

**Genesee County
Phase II Municipalities**



Annual Report

Nov. 1, 2005 to Oct. 31, 2006

Submitted to:

State of Michigan Department of Environmental Quality
Surface Water Quality Division

Submitted by:

Genesee County Drain Commissioner
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LIST OF ACRONYMS

BMP	Best Management Practice
CAER	University of Michigan (U of M) Flint Center for Applied Environmental Research
CD	Genesee County Conservation District
CMI	Clean Michigan Initiative
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
IDEP	Illicit Discharge Elimination Plan
MDEQ	Michigan Department of Environmental Quality
MS4	Municipal Separate Storm Sewer System
NPDES	National Pollutant Discharge Elimination System
PEP	Public Education Plan
PPP	Public Participation Plan
SEMCOG	Southeast Michigan Council of Governors
PSD	Point Source Discharge
QAPP	Quality Assurance Project Plan
SWM	Storm Water Management
SWPPI	Storm Water Pollution Prevention Initiative
WMP	Watershed Management Plan
WWS	Water and Waste Services

INTRODUCTION

This annual report summarizes activities completed for the period from November 1, 2005 to October 31, 2006 by Genesee County Phase II Municipalities to meet the requirements of their National Pollutant Discharge Elimination System (NPDES) permit, including:

- Illicit Discharge Elimination Plan (IDEP)
- Public Education Plan (PEP)
- Public Participation Plans (PPPs)
- Point Source Discharges (PSDs)
- Storm Water Pollution Prevention Initiative (SWPPI)
- Nested drainage system agreements
- Special reporting requirements

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

BACKGROUND INFORMATION

The watershed management planning, Genesee County Storm Water Advisory Committee, and Genesee County Watershed Planning Communities (Contract Communities) are outlined as follows.

Watershed Management Planning

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 (PA) 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.

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

- Lower Flint River
- Middle Flint River
- Upper Flint River
- Shiawassee River
- Cass River (Deferred)

The Shiawassee River Watershed boundary was adjusted in 2005 to avoid overlap with effort proceeding in Livingston County. It now roughly parallels the county line.

These five major watersheds were divided into a total of 20 subwatershed planning areas. Because the magnitude of work involved to perform watershed planning for all of these areas within a two-year period is beyond the staff and financial resources available, areas were ranked and prioritized to focus on designated Phase II areas, highly developed and rapidly developing areas, and water quality concerns.

The current revised Watershed Management Plan (WMP) schedule, as agreed upon with the MDEQ is:

- November 1, 2006: Upper Flint WMP
- January 1, 2007: Shiawassee WMP
- March 1, 2007: Lower and Middle Flint WMPs

Revised SWPPIs for each watershed will be due six months after the due dates for each WMP.

Genesee County Storm Water Advisory Committee

The Genesee County Storm Water Advisory Committee is made up of all of the Communities in Genesee County, except the City of Flint, which is a Phase I community, and the agencies and departments of Genesee County. All of the Communities in Genesee County have elected to participate, although not all are Phase II Communities. Genesee County Storm Water Advisory Committee is guiding the implementation of the entire Phase II Program and has three main sub-committees set up to address specific issues. Each Community serves on at least one sub-committee. A brief explanation of the duties of these sub-committees follows. Figure 1 shows the committee relationships and decision making process.

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.

Construction Standards and Practices Sub-Committee

The Construction Standards and Practices Sub-Committee examines new construction standards and post construction practices for Genesee County. They will work to update existing ordinances to make sure that consistency and EPA elements are met. This sub-committee also oversees the IDEP program.

Monitoring and Mapping Sub-Committee

The Monitoring and Mapping Sub-Committee guides organization and implementation of the IDEP program, mapping guidelines, field-sampling protocols, and how the watershed is monitored for progress.

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. The value of such insights should not be underestimated and are invaluable to a plan development process led at the local level.

Work conducted by these Sub-Committees is used in development of the Middle Flint, Lower Flint, and Shiawassee River WMPs.

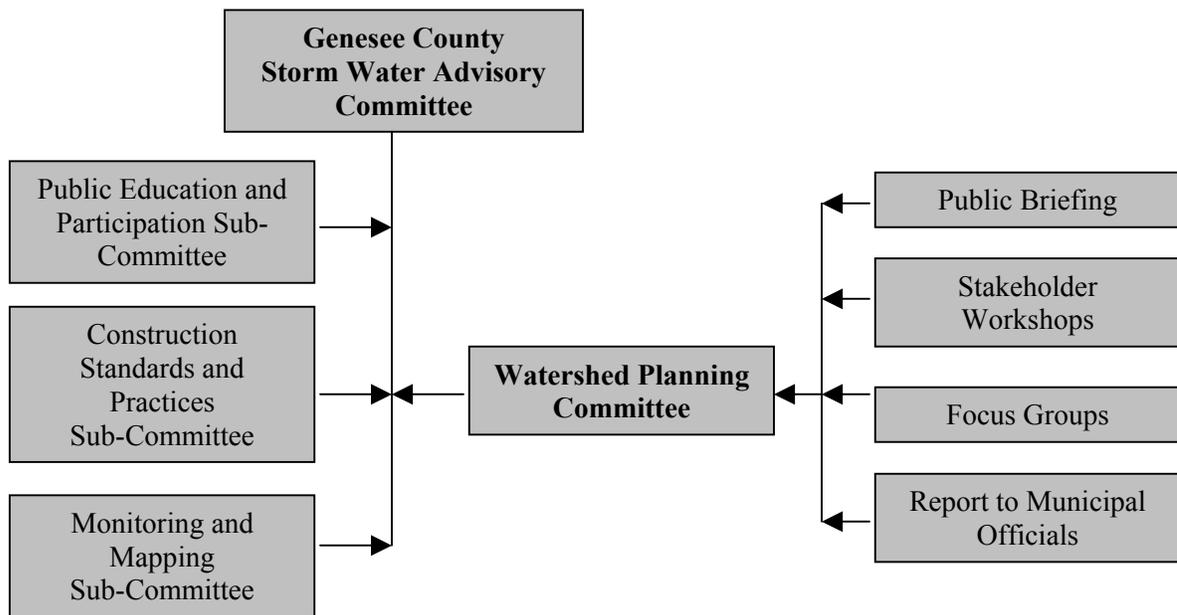


Figure 1 Decision Making Flowchart

Genesee County Watershed Planning Communities (Contract Communities)

There are 32 Genesee County Watershed Planning Communities (Contract Communities), including:

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

ILLICIT DISCHARGE ELIMINATION PLAN (IDEP)

The purpose of the Illicit Discharge Elimination Plan (IDEP) is a program that is designed to prohibit and effectively eliminate illicit discharges and connections, including the discharge of sanitary wastewater, to the Genesee County's separate storm water drainage system, which 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 to comply with their NPDES permit.

During field investigations, crews walk along the waters of the state and within the County drains to identify all MS4s and private drains. Each outfall is 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 to ensure no illicit connections are present.

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

LOWER FLINT RIVER WATERSHED

IDEP work for the Lower Flint River Watershed is scheduled to start this fall.

MIDDLE FLINT RIVER WATERSHED

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

- 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)

The status of IDEP work for each of these project areas is described as follows.

Gibson and Sherwood Drains

The Genesee County Drain Commissioner (GCDC) was awarded a CMI grant to conduct investigations for the Gibson Drain. The Quality Assurance Project Plan (QAPP) was submitted to the 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 the MDEQ in August 2006.

Field crews began walking the main branch of the Gibson Drain as well as its tributary branches, including the Sherwood Drain, in April 2005. A total of 12 miles of drain were walked.

The original storm water permit included 91 separate storm sewer system (MS4) outfalls (also known as point source discharges, PSDs) along the Gibson Drain. During IDEP investigations, 6

of the original 91 PSDs were found not to be storm water outfalls. In many cases, a drainage system did not exist or the pipe was not a MS4. Several additional, non-PSD, storm water outfalls and residential drains (i.e. sump pump and footing drains) were located during field investigations.

The original storm water permit did not include any PSDs along the Sherwood Drain. During IDEP field work, 53 new PSDs were identified.

During investigations, if dry weather flow was present, crews sampled the flow to ensure no pollutants were entering the watercourse from these outfalls. 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. Three additional outfalls with potential illicit connections were identified and are still under investigation as to the source of pollution. Each violation is described as follows:

Confirmed Illicit Connections

1. PSD 6705011 - An illicit connection was found on an outfall discharging to the Gibson Drain from Mill Wheel Street near the intersection of Chapin Street. Turbid dry weather flow was found discharging from a Stone and Marble cutting facility at the corner of Chapin and Saginaw Streets. The County was notified on September 23, 2005 of this issue and has referred the problem to the MDEQ. The 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 the MDEQ notified Genesee Cut Stone Co. they are required to either obtain an NPDES storm water permit or document how the discharge will be eliminated. Additional follow up work will be performed as needed.
2. PSD 6705511 - Dry weather flow was observed at PSD 6705511 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 *E. coli*; suggesting a possible illicit connection. The County was notified of this issue and it was recommended to clean and televise the storm drainage system on Fern Street.
3. PSD 6706257 - A 4-inch plastic pipe was found discharging wastewater directly into the Gibson Drain behind the residence at 1362 Maple Road in May 2005. The County was notified of this issue and is currently working with the municipality and landowner to correct this problem. Additional follow up work will be performed to remove the connection as needed.
4. PSD 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 7731005. Genesee County was notified of this issue on October 18, 2005 and is working with the local municipality (City of Burton) to correct this illicit discharge.

Potential Illicit Connections

1. PSD 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.

2. PSD 6705509 - A potential sanitary connection was found to exist along Spinning Wheel Road between Mill Wheel and Spinning Wheel Court. The County was notified of this issue and it was recommended to clean and televise the storm drainage system along Spinning Wheel Road.
3. PSD 7625751 - A potential illicit connection was found on Lynton Avenue at the dead end, east of Southgate Street. 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 Street. The County was notified on November 30, 2005 of this possible sanitary connection and is arranging dye test confirmation activities. Genesee County will work with the landowner(s) to remove any connection found.

The IDEP grant requires the County to have a system to track reported illicit discharges. Currently, the GCDC Office logs incoming drainage complaints in a *Microsoft Access* database. In addition, the County is in the process of adding an illicit discharge reporting page on their website. The page will give general information about illicit discharges and phone numbers to call when someone finds an illicit discharge.

Thread Creek and Tributaries

The GCDC acquired funds from local communities to conduct IDEP investigations in the Middle Flint River Watershed. Field crews walked the Thread Creek as well as its tributary branches in the spring and summer of 2006. A total of 36 miles of drain were walked. The County outfall maps indicated 43 known outfalls (PSDs). To date, 56 new PSDs have been identified. During investigations, if dry weather flow was present, crews sampled the flow to ensure no pollutants were entering the watercourse from these pipes. No illicit connections were found during this reporting period.

Swartz Creek and Tributaries

The GCDC acquired funds from local communities to conduct IDEP investigations in the Middle Flint River Watershed. Field crews walked the Swartz Creek as well as its tributary branches in the spring and summer of 2006. 196 new PSDs have been identified. During investigations, if dry weather flow was present, crews sampled the flow to ensure no pollutants were entering the watercourse from these pipes. A list of identified illicit connections is being generated and will be forwarded to the MDEQ when it is ready.

UPPER FLINT RIVER WATERSHED

The GCDC acquired funds from local communities to conduct IDEP investigations on the Upper Flint River Watershed. Field crews walked Mott Lake and Butternut Creek as well as all tributary branches in the spring and summer of 2006. A total of 81 miles of drain were walked. County outfall maps indicated 60 known outfalls (PSDs) within the Upper Flint River watershed. To date, 93 new PSDs have been identified.

During investigations, if dry weather flow was present, crews sampled the flow to ensure no pollutants were entering the watercourse from these pipes. Five illicit connections have been identified. Dry weather flow and visible sanitary debris were observed discharging from the following outfalls into the County drains.

1. Kurtz 1507 (8703501) - 3-inch plastic pipe extending southwest, originating from the property at 8296 Center Street discharging into Kurtz Drain; samples identified over 1,200,000 colonies of *E. coli* per 100 milliliters.
2. Butter 1001 (973573) – 1-inch plastic pipe extending 150 yards east, originating from the property at 5467 Frances discharging into the Butternut Creek; samples identified over 2,500,000 colonies of *E. coli* per 100 milliliters.
3. NN4 1101 (8714752) – 3-inch plastic pipe extending 150 feet north, originating from the property at 2369 Coldwater discharging into No Name Creek 4; samples identified over 60,000 colonies of *E. coli* per 100 milliliters.
4. NN4 1103 (8717751) – 3-inch plastic pipe extending 250 feet north, originating from the property adjacent (200 feet west) to the residence at 2369 Coldwater discharging into No Name Creek 4; samples identified over 150,000 colonies of *E. coli* per 100 milliliters.
5. Drud 1001 (9735251) – 4-inch plastic pipe extending 30 feet east, originating from the property at 5402 or 5412 Dodge Road discharging into Drudge Drain; samples identified over 3,500,000 colonies of *E. coli* per 100 milliliters.

The County will dye test the suspected residences listed above to confirm and coordinate disconnection. Once an illicit connection is confirmed, the County will notify the MDEQ in accordance with its NPDES storm water permit and begin action to remove the connection.

SHIAWASSEE RIVER WATERSHED

IDEP work for the Shiawassee River Watershed is scheduled to start this fall or early next spring.

CASS RIVER WATERSHED

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

Due to the large amount of IDEP work that has been going on since spring of this year, the effort to record information and conduct quality control and assurance procedures is ongoing at this time. It is anticipated that a that a map and list of PSDs will be available in early 2007.

PUBLIC EDUCATION PLAN (PEP)

A summary of Public Education Plan (PEP) permit requirements, PEP Work Group Meetings, and activities is provided.

PERMIT REQUIREMENTS

The Public Education Plan (PEP) follows the format recommended by the MDEQ and includes the seven major sections required in the permit, 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. Education of the 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. Education of the public regarding acceptable application and disposal of pesticides and fertilizers.
4. Education of the public concerning preferred cleaning materials and procedures for residential car washing.
5. Education of the public concerning the ultimate discharge point and potential impacts from the separate storm water drainage system serving their place of residence.
6. Education of the public about their responsibility and stewardship in their watershed.
7. Education of the public concerning management of riparian lands to protect water quality.

PEP SUB-COMMITTEE MEETINGS

The PEP Work Group held meetings at the GCDC office on the following dates:

- January 23, 2006
- February 27, 2006
- March 20, 2006
- May 15, 2006
- June 19, 2006
- July 17, 2006
- September 18, 2006
- October 16, 2006

PEP ACTIVITIES

The PEP committee has contracted with the University of Michigan (U of M) Flint Center for Applied Environmental Research (CAER). CAER was responsible for coordinating the development and implementation of several elements of the PEP, including:

- Development of "Our Water" campaign web-page
- Conducting a Public Service Campaign
- Developing Speakers Materials and Presentations
- Marketing Resources
- PEP Evaluation Plan

The GCDC is working with Project Green educational programs. In addition, the GCDC is working with the Genesee Conservation District (CD) to provide storm water education services to school-aged children and is currently reviewing a draft contract for services.

Additional PEP activities planned for 2006/ 2007 include installing watershed signs, stenciling catch basins, and distributing local watershed maps.

Website

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 PEP workgroup to develop, host and update the www.cleargeneseeewater.org webpage. During the report period, CAER worked to acquire the URL requested by the committee, develop appropriate content, and coordinate design and hosting the webpage. The “Our Water” webpage was posted in July of 2006. Monitoring of web traffic is provided by the hosting service and will be summarized in the next reporting period. Since August there have been 43 visits to the website.

Public Service Campaign

A public service campaign was identified by the PEP committee as a necessary component of the “Our Water” campaign. This activity will produce brand identification of the “Our Water” campaign in the general public through the use of TV, print and outdoor media. Little progress has been made in conducting a public service campaign for the “Our Water” campaign. The major components of this campaign were postponed until the successful completion of the other education activities (Webpage, Speaker Materials, Marketing Resources, etc.) The implementation of the Public Service Campaign will begin in the next report period.

Speaker Materials and Presentations

CAER has worked with the PEP Workgroup to develop an educational *Microsoft PowerPoint* presentation that contains the appropriate branding for the “Our Water” campaign. This 60 slide *PowerPoint* presentation contains several modules that address various target audiences and topic areas. Audiences are generally separated into government and non-government. CAER has worked with the Flint River Watershed Coalition (FRWC) to deliver these presentations to various organizations throughout the watershed. FRWC has submitted a proposed contract to the PEP workgroup committee to deliver presentations for a low cost.

Marketing Resources

CAER worked with the PEP committee to develop a number of materials to be used throughout the education campaign, including namely a brochure featuring the seven elements of storm water education, an information booth, newsletter articles and a time of sale packet.

Education Brochure

An education brochure was developed using materials borrowed from Southeast Michigan Council of Governors (SEMCOG). This brochure was specifically developed to provide information about the seven mandated elements of storm water education.

Information booth

CAER worked with the PEP committee to develop a display booth and education activities for public events. During the report period the booth was used at the Genesee County Fair to distribute education information. Details of the fair are provided in the PPP Section of this report.

Newsletter Articles

Several of the communities in Genesee County have requested that the PEP committee develop and distribute prepared newsletter articles to be used in community newsletters and non-profit organization newsletters. CAER worked with SEMCOG to adapt several newsletter articles to the Flint River Watershed. These articles will be distributed to communities and non-profit organizations in November 2006. Newsletters aimed at riparian landowners to help educate them regarding their special circumstances will be mailed bi-annually, once in the spring and once in the fall.

Time of Sale Packets

CAER is currently working with the PEP committee to develop an education tool that will be provided to individuals at the time of or shortly after the purchase of a home. The education piece will provide new homeowners with information important to protecting water quality in and around the home. This includes information about:

- Regulations on fertilizer applications
- Dates and contact information for household hazardous waste recycling days
- Septic system maintenance tips
- Membership application to Flint River Watershed Coalition
- Other as defined by committee

Project Green education Program

Global Rivers Environmental Education Network (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 fourteen years in Genesee County under the direction of the Genesee County Intermediate School District (GISD). In late 2003 the Flint River Watershed Coalition 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 has agreed to take full administrative control over the next two years. In 2004 the Genesee County Drain Office on behalf of the Phase II program partnered with the FRWC with funding and mentors. In spring 2006, 16 classes had a combination of class time and field experience on the local rivers. The students learned about water quality and testing procedures and went to various sites on the Flint River and tributaries to take water samples for the following indicators.

- Dissolved Oxygen
- Nitrate
- PH
- Temperature
- Total Solids
- Turbidity

The Schools were encouraged to come to and participate in a summit, where the students were able to present their results.

The long term goal is to involve all the school districts and provide the science teachers the opportunity to participate.

Conservation District Education Program

The GCDC and the Genesee Conservation District (CD) are working on a contract for the CD to provide some of the school-aged education required for the NPDES Phase II Permit. The CD currently has a program already in place, which is administered by a retired school teacher in school classrooms. The three hour program meets Michigan Educational Assessment Program (MEAP) standards, and with very little tweaking, would fulfill the NPDES Phase II requirements and would have measurable results. Last year alone, the program reached 5,500 school-aged children in Genesee County. The instructor also owns one acre of restored wetland in Gaines Township and has a classroom set up in his garage. He has invited groups (classes, scout troops, etc.) for tours, which stress the importance of wetlands.

The PEP committee is also considering inviting all elected officials for a short course in storm water / wetlands / watersheds very two years so that all new elected officials receive the same education. The CD gives legislative tours to look at implementation of BMPs.

Watershed Signs

Genesee County is in the planning stages to put up 24-inch by 30-inch watershed signs at the break between the Shiawassee River and the Flint River Watersheds. The County is also planning to install stream / river identification signs to increase public awareness of the various rivers and their paths.

Catch Basin Stencils

The GCDC is planning to stencil catch basins while doing normal maintenance and repairs. The stencils will likely say "No Dumping - Flows to River". CAER will provide doorknob hangers that explain the stenciling.

Local Watershed Maps

24-inch by 36-inch local watershed maps will be offered to schools through Genesee Intermediate School District (GISD) to teachers who want them.

Evaluation

The development of an evaluation plan for the ongoing PEP is currently underway. The evaluation plan will focus on monitoring both 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 PEP 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.

PUBLIC PARTICIPATION PLAN (PPP)

In 2005, Genesee County aligned the Lower Flint, Upper Flint, and Shiawassee WMPs so as to jointly conduct meetings and planning efforts. Activities for the combined planning committee and for the Middle Flint Watershed are described below. The PPPs outline how the watershed committees are to solicit public input and participation.

COMBINED UPPER AND LOWER FLINT AND SHIAWASSEE RIVER WATERSHEDS PLANNING COMMITTEE

The Combined Watershed Planning Committee consists of representatives from each community in each of the watersheds, the GCDC as well as a representative from the Flint River Watershed Coalition (FRWC). The committee meets monthly on the last Wednesday of the month. Two meetings are conducted, one in the morning at the GCDC Office and one in late afternoon at the Fenton Town Hall. The meetings have identical agendas.

The Combined Watershed Planning Committee participates in:

- Public Meetings
- Stakeholder Workshops
- Watershed Work Group Meetings
- Public Events
- Report to Municipal Officials

Watershed Work Group Meetings

Four Watershed Work Group meetings were held during this reporting period:

- January 2006 (2 meetings held)
- May 2006

Stakeholder Workshops

Stakeholders are the people, organizations, and agencies that are critical to the planning effort in order to gain relevant input and buy-in to the watershed process. This group is generally comprised of portions of the community that will want to have a say in how the watershed management plan is developed. Examples include manufacturing companies, large businesses, homeowners associations, environmental groups, developers, construction contractors, retailers, and agricultural representatives (if applicable). A specific list of stakeholders is included in the PPP.

Workshops were organized to gather information on the goals and desires for management of the watershed, provide input on priorities, and help refine the targeted action plan. In addition, the workshops foster networking and promote partnerships to assist in future implementation of watershed goals and to provide incentive to participate in future activities.

Community representatives and key stakeholders were targeted with special invitations to solicit their attendance to the workshops. Letter invitations were followed up with a phone call to those attendees who had not responded to the invitation. The call explained the meeting purpose and provided a personal contact for the stakeholders. A follow-up e-mail or postcard closer to the

workshop dates reminded people of the workshop prior to the workshop date. The workshops were brief and productive.

Four workshops were held during watershed management planning. The first workshop solicited ideas on problems that exist in the watershed and gathered information on goals and desires for watershed planning. The watershed findings and data were presented at the second workshop and participants were asked to comment and assist in prioritizing the problems to be addressed. The third workshop focused on refining the targeted action plan to address the watershed problems identified. A fourth and final workshop was held on February 1st to present the final watershed management plan and explain how and why the participants need to stay involved during the implementation phase of the watershed management plan.

The four workshops were held on the following dates:

- January 31, 2005: Workshop #1 Lower Flint
- May 23, 2005: Workshop #1 Shiawassee
- May 23, 2005: Workshop #2 Lower Flint
- August 29, 2005: Workshop #2 Combined
- **November 30, 2005: Workshop # 3 Combined**
- **February 1, 2005 Workshop #4 Combined**

Attendance was very low for the first three workshops. For example, at the May 23rd, Shiawassee meeting there was only 8 people. The move to combine the planning process saw an increase in participation in the August, November and February meetings to over thirty people at each.

Public Meetings

Four public meetings were held during this reporting period:

- November 30, 2005 (2 meetings held)
- February 1, 2006 (2 meetings held)

Public Events

The goal of public events is to inform the public of the watershed management planning effort, invite them to participate in stakeholder meetings, show them how to access the website and provide comments, and gather information of what the perceived problems and concerns are in the watershed.

All watershed citizens are invited to these events through standard public notice procedures. Public Media is used to inform the target audience of upcoming activities. Each meeting held has at least three announcement methods e.g. postcard mailing, newspaper ads, radio announcements, public access channel announcements, distributed at least two weeks prior to the scheduled event.

Public events tools include a power point presentation, brochure on the watershed, and an evaluation survey. The survey information will be used to modify and adapt future meeting strategies and address watershed concerns.

To date, the PPP Committee has participated in one large public event, the Genesee County Fair. Additional upcoming smaller local events are being planned for future public participation.

Genesee County Fair

The Genesee County Fair was held in August of 2006 and lasted for 7 days. The PEP Committee set up a booth at the fair. 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 fair booth was staffed by municipal officials and staff from governments participating in the PEP program. CAER worked with 14 shifts of 2-3 volunteers from local government to conduct the watershed education exercise at the fair. Each volunteer was trained on how to conduct the education activity. This activity functioned to educate the elected official and community members about storm water mitigation.



At the fair, staff interacted with 1,325 individuals. Each of these individuals received a copy of the information brochure, and a prize for participating in the event. Giveaways included rain gages, tote bags, and water bottles.

Upcoming Events

The PEP Committee is considering participating in one or two local public events a year. An inventory of potential events throughout the County, such as Swartz Creek's Creekfest and Flushing's Fall Festival, will be conducted to decide which ones would be most suitable.

Report to Municipal Officials

Local appointed and elected officials are critical players in adopting the watershed management plan 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 watershed management plan. 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 in Genesee County Project are provided with newsletters, developed by GCDC's Office, updating the status of the storm water and watershed planning efforts.

Stakeholder meeting fact sheets are valuable resources to this process to show the elected officials what their constituents view as critical water resource issues in the watershed. The fact sheets contain a schedule of meetings to promote participation and input during the planning process.

Municipal Officials have been invited to participate in all events to date. Formal presentations to municipal bodies will occur upon completion of Phase I of the PEP, when marketing materials and approaches have been developed.

MIDDLE FLINT WATERSHED (CAER AND GCDC)

Genesee County currently has two 319-grant projects underway; the Swartz Creek Watershed Project and the Kearsley Creek Watershed Project. The U of M - Flint CAER with the Flint River Watershed Coalition (FRWC) and the GCDC's Office have developed the WMPs to control nonpoint sources of pollution. Projects may include implementing structural 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. A draft of the WMP was submitted to the DEQ 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 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.

Table 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)

In order to protect water quality from the pollutants identified above, specific source areas and causes of the pollutants were identified. Table 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 2 Pollutant, Source and Cause of
Nonpoint Source Pollutants in Swartz Creek Watershed**

Pollutant	Source	Cause
Hydrology (K)	1. Urban Storm water (K) 2. Channel Alterations (K) 3. Loss of Wetlands (K) 4. In stream structure (K)	<ul style="list-style-type: none"> • Directly Connected Impervious Surfaces (K) • Insufficient storm water management practices (K) • Removal of flood plain (localized) (K) • Loss of wetlands for agricultural use (K) • Western Branch dam (K)
Sediment (K)	Stream banks (K) Road Stream Crossings (K) Developed and developing areas (K) Roads, parking lots (K) Agricultural Lands (K)	<ul style="list-style-type: none"> • Erratic flows / High Runoff (K) • Insufficient Riparian Buffers (K) • Erosive road or shoulder surfaces (K) • Undersized crossing (K) • Insufficient Riparian Buffers (K) • Inadequate soil erosion practices (S) • Inadequate storm water mgt in commercial and industrial parking lots (K) • Insufficient riparian vegetation buffers (K)
Toxins (K)	Parking lots (K) Roadways (K)	<ul style="list-style-type: none"> • Inadequate storm water mgt techniques (K) • Road drains directly to stream (K)
Nutrients (S)	Residential Lawns (K) Residential Septic Systems (S) Agricultural application (S)	<ul style="list-style-type: none"> • Over application of Fertilizer (S) • Failing septic systems (S) • Insufficient Riparian management
Bacteria (S)	Human Waste (S) Animal Waste	<ul style="list-style-type: none"> • Illicit connections to storm sewers (S) • Direct Connection in urban areas (S)
Thermal (S)	Roads & Parking Lots (K) Direct solar radiation (K)	<ul style="list-style-type: none"> • Insufficient storm water mgt. practices (K) • Removal of overhanging vegetation (K)

Public Education

A PEP 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. Portions of the PEP will begin to be implemented in the fall of 2006. A large portion of the early phases of the PEP implementation will focus on assisting Phase II communities take advantage of recommendations set forth in the plan.

Kearsley Creek Watershed Project

The Kearsley Creek Water Quality Improvement Plan (319) was revised per MDEQ comments and was resubmitted in October 2006.

Based on a baseline study and physical inventory, streambank 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 capacity 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.

NEW POINT SOURCE DISCHARGES OF STORM WATER

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.

New Point Source Discharges (PSDs) identified within each of the following four major watersheds are described:

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

The list of all new PSDs within Genesee County is currently being compiled. The information reported below is not necessarily complete. As previously mentioned, due to the large amount of IDEP work currently being conducted the information and quality control and assurance procedures are ongoing. It is anticipated that once these procedures are completed then a comprehensive map and list will be released.

LOWER FLINT RIVER WATERSHED

IDEP work for the Lower Flint River Watershed is scheduled to start this fall. No new PSDs have been identified yet.

MIDDLE FLINT RIVER WATERSHED

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

- Gibson and Sherwood Drains
- Thread Creek and tributaries
- Swartz Creek and tributaries

New PSDs identified within each watershed are described below.

Gibson Drain

The original storm water permit included 91 outfalls (PSDs) along the Gibson Drain. During IDEP investigations, 6 of the original 91 outfalls were found not to be storm water outfalls. In many cases, a drainage system did not exist or the pipe was not a municipal separate storm sewer system (MS4). Several additional, non-PSD, storm water outfalls and residential drains (i.e. sump pump and footing drains) were located during field investigations. The list of new PSDs along the Gibson drain is currently being reviewed and will be included in next years annual report.

Sherwood Drain

The original storm water permit did not include any outfalls (PSDs) along the Sherwood Drain. During IDEP field work, 53 new PSDs were identified. Table 3 lists the field assigned structure names, locations, and receiving waterbodies. County IDs will be assigned and included with next year's annual report.

Table 3 Sherwood Drain - New Point Source Discharges (53 Total)

Field Assigned Structure Name	Latitude	Longitude	Receiving Water Body
Sher 1001	42.96073	-83.68662	Sherwood Drain
Sher 1009	42.96123	-83.69001	Sherwood Drain
Sher 1023	Not available	Not available	Sherwood Drain
Sher 1027	Not available	Not available	Sherwood Drain
Sher 1031	Not available	Not available	Sherwood Drain
Sher 1101	42.95987	-83.69201	Sherwood Drain
Sher 1103	42.95942	-83.69254	Sherwood Drain
Sher 1105	42.95939	-83.69275	Sherwood Drain
Sher 1107	42.95938	-83.69416	Sherwood Drain
Sher 1109	42.95939	-83.69421	Sherwood Drain
Sher 1111	42.95970	-83.69530	Sherwood Drain
Sher 1115	42.95946	-83.69820	Sherwood Drain
Sher 1123	42.95867	-83.70314	Sherwood Drain
Sher 1127	42.95592	-83.70476	Sherwood Drain
Sher 1129	42.95494	-83.70473	Sherwood Drain
Sher 1131	42.95477	-83.70431	Sherwood Drain
Sher 1133	42.95386	-83.70364	Sherwood Drain
Sher 1137	42.95417	-83.70361	Sherwood Drain
Sher 1139	42.95295	-83.70368	Sherwood Drain
Sher 1141	42.95215	-83.70433	Sherwood Drain
Sher 1301	42.95074	-83.70317	Sherwood Drain
Sher 1501	Not available	Not available	Sherwood Drain
Sher 1503	42.94639	-83.69806	Sherwood Drain
Sher 1505	42.94611	-83.69667	Sherwood Drain
Sher 1507	42.94611	-83.69500	Sherwood Drain
Sher 1511	42.94528	-83.69389	Sherwood Drain
Sher 1513	Not available	Not available	Sherwood Drain
Sher 1515	42.94500	-83.69389	Sherwood Drain
Sher 1601	42.94337	-83.69179	Sherwood Drain
Sher 1603	42.94312	-83.69176	Sherwood Drain
Sher 1605	42.94302	-83.69175	Sherwood Drain
Sher 1609	42.94263	-83.69174	Sherwood Drain
Sher 1611	42.94250	-83.69167	Sherwood Drain
Sher 1613	42.94222	83.69167	Sherwood Drain
Sher 1615	42.94222	-83.69167	Sherwood Drain
Sher 1617	42.94194	-83.69167	Sherwood Drain
Sher 1621	42.94167	-83.69139	Sherwood Drain
Sher 1623	42.94167	-83.69139	Sherwood Drain
Sher 1781	42.93989	-83.68839	Sherwood Drain
Sher 1785	42.93969	-83.68851	Sherwood Drain
Sher 1799	Not available	Not available	Sherwood Drain
Sher 1839	42.93548	-83.68843	Sherwood Drain
Sher 1849	42.93467	-83.68704	Sherwood Drain
Sher 1851	42.93436	-83.68648	Sherwood Drain

Table 3 Sherwood Drain - New Point Source Discharges (53 Total)

Field Assigned Structure Name	Latitude	Longitude	Receiving Water Body
Sher 1855	42.93421	-83.68586	Sherwood Drain
Sher 1860	42.93412	-83.68467	Sherwood Drain
Sher 1889	Not available	Not available	Sherwood Drain
Sher 1891	42.93106	-83.68554	Sherwood Drain
Sher 1893	42.93096	-83.68542	Sherwood Drain
Sher 1899	42.92945	-83.68182	Sherwood Drain
Sher 1999	42.92040	-83.67513	Sherwood Drain
Sher south 110	42.94302	-83.70060	Sherwood Drain
Sher south 130	42.94300	-83.70067	Sherwood Drain

Thread Creek and Tributaries

The County outfall maps indicated 43 known outfalls (PSDs) along the Thread Creek and its tributaries. To date, 56 new PSDs have been identified. Table 4 lists the field assigned structure names, the County assigned outfall IDs, GPS coordinates, and receiving waterbodies. This list will be continually updated as IDEP investigations continue.

Table 4 Thread Creek and Tributaries - New Point Source Discharges (56 Total)

Field Assigned Structure Name	County Assigned ID	Latitude	Longitude	Receiving Water Body
6702001	6702001	42.953333	-83.613056	Meyers Drain
6702002	6702002	42.953831	-83.613319	Meyers Drain
6702503	6702503	42.953333	-83.612222	Meyers Drain
6702506	6702506	42.9525	-83.611667	Meyers Drain
6702508	6702508	42.952214	-83.611086	Meyers Drain
6702511	6702511	42.951711	-83.61041	Meyers Drain
6702524	6702524	42.949842	-83.609852	Meyers Drain
6702526	6702526	42.949245	-83.60968	Meyers Drain
6702530	6702530	42.949191	-83.60746	Meyers Drain
6702533	6702533	42.949662	-83.606022	Meyers Drain
6702535	6702535	42.949622	-83.606	Meyers Drain
6702541	6702541	42.9495	-83.6035	Meyers Drain
6702545	6702545	42.9493	-83.5987	Meyers Drain
6702546	6702546	42.9493	-83.5982	Meyers Drain
6714005	6714005	42.9275	-83.6031	Bush Drain
6714252	6714252	42.9266	-83.5994	Bush Drain
6714253	6714253	42.9259	-83.5986	Bush Drain
6714254	6714254	42.925	-83.5979	Bush Drain
6714255	6714255	42.9241	-83.5968	Bush Drain
6721251	6721251	42.912222	-83.641667	Thread Creek
6721252	6721252	42.911389	-83.641111	Layman Drain
6723001	6723001	42.916544	-83.60158	Bush Drain
6831255	6831255	42.885278	-83.553889	Thread Creek
6832003	6832003	42.8875	-83.543889	Thread Creek

Table 4 Thread Creek and Tributaries - New Point Source Discharges (56 Total)

Field Assigned Structure Name	County Assigned ID	Latitude	Longitude	Receiving Water Body
7733752	7733752	42.965278	-83.634167	Thread Creek
7733753	7733753	42.965278	-83.633611	Thread Creek
Cros 1001	6715501	42.922778	-83.624722	Crosby Branch
Days1001	6712252	42.939406	-83.577817	Thread Creek
Laym 101	6721751	42.885278	-83.553889	Thread Creek
Laym 2001	6716751	42.916667	-83.636667	Layman Drain
Laym 201	6721755	42.906667	-83.633333	Layman Drain
Laym 202	6721753	42.906667	-83.6333	Layman Drain
Laym 203	6721756	42.906667	-83.633333	Layman Drain
Laym 204	6721754	42.906667	-83.63333	Layman Drain
Thread 1000B	6710512	42.93139	-83.6263	Thread Creek
Thread 1009	7728255	42.987772	-83.6384	Thread Creek
Thread 1011	7728254	42.988611	-83.638056	Thread Creek
Thread 1083	6715012	42.9294	-83.62648	Thread Creek
Thread 1085	6715013	42.92943	-83.62639	Thread Creek
Thread 1089	6715014	42.929061	-83.626283	Thread Creek
Thread 1503	6710513	42.931261	-83.626189	Thread Creek
Thread 1507	6715011	42.929953	-83.626475	Thread Creek
Thread 1605	6709253	42.94174	-83.63768	Thread Creek
Thread 1607	6709254	42.94393	-83.63809	Thread Creek
Thread 1609	6709255	42.94301	-83.64166	Thread Creek
Thread 301	6832001	42.883211	-83.542258	Thread Creek
ThreadHowe 020	6703753	42.952344	-83.619464	Meyers Drain
ThreadHowe 025	6703251	42.953053	-83.618014	Meyers Drain
ThreadHowe 030	6703252	42.953586	-83.616558	Meyers Drain
ThreadHowe 035	6703253	42.953708	-83.613472	Meyers Drain
ThreadHowe 040	6703254	42.953589	-83.613556	Meyers Drain
ThreadHowe 045	6703255	42.953619	-83.613747	Meyers Drain
ThreadManor 015	7734009	42.972681	-83.628839	Tributary of Thread Creek
ThreadManor 020	7734008	42.972947	-83.628658	Tributary of Thread Creek
ThreadManor 050	7734002	42.974778	-83.63175	Tributary of Thread Creek
ThreadManor 055	7734001	42.974783	-83.631967	Tributary of Thread Creek

Swartz Creek and Tributaries

To date, 196 new PSDs have been identified along the Thread Creek and its tributaries. Table 5 lists the County assigned outfall IDs, GPS coordinates, and receiving waterbodies. This list will be continually updated as IDEP investigations continue.

Table 5 Swartz Creek And Tributaries – New Point Source Discharges (196 Total)

County Assigned ID	Latitude	Longitude	Receiving Water Body
5602495	42.870833	-83.711667	Dawe Drain
5603001	42.868889	-83.749167	Indian Creek Extension
5603002	42.868889	-83.749167	Indian Creek Extension
5603005	42.869167	-83.748056	Indian Creek Extension
6501102	42.956667	-83.821667	Swartz Creek West Branch
6501104	42.955556	-83.828611	Swartz Creek West Branch
6501105	42.954722	-83.829444	Swartz Creek West Branch
6501106	42.954167	-83.831111	Swartz Creek West Branch
6501107	42.954167	-83.831111	Swartz Creek West Branch
6501301	42.956667	-83.821111	Swartz Creek West Branch
6501302	42.956667	-83.821389	Swartz Creek West Branch
6502150	42.950833	-83.845	Swartz Creek West Branch
6502351	42.954167	-83.831944	Swartz Creek West Branch
6502354	42.953889	-83.833333	Swartz Creek West Branch
6502355	42.953889	-83.833889	Swartz Creek West Branch
6502356	42.953611	-83.834167	Swartz Creek West Branch
6502358	42.953611	-83.834722	Swartz Creek West Branch
6502452	42.9525	-83.839167	Swartz Creek West Branch
6502453	42.952778	-83.840556	Swartz Creek West Branch
6502502	42.941944	-83.848611	Alger Drain
6503601	42.941944	-83.870833	Crapo Drain
6503602	42.941667	-83.871944	Crapo Drain
6503603	42.941389	-83.872778	Crapo Drain
6503752	42.942222	-83.851111	Alger Drain
6510301	42.941667	-83.858056	Crapo Drain
6510302	42.941667	-83.870833	Crapo Drain
6511754	42.929444	-83.838056	Alger Drain
6511755	42.92845	-83.837	Alger Drain
6512501	42.932222	-83.830833	Lum Drain
6512502	42.932222	-83.830833	Lum Drain
6512504	42.932222	-83.83	Lum Drain
6512752	42.931389	-83.818333	Lum Drain
6512765	42.930833	-83.810556	Lum Drain
6512766	42.930833	-83.810278	Lum Drain
6512767	42.928611	-83.818889	Lum Drain
6513257	42.923333	-83.810278	Lum Drain Extension
6513601	42.92	-83.828611	Alger Drain
6524251	42.909722	-83.819167	Alger Drain
6524252	42.909722	-83.818889	Alger Drain
6526003	42.898056	-83.847222	Slocum Drain
6603501	42.943889	-83.744722	Swartz Creek
6604255	42.959444	-83.764444	Hewitt Drain
6604257	42.958889	-83.764167	Hewitt Drain
6604259	42.958056	-83.763889	Hewitt Drain

Table 5 Swartz Creek And Tributaries – New Point Source Discharges (196 Total)

County Assigned ID	Latitude	Longitude	Receiving Water Body
6604260	42.958056	-83.764167	Howland Drain
6604510	42.958056	-83.766944	Howland Drain
6604511	42.958056	-83.766944	Howland Drain
6604519	42.953333	-83.770278	Howland Drain
6604520	42.953056	-83.771111	Howland Drain
6604755	42.950556	-83.757778	Hewitt Drain
6604756	42.950556	-83.757778	Hewitt Drain
6604757	42.949722	-83.757778	Hewitt Drain
6604758	42.949167	-83.7575	Hewitt Drain
6604760	42.9475	-83.756389	Hewitt Drain
6604761	42.947222	-83.756389	Hewitt Drain
6604763	42.946667	-83.755833	Hewitt Drain
6604765	42.943611	-83.753889	Hewitt Drain
6604766	42.943889	-83.753611	Hewitt Drain
6605255	42.952778	-83.771667	Howland Drain
6605256	42.953056	-83.771667	Howland Drain
6605257	42.952222	-83.771389	Howland Drain
6605258	42.951667	-83.771389	Howland Drain
6605259	42.951111	-83.771389	Howland Drain
6605260	42.951111	-83.771389	Howland Drain
6605783	42.945833	-83.771667	Howland Drain
6607501	42.930833	-83.810278	Lum Drain
6607502	42.930833	-83.81	Lum Drain
6607504	42.929444	-83.81	Lum Drain
6607506	42.929444	-83.81	Lum Drain
6607517	42.928056	-83.802778	Lum Drain
6608053	42.939444	-83.780556	Bloss Drain
6608066	42.936944	-83.780556	Bloss Drain
6608104	42.936389	-83.784167	Bloss Drain
6608105	42.936111	-83.784722	Bloss Drain
6608298	42.9425	-83.775833	Bloss Drain
6608301	42.941944	-83.776111	Bloss Drain
6608314	42.941389	-83.777778	Bloss Drain
6608317	42.941111	-83.778333	Bloss Drain
6608324	42.940556	-83.779722	Bloss Drain
6608400	42.943056	-83.774167	Howland Drain
6608401	42.943056	-83.773611	Howland Drain
6608402	42.942778	-83.773333	Howland Drain
6608406	42.941944	-83.7725	Howland Drain
6608407	42.941944	-83.772222	Howland Drain
6608408	42.942222	-83.771389	Howland Drain
6608409	42.941944	-83.771111	Howland Drain
6608410	42.942222	-83.771389	Howland Drain
6608653	42.934444	-83.780556	Bloss Drain
6608751	42.933333	-83.770833	Howland Drain

Table 5 Swartz Creek And Tributaries – New Point Source Discharges (196 Total)

County Assigned ID	Latitude	Longitude	Receiving Water Body
6608752	42.933611	-83.770556	Howland Drain
6608753	42.931944	-83.771389	Howland Drain
6608754	42.931944	-83.771389	Howland Drain
6608762	42.928611	-83.770833	Howland Drain
6609150	42.941944	-83.770833	Howland Drain
6609151	42.941944	-83.770833	Howland Drain
6609152	42.941944	-83.770278	Howland Drain
6609153	42.941667	-83.77	Howland Drain
6609155	42.937778	-83.770556	Howland Drain
6609255	42.943056	-83.753333	Hewitt Drain
6609256	42.941389	-83.751944	Hewitt Drain
6609257	42.940556	-83.751944	Hewitt Drain
6609261	42.940833	-83.753889	Hewitt Drain
6609262	42.9375	-83.751667	Hewitt Drain
6609265	42.936111	-83.751667	Hewitt Drain
6609350	42.940833	-83.756111	McCullough Drain
6609352	42.937778	-83.758611	McCullough Drain
6609501	42.933611	-83.770556	Howland Drain
6610505	42.936111	-83.750833	Hewitt Drain
6610508	42.931944	-83.748056	Hewitt Drain
6610751	42.933056	-83.731389	Swartz Creek
6611502	42.93	-83.724722	Swartz Creek
6611503	42.93	-83.725	Swartz Creek
6614254	42.923056	-83.719167	Brewer Drain
6614752	42.918889	-83.715833	Brewer Drain
6614753	42.918889	-83.715833	Brewer Drain
6615007	42.928889	-83.749167	Hewitt Drain
6615251	Not available	Not available	Swartz Creek Extension
6615253	Not available	Not available	Swartz Creek Extension
6616001	42.928611	-83.770278	Howland Drain
6616002	42.928056	-83.770278	Howland Drain
6616013	42.925833	-83.770278	Howland Drain
6616014	42.927222	-83.770278	Howland Drain
6616016	42.925	-83.77	Howland Drain
6616018	42.925	-83.768611	Howland Drain
6616019	42.925	-83.767778	Howland Drain
6616370	42.928611	-83.757778	McCullough Drain
6616517	42.917222	-83.765	Howland Drain
6616529	42.914167	-83.761667	Howland Drain
6616530	42.913889	-83.761389	Howland Drain
6617251	42.928056	-83.771111	Howland Drain
6618254	42.922778	-83.790833	Lum Drain Extension
6620426	42.909722	-83.770556	Linden-Cook
6620951	42.917222	-83.776944	Linden-Cook
6620952	42.916667	-83.777222	Linden-Cook (Howland)

Table 5 Swartz Creek And Tributaries – New Point Source Discharges (196 Total)

County Assigned ID	Latitude	Longitude	Receiving Water Body
6620953	42.914722	-83.777222	Linden-Cook
6620954	42.914307	-83.781444	Linden-Cook
6621256	42.9125	-83.757778	Howland Drain
6621260	42.912222	-83.756667	Howland Drain
6621375	42.909167	-83.769444	Linden-Cook
6621376	42.909167	-83.768333	Linden-Cook
6621377	42.906667	-83.768889	Linden-Cook
6623252	42.911389	-83.715556	Swartz Creek
6623253	42.911111	-83.715278	Swartz Creek
6628997	42.885278	-83.758333	Indian Creek
6628998	42.884722	-83.758333	Indian Creek
6628999	42.884722	-83.758333	Indian Creek
7536801	42.960556	-83.813056	Swartz Creek West Branch
7536802	42.960278	-83.813611	Swartz Creek West Branch
7536803	42.958333	-83.818333	Swartz Creek West Branch
7628550	42.973611	-83.7675	Swartz Creek West Branch
7628551	42.971111	-83.771667	Swartz Creek West Branch
7628552	42.973611	-83.767778	Swartz Creek West Branch
7628553	42.971111	-83.771667	Swartz Creek West Branch
7628554	42.973611	-83.767778	Swartz Creek West Branch
7628701	42.975	-83.766667	Swartz Creek West Branch
7629755	42.975556	-83.763889	Swartz Creek West Branch
7629760	42.972222	-83.781944	Swartz Creek West Branch
7631153	42.963056	-83.806944	Swartz Creek West Branch
7631410	42.970278	-83.788056	Swartz Creek West Branch
7631521	42.963333	-83.807222	Swartz Creek West Branch
7631601	42.963611	-83.808611	Swartz Creek West Branch
7631602	42.963611	-83.808889	Swartz Creek West Branch
7631603	42.962222	-83.810556	Swartz Creek West Branch
7631604	42.961389	-83.811111	Swartz Creek West Branch
7631605	42.961111	-83.810833	Swartz Creek West Branch
7631606	42.961111	-83.811111	Swartz Creek West Branch
7632161	42.968056	-83.791389	Golf
7632220	42.971667	-83.777222	Swartz Creek West Branch
7632221	42.971667	-83.776944	Swartz Creek West Branch
7632222	42.972222	-83.780833	Swartz Creek West Branch
7632223	42.972222	-83.781389	Swartz Creek West Branch
7632280	42.972778	-83.768056	Swartz Creek West Branch
7632282	42.971111	-83.771667	Swartz Creek West Branch
7632284	42.971111	-83.771944	Swartz Creek West Branch
7632285	42.971389	-83.776389	Swartz Creek West Branch
7632286	42.971111	-83.7725	Swartz Creek West Branch
7632288	42.971389	-83.775278	Swartz Creek West Branch
7632289	42.971389	-83.775556	Swartz Creek West Branch
7632291	42.973333	-83.778333	Swartz Creek West Branch

Table 5 Swartz Creek And Tributaries – New Point Source Discharges (196 Total)

County Assigned ID	Latitude	Longitude	Receiving Water Body
7632292	42.972222	-83.781111	Swartz Creek West Branch
7632413	42.972222	-83.781667	Swartz Creek West Branch
7632414	42.972222	-83.783611	Swartz Creek West Branch
7632415	42.971667	-83.785556	Swartz Creek West Branch
7632416	42.971111	-83.786389	Swartz Creek West Branch
7632417	42.971111	-83.786667	Swartz Creek West Branch
7633101	42.9725	-83.767778	Swartz Creek West Branch
7633102	42.973889	-83.767222	Swartz Creek West Branch
7633103	42.971111	-83.771667	Swartz Creek West Branch
7633501	42.965278	-83.766944	Howland Drain
7633502	42.965	-83.766944	Hewitt Drain
7633503	42.964722	-83.766944	Hewitt Drain
7633504	42.964167	-83.766944	Hewitt Drain
7633505	42.963333	-83.766111	Howland Drain
7633509	42.958056	-83.766667	Howland Drain
7633510	42.958333	-83.766667	Howland Drain
7633511	42.965556	-83.768333	Ketz

UPPER FLINT RIVER WATERSHED

County outfall maps indicated 60 known outfalls (PSDs) within the Upper Flint River watershed. To date, 93 new PSDs have been identified. Table 6 lists the field assigned structure names, the County assigned outfall IDs, GPS coordinates, and receiving waterbodies. This list will be continually updated as IDEP investigations continue.

Table 6 Upper Flint Watershed - New Point Source Discharges (93 Total)

Field Assigned Structure Name	County Assigned ID	Latitude	Longitude	Receiving Water Body
8702253	8702253	43.135969	-83.598889	Butternut Creek
Kurtz 1505	8703502	43.1202	-83.634203	Kurtz Drain
Kurtz 2005	8704001	43.128056	-83.6575	Kurtz Drain
Kurtz 2003	8704501	43.126389	-83.651111	Kurtz Drain
Sax 1011	8704751	43.121944	-83.644444	Saxton Drain
Sax 1009	8704752	43.12	-83.643611	Saxton Drain
Sax 2001	8709251	43.12	-83.643611	Saxton Drain
Sax 2005	8709253	43.119167	-83.640833	Saxton Drain
Sax 2013	8709257	43.118889	-83.639167	Saxton Drain
Sax 2015	8709258	43.118889	-83.639167	Saxton Drain
Sax 2017	8709259	43.118889	-83.638333	Saxton Drain
Stan 1101	8709502	43.10555	-83.652461	Stanley-Bray Rd Drain
Kurtz 3501	8710007	43.116111	-83.6325	Kurtz Drain
Kurtz 1005	8710751	43.109444	-83.6275	Kurtz Drain
Kurtz 1503	8710752	43.1125	-83.625833	Kurtz Drain
Kurtz 1007	8710754	43.11228	-83.62582	Kurtz Drain
Heath 2	8710757	43.10973	-83.61788	Heath Drain

Table 6 Upper Flint Watershed - New Point Source Discharges (93 Total)

Field Assigned Structure Name	County Assigned ID	Latitude	Longitude	Receiving Water Body
Heath 1	8710758	43.10973	-83.61788	Heath Drain
Green Arbor 1505	8711001	43.11562	-83.61747	Green Arbor Drain
Green Arbor 1503	8711002	43.11562	-83.61747	Green Arbor Drain
Green arbor 1501	8711003	43.11279	-83.61571	Green Arbor Drain
Mott 1007	8711501	43.10661	-83.61715	Mott Lake
Mott 1011	8711502	43.10658	-83.61634	Mott Lake
Bear 1101	8714001	43.100556	-83.610556	Bear Drain
Bear 1105	8714003	43.100278	-83.609167	Bear Swamp Drain
Bear 1109	8714005	43.09941	-83.60794	Bear Swamp Drain
Bear 1151	8714008	43.098817	-83.607486	Bear Swamp Drain
Bear 1201	8714751	43.098597	-83.664892	Bear Swamp Drain
Bear 1203	8714752	43.098333	-83.603611	Bear Swamp Drain
Bear 1205	8714753	43.098056	-83.603611	Bear Swamp Drain
Bear 1209	8714755	43.098056	-83.605556	Bear Swamp Drain
Bear 1213	8714757	43.098056	-83.606944	Bear Swamp Drain
Hiller 1005	8715751	43.096233	-83.626239	Hiller Drain
Corn 1001	8720253	43.086111	-83.656389	Cornwell Drain
Corn 2001	8720501	43.082222	-83.668889	Cornwell Drain
Corn 2003	8720502	43.082222	-83.67	Cornwell Drain
Corn 2005	8720503	43.0825	-83.66805	Cornwell Drain
Corn 2053	8720504	43.0825	-83.66805	Cornwell Drain
Corn 2051	8720505	43.0825	-83.668056	Cornwell Drain
Bisk 1001	8720506	43.077222	-83.669444	Biskin Drain
Corn 2007	8720751	43.0825	-83.665833	Cornwell Drain
Carp 1001	8722001	43.08548	-83.63659	Carpenter Drain
Carp 1109	8722754	43.07858	-83.61696	Carpenter Drain
Carp 1111	8723501	43.01859	-83.61669	Carpenter Drain
Carp 1113	8723502	43.07859	-83.61669	Carpenter Drain
Carp 1115	8723503	43.07854	-83.61663	Carpenter Drain
Carp 1117	8723504	43.079167	-83.606944	Carpenter Drain
8818751	8818751	43.092222	-83.558056	Powers Cullen Drain
8818754	8818754	43.091944	-83.558056	Powers Cullen Drain
8818755	8818755	43.091944	-83.558056	Powers Cullen Drain
8819252	8819252	43.091461	-83.558497	Powers Cullen Drain
Powe 1003	8819253	43.091461	-83.5583	Powers Cullen Drain
Powe 1001	8819254	43.091611	-83.558211	Powers Cullen Drain
Powe 1011	8819752	43.077444	-83.566983	Powers Cullen Drain
8828751	8828751	43.06611	-83.5275	Powers Cullen Drain
8828752	8828752	43.06556	-83.527222	Powers Cullen Drain
8828753	8828753	43.064722	-83.526667	Powers Cullen Drain
8828754	8828754	43.063333	-83.5261111	Powers Cullen Drain
8828755	8828755	43.063333	-83.526111	Powers Cullen Drain
8830751	8830751	43.062778	-83.563056	Powers Cullen Drain
8830752	8830752	43.062778	-83.563056	Powers Cullen Drain
Powe 199	8831251	43.060278	-83.5575	Powers Cullen Drain

Table 6 Upper Flint Watershed - New Point Source Discharges (93 Total)

Field Assigned Structure Name	County Assigned ID	Latitude	Longitude	Receiving Water Body
Gene 1001	9714501	43.18	-83.611111	Buell Drain
Buell 1001	9723001	43.179697	-83.611253	buell Drain
Drud 1101	9723502	43.165294	-83.612308	Drudge Drain
Buell 2501	9725001	43.165319	-83.595136	Buell Drain
Buell 1703	9725501	43.154025	-83.596139	Buell Drain
Buell 1705	9725502	43.151106	-83.593325	Buell Drain
Drud 2505	9726001	43.165206	-83.612083	Drudge Drain
Buell 1701	9726251	43.165	-83.603056	Buell Drain
Wilbur 1005	9726501	43.156856	-83.619564	Wilbur Drain
Drud 2501	9726752	43.150556	-83.604444	Drudge Drain
Geig 9001	9727001	43.159167	-83.639167	Geiger Drain
Geig 9005	9727501	43.155556	-83.631667	Geiger Drain
Geig 1001	9727503	43.15	-83.63	Geiger Drain
Wage 1009	9734503	43.135586	83.631008	Wager Drain
Geig 2303	9735001	43.149442	-83.618936	Geiger Drain
Geig 2301	9735002	43.149442	-83.618936	Geiger Drain
Drud 1007	9735254	43.148333	-83.601111	Drudge Drain
Wilbur 1001	9735751	43.143333	-83.600556	Wilbur Drain
Wilbur 1003	9735752	43.14333	-83.600556	Wilbur Drain
Butt 1407	9802753	43.209744	-83.484556	Butternut Creek
Butt 1251	9818504	43.180144	-83.570522	Butternut Creek
Park 1015	9827751	43.1572222	-83.499444	Parker-Scothan Drain
Park 1013	9827752	43.157222	-83.499444	Parker-Scothan Drain
Park 1001	9827758	43.151611	-83.503889	Parker-Scothan Drain
Coe 1001	9828251	43.164497	-83.526375	Coe Drain
Coe 1003	9828252	43.164489	-83.526264	Coe Drain
Bar 1001	9829001	43.156894	-83.558675	Barden Branch
Bar 1605	9829003	43.151342	-83.555056	Barden Branch
Butter 1103	9830001	43.165278	-83.569444	Butternut Drain
Butt 7013	9830751	43.159269	83.558917	Butternut Creek
Bar 1601	9832001	43.150572	-83.554172	Barden Branch

SHIAWASSEE RIVER WATERSHED

IDEP work for the Shiawassee River Watershed is scheduled to start this fall or early next spring. No new PSDs have been identified yet.

CASS RIVER WATERSHED

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

STORM WATER POLLUTION PREVENTION INITIATIVE (SWPPI)

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. The goals, objectives, and actions listed in the SWPPI were developed in compliance with the PPP requirements.

The original WMPs submitted to the MDEQ was deemed as not being able to produce an approvable SWPPI. Therefore the current revised Watershed Management Plan (WMP) schedule for submittal is:

- November 1, 2006: Upper Flint WMP
- January 1, 2007: Shiawassee WMP
- March 1, 2007: Lower and Middle Flint WMPs

Revisions, per the MDEQ comments, are currently being made to each of the WMPs so they meet Phase II permit requirements. **The revised SWPPIs for each watershed will be due six months after the due dates for each WMP.**

WMP activities established to meet SWPPIs are outlined as follows. In addition, two river cleanup events were held at various sites tributary to the Flint River. Details are provided below.

WATERSHED MANAGEMENT PLAN / STORM WATER POLLUTION PREVENTION INITIATIVES

The following tables summarize activities from the SWPPI that was not approved. Since the SWPPI was not approved, there was not an effort to collect information on the activities of individual permittees. The following information in the table is intended to update the MDEQ on items in the previous SWPPI and demonstrate that progress is being made despite the current delays.

Table 7 Watershed Management Plan / Storm Water Pollution Prevention Initiative Activities

Goal 1: Protect Public Health		
Action		Action to Date
Objective 1.e:	Examine Sources of Pollutants Resulting in Fish Advisory	No activity. These objectives were removed from new WMP and revised SWPPI
Objective 1.h:	Map Arsenic Levels for Drinking Wells	

Table 7 Watershed Management Plan / Storm Water Pollution Prevention Initiative Activities (Continued)

Goal 2: Establish a Watershed Stewardship Ethic Among the Public						
Objective 2 e:		Enhance Existing Benthic Monitoring Program				
Permit Requirement:		Yes, method of assessing progress in storm water pollution prevention				
Participating Permittees:		Villages, Cities, Townships, County				
Supporting Agencies:		Flint River Watershed Coalition (FRWC), Monitoring and Mapping Committee, SWM				
Action	Lead Agency	Schedule	Material Cost Estimate	Labor Cost Estimate	Evaluation Mechanism	Action to Date
Meet with FRWC to identified opportunities to develop a partnership	MM Committee	Done, Oct '04	Not applicable	Not applicable		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 2 days twice a year to be trained to collect and log samples. Benthic monitoring of the Flint River watershed was conducted in October 2005 and April 2006. October 2006 results not compiled
Identify stream segments that would be desirable to gather macroinvertebrate sampling data on	FRWC	Done, Nov '04.	Not applicable	Not applicable		
Determine what additional resources are needed to expand the monitoring program						
Agree on monitoring enhancements and expansion; i.e. responsibility, schedule and cost			\$750 for materials	Covered under P.A. 342 contract \$4,400 for FWRC to monitor 16 sites. Total cost = \$5,150	MDEQ may provide funds, training, and guidance for the monitoring program.	
Correlate all of the various monitoring information onto one centralized map and database					All monitoring activities should be related together (e.g. frog/toad, water quality, WQ)	
Determine implementation schedule	FRWC/SWM	Feb. ' 05. 16 sites in Genesee county are tested consistently twice a year				

Table 7 Watershed Management Plan / Storm Water Pollution Prevention Initiative Activities (Continued)

Goal 2: Establish a Watershed Stewardship Ethic among the Public (Continued)						
Objective 2 f:		Conduct Basic Water Quality Monitoring (formerly Enhance Existing Project GREEN Program)				
Permit Requirement:		Yes, method of assessing progress in storm water pollution prevention				
Participating Permittees:		Villages, Cities, Townships, County				
Supporting Agencies:		Flint River Watershed Coalition (FRWC), Genesee Intermediate School District (GISD), SWM, Monitoring and Mapping Committee, Others				
Action	Lead Agency	Schedule	Material Cost Estimate	Labor Cost Estimate	Evaluation Mechanism	Action to Date
Identify volunteer programs and public school projects to work with	MM Committee	Oct '04		Covered under P.A. 342 contract Project Green \$1,000/existing school x 3 \$1,500/ new school x 3 Total = \$7,500 Program provides results from all participating schools not just the 6 sponsored.	Increase # of organizations that able to participate	See PEP portion of this annual report for further information. 2005 and 2006 sponsorship and participation in the GREEN program.
Meet with representatives to layout the framework for a monitoring program. Identify responsibilities, schedule and costs					Samples of DO, Ammonia, Nitrate, pH, Phosphate, and temperature are collected regularly	
Correlate all of the various monitoring information onto one centralized map and database					All monitoring activities should be related together (e.g. frog/toad, benthic)	
Identify training requirements and additional resources needed	FRWC	Nov '04				
Determine implementation schedule	FRWC/SWM	Feb '05			If Complete	
Objective 2.g:	Enhance Existing Frog and Toad Survey					No activity. Objective was removed from new revised SWPPI

Table 7 Watershed Management Plan / Storm Water Pollution Prevention Initiative Activities (Continued)

Goal 2: Establish a Watershed Stewardship Ethic among the Public (Continued)						
Objective 2 h:		Stream Crossing Watershed Survey with Photography				
Permit Requirement:		Yes, method of assessing progress in storm water pollution prevention				
Participating Permittees:		Villages, Cities, Townships, County				
Supporting Agencies:		GCRC, GCDC, Monitoring and Mapping Committee				
Action	Lead Agency	Schedule	Material Cost Estimate	Labor Cost Estimate	Evaluation Mechanism	Action to Date
Identify Road Commission bridges currently under inspection	Monitoring and Mapping Committee	June '08			Documentation of water and stream characteristics, plant life, foam, trash, etc.	The GCRC completed a watershed survey in 2005. The survey did not meet the Phase II needs. It will be modified to include Phase II needs for the next 3-year cycle, which will commence in 2008.
Identify additional road/stream crossings to be surveyed	Ad Hoc Committee		Negligible	Since this an expansion of an existing program and it is part of the GCRC contribution, additional Cost will be nominal.		
Determine the responsible party for conducting the surveys.					GCRC	
Determine how the collected data will be stored and organized					Expansion of existing database	
Determine who will be responsible for storing and summarizing the data		To be determined				
Identify training requirements and additional resources needed				\$500	Train to use MDEQ methodology	
Determine implementation schedule	Ad Hoc Committee	3-year cycle, 1/3 of all sites per year			If completed	

Table 7 Watershed Management Plan / Storm Water Pollution Prevention Initiative Activities (Continued)

Goal 2: Establish a Watershed Stewardship Ethic Among the Public (Continued)						
Objective 2 i:		Hot Spot Water Quality Monitoring				
Permit Requirement:		Yes, method of assessing progress in storm water pollution prevention				
Participating Permittees:		Villages, Cities, Townships, County				
Supporting Agencies:		GCHD, Monitoring and Mapping Committee				
Action	Lead Agency	Schedule	Material Cost Estimate	Labor Cost Estimate	Evaluation Mechanism	Action to Date
Identify initial list of target sites, chemical test parameters and collection method	GCHD	To commence in June '06	Not applicable	Is part of routine IDEP procedure	Documentation of water quality associated with hot spots	Tested corroded storm sewer behind carpet facility. All parameters, including pH, temperature, <i>E. Coli</i> , detergents, fluoride, hardness, and ammonia were within acceptable limits.
Determine who will collect the samples and what laboratory will perform the analysis, along with the cost for these services	Ad Hoc Committee			10 per year \$1,000 - \$1,500 per site. Total = \$10,000 – \$15,000	WQ test performed	
Finalize the sites, parameters and collection methods				Covered under P.A. 342 contract		
Schedule the work						
Identify how the collected information will be stored and who will be responsible for it	GCHD				All monitoring activities should be related together (e.g. WQ, benthic)	

Table 7 Watershed Management Plan / Storm Water Pollution Prevention Initiative Activities (Continued)

Goal 3: Reduce Impact From Peak Flows						
Objective 3 a:		County Wide Storm Water Ordinance				
Permit Requirement:		Yes, the development, implementation, and enforcement of a comprehensive storm water management program for post-construction controls for areas of new development and significant redevelopment.				
Participating Permittees:		Villages, Cities, Townships, County				
Supporting Agencies:		SWM, BMP Committee				
Action	Lead Agency	Schedule	Material Cost Estimate	Labor Cost Estimate	Evaluation Mechanism	Action to Date
Adopt a BMP specifications manual	BMP Committee	Done	Not applicable		If completed	Completed
Develop new County site plan review process: Step 1: Pre-Development Step 2: Prepare site plan Step 3: Coordinated County Review Step 4: Municipal Review Step 5: Site Plan Approval		Done, Feb '03		Covered under P.A. 342 contract \$5,000		
Prepare Draft Ordinance		2007-08 (revised from original SWPPI)				
Review current permit fee structure to see if they cover the cost of processing and enforcement						
Facilitate Community Acceptance	SWM/Communities			To be filled in by communities	Better designs	Schedule was revised to commence at a later date than stated in the original SWPPI because of delayed feedback on the WMP from the MDEQ and the MDEQ's rejection of the SWPPI.
Communities to Adopt Ordinance	County wide					
Training on Ordinance	BMP Committee		\$500			
Enforcement	To be determined		3 - 4 staff \$120 – 160K/yr			

Table 7 Watershed Management Plan / Storm Water Pollution Prevention Initiative Activities (Continued)

Goal 3: Reduce Impact From Peak Flows (Continued)						
Objective 3 b:		Maintain Drainage System and Restoration of Watercourses to Minimize Flooding				
Permit Requirement:		Yes, maintenance activities, schedules, and procedures for storm water structural controls to reduce pollutants (including floatables) in discharges from the permittee's separate storm water drainage system.				
Participating Permittees:		Villages, Cities, Townships, County				
Supporting Agencies:		SWM, BMP Committee, MDEQ, IDEP Committee				
Action	Lead Agency	Schedule	Material Cost Estimate	Labor Cost Estimate	Evaluation Mechanism	Action to Date
Inventory/inspect drains /Watercourses	IDEP	Start - Oct '08	Not applicable	Routine IDEP. Covered under P.A. 342 contract	If done	Note revised schedule.
Develop List of necessary work for Natural Watercourses	Ad Hock Committee	Start - Jan '06	Not applicable	Negligible		
Determine mechanism under which maintenance/repair can be done to Natural Watercourses	Ad Hock Committee	July '06	Will have to be funded outside of P.A. 342 contract. Grants are most likely		If done	
Develop a schedule of routine maintenance for County Drains	BMP Committee and Communities	Done	Since 2000 the GCDC. has performed preventative maintenance as a standard operating procedure		Reduce complaint calls	Preventative maintenance is done annually see below for details

Maintenance done to county drains:

- 160 washouts were repaired where the storm pipe had failed
- 44 Log Jams / Culvert Plugs were removed
- 119,116 feet of storm line was Jet and vacuumed to remove debris.
- 330 Catch basins/ manholes were vacuumed to remove debris
- 58,179 linear feet of open ditch cleaning was performed

Note: since it would be impossible to report work through 10/31/2006. The maintenance outlined above was done on the County's fiscal year of Oct 1, 2005 through September 31, 2006.

Table 7 Watershed Management Plan / Storm Water Pollution Prevention Initiative Activities (Continued)

Goal 3: Reduce Impact From Peak Flows (Continued)						
Objective 3 c:		Protect Existing Floodplains and Wetlands from Being Filled or Developed				
Permit Requirement:		Yes, the development, implementation, and enforcement of a comprehensive storm water management program for post-construction controls for areas of new development and significant redevelopment				
Participating Permittees:		Villages, Cities, Townships, County				
Supporting Agencies:		To be determined				
Action	Lead Agency	Schedule	Material Cost Estimate	Labor Cost Estimate	Evaluation Mechanism	Action to Date
Identify existing floodplains and wetlands	SWM	Long-term objective set for Mar. '09 (revised from original SWPPI)		Covered under P.A. 342 contract 120 hrs @ \$50 hr = \$6000	If list is done, FEMA floodplain is start	No activity Note revised schedule.
Prioritize existing floodplains and wetlands as to value	SWM			Covered under P.A. 342 contract 40 hrs @ \$50 hr = \$2000	Prioritization list is developed	
Determine mechanism under which floodplains & wetlands can be protected through easement or land purchase	Ad Hoc Committee			Cost shared, To be determined		
Objective 3 d:		Reduce Storm Water Runoff Quantity, Peak Flows, and Peak Velocity				
Permit Requirement:		Yes, the development, implementation, and enforcement of a comprehensive storm water management program for post-construction controls for areas of new development and significant redevelopment.				
Participating Permittees:		Villages, Cities, Townships, County				
Supporting Agencies:		SMW				
Action	Lead Agency	Schedule	Material Cost Estimate	Labor Cost Estimate	Evaluation Mechanism	Action to Date
Review and update existing storm water requirement for new developments	SWM	May '06 – ongoing	Not applicable	Covered under P.A. 342 contract. Nominal	New storm water requirements	Requirement has been reviewed. Update is on hold.
Training/enforcement		Jan '07		Under storm water ordinance	Under 3a above	No activity Note revised schedule.

Table 7 Watershed Management Plan / Storm Water Pollution Prevention Initiative Activities (Continued)

Goal 3: Reduce Impact From Peak Flows (Continued)						
Objective 3 e:		Monitor Water Quantity to Measure Change				
Permit Requirement:		Yes, ways to ensure the flood management projects assess the impacts on the water quality of the receiving waters and where ever possible examine existing water quality structures for incorporation of additional water quality protection devices or practices.				
Participating Permittees:		Villages, Cities, Townships, County				
Supporting Agencies:		SMW, Monitoring and Mapping Committee, Water and Waste Services (WWS)				
Action	Lead Agency	Schedule	Material Cost Estimate	Labor Cost Estimate	Evaluation Mechanism	Action to Date
Gather data from existing water gages and corresponding rain gages	Monitoring and Mapping Committee	June '06	WWS has a grant to cover this.	Establish baseline measure		Data is being generated, but not gathered, collated, or analyzed.
Track water flows as they relate to rain events	WWS	Feb '07	Covered under P.A. 342 contract - To be determined	Covered under P.A. 342 contract - To be determined	Use baseline measure to gage future flows against current flows	No activity Note revised schedule.
Add Water/ precipitation gages as needed in key locations	Monitoring and Mapping Committee /WWS	To be determined				
Goal 4: Create, Restore, Enhance Recreational Use						
Objective 4 b:		Encourage Investment in Land (Along Water) for Recreation/Wildlife Protection				
Permit Requirement:		Optional, controls for reducing or eliminating the discharge of pollutants from streets, roads, highways, parking lots and maintenance garages				
Participating Permittees:		Villages, Cities, Townships, County				
Supporting Agencies:		PEP Committee, Greenways Program				
Action	Lead Agency	Schedule	Material Cost Estimate	Labor Cost Estimate	Evaluation Mechanism	Action to Date
Enhance existing Greenways program by meeting with organization	Greenways Program	Feb. '06	To be determined	To be determined	Meeting	Greenway Program not ready for proposals. Plan release is delayed. Objective is changed in revised SWPPI wish list.
Receive proposal for needs assessment		Oct. '06				

Table 7 Watershed Management Plan / Storm Water Pollution Prevention Initiative Activities (Continued)

Goal 4: Create, Restore, Enhance Recreational Use (Continued)						
Objective 4 c:		Expand Park, Trails, and River Walk System				
Permit Requirement:		Optional, controls for reducing or eliminating the discharge of pollutants from streets, roads, highways, parking lots and maintenance garages				
Participating Permittees:		Villages, Cities, Townships, County				
Supporting Agencies:		SWM, PEP Committee				
Action	Lead Agency	Schedule	Material Cost Estimate	Labor Cost Estimate	Evaluation Mechanism	Action to Date
Compile list of existing, proposed programs from various organizations	PEP Committee	Nov '07	Covered under P.A. 342 contract - To be determined	Covered under P.A. 342 contract - To be determined	If done	No activity Note revised schedule.
Prioritize list of existing efforts		To be determined				
Enhance existing programs						
Receive proposal for needs assessment						
Sign contract if needed	SWM					
Objective 4 d:		Examine the River and Stream Corridors and Identify Where Additional Access Sites and River Trails Could be Developed				
Permit Requirement:		Optional, controls for reducing or eliminating the discharge of pollutants from streets, roads, highways, parking lots and maintenance garages				
Participating Permittees:		Villages, Cities, Townships, County				
Supporting Agencies:		SWM				
Action	Lead Agency	Schedule	Material Cost Estimate	Labor Cost Estimate	Evaluation Mechanism	Action to Date
Develop list of proposed programs	Ad hoc Committee	Jun '07	Not applicable	Covered under P.A. 342 contract - To be determined	If done	No activity Note revised schedule.
Identify gaps that are not addressed under existing proposed programs		To be determined				
Provide information to interested parties						

Table 7 Watershed Management Plan / Storm Water Pollution Prevention Initiative Activities (Continued)

Goal 5: Restore and Protect Aquatic Life, Wildlife and Habitat						
Objective 5 a:		Re-establish Stream Buffers				
Permit Requirement:		Yes, controls for reducing or eliminating the discharge of pollutants from streets, roads, highways, parking lots and maintenance garages.				
Participating Permittees:		Villages, Cities, Townships, County				
Supporting Agencies:		SWM, BMP Committee				
Action	Lead Agency	Schedule	Material Cost Estimate	Labor Cost Estimate	Evaluation Mechanism	Action to Date
Draft Buffer Strip Ordinance	BMP Committee	Long-term objective set for Mar. '09 (revised from original SWPPI)	Not applicable	Covered under P.A. 342 contract \$5,000	If completed	No activity Note revised schedule.
Develop Cost Analysis	County					
Adopt County-wide Ordinance						
Training on Ordinance	To be determined			Attendance to Training		
Enforcement and Tracking				\$500	Monitoring and Mapping of Watercourse	
Objective 5 c:		Protect Key Locations of Threatened and Endangered Species and Habitat				
Permit Requirement:		Yes, method of assessing progress in storm water pollution prevention				
Participating Permittees:		Villages, Cities, Townships, County				
Supporting Agencies:		SWM				
Action	Lead Agency	Schedule	Material Cost Estimate	Labor Cost Estimate	Evaluation Mechanism	Action to Date
Locate key locations of threatened and endangered species and habitat	Ad hoc Committee	Long-term objective set for Mar. '09 (revised from original SWPPI)	Not applicable	Ongoing Program with Michigan State Extension	If completed	No activity Note revised schedule.
Develop a plan to protect areas, or stabilize and enhance the habitat				Covered under P.A. 342 contract – To be determined		

Table 7 Watershed Management Plan / Storm Water Pollution Prevention Initiative Activities (Continued)

Goal 5: Restore and Protect Aquatic Life, Wildlife and Habitat (Continued)						
Objective 5 d:		Identify Key Soil Erosion Issues/ Locations (This objective is for agricultural/rural areas. SESC programs are already in urban areas)				
Permit Requirement:		Yes, method of assessing progress in storm water pollution prevention				
Participating Permittees:		Townships, County				
Supporting Agencies:		SWM – BMP Committee, NRCS				
Action	Lead Agency	Schedule	Material Cost Estimate	Labor Cost Estimate	Evaluation Mechanism	Action to Date
Work with soil conservation agency or NRCS to identify key soil erosion problems	BMP Committee	Jun '07		Covered under P.A. 342 contract 80 hrs @ \$50/hr = \$3,500	Problem identified	Objective is included in revised SWPPI wish list
Coordinate needs/ efforts to correct identified problems	NRCS	Jun '08			Corrective measures proposed	

Table 7 Watershed Management Plan / Storm Water Pollution Prevention Initiative Activities (Continued)

Goal 6: Good Housekeeping Activities [This list is not intended to be exhaustive and there are many additional activities (too many to list) that can constitute maintenance.]						
Objective 6 a:		Maintenance Activities, Maintenance Schedules, and Inspection Procedures for Storm Water Structural Controls* to Reduce Pollutants (Including Floatables) in Discharges from the Permittee’s Separate Storm Drainage System.**				
Permit Requirement:		Yes, maintenance activities, schedules, and procedures for storm water structural controls to reduce pollutants (including floatables) in discharges from the permittee’s separate storm water drainage system.				
Participating Permittees:		Villages, Cities, Townships, County				
Supporting Agencies:		GCRC, GCDC				
Action	Lead Agency	Schedule	Material Cost Estimate	Labor Cost Estimate	Evaluation Mechanism	Action to Date
Cleaning, clearing, restoring streams/ channels	Local communities				Record of these activities	WMP and SWPPI have not been approved. Therefore, activity for individual permittees has not yet been recorded or reported.
Tail ditch work; installation /maintenance of Rip Rap; other open channels erosion control measures and maintenance functions					New structures, Maintenance schedules, Record of activities	
Storm and combined sewer maintenance and construction projects					Maintenance schedules, Record of activities	
Infrastructure failures (sink hole repairs)					Structure restored	
Tie-in inspections/permits; other maintenance functions related to the storm water infrastructure					Inspection schedule, maintenance schedule	

* Structural controls include: retention basins; detention basins, constructed wetlands, infiltration practices, filters, bioretention, biofilters (swales and filter strips). The storm water drainage system also includes pipes and other conveyance structures that require regular maintenance.

** Please note that each community will have to review their current practices as well as determine future additional activities to create their own unique list of Good Housekeeping Activities. A list of possible activities has been provided.

Table 7 Watershed Management Plan / Storm Water Pollution Prevention Initiative Activities (Continued)

Goal 6: Good Housekeeping Activities (Continued) <i>[This list is not intended to be exhaustive and there are many additional activities (too many to list) that can constitute maintenance.]</i>						
Objective 6 b:		Controls for Reducing or Eliminating the Discharges of Pollutants from Streets, Roads, Highways, Parking Lots, and Maintenance				
Permit Requirement:		Yes, maintenance activities, schedules, and procedures for storm water structural controls to reduce pollutants (including floatables) in discharges from the permittee's separate storm water drainage system.				
Participating Permittees:		Villages, Cities, Townships, County				
Supporting Agencies:		BMP Committee, GCRC, GCDC				
Action	Lead Agency	Schedule	Material Cost Estimate	Labor Cost Estimate	Evaluation Mechanism	Action to Date
Catch basin top replacements, cleaning, repair, and construction	Local Communities				Maintenance schedule	WMP and SWPPI have not been approved. Therefore, activity for individual permittees has not yet been recorded or reported.
Spill/hazard responses						
Street sweeping						
Liter pickup						

Table 7 Watershed Management Plan / Storm Water Pollution Prevention Initiative Activities (Continued)

Goal 6: Good Housekeeping Activities (Continued) [<i>This list is not intended to be exhaustive and there are many additional activities (too many to list) that can constitute maintenance.</i>]						
Objective 6 c:		Procedures for the Proper Disposal of Operation and Maintenance Waste from the Separate Storm Water Drainage System (Dredge Spoil, Accumulated Sediments, Floatables, and Other Debris)*				
Permit Requirement:		Yes, maintenance activities, schedules, and procedures for storm water structural controls to reduce pollutants (including floatables) in discharges from the permittee's separate storm water drainage system.				
Participating Permittees:		Villages, Cities, Townships, County				
Supporting Agencies:		GCRC, GCDC				
Action	Lead Agency	Schedule	Material Cost Estimate	Labor Cost Estimate	Evaluation Mechanism	Action to Date
Option 1: County facility (which is due to come on line in late 2005 or 2006)	O& M Department	As needed			Waste material is disposed of in an appropriate manner	WMP and SWPPI have not been approved. Therefore, activity for individual permittees has not yet been recorded or reported. In new revised SWPPI, these two actions have been combined into one.
Option 2: A local facility that specifically accepts and processes maintenance waste						

* Please note that each community will have to review their current practices as well as determine future additional activities to create their own unique list of Good Housekeeping Activities. A list of possible activities has been provided.

Table 7 Watershed Management Plan / Storm Water Pollution Prevention Initiative Activities (Continued)

Goal 6: Good Housekeeping Activities (Continued) [<i>This list is not intended to be exhaustive and there are many additional activities (too many to list) that can constitute maintenance.</i>]						
Objective 6 d:		Ways to ensure that flood management projects assess the impacts on the water quality of the receiving waters and, whenever possible, examine existing water quantity structures for incorporation of additional water quality protection devices or practices.*				
Permit Requirement:		Yes, maintenance activities, schedules, and procedures for storm water structural controls to reduce pollutants (including floatables) in discharges from the permittee’s separate storm water drainage system.				
Participating Permittees:		Villages, Cities, Townships, County				
Supporting Agencies:		GCRC, GCDC				
Action	Lead Agency	Schedule	Material Cost Estimate	Labor Cost Estimate	Evaluation Mechanism	Action to Date
Assess site plan review process for municipal projects to determine the current level of protection	Local Communities	Short-term			Assessment is completed	Objective moved to Section 3.a – the site plan design manual of the revised SWPPI
Where appropriate, adopt additional measures to ensure water quality					Additional measures or processes are adopted (if necessary)	
Seek opportunities to implement additional measures to existing structures					Certain existing BMPs receive enhancements (where appropriate)	

* Please note that each community will have to review their current practices as well as determine future additional activities to create their own unique list of Good Housekeeping Activities. A list of possible activities has been provided.

Table 7 Watershed Management Plan / Storm Water Pollution Prevention Initiative Activities (Continued)

Goal 6: Good Housekeeping Activities (Continued) [<i>This list is not intended to be exhaustive and there are many additional activities (too many to list) that can constitute maintenance.</i>]						
Objective 6 e:		Implementation of controls to reduce the discharge of pollutants related to application of pesticides, herbicides, and fertilizers applied in the permittee's regulated area*				
Permit Requirement:		Yes, maintenance activities, schedules, and procedures for storm water structural controls to reduce pollutants (including floatables) in discharges from the permittee's separate storm water drainage system.				
Participating Permittees:		Villages, Cities, Townships, County				
Supporting Agencies:		GCRC, GCDC				
Action	Lead Agency	Schedule	Material Cost Estimate	Labor Cost Estimate	Evaluation Mechanism	Action to Date
Use low phosphorous fertilizer and apply according to manufacture specifications	Local Communities				O&M specifications and procedures are reviewed and adjusted as needed	WMP and SWPPI have not been approved. Therefore, activity for individual permittees has not yet been recorded or reported.
Employ Practice Integrated Pest Management techniques						
Apply pesticides sparingly						
Avoid the use of herbicides and apply them at least 300 ft from watercourses						
Keep stocks of pesticides, herbicides and fertilizers in dry, self contained areas that are not connected to the drainage system						

* Please note that each community will have to review their current practices as well as determine future additional activities to create their own unique list of Good Housekeeping Activities. A list of possible activities has been provided.

Table 7 Watershed Management Plan / Storm Water Pollution Prevention Initiative Activities (Continued)

Goal 7: Post Construction Controls for New Development and Significant Redevelopment						
Objective 7 a:		Evaluate and implement site appropriate, cost-effective structural and nonstructural best management practices (BMPs) that prevent or minimize the impacts on water quality				
Permit Requirement:		Yes, the development, implementation, and enforcement of a comprehensive storm water management program for post-construction controls for areas of new development and significant redevelopment.				
Participating Permittees:		Villages, Cities, Townships, County				
Supporting Agencies:		Genesee County Drain Commission, Genesee County Road Commission, Genesee County Health Department				
Action	Lead Agency	Schedule	Material Cost Estimate	Labor Cost Estimate	Evaluation Mechanism	Action to Date
Assess site plan review process to determine the current level of requirements	Local Communities				Assessment is completed	On public sites, the GCDC has installed small BMP measures, such as stand pipes. Older systems received retrofits under preventative maintenance.
Where appropriate, adopt additional measures to ensure water quality					Additional measures or processes are adopted (if necessary)	
Seek opportunities to implement additional measures to existing structures					Existing BMPs may be enhanced	

Common controls for urbanization include: policies and ordinances to direct growth to identified areas, to limit the rate and volume of storm water discharged to pre-developmental hydrologic levels, to protect sensitive areas such as wetlands and riparian areas, and to maintain and/or increase open spaces (including a dedicated funding source for open space acquisition); encouraging infill development in higher density urban areas and areas with existing infrastructure; establishing in-stream maximum flow targets designed to minimize stream bank erosion and maintain healthy aquatic populations; and coordinating release volumes and rates from detention basins to achieve in-stream maximum flow targets.

Table 7 Watershed Management Plan / Storm Water Pollution Prevention Initiative Activities (Continued)

Goal 7: Post Construction Controls for New Development and Significant Redevelopment (Continued)						
Objective 7 b:		Establish long-term operation and maintenance practices for storm water BMPs				
Permit Requirement:		Yes, these controls (BMPs) shall have associated requirements for their long-term operation and maintenance to retain the level of water quality protection over time.				
Participating Permittees:		Villages, Cities, Townships, County				
Supporting Agencies:		Genesee County Drain Commission, Genesee County Road Commission, Genesee County Health Department				
Action	Lead Agency	Schedule	Material Cost Estimate	Labor Cost Estimate	Evaluation Mechanism	Action to Date
Review of existing O&M practices for the maintenance of current BMPs	Local Communities				Completion of review. Ability to determine needed O&M procedures.	No activity
Adopt procedure for instituting needed O&M practices for new BMPs					O&M manual/procedures reflect new requirements	

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 GCDC 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 20 and June 3, 2006, a total of 243 volunteers came out to nine sites, including:

- Crampton Park – Lapeer 38
- Farmers Creek – Lapeer 36
- U of M campus – Flint 33
- Vietnam Veterans Park – Flint 24
- **Holloway Reservoir – Richfield Township 12**
- **M-15 at the Flint River – Richfield Township 4**
- **Riverside Park – Flushing 74**
- Burroughs Park – Flint 5
- Kearsley Park – Flint 17

The volunteers cleaned up approximately 18 river miles and removed 1,613 ft³ of garbage from the river and its banks.

The total number of volunteer hours is estimated as:

- 243 river cleanup volunteers, 3 hours each (729 hours)
 - Project coordinator (85 hours)
 - GCDC (65 hours, excluding 40 hours on grant)
 - FRWC at 25 hours
- 904 volunteer hours total

NESTED DRAINAGE SYSTEM AGREEMENTS

Permittees which are primary jurisdictions shall update the list of each nested jurisdictional area or drainage system that should have its own separate storm water drainage system permit, originally submitted as part of the application requirements in Part I.A.2.

Table 8 lists twenty one schools that have communicated interest in working together under a nested jurisdiction with the GCDC's Office. To date, the GCDC Office has signed letters of agreement with all of the school districts except Atherton and Westwood Heights. Schools of choice do not need to sign an agreement because they do not own any property. They rent it from a corporation they all formed.

Table 8 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
LakeVille	Yes
Linden	Yes
Montrose	Yes
Mt. Morris	Yes
Swartz Creek	Yes
Westwood Heights	No

Note: the nested school districts have requested the GISD to be their representative in this program.

School districts not participating in the nested jurisdiction include:

- West wood Heights

Schools that are Charter and do not have to participate:

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

SPECIAL REPORTING REQUIREMENTS

The University of Michigan (Ann Arbor Campus), the Michigan Department of Transportation, and the Cities of Ann Arbor, Flint, Grand Rapids, Livonia, Sterling Heights, and Warren shall submit additional information.

This section is not applicable.