investigations
Number of occurrences						0	10	1	110	23	93	23	15	34
Percentage of occurrences						0.0%	8.8%	0.9%	96.5%	20.2%	81.6%	20.2%	13.2%	29.8%
Extrapolate to (299*2) 598 sites throughout the watershed						0	52	5	577	121	488	121	79	178
Total Number of occurrences						0	11	1	148	26	115	31	16	50
Total Percentage of occurrences						0.0%	7.2%	0.7%	96.7%	17.0%	75.2%	20.3%	10.5%	32.7%

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.

Physical Inventory

In summary, the water quality of the Swartz Creek Watershed is negatively impacted by the effects of non-point source pollutants. The impact of these pollutants becomes progressively worse as one moves downstream within the watershed. It also appears that water quality within the watershed is likely to continue to degrade if a coordinated, watershed-wide plan is not implemented.

Historically, the development that has taken place in the lower reaches of the watershed has caused severe degradation only to that portion of the watershed. However, as increased growth continues in the relatively healthy headwaters portion of the watershed, it is likely we will see larger reductions in water quality than we have experienced in the past.

The Swartz Creek Watershed has two designated uses that are impaired; total body contact and warm water fisheries. In addition, partial body contact, aquatic wildlife, and agricultural designated uses are threatened. Industrial water supply and public water supply are not current uses but are included as threatened because of the likelihood that these would not be supported if they were needed. Table 6-1 details the status of each of the designated uses and the known and suspected pollutants affecting each use. The table excludes several areas upstream of Ray Road in Section 1 of Fenton Township. Upstream of this crossing the watershed appears to currently be meeting all designated uses. This area will be addressed in the critical areas discussion as a priority for preservation of water quality.

In order to protect water quality from the threats identified above, specific causes and source areas were identified. Table 6-2 outlines the linkages between pollutants, sources and causes in the Swartz Creek Watershed. Each of the pollutants are discussed further in the WMP, where specific critical areas for each pollutant are described and identified.

Table 6-1: Designated Use Attainment/Threats Below Ray Road

Designated use	Status	Pollutants
Agricultural	Threatened (S)	Hydrology (K)
Navigation	Threatened (S)	Hydrology (K)
*Industrial Water Supply	Threatened (S)	Hydrology(K)
*Public Water Supply at point of water intake	Threatened (S)	Hydrology (K)
Warm Water Fisheries	Impaired (K)	Hydrology (K) Sediment (K) Nutrients(K) Pesticides (S) Thermal (S)
Other indigenous aquatic life and wildlife	Threatened (S)	Hydrology (K) Sediment (K) Nutrients (K) Pesticides(S) Thermal (S)
Partial Body Contact	Impaired (S)	Bacteria\pathogens (K) Toxins (K)
Total Body Contact	Impaired (k)	Hydrology (K) Bacteria (K) Toxins (K)

K= Known
S = Suspect

Public Education

A Public Education Plan (PEP) for the Swartz Creek Project is included in the WMP. The goals and objectives of the plan are intended to focus on the specific pollutant identified in the planning process. The PEP is divided into three phases including awareness, education, and action phases. Target audiences, specific messages and tools have been identified to be used in the implementation of the PEP for the 319 WMP area. A large portion of the early phases of the PEP implementation focuses on assisting Phase II communities take advantage of recommendations set forth in the plan.

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.

Table 6-2: Pollutant, Source, and Cause of Nonpoint Source Pollutants

Pollutant	Source	Cause
Hydrology (K)	1. Urban Storm water (K)	Directly Connected Impervious Surfaces (K) Insufficient storm water management practices (K)
	2. Channel Alterations (K)	Removal of flood plain (localized) (K)
	3. Loss of Wetlands (K)	Loss of wetlands for agricultural use (K)
	4. In stream structure (K)	Western Branch dam (K)
Sediment (K)	Stream banks (K)	Erratic flows / High Runoff (K) Insufficient Riparian Buffers (K)
	Road Stream Crossings (K)	Erosive road or shoulder surfaces (K) Undersized crossing (K)
	Developed and developing areas (K)	Insufficient Riparian Buffers (K) Inadequate soil erosion practices (S)
	Roads, parking lots (K)	Inadequate storm water mgt in commercial and industrial parking lots (K)
Toxins (K)	Agricultural Lands (K)	Insufficient riparian vegetation buffers (K)
	Parking lots (K)	Inadequate storm water mgt techniques (K)
Nutrients (S)	Roadways (K)	Road drains directly to stream (K)
	Residential Lawns (K)	Over application of Fertilizer (S)
	Residential Septic Systems (S)	Failing septic systems (S)
Bacteria (S)	Agricultural application (S)	Insufficient Riparian management
	Human Waste (S)	Illicit connections to storm sewers (S)
Thermal (S)	Animal Waste	Direct Connection in urban areas (S)
	Roads & Parking Lots (K)	Insufficient storm water mgt. practices (K)
	Direct solar radiation (K)	Removal of overhanging vegetation (K)

K= Known
S = Suspect

Kearsley Creek Watershed Project

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

Based on a baseline study and physical inventory, stream bank erosion and sediment input are the primary pollutants for the Kearsley Creek Watershed. Hydrologic and hydraulic analyses were conducted to determine changes to the watershed that would result at full build-out based on current Master Plans. The hydraulic capacities at bridge and culvert structures for the full build-out scenario were also verified.

Staff prioritized restoration work efforts based on a field inventory of 29 stream segments within Kearsley Creek from the county line to the Flint River. A rating system was developed based on the severity of erosion within that segment. Six of the segments inventoried were rated as “high” indicating substantial erosion. Seventeen segments were rated as “moderate”. For-Mar Nature Center had the highest erosion rating. Potential BMPs may consist of cross vanes, vanes, j-hooks and gabion baskets at the For-Mar Nature Center where the bluff is over steepened and there is a potential for building failure.

A review of ordinances from the eleven governmental entities within the watershed showed that few ordinances are adopted to protect the Kearsley Creek corridor from development and runoff. None of the ordinances provide the same review criteria for decision making.

The Water Quality Improvement Plan includes a Long-Term Monitoring Plan and Information and Education Plan to inform the public of the major issues within the Kearsley Creek watershed, and preliminary findings of the WMP.

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.

Designated uses are water quality goals set by the MDNRE. Gilkey Creek is managed by the state in the City of Flint, and managed by the Genesee County Drain Commission in the City of Burton. This presents a management problem for attaining designated uses in the City of Flint when upstream portions in Burton are solely managed by the state for flood control. This plan hopes to address this issue by setting goals for the *entire* watershed to meet state designated uses and to achieve desired uses for the Gilkey Creek set by stakeholders. Desired uses were those set by stakeholders that do not tie directly to the state’s designated uses or water quality standards.

Designated and Desired Uses

Uses that are considered impaired are not currently meeting water quality standards established for that particular use. Uses that are currently being met but are at risk of impairment from human activity are defined as threatened. Assessment of use **impairment** in the Gilkey Creek Watershed was completed using several sources of information including: MDNRE fisheries reports, MDNRE water quality assessments, physical inventory road stream crossing surveys, and observation of use by stakeholders.

In addition to the eight State designated uses, many communities establish desired uses. These uses are not based upon water quality criteria but rather reflect some qualitative goal established in the watershed planning process.

The Gilkey Creek Watershed (GCW) is attaining uses for Wildlife, Agricultural and Industrial water supply, and has *two designated uses that are impaired: Aquatic Life, and Warm Water Fishery. The uses requiring Total Body Contact and Partial Body Contact are threatened.* The uses of navigation and public water supply are not applicable to the Gilkey Creek. The Gilkey Creek has never been utilized for agricultural water supply, public water supply, navigation, or industrial supply. *Desired uses for the Gilkey include: (1) use of the creek as an educational tool, (2) increased recreational use, and (3) increased aesthetics.*

Once stakeholders determined what designated uses the watershed was not meeting, a common vision and goals were set for the GCW.

Watershed Goals and Recommendations

Watershed goals were determined and ranked by the Center for Applied Environmental Research (CAER) and stakeholders of the GCW. Objectives and action items were developed for each goal. Recommendations to meet each goal are summarized below:

1. Improve wildlife habitat and other aquatic life habitat: **Reduce impacts from drain maintenance,** Increase the riparian corridor and create/incorporate a green infrastructure network.
2. Improve warm-water fishery: Reduce sediment inputs, decrease impact from storm events, and re-vegetate along the stream corridor.
3. Increase creek aesthetics, educational opportunities and recreational use (for partial and total body contact): **Assessment of E.coli levels,** Increase visibility and aesthetic quality, promote current recreational opportunities, and identify potential recreational opportunities.
4. Reduce flooding and improve navigation: Improve storm water management practices, source control, improve existing infrastructure (bridges, culverts, storm drains), and increase riparian vegetation and wetland areas.
5. Improve creek for public health and drinking water: Reduce **threat** of bacteria and nutrient levels, create a wellhead protection program, reduce impacts from roadways, and prioritize brownfield sites that pose a **potential** threat to **surface water contamination.**

Education

Successful implementation of the watershed management plan and the BMPs *is based on the assumption that stakeholders understand the problems and solutions* for the watershed. An education plan was developed to correspond with BMP recommendations that details target audiences, estimated costs, and delivery mechanisms for success.

CAER found that the challenges to successful implementation in the GCW are driven by two factors, primarily the high amounts of residential properties (47% of total land), which will require a large-scale intensive education effort. Preservation and restoration of the watershed are largely dependent on the collective action of the residents of the GCW. Another challenge is the policy in the GCW. Successful timing of implementation depends on coordination between the cities of Burton and Flint, and the Genesee County Drain Commission.

Evaluation

Watershed planning is an iterative process that will need to change based on results from the program's evaluation. Furthermore, as education efforts are carried out and BMPs are installed, the plan will have to be revised to address new issues.

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 is no time 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 1300 in 2010. 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:

44	Participating Educators
50-60	Classrooms
1,300+	Students
33	Mentors
21	Presenters

Schools are also encouraged to participate in a summit, where students are able to present their findings. On May 4, 2010, a student summit was held at Mott Community College and students presented collected data. A copy of the symposium brochure, a summary table, and news article are included in the appendix.



Each site visited is categorized as excellent, good, fair, poor, or very poor based on the National Sanitation Foundation (NSF) WQI analysis. To determine the WQI, nine tests are performed. Parameters tested include dissolved oxygen, fecal coliform, pH, biochemical oxygen demand (5-day), temperature, total phosphate, nitrates, turbidity, and total solids. After completing the nine tests, results are recorded and transferred to a weighting curve chart where a numerical value is obtained as shown in Table 7-1. For each test, the numerical value or Q-value between 0 and 10 is multiplied by a "weighting factor." For example, dissolved oxygen has a

relatively high weighting factor (0.17) and therefore is more significant in determining water quality than the other tests. The nine resulting values are then added together to arrive at an overall WQI. If all nine water quality tests are not available then the total of those samples available is multiplied by the inverse their total weighting factors.

Table 7-1: Water Quality Index Calculation Chart

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

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

It should be noted that there was no 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. Three sites out of the 38 sites visited were categorized as either poor or very poor.

Table 7-2: Genesee Green Results

ID_No	Location	Sampled Years	Water Quality Index (WQI)
Lower Flint River Watershed			
1L	Armstrong Creek at Dodge Road	2006-07	Good
2L	Craven and Benson Drain off Mt Morris Road	2007	Fair
3L	Mill Street Bridge	1993, 1998-2007	Fair
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	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, 2009	Good**
3S	Fenton Mill Pond (Shiawassee River)	2009	Fair
<i>Unknown Watershed</i>			
1UNK	Unlisted Location	2009	Good

*Improved since previous sampling event

** Degraded since previous sampling event

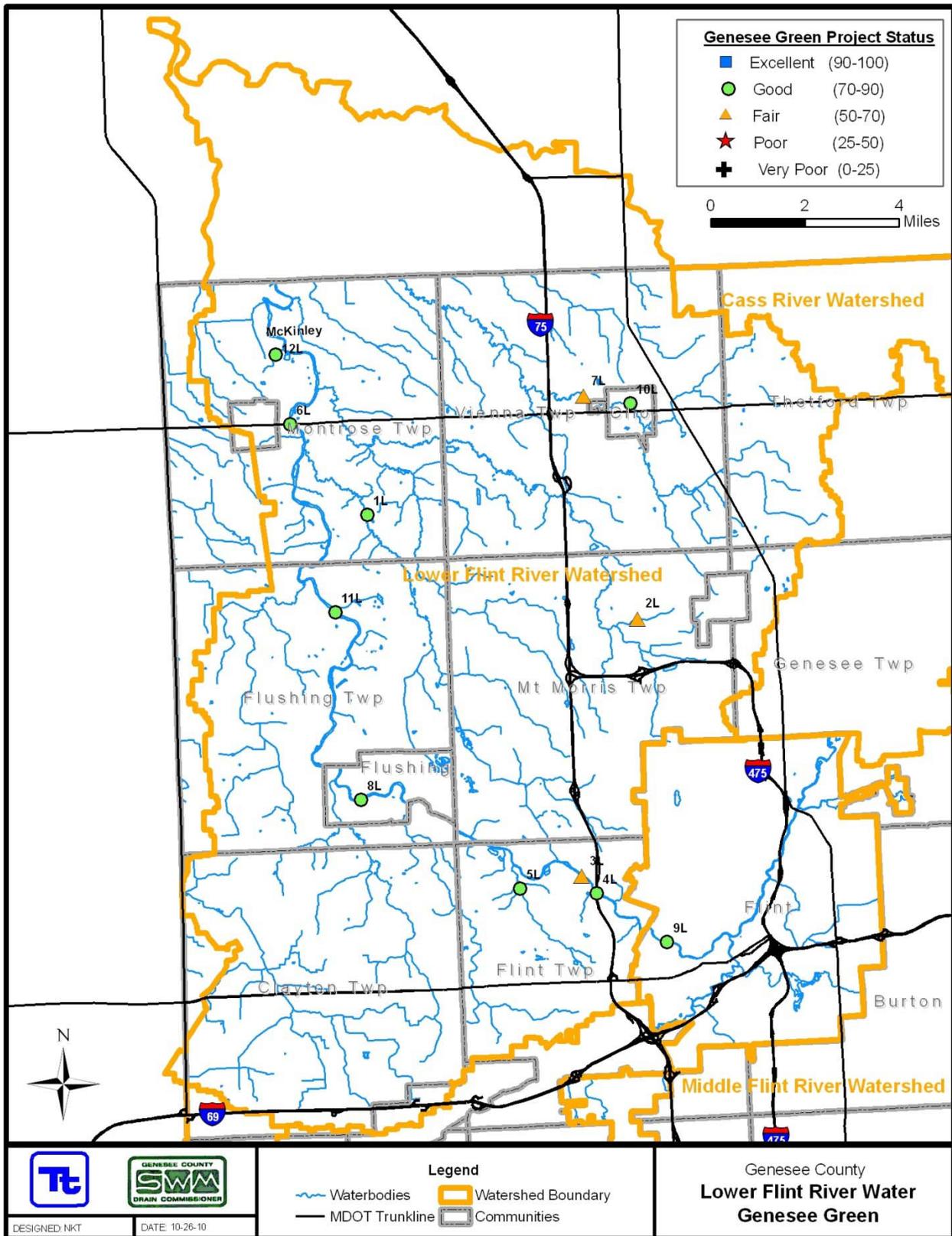


Figure 7-1: Genesee Green Results for the Lower Flint River Watershed

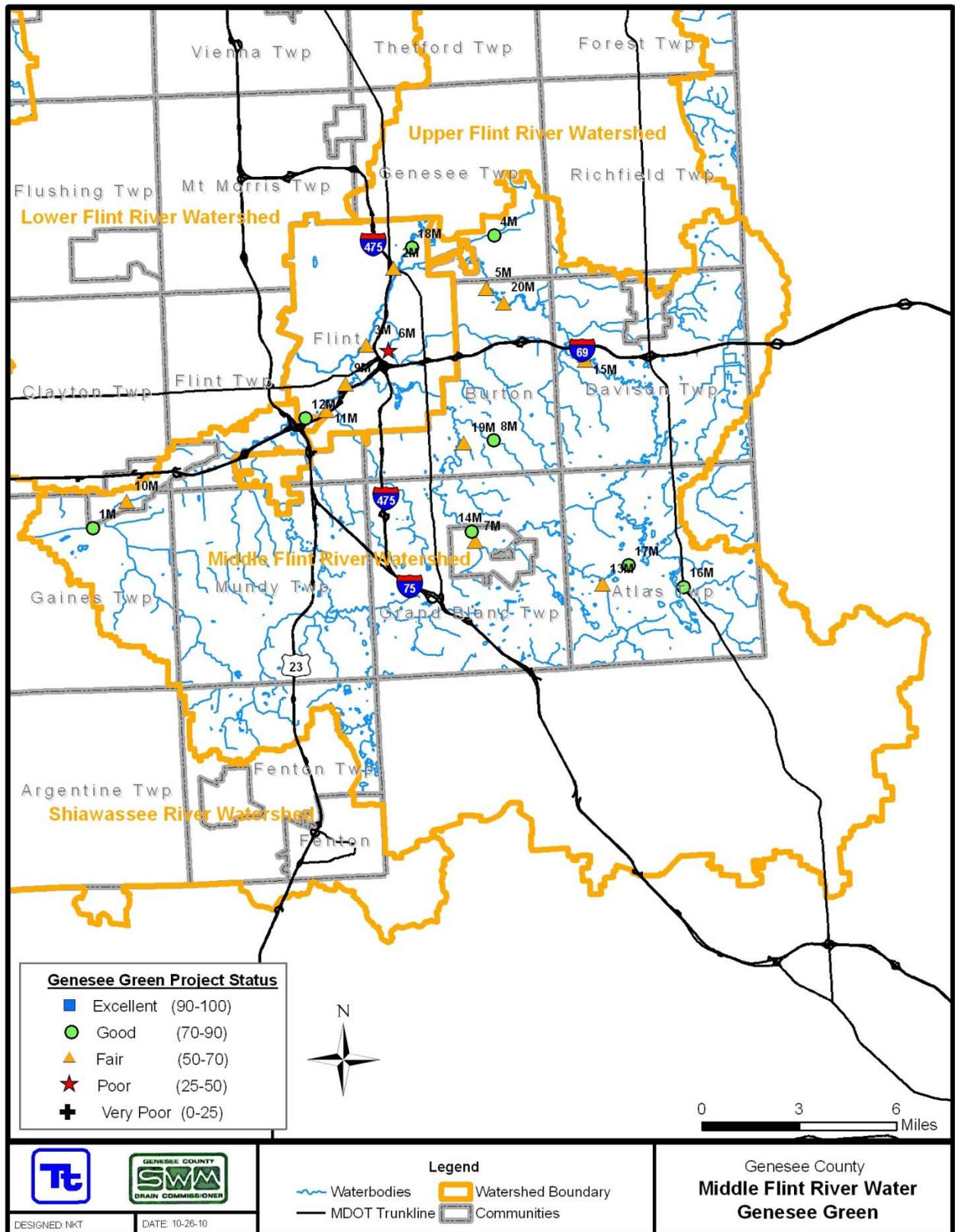


Figure 7-2: Genesee Green Results for the Middle Flint River Watershed

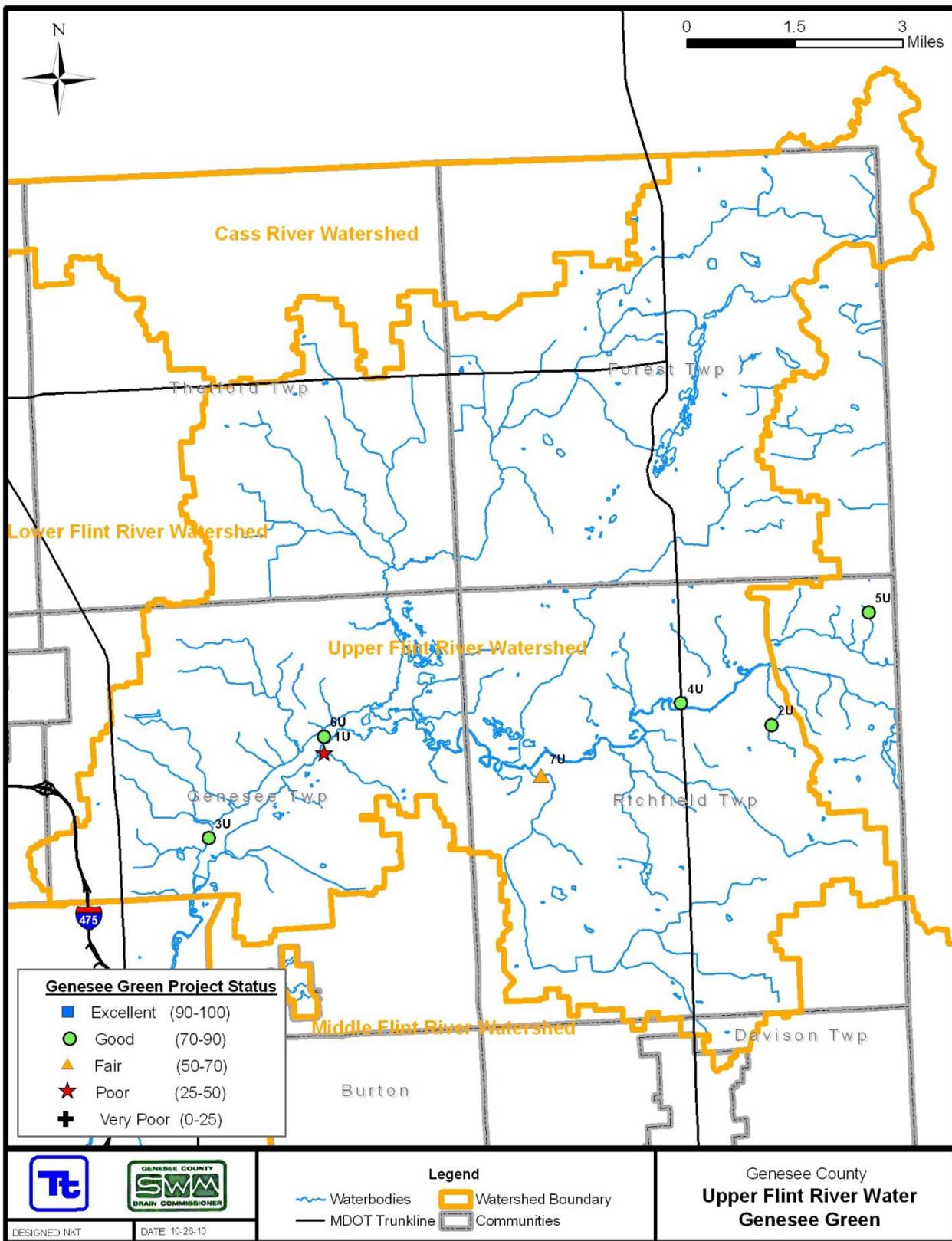


Figure 7-3: Genesee Green Results for the Upper Flint River Watershed

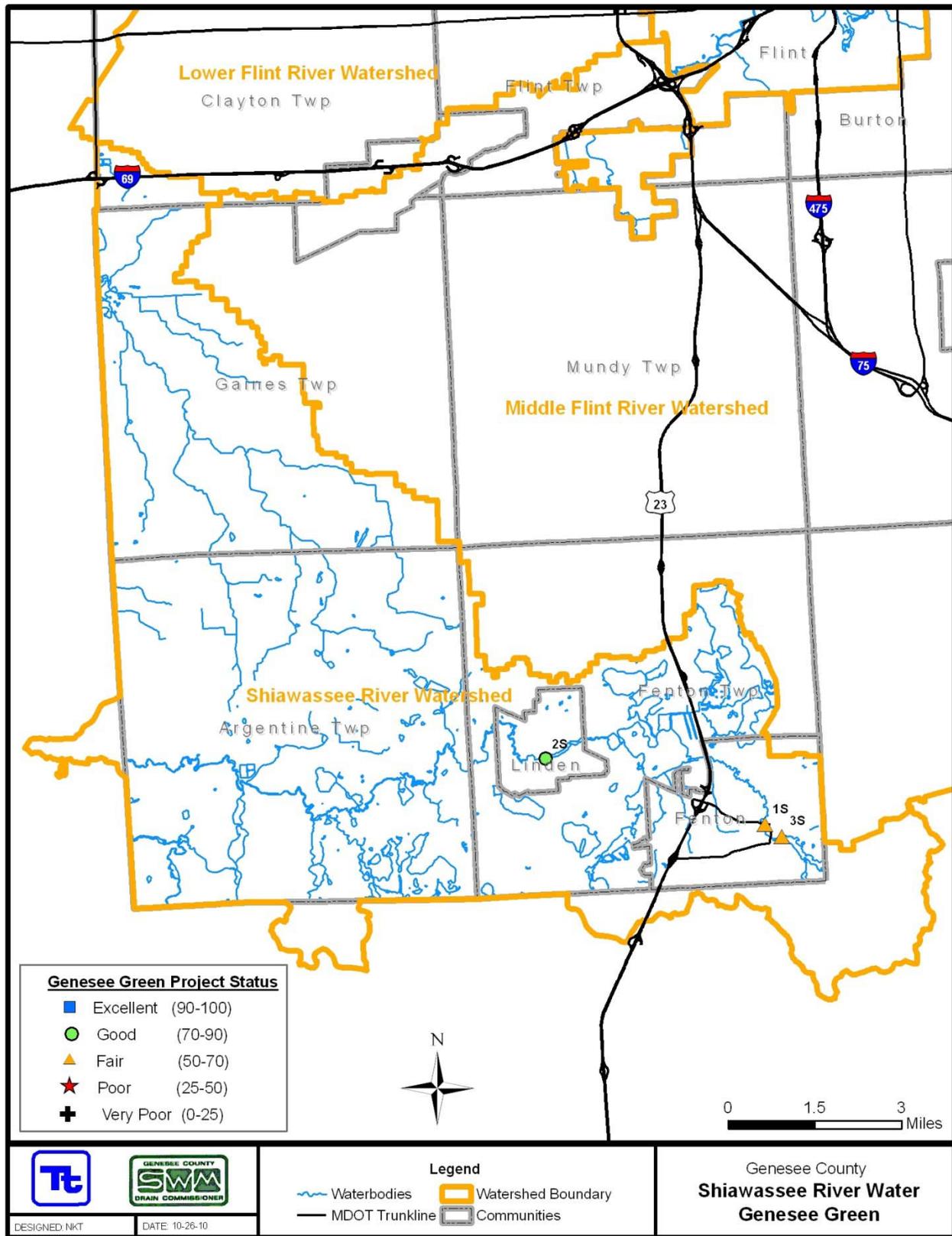


Figure 7-4: Genesee Green Results for the Shiawassee River Watershed



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 either Excellent (>48), Good (34 – 48), Fair (19 – 33.9), and Poor (<19). These scores not only give an indication of macroinvertebrate community health but also provide a good Water Quality Index value. Table 8-1 and Figures 8-1, 8-2, 8-3, and 8-4 summarize macroinvertebrate sampling results for the Lower, Middle, and Upper Flint River Watersheds and the Shiawassee River Watershed. Sites categorized as “poor” are identified in Table 8-1 with red font. Since the last report in 2008, seven new study sites have been added.

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

Table 8-1: Macroinvertebrate Study Results

ID_No	Location	Sampled Years	Water Quality Index (WQI)	Water Quality Changes Last Period/Current Period
<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).

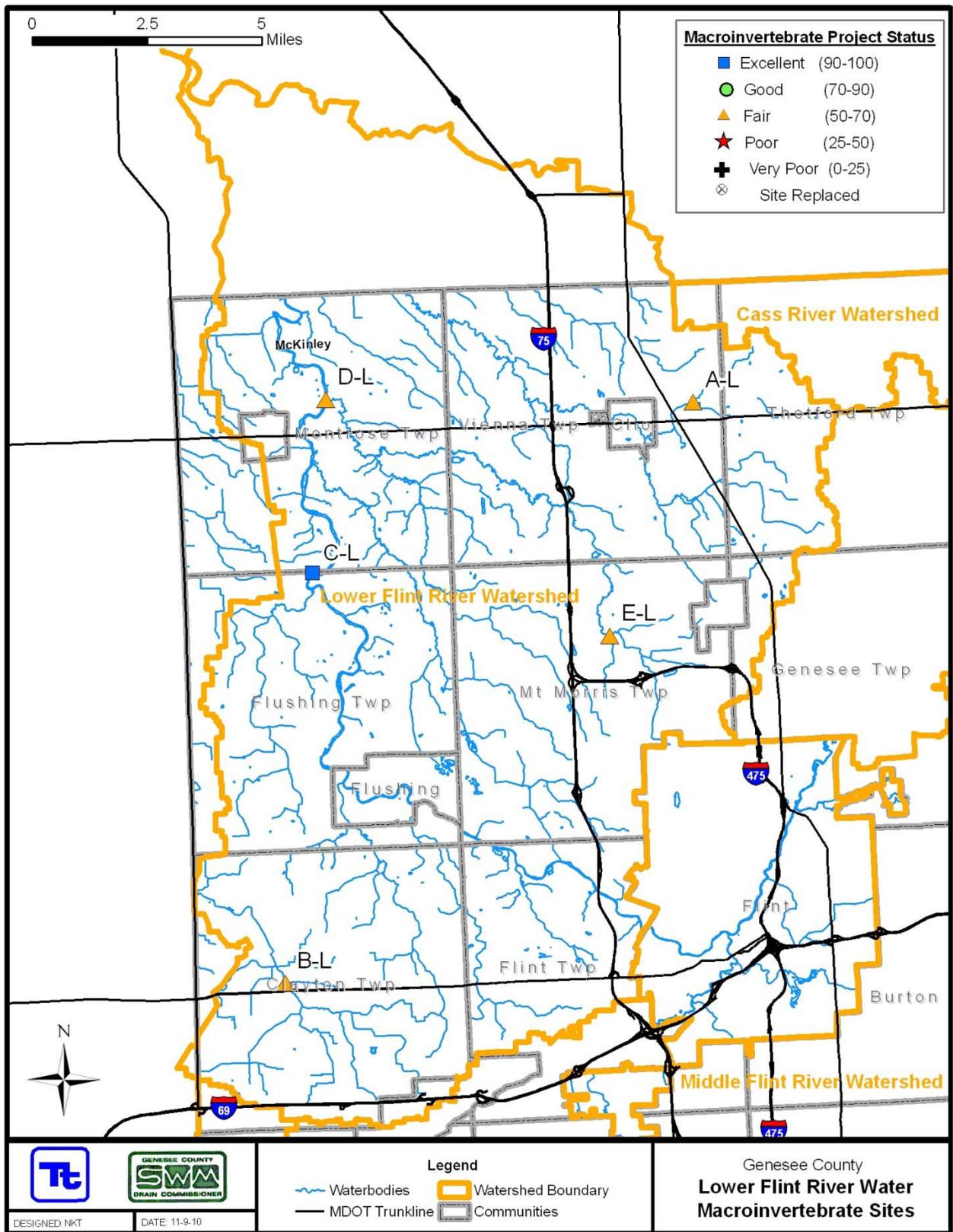


Figure 8-1: Macroinvertebrate Study Results for the Lower Flint River Watershed

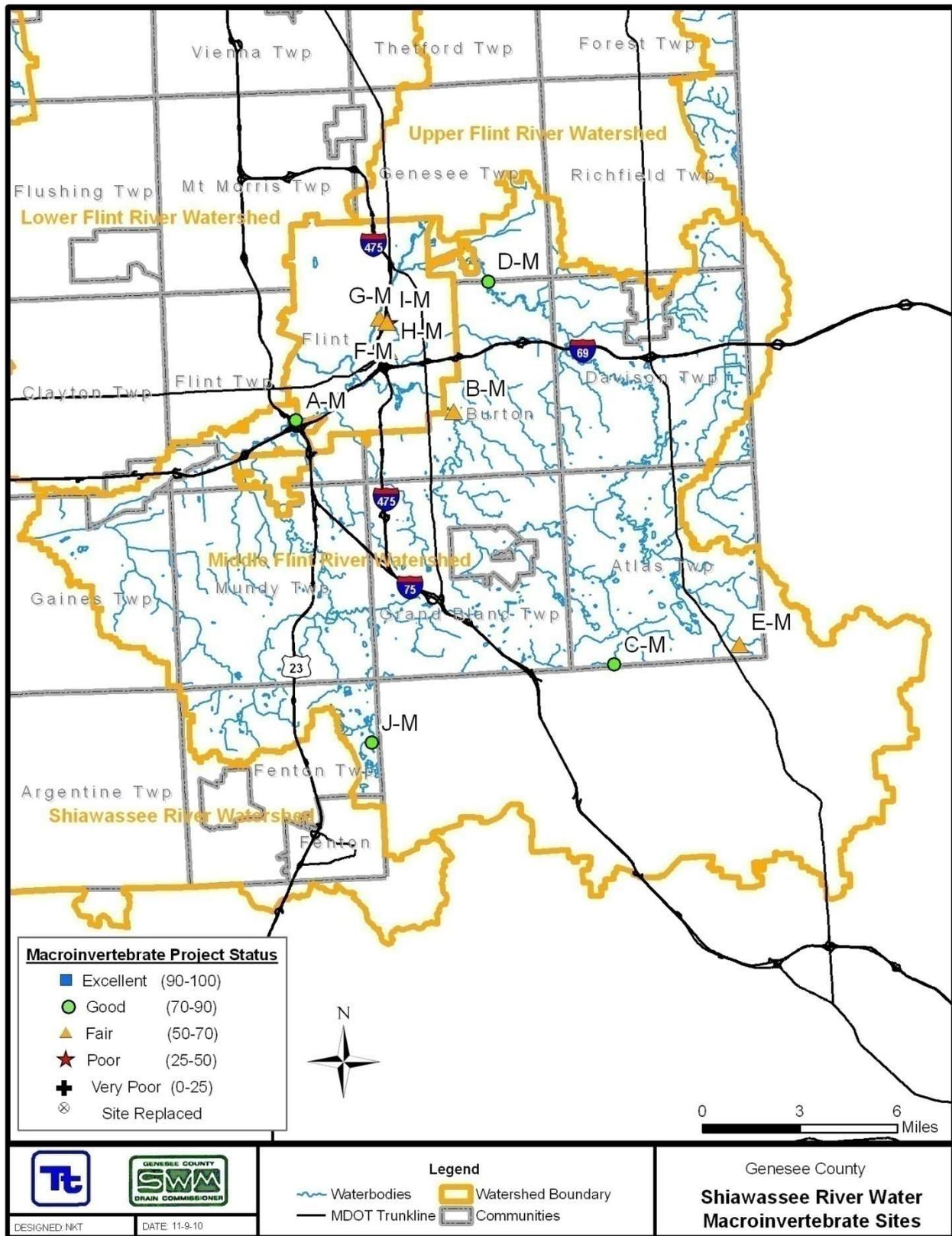


Figure 8-2: Macroinvertebrate Study Results for the Middle Flint River Watershed

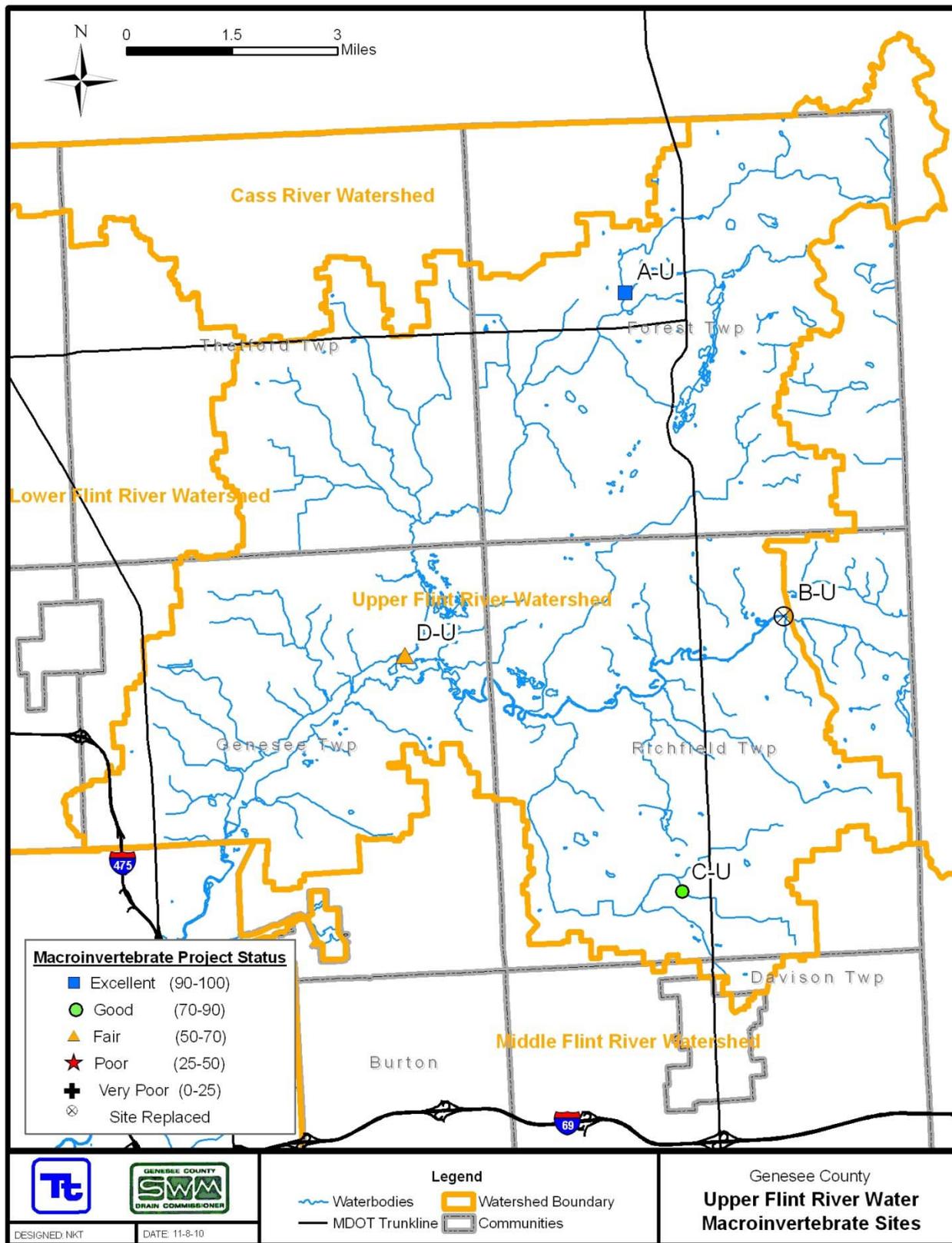


Figure 8-3: Macroinvertebrate Study Results for the Upper Flint River Watershed

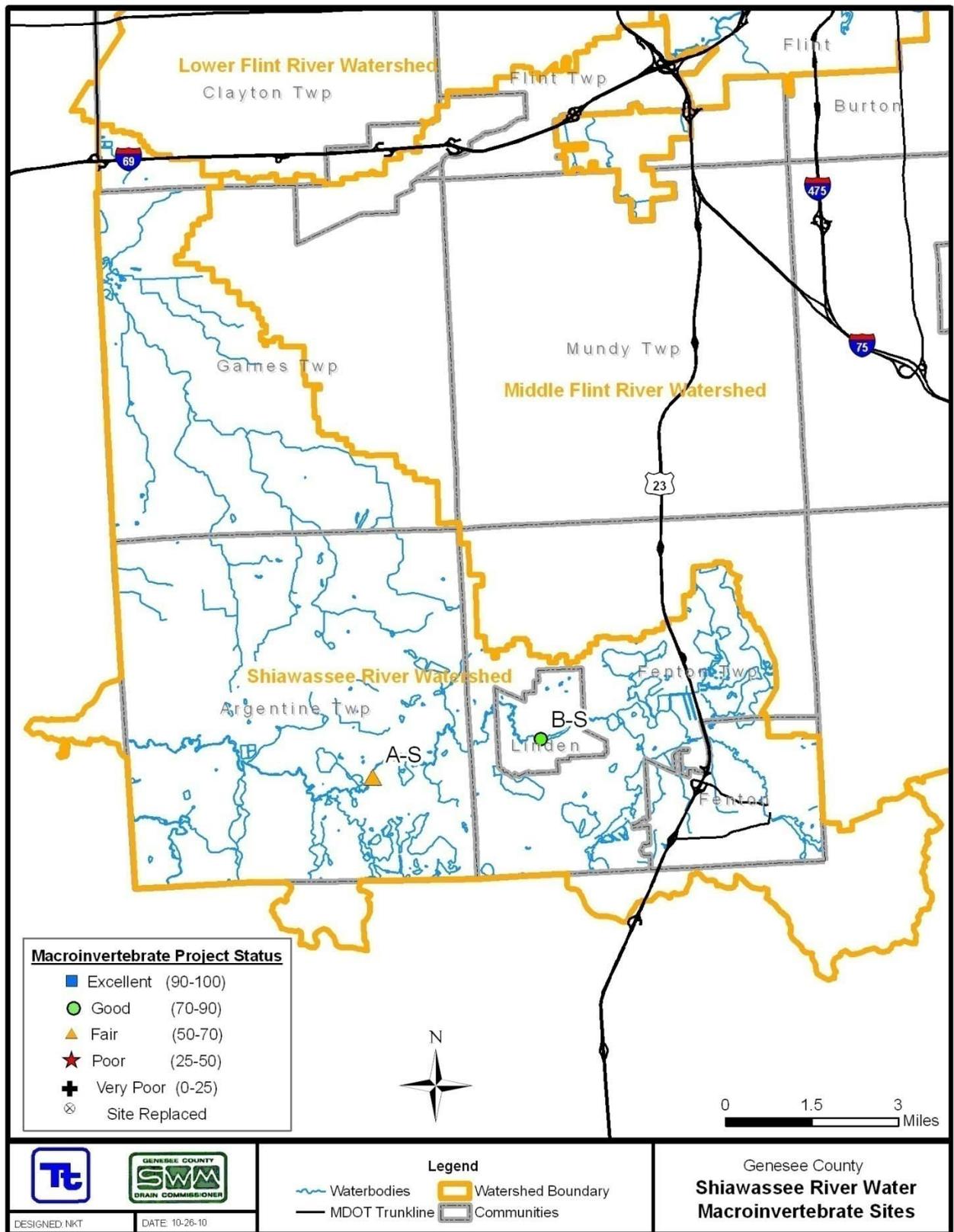


Figure 8-4: Macroinvertebrate Study Results for the Shiawassee River Watershed

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 and illicit connections identified within each watershed. Section 10 provides a list of PSDs identified during 2009-2010 IDEP field investigations. Section 10 also includes Phase II Permit application maps and PSD tables organized by their respective municipality.

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, a sample is taken and analyzed. If the testing results warrant, the flow is tracked upstream to its source. When the pollution source is isolated, Genesee County works with the responsible party to eliminate the discharge.

During 2009-2010, IDEP field investigations were conducted in the following four communities:

- **City of Davison**
- **Davison Township**
- **City of Burton**
- **City of Grand Blanc**

Sites owned by the **Genesee County Drain Commission (GCDC)** were also investigated during the reporting period.

Field investigations during this period uncovered 3 illicit connections or discharges including one PSD under the GCDC authority and two PSDs in the City of Davison. A total of 9 sites require further upstream investigation to locate or confirm illicit discharges.

Follow-up work was done on two sites in the Lower Flint River Watershed and one site in the Upper Flint River Watershed to confirm the removal of illicit connections. Details on these outfalls under Follow-up Investigations from Past Permit.

City of Davison

In 2009-2010, 62 IDEP investigations were conducted in the City of Davison. During this period, two illicit discharges were discovered. One illicit discharge, a direct connection from the sanitary sewer to a GCDC drain at Bay St. and JKF St., was removed. The second illicit discharge at outfall 7810506 (in front of Sterling House Assisted Living at 432 Clark St.) requires further upstream investigation to find the source of the contamination.

Two other outfalls in the City of Davison were also found to require further investigation. Outfall 7803760 was inundated at the time it was investigated and outfall 7810505 could not be seen in the manhole from street level. Both these outfalls require further upstream investigation to find the next access point.

Davison Township

In 2009-2010, 3 IDEP investigations were conducted in Davison Township. No illicit discharges were found in the township during this reporting period.

City of Burton

In 2009-2010, 18 IDEP investigations were conducted in the City of Burton. No illicit discharges were found in the city during this reporting period.

City of Grand Blanc

In 2009-2010, 49 IDEP investigations were conducted in the City of Grand Blanc. Two outfalls, 6715004 and 6715516 require further investigation. The investigation of outfall 6715004 at the crossing of Woodbridge St. and Thread Creek found E. coli levels above 10,000 colonies/100 ml sample. Outfall 6715516, in the greenbelt on the east side of Saginaw St. south of Perry Rd. also had high levels of E. coli (610,000 colonies/100ml sample) and requires upstream investigation to find the source.

GCDC

In 2009-2010, 54 IDEP investigations were conducted at outfalls belonging to GCDC. Of the outfalls investigated, 6 require further upstream investigation. Outfall 7625251 (100 feet north of Hemphill Rd. at the Carman Drain/Hemphill Rd. crossing) had E. coli results >10,000 colonies per 100ml sample. Outfalls 6610007 (Sherwood Drain south of Maple Rd.), 6705014 (Gibson Drain at Wishing Well St.), 6705018 (Gibson Drain at Russell St.), 6705501 (Gibson Drain south of Russell St.), and 6706264 (Gibson Drain at Sandlewood St.) all had E. coli results above the action level and require further upstream investigation. Outfall 7731007 (Carman Drain at Scottwood Ave.) was confirmed to be an illicit discharge and is currently being investigated by GCDC.

Follow-up Investigations from Past Permit

During 2009-10, Tetra Tech assisted GCDC in follow up investigations of several confirmed illicit discharges. In the Lower Flint River Watershed, a final inspection confirmed that the illicit discharge at outfall 8527698 (4359 Seymour Rd.) had been removed. At outfall 8632011 (Mattis Auto Wash, 5279 W. Pierson Rd.), an inspection confirmed that the business owner was working to remove the illicit discharge. In the Upper Flint River Watershed, a final inspection at outfall 9735251 (5402 Dodge Rd.) confirmed that a new drain field had been installed and the illicit discharge had been removed. At outfall 8833003 (Subd' drainage), follow-up investigation eliminated houses as source of E. coli and evidence of animal waste – no further investigation. In the Middle Flint River Watershed, a final inspection confirmed that the illicit discharge at outfall 6502454 (5045 Fairchild Rd.) had been removed. At outfall 7803002 (247 Adams St.), follow-up testing eliminated houses as source of E. coli – no further investigation. At outfall 6709001 (Al-Serra Auto), an inspection confirmed that the business owner had rerouted sanitary line illicit discharge removed. In the Shiawassee River Watershed, at outfall 5619512 (Shiawassee Shore Park), follow-up testing for surfactants did not result in action levels, isolated incident – no further investigation. Throughout Genesee County other outfalls that require follow up are being pursued. When an outfall is confirmed or eliminated a letter is sent to all the appropriate agencies including the MDNRE.

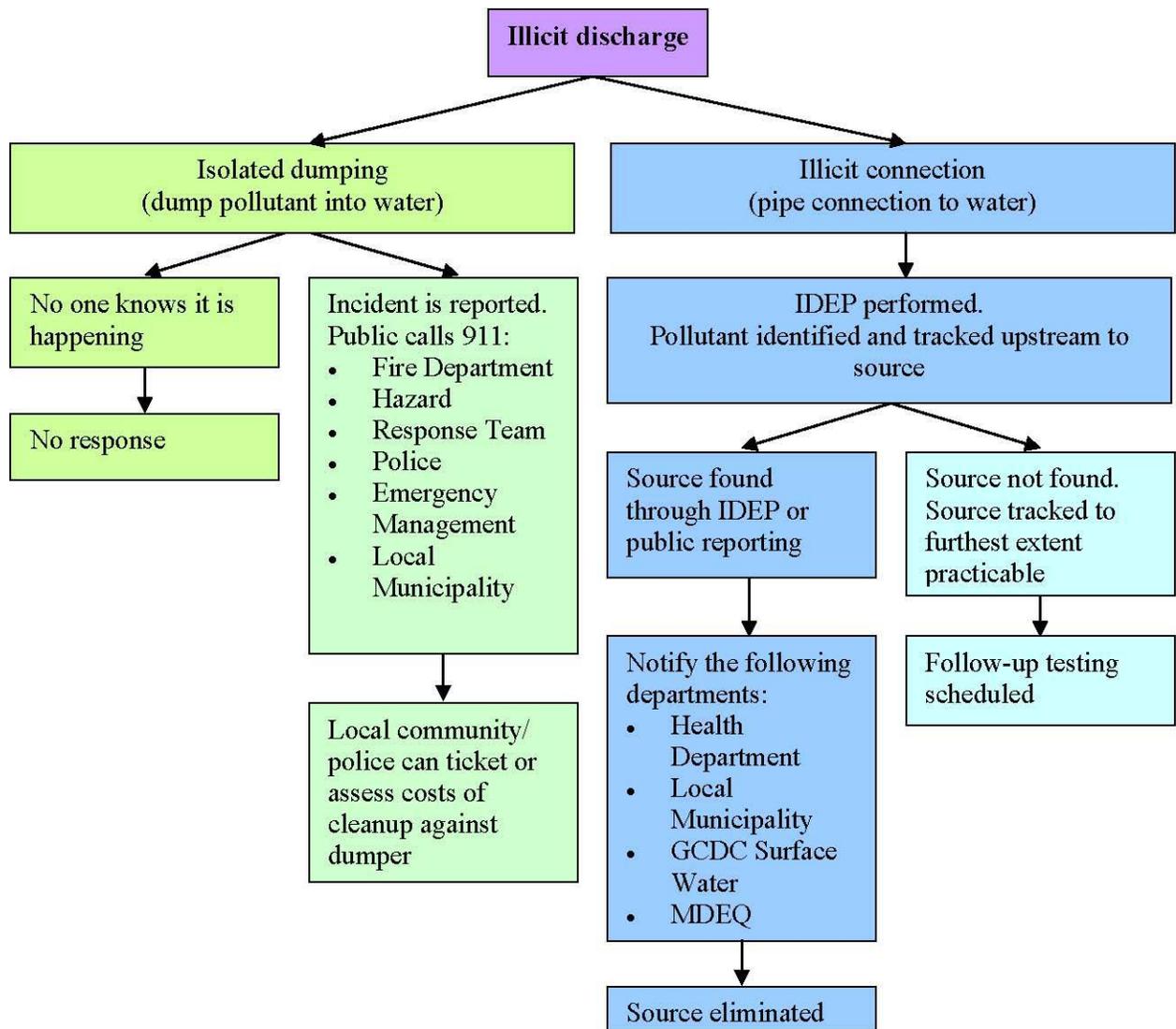


Figure 9-1: Illicit Discharge Notification System Process

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 Burton
- City of Clio
- City of Davison
- City of Fenton
- City of Flushing
- City of Grand Blanc
- City of Linden
- City of Mt. Morris
- City of Swartz Creek
- Davison Township
- Fenton Township
- Flint Charter Township
- Flushing Charter Township
- Genesee Charter Township
- Genesee County Drain Comm.
- Grand Blanc Township
- Mt. Morris Charter Township
- Mundy Charter Township
- Vienna Township

In 2010, investigations began on PSD points in the cities of Burton, Davison, and Grand Blanc as well as Davison Township. PSD points owned by GCDC were also investigated. The following tables and figures show the outfalls investigated. The section concludes with a summary of the follow-up investigation undertaken in 2009-2010.

Table 10-1: GCDC Known Outfalls Investigated in 2010

Point Discharge ID#	Ownership	Outlets To	Year Investigated
6516543	GCDC 0060	GCDC 0175	2010
6520760	GCDC 0133	GCDC0984	2010
6524002	GCDC 0277	GCDC 0141	2010
6524003	GCDC 0038	GCDC 0141	2010
6527501	GCDC 0846	GCDC 0193	
6527503	GCDC	GCDC 0193	
6527752	GCDC 1149	GCDC 0193	
6531751	GCDC 0077	GCDC 0077	2010
6532251	GCDC 0664	GCDC 0148	2010
6532753	GCDC 0215	GCDC 0148	2010
6535752	GCDC 0193	GCDC 0193	
6601006	GC- CA Sch	GCDC 0162	Reinvestigate
6601007	GCDC 0512	GCDC 0162	Reinvestigate
6601008	GC- CA Sch	GCDC 0162	Reinvestigate
6601009	GC- CA Sch	GCDC 0162	Reinvestigate
6601251	GCDC	GCDC 0162	2010
6601253	GCRC	GCDC 0162	2010
6601254	GCRC	GCDC 0162	2010
6601757	GCDC 1236	GCDC 0162	2010
6612259	GCDC 0037	GCDC 0162	
6704010	GCDC 0052	Nat Watercourse	2010
6704254	GCRC	GCDC 0408	2010
6705001	GCDC 0912	GCDC 0423	2010
6705004	GCDC 0912	GCDC 0423	2010
6705005	GCDC 0912	GCDC 0423	2010
6705007	GCDC 0912	GCDC 0423	2010
6705013	GCDC 0912	GCDC 0423	2010
6705014	GCDC 0912	GCDC 0423	2010
6705015	GCDC 0912	GCDC 0423	2010
6705016	GCDC 0912	GCDC 0423	2010
6705017	GCDC 0912	GCDC 0423	2010
6705018	GCDC 0912	GCDC 0423	2010
6705019	GCDC 0912	GCDC 0423	2010
6705020	GCDC 0066	GCDC 0423	2010
6705021	GCDC 0912	GCDC 0423	2010
6705501	GCDC 1463	GCDC 0423	2010
6706264	GCDC 0912	GCDC 0547	2010
6706265	GCDC 0607	GCDC 0547	2010
6706266	GCDC 1442	GCDC 0423	2010
7625251	GCDC	GCDC 0423	2010
7625751	GCDC 0090	GCDC0423	2010
7625755	GCDC 0090	GCDC0423	2010

7625757	GCDC	GCDC 0423	2010
7625758	GCDC 0348	GCDC 0423	2010
7625760	GCDC 0515	GCDC 0423	2010
7636751	GCDC	GCDC 0162	2010
7636753	GCDC	GCDC 0162	2010
7710005	GCDC 0048	GCDC 0017	2010
7710012	GCDC 0048	GCDC 0017	
7714012	GCDC 0071	GCDC 0042	2010
7714016	GCDC 0042	GCDC 0042	2010
7715261	GCDC 0177	GCDC 0017	2010
7715757	GCDC 0046	GCDC 0017	2010
7715761	GCDC 0357	GCDC 0017	2010
7721251	GCDC 0119	GCDC 0344	2010
7722003	GCDC 0344	GCDC 0344	2010
7728257	GCDC 0086	Nat Watercourse	2010
7731007	GCDC 0176	GCDC 0423	2010
7731524	GCDC	GCDC 0162	2010
7731538	GCDC	GCDC 0423	2010

Figure 10-1: GCDC Known Outfalls Investigated in 2010

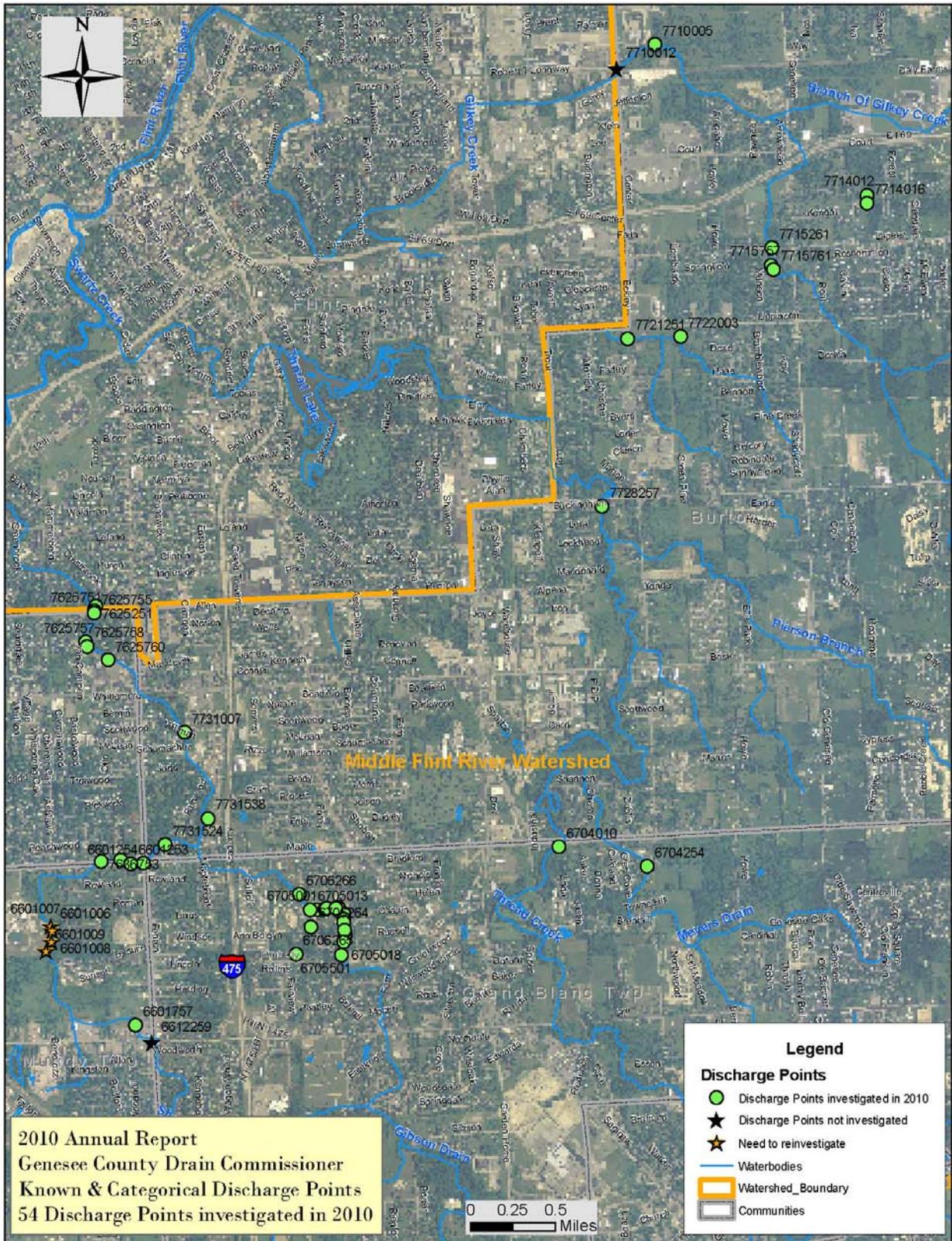


Table 10-2: City of Burton Known Outfalls Investigated in 2010

Point Discharge ID#	Ownership	Outlets To	Year Investigated
7715258	C of Burton	GCDC 0017	2010
7715263	C of Burton	GCDC 0017	2010
7721252	C of Burton	GCDC 0344	2010
7721253	C of Burton	GCDC 0119	2010
7721756	C of Burton	Thread Creek	2010
7721757	C of Burton	GCDC 0119	2010
7722001	C of Burton	GCDC 0344	2010
7722002	C of Burton	GCDC 0344	2010
7727008	C of Burton	GCDC0086	2010
7727009	C of Burton	GCDC0086	2010
7728251	C of Burton	Thread Creek	2010
7728252	C of Burton	Thread Creek	2010
7729501	C of Burton	GCDC 0320	2010
7730754	C of Burton	GCDC 0145	2010
7730755	C of Burton	GCDC 0145	2010
7730756	C of Burton	GCDC 0145	2010
7730757	C of Burton	GCDC 0145	2010
7732001	C of Burton	GCDC 0145	2010

Figure 10-2: City of Burton Known Outfalls Investigated in 2010

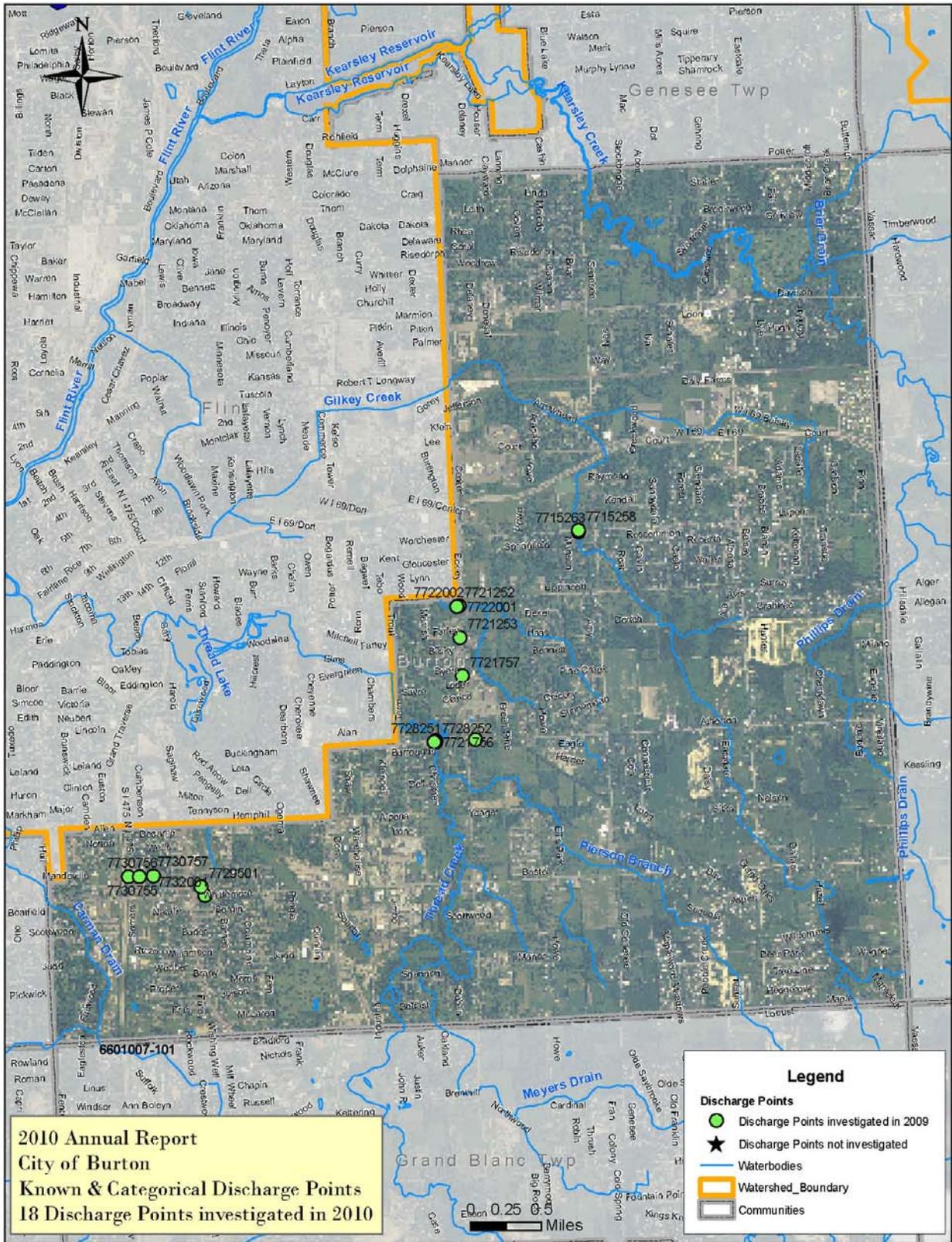


Table 10-3: City of Davison Known Outfalls Investigated in 2010

Point Discharge ID#	Ownership	Outlets To	Year Investigated	Comments
7803501	C of Davison	Wetland	2009	
7803502	C of Davison	Wetland	2010	
7803503	C of Davison	GCDC 0020	2010	
7803504	C of Davison	GCDC 0020	2010	
7803760	C of Davison	Wetland	2010	
7804501	C of Davison	GCDC 0631	2009	
7804502	C of Davison	GCDC 0631	2009	
7804503	C of Davison	GCDC 0631	2009	
7804504	C of Davison	GCDC 0631	2009	
7804505	C of Davison	GCDC 0631	2009	
7804506	C of Davison	GCDC 0631	2009	
7804507	C of Davison	GCDC 0631	2010	Sanitary Sewer
7804508	C of Davison	GCDC 0428	2009	
7804509	C of Davison	GCDC 0428	2009	
7804510	C of Davison	GCDC 0428	2009	
7804511	C of Davison	GCDC 0428	2009	
7804751	C of Davison	GCDC 0428	2009	
7804752	C of Davison	GCDC 0428	2009	
7804753	C of Davison	GCDC 0428	2009	
7804754	C of Davison	GCDC 0428	2009	
7804755	C of Davison	GCDC 0428	2009	
7804756	C of Davison	GCDC 0428	2009	
7804757	C of Davison	GCDC 0524	2009	
7804758	C of Davison	GCDC 0524	2009	
7804759	C of Davison	GCDC 0524	2009	
7804760	C of Davison	GCDC 0428	2009	
7804761	C of Davison	GCDC 0428	2009	
7804762	C of Davison	GCDC 0631	2009	
7804763	C of Davison	GCDC 0631	2010	Sanitary Sewer
7804764	C of Davison	GCDC 0631	2010	
7809251	C of Davison	GCDC0704	2009	
7809263	C of Davison	GCDC 0704	2009	
7809291	C of Davison	GCDC 0631	2009	
7809292	C of Davison	GCDC 0631	2009	
7809293	C of Davison	GCDC 0631	2009	
7809294	C of Davison	GCDC 0631	2009	

7809295	C of Davison	GCDC 0020	2009	
7809296	C of Davison	GCDC 0631	2009	
7809298	C of Davison	GCDC 0020	2009	
7809300	C of Davison	GCDC 0020	2009	
7809301	C of Davison	GCDC 0704		
7809302	C of Davison	GCDC 0704		
7809524	C of Davison	GCDC 0704	2009	
7809751	C of Davison	GCDC 0614	2009	
7809752	C of Davison	GCDC 0704	2009	
7809754	C of Davison	GCDC 0704	2009	
7809756	C of Davison	GCDC 0704	2009	
7809758	C of Davison	GCDC 0704	2009	
7809780	C of Davison	GCDC 0704	2009	
7809781	C of Davison	GCDC 0704	2009	
7810020	C of Davison	GCDC 0704	2009	
7810024	C of Davison	GCDC 0704	2009	
7810027	C of Davison	GCDC 0704	2009	
7810028	C of Davison	GCDC 0704	2009	
7810030	C of Davison	GCDC 0704	2009	
7810031	C of Davison	GCDC 1548	2009	
7810042	C of Davison	GCDC 0091	2009	
7810043	C of Davison	GCDC 0091	2009	
7810044	C of Davison	GCDC 0091	2009	
7810045	C of Davison	GCDC 0704		
7810046	C of Davison	GCDC 0704	2009	
7810047	C of Davison	GCDC 0704	2009	
7810262	C of Davison	GCDC 1548	2010	
7810501	C of Davison	GCDC 0091	2009	
7810502	C of Davison	GCDC 0091	2009	
7810503	C of Davison	GCDC 0091	2009	
7810504	C of Davison	GCDC 0091	2009	
7810505	C of Davison	GCDC 0091	2009	
7810506	C of Davison	GCDC 0091	2009	

Figure 10-3: City of Davison Known Outfalls Investigated in 2010

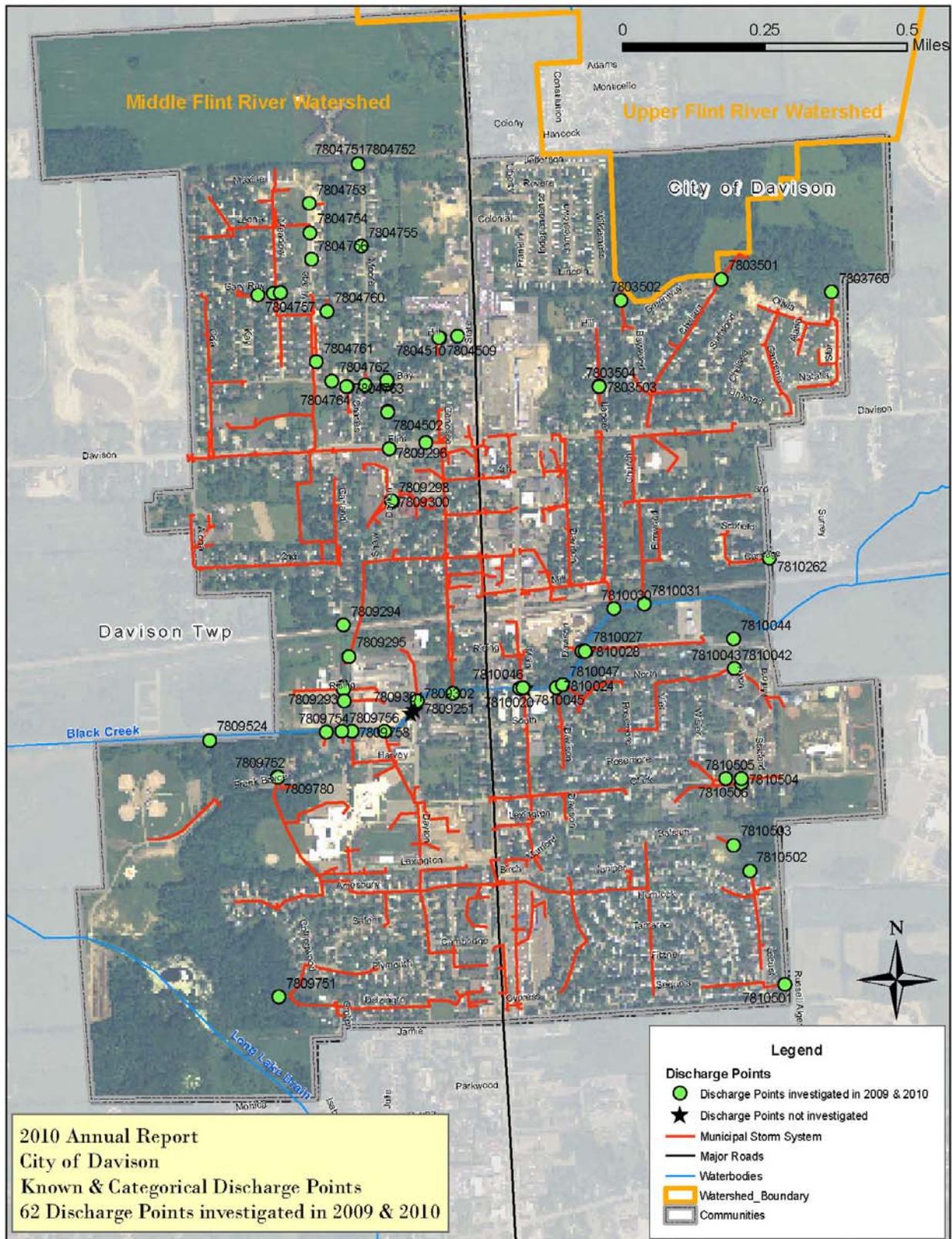


Table 10-4: Davison Township Known Outfalls Investigated in 2010

Point Discharge ID#	Ownership	Outlets To	Year Investigated
7808001	Davison Twp	GCDC 0704	2009
7815001	Davison Twp	MDOT	2009
Airport	Davison Twp	GCDC 0659	2009

Figure 10-4: Davison Township Known Outfalls Investigated in 2010

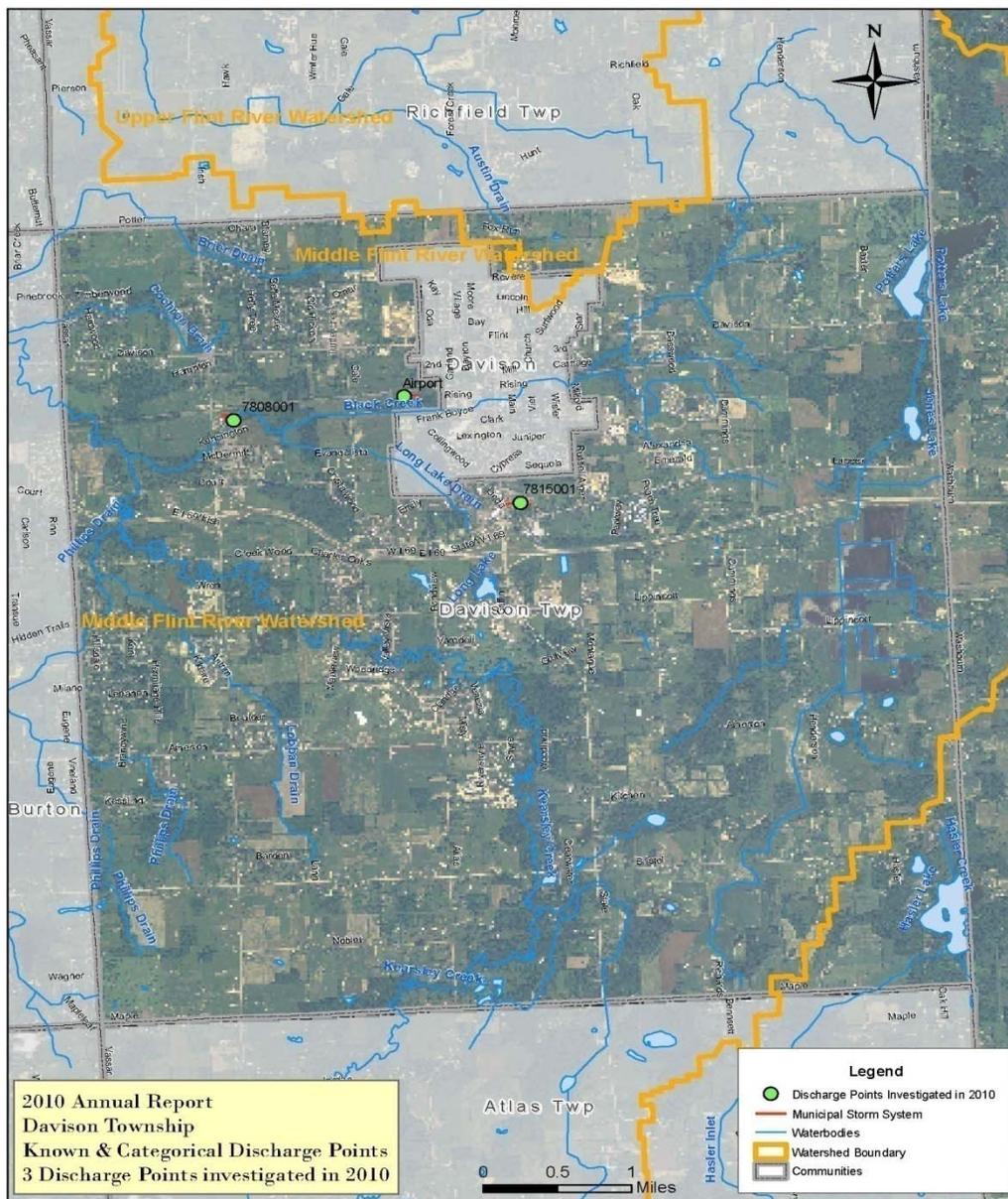


Table 10-5: City of Grand Blanc Known Outfalls Investigated in 2010

City of Grand Blanc			
Point Discharge ID#	Ownership	Outlets To	Year Investigated
6709750	C of GrandB	Rail Road	2009
6710504	C of GrandB	Nat Watercourse	2009
6710506	C of GrandB	Nat Watercourse	2009
6710508	C of GrandB	Nat Watercourse	2009
6710512	C of GrandB	Nat Watercourse	2009
6710513	C of GrandB	Nat Watercourse	2009
6710514	C of GrandB	Nat Watercourse	2009
6710520	C of GrandB	Nat Watercourse	2009
6710521	C of GrandB	Nat Watercourse	
6711751	C of GrandB	Nat Watercourse	2009
6711756	C of GrandB	Nat Watercourse	2009
6714009	C of GrandB	GCDC 0007	
6714010	C of GrandB	GCRC	
6714253	C of GrandB	GCDC 0007	2009
6714256	C of GrandB	GCDC 0007	2009
6714501	C of GrandB	Nat Watercourse	2009
6714753	C of GrandB	Nat Watercourse	2009
6714754	C of GrandB	Nat Watercourse	2009
6714755	C of GrandB	Nat Watercourse	2009
6714756	C of GrandB	GCDC 0007	
6714757	C of GrandB	GCDC 0007	2009
6715003	C of GrandB	Nat Watercourse	2009
6715004	C of GrandB	Nat Watercourse	2009
6715005	C of GrandB	Nat Watercourse	2009
6715010	C of GrandB	GCDC 1061	2009
6715252	C of GrandB	Nat Watercourse	
6715257	C of GrandB	Nat Watercourse	2009
6715262	C of GrandB	Nat Watercourse	2009
6715263	C of GrandB	Nat Watercourse	2009
6715264	C of GrandB	Nat Watercourse	2009
6715265	C of GrandB	Nat Watercourse	2009
6715504	C of GrandB	GCDC 0385	2009
6715505	C of GrandB	GCDC 0385	2009
6715506	C of GrandB	GCDC 0385	2009
6715510	C of GrandB	GCDC 0710	2009
6715511	C of GrandB	GCDC 0710	2009
6715512	C of GrandB	GCDC 0710	2009
6715513	C of GrandB	GCDC 0710	2009
6715514	C of GrandB	GCDC 0710	2009
6715515	C of GrandB	GCDC 0385	2009
6715516	C of GrandB	GCDC 0385	2009
6716250	C of GrandB	GCDC 1061	

6716251	C of GrandB	GCDC 1061	
6716252	C of GrandB	GCDC 1061	
6716253	C of GrandB	GCDC 1061	
6716254	C of GrandB	GCDC 1061	2009
6716255	C of GrandB	RR	2009
6716256	C of GrandB	RR	2009
6716257	C of GrandB	RR	2009
6716751	C of GrandB	GCDC 0385	2009
6716760	C of GrandB	GCDC 0385	2009
6716761	C of GrandB	GCDC 1022	2009
6716762	C of GrandB	GCDC 1022	2009
6716763	C of GrandB	GCDC 0385	2009
6716764	C of GrandB	GCDC 0385	2009
6722251	C of GrandB	GCDC 0710	2009
6723004	C of GrandB	Nat Watercourse	2009
6723005	C of GrandB	Nat Watercourse	2009

Figure 10-5: City of Grand Blanc Known Outfalls Investigated in 2010

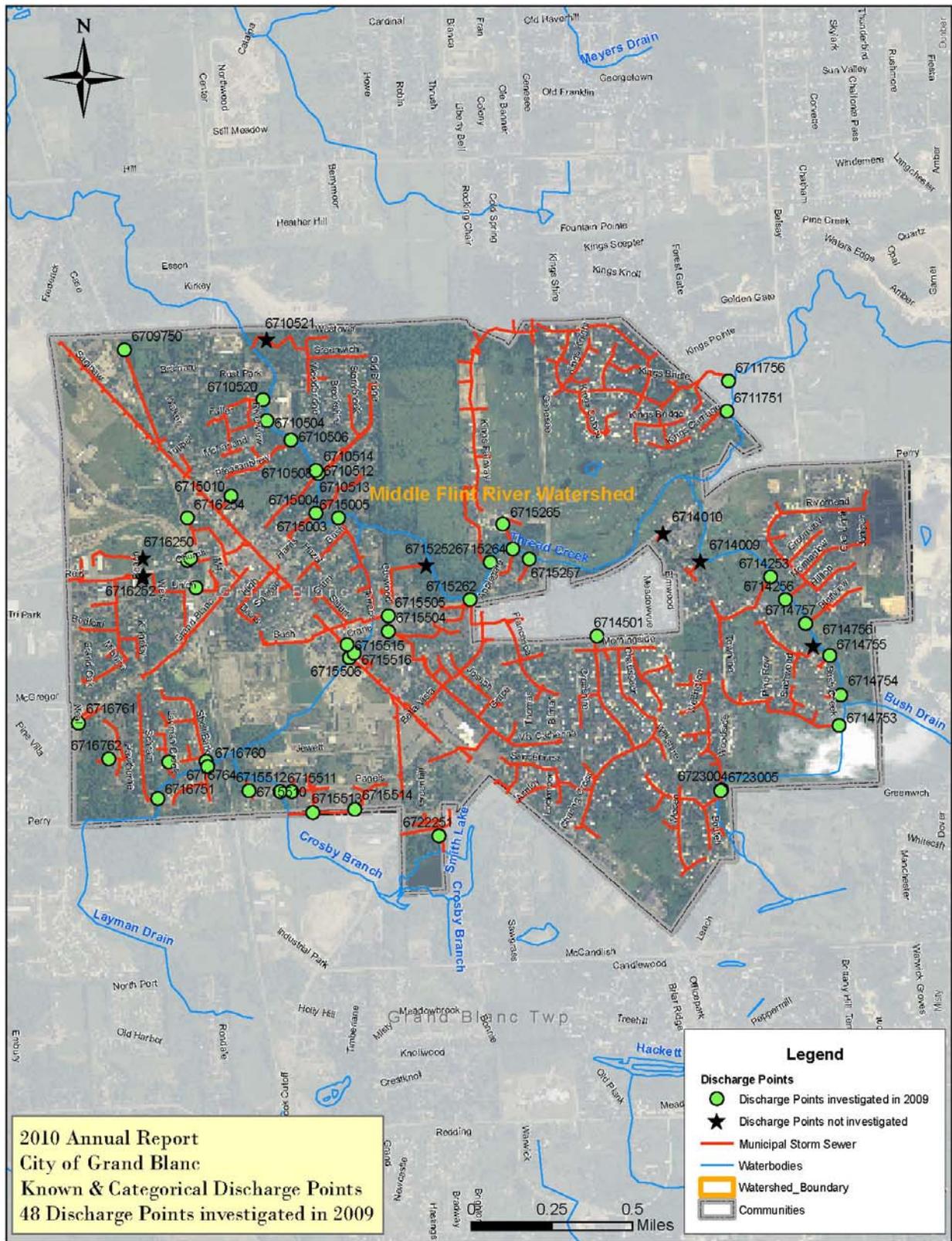
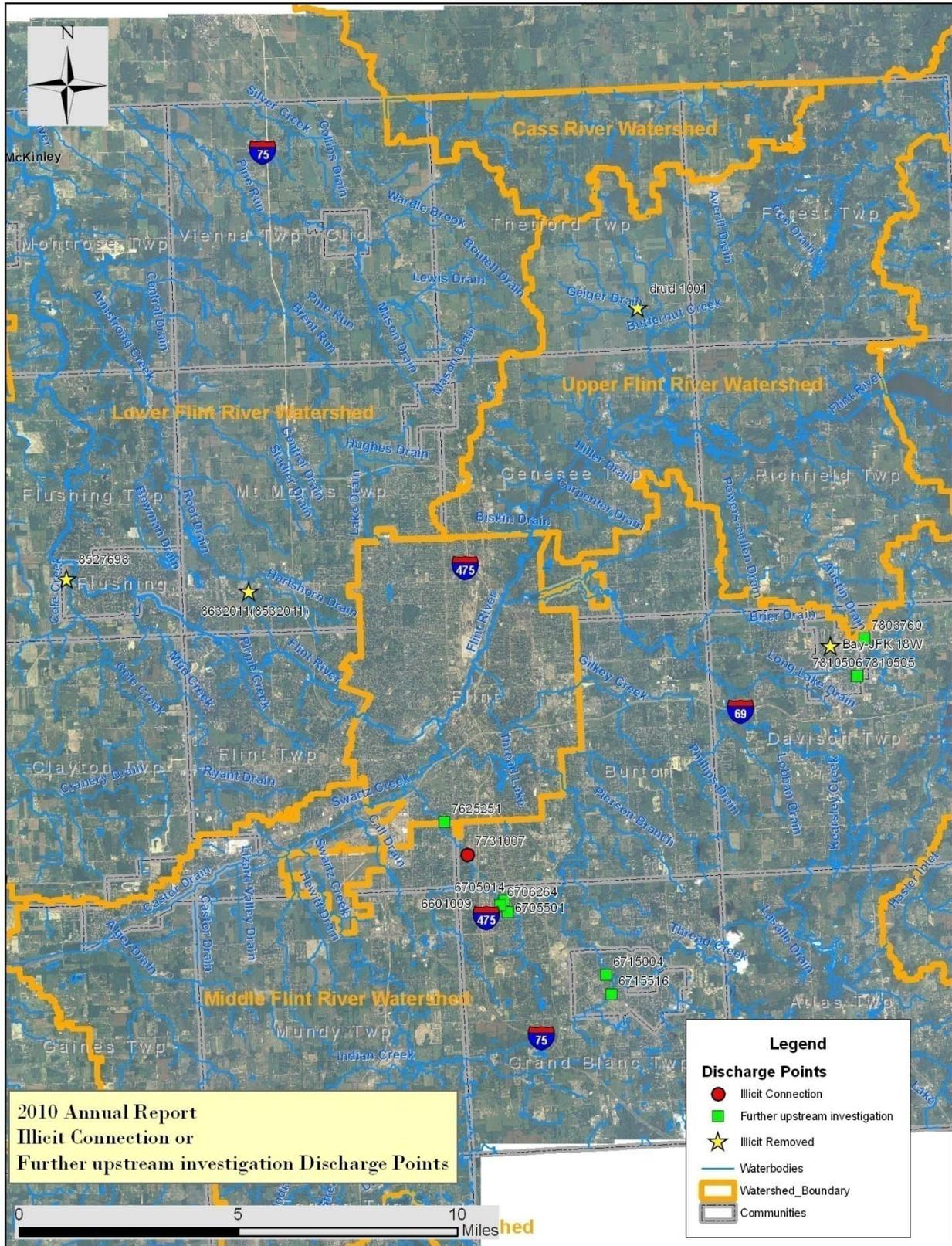


Figure 10-6: Illicit Discharges Requiring Further Investigation



The Items from figure 10-6 are those outfalls discussed in Section 9

APPENDIX A: PUBLIC EDUCATION MATERIAL

PEP Plan
FRWC Articles on Our Water Programs
Good Housekeeping Training Attendance Lists
Fair Booth Data
Riparian Brochure
Homeowner Septic Brochure
Conservation District Presentation Breakdown
FRWC reporting on Our Water Programs

Non Phase II water education efforts going on in Genesee County

Genesee County Parks and Rec. promote and hold education efforts all over the county throughout the year. Many are on the water, near the water or about the water building stewardship.

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

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

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

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

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

The Watershed Reporter

Welcome Spring!

From Executive Director Rebecca Fedewa

As I'm writing this, the snow is falling and Mr. Woodchuck (I'm mad at him, so today he is no Groundhog) has predicted more winter. But spring is tantalizingly close, and we're already making plans for all the fun and educational spring programs you've come to know and love at the Flint River Watershed Coalition.



Rebecca Fedewa

Like many, I often think of Spring as a time of renewal, change, and growth. Much like last year, we have some big changes

coming to the FRWC and the Flint River Watershed.

First, we bid a fond farewell to two outstanding board members. **Bob Carlyon** joined the FRWC back in 1998, and he has served in a variety of roles including the chair of our finance committee. Bob also is a frequent volunteer in a wide array of FRWC events. We wish Bob a wonderful retirement.

Sara McDonnell joined our board in 2007, and immediately took on a number of leadership positions as Treasurer and as co-chair of our Clean Up committee. Her expertise as a Program Coordinator with the Center for Applied Environmental Research at UM-Flint was invaluable to our organization. We are very fortunate that Sara is going to stay involved with the FRWC in a number of ways, including her leadership on the Clean Up committee.

We also want to welcome our newest staff member, **Jaime Welch**, our new Program Assistant. Jaime comes to us

from Southern Lakes Parks and Recreation where she managed their information technology needs, ran a variety of programs, and staffed the front desk. Jaime will have a very similar role at the FRWC, helping us with our electronic communications and technology needs, assisting in program implementation, and helping us keep the office in some sort of order. Welcome, Jaime!

It's also a pretty exciting time for the Flint River Watershed. Locally, regionally, and even nationally, activities big and small are happening that could forever change the health and prosperity of our watershed. On a national level, stimulus spending and the proposed budget submitted by President Obama could bring unprecedented amounts of funding into the Great Lakes to protect habitat and water quality. And we are starting to see real movement at the state, regional, and national level to prevent that wily Asian Carp from entering our waterways.

Locally, we are moving toward on-the-ground solutions to habitat and water quality issues across the watershed. In Lapeer County, a broad alliance of agencies and organizations came together to begin putting the South Branch Watershed Management Plan into action. In Oakland County, our students are taking a lead role in organizing a clean up effort on the Kearsley Creek, among other activities. And in Genesee County we are getting closer to a freer flowing river in downtown Flint, an expanded trail system, and watershed management plan implementation in the Swartz Creek.

Its going to be a great year! See you on the River!



Mayfly Larva, from www.BugGuide.net

Spring = Critter Catching Time!

The FRWC invites you to have some fun helping us collect benthic macroinvertebrates, aka creek critters. Join us for a few hours this Spring on either Thursday, April 29th or Saturday, May 1st as we don our waders to gather data that helps us monitor the health of our creeks and streams. We have 34 sites in our watershed and could use your help in gathering this valuable data that is used by the FRWC, Genesee County Drain Office, and the Michigan DNRE.

This fun "get outdoors" opportunity provides a first-hand watershed experience while learning about your site's habitat. If you like making discoveries -- we have a site for you. Contact Sue Lossing at (810) 767-9491 or slossing@flinriver.org to find out more on how you can help support the benthic monitoring efforts. To see our site locations and/or past years' data, please visit our website at www.FlintRiver.org and click on Programs.



432 N. Saginaw St. Ste. 238
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.

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

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newsletter design & layout by Jon Wood

10 Questions With... FRWC Board Member Bob McAllister



Bob McAllister

1. Why are you a member of /work for/volunteer for the FRWC?
After teaching a course on Water Management, I became interested in protecting surface and ground water from misuse.
2. What FRWC programs do you participate in?
Flint River 500 and Genesee GREEN.
3. When did you first get involved in the FRWC?
I became involved about four years ago.
4. What's your favorite part of the watershed?
I enjoy watching the Flint river as it flows through Mott Park golf course.
5. What is the most interesting thing you have seen in the watershed (wildlife, garbage, someone doing something unexpected, etc.)?
I have seen people throw old tires and garbage in the Flint River. It is a disturbing sight to see.
6. What's your favorite river (any river) memory?
Sitting on a bench next to the Charles River in Boston, Massachusetts watching the fireworks on the Fourth of July.
7. What worries you most about the watershed?
I am concerned about the impact of urban runoff on water quality. Urban runoff is defined as surface runoff from an urban drainage area that reaches a body of water.
8. What gives you the most hope?
Young people are our future and they have a strong desire to live in a green America.
9. If you could change one thing to help improve the watershed, what would it be?
I would improve water quality and wildlife habitats throughout the watershed.
10. Who is your river/watershed/environmental/conservation hero?
Rachel Carson, author of "Silent Spring".

Think Spring! Use Spinning & Stationary Bike to "Get Ready"

The Friends of the Flint River Trail Steering Committee met in February to plan for the 2010 bicycling season. Our own newsletter, "River Ride" will be out in April with more details of the season – but a few pointers for your calendar AND for those really cold mornings when you need to remember that winter will come to an end "someday".

As usual, the regular Sunday rides will begin the first Sunday in May and continue through October – every Sunday – beginning at 2:00 PM from the Flint Farmers' Market. The rides are, generally, 12-17 miles in length and at a leisurely pace. "Sweeps" or support riders accompany every Sunday ride – at the end of the group – to assist with any bicycle problems. In addition to our Sunday rides, we invite riders to join us on

more vigorous Saturday rides to trails within about an hour's drive from Flint. We'll inaugurate our Saturday ride on May 15th with a nearby and relatively short ride – the Clio / Trolley Line Trail – including about three miles of a new trail opened just last year – going north to the County line and that will eventually connect to a trail in Saginaw County (and, eventually, beyond!) Subsequent Saturday rides will be on the second Saturday of each month – June through October.

Of course the success of the rides depends on clearing the trail of winter debris before the ride season really gets underway. Everyone is invited to join the Friends on Saturday, April 24th at Vietnam Veterans Park at 9:00 AM for the annual trail clean-up. A hot-dog lunch will follow.

River Views

Lois B. Robbins

In 2006, with a grant from the Oakland Native Partnership Initiative, 36 volunteers installed a stream buffer next to Kearsley Creek, behind Ortonville's historic Old Mill. The buffer is designed to be both pleasing to the eye and functional. Streamside buffers such as this

are essential to the health of the Creek, a designated trout stream and headwaters to the Flint River. They help prevent soil erosion, uptake pollutants, and capture sediments before they enter the stream. The demonstration buffer is large: 25' X 140', following the principle that the larger a stream buffer, the better. The rule of

thumb is that a stream buffer should be as wide as the tallest tree is tall. This works well in most cases.

Because the open area behind the Old

Mill is often used for community events such as the Ortonville CreekFest, the buffer is designed to leave as much open space as possible and still be wide enough to function well as a buffer. The design incorporates a pathway down to the Creek, with a smaller garden with



Site: Native Stream Buffer at Kearsley Creek, in Ortonville, Michigan

low-growing native plants at the top of the path. A sandbar that floods in the springtime was replanted with water-loving plants, while the remainder of

the buffer was planted with a diverse selection of forbs (wildflowers), sedges, ferns, and low shrubs. The diversity of native plant communities found in the buffer will, over time, offer food, nesting places, and cover for many kinds of wildlife.

Homeowners who have streamside property can create a pretty effective buffer by simply leaving an area next to the stream unmowed. Those who wish to create a native landscape buffer can find more detailed information at the Michigan State University Extension Service.

If you plan to participate in the annual Ortonville CreekFest, or just happen to be in Ortonville, please

include a visit to the native buffer site on Kearsley Creek in your trip.

'River Views' is a periodic column in the FRWC newsletter that features sites of interest along the banks of the Flint River

Community and River Clean Up - Saturday, May 8th

Mark your calendars, and get ready to spruce up the watershed. The Flint River and Community Clean Up is coming up soon!

The snow may still be coming down, but spring will be here before you know it. Last year, 270 volunteers removed over 296 bags of trash, filled 53 yards worth of dumpster space, and hauled 99 tires from the river and its banks, all while competing for the coveted "Golden Gloves" award



The Coveted Golden Gloves!

for the most unusual item found during the clean up. Our 2009 winners were the Youth Leadership Genesee team cleaning up McKinley Park on Thread Lake who pulled a Pepsi machine from the shores of the lake.

The Gloves are up for grabs again this year!! So come on out and see if you can't claim the trophy for your group this year.

Help Reforest the Flint River Watershed!



Visit www.gettrees.org

We all know that forests and natural area provide tremendous opportunities for recreation and improve the overall quality of life in our community. But trees and green areas are also critical to protecting the water quality of the Flint River Watershed. By planting trees and increasing our green spaces we have the opportunity to create cleaner, cooler and clearer waters here in our watershed. We will also leave a natural treasure that that will protect our resources and be enjoyed for many years to come.

This spring, the Genesee Conservation District has made it easier than ever to plant a tree and make a real difference in your community. With our new online marketplace we are making it possible to purchase almost 30 varieties of trees with just the click of a button. Our goal is to distribute over 10,000 trees to improve the environment in Genesee and surrounding counties this spring. To reach our goal we are asking those who care most about our natural resources to take action and make a difference today.

Visit www.gettrees.org today to order your spring trees and make the Flint River Watershed cleaner, cooler and clearer for generations to come.

For more information contact the Genesee Conservation District at (810)230-8766 ext.3

Buick City Clean Up Moving Forward

For over 100 years, the GM property along the Flint River known as Buick City has been producing carriages, cars, and even aircraft engines and other military equipment. The site predominantly sits empty now, and all operations will cease completely some time in 2010.

To encourage redevelopment of the site, the City of Flint, Motors Liquidation Company (MLC), and the Environmental Protection Agency (EPA) are moving forward with a proposed clean up plan for the 230-acre southern end of the site (the north end will be addressed in the next year).

The EPA has developed a proposed clean up plan, called a "Statement of Basis" and is wrapping up the public comment phase of the process. The \$5.9 million

plan calls for a three-fold action plan to bring the site into compliance for future industrial use as well as long term monitoring to measure the effectiveness of the cleanup steps and ensure continued compliance with Michigan criteria for the protection of the Flint River.

The Flint River Watershed Coalition has been an active participant in the comment phase, and will continue to monitor the process to ensure that all plans are indeed protective of the Flint River. If you have any questions about the Statement of Basis or the clean up in general, please feel free to contact Rebecca at rfdewa@flinriver.org.

For more information on the cleanup of the Buick City site, see: <http://www.epa.gov/reg5rcra/wptdiv/sites/buickcity/>

Flint River Watershed Coalition partners with the U.S. Census Bureau to support the 2010 Census

FRWC is partnering with the U.S. Census Bureau to raise awareness of the 2010 Census and help achieve a complete and accurate count of our population. The partnership is part of a larger effort by the Census Bureau to increase participation in the 2010 Census. In our watershed, census data represents power and money – power from adequate congressional representation and money from \$400 billion in state and federal funding. Each county in our watershed the loses about \$1,000 a year over 10 years for each person missed by the Census.

Census data are used for legislative and congressional redistricting, as well as to determine funding for hospitals, schools, job training centers, senior centers, roads and most importantly programs dealing with our waterways.

These improvements can have a significant impact on the lives of everyone in our community.

One of the shortest census forms in history, the 2010 Census form asks 10 questions and takes about 10 minutes to complete. Census forms will be delivered or mailed to households in March 2010. Census Day is April 1, 2010, the official day of the population count. Households should complete and mail back their responses upon receipt. Census workers will visit households that do not return their forms to take a count in person.

Remember ... be counted so the Flint River watershed will get its fair share of state and federal funding for the next 10 years. For more information, please visit www.gencocensus.com or www.2010census.gov.

CALENDAR OF EVENTS

MONTH	DATE/DAY	TIME	EVENT	
MAR	5-7	FRI-SUN	Day	Flint River Steelheaders, Birch Run Expo
	5-8	FRI - MON	Day	Flint Area Science Fair, Kettering
	11	THURSDAY	Day	Flint River GREEN, Professional Development
	12-14	FRI-SAT	Day	Flushing Walleye Festival
	13	SATURDAY	Morning	Environmental Justice in the Urban Context: UM-Flint
	13	SATURDAY	8am-1pm	Keep Genesee County Beautiful Conference: UM-Flint
APR	14	WEDNESDAY	10:00am	Our Water Walk: Flint River Trail Southwalk
	16-17	FRI/SAT	Day	Genesee Conservation District Tree Sale at EA Cummings Center
	18	SUNDAY	Contact FRP	Flint River Paddlers 2010 Ice Breaker Paddle: Mitson Landing to Flushing Riverview Park
	22	THURSDAY	Contact FRWC	Flint River GREEN Water Monitoring Day (Lapeer, Oakland, and Genesee counties)
	22	THURSDAY	Contact FRWC	Paddle Rally: Celebrate the Earth Paddle: Flushing Riverview Park to Flushing Township Nature Park.
	22	THURSDAY	Contact FRWC	Storm Water Run Off Awareness & Stenciling Program for Genesee County
	24	SATURDAY	9:00am	Trail Clean-up for Friends of the Flint River Trail, Viet Nam Vet's Park
	29	THURSDAY	12-6pm	Spring Benthic Monitoring Season/Lab Date
MAY	1	SATURDAY	12-3pm	Spring Benthic Monitoring Season/Lab Date
	2	SUNDAY	2:00pm	First of the weekly FFRT Sunday Bike Rides: Meet every Sunday at the Farmer's Market
	2	SUNDAY	Contact FRP	Flint River Paddlers: Downtown Flushing to Montrose
	8	SATURDAY	9am-12pm	Annual Flint River & Community Clean Up (Genesee, Lapeer & Oakland counties)
	8	SATURDAY	10am-4pm	Wild Lapeer, The Willows Earth Education Center, Chatfield School
	14	FRIDAY	8:30am	Flint River GREEN Student Summit at Mott Community College
	15	SATURDAY	Contact GCMPC	Genesee County Household Hazardous Waste Collection Day
	15	SATURDAY	10:00am	FFRT Saturday Bike Ride: Clio Trail
	16	SUNDAY	Contact FRP	Flint River Paddlers: Holloway Dam to Mott Lake boat ramp
	21-23	FRI-SUN	Contact FRP	Flint River Paddlers: Pine River near Cadillac, Michigan
26	WEDNESDAY	10:00am	Our Water Walk: Flushing River Trail	
JUN	5	SATURDAY	Contact FRWC	Ortonville Creekfest
	6	SUNDAY	Contact FRP	Flint River Paddlers: Holloway Dam to Irish Road
	12	SATURDAY	10:00am	FFRT Saturday Bike Ride: Southern Links Trail
	13	SUNDAY	Contact FRWC	Our Water Paddle: Holloway to Irish Road
	17	THURSDAY	6:00pm	Our Water Walk & Kayaking Demonstrations: Montrose Barber Memorial Park
	20	SUNDAY	Contact FRP	Flint River Paddlers: Shiawassee River Holly to Fenton
	21	MONDAY	Contact FRWC	Our Water Paddle Rally: CELEBRATE SUMMER / Solstice: FTNP to Montrose.

The Watershed Reporter

Rally Ho!!

From Executive Director Rebecca Fedewa

This was a phrase repeated over and over during the 2010 National River Rally held in Snowbird, Utah. I was lucky enough to attend with FRWC Board member Brent Nickola. We were there to give a talk on the Flint River 500, the membership drive held last fall that doubled the membership of the Flint River Watershed Coalition.

Rally is an incredible conference that brings together river advocates from



across the country. I feel very fortunate that I was able to attend, and that we were chosen to share our experience on the Flint River with this talented and dedicated group. Our peers showed great interest in the Flint River and our efforts to protect, preserve and improve our watershed.

Rally also was a time to reconnect with old friends, make many new friends,

and nearly constant learning. I left feeling truly inspired by the work and dedication of the river community, from east coast to west. This is a group inspired by the beauty and splendor of our rivers; if you are reading this newsletter, count yourself among the throngs of amazing

people who take the time to care about our rivers.

As inspiring as Rally was, I also left feeling very fortunate that the Flint River Wa-

tershed is as healthy and protected as it is. Many of the groups that I met with are involved in issues as dire as the Gulf oil spill, water scarcity, rampant point source pollution that is in direct violation of current federal law, and so much more. Which makes it all the more important that we continue to work hard to maintain the quality of our waters.

This is definitely the time for us all to work together in our efforts to protect this wonderful resource. Thank you for being a part of the Flint River Watershed Coalition and for all you do to ensure the health and prosperity of OUR watershed.

Taking Action on Earth Day



Volunteers participate in stenciling to raise awareness

Local Sierra Club and WildOnes members joined with the FRWC to help prevent stormwater pollution, one of the major sources of contamination to our watershed. Unlike wastewater flowing through sewer drains, water that enters our storm drains does not go to a treatment facility. Instead, that water—and all the debris and other contaminants it carries—flows directly to our local streams or rivers.

On Earth Day, volunteers worked in five targeted river stretches with water quality monitoring results that scored as either “Poor” or “Fair,” to raise local awareness of the impact of our storm drains. “Helping to protect our fresh water was a great way to honor Earth Day.” said Rebecca Gale-Gonzalez, President of the Flint River WildOnes.

We appreciate their efforts! Many more neighborhoods could be stenciled. If you would like more information on how you can participate, please contact the FRWC Outreach and Education Coordinator Sue Lossing at 810-767-9491 or slossing@FlintRiver.org

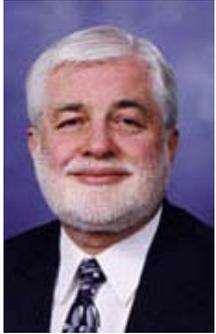
Come and read our blog at



Chairman's Update

Jack Minore

THANKS ! to the many volunteers who turned out for our very busy Spring season. From the Trail clean-up in late April, the River clean-up in early May - - and the monitoring, Flint River GREEN and the student summit – hundreds of folks have given hundreds of hours to the FRWC and its programs. Those volunteers are the



Jack Minore

are what make the Watershed programs really work. THANK-YOU to all!

MEMBERSHIP: Some of you are reading this – but have never joined the FRWC. We need you! Some of you are members at the minimum level: please consider increasing your annual contribution. All of us know two or three people who share our interests in protecting our water and its watershed. Please help the FRWC by recruiting them to join us. Perhaps you're a paddler or bike rider or one of the Lapeer river cleaners, and you enjoy the experiences of the group but have never formally joined. We need you. Each year, as our programs have expanded, the cost of running those programs has gone up, too. Add a clean-up or monitoring site, and we need additional equipment.

We have been fortunate to have received several grants over the past few years to build and maintain our programs; but the ultimate sustainability of the FRWC depends on increased numbers of members. All of us have the opportunity to increase the strength of the organization by joining or recruiting one or two members. Our future depends on it.

TRASH DEFEATED!

Forty-degree weather and a bit of rain is not enough to defeat our awesome volunteers. They are true Watershed Stewards! The 2010 Flint River and Community Cleanup was a very productive effort, with almost 400 people helping to make a difference at one of our 15 locations across the watershed.

We are very excited about the leadership developing among our area's young people through our clean up program..

- This year, we welcomed the Student Veterans of America, Flint Chapter who supported the cleanup at the Vietnam Veteran's park. Over 25 people removed items from this site, including 40 tires.
- Students participating in the Youth Leadership Genesee program started working with the FRWC back in 2008, and they haven't stopped since. Their impact at Cummings Park on Thread Lakes has been enormous.
- Starting in 2009 and continuing this year, the Science Club at Bendle High School hosted the only City of Burton site where more than 30 students helped to clean up Thread Creek. This is upstream from one of our monitoring sites that scores poorly in habitat conditions for macroinvertebrates. We hope to see improving scores at these sites in future years!
- In 2010, the Youth Conservation Council at Brandon Schools took the lead in planning a clean up at three sites along the headwaters of Kearsley Creek. These students raised their own

funds and coordinated all aspects of their clean up.

- In Flushing, 84 students from the high school Environmental Action Group participated in downtown Flushing. Flushing H.S. Teacher Donn



Volunteers at Veteran's Memorial Park smile through the 40 degree temps

Hinds stated this is "... a new record since we started our cleanups about 30 years ago."

The winner of the 2010 Golden Gloves Award is yet to be determined! We'll keep you posted, and the winner(s) will receive their award at our Annual Meeting in January.

We appreciate the efforts of EVERYONE who participated in this year's clean up. Collectively, three hours made a huge difference. To receive notices of the next cleanup date, please visit the FRWC Website www.FlintRiver.org to sign up for our weekly email newsletter "Ripples from the Watershed."

Want to see photos of your watershed?



www.flickr.com/photos/frwc/

River Views

Touring the Shiawassee National Wildlife Refuge

“You know this is the gem of the Flint River, don’t you?” This, before we even had a chance to say hello to our tour guide for the afternoon, Steven F. Kahl, Refuge Manager. I didn’t mention that there are probably a lot of folks out there that feel the same about their slice of the Flint River Watershed, mostly because I absolutely love it when people start a conversation out this way.

Flint River, just before most of its flow is diverted into the Spaulding Drain, outside the SNWR.



If you have never visited the Refuge

before, I strongly encourage you to head to where the Flint River meets with the Shiawassee, Tittabawassee, and Cass Rivers to form the Saginaw River. It contains one of the largest and most productive wetland ecosystems in the state, and last year played host to over 78 different species of birds including 3-5 occupied Bald Eagle nests. The Refuge is also home to a strong population of Blandings turtle, listed as a threatened species in Michigan, and countless other species of reptiles and amphibians. Deer are also plentiful!

With over 13 miles of trails, and activities planned all summer long, there is lots to do. And starting next spring, the Refuge will have completed construction of its new “Auto Tour” route, allowing visitors the chance to see even more of the Refuge than what you can see by foot. Check out their website for more info: <http://www.fws.gov/midwest/shiawassee/>

If you would like to tour the area by boat, an equally compelling and beautiful trip, contact Wil Hufton at Johnny Panther Quests — (810) 653-3859 or www.jpqat.com.

Spring Water Monitoring: “Excellent!”

Every spring and fall, volunteer water quality monitors fan out across the watershed to conduct benthic macroinvertebrate* sampling and stream habitat assessments.

This season, two sites in Genesee County received the highest possible score of “Excellent.” Scoring is based on the collected species’ sensitivity to habitat conditions and whether they are “common” or “rare” at the collection site.

This was also an “excellent” season for monitoring. In stark contrast to last spring—where excessive rain made it too difficult to test most sites—this season 63 volunteers enjoyed the weather and easy stream conditions to help record data on the health of the watershed. Monitors reported on stream habitat conditions, collected macroinvertebrate samples, and helped with the lab identifications. Through their efforts, we monitored all 20 Genesee County sites and 7 of Lapeer County’s 10 sites.

How is this data used? By identifying areas with low or fluctuating scores, we can direct our programs to help build awareness and being taking small steps



Volunteers monitoring at the Flushing Township Nature Park.

in those areas to improve water quality. For example, the FRWC partners with the local Sierra Club Conservation Committee to conduct community Storm Drain Awareness Programs in areas with ‘fair’ or ‘poor’ rankings (see story front page). Scores also are shared with the Genesee County Drain Commission and with the State of Michigan Water Division for their

reporting purposes.

Monitors are essential to the success of this program. Join us at one of the upcoming, State-approved trainings to learn more about monitoring and become a member of a team. Testing is done during the last week of April and the last week in September. For more information, contact program coordinator Sue Lossing at 810 767-9491 or slossing@FlintRiver.org.

* Freshwater benthic macroinvertebrates are animals without backbones that are larger than ½ millimeter (a pencil dot). These animals live on rocks, logs, sediment, aquatic plants, and debris found in the river. They includes crustaceans such as crayfish, mollusks such as clams and/or snails, aquatic worms and the immature forms of aquatic insects such as dragonfly, damselfly, stonefly and mayfly nymphs and larvae.

FFRT Is Ready for Riding!

The regular Sunday rides of the Friends of the Flint River Trail began May 2nd and will continue every Sunday through October – starting at 2:00 PM at the Flint Farmers' Market. There were several new 'first time' riders with us the first two Sundays; and the first of our regular Saturday rides was on the Clio bike path and the new Trolley Line extension north to the County Line. The next Saturday ride will be on June 12th – and the Friends will ride the new Southern Links Trail from Columbiaville to Millington and back. Saturday rides to

other mid-Michigan trails will occur on the second Saturday of each month.

The Sunday rides are at a leisurely pace – and generally go to either Blue Belle Beach or Stepping Stone Falls – about 13 miles total. On the Second Sunday we take a slightly longer ride to the Village of Genesee for ice-cream. All riders are welcome! There is no advance registration: just "show up and ride". (Helmets are strongly recommended.) Ride information from Jack Minore at jacksonmin@aol.com or Bruce Nieuwenhuis at bnbaton@gmail.com

Protecting 97 acres of farm, woodland & stream

Thread Creek Farm Protected Forever thanks to Virginia and Michael Knag

Kathy Rollins took the pictures and Katie Anderson wrote the story

On the last day of 2009, Virginia and Michael Knag and NOHLC's Executive Director, Katie Anderson, met at the Genesee county courthouse to execute and file the Conservation Easement donated by the Knags to permanently protect the conservation values of 97 acres of their 140 acre farmstead known as Thread Creek Farm.



The beautiful Thread Creek Farm

leaving the courthouse Ginny, whose connection to the farm and the land run deep, said, "I just knew this was the right thing to do. I have peace of mind knowing that the farm will be protected in perpetuity and can be appreciated by generations beyond my life. I have enjoyed the farm because of the actions taken by my ancestors to preserve it over these many years."

Having been continually farmed by Virginia's family for six generations, the family still uses the original buildings.

Virginia is the great-great-great granddaughter of Jonathon Davison. John C. Evatt, deceased in 2008 was a fifth generation farmer who passed down the property to his daughter Virginia Evatt Knag and her husband Mike Knag.

They produce native Michigan perennial flowers, sweet corn, pumpkins, and raise a small herd of cattle and turkeys. They open their farm to school groups in the Fall and their roadside stand also provides produce to the public. "I am pleased that we can now focus more on stewardship, than the financial burdens of farming," Ginny said. The easement drafted and negotiated by Frank Aiello, Thomas M. Cooley

Law School Associate Professor and editor of the newly-drafted Michigan Model Conservation Easement, provides for two zones of protection. The Habitat Zone covers the riparian area including Thread Creek and the wooded area, while the Agricultural Zone allows for eco-friendly agricultural practices. The Base-line documentation which serves as a permanent record of the land's conservation values was prepared by Kathleen Rollins, NOHLC Land Steward. The management plan for the property

is being prepared in collaboration with Virginia's niece, Shannon Walker, forestry student at MSU. David McCarty, a NOHLC board member and volunteer, will install permanent NOHLC boundary markers.



Woods at Thread Creek Farm

Conservation Values Protected

- Protects Thread Creek's water quality and essential habitat as part of Flint River watershed.
- Preserves dynamic wet-mesic forest with dominant canopy of Sugar Maple (maple syrup production and woodland habitat).
- Protects valuable, fertile soils for local source of produce, potentially native species
- Preserves part of the natural, cultural and historic heritage of the area.



Thread Creek wanders through the Knag's farm

CALENDAR OF EVENTS

MONTH DATE/DAY TIME EVENT

JUNE

4	FRI	8pm	Begginer Kayak Presentation, Flushing Riverview Park
5	SAT	10a-3p	Water Demonstrations with various Kayaks, Flushing Riverview Park (behind Tucker Pool)
5	SAT	TBA	Ortonville Creekfest, Activities, downtown Ortonville
6	SUN	2pm	(FFRT) Sunday Bike Ride: Farmer's Market
6	SUN	TBA	Flint River Paddlers: Holloway Dam to Irish Road
12	SAT	10am	FFRT Saturday Bike Ride: Southern Links Trail
13	SUN	TBA	Our Water Paddle: Holloway to Irish Road
13	SUN	2pm	(FFRT) Sunday Bike Ride: Farmer's Market
15	TUE	7pm	Lapeer Chapter, FRWC Meeting
17	THU	6pm	Our Water Walk & Kayaking Demonstrations: Montrose Barber Memorial Park
20	SUN	2pm	(FFRT) Sunday Bike Ride: Farmer's Market
20	SUN	TBA	Flint River Paddlers: Shiawassee River Holly to Fenton
21	MON	TBA	Our Water Paddle Rally: Celebrate the Summer Solistice: Flushing Township Nature Park to Montrose
26	SAT	10am	First Annual Flint River Corridor Alliance Triathlon, downtown Flint
27	SUN	2pm	(FFRT) Sunday Bike Ride: Farmer's Market

JULY

4	SUN	2pm	FFRT Sunday Bike Ride: Farmer's Market
10	SAT	10am	Saturday bike ride - Saginaw Valley Trail
11	SUN	2pm	FFRT Sunday Bike Ride: Farmer's Market
14	WED	10am	Our Water Walk: For-Mar Nature Park
18	SUN	2pm	FFRT Sunday Bike Ride: Farmer's Market
21	WED	Contact FRWC	Our Water Paddle Rally: From Flushing Township Nature Park to Barber Memorial Park in Montrose
25	SUN	2pm	FFRT Sunday Bike Ride: Farmer's Market
28	WED	10am	Our Water Walk: Clio Jack Abernathy Trail

AUGUST

1	SUN	2pm	FFRT Sunday Bike Ride: Farmer's Market
1	SUN	Contact FRP	Flint River Paddlers: Shiawassee River from Geeck Park to Shiatown Dam
7	SAT	Contact FRWC	Our Water Paddle Rally & Fresh Water Forever event: Flushing Township Nature Park
8	SUN	2pm	FFRT Sunday Bike Ride: Farmer's Market
13-15	FRI/SUN	Contact FRP	Flint River Paddlers: Au Sable River/Mio to Cummings Flats
14	SAT	10am	FFRT Second Saturday bike ride - trail TBD
15	SUN	2pm	FFRT Sunday Bike Ride: Farmer's Market
18	WED	10am	Our Water Walk: Richfield River Walk & Pot Luck Picnic
20	FRI	8:30am	FRWC Board Meeting
22	SUN	2pm	FFRT Sunday Bike Ride: Farmer's Market
29	SUN	2pm	FFRT Sunday Bike Ride: Farmer's Market

For a listing of events after August, Please visit the website: www.FlintRiver.org

Phenomenally GREEN

The Flint River GREEN program engages area students, teachers, and environmental professionals to help our youth learn about their watershed while engaging in monitoring the health of their local stream or river.

Using scientific methods, students conduct various tests to assess the health of their local river or stream. Students then work to identify any environmental problems, re-



Students get involved with GREEN sampling

search 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.

Following their testing season, classes gather at the 2010 Student Summit held at Mott Community College. At the Summit,

students from 24 school districts in three counties presented their data to one another and to the community, providing an opportunity for shared learning across the watershed.

GREEN hit record numbers this year thanks to additional sources of financial support and new collaborations with organizations providing mentors and session leaders. Major organizations supporting GREEN

include Earth Force, the Lapeer and Genesee Intermediate School Districts, the City of Flint Waste Water Division, the Genesee County Drain Commission, Mott Community College, and General Motors. Through their support, we could offer this program to 13 additional teachers from Lapeer County while continuing to sustain the large number of teachers from Genesee County and a teacher from Oakland County.

From a teacher evaluation following the Student Summit, a Flint River GREEN teacher summed up the program thusly: "Kids are phenomenal - at first they think it is "dumb" but once they get started - it is a whole different story." The FRWC thinks our participating GREEN teachers are phenomenal too! With their help, we see the ripples of learning become a much larger wave towards environmental stewardship.



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The Watershed Reporter

Summer in the Watershed

From Executive Director Rebecca Fedewa



It's been a beautiful summer in the Flint River Watershed. We've had lots of sunny warm weather, which gave us countless opportunities to get out and enjoy the beauty of the Flint River.

And we've seen more and more people doing just that. Even a few years ago, it would have been an odd site to see kayaks or canoes taking a relaxing float down the river. While we have

no official count, I'm confident that this summer we have seen record numbers of boaters taking in the scenery and enjoying this fabulous amenity that flows through so many of our communities.

Fishing has also been grand this summer, starting with a record turnout at the Flushing Walleye Festival, which brings

in over 350 fishermen and women and over 5,000 persons for its outdoor expo, fish dinner, and other entertainment and activities. All summer long, the fishing throughout the entire watershed has been grand.



Paddling, Fishing & Biking Are all great ways to enjoy the watershed!

Our various trails also have seen a dramatic increase in users, both on foot and on bike. The Friends of the Flint River Trail continue to gain new riders every week, as you'll see later in this newsletter. But we've also noted many new faces out walking all the great trails we have throughout the watershed, whether

it's a taking a break over lunch to get some fresh air or taking a long and leisurely stroll on the weekends.

Which is all to say that all across the Flint River Watershed, we have a plethora of opportunities to get out, get wet (or not!) and enjoy this fabulous resource right here in our own backyards.

So what did you do over your summer vacation? Visit our Facebook page and brag a little about the fun you've had in the watershed. Or send us a letter. We love to hear your stories about all the great gems of the Flint River Watershed.

And even though summer is winding down, our beautiful fall weather can provide even more picturesque visits to the Flint River. Grab a friend, and get out there!

Calling All Monitors!

The FRWC is now an official MiCorps water monitoring program! Which means the state can do much more with the data you collect, including comparing it to data from other watersheds across Michigan. As a new MiCorps program, we need all Monitors, experienced and new alike, to attend one of our upcoming MiCorps Water Monitoring Trainings. There are a few changes in procedure we need to pass along, but this is still the fun and effective method of tracking watershed health that it has always been.

While we have many seasoned experts, we are excited about what you and others can learn from one of the trainings. Training will focus on the MiCorps collection process, identification of the "critters" you find in the stream, and reporting your data. Training should be completed in less than three hours and will help Monitors sharpen their skills and share information with new Monitors.

Water Monitoring Training Dates:

Please contact FRWC Outreach and Education Coordinator Sue Lossing at 810-767-9491 or SLossing@FlintRiver.org with any questions and to sign up for the training session that you plan to attend.

WEDNESDAY • SEPTEMBER 1

Water Monitoring Training, in Lapeer County at the Willows Earth Education Center/Chatfield Schools. Contact FRWC for more information

THURSDAY • SEPTEMBER 9

Water Monitoring Training, in Genesee County at Donnelly Pavilion, Kearsley Park. Contact FRWC for more information





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
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- Brent Nickola
- Diane Peplinski
- Bill Welch

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

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newsletter design & layout by Jon Wood

10 Questions With...



Casey Foote

FRWC's New Development Director

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

I have always cared about the environment by being involved in the FRWC I can make a difference right in my own area.

2. What FRWC programs do you participate in?

I volunteered at the Student Summit in the spring of 2010. I plan on taking the training to participate in Benthic monitoring next year.

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

Last summer I attended the Flint River 500 and I knew from that moment on that I wanted to support such a great organization! I was always told to stay away from the Flint River and the FRWC invited me out onto it!

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

I have spent the most time in the Flushing area; however I have recently gone to areas in Lapeer and Goodrich that were absolutely beautiful!

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

A few weeks ago when I was out fly fishing in Flint River every time I took a step I would see ten to fifteen crayfish scurry around under my feet! It was an awesome sight.

6. What's your favorite river (any

river) memory?

When I was a child my brother and I would escape for hours playing in the creek behind my house. I want to help give the children and adults of the Flint River Watershed that same opportunity by being part of the FRWC.

7. What worries you most about the watershed?

Some people have the perception that the Flint River is polluted beyond repair and that what they do will not make a difference.

8. What gives you the most hope?

Since working for the FRWC I am amazed at the amount of people who have volunteered to help in any way they can.

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

I would get more people involved in the Flint River Watershed Coalition, the more awareness and involvement people have the healthier our Flint River will become.

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

Robert F. Kennedy, Jr.

Come and read our blog at



LIVEJOURNAL™

<http://frwc.livejournal.com>

FRWC - Partnering to Protect, Preserve and Improve the Flint River Watershed

Protecting Our Creeks



Storm Drain Stenciling photo of Davison's Catholic Heart Work Camp

Residents in the Village of Goodrich and Davison Township now know a little more about how they can prevent pollutants from entering our streams. With support from the Our Water program, the FRWC is working with various groups around Genesee County to raise awareness about the impact of storm drains in our watershed. Most recently, the Catholic Heart Workcamp program joined in our efforts, with youth from Pennsylvania, Illinois, Tennessee, and Wisconsin stenciling storm drains and distributing information to over 500 residents on Seven Simple Steps to Clean Water. We appreciate their efforts in helping us educate residents in the Kearsley Creek and Thread Creek Subwatersheds on how they can reduce contaminants from entering our rivers and streams.

Fresh Water Forever Celebrates Preservation!



Steve & Megan Romankewiz out paddling with their dog

The water monitoring site at Flushing Township Nature Park received an "Excellent" rating in both the 2009 and 2010 spring monitoring seasons. To celebrate the health of the river, more than 40 people participated in the Fresh Water Forever with a fun paddle from the nature park to Barber Memorial Park. The water, scenery and the enjoyable company helped make this celebration a wonderful event! Many thanks to Heather Griffin for her assistance, and Flushing Township Nature Park for supporting our events.

Improving the Watershed



Terry Reechko & a boat load of Tires

Terry Reechko: One person making a difference! Terry is a true river steward helping to bring the Flint River back to it's natural beauty. Terry knows what is lurking under the water and it's tires! As Terry expressed: "There's plenty of them and more I'd like to take out." We appreciate his efforts in helping to improve our river, especially for those who like to paddle or fish in this area.

Those who would like to help Terry with this effort, please contact the FRWC.

Want to see photos of your watershed?

flickr

www.flickr.com/photos/frwc/

CALENDAR OF EVENTS

MONTH	DATE/DAY	TIME	EVENT	
SEPT	4	WED	Contact FRWC	Water Monitoring Training: Lapeer County. Willows Earth Education Center/Chatfield Schools
	3	FRI	Contact FRWC	FRWC Fundraiser- Home of Robb & Tamra Klaty
	5	SUN	2pm	FFRT Sunday Bike Ride: Farmer's Market
	9	THUR	Contact FRWC	Water Monitoring Training: Genesee County at Donnelly Pavilion, Kearsley Park
	7	SAT	Contact LCD	Tree Sale Begins - Lapeer Conservation District
	11	SAT	10am	FFRT Saturday Bike Ride: Lansing River Trail Meet at Potter Park Zoo
	12	SUN	TBA	FFRT Sunday Bike Ride: Farmer's Market
	17	FRI	830am	FRWC Board Meeting
	19	SUN	2pm	FFRT Sunday Bike Ride: Farmer's Market
	20	MON	7pm	Genesee Conservation District: Deadline for Tree Sales
	21	TUE	7pm	Lapeer Chapter Meeting
	23	THUR	Contact FRWC	Our Water Autumn Paddle: Irish Road to Mott Lake Contact FRWC if participating & for more details
	24	FRI	Contact FRWC	Fenton Winery & Brewery Wine Tasting and Silent Auction. Featuring Artist Ernest Carter
	25	SAT	9pm-1030pm	Adventures in Nature: Herp Survey - Where and when to find slalmanders. Hogbacks area. \$3.00 fee. Contact Genesee Co. Parks & Rec: 810-736-7100, ext. 6
26	SUN	2pm	FFRT Sundry Bike Ride: Farmer's Market	
OCT	2	SAT	7pm	Genesee Conservation District: Tree Pick-up at For-Mar
	3	SUN	2pm	FFRT Sunday Bike Ride: Farmer's Market
	9	SAT	Contact LCD	Tree Sale Pick-up, Lapeer Conservation District.
	9	SAT	10am	Saturday bike ride - Trail TBD
	10	SUN	2pm	FFRT Sunday Bike Ride: Farmer's Market
	15	FRI	830am	FRWC Board Meeting
	16	SAT	[tentative]	Household Hazardous Waste Collection Day, Contact Genesee County Metropolitan Planning Commission
	17	SUN	2pm	FFRT Sunday Bike Ride: Farmer's Market
	19	TUE	7pm	Lapeer Chapter, FRWC Meeting
	24	SUN	2pm	FFRT Sunday Bike Ride: Farmer's Market
31	SUN	2pm	FFRT - FINAL 2010 Sunday Bike Ride: Farmer's Market	
NOV	16	TUE	7pm	Lapeer Chapter, FRWC Meeting
	19	FRI	830am	FRWC Board Meeting
DEC	7	TUE	5:50-830pm	Appllewood Estate: Holiday Walk
	17	FRI	830am	FRWC Board Meeting
JAN	26	WED	6pm	FRWC Annual Meeting: Dinner and Auction
		SAVE THE DATE!!	SAVE THE DATE!!	SAVE THE DATE!!



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Trail Expansion

Construction is nearing completion on a new universal multi-use hard surface blacktop pathway in the City of Flint along the Flint River, made possible with \$1.017 million from the American Recovery and Investment Act.

The new pathway will run from downtown Flint near the State Building next to the University of Michigan - Flint to Ballenger Highway where it will turn north along Ballenger at McLaren Hospital. This section is Phase One of two (2) phases. The preliminary engineering is complete for the second phase which will follow the Flint River along its north bank to Linden Road through Flint Township.



Trail headed west toward Ballenger Hwy

The Flint River Kettering Trail is about 2.5 miles long and will be officially open around Labor Day, 2010.

This new trail will provide connections for many users to neighborhoods along the route, bus stops, stores and shops, community facilities, and other existing and proposed trail

systems. When this trail is open, users will be able to walk, ride, roller blade, or bicycle from McLaren Hospital area to Stepping Stone Falls and even Geneseeville on Mott Lake via trail systems along the Flint River.

According to Gould Engineering, Inc.'s president, Victor Lukasavitz, trails such as this bring to a community a better quality of life, better health, increased economics, increased home and property values, and an alternate form of transportation. He



Under construction near Atwood Stadium

says they are already receiving very positive comments from those who live along the trail route and from early users. The Flint River Kettering Extension is the first major non-motorized transportation facility constructed in years within the City of

Flint. This trail will become a major connection to other similar projects to be constructed within Flint.

Many other pathway projects are under design, construction, or funding consideration throughout the county.

2010 Good Housekeeping Training Attendance List

First	Last	Title	Municipality Type	Municipality Name	Address	City	ST	Zip
Roger	Grimes	DPW	School District	Bendle	3420 Columbine	Burton	MI	48529
Jessie	Dickenson	DPW	School District	Bendle	3420 Columbine	Burton	MI	48529
Doug	Gray	DPW	School District	Bentley	1150 N Belsay	Burton	MI	48509
Neil	Estes			Black & White Asphalt	4153 Jimbo Dr	Burton	MI	48529
Brian	Estes			Black & White Asphalt	4153 Jimbo Dr	Burton	MI	48529
John	Gallagher	DPW	School District	Carman-Ainsworth	3475 W Court	Flint	MI	48532
Dan	McCann	DPW	School District	Clio	430 North Mill Street	Clio	MI	48420
Donald	Poppenfuse			Custom Lawn Care	5289 N Genesee Rd	Flint	MI	48506
Randy	Van Wormer	DPW	School District	Fenton	3200 Donaldson Dr	Fenton	MI	48430
Bruce	Tomlinson	DPW	School District	Fenton	3200 Donaldson Dr	Fenton	MI	48430
Joe	Humpert	DPW	School District	Fenton	3200 Donaldson Dr	Fenton	MI	48430
Virgil	Ates	DPW	School District	Fenton	3200 Donaldson Dr	Fenton	MI	48430
Kelly	Fletcher	DPW	City	Fenton	301 S Leroy	Fenton	MI	48430
Roy	Baird	DPW	City	Fenton	301 S Leroy	Fenton	MI	48430
Ron	Harris	DPW	City	Fenton	301 S Leroy	Fenton	MI	48430
Jay	Johnson	DPW	School District	Flushing	522 N McKinley	Flushing	MI	48433
Gary	Slinkard	DPW	School District	Flushing	522 N McKinley	Flushing	MI	48433
Dwayne	Flowers		Genesee County	Drain Commission	4608 Beecher Rd	Flint	MI	48532
Vaughn	VanWormer		Genesee County	Parks & Rec	5045 Stanley Rd	Flint	MI	48506
Scott	Stolinski	DPW	School District	Genesee	7347 N Genesee	Genesee	MI	48437
Paul	Zumbach	Clerk	Township	Genesee	PO Box 215	Genesee	MI	48437
Randal	Waites	Clerk	Township	Genesee	PO Box 215	Genesee	MI	48437
Danny	Morrison	DPW/Mane	City	Davison	200 E Flint #2	Davison	MI	48423
Dave	Dunn	DPW/Mane	City	Davison	200 E Flint #2	Davison	MI	48423
Tim	Kehn	DPW/Mane	City	Davison	200 E Flint #2	Davison	MI	48423
Mike	Gillie	DPW	School District	Grand Blanc	11920 S Saginaw	Grand Blar	MI	48439
Tom	Angliss	DPW	School District	Grand Blanc	11920 S Saginaw	Grand Blar	MI	48439
Ron	Sides	DPW	School District	Grand Blanc	11920 S Saginaw	Grand Blar	MI	48439
Mark	Collins	DPW	School District	Grand Blanc	11920 S Saginaw	Grand Blar	MI	48439
Ray	Barnum	DPW	School District	Grand Blanc	11920 S Saginaw	Grand Blar	MI	48439
Randy	Winfrey	DPW	School District	Grand Blanc	11920 S Saginaw	Grand Blar	MI	48439
Scott	Cory	DPW	School District	Grand Blanc	11920 S Saginaw	Grand Blar	MI	48439
Matt	Mageli	DPW	School District	Grand Blanc	11920 S Saginaw	Grand Blar	MI	48439
Jim	Rayburn	DPW	School District	Grand Blanc	11920 S Saginaw	Grand Blar	MI	48439
Matt	Stimac	DPW	School District	Grand Blanc	11920 S Saginaw	Grand Blar	MI	48439
Scott	Cook			Green Planet Lawn & Tree	1370 Rizzo Ct	Burton	MI	48529

2010 Good Housekeeping Training Attendance List

Jennifer	Welch			Green Planet Lawn & Tree	1370 Rizzo Ct	Burton	MI	48529
Sandra	Webb	DPW	School District	Kearsley	4396 Underhill Dr	Flint	MI	48506
Bradley	Wiskur	DPW	School District	Kearsley	4396 Underhill Dr	Flint	MI	48506
Jacob	Staley	DPW	School District	Lake Fenton	11425 Torrey Rd	Fenton	MI	48430
Scott	Fairbanks	DPW	City	Linden	PO Box 507	Linden	MI	48451
Jason	Payne	DPW	City	Linden	PO Box 507	Linden	MI	48451
Julius	Turkovics	DPW	School District	Linden	7205 Silver Lake Rd	Linden	MI	48451
Terry	Page	DPW	School District	Linden	7205 Silver Lake Rd	Linden	MI	48451
Rick	Johnson		Township	Mt Morris	G5447 Bicentennial	Mt Morris	MI	48458
Kurtis C	Hine Sr.			Oakland County Fuels	3943 Airport Rd	Waterford	MI	48329
Tim	Hall			Root-Away Drain Cleaning	4101 Circle Dr	Flint	MI	48507
Tom	Hall			Root-Away Drain Cleaning	4101 Circle Dr	Flint	MI	48507
Doug	Corlis			Root-Away Drain Cleaning	4101 Circle Dr	Flint	MI	48507
Shaun	Wolfe			Root-Away Drain Cleaning	4101 Circle Dr	Flint	MI	48507
Mark	Thompson	Building	Township	Vienna	3400 W Vienna Rd	Clio	MI	48420
Michael	Mantel	Building	Township	Vienna	3400 W Vienna Rd	Clio	MI	48420
Stephanie	Kammer			MIDNRE				
David	Guigear		Township	Mundy	3478 Mundy Ave	Swartz Cre	MI	48473
Dave	Clink		School District	Carman-Ainsworth	3475 W Court	Flint	Mi	48507
Barry	June			Parks & Rec	5045 Stanley Rd	Flint	MI	48506
Kevin	Frasier		City	Davison	200 E Flint #2	Davison	MI	48423
Donald	Newsome		School District	Grand Blanc	11920 S Saginaw	Grand Blar	MI	48433
Robert	Tubbs		School District	Grand Blanc	11920 S Saginaw	Grand Blar	MI	48433
Jason	Hindman		School District	Grand Blanc	11920 S Saginaw	Grand Blar	MI	48433
Josh	Arrand		School District	Grand Blanc	11920 S Saginaw	Grand Blar	MI	48433
Brad	Hill		City	Flint	4652 Beecher Rd	Flint	MI	48433
Jason	Moore		City	Mount Morris	11649 N Saginaw	Mount Mor	MI	48458
Randall	Stewart		Township	Davison	1280 N Irish	Davison	MI	48423
Mike	Blom		City	Grand Blanc	203 E Grand Blanc R	Grand Blar	MI	48439
John	Ray		School District	Lakeville	11107 Washburn	Otisville	MI	48463
Kevin	Knuth		School District	Lake Fenton	3464 E Hill Rd	Grand Blar	MI	48439
Keith	Kirby			Curbco Inc	3146 S Dye Rd	Flint	MI	48507
John	Nowack			Curbco Inc	3146 S Dye Rd	Flint	MI	48507
Anthony	Nowiski		City	Flushing	725 E Main	Flushing	MI	48433
Jeff	Clark		City	Flushing	725 E Main	Flushing	MI	48433
Doug	Parkinson		City	Flushing	725 E Main	Flushing	MI	48433
Kirk	Grzelka		School District	Flint	3086 E Court	Flint	MI	48506

2010 Good Housekeeping Training Attendance List

Bob	Herron	School District	Flint	3086 E Court	Flint	MI	48506
Steven	Payer	School District	Lake Fenton	3464 E Hill Rd	Grand Blar	MI	48439
James	Moore	School District	Flint	3086 E Court	Flint	MI	48506
Robert	Palmer	Township	Vienna	3400 W Vienna Rd	Clio	MI	48420
Julian	Muron	School District	Mount Morris	12356 Walter St	Mount Mor	MI	48458
Tim	Culver	School District	Lake Fenton	3464 E Hill Rd	Grand Blar	MI	48439
Aaron	Whitner	Township	Mundy	3478 Mundy Ave	Swartz Cre	MI	48473
Enayet	Ullah		GCDC-SWM	G4608 Beecher Rd	Flint	MI	48532
Jeff	Roth	City	Mount Morris	11649 N Saginaw	Mount Mor	MI	48458
Sue	Kubic		GCDC-SWM	G4608 Beecher Rd	Flint	MI	48532
John	Harkness	City	Fenton	301 S Leroy	Fenton	MI	48430
Allan	Wicker		Building & Grounds	1101 Beach Street	Flint	MI	48502
David	Bond	School District	Davison	1490 N Oak Rd	Davison	MI	48423
Mark	Harper	School District	Grand Blanc	11920 S Saginaw	Grand Blar	MI	48433
Art	Lied	School District	Grand Blanc	11920 S Saginaw	Grand Blar	MI	48433
Bill	Henry		Road Commission	211 W Oakley	Flint	MI	48503
Aaron	Lawrence		Road Commission	211 W Oakley	Flint	MI	48503
Ron	Latimer		Road Commission	211 W Oakley	Flint	MI	48503
Shawn	Hunter		Road Commission	211 W Oakley	Flint	MI	48503
Donald	Terwilliger		Road Commission	211 W Oakley	Flint	MI	48503
Tom	Sanders		Road Commission	211 W Oakley	Flint	MI	48503
Tracey	Tucker	Township	Flint	1490 S Dye Rd	Flint	MI	48532
Jacqueline	Palmer	City	Flint	120 E Fifth St	Flint	MI	48502
James	Adams II	School District	Grand Blanc	11920 S Saginaw	Grand Blar	MI	48439
Joe	Beckwith	School District	Lakeville	11107 Washburn	Otisville	MI	48463
Matt	Wurtz	City	Grand Blanc	203 E Grand Blanc R	Grand Blar	MI	48439
Mike	Brown	City	Flint	3310 E Court	Flint	MI	48506
Kevin	Kryder		Bishop Airport	G3425 W Bristol Rd	Flint	MI	48507
David	Green	City	Clio	505 W Vienna	Clio	MI	48420
Carrie	Strait	School District	Lakeville	11107 Washburn	Otisville	MI	48463
lalene	Mannor	School District	Lakeville	11107 Washburn	Otisville	MI	48463
Jeff	Wilson	School District	Grand Blanc	2500 E Maple RD	Grand Blar	MI	48439
David	Burt	School District	GISD	2413 W Maple Rd	Flint	MI	48507
Aaron	Whitener		Ace Outdoor Services LLC	PO BOX 779	Grand Blar	MI	48480



Information Booth: Data Collection

Event Name: Genesee County Fair **Date:** August 16th – Aug 22nd 2010

Number of people given education broken down by community

CITIES	NUMBERS
Burton	53
Clio	35
Davison	12
Fenton	3
Flint	72
Flushing	4
Grand Blanc	6
Linden	7
Montrose	6
Mt. Morris	19
Swartz Creek	23
TOWNSHIPS	
Argentine	7
Atlas	10
Clayton	4
Davison	53
Fenton	12
Flint	64
Flushing	21
Forest	23
Gaines	9
Genesee	51
Grand Blanc	37
Montrose	10
Mt. Morris	53
Mundy	12
Richfield	23
Thetford	29
Vienna	16
OTHER CO. IN ST	89
OTHER STATES	11

TOTALS

774

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.



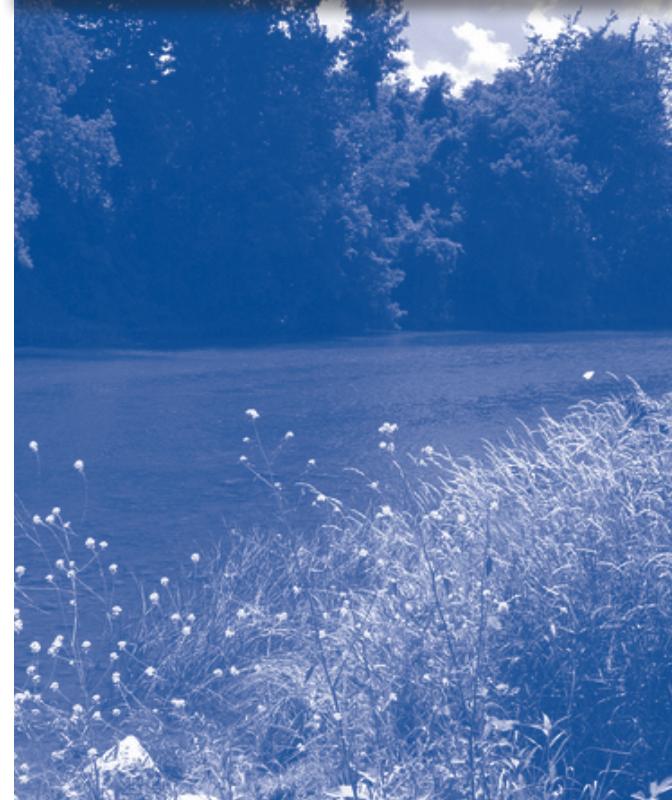
Let's make one thing
Perfectly Clear.
our water
Genesee County Community Water Quality Consortium

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.

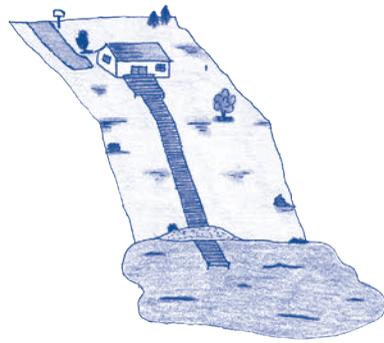
To prevent erosion on your property and save yourself time and money, try these techniques to create a naturalized stream bank or shoreline...

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.

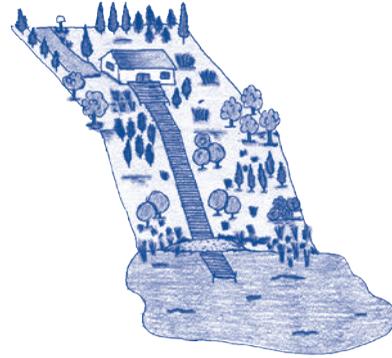
A good buffer strip is wide (30 feet), continuous, and dense with shorter plants nearer the water and taller plants and trees planted further away. Engineered structures like seawalls can reduce animal and plant habitat and are only recommended in erosion-prone locations.

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.

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...

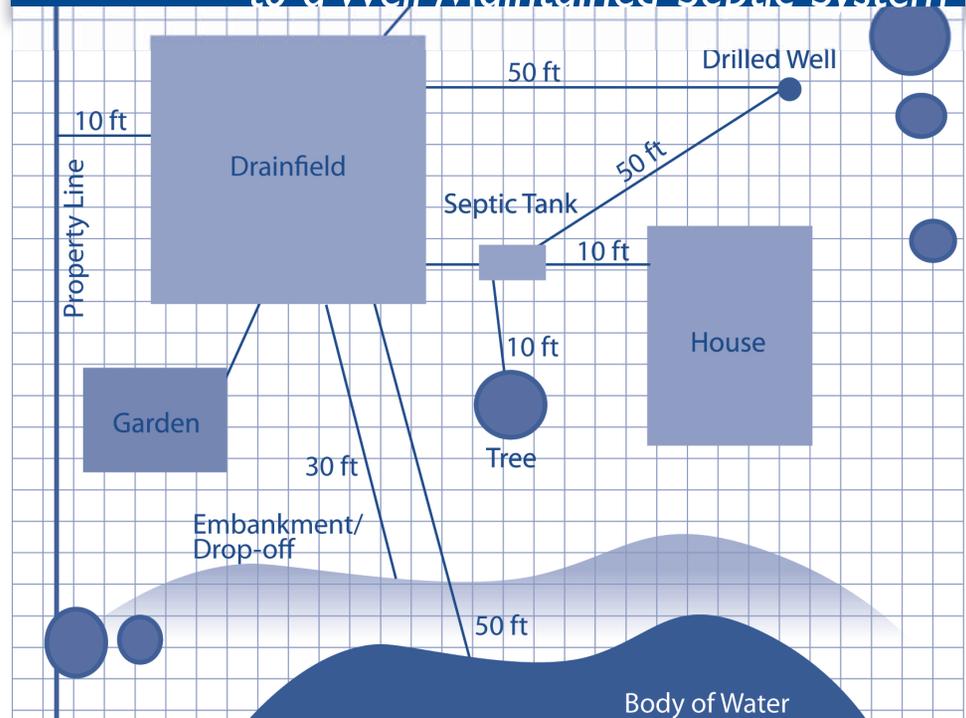
- Establish vegetation on all bare areas of your property
- Develop a beach site with minimal shoreline alteration or have no beach site
- Plant native trees and shrubs
- Retain a natural area of grass, trees, and shrubs next to your streambank or shoreline
- Learn about invasive plants before removing 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



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.

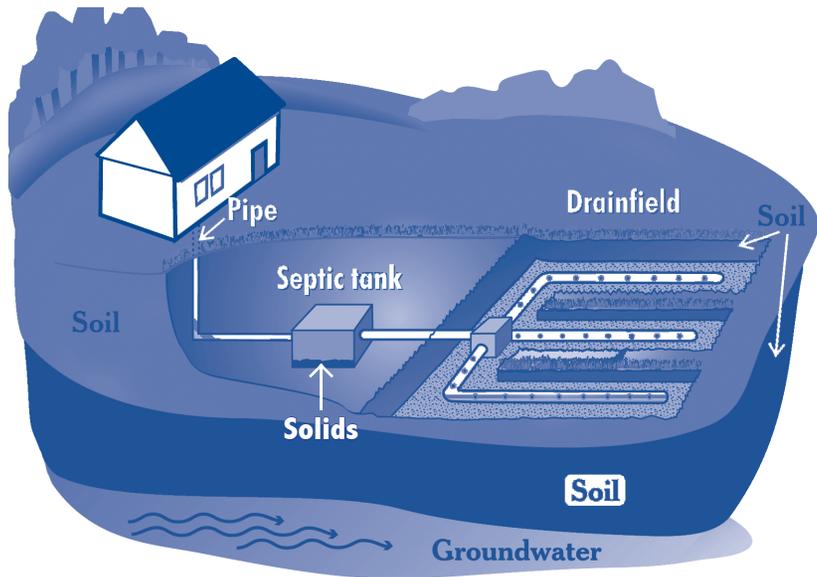
4. Soil with digesting microbes

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?

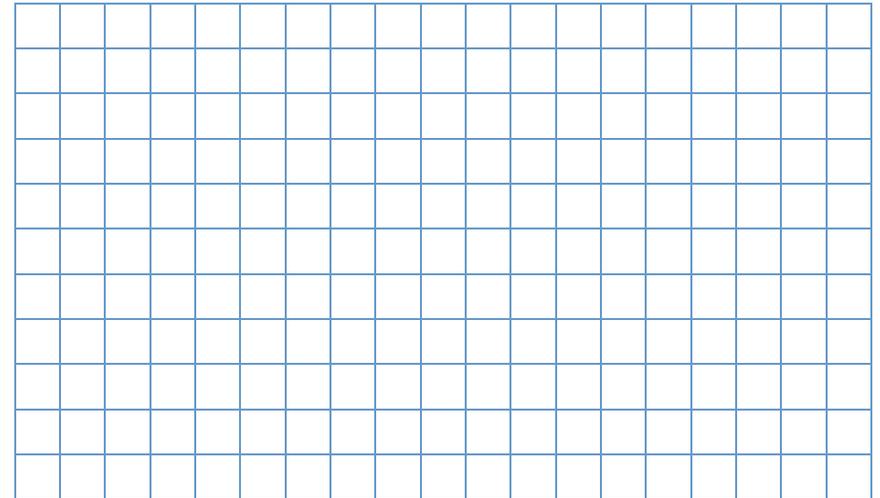
You may want to consult with an inspector or septic pumper to help you find the location of your septic system..



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.



GENESEE CONSERVATION DISTRICT

1525 NORTH ELMS ROAD

FLINT, MI 48532

PHONE: 810-230-8766 EXT. 131

FAX: 810-230-2404

Breakdown of Genesee Conservation District Water Quality Presentations in Fiscal Year 2010:

<u>Month</u>	<u>Event</u>	<u>School aged children reached:</u>	<u>Parents/adults reached:</u>
October	10-3-09 Applewood Fall Harvest Day	1,237 (demographics not recorded)	
	10-6-09 Lakeville Middle School Watershed activity	28	1
	10-21-09 Montrose Orchards School Group Hay Ride Tour	47	48
November	11-19-09 Beecher High Ecology Club School Visit	20	3
	11-20-09 Myer Elementary Career Fair (Grand Blanc)	150	5
	11-24-09 Planning Mtg. for Flushing Alt. Education Nature Walk	0	2
December	12-02-09 Fenton Girl Scout Troop Meeting	18	5
	12-04-09 Mtg. for storm drain marking	0	3
	12-20-09 Beecher Alternative High School Presentation (2 classes)	36	3
	12-20-09 Lakeville Middle School 6 th grade class (pm) Water Game	30	1
	12-21-09 Lakeville Middle School 6 th grade class (am) Water Game	29	1
January	1-21-10 New Beecher Ecology Club Activity	25	2
	1-25-10 Sproutsides Gardens Meeting	1	19
	1-27-10 Grand Blanc H.S. Chem+Phys Class	45	1
	1-29-10 Flint Childrens Museum AM	100	47
February	2-5 Flint Childrens Museum AM	112	8
	2-8-10 Area STEM Meeting	0	39
	2-9-10 Lakeville M.S.-Water Unit Class (x2)	59	1
	2-12-10 Planning Mtg. W/ North Face	0	2
	2-17-10 Montrose H.S. Teach the Teacher	0	3
	2-19-10 Flint Childrens Museum AM	140	10
March	3-4-10 Swartz Creek Kiwanis Club	0	42
	3-6-10 Keep Genesee County Beautiful Conference	63	257
	3-11-10 Genesee Project GREEN meeting	0	24

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



GENESEE CONSERVATION DISTRICT

1525 NORTH ELMS ROAD

FLINT, MI 48532

PHONE: 810-230-8766 EXT. 131

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	3-12,13,14-2010 Flushing Walleye Festival	100	300
	3-29, 30-2010 South Bendle Elementary	81	3
	3-31-10 4-C Child Care Services Fair, Burton	1,200	800
April	4-1-10 South Bendle 1 st Grade water education activities	81	3
	4-5-10 League of Women Voters Presentation	0	38
	4-16-10 Project RED at Reid Elementary in Grand Blanc	255	5
	4-20-10 South Bendle activities, continued	81	3
	4-22-10 Earth Day Event @ Riverview Park	12	38
	4-24-10 Earth Day Celebration at U-M Flint	140	460
	4-27-10 Davison Central Elementary 3 rd grade Assembly	110	2
	4-1-10 South Bendle 1 st Grade activities	81	3
	4-5-10 League of Women Voters Presentation	38	0
May	5-20-10 Bentley Elementary 2 nd grade presentation	46	2
June	6-1-10 thru 6-30 display at Children's Museum	550 (demographics not recorded)	
	6-12-10 Storm drain stenciling w/ cub scouts (x2)	8	1
	6-22-10 Life in the Water presentation w/ parks and rec commission	17	8
	6-25-10 Storm Drain stenciling w/ earth team volunteers	4	0
July	7-1-10 Life in the Water presentation w/ parks & rec. at Richfield	7	4
	7-13-10 Life in the Water Presentation w/ Parks & Rec at Bluebell Beach	3	3
	7-28/29-10 Stormdrain stenciling with Flint Workshop Center Church summer camp boys group (x2)	48	4
	7-31-10 Life in the Water presentation w/ Parks & Rec. at Buell Lake	1	2
August	8-16 thru 8-21 Watershed Educational Trailer at Genesee County Fair	600 (demographics not recorded)	
	8-16/20-10 Genesee County Fair Education booth (Enviroscape and Scavenger Hunt	90	27

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	activities)		
	8-25-10 Stormdrain stenciling with Flint Workshop Center Church members	0	8
	9-18-10 "Bringing it Home" event at Perani Arena	58	300+
	9-25-10 Fall Harvest Fest at Applewood	425 (demographics not recorded)	
	FY2010 Breakdown	6,176	2,541
	FY2010 Total	8,717	
	Annual Goal	8,000	
	% reached of goal reached	109%	

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Presentation Programs 2009: Type (* SDS=Storm Drain Stenciling)												Items Given			
Month	Day	Present	Group	River Walks (4)	Paddle (4)	SDS (10)	Table Event	Present. (17)	Our Water 7 Simple Steps	7 Simple Steps Distributed	Cities:	OW Bottle	OW Bag	C'Up Shirt	FRWC Cup
Oct.															
Nov.															
Dec.	x	x	None for December, 2008.				x		x	x	x				
Sub-Totals for 2009, Oct.-Dec. -->				0	0	0	0	0							
Presentation Programs 2010: Type (* SDS=Storm Drain Stenciling)												Items Given			
Month	Day	Present	Group	River Walks (4)	Paddle (4)	SDS (10)	Table Event	Present. (17)	Our Water 7 Simple Steps	7 Simple Steps Distributed	Cities:	OW Bottle	OW Bag	C'Up Shirt	FRWC Cup
1	4	8	Do Something, Flint (UM Student Group)					1	1, 2, 5, 6		Flint, Lennon, Grand Blanc				
1	12	24	Touch The Earth Garden Club (Grand Blanc)					1	All 7	Yes	Grand Blanc, Holly, Flint				
1	22	35	Rainforest & Watershed Awareness					1	1, 2, 3, 5, 6, 7	Yes	Flint, Grand Blanc, xxx				
1	25	25	Grand Blanc Brownie Troop 13301					1	All 7	Yes	Grand Blanc, Flint				
3	17	24	Grand Blanc Womens Club					1	All 7	Yes	Grand Blanc, Swartz Creek, Holly, Flint, Ortonville, Clio, Davison				
3		150+ (20 sheet)	Flint River Valley Steelheaders Expo				1			Yes	Algonac, Attica, Burton, Caro, Davison, Flint, Flushing, Grand Blanc, Lennon, Metamora, Otisville, Schereville, Swartz Creek,				
3		150+ (44 sheet)	Flushing Walleye Festival				1			Yes	Birch Run, Clio, Davison, Flint, Flushing, Gaines, Lapeer, Millington, Swartz Creek				
3		200 +	Keep Genesee County Beautiful Conference				1			Yes	Davison, Flint, Goodrich, Flushing, Gaines, Lapeer, Millington, Swartz Creek				
4	10	80+	Volunteer Expo				1			Yes	Burton, Clio, Davison, Flint, Flushing, Grand Blanc, Holly, Lapeer, Swartz Creek				
4	14	13	Our Water Walk, Flint River Trail	1						Yes	Davison, Lapeer, Flint, Grand Blanc				
4	17	24	Nepeessing Group Sierra Club					1	All 7	Yes	Montrose, Flushing, Clio, Flint, Lapeer, Ortonville,				
4	22	15	Our Water Paddle, Riverview Park to FTNP		1				All 7	Yes	Davison, Fenton, Flint, Lapeer, Linden, Wales				
4	22	x	SDS: Burton, Sierra Club			1									
4	22	x	SDS: Burton, WildOnes			1									
4	22	x	SDS, Mt. Morris, Sierra Club			1									
4 or 5		x	SDS, Flushing, Environmental Science Club, Flushing			1									
4	24	500+	Annual Earth Day & Garden Celebration				1			Yes	Flushing, Burton, Flint, Lapeer, Swartz Creek, Flint Twp.				
4	29	24	West Flint Business Association					1	Buffers, Storm Drain Maint.		??				
5	12	6	Flint Classical Academy Teachers					1	All 7	Yes	Byron, Flint, Burton, Flushing				
5	26	6	Our Water River Walk: Flushing	1				1	All 7	Yes	Flint, Flushing				
6	5	65	Ortonville Creekfest				1		All 7	Yes	Pontiac, Goodrich, Ortonville, Holly, Davison				
6	5	?	Flushing Art in the Park, Beginner's Kayaking Symposium				1		not Sure	No	Flushing, Mt. Morris, Birch Run, Davison, Flint				

Month	Day	Present	Group	River Walks (4)	Paddle (4)	SDS (10)	Table Event	Present. (17)	Our Water 7 Simple Steps	7 Simple Steps Distributed	Cities:	OW Bottle	OW Bag	C'Up Shirt	FRWC Cup
6	16	40+	Holloway Lake Association					1	1, 2, 7		??				
6	17	8	Our Water Walk, Montrose	1						Yes	Chesaning, Flint, Montrose, Clio, Davison, New Lothrop				
6	18	38	Applewood Gilkey Creek Restoration					1	1, 2, 6, 7	n	Burton, Fenton, Flint, Flushing, Grand Blanc, Swartz Creek, Oxford, Shelby Twp.				
6	18	27	Applewood Gilkey Creek Restoration					1	1, 2, 6, 7	n	Burton, Davison, Flint, Flushing, Grand Blanc, Howell, Kalamazoo, Linden, Swartz Creek	28?	x	x	x
6	21	13	Our Water Paddle, FTNP to Montrose		1				1, 2, 5, 6, 7	Yes	Clio, Davison, Flint, Flushing, Montrose, Mt. Morris				
7	14	9	Our Water Walk, For-Mar	1							Flint, Davison, Lapeer				
7	18	0	Cancelled: Our Water Paddle, Mitson to Flushing		0						Inclement Weather Cancellation				
7	19	x	SDS, Goodrich Morning Crew			1					Goodrich				
7	19	x	SDS, Goodrich Afternoon Crew			1					Goodrich				
7	20	x	SDS, Davison Twp. Morning Crew			1					Davison Twp.				
7	20	x	SDS, Davison Twp. Afternoon Crew			1					Davison Twp.				
7	21	x	SDS, Davison Twp. Morning Crew			1					Davison Twp.				
7	21	x	SDS, Davison Twp. Afternoon Crew			1					Davison				
7	21	27	Our Water Paddle, FTNP to Montrose		1				1, 2, 5, 6, 7	Yes	Burton, Clio, Fenton, Flint, Flushing, Grand Blanc, Linden, Montrose, Mt. Morris, Swartz Creek				
7	28	14	Our Water Walk, Clio	1					1, 2, 3, 5, 6, 7		Flint, Grand Blanc, Davison, Burton, Montrose, Flushing				
8	7	50	Our Water Paddle, Fresh Water Forever		1				2, 6, 7	Yes	Arlington, TX; Burton, Clarkston, Clio, Flint, Flushing, Grand Blanc, Hope, Lapeer, Linden, Midland, Milford, Montrose	Y	Y	x	x
8	16	1000	Genesee County Fair	x	x	x	1	x	x	Yes	Minnow Races on Thurs., 1.0 hr on Sat. over 200 kids				
8	18	7	Our Water Walk & Picnic, Richfield Park	1					2, 3, 7		Flint, Davison, Lapeer				
9	14	8	Flushing Senior Center					1	1, 2, 6, 7	Yes	All Flushing	x	x	x	x
9	15		Cancelled: UM-Flint Walking Presentation					0			Cancelled				
9	21	29	St. John Vianney Parents, Teachers & Students, Walking Presentation					1	1, 2, 3, 5, 6, 7	Yes	Flint, Flushing, Grand Blanc, Burton, Davison. (Bags were useful in carrying materials and picking up trash. Students to contributed to the trash pick-up received a water bottle. The rest of the bottles are being used at the school to	50	32		
9	23	17	Our Water Fall Paddle		1				2, 3, 6, 7	Yes	Pending Review of ACA Paperwork				
9	25	14	Applewood Gilkey Creek Restoration					1	1, 2, 5, 6, 7	Yes	Grand Blanc, Flint, Davison, Swartz Creek, Burton, Birch Run, Fenton				
9	25	9	Applewood Gilkey Creek Restoration					1	1, 2, 5, 6, 7	Yes	Burton, Flint, Fenton, Holly,				
9	25	9	Applewood Fall Harvest, MSU-E Tent				1		1, 6, 7	Yes	Birch Run, Flint, Grand Blanc, Swartz Creek, Flint Twp., Flushing, Frankenmuth	x	18		
10	5	17	Pending, Women's National Forum & Garden Club					1							
Sub-Totals for 2010, Jan.-Sept. -->				6	5	10	9	17							
Totals for Oct. 2009 thru Sept. 2010 -->				6	5	10	9	17							



INVOICE

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

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

DESCRIPTION																																															
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<p><i>This invoice is issued to the Genesee County Drain Commissioner's Office for Genesee County Storm Drain Stenciling programs coordinated by the Flint River Watershed Coalition between October 1, 2009 and September 30, 2010.</i></p> <p>Invoice Details: Storm Drain Stenciling Programs in Genesee County</p> <p>Comments:</p> <p>Storm Drain Stenciling Programs Door Tags & 7 Simple Steps Brochures</p> <table border="1"> <thead> <tr> <th>Month Day</th> <th>Approximate # of Homes</th> <th>Groups</th> <th>Location</th> </tr> </thead> <tbody> <tr> <td>1. April 22 80</td> <td>Sierra Club</td> <td></td> <td>Burton: Neighborhood near Bristol & I-475</td> </tr> <tr> <td>2. April 22 78</td> <td>Flint River WildOnes</td> <td></td> <td>Burton: Bristol Rd. Between Fenton & VanSlyke</td> </tr> <tr> <td>3. April 22 80</td> <td>Sierra Club</td> <td></td> <td>Mt. Morris, SW Saginaw & Mt. Morris Rds.</td> </tr> <tr> <td>4. July 19 100</td> <td>Catholic Heart Work Camp Morning Crew</td> <td></td> <td>City of Goodrich</td> </tr> <tr> <td>5. July 19 120</td> <td>Catholic Heart Work Camp Afternoon Crew</td> <td></td> <td>City of Goodrich</td> </tr> <tr> <td>6. July 20 210</td> <td>Catholic Heart Work Camp Morning Crew</td> <td></td> <td>Davison Twp. towards Goodrich border</td> </tr> <tr> <td>7. July 20 225</td> <td>Catholic Heart Work Camp Afternoon Crew</td> <td></td> <td>Davison Twp. towards City of Davison</td> </tr> <tr> <td>8. July 21 80</td> <td>Catholic Heart Work Camp Morning Crew</td> <td></td> <td>Davison Twp. towards City of Davison</td> </tr> <tr> <td>9. July 21 125</td> <td>Catholic Heart Work Camp Afternoon Crew</td> <td></td> <td>Davison Twp. North of City of Davison</td> </tr> <tr> <td>10. May</td> <td>Flushing Hs.</td> <td></td> <td></td> </tr> </tbody> </table>				Month Day	Approximate # of Homes	Groups	Location	1. April 22 80	Sierra Club		Burton: Neighborhood near Bristol & I-475	2. April 22 78	Flint River WildOnes		Burton: Bristol Rd. Between Fenton & VanSlyke	3. April 22 80	Sierra Club		Mt. Morris, SW Saginaw & Mt. Morris Rds.	4. July 19 100	Catholic Heart Work Camp Morning Crew		City of Goodrich	5. July 19 120	Catholic Heart Work Camp Afternoon Crew		City of Goodrich	6. July 20 210	Catholic Heart Work Camp Morning Crew		Davison Twp. towards Goodrich border	7. July 20 225	Catholic Heart Work Camp Afternoon Crew		Davison Twp. towards City of Davison	8. July 21 80	Catholic Heart Work Camp Morning Crew		Davison Twp. towards City of Davison	9. July 21 125	Catholic Heart Work Camp Afternoon Crew		Davison Twp. North of City of Davison	10. May	Flushing Hs.		
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Make all checks payable to **Flint River Watershed Coalition**

Questions concerning this invoice: Please contact Sue Lossing or Edie Westhoff, 810 767-6490

Partnering to Improve our Water Resources



INVOICE

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

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)			
<p><i>This invoice is issued to the Genesee County Drain Commissioner's Office for Public Education Presentation Programs done by the Flint River Watershed Coalition from Oct. 1, 2009; to Sept. 30, 2010; per the 2010 agreement.</i></p> <p>Invoice Details: Presentations within Phase II Comm.</p>			
Presentation Programs			
Month	Num.	Day	Location
Present	Group		
1. Jan. 4	8	Do Something, Flint	Flint, Lennon, Grand Blanc
2. Jan. 12	24	Touch The Earth Garden Club	Grand Blanc, Holly, Flint
3. Jan. 22	35	Rainforest & Watershed Awareness	Flint, Grand Blanc, Burton, Flushing, Swartz Creek, Coleman, Richfield, Davison, Mt. Morris
4. Jan. 25	25	Grand Blanc Brownie Troop 13301	Grand Blanc, Flint
5. Mar. 17	24	Grand Blanc Womens Club	Grand Blanc, Swartz Creek, Holly, Flint, Ortonville, Clio, Davison
6. April 17	24	Nepessing Group Sierra Club	Montrose, Flushing, Clio, Flint, Lapeer, Ortonville,
7. April 29	24	West Flint Business Association	Flint Township
8. May 12	6	Flint Classical Academy Teachers	Byron, Flint, Burton, Flushing
9. May 26	6	Our Water: Flushing Trail Group	Flint, Flushing
10. June 16	40	Holloway Lake Association	Columbiaville
11. June 18	38	Applewood Gilkey Creek Restoration	Burton, Fenton, Flint, Flushing, Grand Blanc, Swartz Creek, Oxford, Shelby Twp.
12. June 18	27	Applewood Gilkey Creek Restoration	Burton, Davison, Flint, Flushing, Grand Blanc, Howell, Kalamazoo, Linden, Swartz Creek
13. Sept. 1	48	Flushing Senior Center	All Flushing
14. Sept. 15	0	Cancelled: UM-Flint Walking Presentation	Cancelled
15. Sept. 20	37	Shiawassee Moonlight Paddle & Dinner	Fenton, Ortonville, Linden, Byron, Argentine, Davison, Burton
16. Sept. 21	29	St. John Vianney Parents, Students, Teacher	Flint, Flushing, Grand Blanc, Burton, Davison.
17. Sept. 25	11	Applewood Gilkey Creek Restoration	Burton, Flint, Fenton, Holly
			TOTAL

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

Questions concerning this invoice: Please contact Sue Lossing or Edie Westhoff, 810 767-6490

Partnering to Improve our Water Resources



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400 N. Saginaw Street
 Suite 233
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Bill To:
 ATTN: Sue Kubic
 Genesee County Drain Commissioner's Office
 4608 Beecher Rd.
 Flint, MI 48532

DESCRIPTION			
Our Water Campaign Public Education [REDACTED]			
<i>This invoice is issued to the Genesee County Drain Commissioner's Office for Flint River Canoe Tours coordinated by the Flint River Watershed Coalition between October 1, 2009 and September 30, 2010.</i>			
INVOICE Details: Education & Public Outreach [REDACTED]			
Canoe Tours			
Month,			
<u>Day, Time</u>	<u>Present</u>	<u>Location</u>	<u>Participants' Municipalities</u>
1. April 22, Afternoon	15	Flushing Riverview Park to FTNP	Davison, Fenton, Flint, Lapeer, Linden, Wales
2. June 13, Afternoon	4	Holloway Dam to Irish Road	Davison, Linden, Flint
3. June 21, Evening	13	Solstice: FTNP to Barber Mem. Park	Clio, Davison, Flint, Flushing, Montrose,
[REDACTED]		Mt. Morris	
4. July 18, Afternoon	0	Paddle & Picnic Mitson to Flushing: <i>Inclement Weather Cancellation</i>	
5. July 21, Evening	27	FTNP to Barber Memorial Park/Montrose	Burton, Clio, Fenton, Flint, Flushing, Grand
[REDACTED]		Blanc, Linden, Montrose, Mt. Morris,	
[REDACTED]		Swartz Creek	
6. Aug. 7, Afternoon	50	Fresh Water Forever: FTNP to Barber Mem. Park	Arlington, TX; Burton, Clarkston, Clio, Flint,
[REDACTED]		Flushing, Grand Blanc, Hope, Lapeer, Linden,	
[REDACTED]		Midland, Milford, Montrose	
Development and promotion of Paddling Events & Materials			
			TOTAL \$

Make all checks payable to Flint River Watershed Coalition

Questions concerning this invoice: Please contact Sue Lossing or Edie Westhoff, 810 767-6490

Partnering to Improve our Water Resources



**FLINT RIVER
WATERSHED COALITION**

INVOICE

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

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

DESCRIPTION				
Our Water Campaign				
<i>This invoice is issued to the Genesee County Drain Commissioner's Office for Community River Walk programs coordinated by the Flint River Watershed Coalition between October 1, 2009 and September 30, 2010.</i>				
<u>Invoice Details: Genesee County River Walks</u>				
Our Water River Walks				
Month	Number	Present	Trail Walk	Participant Location
Day	Time			
1. April 14, 10am	13		Flint River Trail	Davison, Lapeer, Flint, Grand Blanc
2. May 26, 10am	6		Flushing River Trail	Flint, Flushing
3. June 17, 6pm	8		Montrose, Barber Mem. Park	Chesaning, Flint, Montrose, Clio, Davison, New Lothrop
4. July 14, 10am	9		For-Mar Nature Preserve	Flint, Davison, Lapeer
5. July 28, 10am	14		Clio, George Atkin Jr. Rec. Trail	Flint, Grand Blanc, Davison, Burton, Montrose, Flushing
6. Aug. 18, 10am	7		Richfield Park & Picnic	Flint, Davison, Lapeer
Development and promotion of River Walks & Materials				
				TOTAL

Make all checks payable to Flint River Watershed Coalition

Questions concerning this invoice: Please contact Sue Lossing or Edie Westhoff, 810 767-6490

Partnering to Improve our Water Resources

Household Hazardous Waste & Electronic Waste Collection Day!

Saturday, May 15, 2010
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:

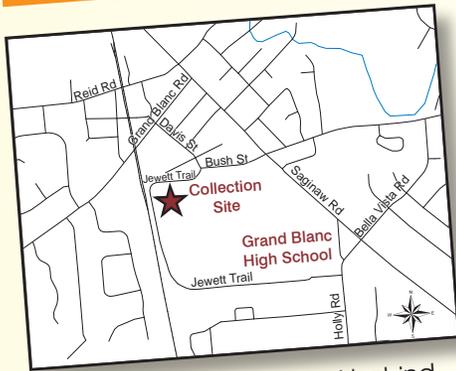
Genesee County Health
Department:
(810) 237-6164
or Genesee County
Recycle Hotline:
(810) 762-7744



Household Hazardous Waste & Electronic Waste Collection Day!



Facility locations...



Collection site located behind High School - Access from Jewett Trail

Grand Blanc High School
12500 Holly Road
Grand Blanc, MI 48439
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, Genesee County Health Department, General Motors Environmental Staff in Flint, UAW Local 599, Goodwill Industries, Fox 66 Green Team 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.



GENESEE COUNTY
METROPOLITAN PLANNING COMMISSION
RECYCLE

Household Hazardous Waste & Electronic Waste Collection Day!

Saturday, October 2, 2010

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...



Goodrich High School
8029 S. Gale Rd.
Goodrich, MI 48438
10:00 a.m. - 2:00 p.m.
Both HHW & E-Waste

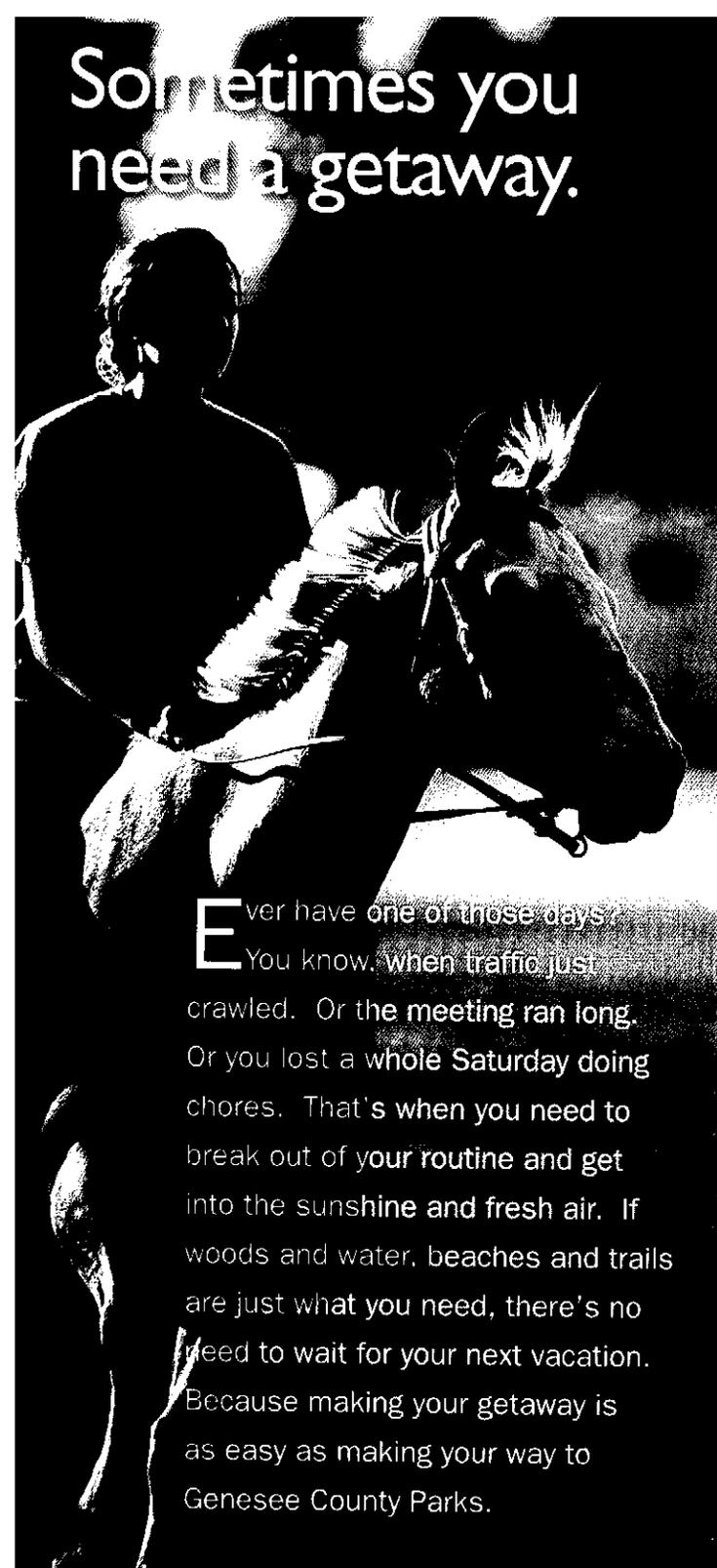


FLINT EAST - WATER SERVICE CENTER - HHW
3310 East Court Street, Flint MI
10:00 a.m. - 2:00 p.m.
Goodwill Industries - E-Waste
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Coordinated by the Household Hazardous Waste Consortium of Genesee County including the Genesee County Metropolitan Planning Commission, 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, and several local units of government.



GENESEE COUNTY
METROPOLITAN PLANNING COMMISSION
RECYCLE

A black and white photograph of a woman grooming a horse. The woman is on the left, seen from the side, holding a grooming brush to the horse's neck. The horse is on the right, facing right. The background is dark and out of focus.

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.

A black and white photograph showing a group of people outdoors, possibly at a park or campsite. The image is somewhat dark and blurry, but it suggests a social gathering in a natural setting.

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

GENESEE
COUNTY
PARKS 

GENESEE COUNTY 

Great Getaway Guide



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

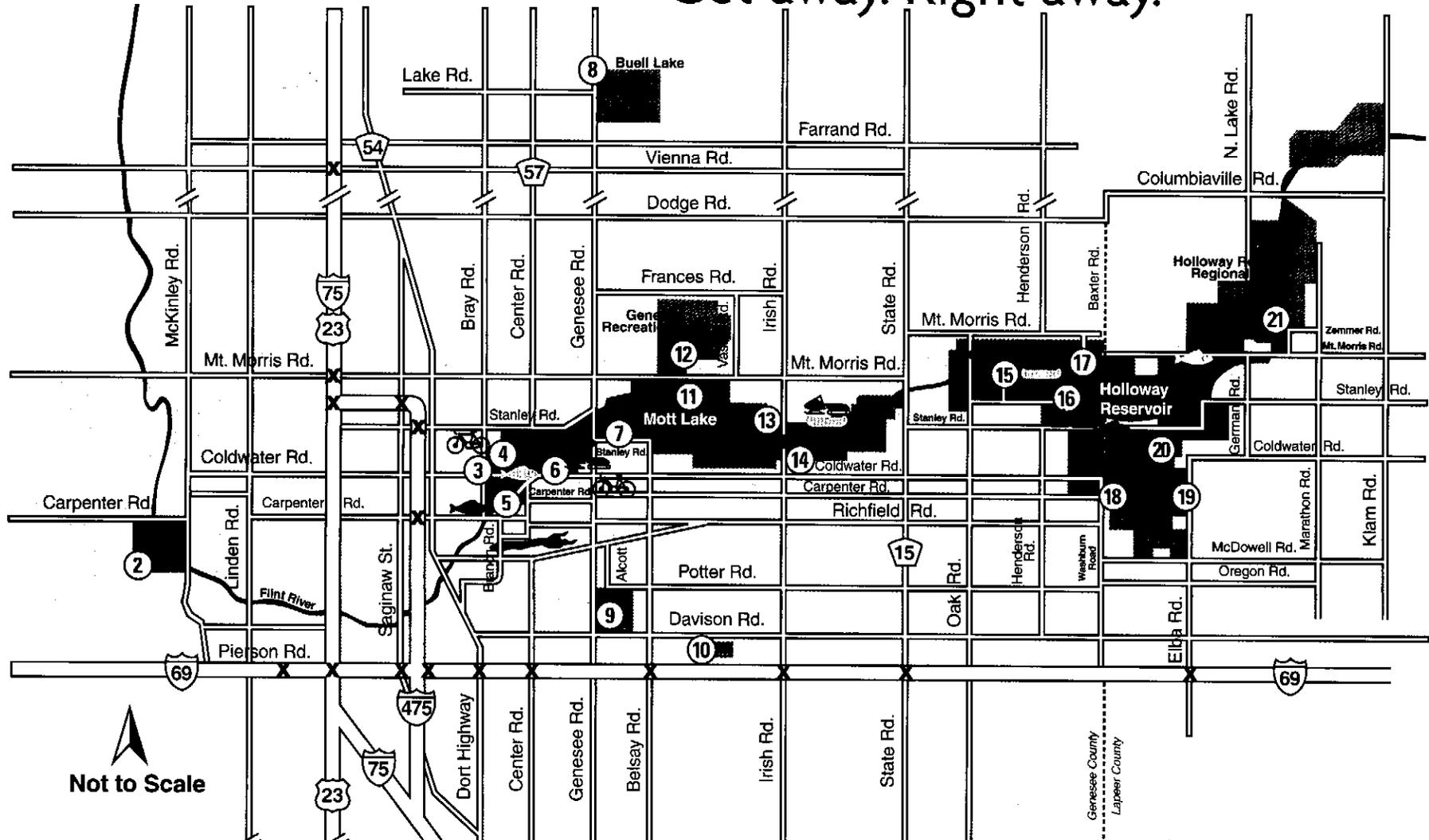


800.648.PARK, ext. 6

810.736.7100, ext. 6

GENESEE COUNTY PARKS

Get away. Right away.



Not to Scale

Key

Bicycle Path Area	Buell Lake	Irish Road & Flint River
Canoe Launch Area	Carpenter & Bray Roads	Below Holloway Reservoir Dam
Snowmobile Area	Bright Road	Stanley Road Tubes
County Parks Area	Genesee & Stanley Roads	Mt. Morris Road Bridge
Crossings	Stanley Roads	

	Ball Diamonds	Beach	BMX	Boat Launch	Canoe Launch	Camping	Cross-Country Skiing	Disc Golf	Wildlife Areas	Fishing	Pavilions	Picnic Areas	Playground	Restrooms	Sledding	Snowmobile Areas	Tennis Courts	Trails
1 LINDEN COUNTY PARK (CLOVER BEACH ON BYRAM LAKE) 15349 S. Linden Rd., Linden • 8 am to sunset daily - 135 acres	●	●				●					●	●	●	PM	●	●	●	WR
2 FLUSHING COUNTY PARK / WALKING AREA 4417 N. McKinley Road, Flushing • 8 am to sunset daily - 105 acres	●					●					●	●	●	P			●	WR 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 Rd. & Bluebell Beach. Splash Pad - Zero Depth		●							●		●	●	●	M				WB
4 CROSSROADS VILLAGE AND HUCKLEBERRY RAILROAD 6140 Bray Road, .5 miles south of Stanley Rd. 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 Rd. • Open daily May-Sept. 8 am-11 pm, Sun.-Thurs., 8 am-12 midnight, Fri. & Sat. Open daily Sept.-Dec. 8 am-9:30 pm. Genesee Belle Departure Site.														M				WR B
4 BLUEGILL BOAT LAUNCH Entrances on Coldwater Road at Center Road and Genesee Road south of Stanley Road. 24-hours daily, year-around				●					●		●	●		M		●		WB
1 ADMINISTRATIVE HEADQUARTERS 5045 Stanley Road, Flint. 810-736-7100 • 8 a.m. to 5 p.m. 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 a.m. to sunset daily - 213 acres	●			●					●	●	●	●		PV		●		WR B
9 FOR-MAR NATURE PRESERVE AND ARBORETUM AND FORBES & MARTHA MERKLEY VISITOR CENTER 2142 N. Genesee Rd., Burton.						●		●						M				WH
10 DAVISON ROADSIDE COUNTY PARK 6160 Davison Road, Burton • 8 a.m. to sunset daily - 4 acres										●	●	●	●	P	●			W
11 EVERETT A. CUMMINGS CENTER 6130 E. Mt. Morris Road, 2 miles east of Genesee Road • Open as scheduled for special events (available for rental, 810-736-7100), ext. 6.						●		●	●	●	●	●		MP		●		WR HE
12 MOUNDS OFF-ROAD VEHICLE AREA 6145 E. Mt. Morris Rd., 1.5 miles east of Genesee Rd. • 8 a.m. to sunset, except Sunday, noon to sunset. For motorcycles, mini-bikes, dune buggies, four-wheel drive vehicles, all-terrain vehicles, etc.			ORV ATV						●	●	●	●		V				
11 GOLDENROD DISC GOLF COURSE 6405 Irish Road, Davison • 8 a.m. to sunset daily.							●				●	●		P				WR
14 RICHFIELD COUNTY PARK & BMX TRACK 6322 N. Irish Road, Davison, .5 miles north of Coldwater Road 8 a.m. to sunset daily, 345 acres, located within Genesee Recreation Area.	●		●	●		●				●	●	●	●	VP		●	●	WR H
15 HOLLOWAY DAM PUBLIC ACCESS FISHING SITE & CANOE LAUNCH 24-HOUR ACCESS Access on Carr Road between Henderson and Oak Roads.				●					●	●	●	●		V				
16 WALLEYE PIKE BOAT LAUNCH 7240 Henderson Road, north of Stanley Road, Davison • Open 24-hours daily, year-around				●					●	●	●	●		M		●		
17 WOLVERINE CAMPGROUND AND BUTTERCUP BEACH 7698 N. Baxter Road, Columbiaville	●	●		●		●			●	●	●	●		M				WR H
16 TOBOGGAN HILL Located .5 miles north of Carpenter Road on Washburn Road, Oregon Township, Lapeer County.														P	●			
19 ELBA EQUESTRIAN COMPLEX Located .75 miles south of Coldwater Road on Elba Road, Oregon Township, Lapeer County.						●		●		●	●	●		P				WR HE
20 HOGBACKS AREA At the Genesee and Lapeer County line, bordered by Elba, Washburn, McDowell, and Stanley Roads.						●		●	●	●	●	●		P				WR H
21 ZEMMER PARK Marathon Road to Zemmer Road • 8 a.m. to sunset				●				●	●	●	●	●		P				

For more information on Wildlife Areas go to: geneseecountyparks.org. Alcohol is not permitted in any Genesee County Parks Facility.

2010 may

AGE GROUP COLOR KEY

- Children, ages 3-6
 - Youth, ages 7-12
 - Adults, ages 16 and older
 - Families, all ages
- Adults must accompany children.*



Fantastic Family Friendly Fun!

SATURDAY, MAY 15

Spring Plant Swap

For-Mar
Spring cleaning isn't a lot of fun, unless it's in your garden! Have extra plants? Bring them out to For-Mar and trade your surplus with other enthusiastic gardeners. All plants must be potted and will be inspected by the Department of Agriculture for disease and insect problems. Inspection starts at 9am and swap starts at 10am. For adults, ages 16 and older.
Time: 9am-noon. Cost: Free!
Pre-registration not required.



For-Mar Visitor Center

SUNDAY, MAY 16

F.A.N.s (Family Adventures in Nature) 3rd Annual Slimy Salamander Stomp

Hogbacks Area, Davison. Stanley Rd. Meet in the fishing lot between Henderson Rd and German Rd.
Join For-Mar Naturalist and salamander fanatic, Teresa Yoder, on a hunt for salamanders. Discover where and when to find them and hunt for live creatures. Dress to hike and get muddy! For families, not recommended for children under 5 years.
Time: 1:30-4:30pm. Cost: \$3.00 per person.
Pre-registration not required, but organized groups are asked to call ahead.



For-Mar

WEDNESDAY, MAY 19

Knee-High Naturalist: Mother Nature's Helpers

For-Mar
Earn your "Jr. Naturalist" badge as we explore ways to help Mother Nature. For children, ages 3-6.
Time: 10:30am-noon. Cost: \$3 per child.
Pre-registration required by 05/17/10.

WEDNESDAY, MAY 19

For-Mar on the Road for Families

Max Brandon Park, MSU Pavilion (Parking at Bunche Elementary School)
What's in the water? Join a naturalist for a look at some of our water loving friends. For families, all ages.
Time: 6-7pm. Cost: FREE!
Pre-registration suggested, but walk-ins welcome.

THURSDAY, MAY 20

Knee-High Naturalist: Mother Nature's Helpers

For-Mar
Earn your "Jr. Naturalist" badge as we explore ways to help Mother Nature. For children, ages 3-6.
Time: 10:30am-noon. Cost: \$3 per child.
Pre-registration required by 05/18/10.

SATURDAY, MAY 22

Adult Birds: Little Brown Birds

For-Mar
Migration is in full swing and those little brown birds (LBBs) are back. Learn the right field marks so you can name those LBBs. Bring your hiking shoes, binoculars, bird skills and a smile. A limited number of binoculars will be available for use. For adults, ages 16 and older.
Time: 8-9:30am. Cost: \$3 per person.
Pre-registration not required, but organized groups are asked to call ahead.



Richfield County Park

SATURDAY, MAY 22

Native Plant Sale

For-Mar
For-Mar will be hosting a plant sale featuring Michigan Native plants. These plants are naturally hardy for our local landscapes and will offer years of maintenance free color and charisma. Species and quantities will be limited, so arrive early! For adults, ages 16 and older.
Time: 10am-2pm. Cost: FREE!
Pre-registration not required.

SATURDAY, MAY 22

Brownie Scouting Outing: Watching Wildlife

For-Mar
Join other Brownie Troops for a program just for you. Earn your Watching Wildlife Achievement badge and have fun meeting other girls. For children, ages 7-12.
Time: 10-11:30 am. Cost: \$3 per child.
Pre-registration required by 05/20/10.



SATURDAY, MAY 22

Juniors Scouting Outing: Wildlife Badge

For-Mar
Join other Junior Girl Scout Troops for a program just for you. Earn your Wildlife badge and have fun meeting other Juniors. For children, ages 7-12.
Time: 1-2:30pm. Cost: \$3 per child.
Pre-registration required by 05/20/10.

WEDNESDAY, MAY 26

Knee-High Naturalist: Let's Go Hiking

For-Mar
Put on your hiking shoes for a short hike as we learn about hiking safety. For children, ages 3-6.
Time: 10:30am-noon. Cost: \$3 per child.
Pre-registration required by 05/24/10.

WEDNESDAY, MAY 26

For-Mar on the Road for Families

Max Brandon Park, MSU Pavilion (Parking at Bunche Elementary School)
Join a naturalist for a flower foray. Look at wildflowers up close and learn to name a few in your park. For families, all ages.
Time: 6-7pm. Cost: FREE!
Pre-registration suggested, but walk-ins welcome.

THURSDAY, MAY 27

Knee-High Naturalist: Let's Go Hiking

For-Mar
Put on your hiking shoes for a short hike as we learn about hiking safety. For children, ages 3-6.
Time: 10:30am-noon. Cost: \$3 per child.
Pre-registration required by 05/25/10.



Flashing County Park

SATURDAY, MAY 29

CrimFit Family Mileage Club

Max Brandon Park, MSU Pavilion (Parking at Bunche Elementary School)
Join the Crim and get the entire family active! You and your family will collect mileage for walking and/or running through the park. The more mileage you earn, the more chances you have to win great healthy prizes! Please wear comfortable clothes and shoes. For families, all ages and activity levels.
Time: 9:30-10:30am. Cost: FREE!
Pre-registration not required.

SATURDAY, MAY 29

Backyard Composting

For-Mar
Compost is known as the "black gold" of the gardening world. This simple resource can turn the poorest dirt into healthy productive gardening soil. Join Master Gardener Phil Downs as he explains how you can make your own "black gold." For adults, ages 16 and older.
Time: 10am-noon. Cost: \$7 per person.
Pre-registration required by 05/27/10.



Hogbacks Area

SUNDAY, MAY 30

Summer Kick-Off Celebration

Bluebell Beach
It's officially Summer in the Genesee County Parks! Bring a picnic and join us for an evening of family fun including bounce houses, music, a community information fair, and fireworks. For families, all ages.
Time: 4-11pm. Cost: FREE!
Pre-registration not required.



Backyard Composting

just for you. Earn your Naturalist badge and have fun meeting other Webelos. For children, ages 7-12.
Time: 10-11:30am. Cost: \$3 per child.
Pre-registration required by 05/13/10.

SATURDAY, MAY 15

Bear Cub Scouting Outing: Sharing Your World with Wildlife

For-Mar
Join other Bear Troops for a program just for you. Earn your Sharing your World with Wildlife badge and have fun meeting other Bear Cubs. For children, ages 7-12.
Time: 1-2:30pm. Cost: \$3 per child.
Pre-registration required by 05/13/10.



SATURDAY, MAY 15

For-Mar Family Nature Club Gathering

For-Mar
With our newly formed Family Nature Club, For-Mar Naturalists will be on hand to help lead a hike and activity before facilitating dialogue regarding future Nature Club outings. Inspired by the Children & Nature Network and Richard Louv's motivating book "Last Child in the Woods," For-Mar is looking for a few adventurous families to take an active role in our very own Family Nature Club. Be a part of something inspirational. We'll decide on a name, a mission, and a schedule, so don't miss out! For families, all ages.
Time: 2-3:30pm. Cost: FREE!
Pre-registration not required, but organized groups are asked to call ahead.

See Page 15 for Live Theatre Schedule!



Tiger Lily (lilium)

Program information, registration, maps and much more, visit:

Or call _____ or _____
Please fill out our online survey on your park experience.

SATURDAY, JUNE 5**CrimFit Family Mileage Club**

Max Brandon Park, MSU Pavilion
(Parking at Bunche Elementary School)
Join the Crim and get the entire family active! You and your family will collect mileage for walking and/or running through the park. The more mileage you earn, the more chances you have to win great healthy prizes! Please wear comfortable clothes and shoes. For families, all ages and activity levels.
Time: 9:30-10:30am. Cost: FREE!
Pre-registration not required.

SATURDAY, JUNE 5**Animals We Love to Hate**

For-Mar, Dewaters Building
Explore the interesting lives of animals like toads, weasels, and moles. Make a toad house to take home. For individuals with cognitive disabilities.
Time: 10:30am-noon. Cost: \$2 per person.
Pre-registration required by 6/3/10.

SATURDAY, JUNE 5**F.A.N.s (Family Adventures in Nature) National Trails Day**

For-Mar
Celebrate National Trails Day on the For-Mar trails with a park naturalist. For families, all ages.
Time: 2-3:30pm. Cost: \$3 per person.
Pre-registration not required, but organized groups are asked to call ahead.

MONDAY, JUNE 7**CrimFit Family Mileage Club**

Flushing County Park, Pavilion 1
Join the Crim and get the entire family active! You and your family will collect mileage for walking and/or running through the park. The more mileage you earn, the more chances you have to win great healthy prizes! Please wear comfortable clothes and shoes. For families, all ages and activity levels.
Time: 7-8:30pm. Cost: FREE!
Pre-registration not required.

TUESDAY, JUNE 8**CrimFit Family Mileage Club**

Linden County Park, Clover Beach Pavilion
Join the Crim and get the entire family active! You and your family will collect mileage for walking and/or running through the park. The more mileage you earn, the more chances you have to win great healthy prizes! Please wear comfortable clothes and shoes. For families, all ages and activity levels.
Time: 7-8:30pm. Cost: FREE!
Pre-registration not required.

toes to lively and sweet traditional fiddle tunes. For families, all ages. **Time: 7-8pm.**
Cost: FREE! Pre-registration not required.

THURSDAY, JUNE 10**Knee-High Naturalist:**

Frogs and Toads For-Mar
Walk to the pond and learn about amphibians. Make a toad house to take home. For children, ages 3-6.
Time: 10:30am-noon. Cost: \$3 per child.
Pre-registration required by 6/8/10.

THURSDAY, JUNE 10**CrimFit Family Mileage Club**

Bluebell Beach Bathhouse
Join the Crim and get the entire family active! You and your family will collect mileage for walking and/or running through the park. The more mileage you earn, the more chances you have to win great healthy prizes! Please wear comfortable clothes and shoes. For families, all ages and activity levels.
Time: 7-8:30pm. Cost: FREE!
Pre-registration not required.

SATURDAY, JUNE 12**6th Annual Kids Fishing Derby**

Bluegill Boat Launch
Fish come in three sizes, small, medium, and the one that got away! Bring your fishing gear and a picnic lunch; we'll supply the bait, the boats, and the experts. Co-sponsored by the Flint River Valley Steelheaders and Fishing Tackle Grab Bag. For families, all ages.
Time: 9am-2pm. Cost: Purchase of an annual or daily pass required for entrance into the facility. Participation in the Fishing Derby is FREE!

Pre-registration not required.
Daily Vehicle \$7
Senior Daily Vehicle \$6
Daily Vehicle w/Trailer \$10
Senior Daily Vehicle w/Trailer \$8
Resident Annual \$34
Resident Senior Annual \$25
Non-Resident Annual \$50
Non-Resident Senior Annual \$40

SATURDAY, JUNE 12**CrimFit Family Mileage Club**

Max Brandon Park, MSU Pavilion
(Parking at Bunche Elementary School)
Join the Crim and get the entire family active! You and your family will collect mileage for walking and/or running through the park. The more mileage you earn, the more chances you have to win great healthy prizes! Please wear comfortable clothes and shoes. For families, all ages and activity levels.
Time: 9:30-10:30am. Cost: FREE!
Pre-registration not required.

create a masterpiece from sun prints.
Summer Solstice Celebration! (ages 7-12)
What is a Solstice? Celebrate the sun and summer wildlife with a For-Mar Naturalist. Make a garden sundial.
Time: 10-11am. Cost: FREE!
Pre-registration suggested, but walk-ins welcome.

TUESDAY, JUNE 15**CrimFit Family Mileage Club**

Linden County Park, Clover Beach Pavilion
Join the Crim and get the entire family active! You and your family will collect mileage for walking and/or running through the park. The more mileage you earn, the more chances you have to win great healthy prizes! Please wear comfortable clothes and shoes. For families, all ages and activity levels.
Time: 7-8:30pm. Cost: FREE!
Pre-registration not required.

WEDNESDAY, JUNE 16**For-Mar on the Road**

For-Mar
Summer Solstice Celebration! (ages 4-6)
A Solstice Celebration! Visit summer wildlife with a For-Mar Naturalist and create a masterpiece from sun prints.
Summer Solstice Celebration! (ages 7-12)
What is a Solstice? Celebrate the sun and summer wildlife with a For-Mar Naturalist. Make a garden sundial.
Time: 11am-noon. Cost: FREE!
Pre-registration suggested, but walk-ins welcome.

WEDNESDAY, JUNE 16**For-Mar on the Road**

Linden County Park, Clover Beach Pavilion
Summer Solstice Celebration! (ages 4-6)
A Solstice Celebration! Visit summer wildlife with a For-Mar Naturalist and create a masterpiece from sun prints.
Summer Solstice Celebration! (ages 7-12)
What is a Solstice? Celebrate the sun and summer wildlife with a For-Mar Naturalist. Make a garden sundial.
Time: 2-3pm. Cost: FREE! Pre-registration suggested, but walk-ins welcome.

WEDNESDAY, JUNE 16**For-Mar on the Road**

for Families
Max Brandon Park, MSU Pavilion
(Parking at Bunche Elementary School)
Interesting insects can be found with a naturalist as your guide. For families, all ages.
Time: 6-7pm. Cost: FREE!
Pre-registration suggested, but walk-ins welcome.

will collect mileage for walking and/or running through the park. The more mileage you earn, the more chances you have to win great healthy prizes! Please wear comfortable clothes and shoes. For families, all ages and activity levels.
Time: 7-8:30pm. Cost: FREE!
Pre-registration not required.

THURSDAY, JUNE 17**Theatre in Our Parks:****Love's Labors Lost**

For-Mar
The Kearsley Park Traveling Players perform Shakespeare's "Love's Labors Lost," the story of a King and his three noble companions who take an oath to devote themselves to three years of study, promising not to give in to the company of women. However, when the Princess of France and her ladies in waiting arrive for a state visit, the men's good intentions take a comical turn. For families, all ages.
Time: 7-9:30pm. Cost: FREE!
Pre-registration not required.

FRIDAY, JUNE 18**For-Mar on the Road**

Richfield County Park, Pavilion 4
Summer Solstice Celebration! (ages 4-6)
A Solstice Celebration! Visit summer wildlife with a For-Mar Naturalist and create a masterpiece from sun prints.
Summer Solstice Celebration! (ages 7-12)
What is a Solstice? Celebrate the sun and summer wildlife with a For-Mar Naturalist. Make a garden sundial.
Time: 11am-noon.
Cost: FREE!
Pre-registration suggested, but walk-ins welcome.

activity levels.
Time: 9:30-10:30am. Cost: FREE!
Pre-registration not required.

SATURDAY, JUNE 19**Father's Day Workshop**

For-Mar
Dad is always making something in his workshop. Well, now it's your turn! Come out to For-Mar's workshop and make something special for dad. For youth, ages 7-12.
Time: 10am-noon. Cost: \$7 per person.
Pre-registration required by 06/17/10.

SATURDAY, JUNE 19**F.A.N.s (Family Adventures in Nature) Campfire Starting and Single Burner Stoves**

For-Mar
Learn just what it takes to start a fire. Join us for games and activities around a fire. For families, all ages.
Time: 6-7:30pm. Cost: \$3.00 per person.
Pre-registration not required, but organized groups are asked to call ahead.

June events continued on next page >>



the more chances you have to win great healthy prizes! Please wear comfortable clothes and shoes. For families, all ages and activity levels.

Time: 7-8:30pm. Cost: FREE!
Pre-registration not required.

TUESDAY, JUNE 22

For-Mar on the Road

Max Brandon Park, MSU Pavilion
(Parking at Bunche Elementary School)
Mystery Morph! (ages 4-6)

Was that a moth or a butterfly? Learn differences between these similar insects with a For-Mar Naturalist. Make a moth feeder and butterfly mask.

Mystery Morph! (ages 7-12)

For-Mar Naturalists identify butterflies, moths and other insects which mysteriously transform. Learn about monarch butterflies while creating a take-home butterfly garden.

Time: 10-11am. Cost: FREE!

Pre-registration suggested, but walk-ins welcome.



Flushing County Park

For-Mar Naturalists identify butterflies, moths and other insects which mysteriously transform. Learn about monarch butterflies while creating a take home butterfly garden.

Time: 11am-noon. Cost: FREE!

Pre-registration suggested, but walk-ins welcome.

WEDNESDAY, JUNE 23

For-Mar on the Road

Linden County Park, Clover Beach Pavilion
Mystery Morph! (ages 4-6)

Was that a moth or a butterfly? Learn differences between these similar insects with a For-Mar Naturalist. Make a moth feeder and butterfly mask.

Mystery Morph! (ages 7-12)

For-Mar Naturalists identify butterflies, moths and other insects which mysteriously transform. Learn about monarch butterflies while creating a take-home butterfly garden.

Time: 2-3pm. Cost: FREE! *Pre-registration suggested, but walk-ins welcome.*

WEDNESDAY, JUNE 23

For-Mar on the Road for Families

Max Brandon Park, MSU Pavilion
(Parking at Bunche Elementary School)

Hike with a naturalist as we learn to follow our nose. For families, all ages.

Time: 6-7pm. Cost: FREE! *Pre-registration suggested, but walk-ins welcome.*

WEDNESDAY, JUNE 23

Cooking Michigan Style & Backyard Family Games

Bluebell Beach Bathhouse
Using Michigan produce, we will prepare recipes from the 1800s and the present. Fun family games end a perfect evening. For families, all ages. **Time: 6-8pm. Cost: FREE!** *Pre-registration not required.*

WEDNESDAY, JUNE 23

Dancing Miracles

Davison Roadside Park
Build confidence and improve your coordination and motor skills through the magic of dance! Join Kara and Heather from L & L Dance Studio for loads of fun in a positive caring class just for you! For children, ages 3-10 with special needs. **Time: 7-7:30pm. Cost: FREE!** *Pre-registration not required, limited to 10 children.*

Bring your family and join us for a sample healthy lunch demonstration, games and a day at the beach. For families, all ages.

Time: 12:30-2pm. Cost: FREE!

Pre-registration not required.

THURSDAY, JUNE 24

Cooking Michigan Style & Backyard Family Games

Flushing County Park, Pavilion 1
Using Michigan produce, we will prepare recipes from the 1800s and the present. Fun family games end a perfect evening. For families, all ages. **Time: 6-8pm. Cost: FREE!** *Pre-registration not required.*

THURSDAY, JUNE 24

CrimFit Family Mileage Club

Bluebell Beach Bathhouse
Join the Crim and get the entire family active! You and your family will collect mileage for walking and/or running through the park. The more mileage you earn, the more chances you have to win great healthy prizes! Please wear comfortable clothes and shoes. For families, all ages and activity levels. **Time: 7-8:30pm. Cost: FREE!** *Pre-registration not required.*

FRIDAY, JUNE 25

For-Mar on the Road

Richfield County Park, Pavilion 4
Mystery Morph! (ages 4-6)

Was that a moth or a butterfly? Learn differences between these similar insects with a For-Mar Naturalist. Make a moth feeder and butterfly mask.

Mystery Morph! (ages 7-12)

For-Mar Naturalists identify butterflies, moths and other insects which mysteriously transform. Learn about monarch butterflies while creating a take-home butterfly garden. **Time: 11am-noon. Cost: FREE!** *Pre-registration suggested, but walk-ins welcome.*

FRIDAY, JUNE 25

For-Mar on the Road

Bluebell Beach, Pavilion 1
Mystery Morph! (ages 4-6)

Was that a moth or a butterfly? Learn differences between these similar insects with a For-Mar Naturalist. Make a moth feeder and butterfly mask.

Mystery Morph! (ages 7-12)

For-Mar Naturalists identify butterflies, moths and other insects which mysteriously transform. Learn about monarch butterflies while creating a take-home butterfly garden. **Time: 2-3pm. Cost: FREE!** *Pre-registration suggested, but walk-ins welcome.*

of the park

S'mores, a campfire, and a night under the stars! For families, all ages.

Time: 5pm-10am. Cost: FREE!

Pre-registration required by 6/25/10.

Limited to the first 50 families. Tents only!

SATURDAY, JUNE 26

F.A.N.s (Family Adventures in Nature) Galileo-Scope

For-Mar

Come explore the night sky with a special telescope designed over 400 years ago. For families, all ages. **Time: 9:30-11pm.**

Cost: \$3 per person. *Pre-registration not required, but organized groups are asked to call ahead.*

MONDAY, JUNE 28

Nutrition and Fitness for Individuals with Special Needs and their Families

Davison Roadside Park

Backyard games and healthy snacks for individuals with special needs and their families. **Time: 6-8pm. Cost: FREE!** *Pre-registration not required.*

MONDAY, JUNE 28

Boy, You're Gonna Love It!

Linden County Park, Clover Beach Pavilion

Outdoor grilling doesn't have to be limited to hamburgers and hot dogs! Join Flint's own David Custer, the Boy Gourmet, to learn how to make your picnic stand out and have other park patrons salivating when they smell your meal! You may also get to be part of the studio audience of the Boy Gourmet's TV segment! For adults, ages 16 and older.

Time: 6:30-8pm. Cost: FREE! *Pre-registration not required, limited to 25 participants.*

MONDAY, JUNE 28

CrimFit Family Mileage Club

Flushing County Park, Pavilion 1

Join the Crim and get the entire family active! You and your family will collect mileage for walking and/or running through the park. The more mileage you earn, the more chances you have to win great healthy prizes! Please wear comfortable clothes and shoes. For families, all ages and activity levels. **Time: 7-8:30pm. Cost: FREE!** *Pre-registration not required.*

TUESDAY, JUNE 29

For-Mar on the Road

Max Brandon Park, MSU Pavilion
(Parking at Bunche Elementary School)

Gone Fishin' (ages 4-6)

"What was that fish I just caught?" A For-Mar Naturalist describes common fish. Observe some of Michigan's fish in a live exhibit.

Gone Fishin' (ages 4-6)

"What was that fish I just caught?" A For-Mar Naturalist describes common fish. Observe some of Michigan's fish in a live exhibit.

Gone Fishin' (ages 7-12)

A For-Mar Naturalist describes fishing as a way of life in Michigan. See some of Michigan's cool species of fish before trying to catch your own. **Time: 11am-noon. Cost: FREE!** *Pre-registration suggested, but walk-ins welcome.*

WEDNESDAY, JUNE 30

For-Mar on the Road

Linden County Park, Clover Beach Pavilion

Gone Fishin' (ages 4-6)

"What was that fish I just caught?" A For-Mar Naturalist describes common fish. Observe some of Michigan's fish in a live exhibit.

Gone Fishin' (ages 7-12)

A For-Mar Naturalist describes fishing as a way of life in Michigan. See some of Michigan's cool species of fish before trying to catch your own. **Time: 2-3pm. Cost: FREE!** *Pre-registration suggested, but walk-ins welcome.*

WEDNESDAY, JUNE 30

For-Mar on the Road for Families

Max Brandon Park, MSU Pavilion
(parking at Bunche Elementary School)

Wade in the water and see what's up with our wading and waddling friends. For families, all ages.

Time: 6-7pm. Cost: FREE!

Pre-registration suggested, but walk-ins welcome.

WEDNESDAY, JUNE 30

Cooking Michigan Style & Backyard Family Games

Bluebell Beach Bathhouse

Using Michigan produce, we will prepare recipes from the 1800s and the present. Fun family games end a perfect evening. For families, all ages. **Time: 6-8pm. Cost: FREE!** *Pre-registration not required.*

WEDNESDAY, JUNE 30

Dancing Miracles

Davison Roadside Park

Build confidence and improve your coordination and motor skills through the magic of dance! Join Kara and Heather from L & L Dance Studio for loads of fun in a positive caring class just for you! For children, ages 3-10 with special needs. **Time: 7-7:30pm. Cost: FREE!** *Pre-registration not required, limited to 10 children.*

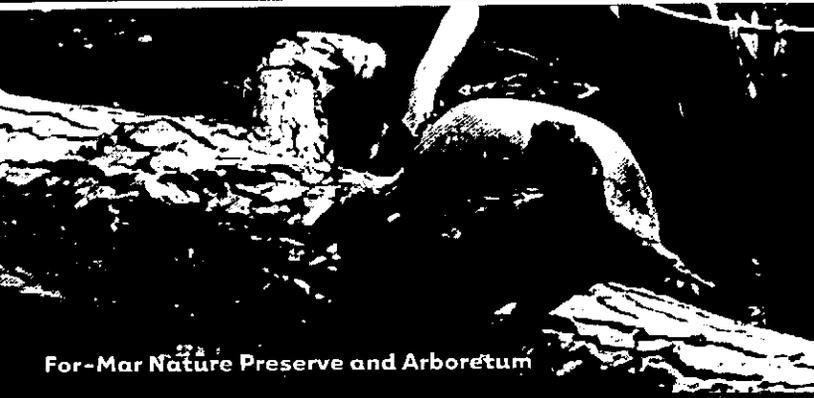
*Cooking Michigan Style & Backyard Family Games, Nutrition & Fitness for Individuals with Special Needs and their families, and the Lunch Bunch are funded with Federal funds from USDA's Supplemental Nutrition Assistance Program by way of the Michigan Nutrition Network in a grant to the Genesee Intermediate School District. The SNAP-Ed Program provides nutrition assistance to people with low income; it can help you buy nutritious foods for a better diet. To find out more, contact your local DHS office or check online <http://www.mfla.state.mi.us/mars/index.aspx> or call 1-800-481-4989. *This institution is an equal opportunity provider and employer.*

JULY 2010

AGE GROUP COLOR KEY

- Children, ages 2-4
- Children, ages 4-6
- Youth, ages 7-12
- Families, all ages
- Adults, ages 16 and older
- Special Needs Audiences, children and adults with cognitive & physical disabilities

Adults must accompany children.



For-Mar Nature Preserve and Arboretum

Fantastic Family Friendly Fun!

THURSDAY, JULY 1 Knee-High Naturalist

Story Hour: Fireflies! For-Mar Fireflies make the nighttime beautiful. Take a close-up look and learn more about them through activities and play. For children, ages 2-4. **Time: 10-11am. Cost: \$3 per child.** Pre-registration required by 6/29/10.

THURSDAY, JULY 1 For-Mar on the Road

Buell Lake County Park, Pavilion 1
Gone Fishin' (ages 4-6)
"What was that fish I just caught?" A For-Mar Naturalist describes common fish. Observe some of Michigan's fish in a live exhibit.
Gone Fishin' (ages 7-12)
A For-Mar Naturalist describes fishing as a way of life in Michigan. See some of Michigan's cool species of fish before trying to catch your own. **Time: 11am-noon. Cost: FREE!** Pre-registration suggested, but walk-ins welcome.

THURSDAY, JULY 1 Life in the Water

Richfield County Park, Pavilion 2
Join Ben Wickerham from the Genesee Conservation District on an adventure to see who and what shares the water with us. Dress to get wet and muddy! For families, all ages.
Time: 7-8pm. Cost: FREE! Pre-registration not required.

THURSDAY, JULY 1 CrimFit Family Mileage Club

Bluebell Beach Bathhouse
Join the Crim and get the entire family active! You and your family will collect mileage for walking and/or running through the park. The more mileage you earn, the more chances you have to win great healthy prizes! Please wear comfortable clothes and shoes. For families, all ages and activity levels.
Time: 7-8:30pm. Cost: FREE! Pre-registration not required.

FRIDAY, JULY 2 For-Mar on the Road

Richfield County Park, Pavilion 4
Gone Fishin' (ages 4-6)
"What was that fish I just caught?" A For-Mar Naturalist describes common fish. Observe some of Michigan's fish in a live exhibit.
Gone Fishin' (ages 7-12)
A For-Mar Naturalist describes fishing as a way of life in Michigan. See some of Michigan's cool species of fish before trying to catch your own.
Time: 11am-noon. Cost: FREE! Pre-registration suggested, but walk-ins welcome.

FRIDAY, JULY 2 For-Mar on the Road



MONDAY, JULY 5 CrimFit Family Mileage Club

Flushing County Park, Pavilion 1
Join the Crim and get the entire family active! You and your family will collect mileage for walking and/or running through the park. The more mileage you earn, the more chances you have to win great healthy prizes! Please wear comfortable clothes and shoes. For families, all ages and activity levels. **Time: 7-8:30pm. Cost: FREE!** Pre-registration not required.

TUESDAY, JULY 6 For-Mar on the Road

Max Brandon Park, MSU Pavilion (Parking at Bunche Elementary School)
Name that Tune (ages 4-6)
It's midsummer and wildlife is making its own unique music. Join a For-Mar Naturalist as they tune into Nature's symphony.
Name that Tune (ages 7-12)
Michigan's wildlife demands to be heard. Follow a For-Mar Naturalist as they track down the source of all these sounds.
Time: 10-11am. Cost: FREE! Pre-registration suggested, but walk-ins welcome.

TUESDAY, JULY 6 Cooking Michigan Style & Backyard Family Games

Davison Roadside Park
Using Michigan produce, we will prepare recipes from the 1800s and the present. Fun family games end a perfect evening. For families, all ages.
Time: 6-8pm. Cost: FREE! Pre-registration not required.

TUESDAY, JULY 6 Summer Shape Up

Flushing County Park, Pavilion 1
Short bursts of cardio with strength exercises to build endurance and strength.

WEDNESDAY, JULY 7 Cooking Michigan Style & Backyard Family Games

Bluebell Beach Bathhouse
Using Michigan produce, we will prepare recipes from the 1800s and the present. Fun family games end a perfect evening. For families, all ages. **Time: 6-8pm. Cost: FREE!** Pre-registration not required.

WEDNESDAY, JULY 7 Things that Go Boom!

Davison Roadside Park
What do lunch bags, film canisters, and diet coke have in common? Dr. Maximus X. Plosion, of course! For families, all ages.
Time: 7-8pm. Cost: FREE! Pre-registration not required.

THURSDAY, JULY 8 Knee-High Naturalist

Story Hour: The Picnic
For-Mar
Enjoy a story about animals and their meals. Learn how and why they eat what they eat. For children, ages 2-4.
Time: 10-11am. Cost: \$3 per child. Pre-registration required by 7/6/10.

THURSDAY, JULY 8 For-Mar on the Road

Buell Lake County Park, Pavilion 1
Name that Tune (ages 4-6)
It's midsummer and wildlife is making its own unique music. Join a For-Mar Naturalist as they tune into Nature's symphony.
Name that Tune (ages 7-12)
Michigan's wildlife demands to be heard. Follow a For-Mar Naturalist as they track down the source of all these sounds.
Time: 11am-noon. Cost: FREE! Pre-registration suggested, but walk-ins welcome.



Buttercup Beach

FRIDAY, JULY 9 For-Mar on the Road

Bluebell Beach, Pavilion 1
Name that Tune (ages 4-6)
It's midsummer and wildlife is making its own unique music. Join a For-Mar Naturalist as they tune into Nature's symphony.
Name that Tune (ages 7-12)
Michigan's wildlife demands to be heard. Follow a For-Mar Naturalist as they track down the source of all these sounds.
Time: 2-3pm. Cost: FREE! Pre-registration suggested, but walk-ins welcome.

SATURDAY, JULY 10 CrimFit Family Mileage Club

Max Brandon Park, MSU Pavilion (Parking at Bunche Elementary School)
Join the Crim and get the entire family active! You and your family will collect mileage for walking and/or running through the park. The more mileage you earn, the more chances you have to win great healthy prizes! Please wear comfortable clothes and shoes. For families, all ages and activity levels. **Time: 9:30-10:30am. Cost: FREE!** Pre-registration not required.

SATURDAY, JULY 10



For-Mar

THURSDAY, JULY 1 For-Mar on the Road

Flushing County Park, Pavilion 1
Gone Fishin' (ages 4-6)

AGE GROUPS FOR NEW

- Children, ages 2-4
- Children, ages 4-6
- Youth, ages 7-12
- Families, all ages
- Adults, ages 16 and older
- Special Needs Audiences, children and adults with cognitive & physical disabilities

Adults must accompany children.



Bluebell Beach

Fantastic Family Friendly Fun!

WEDNESDAY, JULY 21
Cooking Michigan Style & Backyard Family Games
Bluebell Beach Bathhouse
 Using Michigan produce, we will prepare recipes from the 1800s and the present. Fun family games end a perfect evening. For families, all ages. **Time: 6-8pm. Cost: FREE!** *Pre-registration not required.*

WEDNESDAY, JULY 21
And The Survey Says...
Davison Roadside Park
 It's time to play Family Feud with host Chad Mosher! Chad's been a contestant and winner on Jeopardy's Kid's Week, Million Dollar Password, Trivial Pursuit: America Plays, and GSN Live. It's time to relive your favorite TV fun with Game Shows in the Parks! For families, all ages. **Time: 7-8pm. Cost: FREE!** *Pre-registration not required.*

THURSDAY, JULY 22
Knee-High Naturalist Story Hour: Turtle and the Moon
For-Mar
 Learn all about our evening sky visitor, the moon, and make some new friends. For children, ages 2-4. **Time: 10-11am. Cost: \$3 per child.** *Pre-registration required by 7/20/10.*

THURSDAY, JULY 22
For-Mar on the Road
Buell Lake County Park, Pavilion 1
Earth Day Celebration! (ages 4-6)
 Celebrate the 40th Anniversary of Earth Day with For-Mar Naturalists! Using recycled material, learn about the basics of the "Three R's" and composting. **Earth Day Celebration!** (ages 7-12)
 For-Mar Naturalists celebrate the 40th Anniversary of Earth Day. Experience fun ways to incorporate "The Three R's" into everyday life. **Time: 11am-1pm. Cost: FREE!** *Pre-registration suggested, but walk-ins welcome.*

FRIDAY, JULY 23
For-Mar on the Road
Bluebell Beach, Pavilion 1
Earth Day Celebration! (ages 4-6)
 Celebrate the 40th Anniversary of Earth Day with For-Mar Naturalists! Using recycled material, learn all about the basics of the "Three R's" and composting. **Earth Day Celebration!** (ages 7-12)
 For-Mar Naturalists celebrate the 40th Anniversary of Earth Day. Experience fun ways to incorporate "The Three R's" into everyday life. **Time: 2-3pm. Cost: FREE!** *Pre-registration suggested, but walk-ins welcome.*



SATURDAY, JULY 24
CrimFit Family Mileage Club
Max Brandon Park, MSU Pavilion (Parking at Bunche Elementary School)
 Join the Crim and get the entire family active! You and your family will collect mileage for walking and/or running through the park. The more mileage you earn, the more chances you have to win great healthy prizes! Please wear comfortable clothes and shoes. For families, all ages and activity levels. **Time: 9:30-10:30am. Cost: FREE!** *Pre-registration not required.*

TUESDAY, JULY 27
For-Mar on the Road
Max Brandon Park, MSU Pavilion (Parking at Bunche Elementary School)
Life in the Big Pond (ages 4-6)
 Learn about the creepy crawlies, sinister snappers and fuzzy fowl taking over the summer ponds and lakes. A For-Mar Naturalist will help create your own pond still life. **Life in the Big Pond** (ages 7-12)
 Join a For-Mar Naturalist in pond water exploration by 'dipping' from nearby waterways. Make a 'Pond Globe' as a memoir of your observations! **Time: 10-11am. Cost: FREE!** *Pre-registration suggested, but walk-ins welcome.*

TUESDAY, JULY 27
Cooking Michigan Style & Backyard Family Games
Davison Roadside Park
 Using Michigan produce, we will prepare recipes from the 1800s and the present. Fun family games end a perfect evening. For families, all ages. **Time: 6-8pm. Cost: FREE!** *Pre-registration not required.*

TUESDAY, JULY 27
"Let's go to the Winner's Circle!"
Flushing County Park, Pavilion 1
 Relive another one of your favorite TV game shows with host Chad Mosher! It's time to play our version of the \$10,000 Pyramid, where the prize isn't \$10,000! Chad's been a contestant and winner on Jeopardy's Kid's Week, Million Dollar Password, Trivial Pursuit: America Plays, and GSN Live. For families, all ages. **Time: 7-8pm. Cost: FREE!** *Pre-registration not required.*

TUESDAY, JULY 27
CrimFit Family Mileage Club
Indon County Park, Clover Beach Pavilion

WEDNESDAY, JULY 28
No-Sew Tote Bags
Davison Roadside Park
 Scrap fabric, duct tape, and Flint Handmade! Learn how to make no-sew tote bags. For families, all ages. **Time: 7-8:30pm. Cost: FREE!** *Pre-registration not required, limited to the first 25 participants.*

THURSDAY, JULY 29
Knee-High Naturalist Story Hour: Water Dance *For-Mar*
 Follow water on its journey around our planet. Find out where it comes from and where it goes. For children, ages 2-4. **Time: 10-11am. Cost: \$3 per child.** *Pre-registration required by 7/27/10.*

THURSDAY, JULY 29
For-Mar on the Road
Buell Lake County Park, Pavilion 1
Life in the Big Pond (ages 4-6)
 Learn about the creepy crawlies, sinister snappers and fuzzy fowl taking over the summer ponds and lakes. A For-Mar Naturalist will help create your own pond still life. **Life in the Big Pond** (ages 7-12)
 Join a For-Mar Naturalist in pond water exploration by 'dipping' from nearby waterways. Make a 'Pond Globe' as a memoir of your observations! **Time: 11am-noon. Cost: FREE!** *Pre-registration suggested, but walk-ins welcome.*

THURSDAY, JULY 29
For-Mar on the Road
Flushing County Park, Pavilion 1
Life in the Big Pond (ages 4-6)
 Learn about the creepy crawlies, sinister snappers and fuzzy fowl taking over the summer ponds and lakes. A For-Mar Naturalist will help create your own pond still life. **Life in the Big Pond** (ages 7-12)

FRIDAY, JULY 30
For-Mar on the Road
Bluebell Beach, Pavilion 1
Life in the Big Pond (ages 4-6)
 Learn about the creepy crawlies, sinister snappers and fuzzy fowl taking over the summer ponds and lakes. A For-Mar Naturalist will help create your own pond still life. **Life in the Big Pond** (ages 7-12)
 Join a For-Mar Naturalist in pond water exploration by 'dipping' from nearby waterways. Make a 'Pond Globe' as a memoir of your observations! **Time: 2-3pm. Cost: FREE!** *Pre-registration suggested, but walk-ins welcome.*

SATURDAY, JULY 31
CrimFit Family Mileage Club
Max Brandon Park, MSU Pavilion (Parking at Bunche Elementary School)
 Join the Crim and get the entire family active! You and your family will collect mileage for walking and/or running through the park. The more mileage you earn, the more chances you have to win great healthy prizes! Please wear comfortable clothes and shoes. For families, all ages and activity levels. **Time: 9:30-10:30am. Cost: FREE!** *Pre-registration not required.*

SATURDAY, JULY 31
Give A Little Green, Get A Little Green *For-Mar*
 Plants have been known to increase your property values by up to 15%. But did you know that plants can help you save money at home? Join us and learn how planting a little green can save you a little green. For adults, ages 16 and older. **Time: 10am-noon. Cost: \$7 per person.** *Pre-registration recommended, but not required.*

SATURDAY, JULY 31
F.A.N.s (Family Adventures)

THURSDAY, JULY 22

For-Mar on the Road

Flushing County Park, Pavilion 1
Earth Day Celebration! (ages 4-6)
Celebrate the 40th Anniversary of Earth Day with For-Mar Naturalists! Using recycled material, learn all about the basics of the "Three R's" and composting.
Earth Day Celebration! (ages 7-12)
For-Mar Naturalists celebrate the 40th Anniversary of Earth Day. Experience fun ways to incorporate "The Three R's" into everyday life. **Time: 2-3pm. Cost: FREE!** Pre-registration suggested, but walk-ins welcome.

THURSDAY, JULY 22

The Lunch Bunch:

Cooking and Games

Bluebell Beach Bathhouse
Bring your family and join us for a sample healthy lunch demonstration, games and a day at the beach. For families, all ages. **Time: 12:30-2pm. Cost: FREE!** Pre-registration not required.

THURSDAY, JULY 22

Cooking Michigan Style & Backyard Family Games

Flushing County Park, Pavilion 1
Using Michigan produce, we will prepare recipes from the 1800s and the present. Fun family games end a perfect evening. For families, all ages. **Time: 6-8pm. Cost: FREE!** Pre-registration not required.

THURSDAY, JULY 22

CrimFit Family Mileage Club

Bluebell Beach Bathhouse
Join the Crim and get the entire family active! You and your family will collect mileage for walking and/or running through the park. The more mileage you earn, the more chances you have to win great healthy prizes! Please wear comfortable clothes and shoes. For families, all ages and activity levels. **Time: 7-8:30pm. Cost: FREE!** Pre-registration not required.

FRIDAY, JULY 23

For-Mar on the Road

Richfield County Park, Pavilion 4
Earth Day Celebration! (ages 4-6)
Celebrate the 40th Anniversary of Earth Day with For-Mar Naturalists! Using recycled material, learn all about the basics of the "Three R's" and composting.
Earth Day Celebration! (ages 7-12)
For-Mar Naturalists celebrate the 40th Anniversary of Earth Day. Experience fun ways to incorporate "The Three R's" into everyday life. **Time: 11am-noon. Cost: FREE!** Pre-registration suggested, but walk-ins welcome.

Shrubs 101 For-Mar

Shrubs are a critical part of any landscape, be it natural or ornamental. Join us as we learn how to identify a variety of shrubs, both good and bad!
For adults, ages 16 and older. **Time: 10am-noon. Cost: \$7 per person.** Pre-registration recommended, but not required.

SATURDAY, JULY 24

F.A.N.s (Family Adventures in Nature) Nighttime Bug Blitz For-Mar

Make a craft and learn about bug activity at night. For families, all ages. **Time: 8-9:30pm. Cost: \$3.00 per person.** Pre-registration not required, but organized groups are asked to call ahead.

MONDAY, JULY 26

Nutrition and Fitness for Individuals with Special Needs and their Families

Davison Roadside Park
Backyard games and healthy snacks for individuals with special needs and their families. **Time: 6-8pm. Cost: FREE!** Pre-registration not required.

MONDAY, JULY 26

Be in a Movie Workshop

Linden County Park, Clover Beach Pavilion
JR Galactic Casting shares insiders tips on breaking into the film industry at the "Be in a Movie Workshop." Participants of this FREE workshop will learn how to be cast as an extra, key production ques, proper set etiquette and proven techniques to get the most face time on the big screen. Casting directors will be present for on-site registration with JR Galactic Extras Casting Service. There is no charge for the workshop, however those who wish to register with the casting service will submit a \$10 registration fee after the program is over. Please come "Camera Ready." For families, all ages. **Time: 6-8pm. Cost: FREE!** RSVP online at www.JRGalactic.com or call 517.347.5661.

MONDAY, JULY 26

CrimFit Family Mileage Club

Flushing County Park, Pavilion 1
Join the Crim and get the entire family active! You and your family will collect mileage for walking and/or running through the park. The more mileage you earn, the more chances you have to win great healthy prizes! Please wear comfortable clothes and shoes. For families, all ages and activity levels. **Time: 7-8:30pm. Cost: FREE!** Pre-registration not required.

Cooking Michigan Style & Backyard Family Games, Nutrition & Fitness for Individuals with Special Needs and their families, and the Lunch Bunch are funded with Federal funds from USDA's Supplemental Nutrition Assistance Program by way of the Michigan Nutrition Network in a grant to the Genesee Intermediate School District. The SNAP-Ed Program provides nutrition assistance to people with low income; it can help you buy nutritious foods for a better diet. To find out more, contact your local DHS office or check online <http://www.mfla.state.mi.us/mars/index.aspx> or call 1-800-481-4988. *This institution is an equal opportunity provider and employer.

mileage for walking and/or running through the park. The more mileage you earn, the more chances you have to win great healthy prizes! Please wear comfortable clothes and shoes. For families, all ages and activity levels. **Time: 7-8:30pm. Cost: FREE!** Pre-registration not required.

WEDNESDAY, JULY 28

For-Mar on the Road

For-Mar
Life in the Big Pond (ages 4-6)
Learn about the creepy crawlies, sinister snappers and fuzzy fowl taking over the summer ponds and lakes. A For-Mar Naturalist will help create your own pond still life.
Life in the Big Pond (ages 7-12)
Join a For-Mar Naturalist in pond water exploration by 'dipping' from nearby waterways. Make a 'Pond Globe' as a memoir of your observations! **Time: 11am-noon. Cost: FREE!** Pre-registration suggested, but walk-ins welcome.

WEDNESDAY, JULY 28

For-Mar on the Road

Linden County Park, Clover Beach Pavilion
Life in the Big Pond (ages 4-6)
Learn about the creepy crawlies, sinister snappers and fuzzy fowl taking over the summer ponds and lakes. A For-Mar Naturalist will help create your own pond still life.

Life in the Big Pond (ages 7-12)

Join a For-Mar Naturalist in pond water exploration by 'dipping' from nearby waterways. Make a 'Pond Globe' as a memoir of your observations! **Time: 2-3pm. Cost: FREE!** Pre-registration suggested, but walk-ins welcome.

WEDNESDAY, JULY 28

For-Mar on the Road

for Families
Max Brandon Park, MSU Pavilion (Parking at Bunche Elementary School)
Join a naturalist on a search for animal homes. For families, all ages. **Time: 6-7pm. Cost: FREE!** Pre-registration suggested, but walk-ins welcome.

WEDNESDAY, JULY 28

Cooking Michigan Style & Backyard Family Games

Bluebell Beach Bathhouse
Using Michigan produce, we will prepare recipes from the 1800s and the present. Fun family games end a perfect evening. For families, all ages. **Time: 6-8pm. Cost: FREE!** Pre-registration not required.

power of the sun. For families, all ages. **Time: 2-3pm. Cost: FREE!** Pre-registration suggested, but walk-ins welcome.

THURSDAY, JULY 29

The Lunch Bunch:

Cooking and Games

Bluebell Beach Bathhouse
Bring your family and join us for a sample healthy lunch demonstration, games and a day at the beach. For families, all ages. **Time: 12:30-2pm. Cost: FREE!** Pre-registration not required.

THURSDAY, JULY 29

Cooking Michigan Style & Backyard Family Games

Flushing County Park, Pavilion 1
Using Michigan produce, we will prepare recipes from the 1800s and the present. Fun family games end a perfect evening. For families, all ages. **Time: 6-8pm. Cost: FREE!** Pre-registration not required.

THURSDAY, JULY 29

CrimFit Family Mileage Club

Bluebell Beach Bathhouse
Join the Crim and get the entire family active! You and your family will collect mileage for walking and/or running through the park. The more mileage you earn, the more chances you have to win great healthy prizes! Please wear comfortable clothes and shoes. For families, all ages and activity levels. **Time: 7-8:30pm. Cost: FREE!** Pre-registration not required.

FRIDAY, JULY 30

For-Mar on the Road

Richfield County Park, Pavilion 4
Life in the Big Pond (ages 4-6)
Learn about the creepy crawlies, sinister snappers and fuzzy fowl taking over the summer ponds and lakes. A For-Mar Naturalist will help create your own pond still life.
Life in the Big Pond (ages 7-12)
Join a For-Mar Naturalist in pond water exploration by 'dipping' from nearby waterways. Make a 'Pond Globe' as a memoir of your observations! **Time: 11am-noon. Cost: FREE!** Pre-registration suggested, but walk-ins welcome.

power of the sun. For families, all ages. **Time: 2-3:30pm. Cost: \$3.00 per person.** Pre-registration not required, but organized groups are asked to call ahead.

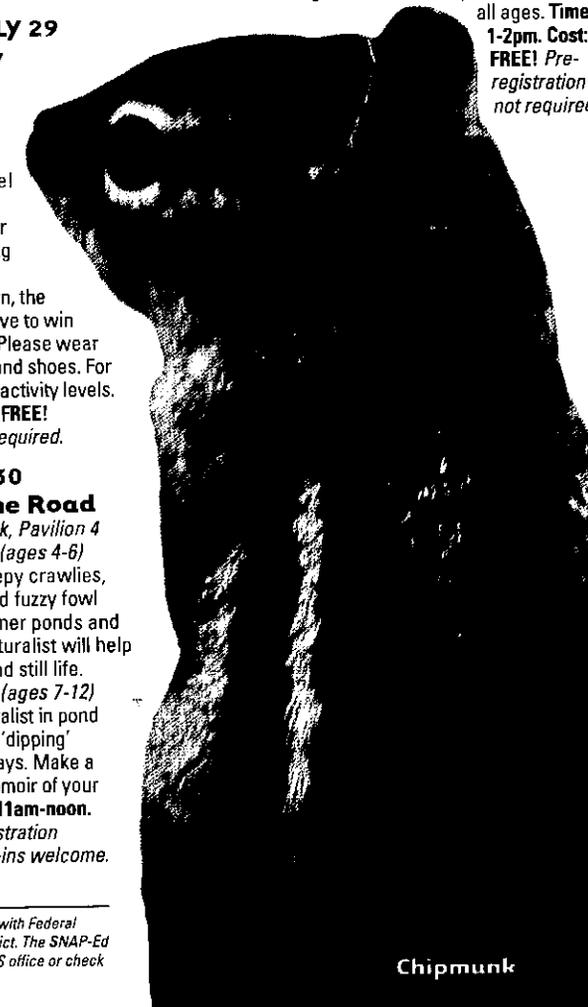
SATURDAY, JULY 31

Pickleball Clinic

Linden County Park, Tennis Courts
Pickleball is a fun game played on a court with the net lowered to 34 inches at the center. It's played with a perforated plastic baseball (similar to a whiffle ball) and paddles, and it's easy for beginners to learn! For adults, ages 16 and older. **Time: 10am-noon. Cost: FREE!** Pre-registration not required, but limited to 10 participants.

SATURDAY, JULY 31

Life in the Water Buell Lake County Park, fishing dock at front of park
Join Ben Wickerham from the Genesee Conservation District on an adventure to see who and what shares the water with us. Dress to get wet and muddy! For families, all ages. **Time: 1-2pm. Cost: FREE!** Pre-registration not required.



Chipmunk

AGE GROUP COLOR KEY

- Children, ages 3-6
 - Families, all ages
 - Adults, ages 16 and older
 - Special Needs Audiences, children and adults with cognitive & physical disabilities
- Adults must accompany children.*



For-Mar's Harvest Festival

september october

Fantastic Family Friendly Fun!



Ghosts & Goodies



Meet friendly witches, happy ghosts and lots of spooky friends! Walk through an enchanted forest where trees have eyes... watch an old-fashioned magic show... and ride the Huckleberry Ghost Train Express! It's all silly fun, and there are doughnuts and candy for everyone!

Weekends, Oct. 2, 3, 9, 10, 16, 17, 23, 24, 30 & 31
12:00 Noon - 9:00 p.m.

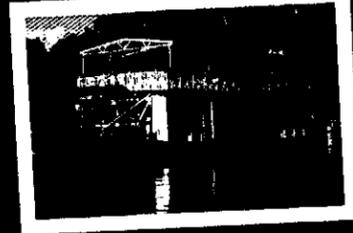
Weekdays, Oct. 8, 15, 22, 27, 28 & 29
5:00 p.m. - 9:00 p.m.

Village Tickets \$10.00
Village/Train -OR- Village/Boat \$13.00
Village, Train & Boat . . . \$16.00

Children 12 months and under are free. No group rate.

Boat Available Weekends Only

On Wednesday afternoons in October, take in the fall colors and experience the serenity of Mott Lake as you eat your lunch aboard the Genesee Belle. Eat lunch in the enclosed lower deck or in the covered, open air upper deck. The choice is yours! October 6, 13, 20 and 27, 12 Noon to 1:00 pm



WEDNESDAY, SEPTEMBER 1
Knee-High Naturalist: Beetle Mania

For-Mar
Learn about the many kinds of beetles and hike to find beetles and other insects. For children, ages 3-6.
Time: 10-11:30am. Cost: \$3 per child.
Pre-registration required by 8/30/10.

WEDNESDAY, SEPTEMBER 1
For-Mar on the Road for Families

Max Brandon Park, MSU Pavilion (Parking at Bunche Elementary School)
Take a look at some of the shapes and sizes of seeds found in your park with a naturalist. For families, all ages.
Time: 6-7pm. Cost: FREE!
Pre-registration suggested, but walk-ins welcome.

THURSDAY, SEPTEMBER 2
Knee-High Naturalist: Beetle Mania

For-Mar
Learn about the many kinds of beetles and hike to find beetles and other insects. For children, ages 3-6.
Time: 10-11:30am. Cost: \$3 per child.
Pre-registration required by 8/31/10.

SATURDAY, SEPTEMBER 4
Animal Tracks and Signs

For-Mar
Enjoy a walk to find the tracks and signs left behind by animals. Create an animal tracks placemat. For individuals with cognitive disabilities.
Time: 10:30am-noon. Cost: \$2 per person.
Pre-registration required by 9/2/10.

WEDNESDAY, SEPTEMBER 8
Knee-High Naturalist: Animal Tracks and Signs

For-Mar
Bring any color t-shirt to make an animal tracks shirt as we learn about signs left by animals. For children, ages 3-6.
Time: 10-11:30am. Cost: \$3 per child.
Pre-registration required by 9/6/10.

WEDNESDAY, SEPTEMBER 8
Musical Performance: Betsy Beckerman and David West

For-Mar
Betsy brings her very good friend David West along to entertain you with a collection of British Isles songs and tunes. David is a multi-instrumentalist and is known for his outstanding concertina performances. For families, all ages.
Time: 7-8pm. Cost: FREE!
Pre-registration not required.



For-Mar Birdhouse Program

THURSDAY, SEPTEMBER 9
Knee-High Naturalist: Animal Tracks and Signs

For-Mar
Bring any color t-shirt to make an animal tracks shirt as we learn about signs left by animals. For children, ages 3-6.
Time: 10-11:30am. Cost: \$3 per child.
Pre-registration required by 9/7/10.

SATURDAY, SEPTEMBER 11
Plants Are For the Birds

For-Mar
Are you a bird lover? Want to help your feathered friends during the cold season? Your choice in plants can help a variety of birds by providing food and habitat. Learn what's good for you, can be good for the birds! For adults, ages 16 and older.
Time: 10am-noon. Cost: \$7 per person.
Pre-registration recommended, but not required.

WEDNESDAY, SEPTEMBER 15
Knee-High Naturalist: Nature's Toolbox

For-Mar
Discover how animals use special adaptations as we hike on the "tool trail." For children, ages 3-6.
Time: 10-11:30am. Cost: \$3 per child.
Pre-registration required by 9/13/10.



For-Mar Planting Program

THURSDAY, SEPTEMBER 16
Knee-High Naturalist: Nature's Toolbox

For-Mar
Discover how animals use special adaptations as we hike on the "tool trail." For children, ages 3-6.
Time: 10-11:30am. Cost: \$3 per child.
Pre-registration required by 9/14/10.

WEDNESDAY, SEPTEMBER 22
Knee-High Naturalist: Tree Tales

For-Mar
Trees have stories to tell! Enjoy a hike to collect gifts from trees. For children, ages 3-6.
Time: 10-11:30am. Cost: \$3 per child.
Pre-registration required by 9/20/10.

THURSDAY, SEPTEMBER 23
Knee-High Naturalist: Tree Tales

For-Mar
Trees have stories to tell! Enjoy a hike to collect gifts from trees. For children, ages 3-6.
Time: 10-11:30am. Cost: \$3 per child.
Pre-registration required by 9/21/10.

SATURDAY, SEPTEMBER 25
Michigan Invasives

For-Mar
Many plants you see in our natural landscapes are non-native and detrimental to our ecosystems. Join us as we take a look at the invasive pests that threaten Michigan landscapes. For adults, ages 16 and older.
Time: 10am-noon. Cost: \$7 per person.
Pre-registration recommended, but not required.

SATURDAY, SEPTEMBER 25
F.A.N.s (Family Adventures in Nature) Herp Survey

Hogbacks Area, Davison Stanley Rd. fishing lot between Henderson Rd. and German Rd.
Discover where and when to find salamanders. Dress to hike and get muddy! For families, all ages.
Time: 9-10:30am. Cost: \$3.00 per person.
Pre-registration not required, but organized groups are asked to call ahead.

WEDNESDAY, SEPTEMBER 29
Knee-High Naturalist: Caring for Pets

For-Mar
Learn about the needs of animals and why wild animals should stay in the wild. For children, ages 3-6.
Time: 10-11:30am. Cost: \$3 per child.
Pre-registration required by 9/27/10.

THURSDAY, SEPTEMBER 30
Knee-High Naturalist: Caring for Pets

For-Mar
Learn about the needs of animals and why wild animals should stay in the wild. For children, ages 3-6.
Time: 10-11:30am. Cost: \$3 per child.
Pre-registration required by 9/28/10.

SATURDAY, OCTOBER 2
F.A.N.s (Family Adventures in Nature): Harvest Festival

For-Mar
Happy Birthday to For-Mar! This year's Harvest Festival will be extra special as we celebrate For-Mar's 40th birthday. That's right, 40 years of family education and recreation at one of Genesee County Parks premier facilities. Join us for hayrides, cider pressing, musical performances and many other activities, all free, and all in honor of this momentous occasion. We're 40 years young and still growing! For families, all ages.
Time: 9am-3pm. Cost: FREE!
Pre-registration not required, but organized groups are asked to call ahead.

WEDNESDAY, OCTOBER 6
Knee-High Naturalist: Rocks and Rock Collecting

For-Mar
Collect and do simple tests to identify rocks. Start a rock collection. For children, ages 3-6.
Time: 10-11:30am. Cost: \$3 per child.
Pre-registration required by 10/4/10.

THURSDAY, OCTOBER 7
Knee-High Naturalist: Rocks and Rock Collecting

For-Mar
Collect and do simple tests to identify rocks. Start a rock collection. For children, ages 3-6.
Time: 10-11:30am. Cost: \$3 per child.
Pre-registration required by 10/5/10.

SATURDAY, OCTOBER 9
Native Alternatives

For-Mar
Many exotic plants have been introduced into Michigan, and some

are now considered invasive. For every introduced species, Michigan has a native that works just as well. Learn what natives can do for your landscape. For adults, ages 16 and older.
Time: 10am-noon. Cost: \$7 per person.
Pre-registration recommended, but not required.

SATURDAY, OCTOBER 9
Colors of the Season

For-Mar, DeWaters Building
Enjoy activities that highlight autumn colors. Make and taste fresh apple cider. For individuals with cognitive disabilities.
Time: 10:30am-noon. Cost: \$2 per person.
Pre-registration required by 10/7/10.

WEDNESDAY, OCTOBER 13
Knee-High Naturalist: Dinosaur Dig!

For-Mar
Go on a "dinosaur dig" as we learn about these ancient reptiles. For children, ages 3-6.
Time: 10-11:30am. Cost: \$3 per child.
Pre-registration required by 10/11/10.

THURSDAY, OCTOBER 14
Knee-High Naturalist: Dinosaur Dig!

For-Mar
Go on a "dinosaur dig" as we learn about these ancient reptiles. For children, ages 3-6.
Time: 10-11:30am. Cost: \$3 per child.
Pre-registration required by 10/12/10.

SATURDAY, OCTOBER 16
Fall Color Wagon Rides

For-Mar
See the amazing fall colors at For-Mar while enjoying an authentic hayride. For families, all ages.
Times: 9am, 11am and 1pm.
Cost: \$2 per person.
Pre-registration not required, but organized groups are asked to call ahead.

WEDNESDAY, OCTOBER 20
Knee-High Naturalist: Colors of the Season

For-Mar, DeWaters Building
Enjoy autumn's beauty as we learn about colors. Make and taste apple cider. For children, ages 3-6.
Time: 10-11:30am. Cost: \$3 per child.
Pre-registration required by 10/18/10.

THURSDAY, OCTOBER 21
Knee-High Naturalist: Colors of the Season

For-Mar, DeWaters Building
Enjoy autumn's beauty as we learn about colors. Make and taste apple cider. For children, ages 3-6.
Time: 10-11:30am. Cost: \$3 per child.
Pre-registration required by 10/19/10.

SATURDAY, OCTOBER 23
Fall Color Wagon Rides

For-Mar
See the amazing fall colors at For-Mar while enjoying an authentic hayride. For families, all ages.
Times: 9am, 11am and 1pm.
Cost: \$2 per person.
Pre-registration not required, but organized groups are asked to call ahead.



For-Mar on the Road

WEDNESDAY, OCTOBER 27
Knee-High Naturalist: Bats!

For-Mar
Learn about these fascinating creatures of the night. Craft a bat to take home. For children, ages 3-6.
Time: 10-11:30am. Cost: \$3 per child.
Pre-registration required by 10/25/10.

THURSDAY, OCTOBER 28
Knee-High Naturalist: Bats!

For-Mar
Learn about these fascinating creatures of the night. Craft a bat to take home. For children, ages 3-6.
Time: 10-11:30am. Cost: \$3 per child.
Pre-registration required by 10/26/10.



See Page 15 for Live Theatre Schedule!

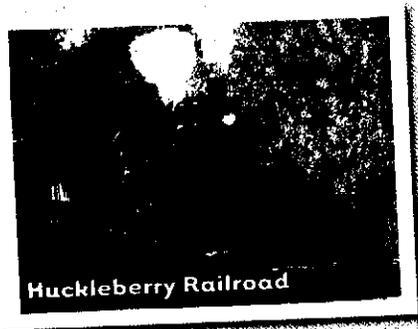
online reservations

Purchasing tickets and making reservations could not be easier when it's done online at Genesee County Parks' website. All it takes is a couple of minutes to register your lifetime password. If you have questions about online reservations, please call Genesee County Parks' reservation department at 800.648.PARK, ext. 6 or 810.736.7100, ext. 6. Reservation office hours are Monday through Friday 8:00am to 5:00pm.

Be sure to follow Genesee County Parks on YouTube, Facebook or Twitter as we post information and send out special deals on Twitter.

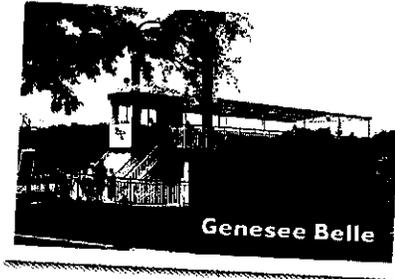
Make reservations online for:

- Crossroads Village and Huckleberry Railroad
- Wolverine Campground
- Pavilion Rental
- For-Mar Programs
- Genesee Belle cruises
- Halloween Ghosts & Goodies at Crossroads
- Christmas at Crossroads Holiday Magic
- Huckleberry Radio Hour
- 7th Annual Huckleberry Hustle 5K Run and Walk and Little Berry Dash



the genesee * belle

Rent the Genesee Belle for your next family reunion, company meeting, or bus tour group. Your guests will enjoy the beautiful scenery and get a glimpse at diverse water birds and wildlife while they sit in open air or air-conditioned seating.



The Belle offers special cruise opportunities too! On Wednesday during the summer and fall months, a casual lunch is served aboard the Belle from Noon to 1:00pm. Summer and fall lunch cruises must be booked one week prior to the cruise date and can be purchased online at geneseecountyparks.org or by calling 800.648.PARK, ext. 6. Arrive at the dock 15 minutes before cruise departure.

Take the Genesee Belle's Summer Evening Cruise on Friday or Sunday during July and August. Advance reservations are not required and are moderately priced. Tickets may be purchased one (1) hour before the cruise at Stepping Stone Fall's concession window only. Cruises are approximately 40 minutes in length.

All summer evening cruises and summer and fall lunch cruises depart from Stepping Stone Falls, which is located at 5161 Branch Road, Flint. Please be at the dock 15 minutes before cruise departure. Children must be accompanied by an adult.

SUMMER & FALL LUNCH CRUISES

Wednesday 12 Noon to 1pm
July 7 to 28, October 6 to 27
\$15.95 per person

EVENING CRUISES

Friday & Sunday 7:00 to 7:45pm
July 9 to August 29
\$2.50/adults
\$1.50/12 yrs. and younger

Cruises on Flint River

volunteer opportunities

The Genesee County Parks have a variety of volunteer opportunities awaiting you! For example, Crossroads Village hosts a variety of special programs and events that require a tremendous amount of manpower...

- Day Out With Thomas™
- The 7th Annual Huckleberry Hustle 5k Trail Run & Walk and Little Berry Dash
- The Huckleberry Radio Hour
- Ladies' Night Out
- Halloween Ghosts and Goodies
- Christmas at Crossroads Holiday Magic

At For-Mar your green thumb and love of the great outdoors can make all the difference by...

- Assisting with gardens
- Counting bluebirds
- Removing invasive plants
- Hiking the trails and picking up litter

Help a child learn to fish, judge a stinky sneaker contest, or sing around a campfire. There are tons of ways that your talent can help someone in your community.

To learn more about the numerous volunteer opportunities in the Genesee County Parks, please contact Volunteer Coordinator, Cindy Kimber at 810.249.3855 or ckimber@gcparks.org.

green thumb gardening

For-Mar

Do you want to garden, but don't have the space? Check out the NEW Community Garden program open to all Genesee County residents!

The Community Gardens are located at For-Mar and Bluebell Beach and are accessible to everyone. Depending on location both in-ground and raised beds are available.

This is a great opportunity for you, your family, or your community group to experience the joy of organic gardening in a family friendly environment.

For more information or to apply for a garden site, call 810.789.8568 or visit our website, geneseecountyparks.org.

APPENDIX B: MONITORING & MAPPING

FRWC reporting on Benthic Monitoring
Project GREEN



**FLINT RIVER
WATERSHED COALITION**

Partnering to protect, preserve, and improve the Flint River watershed.

Flint River Watershed Coalition

432 N. Saginaw Street

Flint, MI 48502

810-767-6490

Benthic Monitoring Spring 2010

# of Sites	Current #	Previous #	Site Name	Site Location	Score	Habitat Assessment	Monitors at Site
1	7	10	Flint River, Flushing	Flushing Twp T8NR5ES3	49.4	Yes	4
2	8	9	Swartz Creek	Flint Twp T7NR7E	41.9	Yes	4
3	9	13	Gilkey Creek	City of Flint T7NR7E	12.5	Yes	3
4	10	11	Thread Creek	Burton Twp T7NR7ES20	29.9	Yes	2
5	11	12	Kearsley Creek (For-Mar)	Burton Twp T7NR7ES2	44.7	Yes	2
6	12	6	Butternut Creek	Genesee Twp T8NR7ES12	26.6	Yes	3
7	15	15B	Brent Run	Montrose Twp T9NR5ES15	21.6	Yes	2
8	20	8B	Misteguay Creek Headwaters	Clayton Twp T7NR5ES8	30.7	Yes	2
9	21	15B	Brent Run Headwaters	Mt. Morris Twp T8NR6ES23	30.5	Yes	2
10	22	9B	Swartz Creek Headwaters	Fenton Twp T5NR6ES6	41	Yes	3
11	23	11B	Thread Creek Headwaters	Grand Blanc Twp T6NR8ES32	33.2	Yes	3
12	24	12B	Kearsley Creek Headwaters	Atlas Twp T6NR8ES36	27.3	Yes	2
13	25	13B	Gilkey Creek Headwaters	Burton Twp T7NR7ES1	25.6	Yes	2
14	26	6B	Butternut Creek, Headwaters	Forest Twp T9NR8ES16	49	Yes	2
15	30	7B	Pine Run Headwaters	Vienna Twp T9NR6ES13	21.6	Yes	2
16	31	20	Shiawassee River Argentine	Argentine Twp T5NR5ES20	31.2	Yes	7
17	32	21	Shiawassee River Linden	Fenton Twp T5NR6ES19	39.5	Yes	3
18	33	16R	Clark Drain, Richfield Park	Richfield Twp T8NR8ES16	39.3	Yes	5

Score Ratings:	
> 48 = Excellent	10-33.9 = Fair
34-48 = Good	< 19 = Poor



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

Benthic Monitoring Fall 2010

# of Sites	Current #	Previous #	Site Name	Site Location	Score	Habitat Assessment	Monitors at Site
1	7	10	Flint River, Flushing	Flushing Twp T8NR5ES3	34.1	Yes	3
2	8	9	Swartz Creek	Flint Twp T7NR7E	36.8	Yes	2
3	9	13	Gilkey Creek	City of Flint T7NR7E	29.4	Yes	2
4	10	11	Thread Creek	Burton Twp T7NR7ES20	24.9	Yes	2
5	11	12	Kearsley Creek (For-Mar)	Burton Twp T7NR7ES2	36.2	Yes	4
6	12	6	Butternut Creek	Genesee Twp T8NR7ES12	35.5	Yes	3
7	15	15B	Brent Run	Montrose Twp T9NR5ES15	37.7	Yes	2
8	20	8B	Misteguay Creek Headwaters	Clayton Twp T7NR5ES8	17.5	Yes	2
9	21	15B	Brent Run Headwaters	Mt. Morris Twp T8NR6ES23	33.5	Yes	3
10	22	9B	Swartz Creek Headwaters	Fenton Twp T5NR6ES6	22.5	Yes	
11	23	11B	Thread Creek Headwaters	Grand Blanc Twp T6NR8ES32	25.5	Yes	3
12	24	12B	Kearsley Creek Headwaters	Atlas Twp T6NR8ES36	41.5	Yes	2
13	25	13B	Gilkey Creek Headwaters	Burton Twp T7NR7ES1	48.5	Yes	3
14	26	6B	Butternut Creek, Headwaters	Forest Twp T9NR8ES16	39	Yes	3
15	30	7B	Pine Run Headwaters	Vienna Twp T9NR6ES13	21.7	Yes	2
16	31	20	Shiawassee River Argentine	Argentine Twp T5NR5ES20	23.7	Yes	3
17	32	21	Shiawassee River Linden	Fenton Twp T5NR6ES19	35.6	Yes	5
18	33	16R	Clark Drain, Richfield Park	Richfield Twp T8NR8ES16	48.5	Yes	5

Score Ratings:	
> 48 = Excellent	10-33.9 = Fair
34-48 = Good	< 19 = Poor

GREEN 2010

Educators					
First Name:	Last Name:	School / Grade :	District		
Matt	Hyslop	Atherton High School	GISD	1	
Don	Hammond* LC	Beecher Middle School	GISD	2	
Cheryl	Hobson -	Bentley High School	GISD	3	
Dave	Green	Brandon Middle School	OISD	4	
Julie	Lawrence	Carman/Ainsworth High School	GISD	5	
Bill	Kraly	Chatfield School (Middle School)	LISD	6	
Jean	Block	Chatfield School (Middle School)	LISD	7	
Chip	McCallum	Clio Carter Middle School	GISD	8	
Ryan	Nemi	Clio Carter Middle School	GISD	9	
Jody	Kosiara	Davison Middle School	GISD	10	
Lynn	Behr	Fenton A.G. Schmidt Middle School	GISD	11	
Nadina	Aversa Website	X Flint Northern Commencement Academy	GISD	12	
Matt	McCorry	Y Flint Northern Commencement Academy	GISD	13	
Robert	Ryan	X Flint Whittier Classical Academy	GISD	14	
Jarrett	Trombley	X Flint Whittier Classical Academy	GISD	15	
Chris	Ochodnicki	Y Flint-Holmes Middle School	GISD	16	
Chad	Anderson	Flushing High School	GISD	17	
Brad	Dawson	Goodrich Middle School	GISD	18	
Cindy	Rivet	Goodrich Middle School	GISD	19	
Craig	Salter	Goodrich Middle School	GISD	20	
Cindy	Sierra	Kearsley Armstrong Middle School	GISD	21	
April	Yorks LC	Kearsley Armstrong Middle School	GISD	22	
Joe	Grigas	Lake Fenton High School	GISD	23	
Ken	Roy	Lake Fenton High School	GISD	24	
Josh	Henley	Lakeville Middle School	GISD	25	
Andrea	Thelen	Lakeville Middle School	GISD	26	
Donald	Shaver	Lapeer Community High School	LISD	27	
Cheryl	Butterfield	Lapeer East Senior High School	LISD	28	
Chad	Kenny	Lapeer East Senior High School	LISD	29	
Craig	Gotham	Linden Middle School	GISD	30	
Charlen	Nester	Linden Middle School	GISD	31	
Linda	Jordan	Montrose Kuehn-Haven Middle School	GISD	32	
Bekah	D'Haene	Mt. Morris Junior High School	GISD	33	
Carrie	Wenta	North Branch High School	LISD	34	
Mary	Parsons	North Branch Middle School	LISD	35	
Julie	Tumblin	North Branch Middle School	LISD	36	
Elizabeth	Petrides	St. John Vianney Catholic School (8th Grade)	GISD	37	

Brandolyn	Forbes	Swartz Creek Middle School	GISD	38	
Dori	Hill	Swartz Creek Middle School	GISD	39	
Mike	White	The Valley School	GISD	40	
Tammy	Wylie	Westwood Heights Hamady High School	GISD	41	
Hale	Karen	H.B. Zemmer Jr. High School	LISD	42	
Reach	Kelly	H.B. Zemmer Jr. High School	LISD	43	
Mentor Names, Titles					
Marv	Asbury	GM		1	
Rick	Avinchey	Wildlife Biologist		2	
Darren	Bagley	MSU-E, 4-H Coordinator		3	
Irene	Bashore	GM		4	
Pier	Bollini	Delphi		5	
John	Bradburn	Environmental Services		6	
Eric	Brubaker	City of Flint		7	
Craig	Buik	GM Flint North		8	
Thad	Domick	City of Flint		9	
Rebecca	Fedewa	Executive Director, Flint River Watershed Coalition		10	
Heather	Griffin	Park Naturalist		11	
Eric	Hakel	Environmental Scientist		12	
Anita	Harrand	Monitor, Flint River Watershed Coalition		13	
Dan	Harrett	GM Retiree		14	
Stacey	Helton	GM		15	
Tom	Hutchings	City of Flint		16	
Saed	Issac	UM-Flint Chemist		17	
Tom	Jones	Genesee Co. Drain Commission		18	
Julie	Lenz	GM		19	
Suzanne	Lossing	Education & Outreach Coordinator, Flint River Watershed Coalition		20	
John	Maksimchuk	GM		21	
Dan	McComb	GM		22	
John	Moldovan	GM Retiree		23	
Jeff	Parker	GM		24	
Diane	Peplinski	Board Vice Chair, Flint River Watershed Coalition		25	
Al	Putney	Delphi		26	
Nicole	Raymond	Genesee Intermediate School District		27	
Jennifer	Tegen	GM		28	
Dennis	Weiler	GM SPO		29	
Bill	Welch	Genesee Intermediate School District Retiree		30	
Dawn	Welsh	City of Flint		31	
Ben	Wickerham	Genesee Soil Conservation District		32	
Brent	Wilson	GM		33	

Other Related Events - Spring			
Event Date	# Participating Educators	# Participating Mentors	Dignitaries (list by name)
05/04/10: Student Summit	32	12	Deborah Cherry, Lee Gonzalez, Jack Minore, David Lossing, Johanna Brown,
03/11/10: Equipment Training	17	16	
03/18/10: Equipment Training (Lapeer)	5	4	
03/11/10: Professional Development	19	19	
03/11/10: Professional Development	19	19	
02/08/10: STEM Initiative Training, Day 1	18	2	
02/08/10: STEM Initiative Training, Day 2	20	3	
Totals for 2010			
# Participating Educators	43		
# Participating Mentors	33		
# Classrooms	Between 50-60		
# Students	Over 1,300		
# Monitoring Events	Between 44-50		
Media			
Outlet Name	Date Ran	Contact Information / Link	
Flint Journal MLive	5/14/2010	http://www.mlive.com/news/flint/index.ssf/2010/05/genesee_and_lapeer_county_stud.html	
Flint Journal MLive	5/4/2010	http://www.mlive.com/news/flint/index.ssf/2010/05/for_swartz_creek_middle_school.html	
Lapeer Community School	5/3/2010	http://lapeercommunityschools.blogspot.com/2010/05/lapeer-east-zemmer-students-participate.html	
2009 Media (not sure it was reported last year)			
ABC 12 (TV)	2009	http://abclocal.go.com/wjrt/story?section=news/local&id=6776529&rss=rss-wjrt-article-6776529	
Flint Journal MLive	4/30/2009	http://www.mlive.com/flushing/index.ssf/2009/04/water_testing.html	
Flint Journal MLive	5/1/2009	http://www.mlive.com/clio/index.ssf/2009/05/go_green_clio_students_test_wa.html	

APPENDIX C: PERMITTEE MPPP SUMMARY

Each Phase II permittee submitted their Municipal Pollution Prevention Plan to the MDNRE by June 30, 2010.

Since Genesee County had to coordinate 6 Agencies, 22 Schools and Bishop Airport that is nested under the County's jurisdiction, some of the MPPP's were submitted after June 30th. Attached is Genesee County's list of SWPPPs and MPPPs that were submitted September 13th 2010. There were 2 schools Montrose and Goodrich that did not submit and the County had no choice but to no longer nest these schools. Letters were sent to the School superintendent with copies to the GISD and the MDNRE.

MPPP and SWPPP submittals for Genesee County

<u>Nested Entities</u>	<u>MPPP submitted by</u>	<u>Storm Water Operator</u>	<u>SWPPP on site and available</u>
Atherton	6/30/2010- done	N/A	Does Not Need
Beecher	6/30/2010- done	Take July class	8/30/2010
Bendle	6/30/2010- done	N/A	Does Not Need
Bentley	6/30/2010- done	Take July class	8/30/2010
Carman Ainsworth	6/30/2010- done	Take July class	8/30/2010
Clio	6/30/2010- done	yes	8/30/2010
Davison	7/15/2010- done	Take June class	6/30/2010
Fenton	8/2/2010- done	Take July class	8/15/2010
Flint Bd of Education	6/30/2010- done	yes-	7/31/2010
Flushing	6/30/2010- done	Take June class	6/30/2010
Genesee	8/2/2010- done	N/A	Does Not Need
Genesee Intermediate	6/30/2010- done	N/A	Does Not Need
Goodrich	6/30/2010	Take July class	7/31/2010
Grand Blanc	6/30/2010- done	Take June class	7/31/2010
Kearsley	6/30/2010- done	Take July class	8/15/2010
Lake Fenton	7/15/2010- done	yes-	6/30/2010
Lakeville	6/1/2010 done	yes-	7/31/2010
Linden	6/30/2010- done	yes-	7/31/2010
Montrose	6/30/2010		
Mt. Morris	6/30/2010 - done	Take July class	8/15/2010
Swartz Creek	8/6/2010 enclosed	Take July class	8/15/2010
Westwood Heights	6/30/2010- done	N/A	Does Not Need
Bishop Airport	6/1/2010 done	yes	Done
<u>Genesee County</u>			
GCDC-SWM	6/30/2010- done	yes-	6/15/2010
GCDC-WWS	6/30/2010- done	yes	7/31/2010
GCRC	6/30/2010- done	yes	Done
GC Bldg & Main.	6/30/2010- done	N/A	Does Not Need
GC Parks & Rec	6/30/2010- done	no	7/31/2010
GC Purchasing (garage)	6/30/2010- done	no	8/15/2010

List Updated 9/13/2010

MPPP's not submitted by June 30 will be turned in as they are received