

**Genesee County
Phase II Municipalities**



**Annual Report
Nov. 1, 2006 to Oct. 31, 2007**

Submitted to:

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

Submitted by:

**Genesee County Drain Commissioner
October 2007**



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LIST OF ACRONYMS

E342C	Contract for Services between Communities and Drain Office
Ad hoc	The Ad hoc Committees are formed to work on a specific objective until complete
BMP	Best Management Practice
CAER	University of Michigan - Flint Center for Applied Environmental Research
GCCD	Genesee County Conservation District
CMI	Clean Michigan Initiative
CSO	Combined sewer overflow
EPA	Environmental Protection Agency
FRWC	Flint River Watershed Coalition
GCDC	Genesee County Drain Commissioner
GCHD	Genesee County Health Department
GCRC	Genesee County Road Commission
GISD	Genesee Intermediate School District
GREEN	Global Rivers Environmental Network
HHW	Household hazardous waste
IDEP	Illicit Discharge Elimination Plan
M&M	Monitoring and Mapping
MDEQ	Michigan Department of Environmental Quality
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
SEMCOG	Southeast Michigan Council of Governors
PSD	Point Source Discharge
QAPP	Quality Assurance Project Plan
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, 2006 to October 31, 2007 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
- 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 System Service District for the entire County under the authority of the Michigan Public Act 342 of 1939. In addition, each of the communities in the County have executed a contract to use the County 342 Storm Water System Service District 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. Tributary areas previously studied as part of the Upper II Shiawassee by Livingston County and outlets into the main channel within Genesee were cut off at the county line. 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 32 Genesee County watershed-planning communities (contract communities). Note that not all contract communities have NPDES permits.

Table 1-1 Contract Communities

Argentine Township	Flushing Township	Montrose Township
Atlas Township	Forest Township	City of Mount Morris
City of Burton	Gaines Township	Mount Morris Township
Clayton Township	Village of Gaines	Mundy Township
City of Clio	Genesee Township	Village of Otisville
City of Davison	Village of Goodrich	Richfield Township
Davison Township	City of Grand Blanc	City of Swartz Creek
City of Fenton	Grand Blanc Township	Thetford Township
Fenton Township	Village of Lennon	Vienna Township
Flint Township	City of Linden	Genesee County
City of Flushing	City of Montrose	

Current Phase II Permittees are in **Bold**

Nested Drainage System Agreements

Table 1-2 lists 21 schools which have communicated interest in working together under a nested jurisdiction with the Genesee County Drain Commissioner (GCDC). To date, the GCDC has signed letters of agreement with all of the school districts except Atherton and Westwood Heights.

Table 1-2 School Districts Interested in Nested Jurisdiction

School District	Signed Agreement
Atherton	No
Beecher	Yes
Bendle	Yes
Bentley	Yes
Carman-Ainsworth	Yes
Clio	Yes
Davison	Yes
Fenton	Yes
Flushing	Yes
Genesee Intermediate School District (GISD)	Yes
Genesee	Yes
Goodrich	Yes
Grand Blanc	Yes
Kearsley	Yes
Lake Fenton	Yes
Lake Ville	Yes
Linden	Yes
Montrose	Yes
Mt. Morris	Yes
Swartz Creek	Yes
Westwood Heights	Yes

The nested school districts have requested that the Genesee Intermediate School District (GISD) to be their representative in this program. The GISD would attend meetings and disseminate information to the school districts.

Schools that are Charter and not required to participate include:

- Academy of Flint
- Burten Glen Academy
- Grand Blanc Academy
- Questar Academy
- Woodland park Academy

Schools of choice do not need to sign an agreement because they do not own property: they rent it from a corporation they all formed.

Genesee County Storm Water Advisory Committee

The Genesee County Storm Water Advisory Committee (SWAC) is comprised of Genesee County and the Communities that have a signed 342 contract. Currently that is all the Communities within Genesee County except the City of Flint, (which is a Phase I community). Most, but not all of the participating communities are Phase II communities with a COC.

SWAC is guiding implementation of the entire Phase II Program and has three main sub-committees, The sub-committees along with stakeholders or individuals with specific specialized knowledge meet to do the work of implementation are referred to as “Work Groups”, including:

- Public Education and Participation Sub-Committee
- New Construction Standards and Practices Sub-Committee
- Monitoring and Mapping Sub-Committee

Figure 1 shows the watershed planning decision-making process and sub-committee relationships. A brief description of sub-committees duties is presented below. Work conducted by the Watershed Planning Committee(s) is used in development of the Lower Flint, Middle 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. The 3 above sub-committees implement the watershed plan, education plan & IDEP plan. Each community serves on at least one sub-committee.

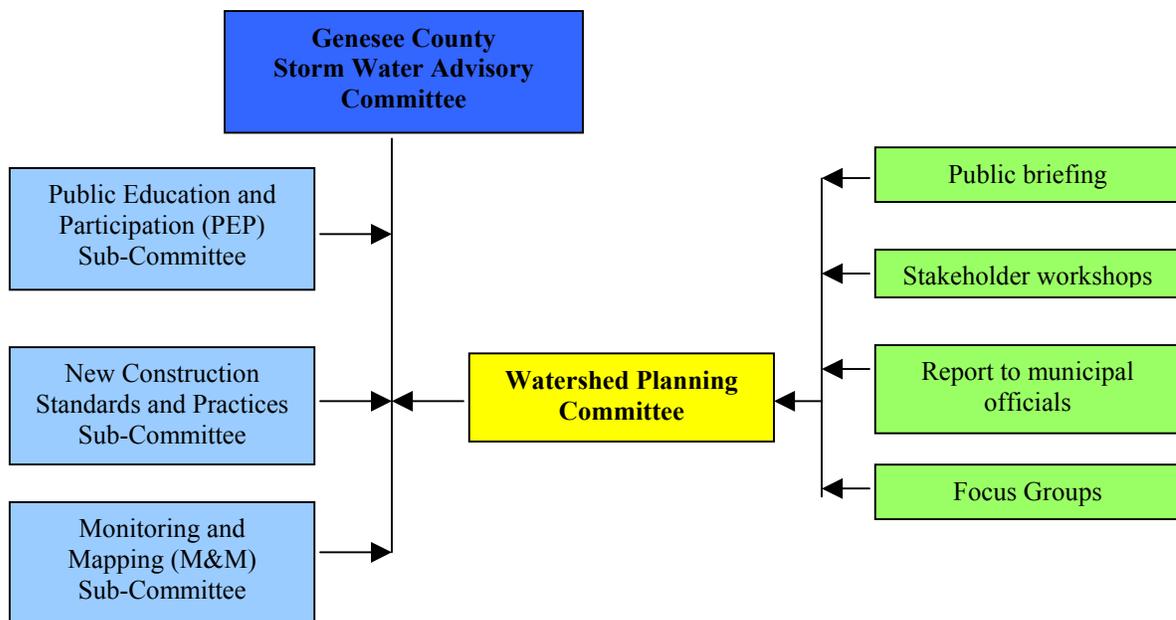


Figure 1-2 Watershed Planning Decision Making Flowchart

Storm Water Advisory Committee

SWAC meetings during this reporting period were held on:

- December 20, 2006
- January 17, 2007
- April 18, 2007
- May 16, 2007
- September 19, 2007
- October 17, 2007

Public Education and Participation Sub-Committee

The Public Education and Participation Sub-Committee guides the overall public education and participation process for the watershed management planning effort. Public Education Plan (PEP) Work Group meetings during this reporting period were held on:

- October 16, 2006
- November 20, 2006
- December 18, 2006
- January 22, 2007
- February 26, 2007
- May 21, 2007
- July 16, 2007
- September 17, 2007

Specific sub-committee activities are summarized in Section 2.0.

Construction Standards and Practices Sub-Committee

The Construction Standards and Practices Sub-Committee (CSP) 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. Sub-committee meetings during this reporting period were held on:

- April 30, 2007
- May 15, 2007
- June 19, 2007
- July 17, 2007
- August 21, 2007
- September 18, 2007

Specific sub-committee activities are summarized in Section 3.0.

Monitoring and Mapping Sub-Committee

The Monitoring and Mapping (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 Sub-committee meetings during this reporting period were held on:

- April 23, 2007
- June 5, 2007
- July 24, 2007
- October 30, 2007 [No minutes]

Specific sub-committee activities are summarized in Section 4.0.

Watershed Management Plans and Storm Water Pollution Prevention Initiatives

Since 2004, GCDC and Tetra Tech have developed a Public Participation Process that was implemented by working with the Watershed Planning Committee(s), stakeholders, and the public to develop Watershed Management Plans (WMPs) and SWPPIs for each watershed.

Beginning May of 2006, the permittees found out that the WMP's were not "Approvable" by the MDEQ. At that time Tetra Tech and the Drain Commissioner's Office met with the MDEQ to discuss necessary changes and extension to the time line.

As of June 1, 2006 all the WMP's due had been submitted except for the Upper Flint River WMP. During meetings with MDEQ staff revised submittal dates were proposed by the MDEQ. Table 1-3 summarizes the new WMP submittal dates to MDEQ as of September 30, 2006. At the MDEQ direction, extensions were filed for all the WMP's Since the Upper Flint had not yet been submitted, it was suggested to fix this WMP first, then working backwards fix the Shiawassee, Lower and finally the Middle Flint.

Table 1-3 Watershed Management Plan Submittal Dates and Status
During September 2006 the extended due dates for the Watershed Management Plans were to be:

	WMP Due	SWPPI Due
Upper Flint	November 1, 2006	May1, 2007
Shiawassee River	January 1, 2007	June 1, 2007
Lower Flint	March 1, 2007	September 1, 2007
Middle Flint	Revision March 1, 2007	September 1, 2007
Cass River	Deferred	Deferred

Revisions to the Upper Flint River WMP were made per comments from the MDEQ and the revised Upper Flint River was resubmitted by November 1, 2006 to the MDEQ. A December meeting with the MDEQ revealed that despite the changes made the Upper Flint River was still unapprovable. At that time a request in writing to the MDEQ was made for a complete review of the Upper Flint River WMP. Subsequently the permittees through the Drain Commissioner's Office proposed an alternative timetable (see below), that was accepted by the MDEQ in January 2007 e-mail.

- Complete review of WMP received (requested a written review of plan from MDEQ)
- Complete response +30 days
- Meeting with MDEQ to come to consensus on changes (Approvable WMP)
- Meet with Communities to approve changes
- Get Communities board of approval on WMP and SWPPI+60 days

The Drain Commissioner's Office and Tetra Tech met with the MDEQ at their offices February 4, 2007 to discuss the Upper Flint River WMP again. Once again a written formal review of the Upper Flint River WMP was requested and received dated March 8, 2007. The plan was revised again and submitted on April 4, 2007, along with an attachment addressing all the MDEQ concerns. See Below for all dates.

<u>Upper Flint Submission</u>	November 1, 2006
<u>Meeting with MDEQ</u>	December 8, 2006
	February 4, 2007
<u>Correspondence from MDEQ</u>	March 8, 2007
<u>Upper Flint Submission</u>	April 4, 2007
<u>Meeting with MDEQ</u>	April 27, 2007
<u>Correspondence from MDEQ</u>	July 16, 2007

On October 8, 2007, MDEQ indicated that the August 28, 2007 revision to the Upper Flint River WMP would produce an approvable SWPPI. The Drain Commissioner's Office is currently revising the remaining WMPs, on behalf of the permittees to match the template of the Upper Flint WMP.

Because the MDEQ determined that SWPPIs based on previous WMP versions were not acceptable, submittal of all SWPPIs has been delayed until an approved SWPPI template is complete. All SWPPIs will be submitted to MDEQ in a timely manner after the revised WMPs have been submitted and deemed approvable. Section 11 of this report provides a copy of the current draft SWPPI action table that lists specific goals, objectives, and actions.

In regards to the other WMPs: the Shiawassee River WMP was due January 1, 2007. After the December 2006 meeting and subsequent e-mail correspondence with the MDEQ citing many new changes to the WMPs (section 6 & 8) it was apparent that it was more important to submit the Shiawassee on time, the **January 1, 2007** deadline. Based on the December 8th comments, we knew the Shiawassee plan would be rejected. The proposed changes from the MDEQ could not be complete, taken to the communities and submitted by the revised February 1, 2007 date proposed by the MDEQ. Also any changes and submission of the Middle Flint or Lower Flint WMPs would not be approvable to the MDEQ, neither of those revised WMPs were submitted. Instead the above timetable was adopted.

2. PUBLIC EDUCATION AND PARTICIPATION SUB-COMMITTEE ACTIVITIES

The Public Education and Participation Sub-Committee held six meetings during this reporting period. The purpose included implementation of the Public Education Plan (PEP) and those objectives that are assigned to the PE committee in the draft action plan (section 8 of the Watershed Management Plan).

PUBLIC EDUCATION PLAN

Permit Requirements

The planning and implementation of the public education done is based on the 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 Public Education and Participation Sub-Committee has contracted with the University of Michigan Flint Center for Applied Environmental Research (CAER) to coordinate development and implementation of several elements of the PEP, including:

- Development of "Our Water" Campaign webpage
- Conducting a Public Service Campaign
- Developing speakers materials and presentations
- Marketing resources
- PEP Evaluation Plan

Genesee Conservation District

The Genesee County Drain Commissioner (GCDC) has contracted with the Genesee County Conservation District (GCCD) to provide storm water education services to school-aged children on behalf of the Phase II permittees.

Flint River Watershed Coalition

On behalf of the of the Phase II permittees, the Flint River Watershed Coalition (FRWC) has contracted with the GCDC to provide several services:

- Provide power point presentations on storm water education to adult audiences,, such as municipal officials, rotary clubs, neighborhood associations, lake associations, etc...
- FRWC developed on their own soil erosion information booklet that received financial backing for printing & distribution from the PE Committee.
- Project Global Rivers Environmental Network (GREEN) Educational Program. (through MM committee)
- FRWC is also executing a bi-annual Benthic Macroinvertebrate Monitoring Program. (through MM committee)

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 of 2006. Monitoring of web traffic is provided by the hosting service. There were 971 unique visitors to the website during this reporting period. The months of August & September after the County Fair were distinctly larger.

Public Service Campaign

A Public Service Campaign was identified as a necessary component of the "Our Water" Campaign. This activity is geared toward producing brand identification of the "Our Water" Campaign to the general public through the use of TV, print and outdoor media. Little progress has been made in the Public Service Campaign, which was postponed until completion of the other educational activities, such as development of the webpage, speaker materials, marketing resources, etc. Implementation of the Public Service Campaign will begin in the next report period. GCDC is in the process of evaluating at different media consultants to coordinate this program.

Speaker Materials and Presentations

An educational *Microsoft PowerPoint* presentation was developed by CAER & the PE committee. 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 has contracted with the FRWC to use the above modular presentation to give presentations to groups such as municipal officials, rotary clubs, neighborhood associations and lake associations:

Date	Event Name	Number In Attendance	Audience
9/20/2006	Krapohl Senior Center	15	Seniors from Mt. Morris Twp.
10/19/2006	Holloway Lake Assoc.	25	Lake Property Owners
3/27/2007	Flushing Rotary Club	35	Local Community Members/Leaders
4/2/2007	Seymour Elementary	12	Patents for Stencil Project
4/4/2007	Springview Elementary	20	Patents for Stencil Project
4/4/2007	Elms Elementary	10	Patents for Stencil Project
9/6/2007	Burton Rotary Club	30	Local Community Members/Leaders
9/30/2007	FFRT Bike Club	50	Community members from across Gen. CO.
10/3/2007	Southern Democratic Club	15	Community members from Southern Gen Co.

Brochures

An education brochure was developed using images purchased from the Huron Watershed and text with permission from the Southeast Michigan Council of Governors (SEMCOG). This brochure was specifically developed to provide information about the seven mandated elements of storm water education. Brochures can be passed out to the public, usually at an event (see information booth below). Also all the municipalities were given brochures to display for the public to take. Since November 1, 2006 over 1000 brochures have been given away actively, and as many have been passively picked up by the public.

FRWC has produced a soil erosion and sedimentation control (SESC) brochure. The brochure will include the logo developed by the PE committee and will be mailed to all municipalities within the Flint River

Watershed, approximately 60% of which are in Genesee County. The purpose of the brochure is to educate planning boards on soil erosion.

Newsletter Articles and Tip Cards

Several of the communities in Genesee County requested that the Public Education and Participation Subcommittee develop and distribute prepared articles to be used in community and non-profit organization newsletters. CAER worked with SEMCOG 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 to use by putting it on their website, in their newsletter, etc.

Direct Mailings to Riparian Landowners

A newsletter aimed at riparian landowners to help educate them regarding their special circumstances is currently in the planning phase and will be implemented in 2008.

Time of Sale Packets

Information to septic owners to help educate on the proper maintenance of their septic is currently in the planning phase and will be implemented in 2008

Promotional Give Aways

GCDC has purchased several promotional giveaways (premiums) in 2006 to promote storm water awareness, including water bottles, t-shirts, rain gauges, tote bags, temporary tattoos. Premiums are given to the public at the information booth. A person can win a premium if they answer a storm water related question. This allows the booth staff / volunteers to engage the resident in conversation and give them a brochure. Since November 1 2006 staff / volunteers have talked to over 933 residents and premiums given away.

Information Booth

A display booth was developed Summer 2006 by CAER & the PE committee. Education activities were also developed for public events. During this reporting period, the booth was used at the following events:

- Genesee County Fair [8/13/2007 – 8/19/2007] 532 total participant and premiums given away
- Earth Day at U of M [4/14/2007] 75 total participant and premiums given away
- Earth Day at Mott [4/21/2007] 57 total participant and premiums given away
- Creekfest in Ortonville [5/9/2007] 73 total participant and premiums given away
- Flint Stealheaders Boat Show [3/1/2007-3/4/2007] 196 total participant and premiums given away
- Flushing Walleye Festival (Partial Booth) [3/9/2007 – 3/11/2007] 117 people participated with only brochures given away
- Green Arts Project activities [1/1/2007-10/1/2007] 87 people participated

The booth included 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.

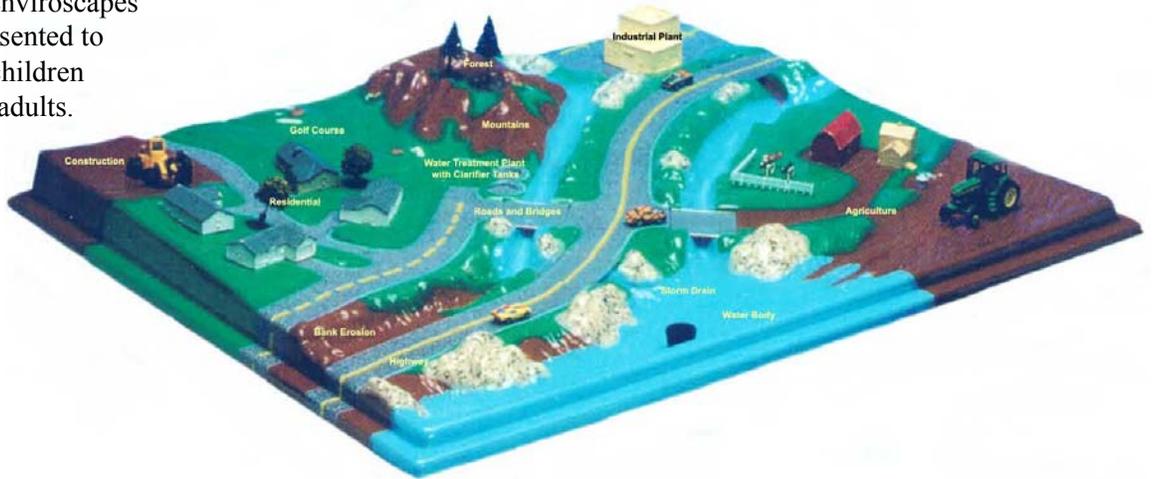
The booth was staffed by either volunteer municipal officials and staff from governments or when necessary by CAER staff. As part of an education activity, each person who agreed to answer a question on water quality was eligible to receive a premium giveaway. Each volunteer was trained on how to conduct the education activity. This activity served 2 purposes. First to educate the elected official and second to have the communities teach the public about storm water mitigation. At the County fair, staff interacted with 532 individuals. Each of these individuals received a copy of the information brochure, and a prize for participating in the event.



Enviroscapes

GCDC has four “Enviroscape” interactive models to promote wetland preservation or educate on pollutants. The Enviroscapes may be borrowed by teachers for use in their classrooms. CAER is promoting the Enviroscapes through Genesee Intermediate School District (GISD) and the Center for Civic Engagement. CAER trains the teachers on how to use them. The conservation district keeps 1 of the Enviroscape’s for their education program.

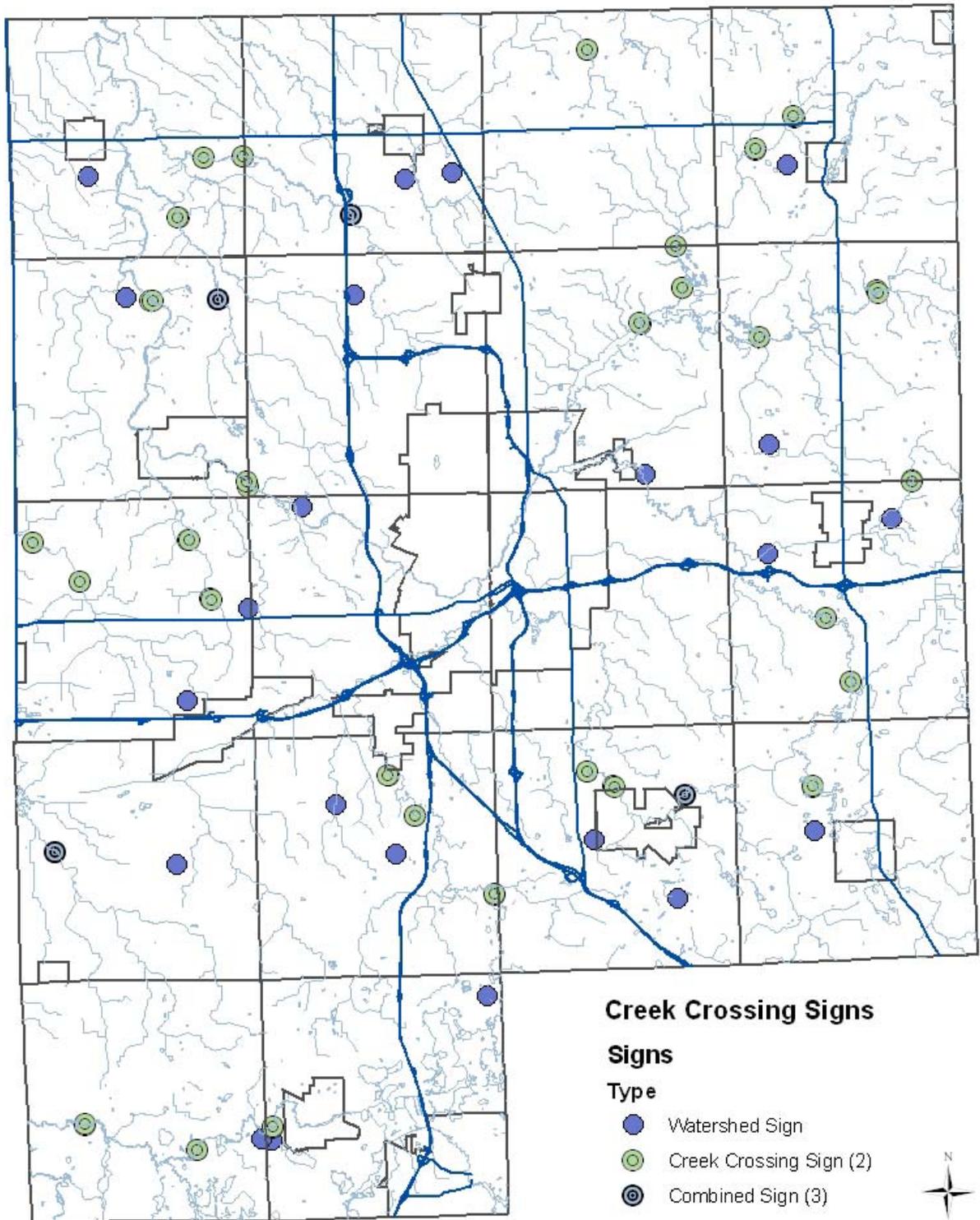
To date, the Enviroscapes have been presented to almost 1150 children and over 100 adults.



Watershed Signs

In cooperation with the Genesee County Road Commission (GCRC), the PE committee has installed 24”X30” watershed signs throughout the Shiawassee River and the Flint River Watersheds. Also being installed stream/river identification signs at river crossing points to increase public awareness of the various rivers and their paths. Since November 1, 2006 96 signs in 55 locations have been installed within Genesee County.





Public awareness of sign is high. 95% of the people asked if they have seen the signs have said yes. Many of those commented on how eye catching they were.

Catch Basin Stencils

The GCDC has a catch basin stenciling program. The stencils say “No Dumping - Flows to River”. CAER & PE committee have developed and printed doorknob hangers to educate residents adjacent to the stenciling locations. Stenciling was done by volunteers and by the Genesee County Drain Commissioner’s Surface Water Maintenance crews as part of preventative maintenance.

- CAER has been coordinating supervised stenciling activities with 3rd and 5th grade volunteers in Flushing City and Township. Door Hangers were given to volunteers. It has been very difficult to get locations & number of stencil’s placed from the volunteers.
- The GCDC SWM maintenance crew will also be stenciling as they do preventive maintenance throughout the county. Their goal is to place several hundred stencils each year.
- Since November 1, 2006 there has been more than 500 stencils placed on Genesee County Roads



Local Watershed Maps

The PE committee is working with the GISD to develop and distribute education material to science teachers for the school districts. Last year the MEAP had changed their curriculum requirements for grades 8-12. Next year they will be changing their curriculum requirements for grades K through 7. Next year the PE committee will be in a good position to promote our programs and information developed to the appropriate teachers through the GISD.

Genesee County Conservation District Education Program

The PE committee has a contract with the Conservation District CD to provide education to the school-aged public required for the NPDES Phase II Permit. The GCCD has modified an existing program to meet some of the EPA required elements. The three-hour program meets Michigan Educational Assessment Program (MEAP) standards. Each year, the program reaches an average of 5,000 school-aged children in Genesee County. The program can be taught at any site such as a school, but the instructor also owns property with restored wetland in Gaines Township and has a classroom set up in his garage. The class or group can take the program as a field trip. He has invited groups (classes, scout troops, etc.) for tours, which stress the importance of wetlands.

The Public Education and Participation Sub-Committee committee is also considering inviting all elected officials for a short course in storm water / wetlands / watersheds so that all the elected officials receive the same education. The GCCD gives legislative tours to look at implementation of Best Management Practices (BMPs).

Year End Report:

The 2007 fiscal year has been a very busy and exciting time for Genesee Conservation District’s Educational Program. Sarah Kilgore joined the program in March as Educational Director, and got the program in full swing with several Career Fairs, Watershed and Wetlands Programs regarding the benefits and descriptions of wetlands as well as talking with students about how they can conserve and protect water resources at home.

3347 students and adults learned valuable information from presentations and informational material regarding Wetlands Programs (one included a field trip to a restored wetland); Tree Planting and Water Quality; Watersheds & Groundwater,

how they become polluted and what can be done to combat these situations; Career Fairs, careers in Conservation and how to conserve and protect our Groundwater & Watersheds; Watershed presentations, with the assistance of the EnviroScape Model.

The Educational Program is a very valuable resource and is in high demand, especially now with school districts cutting out field trips. Sarah has been told by several teachers that this is a great program which presents material in such a different way and gives students a hands-on experience without every leaving the classroom.

Global Rivers Environmental Education Network (GREEN)

Project GREEN is a curriculum based, mentored program designed to propose solutions to local environmental problems using water quality testing. 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. Section 7 provides additional detail on Project GREEN and summarizes findings for each watershed.

Macro-invertebrate Monitoring Program

Since 1999, the FRWC has executed a bi-annual Benthic-Monitoring Program that has been performed to meet MDEQ requirements. This program has expanded from 18 sites to 30 since its inception. 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 Public Education and Participation Sub-Committee will be working during the upcoming report period to develop 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
- Brochure delivered
- Booth (for outside events) delivered

Areas that need improvement:

- Structural lack of administrative support
- CAER and Tetra Tech assigned specific deliverables
- Administration needs to be more flexible regarding areas that pop up between contracts

PUBLIC PARTICIPATION PLAN

The PPP was implemented under previous years annual reports. No PPP meetings were held since November 1, 2006. They are done on an as needed basis.

Report to Municipal Officials

Local appointed and elected officials are critical players in adopting the WMP and allocating resources toward its 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 WMP. 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, developed by GCDC's office, which provide updates on the status of the storm water and watershed planning efforts. Each municipality is given 25-50 newsletters to be passed out to the elected officials and planning boards. Also Municipalities are given brochures and information packets to dispense to the public.

3. CONSTRUCTION STANDARDS AND PRACTICES SUB-COMMITTEE ACTIVITIES

The Construction Standards and Practices Sub-Committee (CSP Committee) oversees new construction standards and post construction (Good Housekeeping) 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 2007, the CSP Committee met regularly. In previous years they focused their efforts towards the BMP manual. This year the committee focused its efforts on developing a Minimal watershed ordinance, adopted county wide. They had six meetings during this reporting period.

BMP MANUAL

Currently, Genesee County has construction BMP's for Soil Erosion and Sedimentation Control. Individual Communities may or may not have ordinances that regulate construction and post construction. The CSP Committee is developing a BMP Manual which will represent minimum standards for construction and post construction BMP's. BMP's will not be limited to SESC. Communities will be able to either adopt the CSP Committee's BMP Manual or create their own. The group is also working to address long-term BMP operation, maintenance, and maintenance schedule issues.

STORM WATER ORDINANCE

The CSP Committee have been working with communities to establish an appropriate approach to developing a storm water ordinance for communities within Genesee County. After reviewing State requirements and sample ordinances from other Counties, Kent County's ordinance was selected to use as a model. The CSP Committee is reviewing the ordinance and is tailoring it. During this process, all communities are being encouraged to provide input to the draft ordinance. Overall, development of the ordinance has proven to be an educational process for participating communities.

CSP Committee is setting the minimum standards for communities to adopt. The local governments may adopt stricter standards, but not weaker ones. The ordinance will have to be adopted by each community individually. However, they may choose to modify it. Currently, the only police powers the County has to enforce are those powers given to them from the State, such as SESC, the Drain Code or Septic. Individual communities will have police power to enforce the ordinance. They do have the right to extend those powers to another entity to enforce on their behalf.

With the ordinance, 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 (i.e., if a county drain is involved, the GCDC must be involved.) With the implementation of a county-wide ordinance, close to 100 percent of the site plans will be reviewed by the County.

The goal is to have a draft storm water ordinance by late 2007 or early 2008, which addresses:

- 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
- Soil erosion control (including long-term post-construction)
- 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 (including long-term 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 but will expand both the communities and GCDC authority as well as specify development requirements. The storm water ordinance will reference a design standards manual, which includes BMPs.

4. MONITORING AND MAPPING SUB-COMMITTEE ACTIVITIES

The Monitoring and Mapping (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 and 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 5 Watershed Road Stream Crossing Survey (Lower Flint River Watershed only)
- Section 6 319 Nonpoint Source Management Program Grant Projects
(Middle Flint River Watershed)
- Section 7 Project GREEN water quality testing
- Section 8 Macroinvertebrate Study
- Section 9 IDEP
- Section 10 Storm Water Non-Point Source Discharges

Section 5: Stream crossing surveys were done by the consultants Tetra Tech and Wade Trim. They were done when the consultants were out performing IDEP. Originally it was to be done by the Genesee County Road Commission. Subsequent conversations with the Road Commission revealed how difficult it would be to coordinate this with their Bridge inspection program. At the time of this report only a draft version of the Lower Flint Road Stream crossing inventory was available. Final copies for all the watersheds will be available for the next report.

Section 7: The Project GREEN contract was made between the M&M Committee and the Flint River Watershed Coalition (FRWC). The FRWC provides the data results from the chemical testing done by the GREEN students. This program has educational aspects of it that are discussed in Section 2: Public education.

The M&M Work Group held four meetings during this reporting period.

**5. LOWER FLINT RIVER WATERSHED
ROAD STREAM CROSSING INVENTORY
DRAFT**



ROAD-STREAM CROSSING SURVEY

During summer of 2007, a team of Tetra Tech field staff conducted a visual assessment along the Lower Flint River and small tributaries. The crews investigated 40 road-stream crossings along the Flint River and waterbodies tributary to the Flint River in Genesee County. Survey locations are presented in Figure 5-1. The river assessment identified the bottom substrate, type of bank vegetation, surrounding land use and potential pollution sources. Road-stream inventories were completed at approximately 11 percent (40 out of 350) of the crossings in the sub-watershed. Of the total 350 road stream crossing located in the Lower Flint River sub-watershed, approximately 50 percent are located within the urbanized areas.



The methodology was developed by the Michigan Department of Environmental Quality (MDEQ) and is presented in an April 2000 document titled “*Stream Crossing Watershed Survey Procedure.*”

DATA ANALYSIS

Tetra Tech summarized the data by actions that would be required to improve the watershed condition. Methodology for the data summary was based on the MDEQ and Center for Watershed Protection recommendations. 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 corrective actions to identify the nature and extent of the problem. The actions include:

1. Stabilize streambank
2. Stabilize disturbed ground
3. Decrease embeddedness
4. Increase shade cover
5. Establish 30 foot riparian buffer
6. Establish 100 foot riparian buffer
7. Improve canoeing and recreation
8. Trash clean-up
9. IDEP investigations
10. Other actions



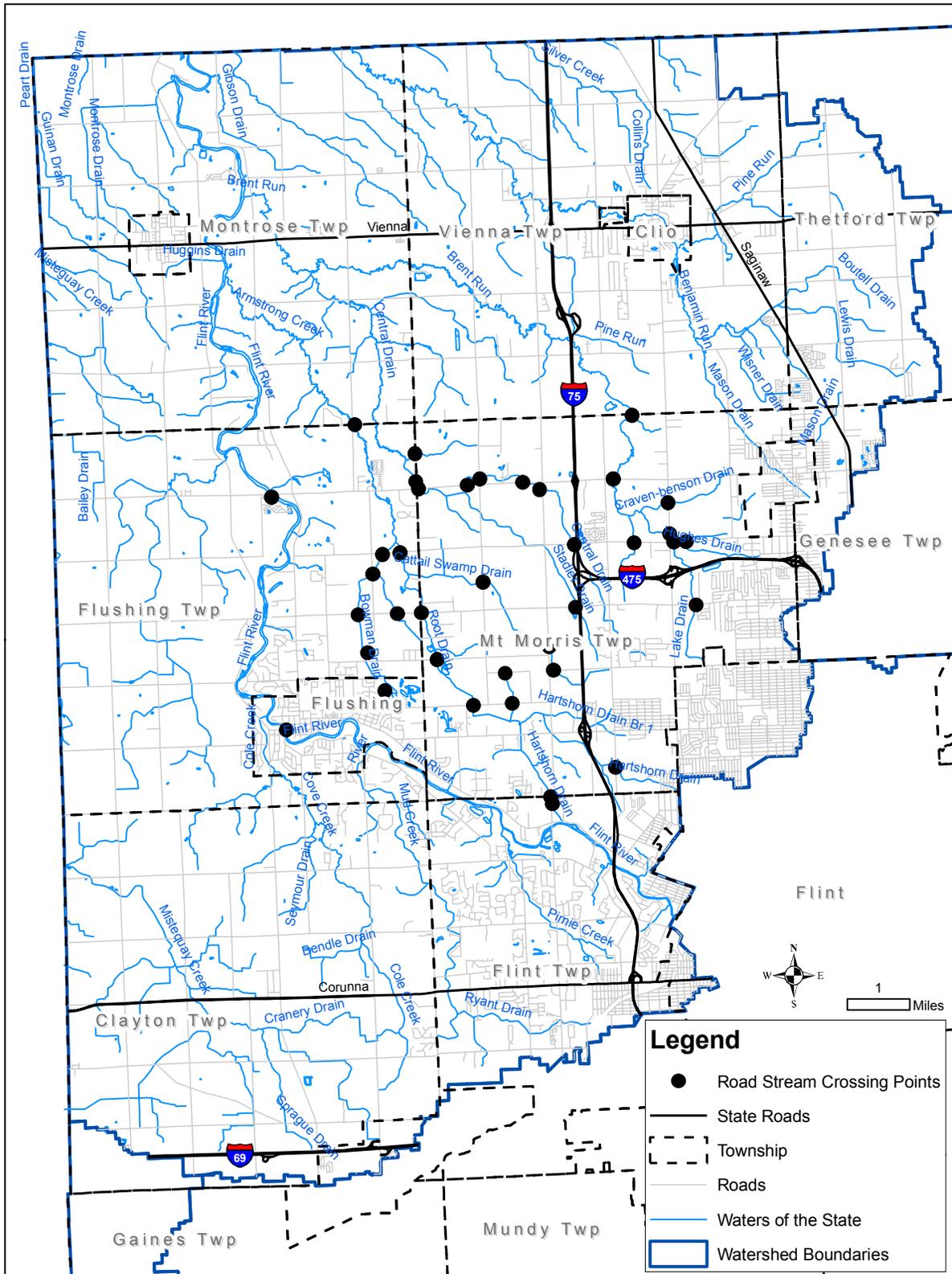


Figure 5-1 Road Stream Crossing Locations

The methods for summarizing the data, the results, and a list of preliminary tasks are provided below for each of the 10 actions.

1. Stabilize Streambank

Moderate or heavy streambank erosion observed at a site was identified as a problem. The locations are presented in Figure 5-2. Seven sites were identified as needing stream bank stabilization.

Tasks:

- Have a professional revisit the site and determine the extent and cause of the erosion.
- Stabilize the bank using soil bioengineering techniques.

2. Stabilize Disturbed Ground

If disturbed ground was observed during the survey on either the right or left bank then the site was identified for additional work. These locations are presented in Figure 5-2. One site was identified during the analysis.

Tasks:

- Have a professional revisit the site and verify the existence of a problem.
- Stabilize the disturbed ground.

3. 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. These locations are presented in Figure 5-2. Conditions that would suggest an embedded stream channel were found at 19 of the sites surveyed.

Tasks:

- Determine the cause of embeddedness problems.
- Stabilize the problem areas.

4. Increase Shade Cover

The site was determined to be impacted if the crew members 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

Seven locations were identified by crew members as having reduced shade cover within the watershed. Figure 5-3 identifies the locations of these sites.



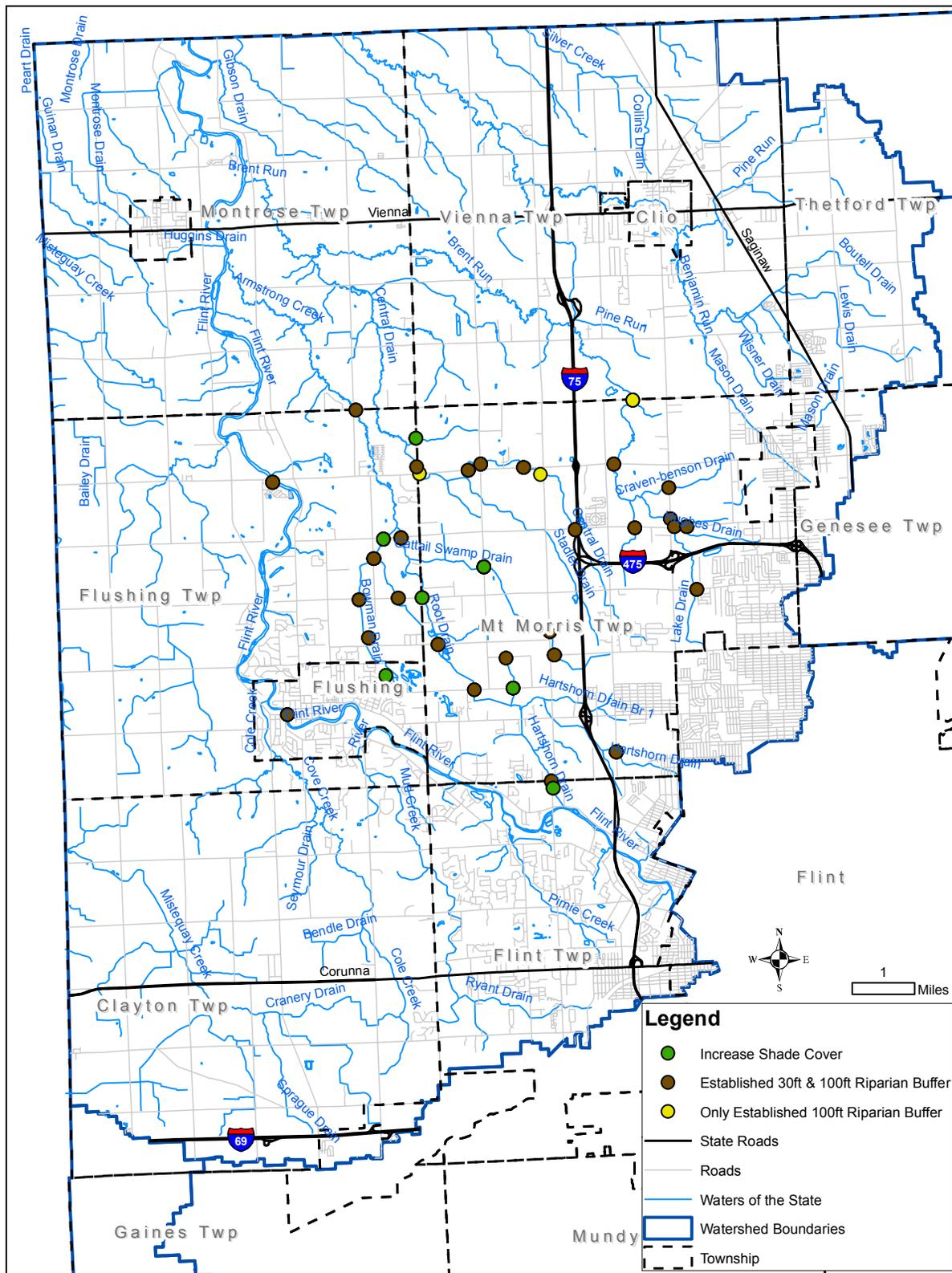


Figure 5-3 Shade Cover and Riparian Buffer Issues

5. Establish a 30 Foot Riparian Buffer

Areas where a buffer was observed as being 30 feet or less were identified as a problem. The 30 feet measure is based on NRCS and other agencies minimum recommendation for the width of a buffer strip to be effective. Figure 5-3 identifies the locations of these sites. Thirty-six sites were identified as having riparian buffers 30 feet or less.

Tasks:

- Establish a 30 foot wide buffer.

Each road stream crossing identified as having a 30 foot or less riparian buffer was evaluated using aerial photos. The length of a riparian buffer 30 feet or less in width was measured on the aerial photos. A total of approximately 91,350 linear feet of buffer was identified for re-establishment. This length represents the upstream and downstream sides of the road stream crossing and incorporates both sides of the waterbody as necessary.

6. Establish a 100 Foot Riparian buffer

Areas where a buffer was observed as being between 30 and 100 feet in width were identified. The 100 feet measure is based on NRCS and other agencies maximum recommendation for the width of a buffer strip. Figure 5-3 identifies the locations of these sites. The surveys identified 39 riparian buffers 100 feet or less in width, but of those 39 sites, 36 are 30 feet or less

Tasks:

- Establish a 100 foot wide buffer.

Each road stream crossing identified as having a 100 foot or less riparian buffer was also evaluated using aerial photos. The length of riparian buffer 100 feet or less in width was measured on the aerial photos. A total of approximately 97,200 linear feet of buffer was identified for re-establishment. This length represents the upstream and downstream sides of the road stream crossing and incorporates both sides of the waterbody as necessary.

7. 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. The analysis identified 11 sites for areas to improve canoeing and recreation. The locations are presented in Figure 5-4.

Tasks:

- Remove logs and debris in a habitat sensitive manner.

8. Trash Clean Up

Tetra Tech crews 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. Trash observations were noted at 11 of the sites investigated. Figure 5-4 identifies the location of all of the trash cleanup sites.

Tasks:

- 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.



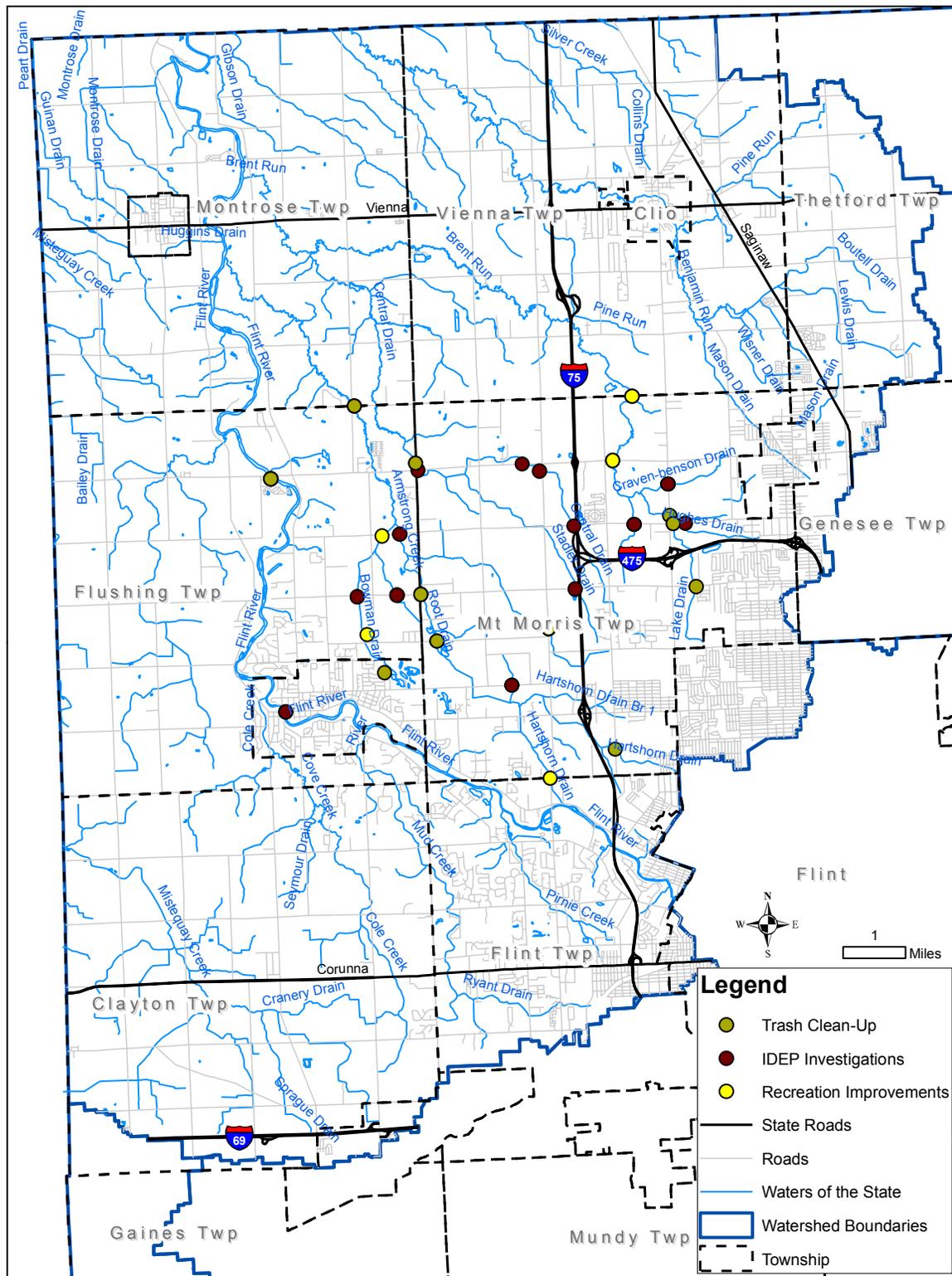


Figure 5-4 Improve Recreation, Trash Clean Up and IDEP Issues

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

Seventeen locations were identified as having potential illicit discharge problems. These locations are presented in Figure 5-4.



Tasks:

- Have a professional revisit the site and verify the existence and nature of the problem
- Stop the illicit discharge or remove the illicit connection.

10. Other Actions

No additional actions were identified from comments provided on the field forms.

6. 319 NONPOINT SOURCE GRANT PROJECTS (MIDDLE FLINT WATERSHED)

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 two 319-grant projects within Genesee County. Both are within the Middle Flint Watershed; the Swartz Creek Watershed Project and the Kearsley Creek Watershed Project. The University of Michigan - Flint Center for Applied Environmental Research (CAER) with the Flint River Watershed Coalition (FRWC) developed the Swartz Creek Watershed Management Plan (WMP) and the Genesee County Drain Commissioner's (GCDC's) Office have developed the Kearsley Creek WMP to control nonpoint sources of pollution. Projects may include implementing structural Best Management Practices (BMPs), non-physical BMPs, and information and education activities to eliminate nonpoint source pollution.

SWARTZ CREEK WATERSHED PROJECT

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

Physical Inventory

A physical inventory of the watershed has been completed including road stream crossings, identification of critical areas and specific sites for BMP implementation. The WMP was submitted to the 319 department of the Michigan Department of Environmental Quality (MDEQ) for review.

In summary, the water quality of the Swartz Creek Watershed is negatively impacted by the affects 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 worsen if a coordinated and watershed wide plan is not implemented.

Historically, development has taken place in the lower reaches of the watershed and has caused severe degradation to the system in only the lowest portions of the watershed. However, as increased growth continues in the relatively healthy portion of the watershed (i.e. the headwaters), it is likely we will see larger reductions in water quality then we have experienced in the past.

The Swartz Creek Watershed has two designated uses that are impaired, including total body contact and warm water fisheries. The partial body contact, aquatic wildlife, and agricultural uses appear to be threatened. The industrial water supply and public water supply are not current uses but are included as threatened because of the likely inability of these uses to be supported if it was so desired. 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 the Ray Road stream crossing over the southern branch 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 pollutants identified above, specific source areas and causes of the pollutants 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.

Table 6-2 Pollutant, Source and Cause of Nonpoint Source Pollutants in Swartz Creek Watershed

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 Water Quality Improvement Plan was revised per MDEQ comments and was resubmitted in October, 2006.

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 the changes to the watershed with regards to the Master Plan upon watershed build outs and the resulting impacts upon full build out. The hydraulic capacities at the bridge and culvert structures at full build out in the watershed 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.

7. PROJECT GREEN

The Global Rivers Environmental Education Network (GREEN) is a curriculum based, mentored program designed to propose solutions to local environmental problems using a water quality testing. This project has been in existence for fifteen 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 the 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 data. Schools are also encouraged to participate in a summit, where students are able to present their findings. On May 11, 2007, a symposium was held at Mott Community College and students presented collected data.

Each site visited is categorized as excellent, good, fair (medium), poor (bad), or very poor (very bad) based on the National Sanitation Foundation (NSF) Water Quality Index (WQI). 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 water quality index (WQI). If all nine water quality tests are not available then multiply the total of those samples available 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 Project 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 Project 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 project 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 Project GREEN Results

ID_No	Location	Sampled Years	Water Quality Index (WQI)
<i>Lower Flint River Watershed</i>			
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	Fair
5L	Pirnie Creek at Beecher Road	2006	Poor
6L	Southeast corner of M-57 and Seymour Road	2001-07	Good
7L	Clio Bike Path at Jennings Road	2007	Good
8L	Flushing Park at Pavilion #2	2001-02, 2005	Good
9L	Mott Golf Course Bridge at hole #6	1993, 1998-2000	Good
10L	Pine Run at Clio Park	2006	Good
11L	North of Flushing at Mt. Morris Bridge	1998	Good
<i>Middle Flint River Watershed</i>			
1M	Swartz Creek at Hill Road Bridge	2005-06	Fair
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	Fair
5M	Downstream from For-Mar Nature Center	2005	Fair
6M	Gilkey Creek behind Central High School	1991-92, 1994, 2002	Good
7M	Immediately west of the Farmer's Market	2004-06	Good
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	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	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	Very poor
7U	Richfield Park	2001, 2003-07	Good
<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	Excellent

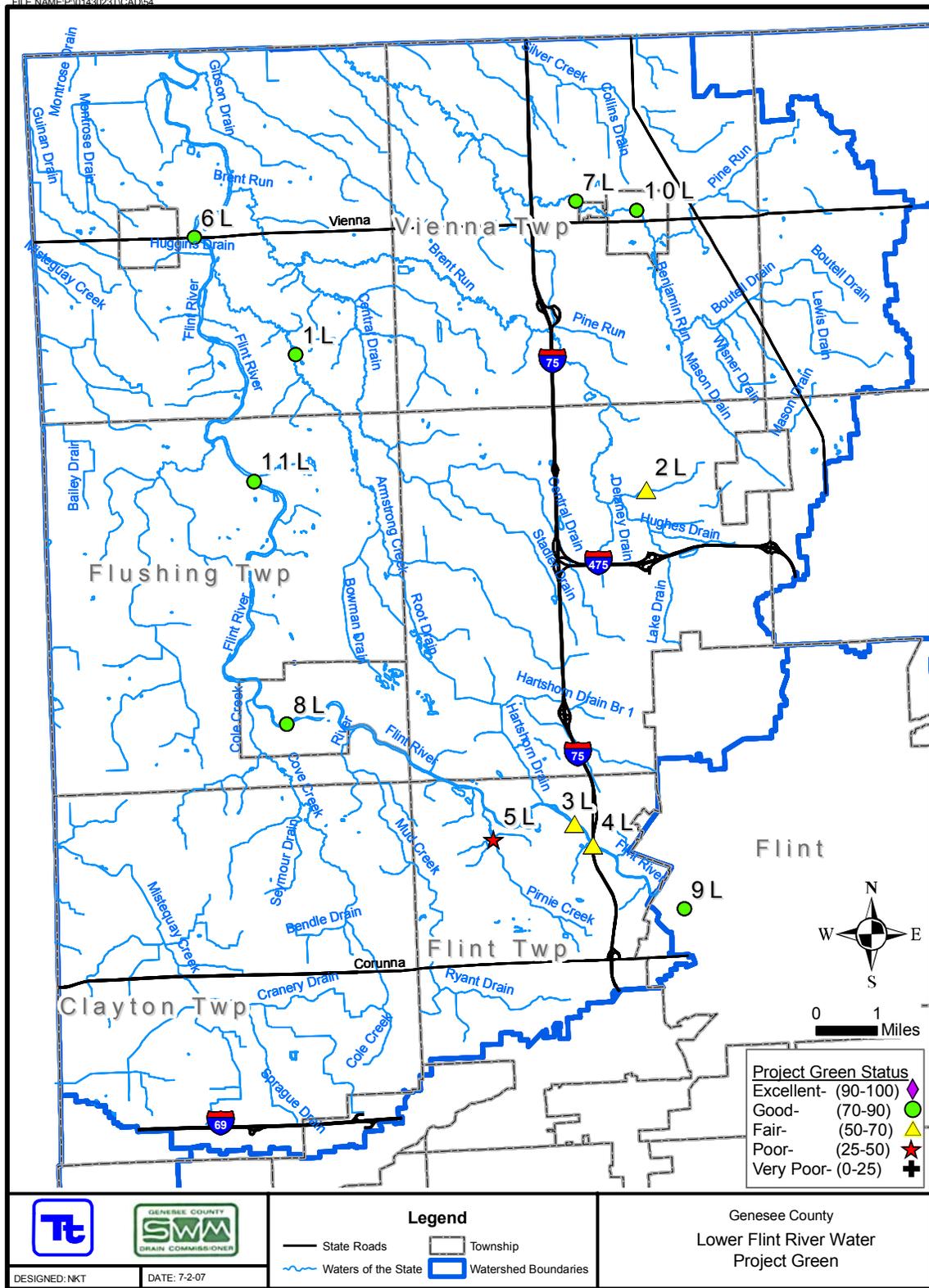


Figure 7-1 Project GREEN Results for the Lower Flint River Watershed

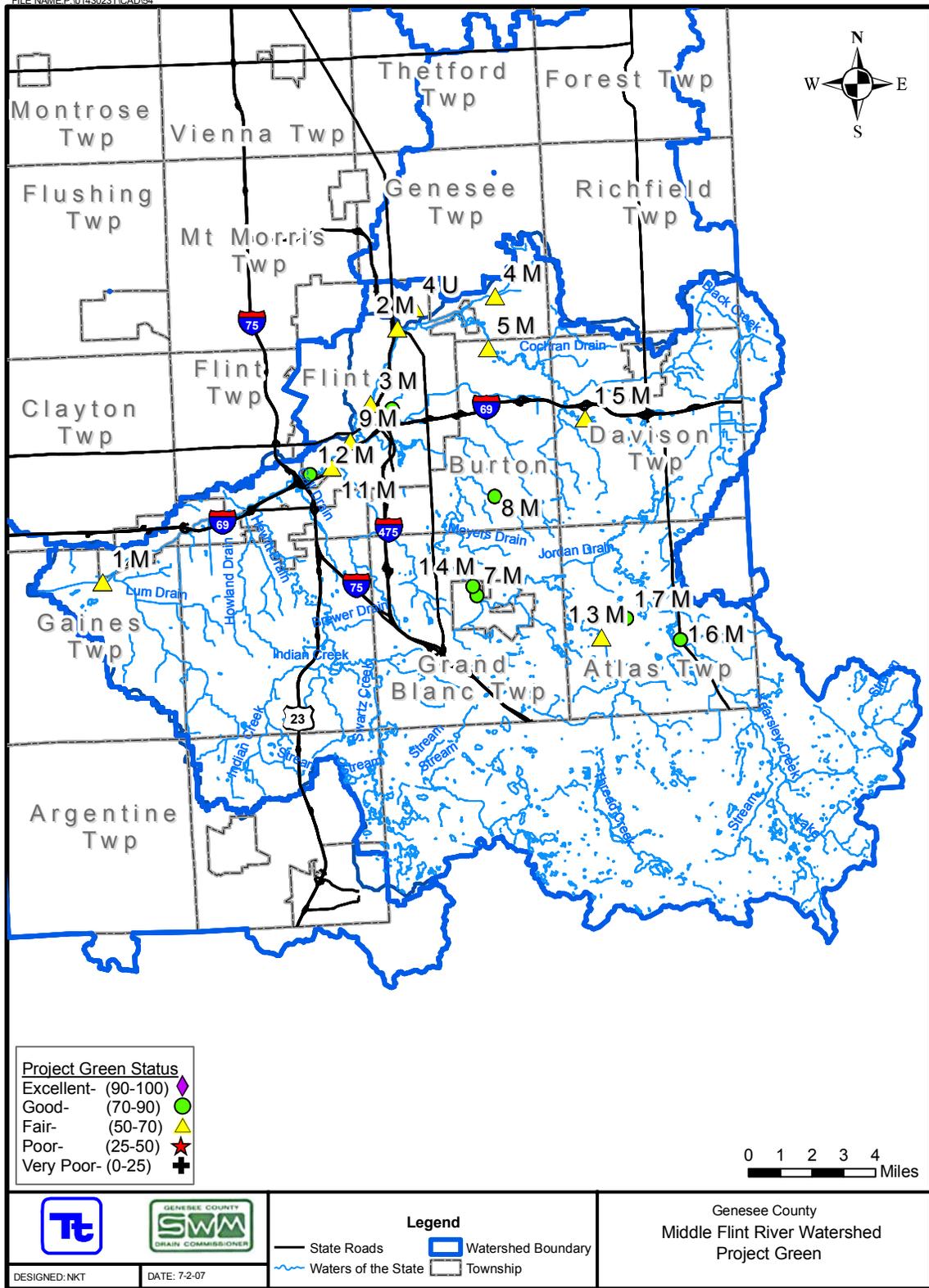


Figure 7-2 Project GREEN Results for the Middle Flint River Watershed

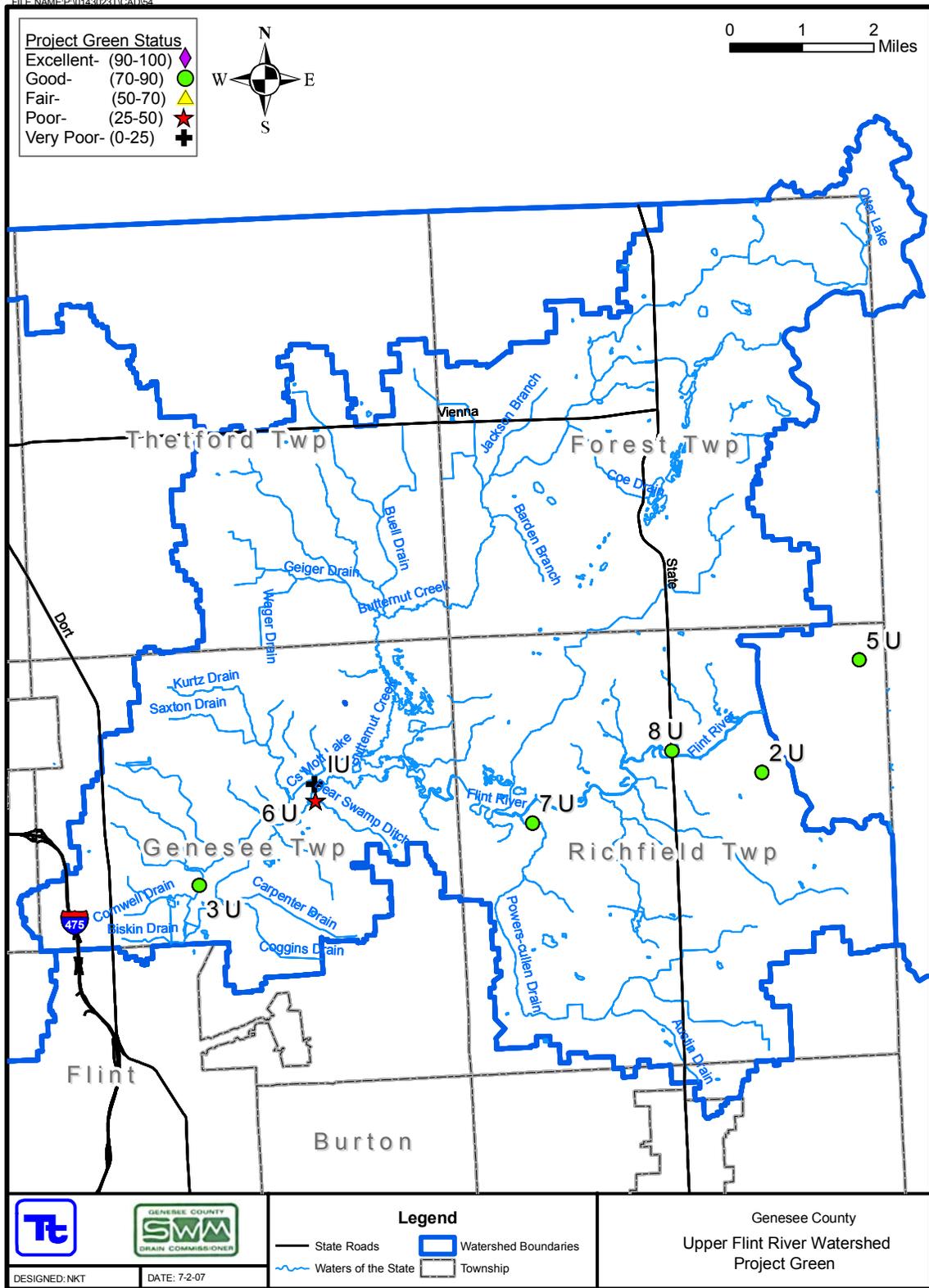


Figure 7-3 Project GREEN Results for the Upper Flint River Watershed

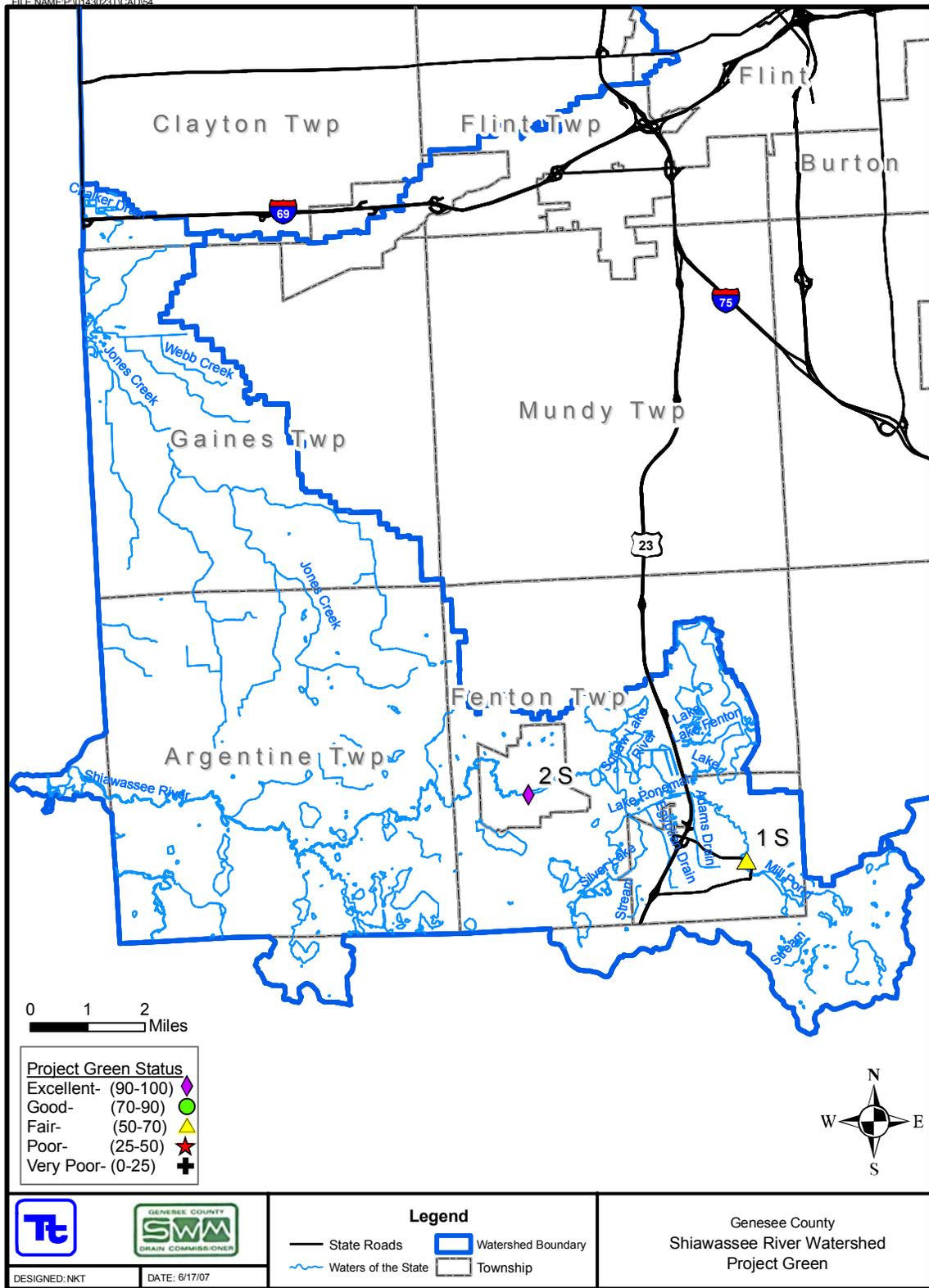


Figure 7-4 Project GREEN Results for the Shiawassee River Watershed

8. MACROINVERTEBRATE STUDY

Since 1999, the Flint River Watershed Coalition (FRWC) has executed a bi-annual Benthic-Monitoring Program that has been performed to meet Michigan Department of Environmental Quality (MDEQ) 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 scores for each site visit were 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 provide an indication of macroinvertebrate community health but also act as a good Water Quality Index. Table 8-1 and Figures 8-1 to 8-3 summarize macroinvertebrate sampling results for the Lower, Middle, and Upper Flint River Watersheds. Sites categorized as “poor” are identified in the table with red font. One site out of the 14 sites visited, at the Brent Run Headwaters, was categorized as “poor”.

Table 8-1 Macroinvertebrate Study Results

ID_No	Location	Sampled Years	Water Quality Index (WQI)
<i>Lower Flint River Watershed</i>			
A-L	Pine Run Headwaters	1999-2000, 2003-06	Fair
B-L	Misteguay Creek Headwaters	1999-2000, 2004-06	Fair
C-L	Flint River, Flushing	1999-2006	Fair
D-L	Brent Run	1999-2003, 2005-06	Good
E-L	Brent Run Headwaters	1999-2000, 2004-06	Poor
<i>Middle Flint River Watershed</i>			
A-M	Swartz Creek	1999-2006	Fair
B-M	Thread Creek	1999-2006	Fair
C-M	Thread Creek Headwaters	1999-2006	Good
D-M	Kearsley Creek	1999, 2001-06	Good
E-M	Kearsley Creek Headwaters	1999-2003, 2005	Fair
F-M	Gilkey Creek	1999-2006	Good
G-M	Gilkey Creek Headwaters	2002-06	Good
<i>Upper Flint River Watershed</i>			
A-U	Butternut Creek Headwaters	2000-06	Good
B-U	Flint River, Richfield	2000-05	Fair

It should be noted that there was no discernable correlation between the Project 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 Project Green.

Data set from October 2007 has not been compiled at this time. It will be reflected in future reports.

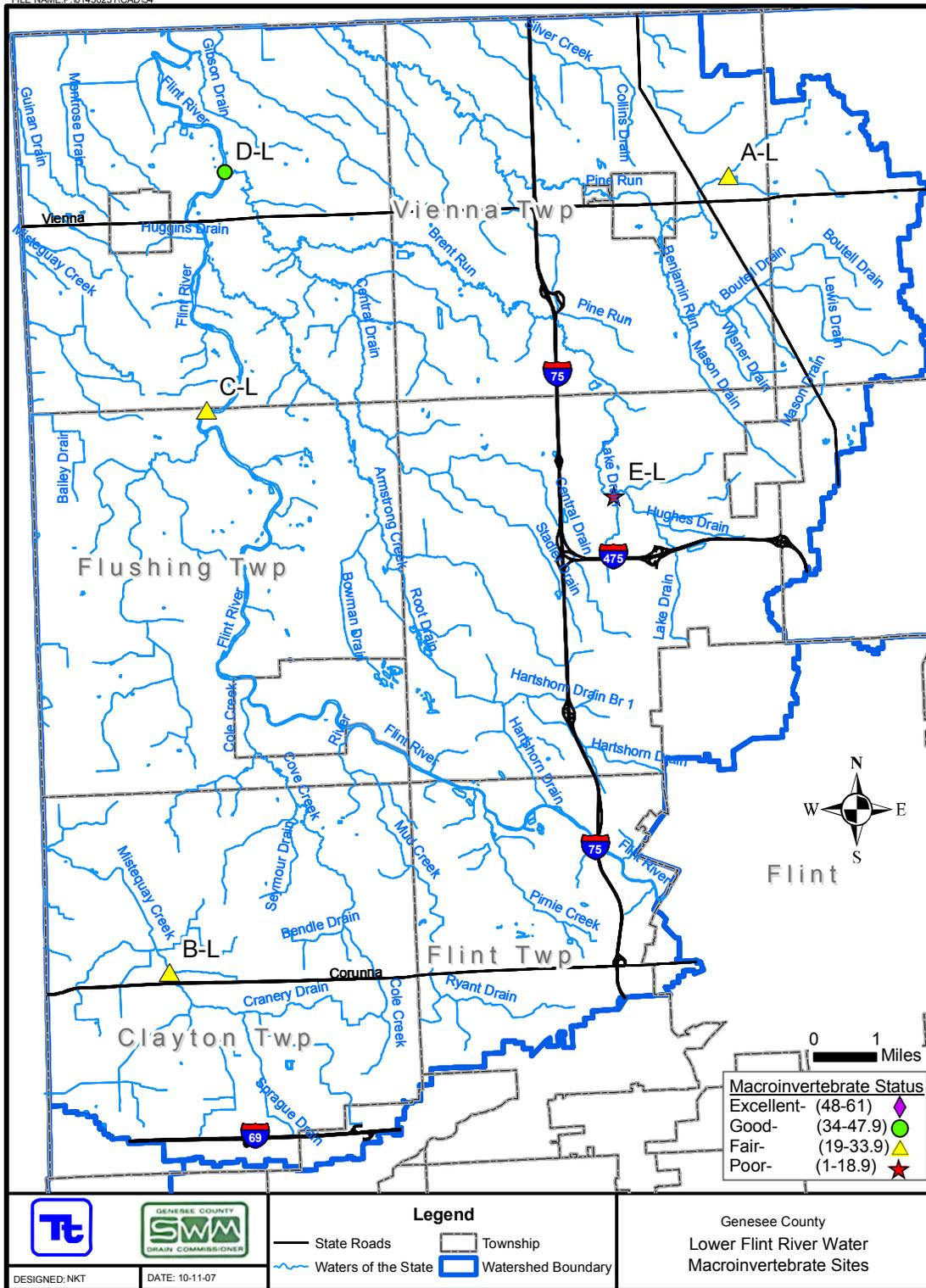


Figure 8-1 Macroinvertebrate Study Results for the Lower Flint River Watershed

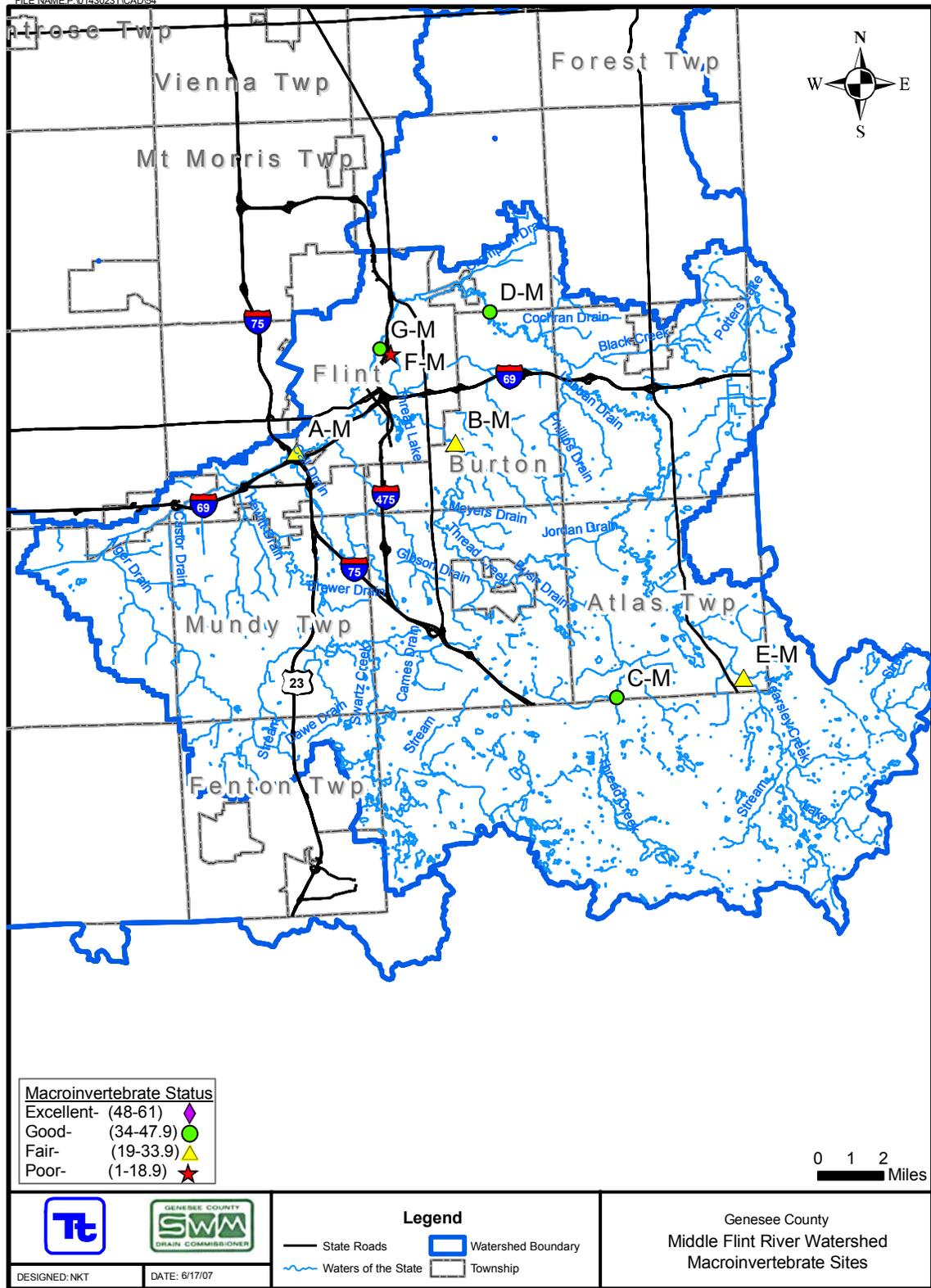


Figure 8-2 Macroinvertebrate Study Results for the Middle Flint River Watershed

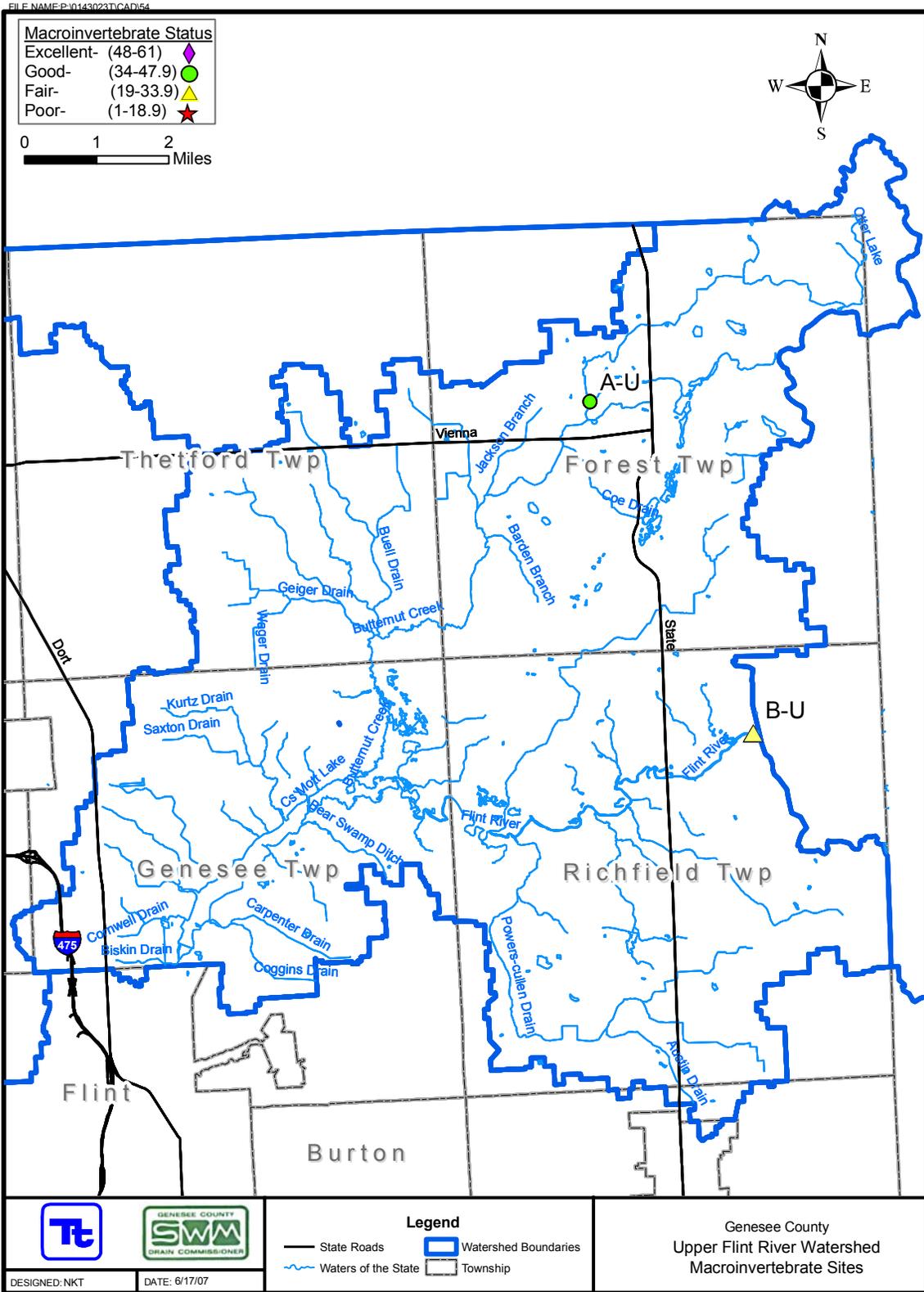


Figure 8-3 Macroinvertebrate Study Results for the Upper Flint River Watershed

9. ILLICIT DISCHARGE ELIMINATION PLAN (IDEP)

The purpose of the Illicit Discharge Elimination Plan (IDEP) is to establish a program that is designed to prohibit and eliminate illicit discharges and connections, including the discharge of sanitary wastewater, to the Genesee County's separate storm water drainage system that includes both open and enclosed drainage systems. 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 IDEP field investigations.

Figure 9-1 shows the illicit discharge notification system process. During field investigations, crews of two people investigate MS4 outfalls and private drains, either by walking within the County drainage system or by kayaking the waters of the state. Each outfall is mapped and investigated at least once every five years. When outfalls are submerged, field crews conduct additional upstream investigations. If dry weather flow is present at an outfall during investigations, the flow is sampled and analyzed to ensure no illicit connections are present. If a possible illicit connection is identified, the pollutant source is isolated and businesses, property owners, and governmental units are contacted in an effort to eliminate these problems.

The status of IDEP work for each of the following five major watersheds is described:

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

[Note: IDEP field investigations have been prioritized to focus on MS4 and urban areas. Not all drains identified in the permit will be investigated by the end of the IDEP cycle, which is April 2009. Per the 342 agreement with local communities, the Genesee County Drain Commissioner (GCDC) will continue to investigate PSDs not previously investigated on behalf of the communities under the permit.]

To date, Genesee County has focused on completing Dry Weather Flow investigations within Phase II communities urbanized areas, (excluding the City of Flint) and some laterals, especially along I-75 and I-69. A total of 25 hot spots have been found and Tetra Tech conducted follow up investigations. All of the IDEP information has been entered into a web base database and PSD points are plotted on a GIS map. When the mapping is complete for the entire County, it will be available on the GCDC public website. In addition, the County has added an illicit discharge reporting page on their web-site. The page will give general information about illicit discharges and phone numbers to call when someone finds an illicit discharge.

A map with the open watercourses as defined in the state Hydro Layer is being developed. It will include points for all identified connections, which ones are illicit connection, and a corresponding table of latitudes & longitudes. This will be an addendum to this annual report submitted no later than November 15th 2007.

LOWER FLINT RIVER WATERSHED

In 2006 and 2007, IDEP investigations were conducted in the Lower Flint River Watershed. As shown in Figure 9-2, 72 miles of drain and river were walked or kayaked. Nine illicit connections were found. Table 9-1 provides a description of the illicit connections, corrective actions taken, and current status. All nine illicit connections listed are pending further investigation. The County will dye test suspected properties to confirm and coordinate disconnection. Once an illicit connection is confirmed, Genesee County will notify MDEQ in accordance with its NPDES storm water permit and will proceed to remove the connection. Field crews will continue investigating drains within the Lower Flint River Watershed through the end of 2007 and 2008. Additional illicit connections found will be included in the 2008 Annual Report.

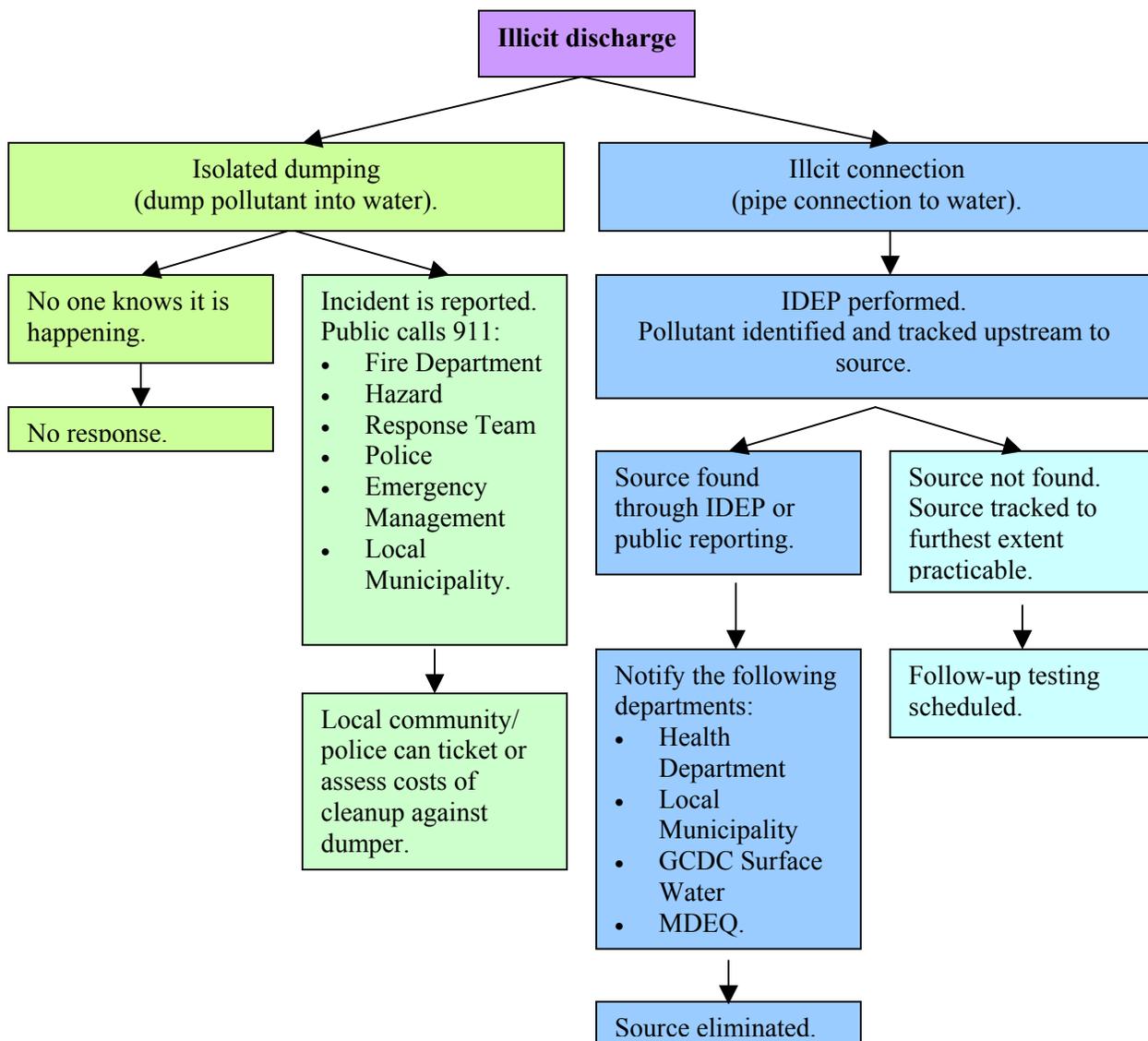


Figure 9-1 Illicit Discharge Notification System Process

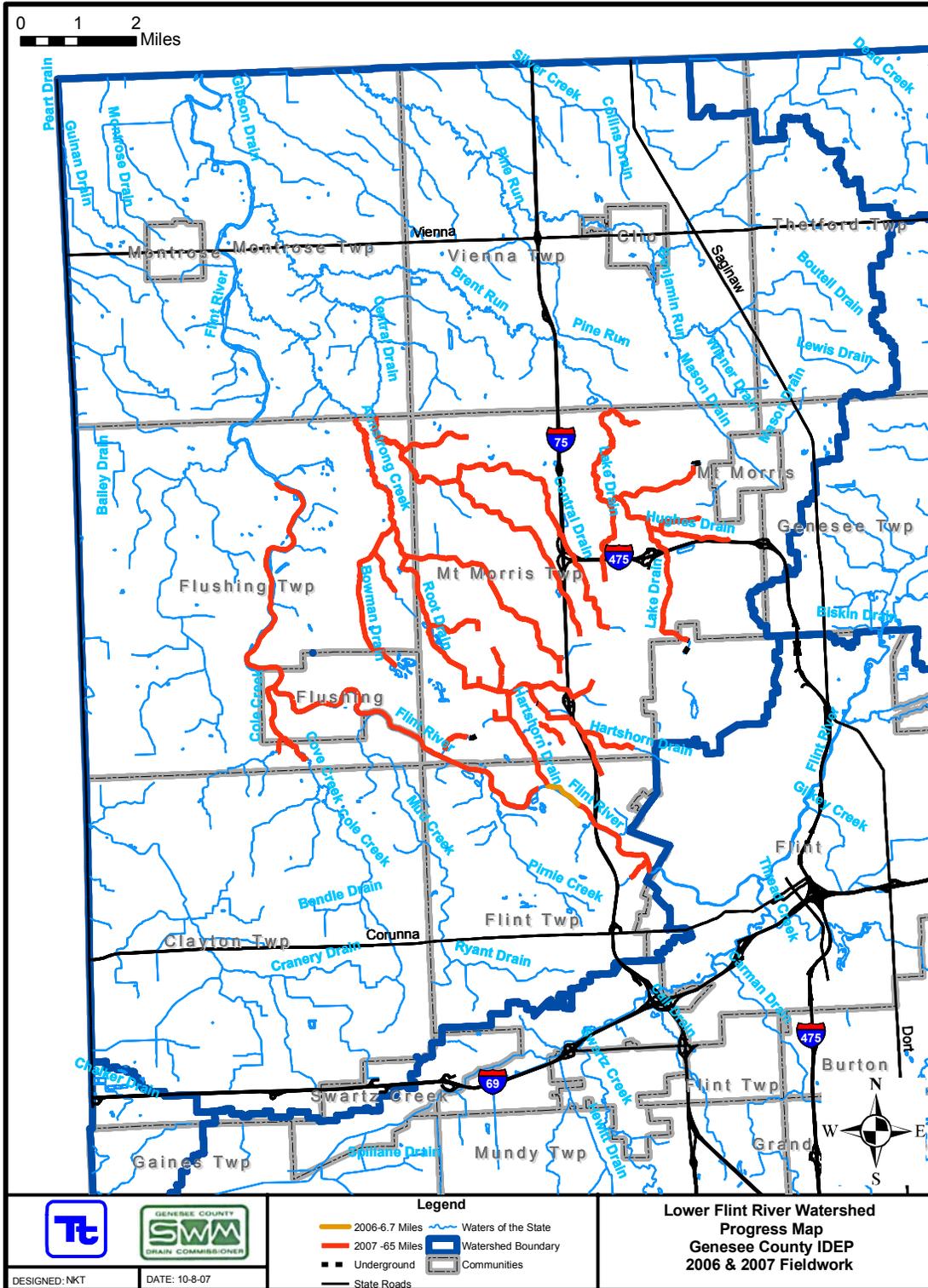


Figure 9-2 Lower Flint River Watershed – IDEP Program Status

Table 9-1 Illicit Connections - Lower Flint River Watershed

Confirmed Illicit Connection	Corrective Actions	Status
<p>1. PSD 8513005 – Dry weather flow was observed discharging from a 4-inch PVC pipe into the Bowman Drain. Field crews observed grease, soap suds, and sanitary odor at this site. Samples identified over 1 million colonies of E.coli per 100 ml, ammonia levels of 48 mg/l, and surfactant levels at 4.2 mg/l.</p>	<p>Need to dye test the residences located at 6448 and 6450 Johnson Rd to confirm and correct the illicit connection.</p>	<p>Pending investigation</p>
<p>2. PSD 8527862 (previously 8527762) - Dry weather flow and soap suds were observed coming from a pile of broken concrete located 40 ft south of Main St. (Flushing Rd) on the west bank of the Flint River. Field crews did not observe a pipe at the location, but water was heard falling from behind the concrete slabs.</p> <p>Samples taken at the time of the initial investigation identified 3,000 colonies of E. coli per 100 ml and surfactants at 8.4 mg/l.</p> <p>Further investigation located dry weather flow from a 4-inch black corrugated plastic pipe discharging to a surface drain connected to the storm drain system. The surface drain is located in the front yard of a business known as Flushing Clean Up, located at 213 Main St. Field crews observed soap suds coming from the pipe. Multiple vehicles were being pressure washed and detailed under an awning and in the garage at the rear of the drive.</p>	<p>Need to dye test the business, residence, and outbuildings located at 213 Main St. to confirm and correct the illicit connection.</p>	<p>Pending investigation</p>
<p>3. PSD 8513503 - Intermittent dry weather flow was observed discharging from a 5-inch PVC pipe into the Bowman Drain. Field crews observed hair and lint extending from the circular grate covering the end of the pipe. Samples identified surfactant levels of 0.08 mg/l.</p>	<p>Need to dye test the residence located at 7526 Coldwater Rd to identify and correct the illicit connection.</p>	<p>Pending investigation</p>
<p>4. PSD 8526756 – (Flint 1015) While conducting IDEP investigations, field crews observed raw sewage flowing from a low area where it had accumulated, to the Flint River. The source of the sewage appears to be a nearby damaged sanitary sewer line. Sanitary odor and black organic staining were observed in the vicinity.</p> <p>Samples identified greater than 4,800 colonies of E. coli per 100 ml, surfactant levels of 2 mg/L, and ammonia levels of 1.3 mg/L.</p>	<p>Need contact the appropriate agency to make the necessary repairs and correct the discharge.</p>	<p>Pending investigation</p>
<p>5. PSD 8619237 - Field crews observed a 5-inch plastic pipe extending from the west bank of the Monroe Branch. No dry weather flow was observed at the time of the investigation, but field crews noted the presence of sanitary debris in the downstream end of the pipe. The upstream pipe</p>	<p>Need to dye test the residence at 5512 N. Elms Rd to identify and correct the illicit connection.</p>	<p>Pending investigation</p>

Confirmed Illicit Connection	Corrective Actions	Status
direction is in the direction of 5512 N. Elms Rd. This is the second residence south of Coldwater Rd on the east side.		
6. PSD 8513247 - Dry weather flow was observed discharging into the Cottell Drain from around a cracked 4-inch re-enforced concrete pipe. Field crews observed sanitary odor and black staining in the area of the pipe. Samples identified E. coli colonies greater than 10,000 counts per 100 ml.	Need to dye test the residence located at 6228 Johnson Rd to confirm and correct the illicit connection.	Pending investigation
7. PSD 8620753 - Dry weather flow was observed discharging from an 18-inch corrugated steel pipe into the Cattail Drain on the northwest corner at Linden Rd. Samples identified ammonia levels at 1.7 mg/l and surfactant levels at 0.37 mg/l. Field crews conducted an upstream investigation and located dry weather flow from a 4-inch corrugated plastic pipe discharging into a catch basin in the road side ditch on the east side of Linden Rd. Sanitary odor and black staining were observed at the downstream end of the pipe. Samples identified greater than 10,000 colonies of E. coli per 100 ml, surfactant levels of 12 mg/l, and ammonia levels of 66 mg/l.	Need to dye test the residence located at 5244 N. Linden Rd to confirm and correct the illicit connection.	Pending investigation
8. PSD 8619101 - Dry weather flow was observed discharging from a 3-inch PVC pipe into the Root Drain. Field crews observed soap suds at the downstream end of the pipe. Samples identified surfactant levels at 1.9 mg/l.	Need to dye test the residence located at 6474 Chicago Rd to confirm and correct the illicit connection.	Pending investigation
9. PSD 8512502 (BOW 823) – Field crews observed dry weather overflow from a private pond discharging into the Bowman Drain. Field crews observed that the homeowner was using plastic construction fencing to contain approximately 6 waterfowl to the pond and Bowman Drain. These animals had direct access to the drain from the surrounding property. Field crews also observed what appeared to be feces from the birds covering wooden bridges over the drain. During a rain event, the feces would be washed directly into the drain. Samples taken from the overflow of the private pond identified E.coli colonies of 2,600 counts per 100 ml and surfactant levels of 0.14 mg/l.	It is recommended that a letter be sent to the homeowner at 7266 Stanley Rd explaining that feces produced by the waterfowl is a source of E. coli that can have a negative impact on the water quality at the site, as well as effecting downstream locations.	Pending investigation

MIDDLE FLINT RIVER WATERSHED

Figure 9-3 shows the status of the IDEP Program for the Middle Flint River Watershed, including the:

- Gibson and Sherwood Drains (Clean Michigan Initiative Grant, CMI)
- Thread Creek and tributaries (Funded by community taxes)
- Swartz Creek and tributaries (Funded by community taxes)
- Kearsley Creek and tributaries (Funded by community taxes)

A total of 52 drain miles have been walked. The status of IDEP work for each of these project areas is described as follows.

Gibson and Sherwood Drains

GCDC was awarded a CMI grant to conduct investigations for the Gibson Drain. The Quality Assurance Project Plan (QAPP) was submitted to MDEQ in December, 2004 and was approved in January, 2005. A consultant was hired to conduct the IDEP investigations. The final project report, fact sheet, and release of claims were submitted to MDEQ in August, 2006.

In 2005, field crews walked the main branch of the Gibson Drain and its tributary branches, including the Sherwood Drain. A total of 12 miles of drain were walked and no additional field work is need for this drain, other than follow-up illicit connection investigations.

Table 9-2 provides a list of confirmed illicit connections in the Middle Flint watershed in the Gibson and Sherwood Drains and summarizes corrective actions taken to date and current status. Four illicit connections were identified, including two sanitary system connections, a commercial car wash facility, and wash water from stone cutting operations at Genesee Cut Stone Company. Table 9-3 lists three additional outfalls with potential illicit connections that were identified and are still under investigation as to the source of pollution. The County will dye test the suspected properties to confirm and coordinate disconnection. Once an illicit connection is confirmed, the County will notify MDEQ in accordance with its NPDES storm water permit and begin action to remove the connection.

Thread Creek and Tributaries

In 2006, the GCDC acquired funds from local communities to conduct IDEP investigations in the Middle Flint River Watershed. Field crews walked the Thread Creek and its tributary branches in the spring and summer of 2006. A total of 40 miles of drain were walked. No illicit connections were found.

Swartz Creek and Tributaries

In 2006, the GCDC acquired funds from local communities to conduct IDEP investigations in the Middle Flint River Watershed. Field crews walked the Swartz Creek and its tributary branches in the spring and summer of 2006. The Swartz Creek drainage area has one confirmed illicit connections and two potential illicit connections pending investigation. Table 9-4 provides a description of the illicit connections and summarizes corrective actions taken to date and current status. The County will dye test the suspected properties to confirm and coordinate disconnection. Once an illicit connection is confirmed, the County will notify MDEQ in accordance with its NPDES storm water permit and begin action to remove the connection.

Kearsley Creek and Tributaries

The GCDC acquired funds from local communities to conduct IDEP investigations in the Middle Flint River Watershed. Field crews walked the Kearsley Creek as well as its tributary branches in the spring and summer of 2007. A list of identified illicit connections is being generated and will be forwarded to the MDEQ when it is ready.

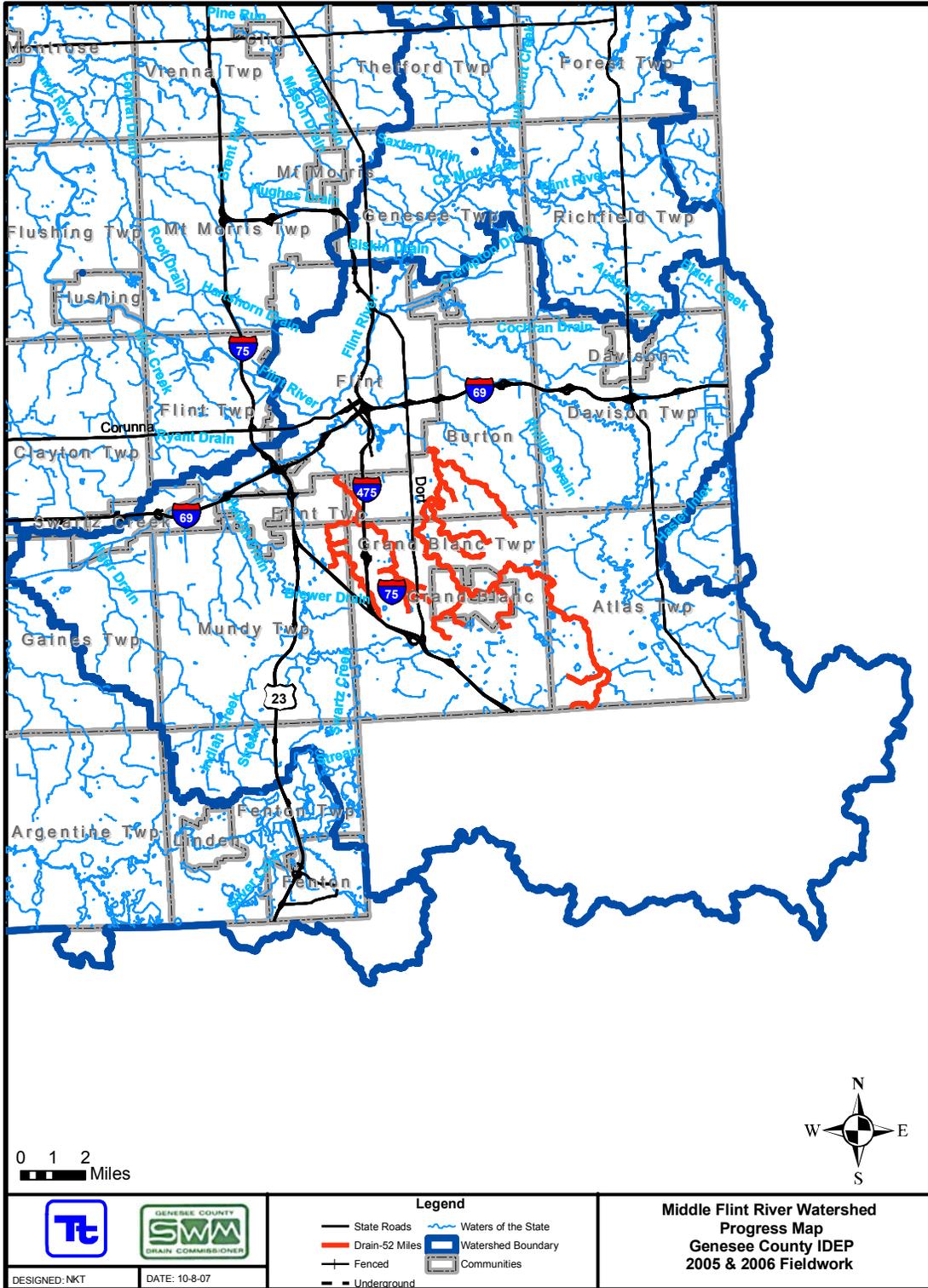


Figure 9-3 Middle Flint River Watershed – IDEP Program Status

Table 9-2 Confirmed Illicit Connections in Middle Flint River Watershed - Gibson and Sherwood Drains

Confirmed Illicit Connection	Corrective Actions	Status
1. PSD 6705011 - An illicit connection was found on an outfall discharging to the Gibson Drain from Mill Wheel St. near the intersection of Chapin St. Turbid dry weather flow was found discharging from a stone and marble cutting facility at the corner of Chapin and Saginaw Streets.	MDEQ conducted a site inspection of the facility and identified the discharge water was in violation of Part 31 of the NREPA. On November 15, 2005, MDEQ notified Genesee Cut Stone Co. that they are required to obtain an NPDES storm water permit.	Pending investigation (MDEQ)
2. PSD 6705508 (previously 6705511) - Dry weather flow was observed at this PSD between residence 2207 and 2297 Rollins and throughout the upstream drainage network; while standing water was identified in the manhole at the intersection of Fern and McGrath Streets. Samples at the outfall identified elevated levels of <i>E. coli</i> ; suggesting a possible illicit connection.	Crews will reinvestigate this PSD and drainage system to confirm results from 2005.	Pending investigation
3. PSD 6706261 (previously 6706257) - A 4-inch plastic pipe was found discharging wastewater directly into the Gibson Drain behind the residence at 1362 Maple Rd.	Dye testing has been conducted. The house is abandoned; basement is full of water and the outlet was not located. Report results to the MDEQ.	Pending investigation
4. PSD 7730752 (previously 7731005) - An illicit discharge was identified on an outfall discharging to the Gibson Drain at the intersection of Bristol and Fenton Roads. Dry weather flow with soap suds was found discharging directly into a catch basin from a Car Wash facility's wash activities into the drainage system of PSD 7730752.	A letter was sent to business owner regarding best management practices.	No action required

Table 9-3 Potential Illicit Connections in Middle Flint River Watershed - Gibson and Sherwood Drains and Tributaries

Potential Illicit Connection	Corrective Actions	Status
1. PSD 6705505 (previously 6705007) - A potential illicit connection has been identified along the Gibson Drain behind McGrath Elementary School, at the end of Leroy Street.	Genesee County will conduct dye testing or televising activities to confirm correct sewer connectivity.	Pending investigation
2. PSD 6705016 (previously 6705509) - A potential sanitary connection was found to exist along Spinning Wheel Rd between Mill Wheel and Spinning Wheel Court.	Crews will reinvestigate this PSD and drainage system to confirm results from 2005.	Pending investigation
3. PSD 7625751 - A potential illicit connection was found on Lynton Ave. at the dead end, east of Southgate St. The connection appears to be a sanitary tap observed in a manhole tributary to storm water PSD 7625751. Dry weather flow containing wastewater was observed to be discharging from the east pipe; originating between residences 3308 and 3314 Southgate St.	On September 18, 2007 follow-up investigation was conducted. Field crews were unable to dye test because the residence at 3308 Southgate Dr. refused entry. Recommend televising the potential sanitary lead connections and then taking the necessary steps to remove the connections from the storm sewer system.	Pending investigation

Table 9-4 Illicit Connections in Middle Flint River Watershed – Swartz Creek and Tributaries

Confirmed Illicit Connection	Corrective Actions	Status
1. PDS 6607507: - During a follow up investigation, field crews observed dry weather flow discharging into the Lum Drain from a 4-inch PVC pipe. Green scum, soap suds, and sanitary odors were observed in and around the base of the pipe. Samples identified 4,000 colonies of E. coli per 100 ml, surfactant levels of 82 mg/l and ammonia levels at 8.6 mg/l.	Need to dye test the residence located at 6474 Reid Rd to confirm and correct the illicit connection.	Pending investigation
2. PSD 6512503 - Dry weather flow was observed discharging from a 4-inch PVC pipe into the Lum Drain. During follow up investigations, field crews observed excessive algae, black staining and sanitary odor at the site. Samples identified 200,000 colonies of E. coli per 100 ml. This pipe is located 65 ft east of Morrish Rd with the Lum Drain crossing on the north side.	Need to dye test the residence located at 6317 Morrish Rd to confirm and correct the illicit connection.	Pending investigation
3. 6054 Fenton Rd Unit 2 – Based on an investigation stemming from previous complaints, it was suspected that the illicit connection was coming from a sanitary line in the drive of a parking area on 6050 Fenton Rd. A clean out connection in the drive was missing a cap and was giving off a sanitary odor. During the initial investigation, there was a strong odor in the storm sewer located at the curb on Fenton Rd., east of the clean out location. Suspect illicit connection to the storm sewer.	Two properties were dyed tested in August, 2007. An illicit discharge was confirmed at 6054 Fenton Rd. Property owner needs to put a threaded cap on the clean out to ensure that the cap doesn't fall off. Conduct follow-up investigation to ensure property owner has fixed the illicit connection.	Illicit connection confirmed.

UPPER FLINT RIVER WATERSHED

In 2006, IDEP investigations were conducted in the Upper Flint River Watershed. As shown in Figure 9-4, field crews walked or kayaked Mott Lake and Butternut Creek and tributary branches. A total of 96 miles of drain were walked. Table 9-5 provides a description of the illicit connections and summarizes corrective actions taken to date and current status. Six illicit connections were identified. Of the six, one has been removed, two were confirmed by dye testing, and three are pending further investigations. The County will dye test the suspected properties to confirm and coordinate disconnection. Once an illicit connection is confirmed, the County will notify MDEQ in accordance with its NPDES storm water permit and begin action to remove the connection. Field crews will continue investigating drains within the Upper Flint River Watershed through the end of 2007 and 2008. Additional illicit connections found will be included in the 2008 Annual Report.

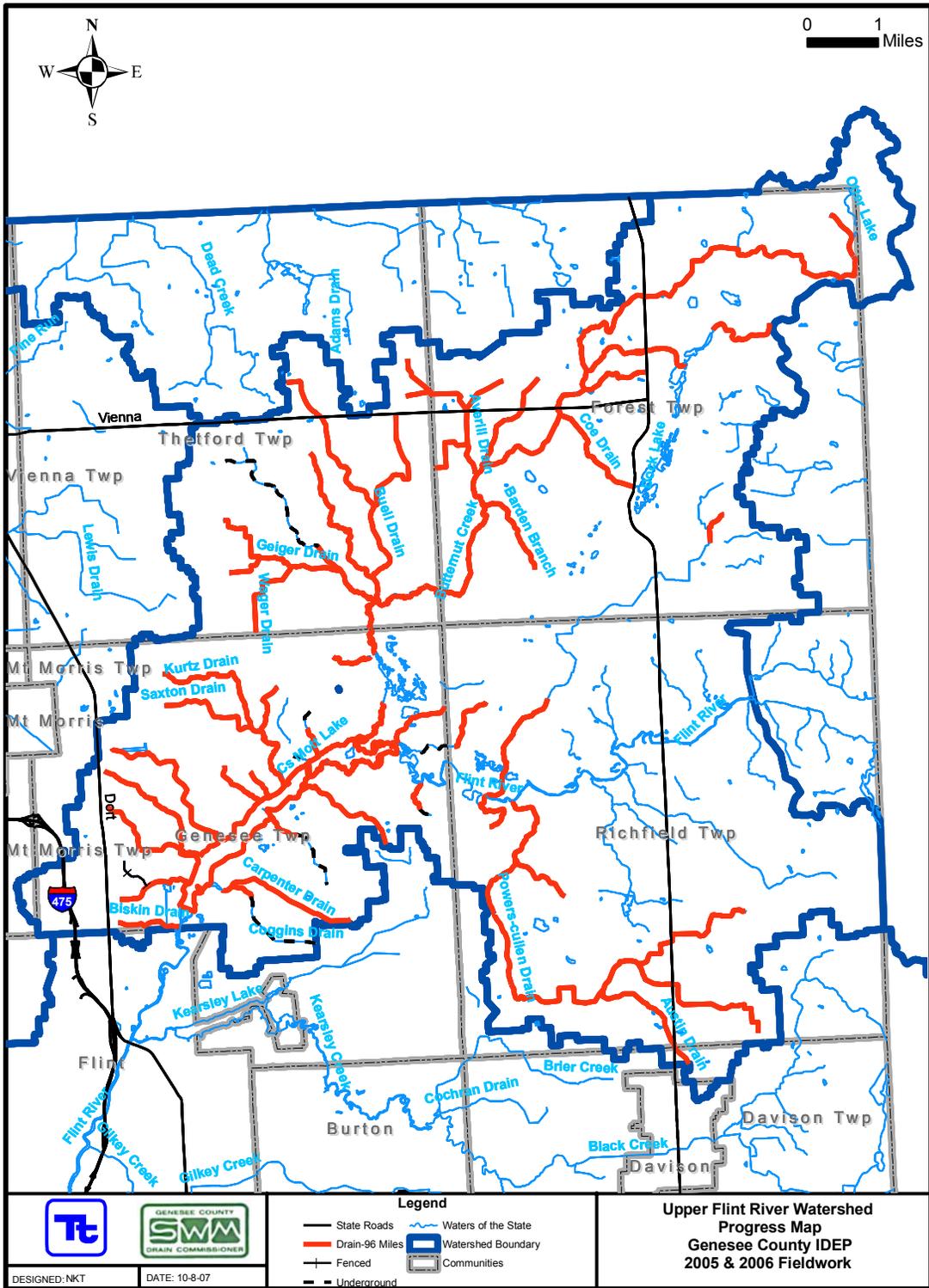


Figure 9-4 Upper Flint River Watershed – IDEP Program Status

Table 9-5 Illicit Connections in Upper Flint River Watershed

Confirmed Illicit Connection	Corrective Actions	Status
1. PSD - 8703501 (previously Kurtz 1507) - 3-inch plastic pipe extending southwest, originating from the property at 8296 Center St discharging into Kurtz Drain. Samples identified over 1,200,000 colonies of <i>E. coli</i> per 100 ml.	Follow-up investigation was conducted on August 20, 2007. A dyed water test was performed at the residence known as 8296 N. Center Street, Mt Morris.	Illicit connection confirmed
2. PSD - 9735753 (previously Butter 1001) – 1-inch plastic pipe extending 150 feet east, originating from the property at 5467 Frances discharging into the Butternut Creek. Samples identified over 2,500,000 colonies of <i>E. coli</i> per 100 ml.	Follow-up investigated was conducted on August 20, 2007. Field crews dyed test the residence known at 5467 E. Francis Rd Mt. Morris. Confirmed an illicit connection, The resident removed the connection.	Illicit removed
3. PSD 8717752 (previously NN4 1101) – 3-inch plastic pipe extending 150 ft north, originating from the property at 2369 Coldwater discharging into No Name Creek 4. Samples identified over 60,000 colonies of <i>E. coli</i> per 100 ml.	Need to dye test the residence located at 2369 Coldwater to confirm and correct the illicit connection.	Pending investigation
4. PSD 8717751 (previously NN4 1103) – 3-inch plastic pipe extending 250 ft north, originating from the property adjacent (200 ft west) to the residence at 2369 Coldwater discharging into No Name Creek 4. Samples identified over 150,000 colonies of <i>E. coli</i> per 100 ml.	Need to dye test the residence located at 2385 Coldwater to confirm and correct the illicit connection.	Pending investigation
5. PSD 9735251 (previously Drud 1001) – 4-inch plastic pipe extending 30 ft east, originating from the property at 5402 or 5412 Dodge Rd discharging into Drudge Drain. Samples identified over 3,500,000 colonies of <i>E. coli</i> per 100 ml.	Need to dye test the residence located at 4402 and 5412 Dodge Rd to confirm and correct the illicit connection.	Pending investigation
6. PSD 9734502 – At the initial investigation on July 25, 2006, black staining, pooling, and odor consistent with sewage was observed coming from the drain west drain bank and discharging into the Wager Drain. No pipe was visible at the time of the investigation. Water samples were collected and laboratory results found <i>E. coli</i> at 340,000 colonies per 100 ml.	On September 18, 2007 dyed test was performed at the residence known as 4191 Francis Rd. in Mt Morris. An illicit connection from the sanitary system at 4191 Francis Rd was confirmed. The residence did not have a septic drain field and has being discharging into the Wager Drain for at least 25 years. The MDEQ was notified.	Illicit connection confirmed

SHIAWASSEE RIVER WATERSHED

The GCDC acquired funds from local communities to conduct IDEP investigations in the Shiawassee River Watershed. Field crews walked its tributary branches and kayaked the Shiawassee River in the winter of 2006 and spring and summer of 2007. As shown in Figure 9-5, 29 miles drain and river were walked and kayaked. No illicit connections were found. Field crews will continue investigating drains within the Shiawassee River Watershed through the end of 2007 and 2008. Additional illicit connections found will be included in the 2008 Annual Report.

CASS RIVER WATERSHED

No IDEP work has been conducted and no IDEP work is currently planned for the Cass River Watershed at this time.

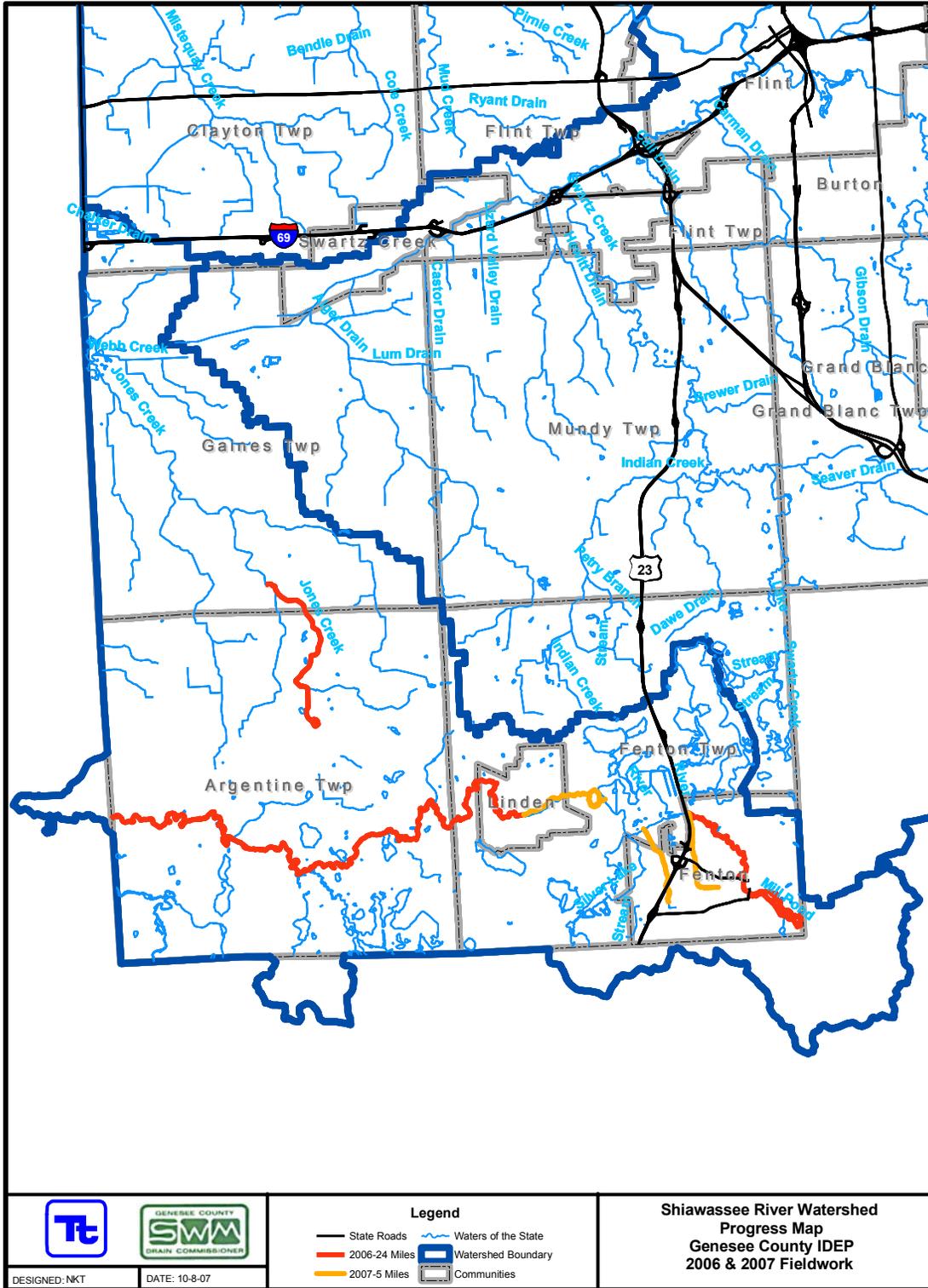


Figure 9-5 Shiawassee River Watershed – IDEP Program Status

10. NEW STORM WATER POINT SOURCE DISCHARGES

The permittee shall provide the information requested in Part I.A.4. of this permit on the discovery of new storm water point sources to the separate storm water drainage system. Also include in this section are the “PSDs Not Permittable” and “Original PSDs-Not Present.”

Three types of storm water point source discharges (PSDs) (outfalls) are defined below:

- A “new PSD” is an outfall identified, during field investigations to be draining municipal separate storm sewer system (MS4) water, which was not listed in the 2003 original Phase II permit.
- A “PSD not permittable” is an outfall that was identified in the 2003 original Phase II permit where upon field investigation the outfall was not draining municipal storm water and is now classified as a private pipe/outfall (i.e. outfall conveys flow from residential sump pumps, footing drains, lawn drains, agricultural field tiles, or parking lots draining commercial buildings).
- An “original PSD not present” is an outfall identified in the 2003 original Phase II permit, and during field investigations was not present.

“PSDs not permittable” and “original PSD not present” will be removed from the list of MS4 PSDs discharging to “Waters of the State”.

PSDs were investigated within the Lower Flint River, Middle Flint River, Upper Flint River, and Shiawassee River Watersheds. [Note: IDEP field investigations have been prioritized to focus on MS4 and urban areas. Not all drains identified in the permit will be investigated by the end of the permit cycle, which is April 2008. Per the 342 agreement with local communities, the GCDC will continue to investigate PSDs not previously investigated on behalf of the communities under the permit.]

LOWER FLINT RIVER WATERSHED

Table 10-1 and Figure 10-1 summarize the PSD status for the Lower Flint River Watershed. The original storm water permit included 232 MS4 PSDs. In 2007, 76 of the 232 PSDs were field investigated and 156 PSDs remain to be investigated. Of the 76 PSDs investigated, 55 were identified as MS4 PSDs, 16 were not present (“original PSDs not present”) (see Table 10-2), and 3 were identified as private outfalls (“PSD not permittable”) (see Table 10-2). In addition, field crews identified 235 “new PSDs” (see Table 10-3) and an additional 257 “private PSDs” (i.e. outfalls conveying flow from residential sump pumps, footing drains, lawn drains, agricultural field tiles, or parking lots draining commercial buildings). The total number of MS4 PSDs investigated is 290 and the total number of private PSDs investigated is 260. Overall, 552 PSDs discharging to Waters of the State in the Lower Flint River Watershed have been investigated. Field crews will continue investigating the remaining outfalls from the 2003 original storm water Phase II permit through the end of 2007 and 2008. Additional PSDs found as well as any changes to the original outfall list will be included in the 2008 Annual Report.

Table 10-1 Lower Flint River Watershed - PSD Status Summary

	MS4 PSD		Private PSDs		Total
	Identified in 2003 Original Permit as MS4 PSD*	New PSD (Not Identified in 2003 Original Permit)	PSD Not Permittable (Identified in 2003 Original Permit as MS4 PSD)	New PSD (Not Identified in 2003 Original Permit)	
2007 field investigation	55	235	3	257	
Subtotal		290		260	550

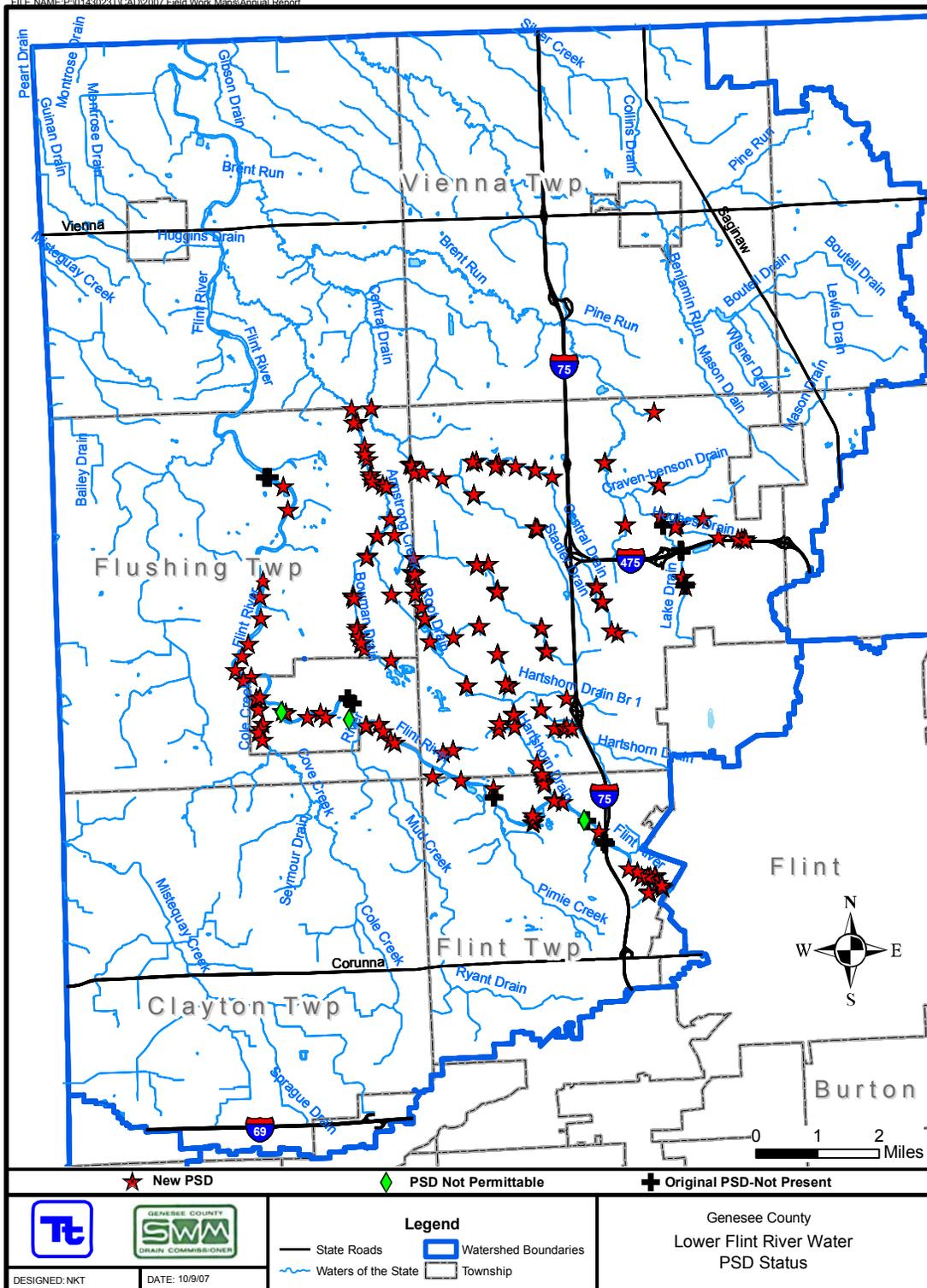


Figure 10-1 Lower Flint River Watershed – “Original PSD Not Present” (16 Total), “PSD Not Permittable” (3 Total) and “New PSDs” (235 Total)

Table 10-2 Lower Flint River Watershed –
Original PSD Not Present (16 Total) and PSD Not Permittable (3 Total)

Structure Number	Latitude	Longitude	Criteria	Receiving Waterbody	Community
7604751	43.0348234	-83.7601435	Original PSD not present	Flint River	Flint Twp
7604752	43.0350000	-83.7611110	PSD not permittable	Flint River	Flint Twp
7605002	43.0408174	-83.7898888	Original PSD not present	Flint River	Flint Twp
7609253	43.0293212	-83.7544095	Original PSD not present	Flint River	Flint Twp
7609254	43.0293154	-83.7543964	Original PSD not present	Flint River	Flint Twp
7609255	43.0297526	-83.7549522	Original PSD not present	Flint River	Flint Twp
7609255	43.0295726	-83.7549522	Original PSD not present	Flint River	Flint Twp
8510251	43.1176637	-83.8604744	Original PSD not present	Flint River	Flushing Twp
8510252	43.1176664	-83.8593110	Original PSD not present	Flint River	Flushing Twp
8526753	43.0650700	-83.8359004	Original PSD not present	Flint River	Flushing Twp
8526753	43.0650700	-83.8359004	Original PSD not present	Flint River	Flushing Twp
8526754	43.0638892	-83.8344086	Original PSD not present	Flint River	Flushing Twp
8526755	43.0601802	-83.8356454	PSD not permittable	Flint River	Flushing Twp
8527759	43.0622953	-83.8572927	PSD not permittable	Flint River	Flushing Twp
8614002	43.0979278	-83.7276823	Original PSD not present	Brent Run	Mt Morris
8614003	43.0976606	-83.7276410	Original PSD not present	Brent Run	Mt Morris
8614004	43.0976725	-83.7275920	Original PSD not present	Brent Run	Mt Morris
8614005	43.1037800	-83.7331665	Original PSD not present	Brent Run	Mt Morris
8614501	43.0896315	-83.7265547	Original PSD not present	Brent Run	Mt Morris
8614502	43.0896366	-83.7265014	Original PSD not present	Brent Run	Mt Morris
8623002	43.0895992	-83.7264942	Original PSD not present	Brent Run	Mt Morris

Table 10-3 Lower Flint River Watershed – New Point Source Discharges (235 Total)

Structure Number	Latitude	Longitude	Diameter	Receiving Waterbody	Community
8527862	43.062500	-83.856944	21	Flint River	Flushing
7604002	43.039444	-83.767778	Open channel	Flint River	Flint Twp
7604227	43.045886	-83.774184	18	Hartshorn Drain	Flint Twp
7604231	43.044424	-83.773384	48	Hartshorn Drain	Flint Twp
7604233	43.044114	-83.773492	12	Hartshorn Drain	Flint Twp
7604235	43.043803	-83.773495	12	Hartshorn Drain	Flint Twp
7604245	43.040073	-83.770346	12	Hartshorn Drain	Flint Twp
7604247	43.039825	-83.770469	12	Hartshorn Drain	Flint Twp
7604249	43.039829	-83.770468	12	Hartshorn Drain	Flint Twp
7605005	43.043119	-83.789847	36	Flint River	Flint Twp
7605757	43.034672	-83.777688	Open channel	Flint River	Flint Twp
7605759	43.034803	-83.777500	30	Flint River	Flint Twp
7605761	43.035472	-83.776996	16	Flint River	Flint Twp
7605763	43.035666	-83.776909	18	Flint River	Flint Twp
7605765	43.036465	-83.777624	12	Flint River	Flint Twp
7606251	43.045132	-83.800284	24	Flint River	Flint Twp

Table 10-3 Lower Flint River Watershed – New Point Source Discharges (235 Total)

Structure Number	Latitude	Longitude	Diameter	Receiving Waterbody	Community
7610007	43.032222	-83.756389	18	Flint River	Flint Twp
7610752	43.017858	-83.740772	72	Flint River	Flint Twp
7610753	43.017571	-83.741039	24	Flint River	Flint Twp
7610754	43.019722	-83.738056	Open channel	Flint River	Flint Twp
7610756	43.021389	-83.738611	12	Flint River	Flint Twp
7610757	43.021667	-83.738889	32	Flint River	Flint Twp
7610758	43.021389	-83.740278	12	Flint River	Flint Twp
7610759	43.021389	-83.741111	12	Flint River	Flint Twp
7610762	43.021389	-83.743056	12	Flint River	Flint Twp
7610763	43.021389	-83.743056	Open channel	Flint River	Flint Twp
7610764	43.022500	-83.744444	24	Flint River	Flint Twp
7610766	43.023333	-83.747222	10	Flint River	Flint Twp
7610771	43.018611	-83.736389	12	Flint River	Flint Twp
7610772	43.018611	-83.736389	12	Flint River	Flint Twp
7610773	43.019167	-83.736667	18	Flint River	Flint Twp
7604229	43.045271	-83.773878	12	Hartshorn Drain	Flint Twp
8501013	43.124444	-83.828333	15	Armstrong Drain	Flushing Twp
8501019	43.130190	-83.830398	Open channel	Armstrong Drain	Flushing Twp
8501021	43.130000	-83.831667	Open channel	Armstrong Drain	Flushing Twp
8501101	43.133333	-83.832222	Open channel	Armstrong Drain	Flushing Twp
8501201	43.133338	-83.825836	Open channel	Central Drain	Flushing Twp
8501203	43.133338	-83.825918	Open channel	Central Drain	Flushing Twp
8501505	43.121389	-83.827500	36	Armstrong Drain	Flushing Twp
8501507	43.122500	-83.828333	10	Armstrong Drain	Flushing Twp
8501753	43.119884	-83.813926	Open channel	Central Drain	Flushing Twp
8510253	43.115522	-83.854750	Open channel	Flint River	Flushing Twp
8510752	43.109842	-83.853497	12	Flint River	Flushing Twp
8512239	43.117760	-83.826802	Open channel	Armstrong Drain	Flushing Twp
8512241	43.117150	-83.826833	Open channel	Armstrong Drain	Flushing Twp
8512247	43.116054	-83.826146	Open channel	Armstrong Drain	Flushing Twp
8512249	43.115303	-83.822881	Open channel	Armstrong Drain	Flushing Twp
8512780	43.103333	-83.819444	Open channel	Armstrong Drain	Flushing Twp
8512947	43.114722	-83.821667	Open channel	Armstrong Drain	Flushing Twp
8512951	43.107096	-83.820777	Open channel	Armstrong Drain	Flushing Twp
8513000	43.103260	-83.825286	Open channel	Bowman Drain	Flushing Twp
8513001	43.098611	-83.828333	15	Bowman Drain	Flushing Twp
8513002	43.098333	-83.828611	Open channel	Bowman Drain	Flushing Twp
8513003	43.103244	-83.825007	Open channel	Bowman Drain	Flushing Twp
8513497	43.097778	-83.813611	Open channel	Cattail Drain	Flushing Twp
8513499	43.097778	-83.813611	Open channel	Cattail Drain	Flushing Twp
8513504	43.089444	-83.833333	Open channel	Bowman Drain	Flushing Twp
8513505	43.089444	-83.833333	Open channel	Bowman Drain	Flushing Twp
8513751	43.089333	-83.820908	Open channel	Flint River	Flushing Twp
8513753	43.089333	-83.820908	Open channel	Cotrell Drain	Flushing Twp
8513993	43.094553	-83.814391	8	Flint River	Flushing Twp

Table 10-3 Lower Flint River Watershed – New Point Source Discharges (235 Total)

Structure Number	Latitude	Longitude	Diameter	Receiving Waterbody	Community
8513995	43.094467	-83.814234	8	Flint River	Flushing Twp
8513999	43.094231	-83.813765	Open channel	Flint River	Flushing Twp
8515753	43.093372	-83.862178	36	Flint River	Flushing Twp
8515754	43.089544	-83.863197	Open channel	Flint River	Flushing Twp
8522003	43.084586	-83.863044	Open channel	Flint River	Flushing Twp
8522501	43.078556	-83.867317	Open channel	Flint River	Flushing Twp
8522504	43.075714	-83.869392	24	Flint River	Flushing Twp
8524001	43.089167	-83.833333	18	Bowman Drain	Flushing Twp
8524002	43.089167	-83.833056	18	Bowman Drain	Flushing Twp
8524003	43.088611	-83.833056	Open channel	Bowman Drain	Flushing Twp
8524004	43.086667	-83.832500	6	Bowman Drain	Flushing Twp
8524501	43.081944	-83.832222	Open channel	Bowman Drain	Flushing Twp
8524502	43.081667	-83.832222	6	Bowman Drain	Flushing Twp
8524503	43.081667	-83.832222	6	Bowman Drain	Flushing Twp
8524504	43.078333	-83.831111	Open channel	Bowman Drain	Flushing Twp
8524505	43.078264	-83.831258	Open channel	Bowman Drain	Flushing Twp
8524506	43.078056	-83.831111	Open channel	Bowman Drain	Flushing Twp
8524507	43.081389	-83.832500	12	Bowman Drain	Flushing Twp
8524508	43.079722	-83.831667	12	Bowman Drain	Flushing Twp
8524509	43.076667	-83.830111	30	Bowman Drain	Flushing Twp
8524516	43.078333	-83.831111	30	Bowman Drain	Flushing Twp
8525257	43.073889	-83.821670	15	Bowman Drain	Flushing
8526508	43.061944	-83.844722	Open channel	Flint River	Flushing
8526509	43.060833	-83.843056	21	Flint River	Flushing
8526511	43.061011	-83.848981	18	Flint River	Flushing
8526757	43.058611	-83.830000	24	Flint River	Flushing Twp
8526758	43.058611	-83.830278	Open channel	Flint River	Flushing Twp
8527253	43.070833	-83.866667	Open channel	Flint River	Flushing
8527254	43.070000	-83.869167	Open channel	Flint River	Flushing Twp
8527255	43.072500	-83.871667	24	Flint River	Flushing Twp
8527696	43.063114	-83.864594	Open channel	Coe Drain	Flushing
8527698	43.065397	-83.865017	18	Coe Drain	Flushing
8527700	43.065678	-83.865176	12	Coe Drain	Flushing
8527702	43.065953	-83.863961	Open channel	Coe Drain	Flushing
8527753	43.062112	-83.855904	8	Flint River	Flushing
8534001	43.059703	-83.863261	15	Coe Drain	Flushing
8534005	43.058522	-83.864075	8	Coe Drain	Flushing
8534007	43.057706	-83.864772	36	Coe Drain	Flushing
8534009	43.055861	-83.863519	30	Coe Drain	Flushing
8536003	43.055000	-83.822500	10	Flint River	Flushing Twp
8536004	43.058889	-83.826111	54	Flint River	Flushing Twp
8536005	43.057222	-83.824722	24	Flint River	Flushing Twp
8536254	43.054444	-83.821111	Open channel	Flint River	Flushing Twp
8603252	43.130740	-83.735080	12	Unnamed Drain	Mt Morris Twp
8603745	43.119167	-83.751111	Open channel	Brent Run Drain	Mt Morris Twp

Table 10-3 Lower Flint River Watershed – New Point Source Discharges (235 Total)

Structure Number	Latitude	Longitude	Diameter	Receiving Waterbody	Community
8605597	43.119609	-83.785445	24	Central Drain	Mt Morris Twp
8605599	43.119286	-83.786203	18	Central Drain	Mt Morris Twp
8605601	43.118889	-83.786389	18	Central Drain	Mt Morris Twp
8605609	43.120278	-83.792500	30	Central Drain	Mt Morris Twp
8605611	43.120278	-83.792500	Open channel	Central Drain	Mt Morris Twp
8605613	43.120278	-83.792500	Open channel	Central Drain	Mt Morris Twp
8606501	43.120000	-83.813611	Open channel	Central Drain	Mt Morris Twp
8606503	43.119722	-83.813333	Open channel	Central Drain	Mt Morris Twp
8606751	43.120100	-83.793800	Open channel	Central Drain	Mt Morris Twp
8606753	43.120100	-83.793800	Open channel	Central Drain	Mt Morris Twp
8606757	43.120100	-83.793800	18	Central Drain	Mt Morris Twp
8606761	43.120100	-83.793800	Open channel	Central Drain	Mt Morris Twp
8606763	43.120100	-83.793800	Open channel	Central Drain	Mt Morris Twp
8607001	43.117778	-83.812500	18	Central Drain	Mt Morris Twp
8607002	43.117778	-83.812500	Open channel	Central Drain	Mt Morris Twp
8607003	43.118056	-83.809722	36	Central Drain	Mt Morris Twp
8607251	43.120100	-83.793800	Open channel	Central Drain	Mt Morris Twp
8607253	43.120100	-83.793800	Open channel	Central Drain	Mt Morris Twp
8607493	43.116389	-83.803611	Open channel	Central Drain	Mt Morris Twp
8607497	43.112222	-83.793611	Open channel	Central Drain	Mt Morris Twp
8607499	43.112222	-83.793611	Open channel	Central Drain	Mt Morris Twp
8608001	43.112418	-83.793685	18	Stadler Drain	Mt Morris Twp
8608251	43.118739	-83.780030	Open channel	Central Drain	Mt Morris Twp
8608252	43.117957	-83.773944	12	Central Drain	Mt Morris Twp
8608999	43.104167	-83.774167	Open channel	Stadler Drain	Mt Morris Twp
8609242	43.117873	-83.773688	10	Central Drain	Mt Morris Twp
8609244	43.117743	-83.773700	10	Central Drain	Mt Morris Twp
8609246	43.116111	-83.768333	24	Central Drain	Mt Morris Twp
8610001	43.119100	-83.751300	Open channel	Brent Run Drain	Mt Morris Twp
8610003	43.119100	-83.751400	Open channel	Brent Run Drain	Mt Morris Twp
8610253	43.113500	-83.734200	18	Craven Benson Drain	Mt Morris Twp
8610255	43.113500	-83.734200	15	Calvin Benson Drain	Mt Morris Twp
8610257	43.113400	-83.734200	18	Calvin Benson Drain	Mt Morris Twp
8611001	43.113475	-83.733884	36	Craven Benson Drain	Mt Morris Twp
8611003	43.113475	-83.733891	10	Craven Benson Drain	Mt Morris Twp
8611501	43.104167	-83.728611	Open channel	Hughes Drain	Mt Morris Twp
8611503	43.104167	-83.728889	Open channel	Hughes Drain	Mt Morris Twp
8611700	43.106111	-83.733889	18	Lake Drain	Mt Morris Twp
8611749	43.105278	-83.720278	15	Hughes Drain	Mt Morris Twp
8613101	43.100277	-83.707956	12	Hughes Drain	Mt Morris Twp
8613103	43.100240	-83.707196	15	Hughes Drain	Mt Morris Twp
8613247	43.100278	-83.709167	60	Hughes Drain	Mt Morris Twp
8613399	43.100000	-83.706667	60	Hughes Drain	Mt Morris Twp
8614237	43.104100	-83.729100	Open channel	Hughes Drain	Mt Morris Twp
8614239	43.104100	-83.729000	Open channel	Hughes Drain	Mt Morris Twp

Table 10-3 Lower Flint River Watershed – New Point Source Discharges (235 Total)

Structure Number	Latitude	Longitude	Diameter	Receiving Waterbody	Community
8614241	43.103400	-83.729200	Open channel	Hughes Drain	Mt Morris Twp
8614497	43.100700	-83.715500	Open channel	Hughes Drain	Mt Morris Twp
8614499	43.100700	-83.715400	24	Hughes Drain	Mt Morris Twp
8614503	43.091330	-83.727660	48	Lake Drain	Mt Morris Twp
8614505	43.091650	-83.727320	8	Lake Drain	Mt Morris Twp
8616001	43.104400	-83.745400	Open channel	Delaney Drain	Mt Morris Twp
8616003	43.104400	-83.745300	Open channel	Delaney Drain	Mt Morris Twp
8616243	43.103810	-83.773360	Open channel	Stadler Drain	Mt Morris Twp
8616753	43.090106	-83.755191	Open channel	Central Drain	Mt Morris Twp
8616755	43.090107	-83.755109	Open channel	Central Drain	Mt Morris Twp
8617251	43.104220	-83.774220	Open channel	Stadler Drain	Mt Morris Twp
8617253	43.104060	-83.773710	Open channel	Stadler Drain	Mt Morris Twp
8617501	43.089768	-83.787039	Open channel	Cattail Drain	Mt Morris Twp
8617503	43.089770	-83.786887	Open channel	Cattail Drain	Mt Morris Twp
8617511	43.096046	-83.789678	Open channel	Cattail Drain	Mt Morris Twp
8617513	43.096046	-83.793303	Open channel	Cattail Drain	Mt Morris Twp
8618737	43.093889	-83.813333	Open channel	Monroe Branch Drain	Mt Morris Twp
8618743	43.091111	-83.813056	4	Monroe Branch Drain	Mt Morris Twp
8618745	43.091111	-83.813056	4	Monroe Branch Drain	Mt Morris Twp
8618747	43.089200	-83.813300	18	Monroe Branch Drain	Mt Morris Twp
8618749	43.089200	-83.813300	12	Monroe Branch Drain	Mt Morris Twp
8618751	43.095833	-83.793333	Open channel	Cattail Drain	Mt Morris Twp
8618753	43.095833	-83.793333	Open channel	Cattail Drain	Mt Morris Twp
8618760	43.095833	-83.793333	18	Cattail Drain	Mt Morris Twp
8618761	43.095833	-83.793333	18	Cattail Drain	Mt Morris Twp
8619101	43.083353	-83.810496	Open channel	Root Drain	Mt Morris Twp
8619102	43.083345	-83.810411	Open channel	Root Drain	Mt Morris Twp
8619231	43.089200	-83.813300	12	Monroe Branch Drain	Mt Morris Twp
8619243	43.086111	-83.811389	6	Monroe Branch Drain	Mt Morris Twp
8619245	43.086111	-83.811389	Open channel	Monroe Branch Drain	Mt Morris Twp
8619247	43.083333	-83.810278	Open channel	Monroe Branch Drain	Mt Morris Twp
8619249	43.083519	-83.810526	Open channel	Monroe Branch Drain	Mt Morris Twp
8619501	43.078056	-83.808889	Open channel	Root Drain	Mt Morris Twp
8619753	43.078889	-83.801389	Open channel	Root Drain	Mt Morris Twp
8619757	43.081389	-83.793333	Open channel	Root Drain	Mt Morris Twp
8619759	43.081389	-83.793333	Open channel	Root Drain	Mt Morris Twp
8620241	43.089444	-83.787222	Open channel	Cattail Drain	Mt Morris Twp
8620243	43.089444	-83.786944	Open channel	Cattail Drain	Mt Morris Twp
8620501	43.081389	-83.793056	Open channel	Monroe Branch Drain	Mt Morris Twp
8620751	43.080556	-83.773333	Open channel	Cattail Drain	Mt Morris Twp
8620753	43.080556	-83.773333	18	Cattail Drain	Mt Morris Twp
8621491	43.086111	-83.753611	Open channel	Central Drain	Mt Morris Twp
8621499	43.089722	-83.755000	Open channel	Central Drain	Mt Morris Twp
8621745	43.080556	-83.773056	12	Cattail Drain	Mt Morris Twp
8621747	43.075267	-83.771817	Open channel	Cattail Drain	Mt Morris Twp

Table 10-3 Lower Flint River Watershed – New Point Source Discharges (235 Total)

Structure Number	Latitude	Longitude	Diameter	Receiving Waterbody	Community
8621749	43.075242	-83.771903	Open channel	Cattail Drain	Mt Morris Twp
8622247	43.086400	-83.753500	Open channel	Central Drain	Mt Morris Twp
8622249	43.086389	-83.753333	Open channel	Central Drain	Mt Morris Twp
8622747	43.078889	-83.748611	15	Central Drain	Mt Morris Twp
8622749	43.079444	-83.750556	27	Central Drain	Mt Morris Twp
8623001	43.089400	-83.726600	15	Lake Drain	Mt Morris Twp
8628001	43.075000	-83.771700	Open channel	Cattail Drain	Mt Morris Twp
8628002	43.075000	-83.771667	Open channel	Cattail Drain	Mt Morris Twp
8628003	43.075000	-83.771800	Open channel	Cattail Drain	Mt Morris Twp
8628004	43.075000	-83.771667	Open channel	Cattail Drain	Mt Morris Twp
8628501	43.063864	-83.765637	18	Hartshorn Drain	Mt Morris Twp
8629001	43.074722	-83.787222	Open channel	Root Drain	Mt Morris Twp
8629002	43.074722	-83.787500	Open channel	Root Drain	Mt Morris Twp
8629261	43.067222	-83.783889	Open channel	Root Drain	Mt Morris Twp
8629263	43.067500	-83.785000	Open channel	Root Drain	Mt Morris Twp
8629501	43.067636	-83.785073	Open channel	Root Drain	Mt Morris Twp
8629503	43.067630	-83.785073	Open channel	Root Drain	Mt Morris Twp
8629751	43.060563	-83.782793	48	Hartshorn Drain	Mt Morris Twp
8629753	43.060572	-83.782666	24	Hartshorn Drain	Mt Morris Twp
8629767	43.061389	-83.774167	36	Hartshorn Drain	Mt Morris Twp
8629769	43.061389	-83.773889	24	Hartshorn Drain	Mt Morris Twp
8630751	43.067474	-83.797792	Open channel	Root Drain	Mt Morris Twp
8630753	43.067483	-83.797696	Open channel	Root Drain	Mt Morris Twp
8630755	43.067500	-83.797500	Open channel	Root Drain	Mt Morris Twp
8630757	43.067500	-83.797500	Open channel	Root Drain	Mt Morris Twp
8631507	43.046200	-83.809200	Open channel	Flint River	Mt Morris Twp
8631741	43.051716	-83.805717	12	Luce Drain	Mt Morris Twp
8631745	43.052348	-83.802482	Open channel	Luce Drain	Mt Morris Twp
8631747	43.052389	-83.802478	12	Luce Drain	Mt Morris Twp
8631749	43.052387	-83.802489	36	Luce Drain	Mt Morris Twp
8632001	43.060326	-83.782769	12	Hartshorn Drain	Mt Morris Twp
8632003	43.060326	-83.782690	12	Hartshorn Drain	Mt Morris Twp
8632017	43.057500	-83.782500	36	Hartshorn Drain	Mt Morris Twp
8632109	43.056892	-83.787812	24	Hartshorn Drain	Mt Morris Twp
8632119	43.058333	-83.787500	36	Hartshorn Drain	Mt Morris Twp
8632751	43.046054	-83.774126	Open channel	Hartshorn Drain	Mt Morris Twp
8632755	43.048776	-83.775670	15	Hartshorn Drain	Mt Morris Twp
8633001	43.056810	-83.769740	24	Hartshorn Drain	Mt Morris Twp
8633003	43.056810	-83.769731	24	Hartshorn Drain	Mt Morris Twp
8633005	43.056774	-83.766638	36	Hartshorn Drain	Mt Morris Twp
8633007	43.057187	-83.765817	24	Hartshorn Drain	Mt Morris Twp
8633020	43.056683	-83.764167	30	Hartshorn Drain	Mt Morris Twp

MIDDLE FLINT RIVER WATERSHED

The Middle Flint River watershed includes the following IDEP project areas:

- Gibson Drain and tributaires (Sherwood Drains)
- Thread Creek and tributaries
- Swartz Creek and tributaries

New PSDs identified within each watershed are described below. The original storm water permit includes 454 PSDs (outfalls) located in the Middle Flint River Watershed. This total of PSDs includes all three drainage area's.

Gibson Drain and Tributaries (Sherwood Drain)

Table 10-4 and Figure 10-2 summarize the PSD status for the Gibson Drain and tributaries (Sherwood Drain). The original storm water permit included 89 MS4 PSDs. During the 2005 and 2006 reporting period, all 89 PSDs were field investigated. Of the 89 PSDs, 62 were identified as MS4 PSDs, 24 were not present (“original PSDs not present”) (see Table 10-5), and 3 were identified as private outfalls (“PSD not permittable”) (see Table 10-5). In addition, field crews identified 90 “new PSDs” (see Table 10-6) and an additional 89 “private PSDs” (i.e. outfalls conveying flow from residential sump pumps, footing drains, lawn drains, agricultural field tiles, or parking lots draining commercial buildings). The total number of MS4 PSDs investigated is 152 and the total number of private PSDs investigated is 92. Overall, 244 PSDs discharging to Waters of the State in the Gibson Drain and tributary area have been investigated. No additional field work is need for this drain.

Table 10-4 Middle Flint River Watershed - Gibson Drain and Tributaries (Sherwood Drain) – PSD Status Summary

	MS4 PSD		Private PSDs		Total
	Identified in 2003 Original Permit as MS4 PSD*	New PSD (Not Identified in 2003 Original Permit)	PSD Not Permittable (Identified in 2003 Original Permit as MS4 PSD)	New PSD (Not Identified in 2003 Original Permit)	
2005-06 field investigation	62	90	3	89	
Subtotal	152		92		244

Table 10-5 Middle Flint River Watershed - Gibson Drain and Tributaries (Sherwood Drain) – Original PSD Not Present (24 Total) and PSD Not Permittable (3 Total)

Structure Number	Latitude	Longitude	Criteria	Receiving Waterbody	Community
6705001	42.9550500	-83.6727900	PSD not permittable	Gibson Drain	Gland Blanc Twp
6705002	42.955150	-83.671057	Original PSD not present	Gibson Drain	Grand Blanc Twp
6705006	42.9544150	-83.6696391	Original PSD not present	Gibson Drain	Gland Blanc Twp
6705008	42.9536485	-83.6694553	Original PSD not present	Gibson Drain	Gland Blanc Twp
6705009	42.9536208	-83.6694480	Original PSD not present	Gibson Drain	Gland Blanc Twp
6705011	42.9533386	-83.6693733	Original PSD not present	Gibson Drain	Gland Blanc Twp
6705012	42.9531283	-83.6693385	Original PSD not present	Gibson Drain	Gland Blanc Twp
6706001	42.959570	-83.686059	Original PSD not present	Gibson Drain	Gland Blanc Twp
6706002	42.959502	-83.686026	Original PSD not present	Gibson Drain	Gland Blanc Twp
6076003	42.959452	-83.686002	Original PSD not present	Gibson Drain	Gland Blanc Twp
6706257	42.9552952	-83.6738378	Original PSD not present	Gibson Drain	Gland Blanc Twp
6706259	42.9550900	-83.6736400	PSD not permittable	Gibson Drain	Gland Blanc Twp
6708001	42.9428808	-83.6649153	Original PSD not present	Gibson Drain	Gland Blanc Twp
6708008	42.9376311	-83.6665816	Original PSD not present	Gibson Drain	Gland Blanc Twp
6708753	42.9338058	-83.6606131	Original PSD not present	Gibson Drain	Gland Blanc Twp
6708754	42.9323613	-83.6572256	Original PSD not present	Gibson Drain	Gland Blanc Twp
6708755	42.9307793	-83.6567780	Original PSD not present	Gibson Drain	Gland Blanc Twp
6708756	42.930373	-83.656086	Original PSD not present	Gibson Drain	Gland Blanc Twp
6717252	42.9272300	-83.6592400	Original PSD not present	Gibson Drain	Gland Blanc Twp
6717256	42.9264775	-83.6592112	Original PSD not present	Gibson Drain	Gland Blanc Twp
6717751	42.922027	-83.657225	Original PSD not present	Gibson Drain	Gland Blanc Twp
6717752	42.9206900	-83.6565900	PSD not permittable	Gibson Drain	Gland Blanc Twp
7731001	42.9734302	-83.6910629	Original PSD not present	Gibson Drain	City of Burton
7731002	42.9733512	-83.6906780	Original PSD not present	Gibson Drain	City of Burton
7731009	42.968712	-83.687343	Original PSD not present	Gibson Drain	City of Burton
7731502	42.966538	-83.685129	Original PSD not present	Gibson Drain	City of Burton
7731506	42.960706	-83.686280	Original PSD not present	Gibson Drain	City of Burton

Table 10-6 Middle Flint River Watershed - Gibson Drain and Tributaries (Sherwood Drain) – New Point Source Discharges (90 Total)

Structure Number	Latitude	Longitude	Diameter	Receiving Waterbody	Community
6705013	42.955000	-83.673080	24	Gibson Drain	Grand Blanc Twp
6705014	42.955160	-83.671430	15	Gibson Drain	Grand Blanc Twp
6705015	42.955080	-83.670730	12	Gibson Drain	Grand Blanc Twp
6705016	42.955260	-83.670830	24	Gibson Drain	Grand Blanc Twp
6705017	42.952860	-83.669250	12	Gibson Drain	Grand Blanc Twp
6705018	42.952210	-83.670000	18	Gibson Drain	Grand Blanc Twp
6705019	42.952210	-83.670000	18	Gibson Drain	Grand Blanc Twp
6705508	42.948730	-83.664800	30	Gibson Drain	Grand Blanc Twp
6705509	42.948610	-83.664870	18	Gibson Drain	Grand Blanc Twp
6705511	42.947880	-83.664910	Unknown	Gibson Drain	Grand Blanc Twp
6705513	42.946750	-83.665570	Unknown	Gibson Drain	Grand Blanc Twp

Table 10-6 Middle Flint River Watershed - Gibson Drain and Tributaries (Sherwood Drain) –
New Point Source Discharges (90 Total)

Structure Number	Latitude	Longitude	Diameter	Receiving Waterbody	Community
6705514	42.945630	-83.665280	18	Gibson Drain	Grand Blanc Twp
6705515	42.945670	-83.664420	18	Gibson Drain	Grand Blanc Twp
6705516	42.944420	-83.664980	12	Gibson Drain	Grand Blanc Twp
6708011	42.944190	-83.664980	Unknown	Gibson Drain	Grand Blanc Twp
6708012	42.939760	-83.663620	36	Gibson Drain	Grand Blanc Twp
6708013	42.939630	-83.663780	24	Gibson Drain	Grand Blanc Twp
6708015	42.939260	-83.665280	12	Gibson Drain	Grand Blanc Twp
6708016	42.938990	-83.665890	15	Gibson Drain	Grand Blanc Twp
6708504	42.936740	-83.664850	36	Gibson Drain	Grand Blanc Twp
6708506	42.931390	-83.664170	24	Reid Rd. Branch Drain	Grand Blanc Twp
6708507	42.930560	-83.666940	48	Reid Rd. Branch Drain	Grand Blanc Twp
6708508	42.930560	-83.666940	36	Reid Rd. Branch Drain	Grand Blanc Twp
6717257	42.928710	-83.655900	Open channel	Gibson Drain	Grand Blanc Twp
7625765	42.975060	-83.693030	18	Gibson Drain	Flint Twp
7730752	42.974080	-83.692790	24	Gibson Drain	Burton
7625769	42.974190	-83.692850	50	Gibson Drain	Flint Twp
7731508	42.963050	-83.685730	30	Gibson Drain	Burton
7731509	42.961290	-83.686170	12	Gibson Drain	Burton
7731510	42.960510	-83.686330	21	Gibson Drain	Burton
7731511	42.959910	-83.686130	6	Gibson Drain	Burton
7731512	42.959820	-83.686240	12	Gibson Drain	Burton
7731513	42.959810	-83.686050	18	Gibson Drain	Burton
7731514	42.961250	-83.686070	12	Gibson Drain	Burton
6601001	42.958670	-83.703140	15	Sherwood Drain	Mundy Twp
6601003	42.955920	-83.704760	24	Sherwood Drain	Mundy Twp
6601004	42.954940	-83.704730	24	Sherwood Drain	Mundy Twp
6601005	42.954770	-83.704310	10	Sherwood Drain	Mundy Twp
6601006	42.953860	-83.703640	36	Sherwood Drain	Mundy Twp
6601007	42.954167	-83.703611	36	Sherwood Drain	Mundy Twp
6601008	42.952950	-83.703680	8	Sherwood Drain	Mundy Twp
6601009	42.952150	-83.704330	12	Sherwood Drain	Mundy Twp
6601251	42.959420	-83.692540	12	Sherwood Drain	Mundy Twp
6601252	42.959390	-83.692750	36	Sherwood Drain	Mundy Twp
6601253	42.959380	-83.694160	12	Sherwood Drain	Mundy Twp
6601254	42.959390	-83.694210	15	Sherwood Drain	Mundy Twp
6601501	42.950740	-83.703170	36	Sherwood Drain	Mundy Twp
6601753	42.946111	-83.696667	8	Sherwood Drain	Mundy Twp
6601754	42.946111	-83.695000	12	Sherwood Drain	Mundy Twp
6601756	42.945278	-83.693889	30	Sherwood Drain	Mundy Twp
6601757	42.945600	-83.694200	18	Sherwood Drain	Mundy Twp
6601758	42.945000	-83.693889	12	Sherwood Drain	Mundy Twp
6612252	42.943020	-83.700600	12	Sherwood Drain	Mundy Twp
6612254	42.943000	-83.700670	12	Sherwood Drain	Mundy Twp
6612255	42.941420	-83.700150	15	Branch of Sherwood	Mundy Twp

Table 10-6 Middle Flint River Watershed - Gibson Drain and Tributaries (Sherwood Drain) –
New Point Source Discharges (90 Total)

Structure Number	Latitude	Longitude	Diameter	Receiving Waterbody	Community
6612256	42.941420	-83.700150	Open channel	Branch of Sherwood	Mundy Twp
6612257	42.941420	-83.700150	Open channel	Branch of Sherwood	Mundy Twp
6612258	42.941310	-83.700710	15	Branch of Sherwood	Mundy Twp
6707001	42.943370	-83.691790	10	Sherwood Drain	Grand Blanc Twp
6707002	42.943120	-83.691760	15	Sherwood Drain	Grand Blanc Twp
6707003	42.943020	-83.691750	12	Sherwood Drain	Grand Blanc Twp
6707005	42.942630	-83.691740	36	Sherwood Drain	Grand Blanc Twp
6707006	42.942500	-83.691667	12	Sherwood Drain	Grand Blanc Twp
6707008	42.942222	-83.691667	12	Sherwood Drain	Grand Blanc Twp
6707009	42.941944	-83.691667	30	Sherwood Drain	Grand Blanc Twp
6707010	42.941667	-83.691389	10	Sherwood Drain	Grand Blanc Twp
6707011	42.941667	-83.691389	15	Sherwood Drain	Grand Blanc Twp
6707017	42.939890	-83.688390	24	Sherwood Drain	Grand Blanc Twp
6707019	42.939690	-83.688510	24	Sherwood Drain	Grand Blanc Twp
6707501	42.936000	-83.689200	36	Sherwood Drain	Grand Blanc Twp
6707502	42.935480	-83.688430	12	Sherwood Drain	Grand Blanc Twp
6707507	42.934670	-83.687040	18	Sherwood Drain	Grand Blanc Twp
6707508	42.934360	-83.686480	12	Sherwood Drain	Grand Blanc Twp
6707510	42.934210	-83.685860	12	Sherwood Drain	Grand Blanc Twp
6707513	42.934120	-83.684670	18	Sherwood Drain	Grand Blanc Twp
6707527	42.931060	-83.685540	24	Sherwood Drain	Grand Blanc Twp
6707528	42.930960	-83.685420	12	Sherwood Drain	Grand Blanc Twp
6707530	42.930700	-83.684500	8	Sherwood Drain	Grand Blanc Twp
6707531	42.932600	-83.684000	12	Sherwood Drain	Grand Blanc Twp
6718001	42.929450	-83.681820	15	Sherwood Drain	Grand Blanc Twp
6718003	42.920400	-83.675130	12	Sherwood Drain	Grand Blanc Twp
7636751	42.959700	-83.695300	36	Sherwood Drain	Flint Twp
7636753	42.959460	-83.698200	Open channel	Sherwood Drain	Flint Twp
7731520	42.960730	-83.686620	12	Sherwood Drain	Burton
7731524	42.961230	-83.690010	36	Sherwood Drain	Burton
7731533	42.960900	-83.691200	12	Sherwood Drain	Burton
7731535	42.960600	-83.691500	12	Sherwood Drain	Burton
7731537	42.959870	-83.692010	12	Sherwood Drain	Burton
6707007	42.942222	-83.691667	15	Sherwood Drain	Grand Blanc Twp
6707030	42.944000	-83.692000	36	Sherwood Drain	Grand Blanc Twp

Thread Creek and Tributaries

Table 10-7 and Figure 10-3 summarize the PSD status for the Thread Creek and Tributaries. The original storm water permit included 84 MS4 PSDs. In 2005 and 2006, 76 of the 84 PSDs were field investigated and 8 PSDs remain to be investigated. Of the 76 PSDs investigated, 40 were identified as MS4 PSDs, 32 were not present (“original PSDs not present”) (see Table 10-8), and 4 were identified as private outfalls (“PSD not permissible”) (see Table 10-8). In addition, field crews identified 121 “new PSDs” (see Table 10-9) and an additional 141 “private PSDs” (i.e. outfalls conveying flow from residential sump pumps, footing drains, lawn drains, agricultural field tiles, or parking lots draining commercial buildings). The total number of MS4 PSDs investigated is 161 and the total number of private PSDs investigated is 145. Overall, 306 PSDs discharging to Waters of the State in the Thread Creek have been investigated. Field crews will continue investigating the 8 remaining outfalls from the 2003 original storm water Phase II permit through the end of 2007 and 2008. Additional PSDs found as well as any changes to the original outfall list will be included in the 2008 Annual Report.

Table 10-7 Middle Flint River Watershed - Thread Creek Watershed - PSD Status Summary

	MS4 PSD		Private PSDs		Total
	Identified in 2003 Original Permit as MS4 PSD*	New PSD (Not Identified in 2003 Original Permit)	PSD Not Permissible (Identified in 2003 Original Permit as MS4 PSD)	New PSD (Not Identified in 2003 Original Permit)	
2005-06 field investigation	40	121	4	141	
Subtotal		161		145	306

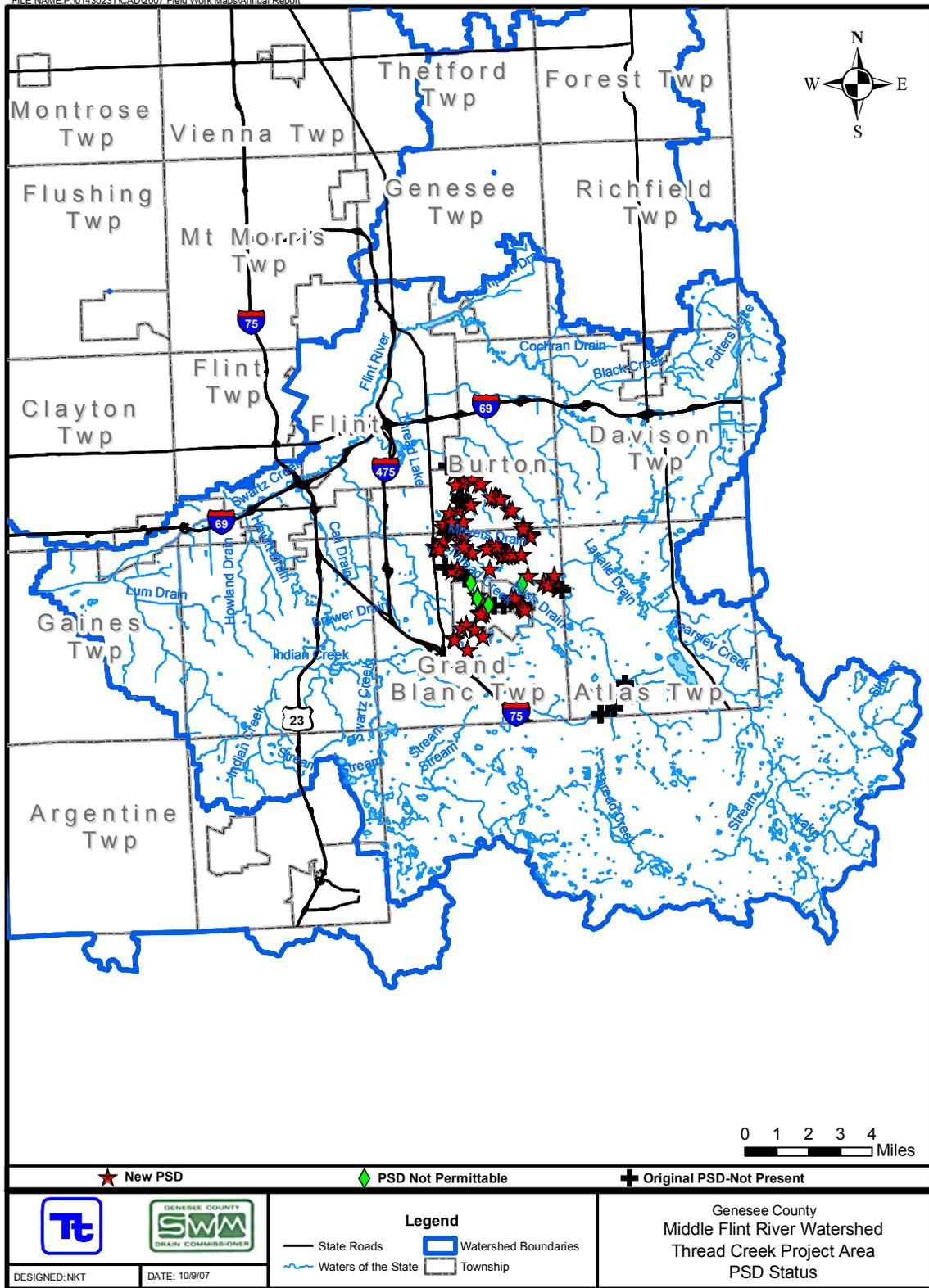


Figure 10-3 Middle Flint River Watershed – Thread Creek - “Original PSD Not

Present” (32 Total), “PSD Not Permittable” (4 Total) and “New PSDs” (121 Total)

Table 10-8 Middle Flint River Watershed - Thread Creek – Original PSD Not Present (32 Total) and PSD Not Permittable (4 Total)

Structure Number	Latitude	Longitude	Criteria	Receiving Waterbody	Community
6704002	42.9603800	-83.64365300	Original PSD not present	Thread Creek	Grand Blanc Twp
6704501	42.9447280	-83.6455980	Original PSD not present	Thread Creek	Grand Blanc Twp
6704502	42.9447210	-83.6455440	Original PSD not present	Thread Creek	Grand Blanc Twp
6709002	42.9446830	-83.6455550	Original PSD not present	Thread Creek	Grand Blanc Twp
6709252	42.9391600	-83.6334500	Original PSD not present	Thread Creek	Grand Blanc
6710002	42.9391460	-83.6324510	Original PSD not present	Thread Creek	Grand Blanc Twp
6710501	42.9372220	-83.6302780	PSD not permittable	Thread Creek	Grand Blanc
6711753	42.9358500	-83.5984100	PSD not permittable	Thread Creek	Grand Blanc
6712753	42.9327350	-83.5737950	Original PSD not present	Thread Creek	Grand Blanc Twp
6712754	42.9327517	-83.5737477	Original PSD not present	Thread Creek	Grand Blanc
6714001	42.9265186	-83.6100980	Original PSD not present	Thread Creek	Grand Blanc
6715001	42.9300000	-83.6263890	PSD not permittable	Thread Creek	Grand Blanc
6715252	42.9270222	-83.6195312	PSD not permittable	Thread Creek	Grand Blanc
6715256	42.9264300	-83.6159400	Original PSD not present	Thread Creek	Grand Blanc
6829753	42.8889312	-83.53617438	Original PSD not present	Thread Creek	Atlas Twp
6829754	42.8889357	-83.53611894	Original PSD not present	Thread Creek	Atlas Twp
6831751	42.8755962	-83.5521228	Original PSD not present	Thread Creek	Atlas Twp
6831752	42.8755554	-83.5521316	Original PSD not present	Thread Creek	Atlas Twp
6832251	42.8888945	-83.5361682	Original PSD not present	Thread Creek	Atlas Twp
6832252	42.8888944	-83.53611975	Original PSD not present	Thread Creek	Atlas Twp
6832502	42.8780367	-83.5437182	Original PSD not present	Thread Creek	Atlas Twp
6832503	42.8780396	-83.5436623	Original PSD not present	Thread Creek	Atlas Twp
6832504	42.8779978	-83.5437104	Original PSD not present	Thread Creek	Atlas Twp
6832505	42.8780033	-83.5436590	Original PSD not present	Thread Creek	Atlas Twp
6832506	42.8755909	-83.5520748	Original PSD not present	Thread Creek	Atlas Twp
6832507	42.8755513	-83.5520800	Original PSD not present	Thread Creek	Atlas Twp
7721752	42.9908697	-83.6423254	Original PSD not present	Thread Creek	Burton
7721753	42.9908403	-83.6423885	Original PSD not present	Thread Creek	Burton
7721754	42.9908312	-83.6423376	Original PSD not present	Thread Creek	Burton
7721755	42.9894098	-83.6382018	Original PSD not present	Thread Creek	Burton
7728751	42.9767237	-83.6347924	Original PSD not present	Thread Creek	Burton
7728752	42.9749740	-83.6354419	Original PSD not present	Thread Creek	Burton
7733251	42.9749348	-83.6354392	Original PSD not present	Thread Creek	Burton
7733252	42.9749386	-83.6353850	Original PSD not present	Thread Creek	Burton
7733501	42.9603482	-83.6437038	Original PSD not present	Thread Creek	Burton
7733502	42.9603447	-83.6436452	Original PSD not present	Thread Creek	Burton

Table 10-9 Middle Flint River Watershed - Thread Creek - New Point Source Discharges (121 Total)

Structure Number	Latitude	Longitude	Diameter	Receiving Waterbody	Community
6715010	42.928611	-83.623333	18	Thread Creek	Grand Blanc
6701001	42.958611	-83.592778	24	Pierson Drain	Grand Blanc Twp
6701002	42.958056	-83.592500	15	Pierson Drain	Grand Blanc Twp
6701004	42.957778	-83.592500	24	Pierson Drain	Grand Blanc Twp
6701005	42.957500	-83.592222	8	Pierson Drain	Grand Blanc Twp
6702001	42.953333	-83.613056	Open channel	Meyers Drain	Grand Blanc Twp
6702002	42.953831	-83.613319	Open channel	Meyers Drain	Grand Blanc Twp
6702251	42.960278	-83.595833	Open channel	Thread Creek	Grand Blanc Twp
6702503	42.953333	-83.612222	30	Meyers Drain	Grand Blanc Twp
6702506	42.952500	-83.611667	6	Meyers Drain	Grand Blanc Twp
6702508	42.952214	-83.611086	12	Meyers Drain	Grand Blanc Twp
6702511	42.951711	-83.610410	40	Meyers Drain	Grand Blanc Twp
6702524	42.949842	-83.609852	18	Meyers Drain	Grand Blanc Twp
6702526	42.949245	-83.609680	42	Meyers Drain	Grand Blanc Twp
6702530	42.949191	-83.607460	30	Meyers Drain	Grand Blanc Twp
6702533	42.949662	-83.606022	18	Meyers Drain	Grand Blanc Twp
6702535	42.949622	-83.606000	10	Meyers Drain	Grand Blanc Twp
6702541	42.949500	-83.603500	Open channel	Meyers Drain	Grand Blanc Twp
6702545	42.949300	-83.598700	10	Meyers Drain	Grand Blanc Twp
6702546	42.949300	-83.598200	48	Meyers Drain	Grand Blanc Twp
6703251	42.953053	-83.618014	36	Meyers Drain	Grand Blanc Twp
6703252	42.953586	-83.616558	18	Meyers Drain	Grand Blanc Twp
6703254	42.953589	-83.613556	12	Meyers Drain	Grand Blanc Twp
6703501	42.951389	-83.631389	36	Meyers Drain	Grand Blanc Twp
6703502	42.950833	-83.628611	15	Meyers Drain	Grand Blanc Twp
6703753	42.952344	-83.619464	24	Meyers Drain	Grand Blanc Twp
6704004	42.956667	-83.646111	36	Thread Creek	Grand Blanc Twp
6704006	42.954167	-83.651667	40	Thread Creek	Grand Blanc Twp
6704007	42.953611	-83.651111	8	Thread Creek	Grand Blanc Twp
6704008	42.952790	-83.648750	30	Thread Creek	Grand Blanc Twp
6704251	42.960278	-83.638889	24	Meyers Drain	Grand Blanc Twp
6704252	42.958889	-83.635833	12	Meyers Drain	Grand Blanc Twp
6704254	42.957778	-83.633889	18	Meyers Drain	Grand Blanc Twp
6704257	42.955833	-83.635278	12	Meyers Drain	Grand Blanc Twp
6704259	42.953889	-83.636389	36	Meyers Drain	Grand Blanc Twp
6704260	42.953464	-83.635839	15	Meyers Drain	Grand Blanc Twp
6704263	42.953333	-83.635278	18	Meyers Drain	Grand Blanc Twp
6704264	42.953750	-83.633806	15	Meyers Drain	Grand Blanc Twp
6709253	42.941740	-83.637680	Open channel	Thread Creek	Grand Blanc Twp
6709254	42.943930	-83.638090	8	Thread Creek	Grand Blanc Twp
6709255	42.943010	-83.641660	24	Thread Creek	Grand Blanc Twp
6710251	42.943075	-83.618044	Open channel	Meyers Drain	Grand Blanc Twp
6710512	42.931390	-83.626300	15	Thread Creek	Grand Blanc
6710513	42.931261	-83.626189	24	Thread Creek	Grand Blanc

Table 10-9 Middle Flint River Watershed - Thread Creek - New Point Source Discharges (121 Total)

Structure Number	Latitude	Longitude	Diameter	Receiving Waterbody	Community
6710514	42.931428	-83.626222	15	Thread Creek	Grand Blanc
6711252	42.939440	-83.594500	12	Thread Creek	Grand Blanc Twp
6711253	42.939444	-83.594444	Open channel	Thread Creek	Grand Blanc Twp
6712253	42.939417	-83.578253	Open channel	Thread Creek	Grand Blanc Twp
6712502	42.936389	-83.585000	15	Thread Creek	Grand Blanc Twp
6712503	42.936389	-83.584940	12	Thread Creek	Grand Blanc Twp
6712755	42.936100	-83.582200	18	Thread Creek	Grand Blanc Twp
6712758	42.935000	-83.582222	15	Thread Creek	Grand Blanc Twp
6712763	42.934056	-83.576022	18	Thread Creek	Grand Blanc Twp
6712764	42.933739	-83.575417	12	Thread Creek	Grand Blanc Twp
6714004	42.930000	-83.605278	8	Thread Creek	Grand Blanc
6714005	42.927500	-83.603100	12	Bush Drain	Grand Blanc
6714006	42.928600	-83.603000	15	Bush Drain	Grand Blanc
6714007	42.929600	-83.603000	8	Bush Drain	Grand Blanc
6714008	42.929600	-83.603000	24	Bush Drain	Grand Blanc
6714252	42.926600	-83.599400	24	Bush Drain	Grand Blanc
6714253	42.925900	-83.598600	30	Bush Drain	Grand Blanc
6714254	42.925000	-83.597900	30	Bush Drain	Grand Blanc
6714255	42.924100	-83.596800	18	Bush Drain	Grand Blanc
6715009	42.928889	-83.623889	12	Thread Creek	Grand Blanc
6715501	42.923586	-83.624344	8	Layman Drain	Grand Blanc
6715502	42.923619	-83.623925	8	Layman Drain	Grand Blanc
6715503	42.923228	-83.625147	8	Layman Drain	Grand Blanc
6715504	42.923133	-83.622861	8	Layman Drain	Grand Blanc
6715505	42.924664	-83.622236	24	Layman Drain	Grand Blanc
6715506	42.922778	-83.624722	24	Crosby Drain	Grand Blanc
6716751	42.916667	-83.636667	10	Layman Drain	Grand Blanc
6716760	42.918053	-83.633672	30	Layman Drain	Grand Blanc
6721251	42.912222	-83.641667	18	Thread Creek	Grand Blanc Twp
6721252	42.911389	-83.641111	15	Layman Drain	Grand Blanc Twp
6721753	42.906667	-83.633300	Open channel	Layman Drain	Grand Blanc Twp
6721754	42.906667	-83.633330	Open channel	Layman Drain	Grand Blanc Twp
6721755	42.906667	-83.633333	Open channel	Layman Drain	Grand Blanc Twp
6721756	42.906667	-83.633333	Open channel	Layman Drain	Grand Blanc Twp
6722001	42.916000	-83.628700	12	Crosby Drain	Grand Blanc
6722002	42.915700	-83.628600	Open channel	Crosby Drain	Grand Blanc Twp
6722003	42.912500	-83.623611	30	Crosby Drain	Grand Blanc Twp
6722004	42.912500	-83.623611	24	Crosby Drain	Grand Blanc Twp
7726501	42.976111	-83.613611	Open channel	Pierson Drain	Burton
7726502	42.976111	-83.613611	Open channel	Pierson Drain	Burton
7726503	42.975778	-83.612500	12	Pierson Drain	Burton
7726504	42.975778	-83.612500	Open channel	Pierson Drain	Burton
7726507	42.975278	-83.611111	Open channel	Pierson Drain	Burton
7726508	42.975278	-83.610556	Open channel	Pierson Drain	Burton
7726509	42.975311	-83.610492	15	Pierson Drain	Burton

Table 10-9 Middle Flint River Watershed - Thread Creek - New Point Source Discharges (121 Total)

Structure Number	Latitude	Longitude	Diameter	Receiving Waterbody	Community
7727001	42.984167	-83.633056	12	Pierson Drain	Burton
7727002	42.982670	-83.633056	15	Pierson Drain	Burton
7727003	42.984444	-83.626944	24	Pierson Drain	Burton
7727004	42.984444	-83.626944	24	Pierson Drain	Burton
7727005	42.982222	-83.623611	60	Pierson Drain	Burton
7727751	42.982222	-83.621944	Open channel	Pierson Drain	Burton
7727752	42.976111	-83.615833	8	Pierson Drain	Burton
7728254	42.988611	-83.638056	12	Thread Creek	Burton
7728255	42.987772	-83.638400	36	Thread Creek	Burton
7728755	42.981944	-83.637778	24	Thread Creek	Burton
7733254	42.970556	-83.636667	Open channel	Thread Creek	Burton
7733257	42.973900	-83.635500	30	Thread Creek	Burton
7733258	42.973889	-83.635556	18	Thread Creek	Burton
7733259	42.969167	-83.641944	48	Thread Creek	Burton
7733503	42.963056	-83.646667	18	Thread Creek	Burton
7733504	42.964722	-83.645556	12	Thread Creek	Burton
7733752	42.965278	-83.634167	24	Thread Creek	Burton
7733753	42.965278	-83.633611	36	Thread Creek	Burton
7733758	42.964722	-83.641111	Open channel	Meyers Drain	Burton
7733759	42.965097	-83.641228	Open channel	Meyers Drain	Burton
7734001	42.974783	-83.631967	18	Thread Creek	Burton
7734002	42.974778	-83.631750	18	Thread Creek	Burton
7734008	42.972947	-83.628658	15	Thread Creek	Burton
7734009	42.972681	-83.628839	24	Thread Creek	Burton
7735001	42.975000	-83.610278	12	Pierson Drain	Burton
7735002	42.975000	-83.610278	Open channel	Pierson Drain	Burton
7735004	42.969722	-83.605000	Open channel	Pierson Drain	Burton
7735005	42.970000	-83.604722	24	Pierson Drain	Burton
7735006	42.969722	-83.603056	0	Pierson Drain	Burton
7735751	42.962778	-83.596667	12	Pierson Drain	Burton
7735752	42.962814	-83.596881	5	Pierson Drain	Burton
7735753	42.961111	-83.596667	12	Pierson Drain	Burton
7735754	42.961111	-83.596667	12	Pierson Drain	Burton
7735755	42.961111	-83.596667	Open channel	Pierson Drain	Burton

Swartz Creek and Tributaries

694 PSDs to the Swartz Creek and its tributaries have been investigated. The collected data is being reviewed. Once completed, a comprehensive map and list will be created.

Kearsley Creek and Tributaries

1,157 PSDs to the Kearsley Creek and its tributaries have been investigated. The collected data is being reviewed. Once completed, a comprehensive map and list will be created.

UPPER FLINT RIVER WATERSHED

Table 10-10 and Figure 10-4 summarize the PSD status for the Upper Flint River Watershed. The original storm water permit included 103 MS4 PSDs. In 2005 and 2006, 24 of the 103 PSDs were field investigated and 79 PSDs remain to be investigated. Of the 24 PSDs investigated, 19 were identified as MS4 PSDs, 4 were not present (“original PSDs not present”) (see Table 10-11), and 1 was identified as a private outfall (“PSD not permissible”) (see Table 10-11). In addition, field crews identified 119 “new PSDs” along the Mott Lake drainage area and its tributaries (see Table 10-12) and an additional 143 “private PSDs” (i.e. outfalls conveying flow from residential sump pumps, footing drains, lawn drains, agricultural field tiles, or parking lots draining commercial buildings). The total number of MS4 PSDs investigated is 138 and the total number of private PSDs investigated is 144. Overall, 282 PSDs discharging to Waters of the State in the Upper Flint River Watershed have been investigated. Field crews will continue investigating the remaining 79 PSDs from the 2003 original storm water Phase II permit through the end of 2007 and 2008. Additional PSDs found as well as any changes to the original outfall list will be included in the 2008 Annual Report.

Table 10-10 Upper Flint River Watershed PSD Status Summary

	MS4 PSD		Private PSDs		Total
	Identified in 2003 Original Permit as MS4 PSD*	New PSD (Not Identified in 2003 Original Permit)	PSD Not Permissible (Identified in 2003 Original Permit as MS4 PSD)	New PSD (Not Identified in 2003 Original Permit)	
2005-06 field investigation	19	119	1	143	
Subtotal		138		144	282

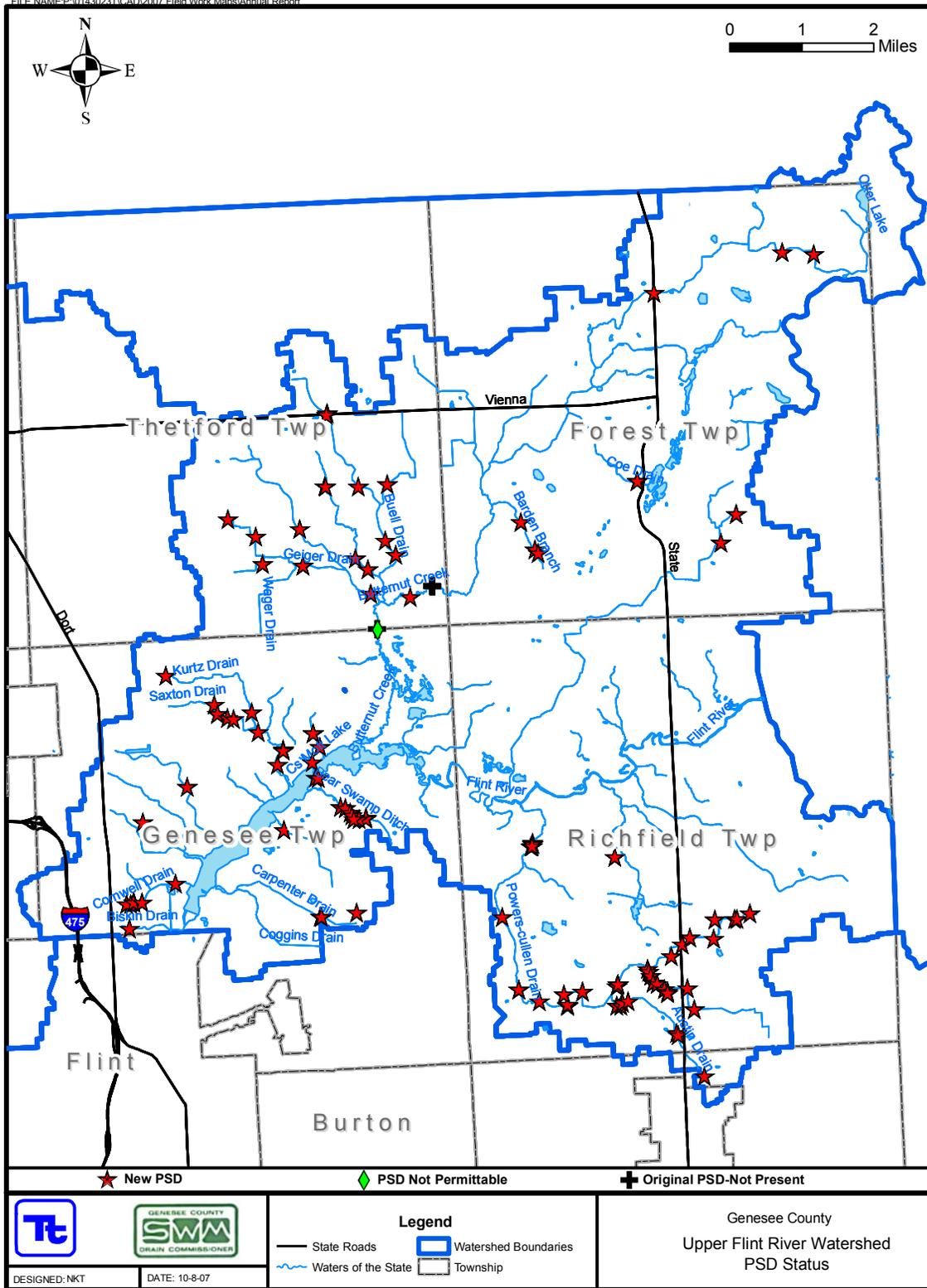


Figure 10-4 Upper Flint River Watershed – “Original PSD Not Present” (4 Total), “PSD Not Permittable” (1 Total) and “New PSDs” (119 Total)

Table 10-11 Upper Flint River Watershed - Original PSD Not Present (4 Total) and PSD Not Permittable (1 Total)

Structure Number	Latitude	Longitude	Criteria	Receiving Waterbody	Community
8702251	43.1360580	-83.5989420	PSD not permittable	Butternut Creek	Genesee Twp
9735501	43.1361925	-83.5990002	Original PSD not present	Butternut Creek	Thetford Twp
9735502	43.1361938	-83.5989686	Original PSD not present	Butternut Creek	Thetford Twp
9736251	43.1445033	-83.5835669	Original PSD not present	Butternut Creek	Thetford Twp
9736252	43.1444757	-83.5835354	Original PSD not present	Butternut Creek	Thetford Twp

Table 10-12 Upper Flint River Watershed - New Point Source Discharges (119 Total)

Structure Number	Latitude	Longitude	Diameter	Receiving Waterbody	Community
7803002	43.044167	-83.512778	30	Powers Cullen Drain	Davison Twp
8703502	43.120200	-83.634203	10	Kurtz Drain	Genesee Twp
8704001	43.128056	-83.657500	Open channel	Kurtz Drain	Genesee Twp
8704501	43.126389	-83.651111	6	Kurtz Drain	Genesee Twp
8704751	43.121944	-83.644444	9	Saxton Drain	Genesee Twp
8704752	43.120000	-83.643611	36	Saxton Drain	Genesee Twp
8709251	43.120000	-83.643611	15	Saxton Drain	Genesee Twp
8709253	43.119167	-83.640833	9	Saxton Drain	Genesee Twp
8709257	43.118889	-83.639167	9	Saxton Drain	Genesee Twp
8709258	43.118889	-83.639167	6	Saxton Drain	Genesee Twp
8709259	43.118889	-83.638333	4	Saxton Drain	Genesee Twp
8709502	43.105550	-83.652461	24	Stanley-Bray Rd Drain	Genesee Twp
8710007	43.116111	-83.632500	12	Kurtz Drain	Genesee Twp
8710751	43.109444	-83.627500	24	Kurtz Drain	Genesee Twp
8710752	43.112500	-83.625833	8	Kurtz Drain	Genesee Twp
8710754	43.112280	-83.625820	24	Kurtz Drain	Genesee Twp
8710757	43.109730	-83.617880	18	Heath Drain	Genesee Twp
8710758	43.109730	-83.617880	36	Heath Drain	Genesee Twp
8711001	43.115620	-83.617470	12	Green Arbor Drain	Genesee Twp
8711002	43.115620	-83.617470	30	Green Arbor Drain	Genesee Twp
8711003	43.112790	-83.615710	15	Green Arbor Drain	Genesee Twp
8711501	43.106610	-83.617150	24	Mott Lake	Genesee Twp
8711502	43.106580	-83.616340	8	Mott Lake	Genesee Twp
8714001	43.100556	-83.610556	24	Bear Swamp Drain	Genesee Twp
8714003	43.100278	-83.609167	10	Bear Swamp Drain	Genesee Twp
8714005	43.099410	-83.607940	15	Bear Swamp Drain	Genesee Twp
8714008	43.098817	-83.607486	15	Bear Swamp Drain	Genesee Twp
8714751	43.098597	-83.664892	30	Bear Swamp Drain	Genesee Twp
8714752	43.098333	-83.603611	15	Bear Swamp Drain	Genesee Twp
8714753	43.098056	-83.603611	36	Bear Swamp Drain	Genesee Twp
8714755	43.098056	-83.605556	30	Bear Swamp Drain	Genesee Twp
8714757	43.098056	-83.606944	30	Bear Swamp Drain	Genesee Twp

Table 10-12 Upper Flint River Watershed - New Point Source Discharges (119 Total)

Structure Number	Latitude	Longitude	Diameter	Receiving Waterbody	Community
8715751	43.096233	-83.626239	Open channel	Hiller drain	Genesee Twp
8720253	43.086111	-83.656389	24	Cornwell Drain	Genesee Twp
8720501	43.082222	-83.668889	8	Cornwell Drain	Genesee Twp
8720502	43.082222	-83.670000	8	Cornwell Drain	Genesee Twp
8720503	43.082500	-83.668050	30	Cornwell Drain	Genesee Twp
8720504	43.082500	-83.668050	12	Cornwell Drain	Genesee Twp
8720505	43.082500	-83.668056	30	Cornwell Drain	Genesee Twp
8720506	43.077222	-83.669444	36	Biskin Drain	Genesee Twp
8720751	43.082500	-83.665833	18	Cornwell Drain	Genesee Twp
8722754	43.078580	-83.616960	10	Carpenter Drain	Genesee Twp
8723502	43.078590	-83.616690	15	Carpenter Drain	Genesee Twp
8723503	43.078540	-83.616630	24	Carpenter Drain	Genesee Twp
8723504	43.079167	-83.606944	24	Carpenter Drain	Genesee Twp
8818751	43.092222	-83.558056	6	Powers Cullen Drain	Richfield Twp
8818754	43.091944	-83.558056	15	Powers Cullen Drain	Richfield Twp
8818755	43.091944	-83.558056	0	Powers Cullen Drain	Richfield Twp
8819252	43.091461	-83.558497	Open channel	Powers Cullen Drain	Richfield Twp
8819253	43.091461	-83.558300	18	Powers Cullen Drain	Richfield Twp
8819254	43.091611	-83.558211	5	Powers Cullen Drain	Richfield Twp
8819752	43.077444	-83.566983	24	Powers Cullen Drain	Richfield Twp
8826001	43.076667	-83.498889	12	Powers Cullen Drain	Richfield Twp
8827001	43.070822	-83.517783	Open channel	Flint River	Richfield Twp
8827002	43.070822	-83.517783	30	Flint River	Richfield Twp
8827005	43.072194	-83.515600	30	Flint River	Richfield Twp
8827252	43.071839	-83.509094	30	Flint River	Richfield Twp
8827256	43.075664	-83.508639	8	Flint River	Richfield Twp
8827257	43.075642	-83.503183	8	Flint River	Richfield Twp
8827258	43.075647	-83.502467	8	Flint River	Richfield Twp
8828751	43.066110	-83.527500	Open channel	Powers Cullen Drain	Richfield Twp
8828752	43.065560	-83.527222	24	Powers Cullen Drain	Richfield Twp
8828753	43.064722	-83.526667	24	Powers Cullen Drain	Richfield Twp
8828754	43.063333	-83.526111	24	Powers Cullen Drain	Richfield Twp
8828755	43.063333	-83.526111	Open channel	Powers Cullen Drain	Richfield Twp
8828757	43.068536	-83.520925	12	Powers Cullen Drain	Richfield Twp
8830751	43.062778	-83.563056	24	Powers Cullen Drain	Richfield Twp
8830752	43.062778	-83.563056	18	Powers Cullen Drain	Richfield Twp
8831251	43.060278	-83.557500	Open channel	Powers Cullen Drain	Richfield Twp
8832001	43.059167	-83.549722	12	Powers Cullen Drain	Richfield Twp
8832005	43.059167	-83.549722	Open channel	Flint River	Richfield Twp
8832006	43.059444	-83.549722	12	Flint River	Richfield Twp
8832251	43.061944	-83.545556	18	Flint River	Richfield Twp
8832252	43.061944	-83.545556	Open channel	Flint River	Richfield Twp
8833002	43.062778	-83.536111	12	Powers Cullen Drain	Richfield Twp
8833003	43.063189	-83.535744	30	Powers Cullen Drain	Richfield Twp
8833004	43.063189	-83.535736	12	Powers Cullen Drain	Richfield Twp

Table 10-12 Upper Flint River Watershed - New Point Source Discharges (119 Total)

Structure Number	Latitude	Longitude	Diameter	Receiving Waterbody	Community
8833005	43.063189	-83.535697	18	Powers Cullen Drain	Richfield Twp
8833006	43.061525	-83.550692	8	Austin Drain	Richfield Twp
8833008	43.058889	-83.536222	8	Austin Drain	Richfield Twp
8833009	43.088890	-83.535556	60	Austin Drain	Richfield Twp
8833010	43.058889	-83.535167	18	Austin Drain	Richfield Twp
8833013	43.059406	-83.534639	8	Austin Drain	Richfield Twp
8833016	43.059722	-83.533056	30	Austin Drain	Richfield Twp
8833251	43.063056	-83.525000	24	Powers Cullen Drain	Richfield Twp
8833252	43.061944	-83.523056	12	Powers Cullen Drain	Richfield Twp
8833253	43.061444	-83.522222	12	Powers Cullen Drain	Richfield Twp
8833255	43.061111	-83.522222	30	Powers Cullen Drain	Richfield Twp
8833751	43.053019	-83.520042	24	Austin Drain	Richfield Twp
8833753	43.052578	-83.519647	Open channel	Austin Drain	Richfield Twp
8834001	43.061944	-83.516667	8	Flint River	Richfield Twp
8834004	43.057722	-83.515000	36	Powers Cullen Drain	Richfield Twp
9714501	43.180000	-83.611111	10	Buell Drain	Thetford Twp
9723001	43.179697	-83.611253	6	Buell Drain	Thetford Twp
9723502	43.165294	-83.612308	Open channel	Drudge Drain	Thetford Twp
9724501	43.142500	-83.589722	Open channel	Averill Drain	Thetford Twp
9725001	43.165319	-83.595136	Open channel	Buell Drain	Thetford Twp
9725501	43.154025	-83.596139	Open channel	Buell Drain	Thetford Twp
9725502	43.151106	-83.593325	Open channel	Buell Drain	Thetford Twp
9726001	43.165206	-83.612083	Open channel	Drudge Drain	Thetford Twp
9726251	43.165000	-83.603056	Open channel	Buell Drain	Thetford Twp
9726501	43.156856	-83.619564	24	Wilbur Drain	Thetford Twp
9726752	43.150556	-83.604444	Open channel	Drudge Drain	Thetford Twp
9727001	43.159167	-83.639167	Open channel	Geiger Drain	Thetford Twp
9727501	43.155556	-83.631667	36	Geiger Drain	Thetford Twp
9727503	43.150000	-83.630000	Open channel	Geiger Drain	Thetford Twp
9735001	43.149442	-83.618936	Open channel	Geiger Drain	Thetford Twp
9735002	43.149442	-83.618936	Open channel	Geiger Drain	Thetford Twp
9735254	43.148333	-83.601111	12	Drudge Drain	Thetford Twp
9735751	43.143333	-83.600556	Open channel	Wilbur Drain	Thetford Twp
9735752	43.143330	-83.600556	Open channel	Wilbur Drain	Thetford Twp
9802753	43.209744	-83.484556	10	Butternut Creek	Forest Twp
9810002	43.202356	-83.520158	24	Butternut Creek	Forest Twp
9812006	43.209169	-83.475947	Open channel	Butternut Creek	Forest Twp
9827751	43.157222	-83.499444	Open channel	Parker-Scothan Drain	Forest Twp
9827752	43.157222	-83.499444	Open channel	Parker-Scothan Drain	Forest Twp
9827758	43.151611	-83.503889	Open channel	Parker-Scothan Drain	Forest Twp
9828251	43.164497	-83.526375	8	Coe Drain	Forest Twp
9828252	43.164489	-83.526264	8	Coe Drain	Forest Twp
9829001	43.156894	-83.558675	12	Barden Branch	Forest Twp
9829003	43.151342	-83.555056	Open channel	Barden Branch	Forest Twp
9832001	43.150572	-83.554172	Open channel	Barden Branch	Forest Twp

SHIAWASSEE RIVER WATERSHED

Table 10-13 and Figure 10-5 summarize the PSD status for the Shiawassee River Watershed. The original storm water permit included 123 MS4 PSDs. In 2007, 74 of the 123 PSDs were field investigated and 49 PSDs remain to be investigated. Of the 74 PSDs investigated, 37 were identified as MS4 PSDs, 37 were not present (“original PSDs not present”) (see Table 10-14), and 0 were identified as private outfalls (“PSD not permissible”). In addition, field crews identified 63 “new PSDs” (see Table 10-15) and an additional 75 “private PSDs” (i.e. outfalls conveying flow from residential sump pumps, footing drains, lawn drains, agricultural field tiles, or parking lots draining commercial buildings). The total number of MS4 PSDs investigated is 100 and the total number of private PSDs investigated is 75. Overall, 175 PSDs discharging to Waters of the State in the Shiawassee River Watershed have been investigated. Field crews will continue investigating the remaining 49 outfalls from the 2003 original storm water Phase II permit through the end of 2007 and 2008. Additional PSDs found as well as any changes to the original outfall list will be included in the 2008 Annual Report.

Table 10-13 Shiawassee River Watershed PSD Status Summary

	MS4 PSD		Private PSDs		Total
	Identified in 2003 Original Permit as MS4 PSD*	New PSD (Not Identified in 2003 Original Permit)	PSD Not Permissible (Identified in 2003 Original Permit as MS4 PSD)	New PSD (Not Identified in 2003 Original Permit)	
2007 field investigation	37	63	0	75	
Subtotal	100		75		175

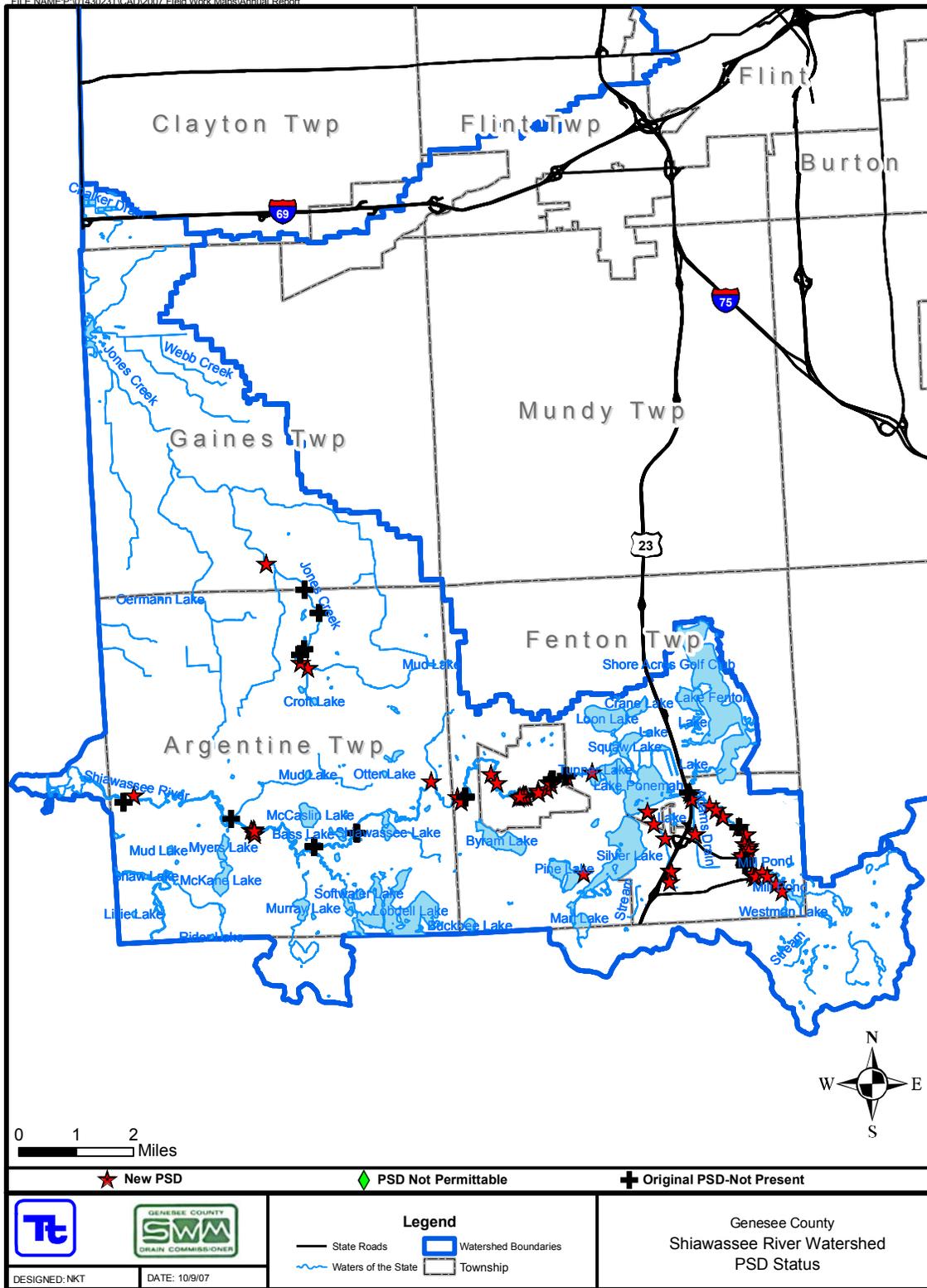


Figure 10-5 Shiawassee River Watershed - “Original PSD Not Present” (37 Total), “PSD Not Permittable” (0 Total) and “New PSDs” (63 Total)

Table 10-14 Shiawassee River Watershed - Original PSD Not Present (37 Total PSD)

Structure Number	Latitude	Longitude	Criteria	Receiving Waterbody	Community
5503251	42.8632419	-83.8509746	Original PSD not present	Web Jones Creek	Argentine Twp
5503252	42.8632457	-83.8509189	Original PSD not present	Web Jones Creek	Argentine Twp
5503253	42.8632047	-83.8509684	Original PSD not present	Web Jones Creek	Argentine Twp
5503254	42.8632099	-83.8509139	Original PSD not present	Web Jones Creek	Argentine Twp
5503255	42.8692293	-83.8556770	Original PSD not present	Web Jones Creek	Argentine Twp
5503256	42.8692353	-83.8556259	Original PSD not present	Web Jones Creek	Argentine Twp
5510001	42.8528502	-83.8578131	Original PSD not present	Web Jones Creek	Argentine Twp
5510002	42.8528604	-83.8577641	Original PSD not present	Web Jones Creek	Argentine Twp
5510003	42.8528113	-83.8577972	Original PSD not present	Web Jones Creek	Argentine Twp
5510004	42.8528205	-83.8577505	Original PSD not present	Web Jones Creek	Argentine Twp
5510252	42.8541667	-83.8563448	Original PSD not present	Web Jones Creek	Argentine Twp
5519502	42.8167018	-83.9197324	Original PSD not present	Shiawassee River	Argentine Twp
5519503	42.8164714	-83.9197811	Original PSD not present	Shiawassee River	Argentine Twp
5521501	42.8117490	-83.8829420	Original PSD not present	Shiawassee River	Argentine Twp
5526001	42.8073959	-83.8400896	Original PSD not present	Shiawassee River	Argentine Twp
5526002	42.8072676	-83.8398594	Original PSD not present	Shiawassee River	Argentine Twp
5526003	42.8073614	-83.8401207	Original PSD not present	Shiawassee River	Argentine Twp
5526004	42.8072367	-83.8398904	Original PSD not present	Shiawassee River	Argentine Twp
5527251	42.8042859	-83.8547848	Original PSD not present	Shiawassee River	Argentine Twp
5527252	42.8043154	-83.8547551	Original PSD not present	Shiawassee River	Argentine Twp
5527253	42.8040722	-83.8546383	Original PSD not present	Shiawassee River	Argentine Twp
5527254	42.8040921	-83.8545894	Original PSD not present	Shiawassee River	Argentine Twp
5619501	42.8158443	-83.8023484	Original PSD not present	Shiawassee River	Fenton Twp
5619502	42.8158498	-83.8022973	Original PSD not present	Shiawassee River	Fenton Twp
5619503	42.8156109	-83.8023305	Original PSD not present	Shiawassee River	Fenton Twp
5620251	42.8204047	-83.7675296	Original PSD not present	Shiawassee River	Fenton Twp
5620252	42.8201992	-83.7675166	Original PSD not present	Shiawassee River	Fenton Twp
5620253	42.8196198	-83.7724325	Original PSD not present	Shiawassee River	Fenton Twp
5620254	42.8195003	-83.7721277	Original PSD not present	Shiawassee River	Fenton Twp
5623503	42.8153117	-83.7258554	Original PSD not present	Shiawassee River	Fenton Twp
5623504	42.8152632	-83.7258412	Original PSD not present	Shiawassee River	Fenton Twp
5625503	42.7977451	-83.7066044	Original PSD not present	Shiawassee River	Fenton Twp
5625504	42.7977331	-83.7066043	Original PSD not present	Shiawassee River	Fenton Twp
5626252	42.8061789	-83.7087819	Original PSD not present	Shiawassee River	Fenton Twp
5626253	42.8061711	-83.7087240	Original PSD not present	Shiawassee River	Fenton Twp
5626254	42.8061486	-83.7087625	Original PSD not present	Shiawassee River	Fenton Twp
5636011	42.7965662	-83.7069303	Original PSD not present	Shiawassee River	Fenton Twp

Table 10-15 Shiawassee River Watershed - New Point Source Discharges (63 Total)

Structure Number	Latitude	Longitude	Diameter	Receiving Waterbody	Community
5623751	42.815450	-83.725440	Open channel	Shiawassee River	Fenton
5623753	42.813683	-83.724719	15	Adams Drain	Fenton
5626003	42.804840	-83.723640	24	Coe Drain	Fenton
5626005	42.804820	-83.723790	15	Coe Drain	Fenton
5627751	42.803960	-83.734170	24	Egyptian Drain	Fenton
5634255	42.795800	-83.732750	24	Egyptian Drain	Fenton
5634257	42.795600	-83.762380	10	Egyptian Drain	Fenton Twp
5634259	42.795600	-83.732380	24	Egyptian Drain	Fenton
5634267	42.792855	-83.733029	Open channel	Egyptian Drain	Fenton
5510251	42.849444	-83.855278	Open channel	Jones-Webb Creek	Argentine Twp
5510253	42.850833	-83.857778	18	Jones-Webb Creek	Argentine Twp
5519251	42.818378	-83.916081	Open channel	Shiawassee River	Argentine Twp
5524751	42.820000	-83.813889	24	Shiawassee River	Argentine Twp
5524753	42.815833	-83.805000	15	Shiawassee River	Fenton Twp
5528001	42.808831	-83.876033	8	Shiawassee River	Argentine Twp
5528003	42.807778	-83.875000	Open channel	Shiawassee River	Argentine Twp
5528005	42.808889	-83.875278	Open channel	Shiawassee River	Argentine Twp
5528251	42.808611	-83.875000	12	Shiawassee River	Argentine Twp
5528253	42.808611	-83.875000	Open channel	Shiawassee River	Argentine Twp
5619506	42.814722	-83.803889	21	Shiawassee River	Fenton Twp
5619510	42.821389	-83.793333	Open channel	Shiawassee River	Linden
5619512	42.819167	-83.791389	15	Shiawassee River	Linden
5620503	42.815900	-83.782292	8	Shiawassee River	Linden
5620506	42.815278	-83.784167	30	Shiawassee River	Linden
5620513	42.816944	-83.777222	24	Shiawassee River	Linden
5620514	42.815833	-83.781667	12	Shiawassee River	Linden
5620515	42.815556	-83.781389	24	Shiawassee River	Linden
5620516	42.815556	-83.781667	12	Shiawassee River	Linden
5620517	42.815556	-83.781944	8	Shiawassee River	Linden
5620518	42.815556	-83.781667	6	Shiawassee River	Linden
5620519	42.815556	-83.782778	24	Shiawassee River	Linden
5620520	42.815556	-83.783611	6	Shiawassee River	Linden
5620522	42.816389	-83.777222	30	Shiawassee River	Linden
5620753	42.817222	-83.774167	24	Shiawassee River	Linden
5620755	42.818889	-83.773611	36	Shiawassee River	Linden
5620757	42.818333	-83.772778	12	Shiawassee River	Linden
5621003	42.821111	-83.758611	30	Shiawassee River	Fenton Twp
5621004	42.820000	-83.767222	20	Shiawassee River	Fenton Twp
5623502	42.815000	-83.725000	Open channel	Shiawassee River	Fenton
5625001	42.804444	-83.706389	24	Shiawassee River	Fenton
5625005	42.801944	-83.706944	12	Shiawassee River	Fenton
5625507	42.801389	-83.705556	12	Shiawassee River	Fenton
5625508	42.800833	-83.705833	8	Shiawassee River	Fenton
5625509	42.800000	-83.705556	Known	Shiawassee River	Fenton

Table 10-15 Shiawassee River Watershed - New Point Source Discharges (63 Total)

Structure Number	Latitude	Longitude	Diameter	Receiving Waterbody	Community
5625510	42.799167	-83.707222	8	Shiawassee River	Fenton
5625511	42.798889	-83.708056	12	Shiawassee River	Fenton
5626250	42.811944	-83.718611	18	Shiawassee River	Fenton
5626251	42.806308	-83.708694	18	Shiawassee River	Fenton
5626252B	42.810833	-83.716389	24	Shiawassee River	Fenton
5626256	42.809144	-83.714403	10	Shiawassee River	Fenton
5626257	42.809056	-83.714100	10	Shiawassee River	Fenton
5627001	42.810787	-83.739931	Open channel	Egyptian Drain	Fenton Twp
5627003	42.810846	-83.739999	8	Egyptian Drain	Fenton Twp
5627009	42.807660	-83.737908	Open channel	Egyptian Drain	Fenton Twp
5636013	42.794444	-83.704444	8	Shiawassee River	Fenton
5636016	42.793611	-83.703889	12	Shiawassee River	Fenton
5636017	42.793611	-83.703889	36	Shiawassee River	Fenton
5636018	42.793692	-83.703369	15	Shiawassee River	Fenton
5636023	42.794722	-83.701111	18	Shiawassee River	Fenton
5636024	42.793611	-83.699440	24	Shiawassee River	Fenton
5636026	42.791667	-83.696440	24	Shiawassee River	Fenton
5636751	42.789722	-83.694444	Open channel	Shiawassee River	Fenton
6534502	42.876111	-83.868611	24	Jones-Webb Creek	Gaines Twp

CASS RIVER WATERSHED

No IDEP work has been conducted, nor is there IDEP work planned for the Cass River Watershed at this time.

11. STORM WATER POLLUTION PREVENTION INITIATIVE (SWPPI) - ACTION PLAN

Storm Water Pollution Prevention Initiatives (SWPPIs) for communities within Genesee County to comply with the Phase II Storm Water NPDES general permit requirements are being led by the GCDC's Office of Surface Water Management (SWM). Table 11-1 provides a draft of the SWPPI goals, objectives, and actions for each watershed. Terms used in the table are defined below.

Since the SWPPIs have not been approved yet, information on the activities of individual permittees has not been compiled. However, Table 11-1 does demonstrate that the County is making progress despite the delays in SWPPI approval. [Note: On October 8, 2007, the MDEQ determined that the resubmitted Watershed Management Plan (WMP) for the Upper Flint River Watershed would produce an approvable SWPPI. The GCDC is currently proceeding to finalize the remaining WMPs and corresponding SWPPIs.]

In addition to the SWPPI actions listed in Table 11-1, there has been ongoing maintenance activities within the county drains and river cleanup events were held at various sites tributary to the Flint River. Details are provided below.

Schedule Definition of Terms

C	Complete
L	Long Term
N/A	Not applicable
O	Ongoing
S	Short Term (before May 2009)
W	Wish List

Other Definitions

E342C	Contract for Services between Communities and Drain Office
Ad hoc	The Ad hoc Committees are formed to work on a specific objective until complete
BMP	Best Management Practice
FRWC	Flint River Watershed Coalition
HHW	Household hazardous waste
M&M	Monitoring and Mapping
NRCS	Natural Resources Conservation Services
PEP	Public Education Plan
PPP	Public Participation Plan
SWM	Surface Water Management
TBD	To be determined
WWS	Water and Waste Services

Table 11-1 SWPPI Action Plan

Goal	Objective	Action	Responsible Parties																		
			County	Health Dept	WWS	SWM	PEP Committee	M&M Committee	BMP Committee	Ad hoc Committee	Phase II Permittees	Developer	HHW	Program organizers	Participating schools	FRWC	GCRC	GISD	Consultant	TBD	
1. Protect public health	a. Ordinance to have septic systems inspected at "time of sale"	1. Draft an ordinance requiring inspection of septic systems at time of property sale. (County Wide)	Y	Y					Y												
		2. Develop fee structure options for septic ordinance.	Y	Y					Y												
		3. Responsible permittees will adopt new ordinance for septic inspection. Non Responsible Permittees will support the ordinance.	Y							Y											
		4. Responsible permittees will make appropriate staff available to be trained on enforcement.	Y							Y											
		5. Enforcement of the new septic ordinance	Y							Y											
		6. Develop & implement septic system tracking program for evaluation purposes.	Y		Y																
	b. Develop Educational Materials For Homeowners With Septic Systems to be Given at "Time of Sale". Main Topic: Septic System Maintenance. Other Topics: Include Lawn Maintenance, Auto Care, Well Water, Household Hazardous Waste Disposal, and well protection.	1. Explore funding options. Potentially use advertising to fund costs.					Y														
		2. Develop partnership with local organizations, such as real estate agents, to promote and distribute information on septic systems.				Y															
		3. Implement distribution of booklet for new homeowners with septic systems.					Y			Y											
		4. Develop tracking mechanism for evaluation purposes.					Y														
	c. Ordinance for Disconnecting of Footing Drains From Sanitary to Reduce Sanitary Sewer Overflows	1. Draft ordinance to disconnect footing drains.			Y					Y											
		2. Develop fee structure options to fund ordinance.			Y					Y											
		3. Responsible permittees will adopt new footing drain ordinance. Non-responsible permittees will support ordinance.			Y					Y	Y										
		4. Responsible permittees will make appropriate staff available to be trained on enforcement.			Y					Y											
		5. Provide permittees with education material for homeowners outlining disconnection options that promote storm water infiltration.					Y														
		6. Distribute educational material through communities																			
		7. Enforce new footing drains ordinance.			Y						Y										
	d. Identify Existing Wellhead Protection Programs	1. Work with MDEQ to identify existing wellhead protection programs within watershed						Y	Y												
		2. Identify responsible parties that would benefit from a Wellhead protection program						Y	Y												
		3. Communities will examine potential to participate in the development of new wellhead protection program						Y	Y												
	e. Ordinance for testing drinking water wells at time of sale	1. Draft ordinance requiring testing of drinking water wells at time of sale.		Y						Y											
		2. Develop fee structure options for ordinance.		Y	Y					Y											
		3. Permittees to adopt new drinking water well ordinance									Y										
		4. Responsible permittees will make appropriate staff available to be trained on new ordinance.		Y							Y										
5. Permittees to enforce new ordinance.			Y							Y											
6. Develop and implement tracking system										Y											

Schedule	Labor	Hours	Cost	Evaluation Mechanism	Included in SWPPI	Genesee County	2006-07 Activities
S	E342C	80-100 hours	\$5,000 - \$10,000	Draft ordinance is produced and adopted by Committee	Y		No activity
S	E342C	80-200 hours	\$5,000 - \$10,000	Document that outlines fee options and evaluates the practicality of each of them. Adoption of a funding options)	Y		No activity
S	E342C	20-100 hours	Legal fees per community	No. of communities supporting ordinance.	Y	S	No activity
S	E342C	100-400 hours	\$300-\$2000	Attendance to training.	Y		No activity
L		TBD	TBD	No. of Inspections. Long Term Failure Rate Trend. Improvement in water quality, especially in rural areas.	Y		
L		TBD	TBD	No. of Inspections. Long Term Failure Rate Trend	Y		
S		40-200 hours of prioritizing and finding funding		Memo on options Presentations to appropriate authorities Adoption of a funding option	Y		
S		40-100 hours of development 20-50 hours of distribution	\$1-\$3 ea 500 - 1000 packets \$500 - \$3000 Total	Distribution channels are established and maintained. No. of packets distributed by partners.	Y		No activity
S			TBD, dependent on distribution method	Count # packets distributed Targeted Public Survey by PEP No. of Volunteers	Y		No activity
S		120 hours of organizing mailing	Brochures \$2000-\$10,000	No. of packets printed and distributed by Permittees and organization. Social Survey	Y		No activity
W	E342C	100-200 hours	\$5,000-\$10,000	Draft ordinance is produced and adopted by Committee			
W	E342C	80-200 hours	\$5,000-\$10,000	Document that outlines fee options and evaluates the practicality of each of them. Adoption of a funding options)			
W	E342C	20-100 hours	Legal fees per community	No. of ordinances supported locally		W	
W	E342C	Advertising: 100-400 hours	Advertising: \$300-\$2000	Attendance to training			
W	E342C			Number of disconnections. Percent of those that encourage storm water infiltration.			
W		TBD	TBD	No. of educational material pieces distributed by each permittee			
W		TBD	TBD	No. of footing drains removed. Long term SSO trend		W	
W		TBD	TBD	Creation of tracking system. Statistics on "disconnections" No. of Disconnections		W	
W		TBD	TBD	Done			
W		TBD	TBD	List of potential Wellhead protection programs			
W		TBD	TBD	New wellhead protection program adoption. Future recognition of WHP in WMP.			
W	E342C	100-500 hours	\$5,000-\$15,000	Draft ordinance is produced and adopted by Committee			
W	E342C	80-200 hours	\$5,000-\$10,000	Document that outlines fee options and evaluates the practicality of each of them. Adoption of a funding options)			
W	E342C	20-100 hours	Legal fees per community	No. of ordinances supported locally		W	
W	E342C	Advertising: 100-400 hours	Advertising: \$300-\$2000	Attendance to Training. No. of advertisements.			
W		TBD	TBD	# of Inspections. Long Term Trend. Improvement in water quality, especially in rural areas.		W	
W		TBD	TBD	Number of tests performed. Test results			

Table 11-1 SWPPI Action Plan

Goal	Objective	Action	Responsible Parties																			
			County	Health Dept	WWS	SWM	PEP Committee	M&M Committee	BMP Committee	Ad hoc Committee	Phase II Permittees	Developer	HHW	Program organizers	Participating schools	FRWC	GCRC	GISD	Consultant	TBD		
	f. Map arsenic levels for drinking wells	1. Identify existing arsenic levels that have been tested in the watershed		Y						Y												
		2. Make information available to decision makers and general public																				Y
2. Establish a watershed stewardship ethic among the public	a. Educate the public about the 7 required education elements	1. Update www.ClearGeneseeWater.org with watershed wide educational material, monitoring results, permit information, meeting information and committees as needed.					Y															
		2. Place link on website connecting to above website if available.								Y												
		3. Develop print media to educate public.					Y															
		4. Distribute media through municipalities.				Y				Y												
		5. Develop evaluation method to track effectiveness of media					Y															
	b. Direct Mailing to Riparian Land owners (Rivers/Lakes)	1. Design riparian landowner educational materials emphasizing protecting and managing the riparian corridor.					Y															
		2. Develop & maintain a list of riparian landowners.					Y															
		3. Implement direct mailings to land owners and updating public education materials.					Y															
		4. Develop evaluation method to track effectiveness of program					Y															
	c. Partner with existing household hazardous waste (HHW) program committee to increase awareness and use	1. Meet with existing household hazardous waste program committee. Investigate options to assist program.					Y				Y											
		2. Conduct needs assessment that includes determining collection dates (annually, monthly or weekly) and locations.								Y		Y										
		3. Determine feasibility of implementing recommendations from needs assessment.								Y		Y										
		4. Implement recommendations from needs study as completely as is feasible and identify future opportunities and actions.				Y					Y											
	d. Enhance Existing Benthic Monitoring Program	1. Meet with Flint River Watershed Coalition (FRWC) to identified opportunities to develop partnership(s).					Y															
		2. Identify additional stream segments that would be desirable to gather macroinvertebrate sampling data on.													Y							
		3. Determine what additional resources are needed to expand the monitoring program.								Y												
		4. Implement a yearly schedule and set up dead lines displaying when stream sections will be inventory yearly.			Y		Y									Y						
		5. Sign contract with FRWC to provide Benthic Monitoring				Y	Y									Y						
		6. Review Results from past seasons. Current results will be reviewed each year				Y	Y															
		7. Conduct monitoring														Y						
	e. Enhance Existing Project GREEN Program	1. Sign Contract with FRWC to administer program				Y										Y						
		2. Identify local schools to participate. Meet with school district representatives														Y						
		3. Increase number of classes involved with program														Y						
		4. Conduct monitoring													Y	Y						
		5. Review Results					Y									Y						

Schedule	Labor	Hours	Cost	Evaluation Mechanism	Included in SWPPI	Genesee County	2006-07 Activities
W		TBD	TBD	Production of a County map indicating arsenic levels			
W		TBD	TBD	# of hits on website. #. of maps distributed. # of drinking water tests requested.			
O	E342C	80-200 hours/year	Part of Education Media Campaign budget	No. of hits on website and downloads. List of information kept on website.	Y		
S		Varies	Varies	Counters recording number of hits on permittees websites	Y		
C	E342C	60 hours	\$2,000-\$5,000	Print material developed	Y		
O	E342C	20 hours/year	Public education budget	No. of ad's, print material and units distributed (etc.) by each permittee Social survey	Y	O	
S		TBD	TBD	No. of ad's, print material and units distributed (etc.) by each permittee Social survey	Y		No activity. Media campaign not launched yet.
S			Brochures part of Education Media Campaign budget \$2,000-\$10,000	Creation of riparian landowner brochure.			Currently evaluating whether to mail information and are exploring alternative options for program.
S		20 hours per community	Develop cost analysis	List developed with regularly scheduled updates (5 yrs)			List has been created.
S		30+ hours	\$4,000-\$8,000	No. of information packets distributed No. of hits on web site. Returned postcard from newsletter			Delivery vehicle is being determined.
S		TBD	TBD	No. of information packets distributed No. of hits on web site. Specific Survey.			Delivery vehicle is being determined.
W		10-20 hours		Increased demand/use of HHW program			
W		40-80 hours	TBD	List of potential improvements			
W			\$1,000-\$5,000	Document that outlines fee options and evaluates the practicality of each of them. Adoption of a funding options)			
W		TBD	TBD	Long-term: reduction of the presence of HH chemical in water quality monitoring samples.			
C		5 hours	Negligible	The 16 sites in Genesee county are tested consistently twice a year			
C		10-20 hours	Negligible	Additional sites are identified.			
O		20 hours to meet to negotiate contract with FRWC		Report of estimated additional resources needed.			
	E342C contract done by FRWC			Schedule set			
C			\$5,150/year	Sign Contract			
S	E342C	TBD	TBD	Trend data is entered and analyzed. All monitoring activities should be related			Completed. See Project Green report in year end report.
O	Done by FRWC			Track WQ improvements over the permit cycle			
C			\$7,500/year	Contract Signed			
O	E342C		Done by contract with FRWC	Organizations that participate are identified. No. of classes participating in project Green.			
O				Number of classes participating increase			
O			120+ hours/year	Samples of DO, Ammonia, Nitrate, PH, Phosphate, and temperature are collected regularly. Monitoring is completed and results are compiled			
S	E342C	20 hours/month	Up to \$5,000	Results provided for all sites. Trend data is entered and analyzed			See year end report.

Table 11-1 SWPPI Action Plan

Goal	Objective	Action	Responsible Parties																	
			County	Health Dept	WWS	SWM	PEP Committee	M&M Committee	BMP Committee	Ad hoc Committee	Phase II Permittees	Developer	HHW	Program organizers	Participating schools	FRWC	GCRC	GISD	Consultant	TBD
	f. Stream Crossing Watershed Survey with Photography.	1. Develop road stream inspection program. (Identify road/stream crossings, information collected)						Y												
		2. Determine implementation options and responsibilities.						Y										Y		
		3. Provide training to personnel responsible for completing survey						Y											Y	
		4. Conduct survey based on a schedule developed						Y									Y		Y	
		5. Review results				Y		Y												
	g. Hot Spot Water Quality Monitoring for MS4's as needed	1. Identify initial list of target sites, chemical tests, parameters and collection method.						Y												
		2. Determine testing needed for each site.						Y												
		3. Create a protocol manual for fieldwork crews (lab results parameters and collection methods).																	Y	
		4. Schedule and conduct field work done by professionals (Consultants)																	Y	
		5. Review Results						Y											Y	
3. Reduce impact from peak flows	a. Storm Water Ordinance	1. Create a storm water design standards/site plan manual.				Y														
		2. Develop table that will show how much the installed BMPs will reduce or prevent post-construction impacts on water quality						Y												
		3. Draft a stormwater ordinance that refers to the design/site plan manual that considers quantity and quality BMPs.						Y												
		4. Develop new County site plan review process with the following steps: Step 1: Pre-Development Step 2: Prepare site plan Step 3: Coordinated County Review Step 4: Municipal Review Step 5: Site Plan Step 6: Approval						Y												
		5. Develop permit fee structure to cover the cost of processing and enforcement with provision for future adjustments.						Y												
		6. Facilitate community acceptance through public forms and information packets.								Y										
		7. Permittees to approve/adopt ordinance.								Y										
		8. Responsible permittees will make appropriate staff available to be trained on the storm water ordinance, process and design manual.						Y												
		9. SWM permittees to enforce new storm water ordinance.								Y										
	b. Pursue restoration projects on natural watercourses	1. Develop list of pollution problems along natural watercourses not covered by IDEP (i.e., bank erosion...)						Y												
		2. Identify problem areas and prioritize.						Y												
		3. Determine mechanism under which maintenance/repair can be done to Natural Watercourses						Y												
		4. Provide maintenance or repair to natural watercourse						Y		Y										
	c. Preserve existing floodplains and wetlands from being filled or developed	1. Establish criteria that will be used to identify and prioritize existing wetlands and floodplains				Y														
		2. Identify existing floodplains and wetlands				Y														
		3. Prioritize existing floodplains and wetlands based on amenity and ability to protect				Y														
		4. Determine mechanism under which floodplains & wetlands can be preserve (May include ordinances)							Y	Y										
		5. County and communities implement recommended mechanism's).	Y							Y										

Schedule	Labor	Hours	Cost	Evaluation Mechanism	Included in SWPPI	Genesee County	2006-07 Activities
C			Total additional cost \$500-\$2,000	Documentation of water and stream characteristics, plant life, foam, trash, etc.			Surveyed about 140 road/stream crossings with photos in 2007.
C	E342C	20 hours		Memo on options. Presentations to appropriate authorities			
O	E342C	20 hours		No. of people trained. Program sustained over time.			
S	E342C	80 hours		Schedule is created and implemented. Photos are taken, reports are written			
S	E342C	TBD	TBD	Data entered and analysis performed.			
O			Costs are as needed. Comes out of E342C	Documentation of water quality associated with hot spots.			Through IDEP Program, hot spots have been identified for further investigation.
C		Will vary	Will vary	Plan and needs assessment created. Advanced sample collection needs to be done by professionals			
C	E342C	10 hours		Sites and protocols established			
O			\$1,000-\$1,500 per site	Schedule established. WQ samples collected			
O			Database costs are part of contract with Tetra Tech	Trend data is entered and analyzed. All monitoring activities should be related together (e.g. road/stream, WQ)			
S	E342C	200-2,000 hours		Creation of a design manual	Y		
L		Will vary for each permittee	Will vary for each permittee	Mechanism developed to track quantity and types of pollutants removed by various BMPs	Y		
S	E342C	40-200 hours per committee members	TBD	Draft ordinance is produced	Y		BMP Committee has been working on ordinance since April, 2007. Goal is to complete ordinance by winter 2008.
L	E342C	200+	\$5,000	Process is adopted and followed by county and communities. New development beings to take different form.	Y		
L	E342C	20-100 hours	\$2,500-\$3,000	Document that outlines fee options and evaluates the practicality of each of them. Adoption of a funding option(s)	Y		
L		40-200 hours per community		Information sessions. No. of information packets distributed by permittees	Y	L	
L		Will vary	Will vary	No. of Communities that adopt ordinance,	Y	L	
L		10 hours	\$500	No. of participants in training Advertising of training	Y		
L			3-4 staff \$120-160K/year	No. of citations No. of developments going thru the process.	Y	L	
S		Negligible	Negligible	Work list is developed. Regular updating of inventory	Y		Have partially identified problem areas.
S		Negligible	Negligible	List problem areas as committee becomes aware of them. Problems ranked.	Y		
W			Will have to be funded outside of E342C. Grants are most likely	List of options is created	Y		
W	E342C	200+ hours	TBD	Corrective measures proposed and implemented	Y		
S		100+ hours	Nominal	Criteria creation	Y		
W	E342C (FEMA floodplain is start)	120 hours	120 hours @ \$50/hour = \$6,000	List created			
W	E342C	40 hours	40 hours @ \$50/hour = \$2,000	Prioritization list is developed.			
W			Cost shared, TBD	List of options is created.		L	
W			Cost shared, TBD	Plan for protection is devised. Permittees follow plan. Reduction in the rate of loss of wetlands / floodplain dev.		L	

Table 11-1 SWPPI Action Plan

Goal	Objective	Action	Responsible Parties																	
			County	Health Dept	WWS	SWM	PEP Committee	M&M Committee	BMP Committee	Ad hoc Committee	Phase II Permittees	Developer	HHW	Program organizers	Participating schools	FRWC	GCRC	GISD	Consultant	TBD
	d. Monitor water quantity to measure hydraulic change within watercourses	1. Gather data from existing stream gauges and corresponding rain gauges.						Y												
		2. Track water flows as they relate to rain events				Y														
		3. Review Results				Y														
		4. Add stream/ precipitation gages as needed in key locations.			Y		Y													
	e. Produce demonstration projects for (Low Impact Development) for new and retrofit sites	1. Identify potential existing sites for retrofit with bio-retention. Either on permittee property or by education of private development.						Y												
		2. Create education materials for permittees and developers						Y												
		3. Educate developers on the benefits of incorporating low impact development into their site design.						Y												
		4. Develop mechanism for providing funding or incentives to implement low impact development.						Y												
		5. Have demonstration sites built.							Y	Y										
		6. Track reduction of flow/pollutants				Y														
4. Create, restore, & Enhance Recreational Use	a. Educate Public about recreational opportunities near/ on the water	1. Promote recreational programs (website, brochures, and community news.)					Y			Y										
		2. Distribute materials on recreational programs through municipalities					Y			Y										
	b. Protect /Expand Parks Trails and River Walk System	1. Coordinate with existing Greenways Initiative to compile a list of existing and proposed greenways					Y													
		2. Prioritize list for protection and for future enhancements (e.g. increased accesses)/ acquisition of property- if necessary					Y													
		3. Develop plan for acquiring land (along water) for recreation/ Wildlife protection					Y													
		4. Implement plan based on list of priorities and sign contracts if necessary				Y	Y			Y										
5. Restore and protect aquatic life, wildlife and habitat	a. Establish vegetative buffer areas adjacent to sensitive areas	1. Draft Buffer Strip Ordinance						Y												
		2. Develop fee structure options for buffer strip ordinance.						Y												
		3. Permittees adopt new ordinance.	Y							Y										
		4. Responsible permittees will make appropriate staff available to be trained about the new buffer ordinance.																	Y	
		5. Permittees to enforce new stream buffer strip ordinance.								Y										
		6. Develop tracking method for enforcement								Y										
	b. Protect key locations of threatened and endangered species and habitat	1. Identify key locations of threatened and endangered species and habitat. using Natural Features Inventory						Y												
		2. Develop plan to protect areas, or stabilize and enhance habitat						Y												
		3. Adopt plan								Y										
		4. Permittees to implement protection plan for threatened/endangered species.								Y										
6. MDEQ requirement - good housekeeping activities	a. Ensure Maintenance activities, schedules, and inspection procedures for storm water structural controls (SWSC) as appropriate.	1. Develop or adopt a BMP manual to provide permittees with maintenance procedures to be implemented for Good Housekeeping Activities								Y										
		2. Develop schedule for inspection & maintenance procedures of SWSC owned by permittee								Y										
		3. Permittees will make appropriate staff available to be trained							Y	Y										
		4. Inspect all SWSC owned by permittee according to schedule								Y										
		5. Perform maintenance / repair to SWSC owned by permittee (including but not limited to)								Y										
		Pipes / culverts																		
		Ditches																		
		Catch Basins																		
		Oil-Grit Separators																		

Schedule	Labor	Hours	Cost	Evaluation Mechanism	Included in SWPPI	Genesee County	2006-07 Activities
L	E342C	TBD	TBD	Establish baseline measure	Y		
L	E342C	TBD	TBD	Use baseline measure to gage future flows vs. current flows	Y		
L	E342C	TBD	TBD	Trend data is entered & analyzed. All monitoring activities should be related together (e.g. road/stream, WQ)	Y		
W	E342C	TBD	TBD	Gauges added.	Y		
W		TBD	TBD	Sites identified and opportunities for redevelopment evaluated.			
L				Relationships have been developed and an indication of their willingness to partner on a project.			
W		TBD	TBD	Documentation of potential funding schemes and sources.			
W			Not part of E342C budget	# of sites built			
W		TBD	TBD	Flow meters or other measurement devices.		W	
W		TBD	TBD	# of Field trips, Presentations, signage, etc.			
S				# of hits on recreation page of website. # of flyers distributed	Y	S	
S				No. of brochures, web hits, etc. Social survey	Y	S	
L				Meeting with Greenways. List of proposed areas compiled.			
L				List of prioritized areas is created.			
W				Acres of Land Acquired. List of methods developed			
W				Acres of Land Acquired. Natural land vs. developed land calculations			
L	E342C	100-500 hours	\$5,000-\$15,000	Draft ordinance is produced			
L	E342C		\$5,000	Document that outlines fee options and evaluates the practicality of each of them. Adoption of a funding option(s)	Y		
L		20-100 hours	Legal fees vary by community	No. of ordinances supported locally	Y	L	
L		10 hours per community	Staff costs vary by community	Attendance to Training	Y		
L			Enforcement costs will vary by community	Citations issued. No. of miles of buffer strips implemented.	Y	L	
L		TBD	TBD	Citations issued. No. of miles of buffer strips implemented	Y		
W	Ongoing program with MSU	60 hours for committee. 100 hours for contractors		List created			
W	E342C	200 hours	TBD	Develop Plan and Options for implementation			
		TBD	TBD	Plan is adopted			
W		TBD	TBD	Plan is implemented locally. No. of Acres of habitat areas are preserved.		L	
S		Will vary for each permittee	Will vary for each permittee	BMP manual developed or adopted	Y		SWPPI has not been approved. Therefore, activities for other permittees have not been recorded or reported.
S		Will vary for each permittee	Will vary for each permittee	Structural controls identified. Maintenance and inspection schedule developed	Y		SWPPI has not been approved. Therefore, activities for other permittees have not been recorded or reported.
S		TBD	TBD	Appropriate staff trained	Y		SWPPI has not been approved. Therefore, activities for other permittees have not been recorded or reported.
S		Will vary for each permittee	Will vary for each permittee	Inspections done according to schedule	Y		SWPPI has not been approved. Therefore, activities for other permittees have not been recorded or reported.
S		Will vary for each permittee	Will vary for each permittee	Maintenance of structural controls owned or operated by permittee as needed according to inspection	Y		SWPPI has not been approved. Therefore, activities for other permittees have not been recorded or reported.
	Per procedure			Pipes / culverts	Y		
	Per procedure			Ditches	Y		
	Per procedure			Catch Basins	Y		
	Per procedure			Oil-Grit Separators	Y		

Table 11-1 SWPPI Action Plan

Goal	Objective	Action	Responsible Parties																	
			County	Health Dept	WWS	SWM	PEP Committee	M&M Committee	BMP Committee	Ad hoc Committee	Phase II Permittees	Developer	HHW	Program organizers	Participating schools	FRWC	GCRC	GISD	Consultant	TBD
		Detention (wet/dry)																		
		Vaults or tanks																		
		Infiltration Basin																		
		Rain Gardens																		
		Porous Pavement																		
		Vegetated Swales																		
		Constructed wetlands																		
		Filter Strips																		
		6. Track inspection and maintenance								Y										
	b. Implement Controls for reducing or eliminating the discharges of pollutants from streets, roads, highways, parking lots, and storage yards	1. Develop schedule & procedures for the following controls on pavement that is owned or operated by permittee									Y									
		Street Sweeping																		
		Road Salt Application & Storage																		
		Dust Control																		
		Snow Removal																		
		Maintenance Garage / Storage Yards																		
		Road & Bridge Maintenance																		
		Gravel Road Maintenance																		
		Roadside Vegetation																		
		2. Track inspection and maintenance of Controls									Y									
	c. Institute Procedures for the proper disposal of operation and maintenance waste from the separate storm water drainage system (from street sweeping, catch basin clean out, etc)	1. Develop procedure for proper disposal of the following waste collected from maintenance of the storm system owned or operated by permittees									Y									
		Spoils / sediments																		
		Floatables / oil																		
		Other Debris / Pollutants																		
		2. Document disposal method for operation and maintenance waste									Y									
	d. Ensure that flood management projects assess the impacts on the water quality of the receiving waters.	1. Evaluate current or create new procedures to place water quality measures on storm water facilities owned by permittee.								Y										
		2. Implement procedures on permittee owned facilities									Y									
		3. Install BMPs where appropriate on permittee owned facilities pursuant BMP manual									Y									
		4. Assess new projects owned by permittee for water quality impact.									Y									
	e. Reduce the discharge of pollutants related to application of pesticides, herbicides, and fertilizers applied in the permittees regulated area.	1. If fertilizers are used, permittee will have soil testing performed, prior to application, and fertilizer application will be based on soil testing results.									Y									
		2. If fertilizers are used, permittee will have fertilizer applied by a licensed individual									Y									
		3. If herbicides are used, permittee will have herbicides applied by a licensed individual and the herbicides applied should be appropriate for use.									Y									
		4. If pesticides are used outside, permittee will apply sparingly by a licensed individual									Y									
		5. Pesticides, herbicides and fertilizers kept on site will be stored appropriately in dry, self contained areas that are not connected to the storm water drainage system.									Y									

Schedule	Labor	Hours	Cost	Evaluation Mechanism	Included in SWPPI	Genesee County	2006-07 Activities
	Per procedure			Detention (wet/dry)	Y		
	Per procedure			Vaults or tanks	Y		
	Per procedure			Infiltration Basin	Y		
	Per procedure			Rain Gardens	Y		
	Per procedure			Porous Pavement	Y		
	Per procedure			Vegetated Swales	Y		
	Per procedure			Constructed wetlands	Y		
	Per procedure			Filter Strips	Y		
S		Will vary for each permittee	Will vary for each permittee	Inspection findings recorded, maintenance performed Track quantity of pollutants removed or reduced.	Y		SWPPI has not been approved. Therefore, activities for other permittees have not been recorded or reported.
S		Will vary for each permittee	Will vary for each permittee	Schedule and O & M procedures developed			SWPPI has not been approved. Therefore, activities for other permittees have not been recorded or reported.
	Per schedule			Street Sweeping			
	Per procedure			Road Salt Application & Storage			
	Per procedure			Dust Control			
	Per procedure			Snow Removal			
	Per procedure			Maintenance Garage / Storage Yards			
	Per schedule			Road & Bridge Maintenance			
	Per schedule			Gravel Road Maintenance			
	Per schedule			Roadside Vegetation			
S		Will vary for each permittee	Will vary for each permittee	Inspection findings recorded, maintenance performed. Track quantity of pollutants removed or reduced.			GCRC conducts bi-weekly BMP inspections at maintenance yards and bi-annual full inspections of maintenance yards.
S		Will vary for each permittee	Will vary for each permittee	Procedure developed and implemented			SWPPI has not been approved. Therefore, activities for other permittees have not been recorded or reported.
				Spoils / sediments			
				Floatables / oil			
				Other Debris / Pollutants			
S				Track quantity of pollutants removed or reduced			
L		Will vary for each permittee	Will vary for each permittee	Procedures for determining water quality measures has been evaluated / developed			
L		Will vary for each permittee	Will vary for each permittee	Identified procedures implemented			
L		Will vary for each permittee	Will vary for each permittee	Identified BMPs Installed			
L		Negligible	Negligible	Assessment done on site plan. Appropriate BMPs shown in design.			
S		Will vary for each permittee	Will vary for each permittee	Fertilizer use policy changed if necessary			SWPPI has not been approved. Therefore, activities for other permittees have not been recorded or reported.
S		Will vary for each permittee	Will vary for each permittee	Measure reduction or elimination of phosphorous and or fertilizer due to permittee's change in procedure.			SWPPI has not been approved. Therefore, activities for other permittees have not been recorded or reported.
S		Will vary for each permittee	Will vary for each permittee	Herbicide use policy changed if necessary. Reduce use of herbicide by permittees			SWPPI has not been approved. Therefore, activities for other permittees have not been recorded or reported.
S		Will vary for each permittee	Will vary for each permittee	Pesticide use policy changed if necessary . Reduce use of pesticides by permittees			SWPPI has not been approved. Therefore, activities for other permittees have not been recorded or reported.
S		Will vary for each permittee	Will vary for each permittee	Procedures reviewed and adjusted if necessary. Material handling SOP adjusted			SWPPI has not been approved. Therefore, activities for other permittees have not been recorded or reported.

Table 11-1 SWPPI Action Plan

Goal	Objective	Action	Responsible Parties																		
			County	Health Dept	WWS	SWM	PEP Committee	M&M Committee	BMP Committee	Ad hoc Committee	Phase II Permittees	Developer	HHW	Program organizers	Participating schools	FRWC	GCRC	GISD	Consultant	TBD	
7. MDEQ requirement - post construction controls	a. Evaluate and implement site appropriate, cost-effective structural and nonstructural best management practices (BMPs) that prevent or minimize post construction impacts on water quality.	1. Adopt BMPs manual from <u>Objective 3a</u> or develop and adopt a BMP manual to protect water quality in both new development and significant redevelopment									Y										
		2. Adopt the <u>Objective 3a</u> Stormwater ordinance to enforce BMP manual or develop and adopt individual Stormwater ordinance.									Y										
		3. Responsible permittees will make appropriate staff available to be trained on enforcement										Y									
		4. Develop tracking system										Y									
	b. Establish long-term operation and maintenance practices for storm water BMPs on private property.	1. Review existing O&M practices as it relates to the adopted BMP manual.										Y									
		2. Develop a procedure to enforce new O & M practices on private storm water systems.										Y									
		3. Adopt necessary ordinances to enforce new O & M practices on private storm water systems.										Y									
		4. Responsible permittees will make appropriate staff available to be trained on enforcement										Y									
		5. Develop tracking system										Y									
		8. Opportunities for sustainability	a. Secure funding options available for implementation	1. Sign E342C contract (through May 1, 2008)										Y							
2. Review E342C contract for renewal												Y									
3. Sign new contract or develop funding mechanism to support independent program												Y									
4. Identify existing federal, state, and local funding opportunities.											Y										
5. Coordinate the development of grant proposals						Y															
b. Institutionalize the committee structure.	1. Phase II permittee representative to site on PE Committee.											Y							Y		
	2. Phase II permittee representative to site on BMP Committee.											Y									
	3. Phase II permittee representative to site on MM Committee.											Y									
	4. Phase II permittee representative to site on an Ad hoc Committee.											Y									

Schedule	Labor	Hours	Cost	Evaluation Mechanism	Included in SWPPI	Genesee County	2006-07 Activities
S		Will vary for each permittee	Will vary for each permittee	Assessment is completed. BMP Manual created and adopted by permittees. No. of people that use the manual. SOP are adjusted	Y	S	
L		Will vary for each permittee	Will vary for each permittee	Necessary ordinances developed and adopted	Y		
L		Will vary for each permittee	Will vary for each permittee	Number trained. Number of sites enforced	Y		
L		Will vary for each permittee	Will vary for each permittee	Mechanism developed to track number of sites, types of BMPs quantity of pollutants removed reduced	Y		
S		Will vary for each permittee	Will vary for each permittee	Completion of review. Ability to determine needed O&M procedures	Y	L	
L		Will vary for each permittee	Will vary for each permittee	O&M procedures developed and supported by local communities.	Y	L	
L		Will vary for each permittee	Will vary for each permittee	Necessary ordinances developed and adopted. O&M manual/ procedures reflect new requirements	Y	L	
L		Will vary for each permittee	Will vary for each permittee	Number trained. Number of sites enforced	Y		
L		Will vary for each permittee	Will vary for each permittee	Mechanism developed to track number of sites, types of BMPs quantity of pollutants removed reduced	Y		
C				Permittee sign contract- see application	Y		
S		TBD	TBD	Contract has been reviewed by permittee	Y		Permittees are meeting with GCDC in Fall of 2007 to discuss renewal.
S		TBD	TBD	Permittee either signs new contract based on new permit cycle or permittee pursue implementation of permit with independent funding.	Y		
W		250-500 hours (includes action 3)	\$10,000 (includes action 3)	Funding Strategies and opportunity document created.			
W		100-150 hours		Multi-jurisdictional grants are applied for and received.			
O		100+ hours/year for administrator .24+ hours/year for members		Meeting Minutes. Action plan items are implemented. Attendance	Y	O	
O		100+ hours/year for administrator .24+ hours/year for members		Meeting Minutes. Action plan items are implemented. Attendance	Y	O	
O		100+ hours/year for administrator .24+ hours/year for members		Meeting Minutes. Action plan items are implemented. Attendance	Y	O	
S		TBD	TBD	Meeting Minutes. Action plan items are implemented. Attendance	Y	S	See appendix with meeting minutes

COUNTY DRAIN MAINTENANCE ACTIVITIES

Maintenance done to county drains during this reporting period include:

- 189 washouts were repaired where the storm pipe had failed
- 32 log jams/culvert plugs were removed
- 85,200 feet of storm line was jetted and vacuumed to remove debris
- 400 catch basins/manholes were vacuumed to remove debris
- 64,712 linear feet of open ditch cleaning was performed

[Note: Since it would be impossible to report work done through 10/31/2007, the maintenance activities outlined above was done on the County's fiscal year of October 1, 2006 through September 31, 2007.]

RIVER CLEANUP

The GCDC Office was approached by the Flint River Watershed Coalition (FRWC) to apply for a grant to hold multiple river cleanups. The GDCD Office participated by co-chairing and organizing multiple cleanups within the Flint River Watershed.

Municipalities were contacted for cleanup and support. Flyers were mailed to township and municipal offices in the watershed, including cities and counties, and schools. Promotion letters were mailed to civic groups, recreational businesses, fishing businesses, marinas, etc. The two events were advertised on the FRWC website and promoted in the FRWC newsletter. A press release also appeared in the Flint Journal.



On May 12th, 2007, a total of 164 volunteers came out to 5 sites, including:

• U of M campus – Flint	35
• Vietnam Veterans Park – Flint	30
• Holloway Reservoir – Richfield Township	12
• M-15 at the Flint River – Richfield Township	6
• Riverside Park – Flushing	81
<i>Total number of volunteers:</i>	<i>164</i>

The volunteers cleaned up approximately 10 river miles and removed 845 ft³ of garbage from the river and its banks.