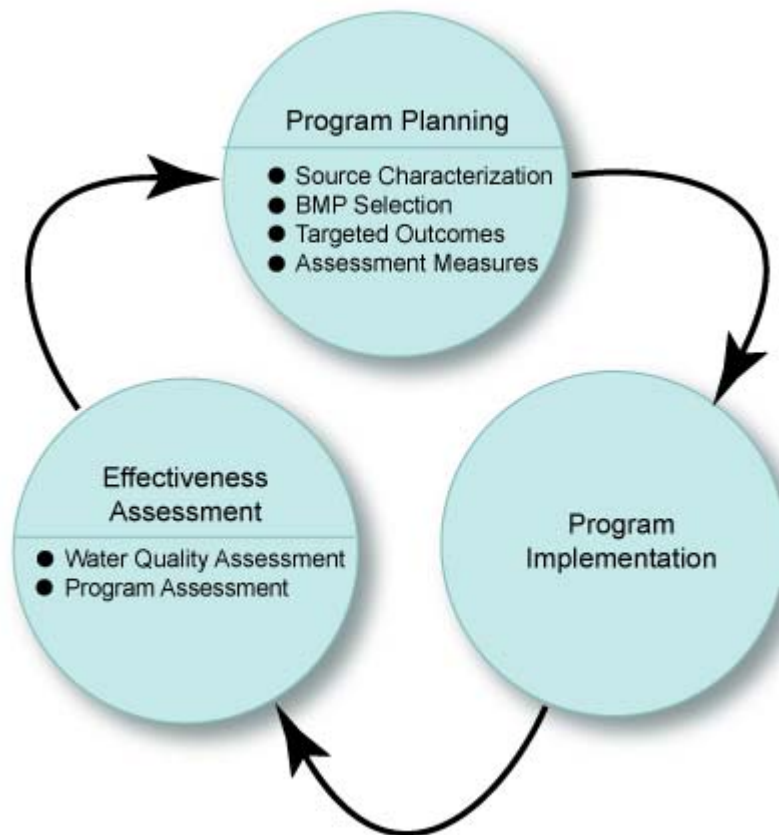


## SECTION 9 - EVALUATION METHODS FOR MEASURING SUCCESS

### INTRODUCTION

Watershed planning is meant to be an iterative process that will be continually revised and updated. This Watershed Management Plan (WMP) is a living document and is meant to be used, revised as new information becomes available, and altered to fit the changing needs of the watershed. This section establishes an overall program framework which emphasizes the importance of an on-going iterative process that consists of three elements: Program Planning, Program Implementation, and Effectiveness Assessment. The relationship between the three elements is presented in Figure 9-1. Portions of this chapter are based on “A Framework for Assessing the Effectiveness of Jurisdictional Urban Runoff Management Programs” developed by the San Diego Municipal Storm Water Co-Permittees (October 16, 2003).

**Figure 9-1 Program Elements**



## **PERMIT REQUIREMENTS**

Watershed management is intended to be a tool in a comprehensive and systematic approach to balancing land uses and human activities to meet mutually agreed upon social, economic, and environmental goals and objectives in a drainage basin. As required by the NPDES Wastewater Discharge General Permit, the WMP must include the following, all of which are intended to be done in the context of significant public participation:

1. Assess the nature and status of the watershed ecosystem. (Section 3)
2. Define long-term goals and short-term objectives for the system. (Section 6)
3. Determine actions needed to achieve long-term goals and short-term objectives. (Section 8)
4. Assess both benefits and costs of each action. (Section 8 and 9)
5. Implement desired actions by a specified schedule and permittee commitments.
6. Evaluate the effects of the implemented actions and progress toward goals and objectives.
7. Re-evaluate goals and objectives as part of an interactive process (MDEQ, 1997).

Development of this document has included Steps 1, 2 and 3 above, and some elements of Step 4. As communities and agencies review this document, and opportunities arise, site or program-specific information will be generated to develop greater detail regarding the costs and benefits of each action. The implemented actions presented in Section 8 will be assessed for cost-benefit and effectiveness based on volunteer watershed monitoring as presented in this section. Based on the results of the assessment, planned actions will be revised.

Communities must develop funding mechanisms to implement the WMP. Arrangements will be made to provide start-up funding for implementing recommendations. Development of proposals should involve the creation of detailed information regarding what BMPs are to be implemented, the locations of these BMPs, anticipated costs, and information regarding who will be responsible for implementation.

Under Public Act 342, Genesee County established a Storm Water Management System. Those Communities in Genesee County that signed a contract with the Genesee County Drain Commissioner's Office were:

Township of Argentine	Township of Thetford
<b>Township of Atlas</b>	Charter Township of Vienna
<b>Charter Township of Clayton</b>	<b>City of Burton</b>
<b>Township of Davison</b>	City of Clio
<b>Charter Township of Fenton</b>	<b>City of Davison</b>
<b>Charter Township of Flint</b>	<b>City of Fenton</b>
Charter Township of Flushing	City of Flushing
Township of Forest	<b>City of Grand Blanc</b>
<b>Township of Gaines</b>	City of Linden
<b>Charter Township of Genesee</b>	City of Montrose
<b>Charter Township of Grand Blanc</b>	City of Mt. Morris
Charter Township of Montrose	<b>City of Swartz Creek</b>
Charter Township of Mt. Morris	<b>Village of Gaines</b>
<b>Charter Township of Mundy</b>	<b>Village of Goodrich</b>
<b>Township of Richfield</b>	Village of Otisville

\*Bolded Communities are part of the Middle Flint Watershed

As part of the PA 342 contract these communities and Genesee County have pledged contribute monetarily to fund the various aspects of the Watershed Plans from fiscal year 2004 through 2008. A new contract will be negotiated upon the completion of this cycle.

The annual budget not to exceed \$500,000.00 has been set countywide. Currently the budget is set with the Public Education Program budgeted up to \$80,000/year, the Monitoring and Mapping program budgeted up to \$40,000/year and IDEP program and other minor expenses is allocated the remainder of the annual budget. The budget is broken up among the following responsibilities:

- (a) the Public Education Program Subcommittee, with responsibility for public education and participation; For those Services relating to Implementation Activities for which the Public Education Program Subcommittee is responsible, the Local Share thereof shall be allocated to each Municipality on the basis of a fraction, the numerator of which is the population for such Municipality at the beginning of such Fiscal Year and the denominator of which is the population for all Municipalities at the beginning of such Fiscal Year
- (b) the Monitoring and Mapping Subcommittee, with responsibility for the illicit discharge program, which will identify and map all municipal discharges to open waters; and for those Services relating to Implementation Activities for which the Monitoring and Mapping Subcommittee is responsible, the Local Share thereof shall be allocated to each Municipality on the basis of a fraction, the numerator of which is the weighted sum (determined as hereinafter provided) of the developed parcels in such Municipality at the beginning of such Fiscal Year and the denominator of which is the weighted sum of the developed parcels in all Municipalities at the beginning of such Fiscal Year. For purposes of this subsection (b), the weighted sum of developed parcels in each Municipality shall be determined by assigning one (1) unit for each developed residential parcel and four (4) units for each developed commercial

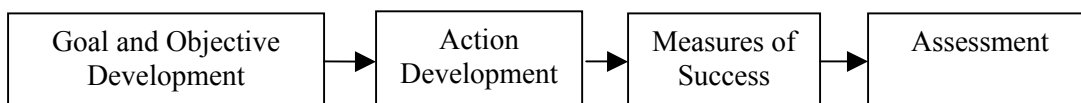
- and industrial parcel and then adding the total number of assigned units for all developed parcels in such Municipality.
- (c) the New Construction Standards Subcommittee, with responsibility for construction standards, redevelopment standards, oversight of all watersheds and the preparation of the pollution prevention program known as the Storm Water Pollution Prevention Initiative; and for those Services relating to Implementation Activities for which the New Construction Standards Subcommittee is responsible, the Local Share thereof shall be allocated as follows: The Local Share of the cost of such Services that consist of administrative costs relating to the establishment of the five planning areas for the System (Cass River, Lower Flint, Middle Flint, Upper Flint and Shiawassee, hereinafter individually referred to as a "Planning Area" and collectively as the "Planning Areas") and the development of the standardized templates for the Planning Areas shall be allocated equally among the Planning Areas, and within each Planning Area shall be allocated to each Municipality therein on the basis of the equivalent acreage in each Municipality, using the same methodology for calculating equivalent acreage that the County Drain Commissioner would use for purposes of establishing drain assessments for benefiting parcels in a drainage district under Chapter 7 of the Drain Code (hereinafter referred to as the "Equivalent Acreage Methodology"). The Local Share of the cost of all other Services for which the New Construction Standards Subcommittee is responsible shall be allocated to the specific Planning Area to which such Services relate and within such Planning Area shall be allocated to each Municipality therein on the basis of the Equivalent Acreage Methodology.

Outside Genesee County each NPDES Phase II Community has its own arrangement either to do their own IDEP and education or have contracted with another watershed group to manage it for them. Oakland County Drain Commissioner's Office is responsible for doing their own IDEP for county drains.

Within the Middle Flint River Watershed, there are 3 grant projects. The Genesee County Drain Commissioner's Office has received 2 of those grants. There is a 319-grant for watershed planning specifically for the Kearsley Creek and a CMI grant was received to pilot an IDEP program for the Gibson Drain, which is located within the Swartz Creek Watershed. U of M CAER has received a 319 grant for the Swartz Creek Watershed.

## PROGRAM PLANNING

The program planning phase requires a significant amount of public participation as public input is sought to characterize the watershed and develop and prioritize goals and objectives for the watershed. This phase can be broken down into the four steps shown below:



While the elements of program planning interact in a cyclical manner, developing goals and objectives typically initiates the cycle. However, program planning also occurs following the effectiveness assessment phase if changes to the WMP are necessary.

### ***Goal and Objective Development (Section 6)***

Goal and Objective development was completed as part of this WMP and was accomplished through activities outlined in the Public Participation Plan (PPP). Discussions at watershed committee meetings and stakeholder workshops helped to prioritize long-term watershed goals that would impact water quality within the watershed. It was important to involve the public as much as possible in the development process to gain support for implementation.

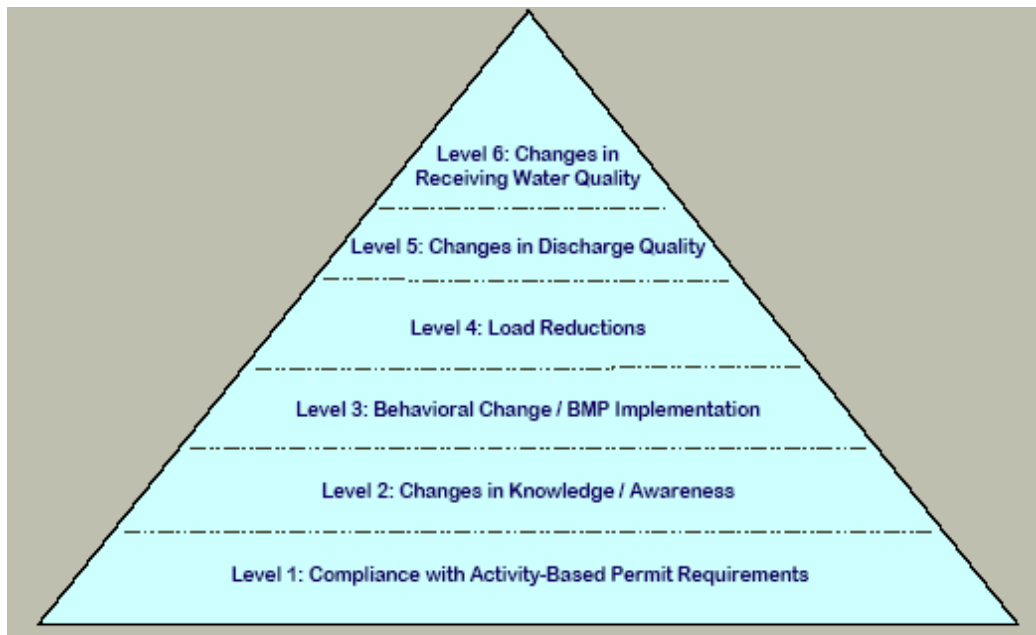
### ***Action Development (Section 8)***

To implement the goals and objectives, specific actions were developed for each objective. Action development was completed as part of this WMP. The actions were assigned a schedule, responsible party, cost, and measure of success. The measure of success establishes a way to assess the completion or progress of an action. More details concerning measuring the effectiveness of actions are included later in this section.

### ***Measures of Success***

Measures of success are essential to assessing the effectiveness of the overall program. Identification of quantifiable measures provides measurability and accountability within the program. To help organize successes and provide a relationship between success types, six success levels are established as shown in Figure 9-2.

Figure 9-2 Success Levels



Level One: Compliance with Activity-Based Permit Requirements- Activities conducted under this level include those that are described or required in the permit. These activities are expected to be beneficial to water quality because they are part of a

successful watershed management plan. The watershed will be addressing these permit requirements including specific requirements of the Storm Water Pollution Prevention Initiative (SWPPI).

Level Two: Changes in Knowledge/Awareness- Changes in knowledge and awareness are targeted through the PPP and Public Education Plan (PEP), such as conducting stakeholder workshops and public briefings. Currently surveys are being used to receive a baseline for public knowledge that can be compared to future surveys.

Level Three: Behavioral Change/BMP Implementation- The desired success of Level Three is behavioral change due to an increase in knowledge. This may be documented through the use of a survey or tracking the number of BMPs installed or retrofitted.

Level Four: Load Reductions- BMPs are used to reduce the amount of pollutants entering local water bodies from storm water runoff. Load reductions may be calculated based on information provided once a BMP is installed. Load reductions may also be estimated for illicit discharges that are removed.

Level Five: Changes in Discharge Quality- Changes in the water quality of storm water discharge show the direct environmental benefit gained by the installation of BMPs and pollution prevention practices. The watershed will be working on this task through their Illicit Discharge Elimination Program (IDEP), which seeks to correct illicit discharges that are discovered through outfall screening and investigation. Should a sample show poor water quality, further sampling and testing will take place to pinpoint the source and work to remove it.

Level Six: Changes in Receiving Water Quality- The ultimate goal of Phase II NPDES Storm Water Legislation is to show improvement in water quality of receiving water bodies. Monitoring will be conducted on a periodic basis to show change in water quality and environmental benefit.

### **Assessment**

Assessment is the process of evaluating the attainment of the measures of success. Measures of success fall within two categories, direct and indirect. Indirect measures deal with degrees of activity or program implementation, while direct measures focus on characterizing water quality and quantifying pollutant loads. Measures of Success Levels One through Three are primarily indirect measures while Levels Four through Six are direct measures.

### **PROGRAM IMPLEMENTATION**

Program implementation is the second phase of the cycle and consists of applying the WMP which was developed or updated during the program planning phase.

Lessons learned and comments on the WMP are compiled during the implementation phase and are subsequently addressed in the effectiveness assessment phase to consider the suggested changes and comments.

## **EFFECTIVENESS ASSESSMENT**

The effectiveness assessment phase consists of a water quality assessment, a program assessment, and an integrated assessment. The integrated assessment facilitates examining the causal relationships between program implementation and changes in water quality.

### ***Water Quality Assessment***

Water quality assessment is the analysis of water quality data to draw conclusions on the condition of or changes to the condition of receiving waters or discharges to those waters. The water quality assessment provides a way to assess the attainment of direct measures of success. Long-term assessment is also necessary to ensure that seasonal, annual, and other variables can be identified and are considered when interpreting the results.

Five watershed monitoring methods will be used throughout the watershed to help evaluate the effectiveness of WMP implementation. (Section 7) The five methods include the following:

- Benthic macroinvertebrate monitoring
- Frog and toad survey
- Stream crossing watershed survey and photographs
- Water quality monitoring
- Hot spot testing at hazardous sites

The different monitoring activities will be conducted in close proximity to one another in order to develop relationships between them and a holistic view of a particular area. For example, the photographic monitoring will be done at the macroinvertebrate sites along with the basic water quality monitoring. The road/stream crossing surveys will be done immediately upstream and downstream of the macroinvertebrate sites and will include photographic log files.

Volunteers from the general public will be trained to carry out the monitoring program. The benefits of using volunteers to conduct monitoring include increasing public participation, increasing public education and decreasing the cost of the monitoring program. Including established volunteer programs in the monitoring effort may be beneficial. Established groups include the adopt-a-stream program, public school projects such as GREEN (Global Rivers Environmental Education Network), or other organized activities such as 4H clubs, scouting groups, and senior citizen groups.

### ***Benthic Macroinvertebrate Study***

The presence or absence of certain species of benthic macroinvertebrates is a good indicator of the health of a stream. A benthic macroinvertebrate is an organism having no backbone that dwells on the bottom of a water body. The presence of organisms tolerant to pollution and few or no organisms sensitive to pollution indicates pollution in the water.

The Flint River Watershed Coalition (FRWC) in partnership with the University of Michigan – Flint (UM-F) Center for Applied Environmental Research (CAER) has an existing benthic macroinvertebrate volunteer monitoring program in the Flint River Watershed. The watershed will seek to partner with the FRWC to enhance and expand

the existing program. Helping to enhance the existing program may include activities such as advertising, soliciting volunteers, providing equipment, providing additional technical help, public education, analyzing the collected data, or publicizing the results.

#### ***Basic Water Quality Monitoring***

Typical water quality monitoring parameters may include dissolved oxygen, ammonia, nitrate, pH, phosphate, and temperature. Volunteers will take grab samples at pre-determined locations and use simple test kits to conduct the analysis.

There is no existing water quality monitoring program.

#### ***Frog and Toad Survey***

Like benthic macroinvertebrates, frogs and toads are sensitive to changes in water quality. The absence or decline of a frog and toad population indicates a loss of the quality of their wetland habitat and ultimately their ecosystem. As a result of the concern for the rarity, decline, and population die-off of several species, the Michigan Department of Natural Resources (MDNR) developed the Michigan Frog and Toad Survey.

Genesee County has an existing frog and toad survey program which uses volunteers to monitor wetland sites three times annually during early spring, late spring, and summer. At each site, the volunteer listens for frog and toad breeding season calls and makes a simple estimate on the population size. Detailed information is given to the volunteer including how to establish a survey route and a tape or CD of frog and toad calls.

#### ***Stream Crossing Watershed Survey with Photograph***

The stream crossing watershed survey is an approach used to collect information about the quality of a stream. A standard data collection form is used to ensure uniformity throughout the watersheds. The physical habitat of the site including water characteristics, stream characteristics, plant life, foam and trash presence, substrate type, stream morphology, land use, and corridor description are recorded. Also potential sources of pollution upstream and downstream of the site are identified if apparent.

There is no existing stream crossing watershed survey program.

#### ***Hot Spot Water Quality Monitoring***

Much of the Flint River Watershed encompasses land which has a history of heavy industrialization. Many large companies settled in this area to begin mass production of cars, auto parts, trucks, metal manufacturing, and other industries. These types of activities have had a host of regulations to promote their cleanup since the promulgation of the Clean Water Act. Prior to this Act however, a number of pollutants were released without realizing their potential impacts on public health and safety and water quality in aquatic environments. In addition to historical pollution, various hot spots of pollution are believed to exist around the five major watersheds in Genesee County.

There is no existing hot spot water quality monitoring program.

#### ***Program Assessment***

Program assessment involves reviewing the attainment of primarily the indirect measures of success. Measures of success will be reviewed for achievement and if the



desired level of achievement is not attained, an investigation will be conducted to determine possible factors causing failure.

The PEP has developed and administered a phone survey to the public. Besides as a tool to direct the education committee, it can be used as a baseline assessment of where the public's knowledge is now. Future surveys can be used to measure change in knowledge and behavior. Other methods can provide measurable quantities like counting number of hits on the website or how many pounds of household hazardous waste have been dropped off.

Assessing the attainment of the measures of success is a yearly task that will be reported in the annual progress reports. The annual progress report is required to cover decisions made, actions performed, and results for the IDEP, PEP, SWPPI, and any other storm water actions conducted during the previous permit year (The IDEP and PEP are separate documents containing additional actions and measures of success not covered in this WMP.) The annual report must also cover updates of nested drainage system agreements and point source discharges to the storm water system.

### ***Integrated Assessment***

The integrated assessment incorporates the water quality assessment and program assessment and evaluates the entire watershed management plan as a whole. The integrated assessment identifies and addresses data gaps in the water quality monitoring program and finds causal relationships between actions taken through the WMP and changes in load reductions, discharge quality, and receiving water quality.

As a result of the integrated assessment, targeted updates and revisions will be made to the WMP for submittal to the MDEQ by the March 1, 2007 deadline indicated on the certificate of coverage.

### **SUMMARY**

The framework presented here is not meant to be inclusive, but rather a guide illustrating the embodiment of the watershed management plan. The emphasis of the plan is to focus on high priority constituents, sources, benefits etc. rather than all potential problems. Attention is given to the importance of long-term assessments that boast strategy rather than ambition.



## SECTION 10 - STEPS FOR PLAN SUSTAINABILITY

Below are various ways that the implementation of the watershed plan can be sustained. More than one method is being used in the Middle Flint River Watershed.

### **OPTIONS FOR SUSTAINABILITY**

Analyzing methods for sustainability is a critical component of watershed management planning. Especially since this watershed management plan is being used for Phase II permit compliance. Sustainability means finding a way to keep going to implement the WMP once it is complete. It also means that the plan is being continuously updated and improved to meeting local needs.

#### ***Watershed Councils- Michigan's Local River Management***

Watershed Councils can be formed through Michigan's Natural Resources and Environmental PA 451 of 1994, Part 311 Local River Management. Watershed groups such as the Clinton River Watershed Council and the Huron River Watershed Council were formed under this act. The Clinton River Watershed Council eventually reorganized to become a 501(c)3 nonprofit organization. This allowed the council to receive additional revenue from grants, businesses and individual membership contributions.

#### ***Watershed Councils- Voluntary Partnerships***

Watershed groups can also be formed through other means such as a voluntary association of local governments organized to promote cooperative action on water management issues. Watershed groups such as the Partnership for the Saginaw Bay Watershed are formed in this manner.

A key component of sustainability is obtaining and keeping a wide variety of local support. This support and public involvement will keep momentum for implementing this watershed management plan. Local support will also help maintain funding through all available means and open doors for partnerships in areas where other groups have similar missions.

### **PHASE II LEGAL RELATIONSHIP**

Michigan has a number of different methods available for community groups to form into a legal entity. At least six approaches are available under Michigan statutes to lead and assign funding responsibilities for Phase II permitting. These options include the following:

- 1) Drain Code – Public Act 40 (1956)
- 2) Inter-Municipal Committee Act – Public Act 200 (1957)
- 3) Municipal Sewerage and Water Systems - Public Act 233 (1955)
- 4) County Public Improvement Act – Public Act 342 (1939)

- 5) County Department and Board of Public Works – Public Act 185 (1957)
- 6) Voluntary Cooperation

This section provides a brief summary of how each of these options can be used, and some limitations or considerations for using each option. Any of these options could be used independently or in combination to handle a specific project area.

A summary of the possible Phase II storm water permit leadership options is presented in Table 10-1 Summary of Phase II Storm Water Leadership Options. The title of each option is listed in this table along with the appropriate Michigan Public Act, a statement on how the approach works, limitations, and some areas where these approaches are either in use or are being considered for use.

**Table 10-1 Summary of Phase II Storm Water Leadership Options**

<b>Option</b>	<b>Title</b>	<b>Public Act</b>	<b>Approach</b>	<b>Limitations</b>
<b>1</b>	Drain Code	40 (1956)	<ul style="list-style-type: none"> <li>Public Health Projects using Chapter 20</li> </ul>	Separate projects each drain requires petition/notice
<b>2</b>	Inter-Municipal Committee Act	200 (1957)	<ul style="list-style-type: none"> <li>Resolutions to study issues or problems</li> </ul>	Studies only
<b>3</b>	Municipal Sewerage and Water Systems Act	233 (1955)	<ul style="list-style-type: none"> <li>Incorporate an Authority</li> <li>Sewage disposal system includes storm sewers</li> </ul>	Intended for water and wastewater services
<b>4</b>	County Public Improvement Act	342 (1939)	<ul style="list-style-type: none"> <li>County Board resolution and/or contracts with any unit of government</li> <li>Sewers include storm water</li> </ul>	Difficult to start storm water limited to
<b>5</b>	County Department and Board of Public Works	185 (1957)	<ul style="list-style-type: none"> <li>County Board action and contract with local government units</li> <li>Sewers include storm water</li> </ul>	Difficult to start if limited to storm water
<b>6</b>	Voluntary Cooperation or Agreements	None	<ul style="list-style-type: none"> <li>Attitude of trust and agree to work together</li> </ul>	Requires trust and individual accountability

#### Option 4: County Public Improvement Act (PA 342, 1939)

A County Board of Commissioners can use this act to authorize and provide water, sewer, sewage disposal, and garbage collection and disposal services. As defined in the Act, sewers can include storm sewers to transport and collect storm water. The County Board resolution must designate the county agency to supervise, control, manage, and operate the improvements, and facilities and to provide services. The County agencies eligible for designation include the County Road Commission, the Drain Commissioner, or the Board of Public Works. Services of the County Agency can be provided by contract with any other unit of local government.

The County Agency designated by the County Board is responsible to establish just, equitable, and uniform rates, charges, or assessments to be paid for the services provided. Any contracting unit of government may use the following methods of raising funds to pay for services:

- 1) Annual property tax levy
- 2) Special assessments on property
- 3) Rates or charges to service users
- 4) Tax revenue from the state
- 5) Other funds, which may validly be used for the contracted purpose

This method is currently being used in Genesee County to prepare a watershed permit for the county, except for the City of Flint, which is covered by a Phase I permit.

#### MIDDLE FLINT RIVER WATERSHED

However, this group is moving forward with implementation plans under Act 342 (Option #4). Not all the communities within the Middle Flint River Watershed have signed contracts with the Genesee County Drain Commissioner's Office, but all those communities within Genesee County have. All the school districts within Genesee County also have signed contracts to be nested jurisdiction under their communities Certificate of Coverage.



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## Appendix "A"

**Table 3-5: Point Sources**

DESCRIPTION	PERMIT	MUNICIPALITY	FACILITY OWNER	STATUS
<b>BROWNFIELD/ ACTIVE UST/OPEN LUST</b>				
(frmr) Zack Co/demo dump	25000352	Flint		Inactive
1854 Remell St	25000263	Flint		Interim Response conducted
4315 S. DORT HWY.	25000653	Burton		Inactive
6208 Woodmoor	25000380	Burton		Evaluation conducted
Auto Brite Collision Inc	25000004	Burton		Interim Response in progress
B & B Paint	25000318	Burton		Interim Response in progress
Carpenter Enterprises	25000028	Fenton		Inactive
Davison Shopping Center	25000366	Davison		Inactive
Delta Tube and Fabrication Corp	63000019	Holly		Inactive
Grand Blanc Disposal Area	25000026	Grand Blanc		Contact Lead Division
High Tech Motors	25000563	Burton		Inactive
Nevilles Waste Collection	25000018	Grand Blanc		Contact Lead Division
Richfield Iron Works	25000022	Flint		Inactive
Southern End of Holiday Drive	25000603	Flint		Inactive
Stephenson Tree Surgeon	25000324	Grand Blanc		Inactive
Tru Green	25000055	Flint		Evaluation conducted
Vassar Road Farm	25000220	Grand Blanc		Inactive
Windiate Park/Dixieland Subdvn	25000689	Flint		Interim Response in progress
A&e Sales	50001963	Grand Blanc		Open
Ac Rochester,flint East	17248	Troy		Open
Action Auto #17	12958	FLINT		Open
Action Auto #2	12980	Lansing		Open
Action Auto #9	12975	Coopersville		Open
Admiral Petroleum Co #36	12978	Coopersville		Open
Agree Development	40562	Farmington Hill		Open
Allen's Cleaners	36499	Grand Blanc		Open
American Auto Collision	39566	Flint		Open
American Realty Associates I	50005390	Flint		Open
Amoco	50001213	Unknown		Open
Amoco Oil #5099	5719	Livonia		Open
Amoco Oil #9774	4935	Flint		Open
Atlas Township	36531	Goodrich		Open
Auto City Service	41176	Not Recorded		Open
Auto City Service #2	16722	Fenton		Open
Auto-wares	50001163	Unknown		Open
B & B Paint	18533	Flint		Open
B & M Cartage Co Inc.	9445	CLIO		Open
Bentley Community Schools, S. Be	1165	Burton		Open
Betty Owen - Former Collision Shop	41797	Groveland Town		Open
Bionic Starter And Alternator, I	1977	Burton		Open
Bishop Airport - Skybolt	37502	Flint		Open
Bob Peranis Sport Shop	50002167	Unknown		Open
Bob's Tire	50000582	FLINT		Open

DESCRIPTION	PERMIT	MUNICIPALITY	FACILITY OWNER	STATUS
BROWNFIELD/ ACTIVE UST/OPEN LUST				
Boron	50001581	Unknown		Open
BP Oil #4313	34678	Detroit		Open
Brandon Twp Fire Dept	12573	Ortonville		Open
Brandon Twp Hall	7782	Ortonville		Open
Brandon's Service	18705	Flint		Open
Bristol Point Shell #16	18965	Novi		Open
Bristol Rd Site	50001964	Unknown		Open
Bristolwood	18964	Philadelphia		Open
Camp Tamatac	50000720	Unknown		Open
Carman-ainsworth Bus Garage	9144	Flint		Open
Citizens Bank	50000550	Unknown		Open
City Auto Parts Of Flint	36482	Flint		Open
Clark #1849	12243	Coopersville		Open
Clark Station #1361	12289	Troy		Open
Clark Station #2000	12249	Grand Blanc		Open
Clark Store #1605	12235	Coopersville		Open
Cms #28	13379	Springfield		Open
Cms Ortonville	50001573	Not Recorded		Open
C-my Video	50001427	Unknown		Open
Coley & Swanson	34684	Flint		Open
Conlee Oil Co	571	Clio		Open
Crestwood Memorial Cemetery	36309	Fenton		Open
Danhausen, Floyd & Ruth	37137	Fenton		Open
Davison Gas & Oil #5	33416	Davison		Open
Davison Oil #9	33415	Ortonville		Open
Davison Oil & Gas	50005149	Davison		Open
Davison Oil & Gas #17	34122	Davison		Open
Davison Oil & Gas Co #3	33252	Davison		Open
Davison Oil & Gas Co #6	33269	Davison		Open
Dawn Donuts	19050	Flint		Open
Dort Hwy Site	50002024	Unknown		Open
Dort Site	50002172	Unknown		Open
Dort Sunoco Inc.	18392	Flint		Open
Dr Hugh Grover	40486	Flint		Open
Duncon Donuts/marathon 2077	19048	Flint		Open
Dunkin Donut #2100	21899	Flint		Open
Dunkin Donuts/marathon 2086	19049	Flint		Open
East Holly Village Inc	38193	Holly		Open
Eastland Shell	33280	Flint		Open
Fire Station #8	7357	Flint		Open
Fleet Admin - 12th St Yard	13341	Flint		Open
Flint Riggers & Erectors	7863	Bloomfield Hil		Open
Former Bob's Sunoco Service	50005214	Unknown		Open
Former Boron Oil	50002766	Unknown		Open
Former David Gray Property	50005232	Unknown		Open
Former Gary's Transmission	38962	FLINT		Open
Former Gas Station	50002038	Davisburg		Open

DESCRIPTION	PERMIT	MUNICIPALITY	FACILITY OWNER	STATUS
BROWNFIELD/ ACTIVE UST/OPEN LUST				
Former Gasoline Station	39745	Grand Blanc		Open
Former Independent Oil	50002696	Unknown		Open
Former Jerry's Standard	50002709	BURTON		Open
Former Mobil	50005492	Unknown		Open
Former Pete's Sunoco	50002722	Philadelphia		Open
Former Texaco	50005491	Unknown		Open
Former Thrall	50005236	Morrice		Open
General Motors Corp	1461	FLINT		Open
Genesee County Detention Center	50001827	FLINT		Open
Glenns Auto Parts	38096	Bay City		Open
GM Tg-flint Assembly	17757	Flint		Open
Goodwill Industries	15182	Flint		Open
Government Center	38459	Grand Blanc		Open
Grand Blanc Amoco	19461	Bloomfield Hil		Open
Grand Blanc Golf Club	33107	Grand Blanc		Open
Grand Blanc Marathon	17682	Holly		Open
Grand Trunk Western Rr Engine Ho	10859	Iron Mountain		Open
Great Lakes Technology Center	7501	FLINT		Open
Groveland Fire Department	14480	Holly		Open
Groveland Oaks County Park	7768	Waterford		Open
Hamiltons Of Ortonville	18579	Ortonville		Open
Hank Graff Chevrolet	8734	Davison		Open
Hariston Shell	18954	Dearborn		Open
Holly Hills #8	18952	Fenton		Open
J & J Service	34682	Flint		Open
Jet Gas, Flint	16951	Springfield		Open
John's Steak House Pizzeria & Ba	35644	Goodrich		Open
Kanrock Tire Corporation	20347	Fenton		Open
Kearsley 21	4163	Flint		Open
Kfc #7322-085	40537	IRVINE		Open
Kustom Equipment Warehouse, Inc.	38338	Burton		Open
Letavis Cloth Wash, S. Saginaw	34815	SWARTZ CREEK		Open
Lina's Petro Inc.	18528	Burton		Open
Little Caesar's Pizza	40276	Ortonville		Open
Maple Point Shell	18953	Saginaw		Open
Marathon Flint Oil #4	17679	Flint		Open
Marathon Station, (former)	50001705	Unknown		Open
Marathon, Miller Road, Rel. 2, 1	18150	Grand Blanc		Open
Maratrhon #8751	9408	Springfield		Open
Mass Transit Authority	15106	Flint		Open
Michigan Bell Telephone	11644	Dallas		Open
Mid America Plaza	37869	FLINT		Open
Mobil #03-cot	3188	Swartz Creek		Open
Mobil/1-stop Food Stores	504	Davison		Open
Morgan's Market	37413	Grand Blanc		Open
Mottard Enterprises #17	8088	Grand Blanc		Open
Mr Housni Fayz	39705	Dearborn Hts		Open

DESCRIPTION	PERMIT	MUNICIPALITY	FACILITY OWNER	STATUS
BROWNFIELD/ ACTIVE UST/OPEN LUST				
Mr P's Wash World	50002624	FLINT		Open
Nell	50002229	Unknown		Open
NRT Owner	50002211	Unknown		Open
Oak Hill Auto Restoration	36650	Davison		Open
Old Station, 2519 W. Grand Blanc	33539	Grand Blanc		Open
One Stop Food Store #15	510	Davison		Open
Orval Opperthausen	40272	Ortonville		Open
Pepsi Cola, Flint	19381	Detroit		Open
Quick Sav #29	2198	Flushing		Open
Quick Sav Foods Inc	13027	Flushing		Open
Quick Save Food Store, #4, Fento	2777	Flushing		Open
Richfield Iron Works	50000562	Unknown		Open
Rohman, Fred	50001897	Flint		Open
Roller Skating Club	50002144	Unknown		Open
Runyan Lake Food Center	5175	Fenton		Open
Sarra Inc	18393	Not Recorded		Open
Schaefer Bakeries	73	LANSING		Open
Shepherd, Mary	37663	Fenton		Open
Speedway #8764	1656	BRIGHTON		Open
Speedy Q Market #44	5226	Port Huron		Open
Spring Drug Store	50002159	Unknown		Open
Sun Austin Express #3	4157	Flint		Open
Sunoco	4154	Farmington Hil		Open
Sunoco	14457	Davison		Open
Sunoco, Fenton Road, Release 1,	4160	Flint		Open
Sunshine Food Stores, Burton #11	2199	Flint		Open
Swartz Creek Comm Sch Bus Garage	1259	Swartz Creek		Open
Swartz Creek, City Of, Morrish R	50000836	Unknown		Open
Tom Ryan Distributing	20363	Flint		Open
Total #2575	9414	Springfield		Open
Total Sta 0534	50001439	Unknown		Open
Total Station	9404	Springfield		Open
Town Pride Carpets	41359	Davison		Open
Trinity Lutheran Church	42008	Davison		Open
Union Super Stop #20	8104	Lansing		Open
United #6254	17024	Springfield		Open
United Cleaners, Inc.	849	Burton		Open
United Station #6255	9819	Coopersville		Open
Vacant Former Gas Station	50002447	Unknown		Open
Vacant Garage	39677	Alpena		Open
Valley Petroleum	1372	Swartz Creek		Open
Valley Petroleum	37879	Swartz Creek		Open
Vern Van Y Elementary School	41571	Burton		Open
Victor George Oldsmobile	6530	FLINT		Open
Wash World Inc	1886	Flushing		Open
Water Dept (service Center)	13339	Flint		Open
Watkins & Himelhoch Inc	12835	Burton		Open

DESCRIPTION	PERMIT	MUNICIPALITY	FACILITY OWNER	STATUS
BROWNFIELD/ ACTIVE UST/OPEN LUST				
White Pizza & Party Store	40531	Burton		Open
Wiltic Chemical Co	7436	Davison		Open
Yellow Freight System Inc (flt)	2021	OVERLAND PARK		Open
1-stop Food Store/Mobil	00000510	Flint		
7-eleven Store # 163	00018953	BURTON		
7-eleven W/gas - Store #158	00038633	FLINT		
A J Mini Mart	00009277	Flint		
ABE Petroleum	00018963	Flint		
Ac Delco Systems	00017154	FLINT		
Admiral Petroleum #144	00012243	Flint		
Admiral Petroleum #105	00009819	Flint		
Admiral Petroleum #42	00004171	Swartz Creek		
Admiral Petroleum Co #31	00012975	FLINT		
Admiral Petroleum Co #36	00012978	Burton		
Admiral Petroleum Co. #123	00012339	Flint		
Admiral Petroleum Co. #124	00012235	Flint		
Al Serra Chevrolet Inc	00015108	Grand Blanc		
Amir Mini-mart	00040233	Mount Morris		
Atherton Oil Inc	00012969	Flint		
Averill Ave Complex Plant 6	00017249	FLINT		
Belford Motor Sales Inc	00006085	DAVISON		
Belsay & Atherton Shell	00033268	Burton		
Belsay No 17	00019050	Burton		
Bishop Airport Maintenance	00036799	FLINT		
Bishop International Airport	00009604	Flint		
BP Gas Station	00019453	Burton		
Bristol Torrey Inc	00040438	Flint		
Burton Dpw	00004612	Burton		
Bus Garage	00001124	Goodrich		
Bus Garage Jewett Trail	00001176	GRAND BLANC		
Car Rental Facility	00039246	FLINT		
Castle Plaza	00039300	Grand Blanc		
Central Transport	00003298	Flint		
Church & Sons Auto Center	00035022	Goodrich		
City Of Burton Police/fire	00007777	Burton		
Conlee Oil Co	00000571	OTISVILLE		
Corrigan Sunoco North	00004172	Flint		
D & N Food & Gas Inc	00037622	Grand Blanc		
Dave Kemerko	00033415	Davison		
Davison Central Office	00011212	Davison		
Davison Maintenance Facility	00033727	DAVISON		
Davison Shopping Center	00038067	Davison		
Delphi Energy & Engine Mgr Systs	00017248	Flint		
Delphi Energy & Engine-div Gmc	00017269	FLINT		
DMJ Corp	00033416	Davison		
Dort-fill-up Inc	00038637	Flint		



DESCRIPTION	PERMIT	MUNICIPALITY	FACILITY OWNER	STATUS
BROWNFIELD/ ACTIVE UST/OPEN LUST				
Dortwood Amoco Service #19	00004935	Flint		
Duncon Donuts/marathon 2077	00019048	Flint		
Dunkin Donuts / Marathon 2086	00019049	Flint		
E Z Run	00036513	Flint		
EDS	00021823	Flint		
Estes Express Lines	00007477	Flint		
E-z Run Of Grand Blanc	00016990	Grand Blanc		
FinaTec LLC	00018389	Flint		
Fire Station #5	00007354	Flint		
Fire Station #8	00007357	Flint		
Flint East Co	00011702	Flint		
Flint Golf Club	00000352	Flint		
Flint Grand Traverse Gar & Strm	00011644	Flint		
Flint Riggers & Erectors	00007863	Burton		
Flint Stone	00038520	Flint		
Flint Water Plant	00037075	Flint		
Former Bond Shell	00004152	Flint		
Former Eastland Shell	00033280	Burton		
Former Viking Oil Co	00034678	Flint		
Garb-Ko Inc	00004154	Burton		
Generous Phone Company Inc	00021567	Flint		
Genesee County Association For Retarded Citiz	00005160	Flint		
Genesee Valley Center	00007562	FLINT		
GM Flint Assembly	00017757	Flint		
Gm Truck & Bus Group-flint Metal	00017247	FLINT		
Goodwill Ind Of Mid-michigan	00015182	Flint		
Grand Blanc Amoco	00019461	Grand Blanc		
Grand Blanc Central Office	00011723	Grand Blanc		
Grand Blanc Clark	00012249	Grand Blanc		
Grand Blanc Service Inc	00014316	Grand Blanc		
Hank Graff Chevrolet Inc	00008734	Davison		
Hill Road Citgo	00019455	Flint		
Holly Hills Sunoco	00018952	Grand Blanc		
Holly Road BP	00005661	Grand Blanc		
Kajy Hill Inc	00004160	FLINT		
Kearsley Community Schools	00007190	Flint		
Koegel Meats	00007256	Flint		
Kroger #115	00039431	FLINT		
Kroger #711	00041251	Swartz Creek		
Kroger D-406	00040994	Burton		
Maintenance & Operations Dept	00014453	Flint		
Marathon Flint Oil #4	00017679	Flint		
Marathon Unit #1937	00018150	Swartz Creek		
Meijer Gas Station #44	00033525	Flint		
Meijer Store #29	00034043	Burton		
Michigan Gasoline Traders Inc	00034122	Davison		
Mobil / 1 Stop Food Stores	00016721	Flint		

DESCRIPTION	PERMIT	MUNICIPALITY	FACILITY OWNER	STATUS
BROWNFIELD/ ACTIVE UST/OPEN LUST				
Mobil 1-stop	00035602	Davison		
Mobil 1-Stop Food Store	00000507	Flint		
Mobil\1-stopfood Stores	00016717	Burton		
Modern Ind Inc	00017287	Flint		
MTS Burton	00039348	Burton		
Myers School	00036457	GRAND BLANC		
Obeid, Inc.	00003188	Swartz Creek		
Old Forestry Division Compound	00036783	Flint		
Point Amoco	00019460	Flint		
Quick Sav #29	00002198	Goodrich		
Quick Stop Petreluem	00018392	Flint		
Quick-sav Food Store #4	00002777	Fenton		
Quick-Save #1	00013027	Swartz Creek		
Qussama Char	00008088	CLIO		
Road Runner Express	00040642	Burton		
Ross Properties	00041962	Grand Blanc		
Runyan Lake Food Center	00005175	Fenton		
Saginaw Lease	00018954	FLINT		
Sam Kallabat	00018705	Flint		
Speedway #2222	00017501	Burton		
Speedway #2206	00017519	Flint		
Speedway #2227	00017505	FLINT		
Speedway #2240	00041921	Davison		
Speedway #2375	00017540	Grand Blanc		
Speedway #5518	00018163	Burton		
Speedway #5524	00037941	Flint		
Speedway #6254	00017024	Flint		
Speedway #8393	00013379	Flint		
Speedway #8403	00009867	Davison		
Speedway #8591	00014195	Grand Blanc		
Speedway #8748	00002005	Flint		
Speedway #8749	00009404	FLINT		
Speedway #8752	00016951	Flint		
Speedway #8763	00021607	Grand Blanc		
Speedway 8753	00016957	Flint		
Speedy Q Mkt-craigs Food Store	00005226	FLINT		
Star Truck Rentals Inc	00018359	Flint		
Stewart Elementary School	00040793	Flint		
Sunoco	00014457	Davison		
Sunoco Miller/i75	00018955	Flint		
Superior Pontiac-cadillac	00013388	Flint		
T & T Petro Inc	00018528	Burton		
Thomas Investment Properties LLC	00041375	Flint		
Thompson Exit Shell	00016719	Fenton		
Tom Oconnor	00008392	Swartz Creek		
Tom Ryan Dist Co Inc	00020363	Flint		
United Parcel Service Inc	00019294	Flint		

DESCRIPTION	PERMIT	MUNICIPALITY	FACILITY OWNER	STATUS
BROWNFIELD/ ACTIVE UST/OPEN LUST				
Valley Petroleum	00001372	Swartz Creek		
Wash World Inc	00001886	Grand Blanc		
Zip's Party Store	00033256	Davison		
NPDES				
ABF Freight System-Flint	MIS510155	Flint	Private	
ACCI-Flint-West Bristol	MIS510526	Flint	Private	
Allied Systems Ltd-Flint	MIS510158	Flint	Private	
Atlas Oil Co-Flint Bulk Plt	MIS510651	Flint	Private	
Barrett Paving-Burton	MIS510163	Burton	Private	
Barrett Paving-Flint Plant 114	MIS510159	Flint	Private	
B-B Paint Corp-Flint	MIS510160	Flint	Private	
Bishop International Airport	MIS510162	Flint	Private	
Burton Auto Parts	MIS510166	Burton	Private	
Cadence Innovation-Grand Blanc	MIS510307	Grand Blanc	Private	
Citizens Disposal-Grand Blanc	MIS510201	Grand Blanc	Private	
Coca-Cola Company-Flint	MIS510202	Flint	Private	
Con-way Freight-XFL	MIS510393	Burton	Private	
Crown Enterprises-Flint	MIS510544	Flint	Private	
Delphi E-Flint East	MIS510078	Flint	Private	
Fernco Inc-Davison	MIS510210	Davison	Private	
Flint Boxmakers Inc	MIS510231	Burton	Private	
Frito-Lay-Gateway DC-Flint	MIS510646	Flint	Private	
GCRC-Atlas Maint Garage	MIS510235	Goodrich	Private	
GCRC-Flint Maint Garage	MIS510236	Flint	Private	
Genesee Packaging Inc	MIS510241	Flint	Private	
Genesee Polymers Corp	MIS510242	Burton	Private	
GMC-Flint Engine South	MIS510556	Flint	Private	
GM-MFD-Flint Metal Center	MIS510327	Flint	Private	
GM-MFD-Flint Tool & Die	MIS510392	Flint	Private	
GM-MFD-Grand Blanc Plant	MIS510328	Grand Blanc	Private	
GM-Van Slyke Utilities Group	MIS510613	Flint	Private	
Grand Blanc Cement Products	MIS510255	Grand Blanc	Private	
Grand Blanc Processing-Holly	MIS510283	Holly	Private	
Grand Trunk WRR-Flint	MIS510404	Flint	Private	
Great Lakes Waste-Flint	MIS510584	Flint	Private	
Inter-City Auto Parts-Flint	MIS510259	Flint	Private	
J & S Auto Salvage-Flint	MIS510260	Flint	Private	
Kens Redi-Mix Inc	MIS510257	Goodrich	Private	
Laidlaw Transit-Fenton	MIS210520	Fenton	Private	
Landaal Packaging-Iron St	MIS510623	Burton	Private	
Levy-Ace Asphalt & Paving-Plt3	MIS510156	Burton	Private	
M J Manufacturing-Burton	MIS510268	Burton	Private	
Mass Trans Authority-Flint	MIS510396	Flint	Private	
Metalfforming Tech Inc-Burton	MIS510232	Burton	Private	
Metro Fabricators Inc-Burton	MIS510271	Burton	Private	
Mich ARNG-Flint Armory-OMS 3	MIS510273	Flint	Private	
Mid-State Plating Co-Flint	MIS510272	Flint	Private	

DESCRIPTION	PERMIT	MUNICIPALITY	FACILITY OWNER	STATUS
NPDES				
Paragon Mfg-Fenton	MIS510557	Fenton	Private	
Premiere Packaging Inc	MIS520014	Flint	Private	
Qualitor-McGuane Industries	MIS510164	Burton	Private	
Quality Way Products	MIS510669	Holly	Private	
Raw Car Grp-Contour Fab-Fenton	MIS210687	Fenton	Private	
Richfield Iron Works Inc-Flint	MIS510152	Flint	Private	
Ring Screw LLC-Gainey Dr	MIS510674	Holly	Private	
Ring Screw LLC-Holly Dist Ctr	MIS510284	Holly	Private	
Ring Screw LLC-Holly Oper	MIS510285	Holly	Private	
Schmald Tool & Die Inc	MIS510292	Burton	Private	
Spooner Sales Inc	MIS510356	Flint	Private	
Stokes Steel Treating-Flint	MIS510295	Flint	Private	
Stone Transport-Flint Stone	MIS510233	Flint	Private	
Tiger Auto Salvage	MIS510297	Burton	Private	
TMI-Holly	MIS510299	Holly	Private	
UPS-Flint	MIS510302	Flint	Private	
US Fence-Flint	MIS510600	Flint	Private	
Data from USEPA National Priorities list; MDEQ Brownfields- USTfields Database; MDEQ Active NPDES permits list.				