State of Michigan

National Pollutant Discharge Elimination System Permit

Application for Discharge of Stormwater to Surface Waters from a Municipal Separate Storm Sewer System

DEPARTMENT OF ENVIRONMENTAL QUALITY
WATER RESOURCES DIVISION
PERMITS SECTION
P.O. BOX 30458
LANSING, MICHIGAN 48909-7958
TELEPHONE: 517-284-5568
FAX: 517-241-9003

Michigan Department of Environmental Quality – Water Resources Division

STORMWATER DISCHARGE PERMIT APPLICATION

Do Not Return This Page with the Completed Application

PURPOSE AND AUTHORITY

The National Pollutant Discharge Elimination System (NPDES) Program protects the surface waters of the state by assuring that discharges of wastewater comply with state and federal regulations. Anyone discharging or proposing to discharge wastewater to the surface waters of the state shall make application for and obtain a valid NPDES permit prior to the wastewater discharge.

NPDES permits are required under Section 402 of the Federal Clean Water Act (the Federal Act), as amended (33 U.S.C. 1251 et seq., P.L. 92-500, 95-217), and under Part 31, Water Resources Protection, of Michigan's Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (the Michigan Act). Part 31 of the Michigan Act also provides authority for the State to issue NPDES permits. The Michigan Department of Environmental Quality (MDEQ) administers the NPDES permit program for the State of Michigan. This application should be used to apply for a stormwater discharge from a regulated Municipal Separate Storm Sewer System (MS4) to the surface waters of the state.

ELIGIBLE PERMITTEES

Except as excluded below, any public body that owns or operates a regulated MS4 may be eligible for permit coverage including, but not limited to, the United States, the State of Michigan, a city, village, township, county, public school district, public college or university, a single purpose governmental agency, or any other governing body which is created by federal or state statute or law.

The DEQ will determine eligibility for permit coverage.

Nongovernmental entities, such as individuals, private schools, private colleges, and private universities, or industrial and commercial entities, are not eligible for permit coverage.

PENALTIES

The information in this Application is required by the Part 21 Rules of the Michigan Act. A municipality, business, or industry that violates the Part 21 Rules may be enjoined by action commenced by the Attorney General in a court of competent jurisdiction. Federal and State laws provide penalties for submitting false application information. The laws imposing those penalties are cited below.

The Federal Act, Section 309(c)(4): "Any person who knowingly makes any false material statement, representation, or certification in any application, record, report, plan, or other document filed or required to be maintained under this chapter or who knowingly falsifies, tampers with, or renders inaccurate any monitoring device or method required to be maintained under this chapter, shall upon conviction, be punished by a fine of not more than $10,000, or by imprisonment for not more than 2 years, or by both. If a conviction of a person is for a violation committed after a first conviction of such person under this paragraph, punishment shall be a fine of not more than $20,000 per day of violation, or by imprisonment of not more than 4 years, or by both."

The Michigan Act, Section 3115(2): "A person who at the time of the violation knew or should have known that he or she discharged a substance contrary to this part, or contrary to a permit or order issued or rule promulgated under this part, or who intentionally makes a false statement, representation, or certification in an application form pertaining to a permit or in a notice or report required by the terms and conditions of an issued permit, or who intentionally renders inaccurate a monitoring device or record required to be maintained by the department, is guilty of a felony and shall be fined not less than $2,500.00 or more than $25,000.00 for each violation. The court may impose an additional fine of not more than $25,000.00 for each day during which the unlawful discharge occurred. If the conviction is for a violation committed after a first conviction of the person under this subsection, the court shall impose a fine of not less than $25,000.00 per day and not more than $50,000.00 per day of violation. Upon conviction, in addition to a fine, the court, in its discretion may sentence the defendant to imprisonment for not more than 2 years or impose probation upon a person for a violation of this part.

With the exception of the issuance of criminal complaints, issuance of warrants, and the holding of an arraignment, the circuit court for the county in which the violation occurred has exclusive jurisdiction. However, the person shall not be subject to the penalties of this subsection if the discharge of the effluent is in conformance with and obedient to a rule, order, or permit of the department. In addition to a fine, the attorney general may file a civil suit in a court of competent jurisdiction to recover the full value of the injuries done to the natural resources of the state and the costs of surveillance and enforcement by the state resulting from the violation."

Michigan Department of Environmental Quality – Water Resources Division

STORMWATER DISCHARGE PERMIT APPLICATION

PLEASE TYPE OR PRINT

Applicants for either new permit coverage or reissuance of a permit shall include all of the following requested information for Sections I-VIII.

SECTION I. APPLICANT NAME AND MAILING ADDRESS

Current Permit/COC Number (if applicable): MIG 610081

Additional Applicant Name Information:

Street Address or P.O. Box: 11649 N. Saginaw St.

e-mail: citymanager@cityofmtmorris.org

City or Village: Mt. Morris | State: MI | ZIP Code: 48458

Telephone (with area code): 810-686-2160 | FAX Number (with area code): 810-686-7330

SECTION II. CONTACTS

☒ Application Contact
☐ Stormwater Program Manager
☒ Stormwater Billing

First Name: Thomas | Last Name: Darnell
Title: City Manager | Business: City of Mt. Morris
Address 1: 11649 N. Saginaw St. | Address 2:
City: Mt. Morris | State: MI | ZIP Code: 48458
Telephone (with area code): 810-686-2160 | FAX (with area code): 810-686-7330 | e-mail: citymanager@cityofmtmorris.org

☐ Application Contact
☒ Stormwater Program Manager
☐ Stormwater Billing

First Name: Jeff | Last Name: Roth
Title: Superintendent of Public Works | Business: City of Mt. Morris
Address 1: 11649 N. Saginaw St. | Address 2:
City: Mt. Morris | State: MI | ZIP Code: 48458
Telephone (with area code): 810-686-2160 | FAX (with area code): 810-686-7330 | e-mail: jroth@cityofmtmorris.org

☐ Application Contact
☐ Stormwater Program Manager
☐ Stormwater Billing

First Name: | Last Name:
Title: | Business:
Address 1: | Address 2:
City: | State: | Zip Code:
Telephone (with area code): | FAX (with area code): | e-mail:

SECTION III.

PERMIT ACTION REQUESTED:

☐ NEW AUTHORIZATION

☒ REISSUANCE OF PREVIOUS AUTHORIZATION

☐ MODIFICATION OF CURRENT PERMIT

SECTION IV. REGULATED AREA

Provide a map identifying the urbanized area within the applicant's jurisdictional boundary as defined by the 2010 Census. The regulated municipal separate storm sewer system (MS4) means an MS4 owned or operated by a city, village, township, county, district, association, or other public body created by or pursuant to state law and the nested MS4 identified in Section VI. that is

located in an urbanized area and discharges stormwater into surface waters of the state. The 2010 Census maps are located at http://www.michigan.gov/documents/deq/wrd-stormwater-urbanizedareas_374344_7.pdf

SECTION V. OUTFALLS AND POINTS OF DISCHARGE

Identify and provide the surface water of the state that receives the discharge from each of the applicant's outfalls and points of discharge in Table 1 or an alternative format. Please note that an MS4 is not a surface water of the state. For example, an open county drain that is a surface water of the state is not an MS4.

SECTION VI. NESTED JURISDICTIONS

Submit the name and general description of each nested MS4 for which a cooperative agreement has been reached to carry out the terms and conditions of the permit for the nested jurisdiction. The applicant shall be responsible for assuring compliance with the permit for those nested jurisdictions with which they have entered into an agreement and listed as part of the Application. If the primary jurisdiction and the nested jurisdiction agree to cooperate so that the terms and conditions of the permit are met for the nested MS4, the nested jurisdiction does not need to apply for a separate permit. A city, village, or township shall not be a nested jurisdiction.

NESTED JURISDICTION NAME AND GENERAL DESCRIPTION:

N/A

SECTION VII. STORMWATER MANAGEMENT PROGRAM

This application requires a description of the Best Management Practices (BMPs) the applicant will implement for each minimum control measure and the applicable water quality requirements during this permit cycle. The applicant shall incorporate the BMPs to develop a Stormwater Management Program (SWMP) as part of the application. The SWMP shall be developed, implemented, and enforced to reduce the discharge of pollutants from the MS4 to the Maximum Extent Practicable and protect water quality in accordance with the appropriate water quality requirements of Michigan Act 451, Public Acts of 1994, Part 31, and the Federal Water Pollution Control Act, as amended, (33 U.S.C. 1251 *et seq.*). The Maximum Extent Practicable may be met by implementing the BMPs identified in the SWMP and demonstrating the effectiveness of the BMPs. The applicant shall attach any appropriate and necessary documentation to demonstrate compliance with the six minimum control measures and applicable water quality requirements as part of the application.

The applicant shall complete this application to the best of its knowledge and ensure that it is true, accurate, and meets the minimum requirements for a SWMP to the Maximum Extent Practicable.

When answering the questions in this section of the application, the applicant's MS4 encompasses what the applicant identified in Sections IV, V, and VI, above. The applicant shall include a measurable goal for each BMP. Each measurable goal shall include, as appropriate, a schedule for BMP implementation (months and years), including interim milestones and the frequency of the action. Each measurable goal shall have a measure of assessment to measure progress towards achieving the measurable goal. A United States Environmental Protection Agency (USEPA) guidance document on measurable goals available at http://www.epa.gov/npdes/pubs/measurablegoals.pdf.

Several minimum control measures include a statement requesting the applicant to indicate in the response if you are, or will be, working collaboratively with watershed or regional partners on any or all activities to meet the minimum control measure requirements. If the applicant chooses to work collaboratively with watershed or regional partners to implement parts of the SWMP, each applicant will be responsible for complying with the minimum permit requirements.

For purposes of this application a procedure means a written process, policy or other mechanism describing how the applicant will implement minimum requirements. It may be helpful to read all questions in each section first.

Enforcement Response Procedure (ERP)

The applicant shall describe the current and proposed enforcement responses to address violations of the applicant's ordinances and regulatory mechanisms identified in the SWMP. The following question represents the minimum requirement for the ERP. Please complete the question below.

1. Provide the ERP. The ERP shall include the applicant's expected response to violations to compel compliance with an ordinance or regulatory mechanism implemented by the applicant in the SWMP (e.g., written notices, citations, and fines). The ERP shall contain a method for tracking instances of non-compliance, including, as appropriate, the name of the person responsible for violating the applicant's ordinance or regulatory mechanism, the date and location of the violation, a description of the violation, a description of the enforcement response used, a schedule for returning to compliance, and the date the violation was resolved. The applicant may keep an electronic file or hard copy file of the enforcement tracking.

   ERP Reference (page and paragraph of attachments): *e.g., Attachment A, Page 3, Section b.* See Attachment 2, page 5-9, 27-28 of IDEP, Individual Permittee ERP.

Public Participation/Involvement Program (PPP)

The applicant shall describe the current and proposed BMPs to meet the minimum control measure requirements for the PPP to the maximum extent practicable, which shall be incorporated into the SWMP. Please indicate in your response if you are, or will be, working collaboratively with watershed or regional partners on any or all activities in the PPP during the permit cycle (i.e., identify collaborative efforts in the procedures). The following questions represent the minimum control measure requirements for the PPP. Please complete all the questions below. A measurable goal with a measure of assessment shall be included for each BMP, and, as appropriate, a schedule for implementation (months and years), including interim milestones and the frequency of the BMP.

2. Provide the procedure for making the SWMP available for public inspection and comment. The procedure shall include a process for notifying the public when and where the SWMP is available and of opportunities to provide comment. The procedure shall also include a process for complying with local public notice requirements, as appropriate.

   Procedure Reference (page and paragraph of attachments): *e.g., Attachment A, Page 3, Section b.* See Attachment 3

3. Provide the procedure for inviting public involvement and participation in the implementation and periodic review of the SWMP.

   Procedure Reference (page and paragraph of attachments): See attachment 3

Public Education Program (PEP)
The applicant shall describe the current and proposed BMPs to meet the minimum control measure requirements for the PEP to the maximum extent practicable, which shall be incorporated into the SWMP. Please indicate in your response if you are, or will be, working collaboratively with watershed or regional partners on any or all activities in the PEP during the permit cycle. The following questions represent the minimum requirements for the PEP. Please complete all the questions below. A measurable goal with a measure of assessment shall be included for each BMP, and, as appropriate, a schedule for implementation (months and years), including interim milestones and the frequency of the BMP. The responses shall reflect the nested MS4s identified in Section VI.

4. Provide the procedure with the assessment of high priority, community-wide issues and targeted issues to reduce pollutants in stormwater runoff as part of the PEP. The assessment shall include a list of the priority issues.
   ☐ Procedure Reference (page and paragraph of attachments): *e.g., Attachment A, Page 3, Section b* Attachment 4
   ☒ Not applicable – PEP topics will not be prioritized.

5. The applicant shall identify applicable PEP topics below and prioritize based on the assessment in Question 4. The PEP topics may be prioritized as high, medium, and low or in order from 1-11 based on the assigned priority level (e.g., 1 being the highest priority topic and 11 being the lowest priority topic). For each applicable topic, identify the target audience; key message; delivery mechanism; year and frequency the BMP will be implemented; and the responsible party.

   For each topic below, complete one or more of the following
   - Fill out Table 2 for each applicable PEP topic.
   - Reference the page number in your existing PEP document.
   - Explain why the PEP activity is not applicable or a priority issue.

   A. Promote public responsibility and stewardship in the applicant's watershed(s).
      Priority Ranking _____
      ☒ See Table 2
      ☐ Attach existing approved PEP (page and paragraph of attachments): _____
      ☐ Not applicable. Provide explanation below.

   B. Inform and educate the public about the connection of the MS4 to area waterbodies and the potential impacts discharges could have on surface waters of the state.
      Priority Ranking _____
      ☒ See Table 2
      ☐ Attach existing approved PEP (page and paragraph of attachments): _____
      ☐ Not applicable. Provide explanation below.

   C. Educate the public on illicit discharges and promote public reporting of illicit discharges and improper disposal of materials into the MS4.
      Priority Ranking _____
      ☒ See Table 2
      ☐ Attach existing approved PEP (page and paragraph of attachments): _____
      ☐ Not applicable. Provide explanation below.

D. Promote preferred cleaning materials and procedures for car, pavement, and power washing.
Priority Ranking _____
☒ See Table 2
☐ Attach existing approved PEP (page and paragraph of attachments): _____
☐ Not applicable. Provide explanation below.

E. Inform and educate the public on proper application and disposal of pesticides, herbicides, and fertilizers.
Priority Ranking _____
☒ See Table 2
☐ Attach existing approved PEP (page and paragraph of attachments): _____
☐ Not applicable. Provide explanation below.

F. Promote proper disposal practices for grass clippings, leaf litter, and animal wastes that may enter into the MS4.
Priority Ranking _____
☒ See Table 2
☐ Attach existing approved PEP (page and paragraph of attachments): _____
☐ Not applicable. Provide explanation below.

G. Identify and promote the availability, location, and requirements of facilities for collection or disposal of household hazardous wastes, travel trailer sanitary wastes, chemicals, and motor vehicle fluids.
Priority Ranking _____
☒ See Table 2
☐ Attach existing approved PEP (page and paragraph of attachments): _____
☐ Not applicable. Provide explanation below.

H. Inform and educate the public on proper septic system care and maintenance, and how to recognize system failure.
Priority Ranking _____
☐ See Table 2
☐ Attach existing approved PEP (page and paragraph of attachments): _____
☒ Not applicable. Provide explanation below.

There are no septic systems in our jurisdiction.

I. Educate the public on, and promote the benefits of, green infrastructure and Low Impact Development.
Priority Ranking _____
☒ See Table 2
☐ Attach existing approved PEP (page and paragraph of attachments): _____
☐ Not applicable. Provide explanation below.

J. Promote methods for managing riparian lands to protect water quality.
Priority Ranking _____
☒ See Table 2
☐ Attach existing approved PEP (page and paragraph of attachments): _____
☐ Not applicable. Provide explanation on the next page.

K. Identify and educate commercial, industrial, and institutional entities likely to contribute pollutants to stormwater runoff.
Priority Ranking _____
☒ See Table 2
☐ Attach existing approved PEP (page and paragraph of attachments): _____
☐ Not applicable. Provide explanation below.

6. Provide the procedure for evaluating and determining the effectiveness of the overall PEP. The procedure shall include a method for assessing changes in public awareness and behavior resulting from the implementation of the PEP and the process for modifying the PEP to address ineffective implementation.

Procedure Reference (page and paragraph of attachments): Attachment 4

Illicit Discharge Elimination Program (IDEP)
The applicant shall describe the current and proposed BMPs to meet the minimum control measure requirements for the IDEP to the Maximum Extent Practicable, which shall be incorporated into the SWMP. Please indicate in your response if you are or will be working collaboratively with watershed or regional partners on any or all BMPs in the IDEP during the permit cycle (e.g., identify collaborative efforts in the procedures). The following questions represent the minimum control measure requirements for the IDEP. Please complete all the questions below. A measurable goal with a measure of assessment shall be included for each BMP, and, as appropriate, a schedule for implementation (months and years), including interim milestones and the frequency of the BMP. The responses shall reflect the nested MS4s identified in Section VI.

The following definitions apply to the terms used below:
- Illicit Discharge: Any discharge to, or seepage into, an MS4 that is not composed entirely of stormwater or uncontaminated groundwater except discharges pursuant to an NPDES permit. A discharge that originates from the applicant's property and meets the illicit discharge definition is considered an illicit discharge.
- Illicit Connection: A physical connection to an MS4 that primarily conveys non-stormwater discharges other than uncontaminated groundwater into the MS4; or a physical connection not authorized or permitted by the local authority, where a local authority requires authorization or a permit for physical connections.

The Center for Watershed Protection has a guide on developing and implementing an IDEP available at http://www.epa.gov/npdes/pubs/idde_manualwithappendices.pdf. This guide is a useful tool to assist with completing the application.

Storm Sewer System Map

7. Provide the location where an up-to-date storm sewer system map(s) is available. The map(s) shall identify the following: the storm sewer system, the location of all outfalls and points of discharge, and the names and location of the surface waters of the state that receive discharges from the permittee's MS4 (for both outfalls and points of discharge). A separate storm sewer system includes: roads, catch basins, curbs, gutters, parking lots, ditches, conduits, pumping devices, and man-made channels. A storm sewer system map(s) may include available diagrams, such as certification maps, road maps showing rights-of-way, as-built drawings, or other hard copy or digital representation of the storm sewer system.

The map (or maps) is available at the following location: *e.g., The Department of Public Works front office* DPW Office, 720 Hughes St. Mt. Morris.

Illicit Discharge Identification and Investigation

8. Provide the procedure for prioritizing the applicant's MS4 for detecting non-stormwater discharges. The goal of the prioritization process is to target areas with high illicit discharge potential. The procedure shall document the process for selecting each priority area using the list below.
   - Areas with older infrastructure
   - Industrial, commercial, or mixed use areas
   - Areas with a history of past illicit discharges
   - Areas with a history of illegal dumping
   - Areas with onsite sewage disposal systems
   - Areas with older sewer lines or with a history of sewer overflows or cross-connections
   - Areas with sewer conversions or historic combined sewer systems
   - Areas with poor dry-weather water quality
   - Areas with water quality impacts, including waterbodies identified in a Total Maximum Daily Load
   - Priority areas applicable to the applicant not identified above

☒ Procedure Reference (page and paragraph of attachments): *e.g., Attachment A, Page 3, Section b* Attachment 2, page 3-4 of IDEP plan
☐ Not applicable – The applicant will perform illicit discharge identification and investigation throughout the entire MS4. Skip to Question 10.

9. Provide the geographical location of each prioritized area using either a narrative description or map and identify the prioritized areas that will be targeted during the permit cycle.

IDEP Prioritized Areas (page and paragraph of attachments): Attachment 2 page 3 of IDEP plan

10. Provide the procedure for performing field observations at all outfalls and points of discharge in the priority areas, as identified in the procedure above, or for the entire MS4 during dry-weather at least once during the permit cycle. The procedure shall include a schedule for completing the field observations during the permit cycle or more expeditiously if the applicant becomes aware of a non-stormwater discharge. *As part of the procedure, the applicant may submit an interagency agreement with the owner or operator of the downstream MS4 identifying responsibilities for ensuring an illicit discharge is eliminated if originating from the applicant's point(s) of discharge. The interagency agreement would eliminate the requirement for performing a field observation at that point(s) of discharge.*

The focus of the field observation shall be to observe the following:

- Presence/absence of flow
- Deposits/stains on the discharge structure or bank
- Vegetation condition
- Structural condition
- Biology, such as bacterial sheens, algae, and slimes
- Water clarity
- Color
- Odor
- Floatable materials

Procedure Reference (page and paragraph of attachments): Attachment 2 page 4-6 of IDEP plan.

11. Provide the procedure for performing field screening if flow is observed at an outfall or point of discharge and the source of an illicit discharge is not identified during the field observation. Field screening shall include analyzing the discharge for indicator parameters (e.g., ammonia, fluoride, detergents, and pH). The procedure shall include a schedule for performing field screening.

Procedure Reference (page and paragraph of attachments): Attachment 2 page 4-7 of IDEP plan

12. Provide the procedure for performing a source investigation if the source of an illicit discharge is not identified by field screening. The procedure shall include a schedule for performing a source investigation.

Procedure Reference (page and paragraph of attachments): Attachment 2 page 8 of IDEP plan

13. Provide the procedure for responding to illegal dumping/spills. The procedure shall include a schedule for responding to complaints, performing field observations, and follow-up field screening and source investigations as appropriate.

Procedure Reference (page and paragraph of attachments): Attachment 2 page 6-7 of IDEP plan

14. Provide the procedure for responding to illicit discharges outside of the priority areas. The procedure shall include a schedule for performing field observations, and follow-up field screening and source investigations as appropriate.
☐ Procedure Reference (page and paragraph of attachments): _____
☒ Not applicable – Field observations will be conducted at all outfalls and points of discharge

15. Provide the procedure that includes a requirement to immediately report any release of any polluting materials from the MS4 to the surface waters or groundwaters of the state, unless a determination is made that the release is not in excess of the threshold reporting quantities in the Part 5 Rules, by calling the appropriate MDEQ District Office, or if the notice is provided after regular working hours call the MDEQ's 24-Hour Pollution Emergency Alerting System telephone number: 800-292-4706.

Procedure Reference (page and paragraph of attachments): Attachment 2 individual ERP

16. If the procedures requested in Questions 8 through 14 do not accurately reflect the permittee's procedure(s), describe the alternative approach to meet the minimum requirements.

☒ Not applicable

17. Provide the procedure for responding to illicit discharges once the source is identified. The procedure shall include a schedule to eliminate the illicit discharge and pursue enforcement actions. The procedure shall also address illegal spills/dumping.

Procedure Reference (page and paragraph of attachments): Attachment 2, page 7 & 9 of IDEP plan

IDEP Training and Evaluation

18. Provide the program to train staff employed by the applicant on identifying an illicit discharge or connection and the proper procedure for reporting and responding to an illicit discharge or connection. At a minimum, existing staff shall be trained at least once during the permit cycle and new hires within the first year of their hire date. The program shall include a training schedule for the permit cycle. *It is recommended that staff is trained more than once per permit cycle.*

    Program Reference (page and paragraph of attachments): Attachment 2 page 11 of IDEP plan

19. Provide the procedure for evaluating and determining the overall effectiveness of the IDEP. *Examples of evaluating overall effectiveness include, but are not limited to, the following: evaluate the prioritization process to determine if efforts are being maximized in areas with high illicit discharge potential; evaluate the effectiveness of using different detection methods; evaluate the number of discharges and/or quantity of discharges eliminated using different enforcement methods; and evaluate program efficiency and staff training frequency.*

    Procedure Reference (page and paragraph of attachments): Attachment 2 page 11 IDEP plan

Illicit Discharge Ordinance

20. Provide the ordinance or regulatory mechanism in effect that prohibits non-stormwater discharges into the applicant's MS4 (except the non-stormwater discharges addressed in Questions 21 and 22).

    Ordinance number(s) or regulatory mechanism title(s) (attach a copy): Attachment 2, Illicit Discharge Ordinance/Regulatory Mechanism

21. Does the ordinance or other regulatory mechanism exclude prohibiting the discharges or flows from firefighting activities to the applicant's MS4 and require that these discharges or flows only be addressed if they are identified as significant sources of pollutants to waters of the State? The ordinance shall not authorize illicit discharges; however, the applicant may choose to exclude prohibiting the discharges and flows from firefighting activities if they are identified as not being significant sources of pollutants to waters of the state.
    ☒ Yes, ordinance or regulatory mechanism reference (page and paragraph of attachments): Attachment 2
    ☐ Not applicable – All non-stormwater discharges into the applicant's MS4 will be prohibited.

22. Does the ordinance or other regulatory mechanism prohibit the following categories of non-stormwater discharges or flows if identified as significant contributors to violations of Water Quality Standards? The ordinance shall not authorize illicit discharges; however, the applicant may choose to exclude prohibiting the following discharges or flows if they are identified as not being a significant contributor to violations of Water Quality Standards.
    a. Water line flushing and discharges from potable water sources
    b. Landscape irrigation runoff, lawn watering runoff, and irrigation waters
    c. Diverted stream flows and flows from riparian habitats and wetlands
    d. Rising groundwaters and springs
    e. Uncontaminated groundwater infiltration and seepage
    f. Uncontaminated pumped groundwater, except for groundwater cleanups specifically authorized by NPDES permits
    g. Foundation drains, water from crawl space pumps, footing drains, and basement sump pumps
    h. Air conditioning condensation
    i. Waters from noncommercial car washing
    j. Street wash water
    k. Dechlorinated swimming pool water from single, two, or three family residences. (A swimming pool operated by the permittee shall not be discharged to a separate storm sewer or to surface waters of the state without NPDES permit authorization from the MDEQ.)

    ☒ Yes, ordinance or regulatory mechanism reference (page and paragraph of attachments): Attachment 2
    ☐ Not applicable – All non-stormwater discharges into the applicant's MS4 will be prohibited.

23. Provide the ordinance or regulatory mechanism that regulates the contribution of pollutants to the applicant's MS4.

    Ordinance or regulatory mechanism reference (page and paragraph of attachments): Attachment 2

24. Provide the ordinance or regulatory mechanism that prohibits illicit discharges, including illicit connections and the direct dumping or disposal of materials into the applicant's MS4.

    Ordinance or regulatory mechanism reference (page and paragraph of attachments): Attachment 2

25. Provide the ordinance or regulatory mechanism with the authority established to inspect, investigate, and monitor suspected illicit discharges into the applicant's MS4.

    Ordinance or regulatory mechanism reference (page and paragraph of attachments): Attachment 2

26. Provide the ordinance or regulatory mechanism that requires and enforces elimination of illicit discharges into the applicant's MS4, including providing the applicant the authority to eliminate the illicit discharge.

    Ordinance or regulatory mechanism reference (page and paragraph of attachments): Attachment 2

Construction Stormwater Runoff Control Program

The applicant shall describe the current and proposed BMPs to meet the minimum control measure requirements for the construction stormwater runoff control program to the maximum extent practicable, which shall be incorporated into the SWMP. Please indicate in your response if you are or will be working collaboratively with watershed or regional partners on any or all requirements of this program during the permit cycle. The following questions represent the minimum control measure requirements for the construction stormwater runoff control program. Please complete all the questions below. A measurable goal with a measure of assessment shall be included for each BMP, and, as appropriate, a schedule for implementation (months and years), including interim milestones and the frequency of the BMP. The responses shall reflect the nested MS4s identified in Section VI.

Qualifying Local Soil Erosion and Sedimentation Control Programs

27. Is the applicant a Part 91 Agency? A list of Part 91 agencies is available at http://www.michigan.gov/deq/0,4561,7-135-3311_4113-8870--,00.html.

    Yes. Choose type: ☐ County Enforcing Agency ☐ Municipal Enforcing Agency ☐ Authorized Public Agency

    ☒ No, the applicant relies on the following Qualifying Local Soil Erosion and Sedimentation Control Program (Part 91 Agency)

    _____

Construction Stormwater Runoff Control

28. Provide the procedure with the process for notifying the Part 91 Agency or appropriate staff when soil or sediment is discharged to the applicant's MS4 from a construction activity. The procedure shall allow for the receipt and consideration of complaints or other information submitted by the public or identified internally as it relates to construction stormwater runoff control. For non-Part 91 agencies, consideration of complaints may include referring the complaint to the qualifying local Soil Erosion and Sedimentation Control Program as appropriate. Construction activity is defined pursuant to Part 21, Wastewater Discharge Permits, Rule 323.2102 (K). The applicant may consider as part of their procedure when and under what circumstances the Part 91 Agency or appropriate staff will be contacted.

    Procedure Reference (page and paragraph of attachments): *e.g., Attachment A, Page 3, Section b* Attachment 5

29. Provide the procedure for when to notify the MDEQ when soil, sediment, or other pollutants are discharged to the applicant's MS4 from a construction activity. Other pollutants include pesticides, petroleum derivatives, construction chemicals, and solid wastes that may become mobilized when land surfaces are disturbed. The applicant may consider as part of their procedure when and under what circumstances the MDEQ will be contacted.

    Procedure Reference (page and paragraph of attachments): Attachment 5

30. Provide the procedure for ensuring that construction activity one acre or greater in total earth disturbance with the potential to discharge to the applicant's MS4 obtains a Part 91 permit, or is conducted by an approved Authorized Public Agency as appropriate. Note: For applicants that conduct site plan review, the procedure must be triggered at the site plan review stage.

    Procedure Reference (page and paragraph of attachments): Attachment 5

31. Provide the procedure to advise the landowner or recorded easement holder of the property where the construction activity will occur of the State of Michigan Permit by Rule (Rule 323.2190).

    Procedure Reference (page and paragraph of attachments): Attachment 5

Post-Construction Stormwater Runoff Program

Post-construction stormwater runoff controls are necessary to maintain or restore stable hydrology in receiving waters by limiting surface runoff rates and volumes and reducing pollutant loadings from sites that undergo development or significant redevelopment.

The applicant shall describe the current and proposed BMPs to meet the minimum control measure requirements for the post-construction stormwater runoff program to the maximum extent practicable, which shall be incorporated into the SWMP. Please complete the questions below as appropriate. If the "No" response is selected but a date is requested for the minimum requirement to

be available, please provide a date to meet the minimum requirement. All dates provided by the applicant in this application should be on or before October 1, 2014. Some questions are set up to allow for additional responses to meet the minimum requirements. If space is not available for an additional response, then the minimum requirement must be met in accordance with the question. A measurable goal with a measure of assessment shall be included for each BMP, and, as appropriate, a schedule for implementation (months and years), including interim milestones and the frequency of the BMP. The responses shall reflect the nested MS4s identified in Section VI.

An applicant may reference in its ordinance or regulatory mechanism other technical documents used to implement the post-construction stormwater runoff program. For example, an applicant may answer a question with a reference to a performance or technical standards document in the ordinance **and** the reference in the technical document. When referencing the ordinance, regulatory mechanism, or other technical documents, attach the document and provide the page and paragraph reference.

The MDEQ has a manual with information on post-construction stormwater runoff control available at http://www.semcog.org/LowImpactDevelopment.aspx . Chapter 9 of the *Low Impact Development Manual for Michigan* provides a methodology for addressing post-construction stormwater runoff.

Ordinance or Other Regulatory Mechanism

32. Is an ordinance or other regulatory mechanism in effect to address post-construction stormwater runoff from new development and redevelopment projects, including preventing or minimizing water quality impacts? The ordinance or other regulatory mechanism shall apply to private, commercial, and public projects, including projects where the applicant is the developer. This requirement may be met using a single ordinance or regulatory mechanism or a combination of ordinances and regulatory mechanisms.
☐ Yes, ordinance or regulatory mechanism reference (page and paragraph of attachments): *e.g., Attachment A, Pages 1-15* _____
☒ No, the ordinance or regulatory mechanism will be available on 9/30/14

33. Does the ordinance or other regulatory mechanism apply to projects that disturb at least one or more acres, including projects less than an acre that are part of a larger common plan of development or sale and discharge into the applicant's MS4?
☐ Yes, ordinance or regulatory mechanism reference (page and paragraph of attachments): _____
☒ No, the ordinance or regulatory mechanism will be available on 9/30/14

Federal Facilities

Federal facilities are subject to the Energy Independence and Security Act of 2007. Section 438 of this legislation establishes post-construction stormwater runoff requirements for federal development and redevelopment projects.

34. Is the applicant the owner or operator of a federal facility with a stormwater discharge?
☐ Yes
☒ No, skip to Question 36

35. Is the applicant implementing the post-construction stormwater runoff control requirements in Section 438 of the Energy Independence and Security Act? A guidance document is available at http://www.epa.gov/greeningepa/documents/epa_swm_guidance.pdf
☐ Yes, regulatory mechanism reference (page and paragraph of attachments): _____
☐ No, the regulatory mechanism will be available on _____

Water Quality Treatment Performance Standard

36. Does the ordinance or other regulatory mechanism include one of the following water quality treatment standards?

☐ Treat the first one inch of runoff from the entire site. Ordinance or other regulatory mechanism reference (page and paragraph of attachments) _____ Skip to Question 38.
☐ Treat the runoff generated from 90 percent of all runoff-producing storms. Ordinance or other regulatory mechanism reference (page and paragraph of attachments) _____
☒ No, the ordinance or other regulatory mechanism will be available on 10/1/14, Draft in attachment 6
☐ The ordinance or other regulatory mechanism is/will be available on _____ and includes the following water quality treatment standard. Provide an explanation as to how the water quality treatment standard will prevent or minimize water quality impacts.

37. What is the source of the rainfall data if the applicant has chosen the water quality treatment standard of requiring the treatment of the runoff generated from 90 percent of all runoff-producing storms?

☒ The MDEQ's memo dated March 24, 2006 providing the 90 percent annual non-exceedance storm statistics. The memo is available at http://www.michigan.gov/documents/deq/lwm-hsu-nps-ninety-percent_198401_7.pdf.

☐ An analysis of at least ten years of local published rain gauge data following the method in the March 25, 2006, MDEQ memo titled *90 Percent Annual Non-Exceedance Storms* cited above.
☐ Other rainfall data source (page and paragraph of attachments) _____

38. Does the ordinance or other regulatory mechanism require that BMPs be **designed** on a site-specific basis to reduce post-development total suspended solids loadings by 80 percent or achieve a discharge concentration of total suspended solids not to exceed 80 milligram per liter?
☐ Yes, ordinance or other regulatory mechanism reference (page and paragraph of attachments): _____
☒ No, the ordinance or other regulatory mechanism will be available on 10/1/14
☐ The ordinance or other regulatory mechanism defines treatment as follows:

Attachment 6 and companion page 8 requirement A

Channel Protection Performance Standard

39. Does the ordinance or other regulatory mechanism require that the post-construction runoff rate and volume of discharges not exceed the pre-development rate and volume for all storms up to the two-year, 24-hour storm at the site? At a minimum, pre-development is the last land use prior to the planned new development or redevelopment. *A spreadsheet to assist with these calculations is available at www.michigan.gov/documents/deq/wb-storm-MS4-RunoffVolume_331235_7.xls*
☐ Yes, ordinance or other regulatory mechanism reference (page and paragraph of attachments): _____
☐ No, the ordinance or other regulatory mechanism will be available on _____
☒ The ordinance or other regulatory mechanism is/will be available on 10/1/14and includes the following channel protection standard. Provide an explanation as to how the channel protection standard will prevent or minimize water quality impacts.

Attachment 6 and companion page 8 requirement B

40. Does the ordinance or other regulatory mechanism exclude any waterbodies from the channel protection performance standard? The channel protection performance standard is not required for the following waterbodies: the Great Lakes or connecting channels of the Great Lakes; Rouge River downstream of the Turning Basin; Saginaw River; Mona Lake and Muskegon Lake (Muskegon County); and Lake Macatawa and Spring Lake (Ottawa County).
☐ Yes, ordinance or other regulatory mechanism reference (page and paragraph of attachments): _____
☐ No, the ordinance or other regulatory mechanism will be available on _____
☒ Not applicable

Site-Specific Requirements

41. Provide the procedure for reviewing the use of infiltration BMPs to meet the water quality treatment and channel protection standards for new development or redevelopment projects in areas of soil or groundwater contamination in a manner that does not exacerbate existing conditions. The procedure shall include the process for coordinating with MDEQ staff as appropriate.

Procedure Reference (page and paragraph of attachments): Attachment 6

42. Does the ordinance or other regulatory mechanism require BMPs to address the associated pollutants in potential hot spots as part of meeting the water quality treatment and channel protection standards for new development or redevelopment projects? Hot spots include areas with the potential for significant pollutant loading such as gas stations, commercial vehicle maintenance and repair, auto recyclers, recycling centers, and scrap yards. Hot spots also include areas with the potential for contaminating public water supply intakes.
☒ Yes, ordinance or other regulatory mechanism reference (page and paragraph of attachments): Attachment 6
☐ No, the ordinance or other regulatory mechanism will be available on _____

Off-Site Mitigation and Payment in Lieu Programs

43. Does the ordinance or other regulatory mechanism allow for the approval of off-site mitigation for redevelopment projects that cannot meet 100 percent of the performance standards on-site after maximizing stormwater retention? Off-site mitigation refers to BMPs implemented at another location within the same jurisdiction and watershed/sewershed as the original project. *A watershed is the geographic area included in a10-digit Hydrologic Unit Code and a sewershed is the area where stormwater is conveyed by the applicant's MS4 to a common outfall or point of discharge.*
☐ Yes, ordinance or other regulatory mechanism reference (page and paragraph of attachments): _____
☐ No, the ordinance or other regulatory mechanism will be available on _____
☒ Not pursuing this option

44. Does the ordinance or other regulatory mechanism allow for the approval of payment in lieu for projects that cannot meet 100 percent of the performance standards on-site after maximizing stormwater retention? A payment in lieu program refers to a developer paying a fee to the applicant that is applied to a public stormwater management project within the same jurisdiction and watershed/sewershed as the original project in lieu of installing the required BMPs onsite. The stormwater management project may be either a new BMP or a retrofit to an existing BMP and shall be developed in accordance with the applicant's performance standards. *A watershed is the geographic area included in a 10-digit Hydrologic Unit Code and a sewershed is the area where stormwater is conveyed by the applicant's MS4 to a common outfall or point of discharge.*
☐ Yes, ordinance or other regulatory mechanism reference (page and paragraph of attachments): _____
☐ No, the ordinance or other regulatory mechanism will be available on _____
☒ Not pursuing this option. If "not pursuing this option" was selected for both Questions 43 and 44, skip to Question 52.

45. Does the ordinance or other regulatory mechanism establish criteria for determining the conditions under which off-site mitigation and/or payment in lieu are available and require technical justification as to the infeasibility of on-site management? The determination that performance standards cannot be met on-site shall not be based solely on the difficulty or cost of implementing, but shall be based on multiple criteria related to the physical constraints of the project site, such as: too small of a lot outside of the building footprint to create the necessary infiltrative capacity even with amended soils; soil instability as documented by a thorough geotechnical analysis; a site use that is inconsistent with the capture and reuse of stormwater; too much shade or other physical conditions that preclude adequate use of plants. The criteria shall also include consideration of the stream order and location within the watershed/sewershed as it relates to the water quality impacts from the original project site *(e.g., the water quality impact from a site with a discharge to a small-sized stream would be greater than a site on a large river and an offset downstream of the project site may provide less water quality benefit.)* The highest preference for off-site mitigation and in lieu projects shall be given to locations that yield benefits to the same receiving water that received runoff from the original project site.
☐ Yes, ordinance or other regulatory mechanism reference (page and paragraph of attachments): _____
☐ No, the ordinance or other regulatory mechanism will be available on _____

46. Does the ordinance or other regulatory mechanism establish a minimum amount of stormwater to be managed on-site as a first tier for off-site mitigation or payment in lieu? A higher offset ratio is required if off-site mitigation or payment in lieu is requested for the amount of stormwater identified as the first tier. *For example, a minimum of 0.4 inches of stormwater runoff shall be managed on-site as a first tier.*
☐ Yes, ordinance or other regulatory mechanism reference (page and paragraph of attachments): _____
☐ No, the ordinance or other regulatory mechanism will be available on _____
☐ The ordinance or other regulatory mechanism requires the following:

47. Does the ordinance or other regulatory mechanism require an offset ratio of 1:1.5 for the amount of stormwater above the first tier (identified in Question 47) not managed on-site to the amount of stormwater required to be mitigated at another site or for which in-lieu payments shall be made?
☐ Yes, ordinance or other regulatory mechanism reference (page and paragraph of attachments): _____
☐ No, the ordinance or other regulatory mechanism will be available on _____
☐ The ordinance or other regulatory mechanism requires the following:

48. Does the ordinance or other regulatory mechanism require that if demonstrated by the developer to the applicant that it is completely infeasible to manage the first tier of stormwater identified in Question 47 on-site, the offset ratio for the unmanaged portion is 1:2?
☐ Yes, ordinance or other regulatory mechanism reference (page and paragraph of attachments): _____
☐ No, the ordinance or other regulatory mechanism will be available on _____
☐ The ordinance or other regulatory mechanism requires the following:

49. Does the ordinance or other regulatory mechanism require a schedule for completing off-site mitigation and in-lieu projects? *Off-site mitigation and in-lieu projects should be completed within 24 months after the start of the original project site construction.*
☐ Yes, ordinance or other regulatory mechanism reference (page and paragraph of attachments): _____
☐ No, the ordinance or other regulatory mechanism will be available on _____
☐ The ordinance or other regulatory mechanism requires the following:

50. Does the ordinance or other regulatory mechanism require that offsets and in-lieu projects be preserved and maintained in perpetuity, such as deed restrictions and long-term operation and maintenance?
☐ Yes, ordinance or other regulatory mechanism reference (page and paragraph of attachments): _____
☐ No, the ordinance or other regulatory mechanism will be available on _____
☐ The ordinance or other regulatory mechanism requires the following:

51. Describe the tracking system implemented, or to be implemented, to track off-site mitigation and/or in-lieu projects.

52. Are there any other exceptions to the performance standards, other than off-site mitigation and payment in lieu, being implemented or to be implemented during the permit cycle?
☐ Yes, describe below
☒ No

Site Plan Review

53. Does the ordinance or other regulatory mechanism include a requirement to submit a site plan for review and approval of post-construction stormwater runoff BMPs?
☐ Yes, ordinance or regulatory mechanism reference (page and paragraph of attachments): _____
☒ No, the ordinance or regulatory mechanism will be available on 10/1/14

54. Provide the procedure for site plan review and approval.

Procedure Reference (page and paragraph of attachments): Attachment 6

55. Provide the reference in the site plan review and approval procedure to the process for determining how the developer meets the performance standards and ensures long-term operation and maintenance of BMPs.

Procedure Reference (page and paragraph of attachments): Attachment 6

Long-Term Operation and Maintenance of BMPs

56. Does the ordinance or other regulatory mechanism require the long-term operation and maintenance of all structural and vegetative BMPs installed and implemented to meet the performance standards in perpetuity?
☐ Yes, ordinance or other regulatory mechanism reference (page and paragraph of attachments): _____
☒ No, the ordinance or other regulatory mechanism will be available on 10/1/14

57. Does the ordinance or other regulatory mechanism require a maintenance agreement between the applicant and owners or operators responsible for the long-term operation and maintenance of structural and vegetative BMPs installed and implemented to meet the performance standards?
☐ Yes, ordinance or other regulatory mechanism reference (page and paragraph of attachments): _____
☒ No, the ordinance or other regulatory mechanism will be available on 10/1/14
☐ The ordinance or other regulatory mechanism requires the following:

58. Does the maintenance agreement or other legal mechanism allow the applicant to complete the following? (Check if yes)
☒ Inspect the structural or vegetative BMP
☒ Perform the necessary maintenance or corrective actions neglected by the BMP owner or operator
☒ Track the transfer of operation and maintenance responsibility of the BMP (e.g., deed restrictions)

If any of the boxes above were not checked, provide a response explaining how the maintenance agreement or other legal

mechanism allows the applicant to verify and ensure maintenance of the BMP.

Pollution Prevention and Good Housekeeping Program

The applicant shall describe the current and proposed BMPs to meet the minimum control measure requirements for the Pollution Prevention and Good Housekeeping Program to the maximum extent practicable, which shall be incorporated into the SWMP. The applicant shall develop and implement a Pollution Prevention and Good Housekeeping Program to prevent or reduce the discharge of pollutants from municipal facilities and operations.

The following definitions apply to the terms used below:

- Fleet: A group of vehicles owned or operated as a unit.
- Maintenance (includes, but not limited to): adding/changing vehicle fluids, fueling, lubrication, painting, mechanical repairs, parts degreasing, and vehicle/equipment washing.
- Storage Yard (includes, but not limited to): areas where vehicles are stored longer than overnight/weekend; areas where road maintenance materials are stored; areas where vehicle maintenance materials are stored; areas where chemicals in bulk are stored; areas where catch basin cleaning wastes are stored; and areas where maintenance equipment such as mowers, tractors, vactor trucks, and sweepers is stored.

Please complete the questions below as appropriate. A "Not Applicable" response is appropriate in cases where the applicant does not own or operate a municipal facility or stormwater structural control or does not perform the operation in the question. A measurable goal with a measure of assessment shall be included for each BMP, and, as appropriate, a schedule for implementation (months and years), including interim milestones and the frequency of the BMP. The responses shall reflect the nested MS4s identified in Section VI.

Municipal Facility and Structural Stormwater Control Inventory

59. Provide an up-to-date inventory of applicant-owned or operated facilities and stormwater structural controls with a discharge of stormwater to surface waters of the state. The inventory shall include the location of each facility and an estimate of the number of structural stormwater controls for each category below (e.g., 100 catch basins and 7 detention basins).

Inventory Reference (Page and Paragraph of Attachments): *e.g., Attachment A, Page 3, Section b* Attachment 7, table 3

Check all applicant-owned or operated facilities with a discharge of stormwater to surface waters of the state:

- ☒ Administration buildings
- ☐ Airports
- ☒ Cemeteries
- ☐ Equipment storage and maintenance facilities
- ☐ Fuel Farms
- ☐ Hazardous waste handling and transfer facilities
- ☐ Landscape maintenance facilities
- ☐ Materials storage yards
- ☐ Parks
- ☒ Police stations
- ☒ Public parking lots
- ☒ Public works yards
- ☒ Salt storage facilities
- ☒ Vacant land and open space
- ☐ Outdoor wash areas
- ☐ Animal Control Building
- ☐ Bus Stations and Garages
- ☐ Composting facilities
- ☒ Fire Stations
- ☐ Hazardous waste disposal facilities
- ☐ Landfills
- ☒ Libraries
- ☐ Mosquito Control Facility
- ☐ Pesticide storage facilities
- ☐ Public golf courses
- ☐ Public schools
- ☐ Recycling facilities
- ☐ Solid waste handling and transfer facilities
- ☐ Vehicle storage and maintenance yards
- ☐ Other facilities – Provide a description below:

Check all applicant-owned or operated structural stormwater controls with a discharge of stormwater to surface waters of the state:

- ☒ Catch basins
- ☒ Detention basins
- ☐ Oil/water separators
- ☐ Pump Stations
- ☐ Secondary containment
- ☐ Vegetated swales
- ☐ Other structural stormwater controls – Provide a description below:
- ☐ Constructed wetlands
- ☐ Infiltration basins and trenches
- ☐ Porous pavement
- ☐ Rain gardens
- ☐ Underground storage vaults or tanks

60. Provide the location where an up-to-date map (or maps) is available with the location of the facilities and structural stormwater controls identified in Question 59. *The location of the facilities and structural stormwater controls may be included on the storm sewer system map maintained for the IDEP.*

The map (or maps) is available at the following location: DPW, 720 Hughes, Mt. Morris

61. Provide the procedure for updating and revising the inventory in Question 59 and map (or maps) identified in Question 60 as facilities and structural stormwater controls are added, removed, or no longer owned or operated by the applicant. *A suggested timeframe for updating/revising the inventory and map(s) is 30 days following adding/removing a facility or structural stormwater control.*

Procedure Reference (page and paragraph of attachments): Attachment 7

Facility-Specific Stormwater Management

62. Provide the procedure for assessing each facility identified in Question 59 for the potential to discharge pollutants to surface waters of the state. The procedure shall include a process for updating and revising the assessment. *A recommended timeframe for updating/revising the assessment is 30 days prior to discharging stormwater from a new facility and within 30 days of determining a need to update/revise the facility assessment.*

The applicant should consider the following factors when assessing each facility:

- Amount of urban pollutants stored at the site (e.g., sediment, nutrients, metals, hydrocarbons, pesticides, fertilizers, herbicides, chlorides, trash, bacteria, or other site-specific pollutants)
- Identification of improperly stored materials
- The potential for polluting activities to be conducted outside (e.g., vehicle washing)
- Proximity to waterbodies
- Poor housekeeping practices
- Discharge of pollutants of concern to impaired waters

☒ Procedure Reference (page and paragraph of attachments): Attachment 7
☐ Not Applicable – The applicant does not own a facility that discharges stormwater to surface waters of the state. Skip to Question 70.

63. Provide the list of prioritized facilities using the assessment in Question 62. Each facility shall be prioritized based on having the high, medium, or low potential to discharge pollutants to surface waters of the state. Facilities with the high potential for pollutant runoff shall include, but are not limited to, the applicant's fleet maintenance and storage yards. The applicant may submit a demonstration with a description of how the applicant's fleet maintenance and storage yard has the low potential to discharge pollutants to surface waters of the state.

☒ Prioritized Facility List (page and paragraph of attachments): Attachment 7 Table 3
☐ Fleet Maintenance and Storage Yard Demonstrations (page and paragraph of attachments): _____

64. Is a site-specific standard operating procedure (SOP) available identifying the structural and non-structural stormwater controls implemented and maintained to prevent or reduce pollutant runoff at each facility with the high potential for pollutant runoff? The SOP shall be available at each facility with the high potential for pollutant runoff and upon request from the MDEQ. The SOP shall identify the person responsible for oversight of the facility. *The MDEQ may request the submission of the SOP during the application review process.*

☒ Yes, a site-specific SOP is available at each facility with the high potential for pollutant runoff
☐ Not Applicable – The applicant does not own or operate any facilities with the high potential for pollutant runoff. Skip to Question 69.

65. Provide the reference in the SOP, for each facility with the high potential for pollutant runoff, to the following: the list of significant materials stored on-site that could pollute stormwater; the description of the handling and storage requirements for each significant material; and the potential to discharge the significant material.

SOP Reference (page and paragraph of attachments): Attachment 7

This space is available to reference multiple site-specific SOPs

66. Provide the reference in the SOP, for each facility with the high potential for pollutant runoff, identifying the good housekeeping practices implemented at the site. *Good housekeeping practices include keeping the facility neat and orderly, properly storing and covering materials, and minimizing pollutant sources to prevent or reduce pollutant runoff.*

SOP Reference (page and paragraph of attachments): Attachment 7

This space is available to reference multiple site-specific SOPs

67. Provide the reference in the SOP, for each facility with the high potential for pollutant runoff, to the description and schedule for conducting routine maintenance and inspections of stormwater management and control devices to ensure materials and equipment are clean and orderly and to prevent or reduce pollutant runoff. *A biweekly schedule is recommended for routine inspections.*

SOP Reference (page and paragraph of attachments): Attachment 7

This space is available to reference multiple site-specific SOPs

68. Provide the reference in the SOP, for each facility with the high potential for pollutant runoff, to the description and schedule for conducting a comprehensive site inspection at least once every six months. The comprehensive inspection shall include an inspection of all structural stormwater controls and a review of non-structural stormwater controls to prevent or reduce pollutant runoff.

SOP Reference (page and paragraph of attachments): Attachment 7

This space is available to reference multiple site-specific SOPs

69. Provide the procedure identifying the BMPs currently implemented or to be implemented during the permit cycle to prevent or reduce pollutant runoff at each facility with the medium and lower potential for the discharge of pollutants to surface waters of the state using the assessment and prioritized list in Questions 62 and 63.

Procedure Reference (page and paragraph of attachments): Attachment 7

Structural Stormwater Control Operation and Maintenance Activities

70. Provide the procedure for prioritizing each catch basin for routine inspection, maintenance, and cleaning based on preventing or reducing pollutant runoff. The procedure shall include assigning a priority level for each catch basin and the associated inspection, maintenance and cleaning schedule based on preventing or reducing pollutant runoff. The procedure shall include a process for updating/revising the priority level for a catch basin giving consideration to inspection findings and citizen complaints. *A recommended timeframe for updating/revising the procedure is 30 days following the construction of a catch basin or a change in priority level.*

☒ Procedure Reference (page and paragraph of attachments): Attachment 7
☐ Not Applicable – The applicant does not own or operate catch basins. Skip to Question 74.

71. Provide the geographic location of the catch basins in each priority level using either a narrative description or map.

Catch Basin Priority Location (page and paragraph of attachments): Attachment 7

72. Provide the procedure for inspecting, cleaning, and maintaining catch basins to ensure proper performance. Proper cleaning methods include ensuring accumulated pollutants are not discharged during cleaning and are removed prior to discharging to surface waters of the state. *A compliance assistance document titled Catch Basin Cleaning Activities Guidance Document is available at http://www.michigan.gov/documents/deq/wb-stormwater-CatchBasinGuidance_216198_7.pdf.*

Procedure Reference (page and paragraph of attachments): _____

73. Provide the procedure for dewatering and disposal of materials extracted from catch basins. *A compliance assistance document titled Catch Basin Cleaning Activities Guidance Document is available at http://www.michigan.gov/documents/deq/wb-stormwater-CatchBasinGuidance_216198_7.pdf.*

    Procedure Reference (page and paragraph of attachments): Attachment 7

74. Provide the procedure for inspecting and maintaining the structural stormwater controls identified in Question 59, excluding the structural stormwater controls included in an SOP as part of Question 64 and catch basins... The procedure shall include a description and schedule for inspecting and maintaining each structural stormwater control and the process for disposing of maintenance waste materials. The procedure shall require that controls be maintained to reduce to the maximum extent practicable the contribution of pollutants to stormwater. The procedure shall include a process for updating/revising the procedure to ensure a maintenance and inspection program for each structural stormwater control. *A recommended timeframe for updating/revising the procedure is 30 days following the implementation of a new structural stormwater control.*

    ☒ Procedure Reference (page and paragraph of attachments): Attachment 7
    ☐ Not Applicable – Applicant does not own or operate any structural stormwater controls

75. Provide the procedure requiring new applicant-owned or operated facilities or new structural stormwater controls for water **quantity** be designed and implemented in accordance with the post-construction stormwater runoff control performance standards and long-term operation and maintenance requirements.

    Procedure Reference (page and paragraph of attachments): Attachment 7

Municipal Operations and Maintenance Activities

76. Provide the procedure with the assessment of the applicant's operation and maintenance activities for the potential to discharge pollutants to surface waters of the state. The assessment shall identify all pollutants that could be discharged from each applicable operation and maintenance activity and the BMPs being implemented or to be implemented to prevent or reduce pollutant runoff. The procedure shall include a process for updating and revising the assessment. *A suggested timeframe for updating/revising the assessment is 30 days following adding/removing BMPs to address new and existing operation and maintenance activities.*

    At a minimum, the procedure shall include assessing the following municipal operation and maintenance activities if applicable:
    - Road, parking lot, and sidewalk maintenance (e.g., pothole, sidewalk, and curb and gutter repair)
    - Bridge maintenance
    - Right-of-way maintenance
    - Unpaved road maintenance
    - Cold weather operations (e.g., plowing, sanding, application of deicing agents, and snow pile disposal)
    - Vehicle washing and maintenance of applicant-owned vehicles (e.g., police, fire, school bus, public works)

    ☒ Procedure Reference (page and paragraph of attachments): Attachment 7
    ☐ Not Applicable – Provide an explanation below.

77. Provide the procedure for prioritizing applicant-owned or operated streets, parking lots, and other impervious infrastructure for street sweeping based on the potential to discharge pollutants to surface waters of the state. The procedure shall include assigning a priority level for each parking lot and street and the associated cleaning schedule (i.e., sweeping frequency and timing) based on preventing or reducing pollutant runoff. The procedure shall include a process for updating/revising the priority level giving consideration to street sweeping findings and citizen complaints. *A recommended timeframe for updating/revising the prioritization is 30 days following the construction of a new street, parking lot, or other applicant-owned or operated impervious surface or within 30 days of identifying a need to revise a priority level.*
    ☒ Procedure Reference (page and paragraph of attachments): Attachment 7
    ☐ Not Applicable – The applicant does not own or operate any streets, parking lots, or other impervious infrastructure. Skip to Question 81.

78. Provide the geographic location of the streets, parking lots, and other impervious surfaces in each priority level using either a narrative description or map.

    Street Sweeping Priority Location (page and paragraph of attachments): Attachment 7

79. Provide the procedure identifying the sweeping methods based on the applicant's sweeping equipment and use of additional resources in sweeping seasonal leaves or pick-up of other materials. *Proper sweeping methods include operating sweeping equipment according to the manufacturers' operating instructions and to protect water quality.*

Procedure Reference (page and paragraph of attachments): Attachment 7

80. Provide the procedure for dewatering and disposal of street sweeper waste material. *A compliance assistance document titled Catch Basin Cleaning Activities Guidance Document is available at http://www.michigan.gov/documents/deq/wb-stormwater-CatchBasinGuidance_216198_7.pdf.*

Procedure Reference (page and paragraph of attachments): Attachment 7

Managing Vegetated Properties

81. Provide the procedure requiring the applicant's pesticide applicator to be certified by the State of Michigan as an applicator in the applicable category, to prevent or reduce pollutant runoff from vegetated land. A description of the categories is located at http://www.michigan.gov/mdard/0,4610,7-125-1569_16988_35289-11992--,00.html

☐ Procedure Reference (page and paragraph of attachments): _____
☒ Not Applicable – Provide an explanation below (e.g., the applicant's pesticide applicator only uses ready-to-use products from the original container).

Employee Training

82. Provide the employee training program to train employees involved in implementing the pollution prevention and good housekeeping program. The program shall include the training schedule. At a minimum, existing staff shall be trained once during the permit cycle and new hires within the first year of their hire date.

Program Reference (Page and Paragraph of Attachments): Attachment 7

Contractor Requirements and Oversight

83. Provide the procedure requiring contractors hired by the applicant to perform municipal operation and maintenance activities comply with all pollution prevention and good housekeeping BMPs as appropriate. The procedure shall include the process implemented for providing oversight of contractor activities to ensure compliance.

Procedure Reference (Page and Paragraph of Attachments): Attachment 7

Total Maximum Daily Load (TMDL) Implementation Plan

The following questions address discharges to impaired waters with a USEPA approved TMDL that includes a pollutant load allocation assigned to the permittee's MS4. BMPs shall be implemented to reduce the discharge of the TMDL pollutant from the MS4 to make progress in meeting Water Quality Standards. Applicable TMDLs are TMDLs approved prior to the applicant being notified of the need to apply for permit reissuance. Applicable TMDLs for the applicant were provided in the application notice letter.

The applicant shall describe the current and proposed BMPs to meet the minimum requirements for the TMDL Implementation Plan, which shall be incorporated into the SWMP. Please indicate in your response, if you are or will be working collaboratively with watershed or regional partners on any or all activities in the TMDL Implementation Plan during the permit cycle. The following questions represent the minimum requirements for a TMDL Implementation Plan. Please complete the following questions as appropriate. A measurable goal with a measure of assessment shall be included for each BMP, and, as appropriate, a schedule for implementation (months and years), including interim milestones and the frequency of the BMP. The responses shall reflect the nested MS4s identified in Section VI.

The USEPA has a document to assist with developing a TMDL Implementation Plan available at http://water.epa.gov/lawsregs/lawsguidance/cwa/tmdl/upload/region3_factsheet_tmdl.pdf.

84. Was a TMDL included in the applicant's application notice?
☐ Yes, the following approved USEPA TMDL(s) was included in my application notice letter:

☐ No, Skip to Section VIII.

85. Provide the procedure for identifying and prioritizing BMPs currently being implemented or to be implemented during the permit cycle to make progress toward achieving the pollutant load reduction requirement in each TMDL identified in Question 85. The procedure shall include a process for reviewing, updating, and revising BMPs implemented or to be implemented to ensure progress in achieving the TMDL pollutant load reduction.

    Procedure Reference (page and paragraph of attachments): *e.g., Attachment A, Page 3, Section b* _____

86. Provide the list of prioritized BMPs currently being implemented or to be implemented during the permit cycle to make progress toward achieving the pollutant load reduction requirement in each TMDL identified in Question 85. Each BMP shall include a reference to the targeted TMDL pollutant.

    TMDL BMP Priority List (page and paragraph of attachments): _____

87. Provide the monitoring plan for assessing the effectiveness of the BMPs currently being implemented, or to be implemented, in making progress toward achieving the TMDL pollutant load reduction requirement, including a schedule for completing the monitoring. Monitoring shall be specifically for the pollutant identified in the TMDL. Monitoring may include, but is not limited to, outfall monitoring, in-stream monitoring, or modeling. At a minimum, monitoring shall be conducted two times during the permit cycle or at a frequency sufficient to determine if the BMPs are adequate in making progress toward achieving the TMDL pollutant load reduction. *Existing monitoring data may be submitted for review as part of the plan to meet part of the monitoring requirement.*

    TMDL Monitoring Plan (page and paragraph of attachments): _____

SECTION VIII. CERTIFICATION

Rule 323.2114(1-4) of the Part 21 Rules of Michigan Act 451, Public Act of 1994, Part 31, as amended, requires that this Application be signed by either a principal executive officer, the mayor, village president, city or village manager, or other duly authorized employee.

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision In accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for having knowledge of violations."

I understand that my signature constitutes a legal agreement to comply with the requirements of the NPDES Permit. I certify under penalty of law that I possess full authority on behalf of the legal owner/permittee to sign and submit this Application. I certify to the best of my knowledge that it is true, accurate and meets the minimum permit requirements for a SWMP to the MEP.

Print Name: Thomas Darnell

Title: City Manager

Representing: City of Mt. Morris

Signature:	Date:

Please submit this completed Application and attachments to:

DEPARTMENT OF ENVIRONMENTAL QUALITY
WATER RESOURCES DIVISION
PERMITS SECTION
P.O. BOX 30458
LANSING, MICHIGAN 48909-7958

Michigan Department of Environmental Quality – Water Resources Division

STORMWATER DISCHARGE PERMIT APPLICATION

Table 1 – Outfall and Point of Discharge Information

An identification number shall be provided for each outfall and point of discharge. Please note that the latitude and longitude is not required as part of the application. When entering a point of discharge, the receiving water is the point where the stormwater enters a surface water of the state. The following definitions apply to these terms:

- **Outfall** means a discharge point from an MS4 directly to surface waters of the state
- **Point of Discharge** means a discharge from an MS4 to an MS4 owned or operated by another public body

A. Outfall/ Point of Discharge No.:	☐ Outfall ☐ Point of Discharge	Outfall/Point of Discharge Identification No.:
B. Receiving Water:	Receiving Water :	
C. Latitude/Longitude (Optional)	Latitude:	Longitude:

A. Outfall/ Point of Discharge No.:	☐ Outfall ☐ Point of Discharge	Outfall/Point of Discharge Identification No.:
B. Receiving Water:	Receiving Water :	
C Latitude/Longitude (Optional)	Latitude:	Longitude:

A. Outfall/ Point of Discharge No.:	☐ Outfall ☐ Point of Discharge	Outfall/Point of Discharge Identification No.:
B. Receiving Water:	Receiving Water :	
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C. Latitude/Longitude (Optional)	Latitude:	Longitude:

STORMWATER DISCHARGE PERMIT APPLICATION

Table 2: Public Education Program Best Management Practices (BMPs)

PEP Topic	BMP Identifier	BMP Descriptor	Partner Collaboration	Target Audience	Key Messages	Delivery Mechanism	Year	Frequency	Responsible Party	Measurable Goal

Michigan Department of Environmental Quality – Water Resources Division

STORMWATER DISCHARGE PERMIT APPLICATION

APPENDIX A

LOCAL DISTRICT OFFICE ADDRESSES AND COUNTY JURISDICTIONS

DEQ DISTRICT OFFICES	TELEPHONE #	COUNTY JURISDICTIONS		
CADILLAC DISTRICT OFFICE 120 WEST CHAPIN STREET CADILLAC MI 49601-2158	(231) 775-3960	ALPENA ALCONA ANTRIM BENZIE CHARLEVOIX CHEBOYGAN CRAWFORD EMMET	GRAND TRAVERSE KALKASKA LAKE LEELANAU MANISTEE MASON MISSAUKEE	MONTMORENCY OSCEOLA OSCODA OTSEGO PRESQUE ISLE ROSCOMMON WEXFORD
SOUTHEAST MICHIGAN DISTRICT OFFICE 27700 DONALD COURT WARREN, MI 48092	(586) 753-3700	MACOMB OAKLAND	ST. CLAIR	WAYNE
GRAND RAPIDS DISTRICT OFFICE STATE OFFICE BUILDING, FIFTH FLOOR 350 OTTAWA NW, UNIT 10 GRAND RAPIDS, MI 49503-2341	(616) 356-0500	BARRY IONIA KENT	MECOSTA MONTCALM MUSKEGON	NEWAYGO OCEANA OTTAWA
JACKSON DISTRICT OFFICE 301 EAST LOUIS GLICK HIGHWAY JACKSON MI 49201-1556	(517) 780-7690	HILLSDALE JACKSON	LENAWEE MONROE	WASHTENAW
UPPER PENINSULA DISTRICT OFFICE KI SAWYER INTERNATIONAL AIRPORT AND BUSINESS CENTER 420 FIFTH STREET GWINN, MI 49841	(906) 346-8300	ALGER BARAGA CHIPPEWA DELTA DICKINSON	GOGEBIC HOUGHTON IRON KEWEENAW LUCE	MARQUETTE MACKINAC MENOMINEE ONTONAGON SCHOOLCRAFT
KALAMAZOO DISTRICT OFFICE 7953 ADOBE ROAD KALAMAZOO MI 49009-5026	(269) 567-3500	ALLEGAN BERRIEN BRANCH	CALHOUN CASS KALAMAZOO	ST. JOSEPH VAN BUREN
SAGINAW BAY DISTRICT OFFICE 503 NORTH EUCLID AVENUE, SUITE 1 BAY CITY, MI 48706-2965	(989) 686-8025	ARENAC BAY CLARE GLADWIN	HURON IOSCO ISABELLA MIDLAND	OGEMAW SAGINAW SANILAC TUSCOLA
LANSING DISTRICT OFFICE CONSTITUTION HALL 4TH FLOOR NORTH 525 WEST ALLEGAN PO BOX 30242 LANSING, MI 48909	(517) 335-4598	CLINTON EATON GENESEE	GRATIOT INGHAM LAPEER	LIVINGSTON SHIAWASSEE

Table 2: Public Education Program Best Management Practices (BMPs)

Delivery Mechanism / Activity	Public Education Topics	Target Audience(s)	Key Message	Standard of Effectiveness (recommended)	Mechanism Specific Audience (recommended)	Mechanism Specific Message(s) (recommended)	Milestone(s) (recommended)	Timetable / Timeline		Responsible Party	Cost (recommended)	Evaluation
								Development	Implementation			
Road/stream crossing and watershed signs	A B	Public, Residents, Visitors	Educate on specific watershed. Waterbodies the public can affect.	Get 50% of people to know the stream names and that they are in a watershed	Drivers and passengers, visitors going by specific sign	Entering a watershed; specific waterbodies; and watershed website	Increase in number of people recognizing the watershed and waterbodies they live in or passing by. Awareness leads to stewardship	Signs have been installed beginning in 2008	Will continue to install until reached 200 sites, appox. 400 to 600 signs, then maintain existing signs. Proposed plan to expand with signs in Parks	SWM\ Road Commission	$3,000/yr.	Measure the number of residents that went to the website based on the information on the sign; social survey response
Watershed Maps	A B C D E F	School Children, Teachers	Definition of a watershed - Educate on Specific Watershed the public can affect, purpose for protecting the watershed. Effects of human activities on waterways, illicit discharge, what is it? Promoting illicit discharge reporting.	Get 50% of students to know what a watershed is and which one they live in.	Teachers/classrooms	What is a watershed; specific waterbodies; and watershed website	Have maps posted in as many classrooms as possible and discussed in class. Also designed to be used as handouts	Printed 2014	Distribute to appropriate teachers for class use. Reprint and send out upon request as needed. Available on website for download and printing	SWM	Development - $780.00 'Printing - $3,000 Promotion - $910.00/yr Distribution/workshop - $5,200.00/per session	Number of teachers incorporating lessons into curriculum.
Benthic Monitoring Program	A B	Residents, School Children	Ways that individuals can affect the watershed through their activities. What is the actual condition of our waters?	Maintain current level of sites monitored or expand that number. Currently 18	Interested volunteers. Produce results for public on website. (general health of Our Water)	Your efforts help us to better understand the watershed.	Consistent trends begin to paint a clearer picture of different reaches.	Program has been running in Flint River Watershed since 1999. Shiawassee Watershed added in 2008	Twice a year	SWM/FRWC to administer program	$5,150/yr	No. of volunteers and sites surveyed. Use information to aid decision-making.
Project Green WQ monitoring Program	A B (Depending on who does the Mentoring, the following topics can be covered C, D, E, F, G)	School Children, Teachers Groups	Ways that individuals can affect the watershed through their activities. What is the actual condition of our waters? How pollution occures	Maintain current level of participation or increase number of classrooms.	School children, teachers	Our actions have impacts on local waterways; how to act to better protect adjacent waterbodies.	Increased demand for the program	Program has been running since 1991. Since 2005 it has been under the FRWC administration.	Yearly	SWM/FRWC to administer program	$7,500/yr for sampling + private funds Up to $5,000 for analysis	#participating schools/ sites survey. Information to aid decision-making. Increased public awareness - social survey.

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C. Educate the public on illicit discharges and promote public reporting of illicit discharges and improper disposal of materials into the MS4. **D.** Promote preferred cleaning materials and procedures for car, pavement, and power washing.
E. Inform and educate the public on proper application and disposal of pesticides, herbicides, and fertilizers. **F.** Promote proper disposal practices for grass clippings, leaf litter, and animal wastes that may enter into the MS4.
G. Identify and promote the availability, location, and requirements of facilities for collection or disposal of household hazardous wastes, travel trailer sanitary wastes, chemicals, and motor vehicle fluids.
H. Inform and educate the public on proper septic system care and maintenance, and how to recognize system failure. **I.** Educate the public on, and promote the benefits of, green infrastructure and Low Impact Development.
J. Promote methods for managing riparian lands to protect water quality. **K.** Identify and educate commercial, industrial, and institutional entities likely to contribute pollutants to stormwater runoff.

Michigan Department of Environmental Quality – Water Resources Division

STORMWATER DISCHARGE PERMIT APPLICATION

Delivery Mechanism / Activity	Public Education Topics	Target Audience(s)	Key Message	Standard of Effectiveness (recommended)	Mechanism Specific Audience (recommended)	Mechanism Specific Message(s) (recommended)	Milestone(s) (recommended)	Timetable / Timeline		Responsible Party	Cost (recommended)	Evaluation
								Development	Implementation			
Display Booth for events	A B C D E F G H J	Public, public employees	Definition of a watershed - Ways those individuals can affect the watershed through their activities.	Residents adopt the recommended behavior changes.	Home owners, various associations and businesses	Same as "Seven Simple Steps"	Display at 6+functions a year	Developed	Ongoing training of volunteers to man booth. attendance of booth at several events throughout year # of people spoken to	SWM\Cons Dist	$9,500/yr	social survey Number of public spoken to. Number of events attended
Website: http://cleargeneseewater.org/	A, B, C D, E, F G, H, I J, K	Public	Have messages on most topics.	Residents adopt the recommended behavior changes.	Permittees, home owners, associations, businesses	Same as key message	Number of hits per year stay the same or increase.	Developed	Expand site as new material becomes available. Update as needed	SWM	100 hrs a year. Plus periodic costs for updates.	Number of hits on the site Number of times brochure is downloaded.
Conservation District presentation to school districts with Enviroscapes	A, B, C, D (Depending on who does the training, the following topics can be covered E, F, G, I)	School Children, Teachers	What is a watershed - Importance of a riparian corridor, effects of human activities on waterways and wetlands.	Make presentation 5000 students/ teachers per year	School children	Our actions have impacts on local waterways; how to act to better protect adjacent waterbodies.	Number of presentations per year.	Developed	Schedule presentations annually to reach at least 5000 students/year	SWM\ Conservation District	$16,000/yr	- Number of presentations, - Answer questions on social survey - Improvement in other metrics
Catch basin stenciling program that includes door to door delivery of brochures	A B	Residents, schools, owners and employees of local businesses and industries, boy/girl scouts, volunteers groups	- Storm drains discharge to water bodies - Storm water discharged from separate storm sewer systems does not receive treatment prior to discharge - Impacts of storm water pollutants in the watershed - Knowledge of separate storm water drainage system in your front ditch and that it flows to a river	Get 10% of the people in the watershed where the catch basins were labeled to understand where there storm water goes and what the impacts are.	Homeowners; parties distributing brochures and stenciling	Same as key message	Stencil 1000 catch basins/yr - with residents receiving a brochure when stenciling is in their neighborhood	Program began in 2005; materials have been developed	Continue to deliver program plan training and brochure. Repurchase supplies, brochure as needed. Evaluate and modify message as needed when reprinting doorhangers	FRWC/CD & SWM maintenance dept.	$5,300/yr.	Phone or mail survey of residents' awareness of the watershed; number of residents that volunteer to stencil storm drains.

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Michigan Department of Environmental Quality – Water Resources Division

STORMWATER DISCHARGE PERMIT APPLICATION

Delivery Mechanism / Activity	Public Education Topics	Target Audience(s)	Key Message	Standard of Effectiveness (recommended)	Mechanism Specific Audience (recommended)	Mechanism Specific Message(s) (recommended)	Milestone(s) (recommended)	Timetable / Timeline		Responsible Party	Cost (recommended)	Evaluation
								Development	Implementation			
Distribute brochures promoting the "seven simple steps"	A B C D E F G	Public and public employees	Actions everyone can take to improve water quality. Effects of residential waste on our waterbodies.	Residents adopt the recommended behavior changes.	All residents	Specific to each of the seven steps: Car Care, proper fertilizing, pet waste, water conservation, HHW, storm drains, earth friendly landscaping	Distribute 2500+ /yr	"Seven Simple Steps" brochure has been developed.	Continue to distribute "seven simple steps" through permittees/ events. Evaluate message, amend as needed, reprint as needed	SWM/ Permittees	Reprinting costs	- social survey - Other # of brochures distributed to public
Speakers	B (Depending on who does the training, the following topics can be covered A, C, D, E, F, G, H, I, J)	Home owner associations, non-profit groups, rotary clubs...	What is a watershed - Actions everyone can take to improve water quality, effects of residential waste on our waterbodies; and other specific messages (7 simple steps) The talk is broken into segments by topic so each talk can be customized	Residents adopt the recommended behavior changes.	Home owners, various associations and businesses	Same as "Seven Simple Steps"	Address 10+ groups a year	Developed	Train new volunteers to give presentations as needed	FRWC	$2,040/yr	- social survey - Other Number of presentation given, number of attendees.
Articles on seven measures/ Newsletters on Ph II program	A B C D E F G	Public, non-profit groups, public employees	What is a watershed - Actions everyone can take to improve water quality, effects of residential waste on our waterbodies, The Ph II program. Implementation efforts	Residents adopt the recommended behavior changes. PhII permittees educated on program	Homeowners, businesses, industries, Ph II permittees. Non Ph II Municipalities.	Same as key message	Increase sense of community stewardship and actions taken to protect waterways.	Some have been developed; new articles will be to address timely issues.	Submit articles to group, newsletters & newspaper for print	SWM	None	-Articles get published - Responses to the pending social survey
Advertise and distribute flyers about the Household Hazardous Waste Collection Day	G	Public, public employees, businesses	Identification of HHW (household hazardous waste), disposal locations and availability	Increase the number of residents dropping off HHW at events by 10%	Homeowners, businesses (painters, landscapers, etc.)	How and where to dispose of oil-based paint, pesticides, herbicides, etc.	Increase awareness of household hazardous waste and where and when it can be disposed	Develop advertisements/flyers for distribution twice a year	Distribution twice a year of advertisements /flyers develpoend by HHW group	All Permittees/ HHW Committee	Cost of advertisement / flyers, staff time, and hazardous waste disposal costs	Track the number of residents and the amount of waste collected during HHW Collection.

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Michigan Department of Environmental Quality – Water Resources Division

STORMWATER DISCHARGE PERMIT APPLICATION

Delivery Mechanism / Activity	Public Education Topics	Target Audience(s)	Key Message	Standard of Effectiveness (recommended)	Mechanism Specific Audience (recommended)	Mechanism Specific Message(s) (recommended)	Milestone(s) (recommended)	Timetable / Timeline		Responsible Party	Cost (recommended)	Evaluation
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Educational materials for Homeowners With Septic Systems to be Given at "Time of Sale". Main Topic: Septic System Maintenance.	C G H	Homeowners, public employees, realtors, haulers, inspectors	Proper septic system care and maintenance, how to recognize a system failure, impact of failure, where to go for assistance.	Educate septic system owners on proper care and maintenance, recognizing a failure and correcting	Septic system owners	How to properly maintain your septic system	Educate septic system owners on the proper care and maintenance of their systems and how to recognize failing systems.	Information has been developed. Delivery mechanism is being worked out.	Printing materials beginning in 2009 and distribute through communities & real estate agents.	SWM and TBD	300 - 500 hours "printing - $3000.00 Mail\distribution - $1500.00 (estimated until 2013)	Social survey
Canoe trips	A B J	Public, landowners	Purpose for protecting the watershed, ways those individuals can affect the watershed through their activities, improving water quality and habitat and benefits to all.	Realize an increase in the use of the riparian corridor and a corresponding increase of volunteering/ stewardship of the waterbodies	Any resident	People that use the waterbodies for recreation are going to want to protect the waterbodies	Increase in volunteerism	Already ongoing	Schedule events annually 4+/year.	SWM/FRWC	$4,000/yr.	- The number on new people participating in each event. Participant comment
Presentation information about proper disposal of medications and personal care products on website	G	Public	Proper disposal of HHW, specifically medications and personal care products	Get 20% of those educated to utilize HHW program to properly dispose of in landfill	Public	Proper disposal of HHW, specifically medications and personal care products	Educate 10% public on program. Increase use of HHW program	Done	Information on WWS website	Water and Waste Services (WWS)	Staff time	Attendance and website hits
Information to riparian landowners on landscape improvements to protect waterways.	A B I J	Riparian landowners,	- Importance of riparian corridors - BMPs for riparian lands - Landscaping for water quality - Shoreline stabilization techniques - Native vegetation alternative	residential riparian landowners to learn how to better manage the land.	Lake and stream associations, riparian land owners	How to properly manage and dispose of grass, leaf and animal wastes; how to improve your property to better protect adjacent waterbodies.	Educate the number of riparian land owners in the knowledge of how to protect banks from erosion and water quality. Educate 25% by 2012 and All watersheds by 2014	Mailers and workshop literature developed and printed for distribution 2009	Information is passed out to public at events and available on website	SWM	Printing	Number of information packets given out.

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Michigan Department of Environmental Quality – Water Resources Division

STORMWATER DISCHARGE PERMIT APPLICATION

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								Development	Implementation			
Pub ed workshop on proper disposal of restaurant waste	K	Business owners	Proper disposal of kitchen waste	Get restaurant owners that have had attended workshop to properly dispose of restaurant waste	Business owners	Proper disposal of kitchen waste	Educate 20% restaurants on program	Program developed by WWS. Will add stormwater component to their program	Have workshops in permit cycle or distribute information brochure.	WWS	Staff time and TBD workshop costs	Attendance to workshop
What is Green Infrastructure workshop	I	Engineers, Developers	What is Green Infrastructure?, Why should we develop with Green Infrastructure?, how to design Green Infrastructure?	Get Developers to support GI	Engineers, Developers	Get Engineers educated on how to design for GI, Get Developers, to buy into green Infrastructure	Educate 75% Engineers, 25% Developers	2015	1 workshop before 2016	SWM	Cost of development/ printing/ workshop	Attendance to workshop, voluntary compliance to GI
Operation and maintenance 1/2 day workshop for municipalities, entities and their contractors (Good House Keeping)	B C D E F K	Public employees, contractors	Good housekeeping practices and their impact on water quality.	Adoption and recording of good housekeeping practices	PowerPt and manual	How to properly manage and maintain public infrastructure and related activities	Educate 50% by 2011 and 90% by 2015; Have maintenance crews adopt maintenance protocols on property by 2014	Training is developed	Complete. Schedule training as-needed.	SWM/Tetra Tech	$6,000/ first yr. up to $6000/ year	Pass MDEQ inspections
Good House Keeping training video	B C D E F K	Public employees, contractors	Good housekeeping practices and their impact on water quality.	Adoption and recording of good housekeeping practices	Attendance of training by video/ internet	How to properly manage and maintain public infrastructure and related activities	Have maintenance crews/ B&G staff trained within 1st year of hire or within permit cycle.	Training is developed. Tansfering information to a video or internet format is in development	Produce Video/ internet training. Schedule training as-needed.	SWM/Tetra Tech	$6,000/ first yr. up to $6000/ year	Pass MDEQ inspections

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Michigan Department of Environmental Quality – Water Resources Division

STORMWATER DISCHARGE PERMIT APPLICATION

Education efforts by individual Permittee (EXAMPLES of what you can do. You MUST provide enough detail to the State so they know what your specific commitment is. If you provide literature to public, where is it made available, if you post information on a board, where is that board located and who will see it, etc...)

Delivery Mechanism / Activity	Public Education Topics	Target Audience(s)	Key Message	Standard of Effectiveness (recommended)	Mechanism Specific Audience (recommended)	Mechanism Specific Message(s) (recommended)	Milestone(s) (recommended)	Timetable / Timeline		Responsible Party	Cost (recommended)	Evaluation
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Provide a link on our website to the Clear genesee water.org website	*A, B, C D, E, F G, H, I J, K*	*Residents*	*Most topics*	*Residents adopt the recommended behavior changes*	*Homeowners, businesses*	*Same as key message*	*Number of hits per year increases or stays the same*	*By October, 2014*	*Oct 1, 14*	*City Manager*	*< $100*	*Number of hits*
Provide literature at City Hall. Seven Simple steps, Septic Booklet, Riparian Landowners, IDEP identification	*A, B, C D, E, F G, H, I J*	*Residents, public*	Awareness of IDEP, stormwater issues.	*Residents adopt the recommended behavior changes*	*Residents*	*Same as Key Message*	*Number of leaflets picked up increases*	*By 10/1/14*	*10/1/14*	*City Manager*	*<$100*	*Number of leflets picked up*
Creation of an illicit discharge reporting mechanism (See IDEP plan- Attachment C & E for more information-)	C	Public	What is an illicit discharge? How to report illicit discharge.	*Number of reports vs. number of violations*	Public	Recognize and Report illicit discharges or improper disposal of materials that threaten the water supply	Eliminate known illicit discharges to storm drains and waterways	Attachment E has been created and is in place. Attachment C is based on Rouge Rivers and has to be customized	Printing can be done as needed. Placed on Website. Place on Counter for Public. -	Municipal	Staff costs printing cost	Is the illicit discharge reporting mechanism being used

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Michigan Department of Environmental Quality – Water Resources Division

STORMWATER DISCHARGE PERMIT APPLICATION

Many of the Public Education actions are performed by other Permittees or non- Permittee partners. Each Permittee is responsible to execute the permitted Public education efforts regardless of who is actually doing the work. All work identified in the PEP is being done on a Countywide basis. They have not been ranked by priority.

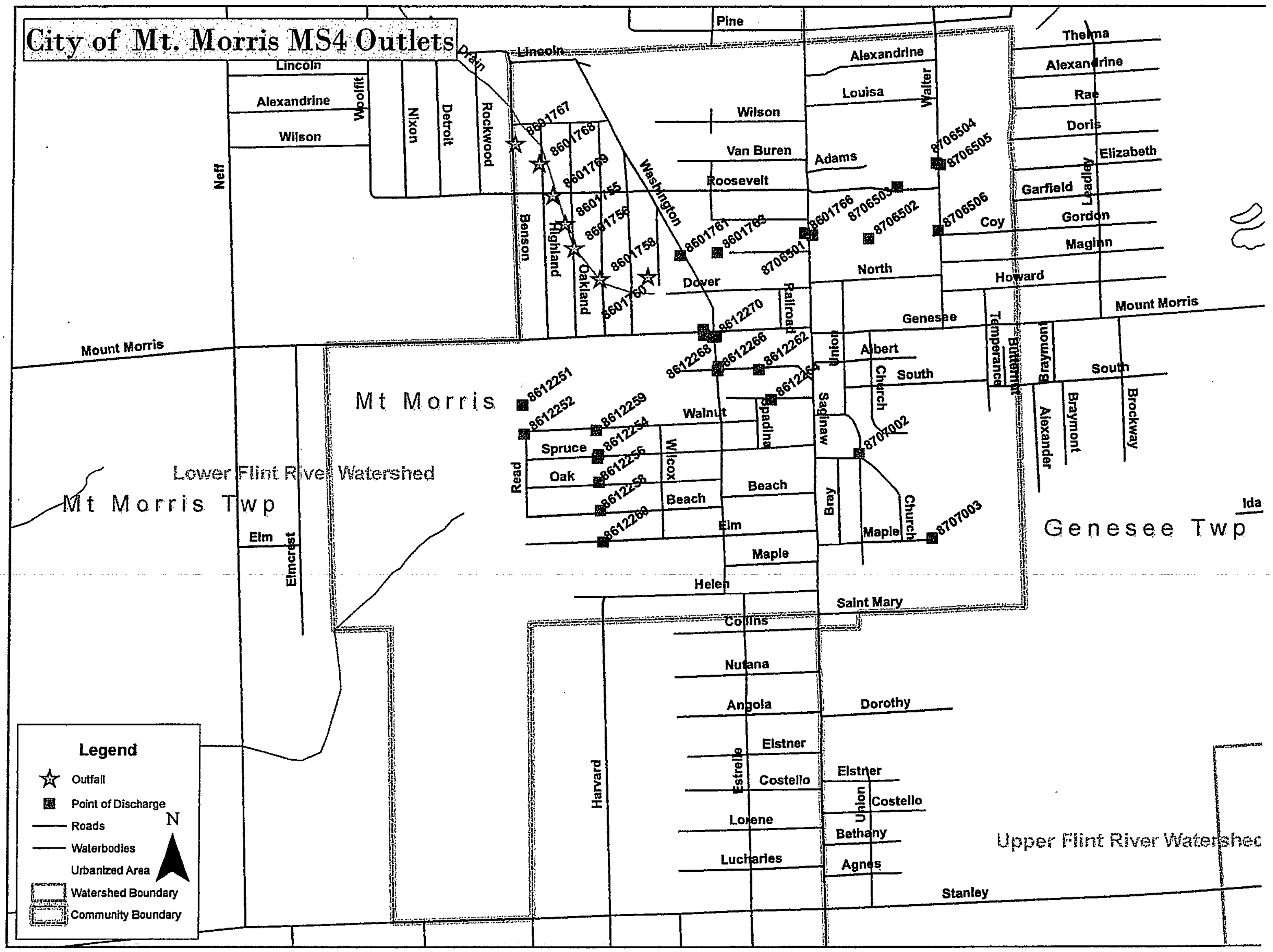
A. Promote public responsibility and stewardship in the applicant's watershed(s). **B.** Inform and educate the public about the connection of the MS4 to area waterbodies and the potential impacts discharges could have on surface waters of the state.
C. Educate the public on illicit discharges and promote public reporting of illicit discharges and improper disposal of materials into the MS4. **D.** Promote preferred cleaning materials and procedures for car, pavement, and power washing.
E. Inform and educate the public on proper application and disposal of pesticides, herbicides, and fertilizers. **F.** Promote proper disposal practices for grass clippings, leaf litter, and animal wastes that may enter into the MS4.
G. Identify and promote the availability, location, and requirements of facilities for collection or disposal of household hazardous wastes, travel trailer sanitary wastes, chemicals, and motor vehicle fluids.
H. Inform and educate the public on proper septic system care and maintenance, and how to recognize system failure. **I.** Educate the public on, and promote the benefits of, green infrastructure and Low Impact Development.
J. Promote methods for managing riparian lands to protect water quality. **K.** Identify and educate commercial, industrial, and institutional entities likely to contribute pollutants to stormwater runoff.

Attachment 1

To MDEQ Stormwater Discharge Permit Application

(Section IV map)

(Section V Table 1)


City of Mt. Morris MS4 Outlets
Legend
Outfall
Point of Discharge
Roads
Waterbodies
Urbanized Area
Watershed Boundary
Community Boundary
N
Mt Morris
Mt Morris Twp
Genesee Twp
Lower Flint River Watershed
Upper Flint River Watershec
Pine
Lincoln
Alexandrine
Wilson
Louisa
Walter
Thelma
Rae
Doris
Elizabeth
Van Buren
Adams
Roosevelt
Garfield
Gordon
Coy
Maginn
North
Howard
Dover
Genesee
Mount Morris
Neff
Woolfit
Nixon
Detroit
Rockwood
Benson
Highland
Oakland
Washington
Railroad
Union
Albert
Church
South
Temperance
Butternut
Braymount
Alexander
Brockway
Walnut
Spadina
Saginaw
Spruce
Oak
Read
Wilcox
Beach
Elm
Maple
Bray
Helen
Saint Mary
Collins
Nutana
Angola
Dorothy
Elstner
Costello
Lorene
Bethany
Lucharles
Agnes
Stanley
Harvard
Estrelle
Elmcrest
Ida
Leadley
8601767
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8601766
8706501
8706502
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8706504
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8706506
8612270
8612268
8612266
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8612264
8612251
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8612254
8612256
8612258
8612260
8707002
8707003

City of Mt. Morris				
Outfall/Point of Discharge ID No	**Structure Type**	**Receiving Water**	**Latitude**	**Longitude**
8601754	Outfall	Mason Drain	43.122987	-83.703111
8601755	Outfall	Mason Drain	43.122258	-83.702704
8601756	Outfall	Mason Drain	43.121646	-83.702415
"8601757"	Outfall	Benjamin Run Tributary	43.121905	-83.702525
8601758	Outfall	Mason Drain	43.120843	-83.701567
"8601759"	Outfall	Benjamin Run Tributary	43.120653	-83.700505
8601760	Outfall	Mason Drain	43.120872	-83.699963
8601761	Point of Discharge	Mason Drain	43.121371	-83.698870
8601762	Point of Discharge	Mason Drain	43.121432	-83.697606
8601763	Point of Discharge	Mason Drain	43.121432	-83.697606
"8601764"	Point of Discharge	Benjamin Run Tributary	43.121771	-83.695098
8601765	Point of Discharge	Mason Drain	43.121856	-83.694594
8601766	Point of Discharge	Mason Drain	43.121856	-83.694594
8601767	Outfall	Mason Drain	43.124322	-83.704333
8601768	Outfall	Mason Drain	43.123794	-83.703538
8601769	Outfall	Mason Drain	43.122987	-83.703111
8601770	Point of Discharge	Mason Drain	43.119369	-83.698104
8601771	Point of Discharge	Mason Drain	43.119507	-83.698138
8612251	Point of Discharge	Craven & Benson, Branch #1	43.117713	-83.704256
8612252	Point of Discharge	Craven & Benson Branch #1	43.116985	-83.704214
8612253	Point of Discharge	Craven & Benson Branch #1	43.116985	-83.704214
8612254	Point of Discharge	Craven & Benson Branch #1	43.116417	-83.701722
8612255	Point of Discharge	Craven & Benson Branch #1	43.116331	-83.701771
8612256	Point of Discharge	Craven & Benson Branch #1	43.115715	-83.701724
8612257	Point of Discharge	Craven & Benson Branch #1	43.117029	-83.701781
8612258	Point of Discharge	Craven & Benson Branch #1	43.115000	-83.701698
8612259	Point of Discharge	Craven & Benson Branch #1	43.117029	-83.701781
8612260	Point of Discharge	Craven & Benson Branch #1	43.114198	-83.701640
8612261	Point of Discharge	Mason Drain	43.118451	-83.696243
8612262	Point of Discharge	Mason Drain	43.118451	-83.696243
8612263	Point of Discharge	Mason Drain	43.117678	-83.695862
8612264	Point of Discharge	Not listed	43.117678	-83.695862
8612265	Point of Discharge	Mason Drain	43.118546	-83.697634
8612266	Point of Discharge	Benjamin Run Tributary	43.118452	-83.697674
8612267	Point of Discharge	Benjamin Run Tributary	43.119359	-83.698106
8612268	Point of Discharge	Mason Drain	43.119315	-83.697811
8612269	Point of Discharge	Mason Drain	43.119316	-83.697698
8612270	Point of Discharge	Benjamin Run Tributary	43.119300	-83.697767
8706501	Point of Discharge	Mason Drain	43.121806	-83.694333
8706502	Point of Discharge	Mason Drain	43.121680	-83.692379
8706503	Point of Discharge	Benjamin Run Tributary	43.122964	-83.691391
8706504	Point of Discharge	Mason Drain	43.123531	-83.690030
8706505	Point of Discharge	Mason Drain	43.123494	-83.689899
8706506	Point of Discharge	Mason Drain	43.121823	-83.690020
8706507	Point of Discharge	Benjamin Run Tributary	43.122985	-83.691416
8707001	Point of Discharge	Mason Drain	43.116264	-83.692839
8707002	Point of Discharge	Costello	43.116264	-83.692839
8707003	Point of Discharge	Mason Drain	43.114067	-83.690421

"Not verified in field"

Attachment 2

To MDEQ Stormwater Discharge Permit Application

(IDEP Plan)

(IDEP Protocol Manual)

(Individual Community Enforcement Authority)

(Illicit Discharge Ordinance/ Regulatory Mechanism)

(IDEP Ordinance Schedule)

ILLICIT DISCHARGE ELIMINATION PLAN (IDEP) 2014 Application

Submitted in partial fulfillment of the State of Michigan National Pollutant Discharge Elimination System Permit Application for Coverage of Storm Water Discharges by:

GENESEE COUNTY PHASE II PARTICIPANTS

Phase II Permittees:

Burton; Clio; Davison; Davison Township; Fenton; Fenton Township; Flint Township; Flushing; Genesee Township; Grand Blanc; Linden; Mount Morris; Mount Morris Township; Swartz Creek; Vienna Township; Genesee County.

Nested Jurisdictions under Genesee County Permit:

Atherton Community Schools	Fenton Area School	Lake Fenton Schools
Beecher Community Schools	Flint Board of Educations	Linden Community School
Bendle Public Schools	Flushing Community Schools	Mt. Morris Consolidated Schools
Bentley Community Schools	Genesee Schools District	Swartz Creek Community Schools
Carman Ainsworth Community Schools	Genesee Intermediate School District	Westwood Heights Schools
Clio Area Schools	Grand Blanc Community Schools	
Davison Community Schools	Kearsley Community Schools	Bishop Airport*

The Bishop Airport property is nested under Genesee County's permit for their storm water runoff only. They also have an industrial discharge permit for their other activities.

The Municipal Separate Storm Water Discharge Permit requires that all MS4s develop an illicit discharge elimination plan (IDEP). The above communities have entered into a 342 agreement with the Genesee County Drain Commissioner's office (GCDC) to assist them with their stormwater needs. As part of the contracted agreement the GCDC will be conducting the IDEP activities required by the permit on behalf of the communities and nested jurisdictions. This plan is submitted on behalf of all of the above communities and nested jurisdictions. It outlines the approach to be used to meet their IDEP obligations. The major components of the Genesee County IDEP plan include field verification of outfall locations, reviewing and eliminating illicit discharges, reviewing the legal authority, minimizing seepage from septic systems and sanitary sewers, and the coordination of activities.

Reviewing the Legal Authority

Legal authority for the management & elimination of illicit connections and discharges stems from two state authorities. The first is the Michigan National Pollutant Discharge Elimination System (NPDES) permit (MIG60000) which enables local communities to grant themselves the authority to regulate, prohibit, investigate, monitor and enforce illicit connects and discharges. The 342 permitted communities have been provided with an ordinance template that addresses each of these requirements that they can

tailor to their own situation and then adopt it into their local code. Individual permittee legal authority is under a **separate document**.

The second legal authority stems from the Michigan Drain Code of 1956, Section 280.423, which grants the Genesee County Drain Commissioner (GCDC) the authority to prohibit illicit discharges. This authority applies to all legally established county drains. The relevant section from the Michigan Drain Code is attached.

The third legal authority is the Genesee County Health Department (GCHD), which governs septic systems only.

The fourth legal authority stems from PA 283 of 1909, section 19b. which requires a person, partnership, association, corporation or governmental entity to acquire a Permit for work within a county road from its Road Commission. Work would include connecting storm water outlets within the Road ROW. The relevant section is attached.

The GCDC together with local community representatives has reviewed the current legal authority and enforcement procedures. The County storm water ordinance template will provide local municipalities with the authority (once adopted) to prohibit illicit discharges and manage outfalls for all municipal drainage systems. Attachment "C" is the section out of the template ordinance that covers legal authority to prohibit illicit discharges.

The BMP subcommittee has been working on developing the Stormwater Ordinance, which includes the authority to detect and eliminate illicit connections and discharges to the permittee's MS4. Pursuant the COCs, the Stormwater Ordinance Template was submitted to the MDEQ for review under the revoked 2008 permit. The following schedule will be followed for adoption of the ordinance:

Aug 11, 2010: Meet with MDEQ, to go over comments and concerns.

October 11, 2010: make necessary changes and submit copy to MDEQ.

March 8, 2011: MDEQ withdrew 2008 permit

2014* required communities to adopt ordinance.

Field Verification of Outfall Locations

The outfall map section of this plan is based on field investigation conducted in the previous permit cycle together with permittee records. Although a majority of the collection systems was surveyed in the first permit cycle not all outfalls have been field verified. The IDEP plan approved under the previous permit used a different approach to locate and field verify outfalls. The IDEP crews walked the waters of the state within Genesee County and located all outfalls whether they were MS4's or private. With the 2008-2013 permit cycle, only MS4's are being identified. The outfalls that are being identified and screened are all MS4s where they are going from permitee jurisdiction into the waters of the state and discharge points between two permitee MS4 jurisdictions. **Note: Genesee County's permit covers several agencies and nested jurisdictions. A single outfall identified under the County's permit may contain multiple discharge points between agencies or nested jurisdictions covered under the same permit**. An important part of this cycles IDEP work will be to continue to field verify the location of mapped outfalls. Additionally, ownership (municipal MS4 or private) will be determined for each outfall. Maps are being continually updated, but are available in a shapefile version (GIS). Electronic copies are available and were provided to the MDEQ upon request in 2010 and an updated version November 2011. Yearly outfall updates are prepared and submitted within the progress report.

All known outfalls and discharge points for each community (except Burton and Genesee County) have been identified. Genesee County's agencies and nested jurisdictions combined have more than 1,500

categorical discharges that are being identified. City of Burton took over the roads from the Genesee County Road Commission in the last 10-years. This has provided a significant larger number of outfalls under the City of Burton's jurisdiction than originally anticipated. Identification of the outfalls for Burton Roads has been complicated by not all roads having maps.

All outfalls identified as of April 1, 2014 are located in attachment 1. If all outfalls are not identified a plan is included on how they will be identified prior to Oct 1, 2014. A shape file of the outfalls and storm systems are available. As outfalls are added/ removed, specific location(s) for additional outfall(s) will be reported as needed. Changes will be reflected in an updated map to be included in the progress reports.

Prioritizing Areas for Dry Weather Flow

Areas to be dry weather flow tested first are prioritized based on the permit application (page 5) and other criteria listed below. Before Oct 1, 2014 all known outfalls will be evaluated based on the criteria below be ranked as high, medium or low priority and the basis for that ranking. Dry weather testing will be done based on the schedule below and geography to maximize resources and to reduce travel time, proximity of outfalls to one another will be taken into consideration. Copies of the updated outfalls with the priorities will be available to the State upon request.

NOTE: Individual Permittees that opt to follow a alternative procedure for dry weather testing will need to provide to the State their procedure that would supersede this one.

High Priority	Areas with older infrastructure Industrial, commercial, or mixed use areas Areas with a history of past illicit discharges Areas with a history of illegal dumping Areas with onsite sewage disposal systems Areas with older sewer lines or with a history of sewer overflows or cross-connections Areas with poor dry-weather water quality *Areas with water quality impacts, including waterbodies identified in a Total Maximum Daily Load Verification of Categorical Outfalls (previously unmapped ?& never tested) Discharge complaints and reports
Medium priority	Other potential pollutant generating sites Type of commercial activity Areas with sewer conversions or historic combined sewer systems
Low priority	Undeveloped area Subdivisions less than 30 years old with no know history of illicit discharge Confirmed illicit discharge that has been removed Upstream Discharge points that are already being sampled at the outfall regardless of jurisdiction unless a suspected illicit discharge is found

*The only TMDL in Genesee County is for ecoli. The outfall would only be considered high priority under this choice if it had the potential of discharging ecoli.

Schedule: outfalls to be dry weather tested

2015	High priority outfalls for Municipalities 60% complete, Genesee Co 10% complete
2016	High priority outfalls for Municipalities 95% complete, Genesee Co 25% complete
2017	High priority outfalls for Municipalities 100% complete, Genesee Co 50% complete Medium priority outfalls for Municipalities 50% complete, Genesee Co. 10% comp
2018	High priority outfalls for Genesee Co 75% complete Medium priority outfalls for Municipalities 100%, Genesee Co. 60%
2019	High priority outfalls for Genesee Co 100% complete Medium priority outfalls for Genesee Co. 100% Low priority outfalls will be done in 2020-2025 permit cycle

Although ok the outfalls will be completed at the end of the 5-year IDEP cycle the year-to-year schedule is subject to adjustments due to weather, financial considerations and staff availability.

***Prior to October 1, 2014 a list showing the priority level of each outfall will be provided to the State.**

Performing Dry-weather Screening

As mentioned above, one of the primary actions under the IDEP program is to identify and remove all illicit discharges and connections from the municipal storm sewer system. The outfall maps presented in Attachment 1 of the 2014 application is in ArcView GIS and this information will be updated and added to for guiding the screening of outfalls for dry weather flow.

To achieve IDEP requirements, each outfall that is prioritized High or Medium will be screened for signs of illicit discharges. Where illicit discharges are suspected, systematic investigation upstream of the outfall will be conducted to trace the discharge to the source where practicable.

*Genesee County outfalls include all County agency and nested jurisdiction outfalls. A single outfall identified under the County's permit may contain multiple discharge points between agencies or nested jurisdictions covered under the same permit. Only the County agency/ nested jurisdiction at the point of outlet will be indicated on the outfall table. The PA 342 Contract acts as a interagency agreement.

The process of locating and removing illicit connections is illustrated in an attached Work Plan Flow Chart. The flow chart is discussed in detail below. Forms for recording field inventory information and observations if dry weather flow is observed are also included at the end of this section. The dry weather screening form could be used multiple times at a single site if a suspected connection or discharge requires follow-up site visits.

The High or Medium outfall will be observed in the field during dry weather conditions, 72 hours with less than 0.10 inches of rainfall, and the sites will be checked for intermittent flows if suspected. If flow is present, it will be visually observed, checked for odors, and tested for representative tracer parameters such as pH, temperature, E. coli, fecal coliform, detergents, ammonia, and total organic carbon. The thresholds for the above parameters that trigger activity to determine the sources of illicit connections are listed below. All of these tests, except for pH and temperature, will be performed by a professional

contract laboratory. Test results and observations will be used to identify areas that require follow-up investigations.

Parameter	Threshold
Ammonia (NH_3)	1 mg/l
Surfactant	.2 mg/l
E.coli.	2000 Col. Per 100 ml
Ph	7 - 9

Decision Making

Depending upon the type of illicit discharge there are various responses that can occur. The following chart outlines the appropriate responses to an illicit discharge based upon whether they are spills and emergencies or illicit connection.

Illicit Discharge

Spills & Emergencies (isolated dump of pollutant into water)		Illicit Connection (Pipe connection to water)	
		Dry weather testing performed	
		Pollutant identified & tracked upstream to source	
No one knows it is happening	**Incident is reported**		
	911 is called by public:	**Source found through**	**Source not found**
No response	Fire Dept	**IDEP or public reporting**	
	Hazard response team		Source tracked to the furthest extend practicable.
	Police		
	Emergency Mgmt.	Notify the following departments:	
	Local Municipality		Follow-up testing scheduled
	SESC enforcing agency	Health Dept	
	MDNRE	Local Municipality	
	Dry weather testing performed as needed by GCDC	GCDC Surface Water	
		MDNRE	
	Local Community/ Police can ticket or assess costs of cleanup against dumper.	Source eliminated	

Depending on the type and location of an illicit discharge, the responsible party can change. In a spill or emergency, 911 should be called to initiate the emergency response. As an illicit discharge is identified and information is gathered, the responsible party will be identified from the above bulleted list.

The following are examples of the types of materials that if discharged constitute a spill or an emergency due to the potential introduction of pollutants to local waterways either directly or through stormwater: dredged spoils, solid waste (see below), sewage, garbage, sewage sludge, munitions, chemical wastes,

biological materials, radioactive materials, heat sources, wrecked or discarded equipment, rock, sand, petroleum products, industrial, municipal, and agricultural waste. This list is not meant to be exhaustive. The quantity of the spill should also be considered in conjunction with the type of spill that has occurred before reporting it. For example, wastewater from painting activities need not be reported to 911 but one may wish to mention it to the authorities such as public works, or the GCDC to have them contact the offender in order to educate them.

Illegal dumping: permitee will make sure 911 has been contacted, who will contact fire dept, police, emergency management and the hazardous response team. Local responder will depend on the nature of the discharge (see above) and if a responsible party is identified. If a responsible party is identified, a private cleanup company may be involved. MS4 owner is enforcement agency for follow up. (local municipality, County, MDNRE).

Illicit sanitary connection: once identified, GCDC will contact the Heath Dept, local community, MS4 owner and MDNRE by letter. Enforcement agency for follow up is Health Dept, coordinated with GCDC.

Failing soil erosion measures: MS4 owners are the enforcement agency once construction is complete and the soil erosion permit has been released. If the site is a current construction site, the permitee will make sure the presiding SESC agency has been notified pursuant section 9107 of Part 91 and fill out a spill form. If there is an active SESC permit then the presiding SESC agency is the enforcement agency.

Large quantity spill: permitee will make sure 911 has been contacted, who will contact fire dept, police, emergency management and the hazardous response team. Local responder will depend on the nature of the discharge and if a responsible party is identified. If a responsible party is identified, a private cleanup company may be involved. MS4 owner is enforcement agency for follow up. (local municipality, County, MDNRE).

In all the above instances, if a responsible party is not identified, and if the spill is significant enough to warrant clean-up, measures will be taken to address the problem by local authorities to levels that at a minimum ensure public safety. The decision to commence with a clean-up will be made by whoever has jurisdiction over the spill site. In some cases there maybe multiple jurisdictions in which case all parties will be consulted on the course of action to occur. For all significant spills, the MDEQ will receive verbal notification of the event within twenty-four (24) hours.

Within Individual communities, if an emergency spill is received, this person will make sure that the call gets resolved or forwarded to the responsible agency.

• Davison Township	DPW Director
• Fenton Township	Ordinance Enforcement Officer
• Flint Township	Building Dept Agent
• Genesee Township	Code Enforcement Officer
• Mt. Morris Township	Code Enforcement Officer
• Vienna Township	Building Superintendent
• City of Burton	DPW Director
• City of Clio	City Administrator
• City of Davison	Clerk/DPW
• City of Fenton	DPW Director
• City of Flushing	DPW Supervisor
• City of Grand Blanc	Public Works Director
• City of Linden	DPW Director
• City of Mt. Morris	DPW Superintendent
• City of Swartz Creek	DPW Director

- Genesee County GCDC-SWM Drain Engineer

Illicit Source Identification

GCDC-SWM has been contracted to coordinate the dry weather testing and perform any follow up on behalf of the Contracted Phase II communities and nested jurisdictions listed on the first page of this document. When initial testing has identified a potential problem, it will be given to the GCDC office staff to follow up and confirm an illict connection or not. The land use and type of buildings in the area will be considered to determine the next course of action. Based on the land use and the results of the observations and chemical testing, additional manholes will be investigated. Tracing of the pollutant stream will continue by manhole investigations until the source is isolated within a relatively short reach of sewer. Dye testing of building fixtures will then be used to locate the source.

Dye testing will be scheduled by GCDC staff at individual buildings following notification of the building owner to explain the need for this investigation and how it will be performed. In general, dye testing will be used as the final step to gain positive identification of an illicit connection. Televising the sewer may be used to further isolate the pollutant source or may be used if dye testing does not reveal the source of the problem. This approach is intended to locate illicit connections is the most cost-effective and efficient manner possible. It will focus the use of dye testing in those areas with the highest potential for illicit connections.

Field investigations to identify specific illicit connection locations will be performed by either the GCDC or a consultant contract. If a source is found discharging to a municipal's or nested jurisdiction's MS4 that is not owned by Genesee County, GCDC will also notify owner, elected official (supervisor, mayor or superintendent) or in the case of the airport the facilities manager for assistance to perform the tracking and elimination of the illicit discharge. If a source is found discharging to a Genesee County MS4, GCDC will also notify the appropriate agencie(s) for assistance to perform the tracking and elimination of the illicit discharge.

Illicit discharges to MS4 systems other than the County's, 342 communities and nested jurisdictions that are discovered will result in the generation of a letter to the owner/operator informing them of the problem. If it is a confirmed illicit discharge the MDEQ will be copied on the letter.

Occasionally, hot spots are located that may threaten local water quality. Stormwater hot spots are areas where current or legacy land uses or activities generate contaminated runoff, with concentrations of pollutants exceeding those typically found in stormwater. A typical example is an abandoned underground storage tank associated with a gas station. If a suspected hot spot comes to the attention of GCDC they will develop a plan to monitor the hot spot and the surrounding area, with in their capacity, to determine the degree and extent of the problem and the threat (if any) it may pose to local waterways and public health. Appropriate action will then be taken as limited by the availability of funds.

When potential illicit connections are located, the GCDC will be provided with specific details by the consultant/ field investigator.The GCDC will be responsible for coordinating the tracking of an illicit connection upstream to its source and elimination. Once an illicit connection has been confirmed a letter to notify the property owner / responsible party and other involved parties (including the municipality, MS4 owner and the MDEQ) of the violation and require corrective action by the property owner or responsible party. If the illicit connection is time sensitive or beyond the jurisdiction of this program (such as an industrial discharge), an e-mail may be sent in lieu of a letter. Once the confirmed illicit connection has been eliminated a follow-up letter will be sent to all involved parties.

Eliminating Illicit Discharges and Pursuing Enforcement Action

Prioritization of verifying and removing potential illicit connection is done through a combination of when they are initially detected (chronologically) and by geographical location (trying to maximize resources through scheduling investigation that are close to each other). If the property owner does not respond in the specified time frame, follow-up enforcement action will be taken by GCDC or the appropriate enforcing agency. Each problem is unique and depending upon the circumstance. When the property owner or responsible party has indicated that a connection has been eliminated, GCDC will confirm that all problems have been fixed to their satisfaction for both the County Departments, nested jurisdictions and 342 communities.

GCDC and its partners will work to eliminate all illicit discharges to the maximum extent practicable. This means exhaustive steps will be taken within the limits of financial and technical resources available to address the problem. Occasionally, elimination of the source is not possible either because it cannot be found or the cost to address the problem exceeds the benefits of making the correction. In these cases either a management plan will be implemented and/or the location identified for regular monitoring by the owner/operator.

Updated maps are provided in the progress reports that reflect ownership, status of any illicit connections found, as well as corrections to the original information in the permit.

Public Notification System for Illicit Discharges

Currently the Illicit Discharge system is split between those that are associated with illegal dumping and those releases associated with MS4s. The above flow chart illustrates the various paths and responsible parties involved in managing Illicit Discharges.

The number of possible ways that an illegal dumping can occur compounded by the number of agencies involved make centralization of this function extremely difficult and cost prohibitive under the current economic climate. Furthermore, centralization of the function may in-fact reduce response time and clean up efficiency due to having to educate the public about the who they should call. Current laws do not provide for a single responsible party.

The permit requires the permitee to develop and implement a procedure for the receipt and consideration of complaints or other information submitted by the public regarding construction activities discharging waste to the MS4.

The M&M Subcommittee had already created a form to be used to track illegal dumping as reported by the public, similar in concept to a "chain of custody" from used to track hazardous materials. The form originates with the agency that receives the call from the public and end with GCDC. This way illegal dumping calls will be responded to as they are received. Calls will continue to be prioritized by the type of suspected release. For example, from the responder's perspective a suspected oil spill will take precedent over a suspected detergent spills. Another benefit to improving the current system is that it allows local communities under current laws to levy fines and collect clean-up costs if the responsible party can be identified.

The illicit dumping form will direct the originating agency to notify GCDC within 24 to 48 hours and inform them of any corrective action taken. This way GCDC can track any open notification that still may need to be followed up on as well as determine any apparent patterns that may lead to eliminating re-occurrences in the future.

The permit requires the permitee to develop and implement a procedure to provide notice to the part 91 permitting entity and the Department when pollutants are discharged in violation of section 9116 of Part 91 (SESC rules). The requirement of notice of violation has already been required in section 9107 of Part 91. A new procedure is unnecessary.

Note: minor changes to the spill form have been done to include SESC information to notify of SESC complaints.

Minimizing Seepage from Septic Systems and Sanitary Sewers

A map of the sanitary sewer service areas was prepared in 2006 for the watershed plan to define areas where sanitary service is available and septic tanks can be prohibited. Those areas with possible septic tanks are included in the watershed management plans. As part of the actions in the Watershed Management Plan, Genesee County will explore the possibility for a time of sale septic tank inspection ordinance and coordinate such activities with the County Public Health Department.

GCDC Water and Waste Services (WWS) has a PA 342 Water and Sewer Advisory Board (WSAB) with their water and sewer community customers. The WSAB have a sanitary sewer infiltration and inflow removal program (I&I Program). This program is being enforced by both GCDC-WWS and the local communities that use the WWS treatment plants. Since 2001 there has been a significant effort to reduce I&I through monitoring flows between communities, lining sanitary lines, locking sanitary lids, waterproofing structures, footing drain removal and other efforts by all parties. This has resulted in a wet weather reduction to the treatment plants. There has also been a reduction on sanitary sewer overflows due to wet weather. WWS has also focused on efforts to the infrastructure and treatment plants to build in non-wet weather capacity.

Training

At the start of every IDEP field season training is conducted for new Tetra Tech employees, summer interns, GCDC personnel and individuals from various other firms and municipalities. The training is typically for an entire day and provides procedural information for individuals that have not previously been involved in IDEP operations, and it serves as a refresher for the regular IDEP field crews. There is both an in-class module and a field demonstration. Through the use of Power Point presentations, IDEP protocol manuals, and hands on training in the field, individuals are given the tools to collect and record the required data under the Phase II Storm Water permit.

At a minimum the following topics are covered:

The definition of illicit discharges and connections

Techniques for finding illicit discharges, including field screening, source identification, and recognizing illicit discharges and connections

Methods for eliminating illicit discharges and the proper enforcement response

A training schedule and requirement for training during the term of the permit

Additional topics usually include:

The methodology that will be utilized by the municipality to find, prioritize and eliminate illicit discharges and connections to the municipal separate storm sewer system (MS4)

The IDEP investigation history for the municipality

Desktop assessment of illicit discharge potential within the municipality, including assessment of the highest priority investigation areas based on the prioritization criteria listed in Table 1 of the permits

Investigation planning and preparation for field work

Field techniques that can be used to detect and identify the sources of illicit discharges/connections.

Training for staff that have field jobs

For staff that do not actually perform Dry weather flow, but do work in field jobs that would have the potential for them to witness illicit discharges and connections, a information sheet is being developed. See Attachment C. This will be provided to appropriate staff per IDEP training and evaluation (#18) requirements in the 2014 application and can be used to train staff.

An information sheet on signs of an illicit discharge, see attachment – will be provided to staff per IDEP training and evaluation (#18) requirements in application. We will provide the training/literature on the following schedule:

Training of Public Works personnel, along with distribution of an information sheet will be done NLT July 1, 2014.

Effectiveness of IDEP program

The current permit requires that the permitee determine the effectiveness of their illicit discharge elimination activities. These evaluation activities are in addition to inspecting each high and medium storm water point source every five years. GCDC will use three evaluation methods, all of which are approved methods in the MDEQ IDEP guidance. The current GCDC IDEP program will continue to compare the number of illicit discharges/connections eliminated versus the number found and report these in the annual report. The second evaluation method is to use the illicit discharge tracking form for public generated complaints. Information collected will be reported in the progress reports. The last evaluation method to be used is the ambient water quality monitoring results generated yearly from the existing program. Project Green, FRWC's Benthic Monitoring, monitoring conducted for IDEP investigation and any additional hot spot monitoring are updated and analyzed annual.

Progress Report

GCDC together with its member permitees will provide documentation of the actions taken to eliminate illicit discharges. For identified illicit discharges, the permitees shall summarize the total estimated volume and pollutant load eliminated for the main pollutants of concern, and the locations of the discharges into both the permitees MS4 and the receiving water.

Coordination of Activities

The Genesee County Drain Commissioner will be coordinating with all municipalities, county agencies and nested jurisdictions to address illicit connections/discharges, local ordinances, and seepage from septic systems and sanitary sewers. This work is proposed to be performed under a PA 342 contract with Genesee County. All work is proposed to be directed by the Drain Commissioner and coordinated with the Road Commission, Health Department, Emergency Management Services, and local officials, as appropriate. Annual discussions on IDEP matters will be placed on 342 committee of the whole meetings.

Record Keeping

Permitees shall make records associated with IDEP activates to address illicit discharges and connections available to the MNRE upon request.

Program Schedule

Activities to be performed within **12 months** include:

Continue to annually train field staff on procedures for the IDEP compliance requirements.

Fully implement the public complaint and reporting system.

Continue to require sanitary sewer connections when available.

Track activities for Permit Reports.

Activities to be performed within **24 months** include all of the ongoing actions listed above as well as:

Visually inspect mapped storm sewer outfalls for dry weather flow for all identified outfalls in the permit application.

Prepare Permit Report.

Conduct follow up field investigation on suspected illicit discharges and priority areas.

DRAINAGE SYSTEM INVENTORY

GENERAL ID _____

Date _____ Time _____

Crew Initials _____ Chk By: _____

Photographs: Roll #_____ Picture #'s _____

DISCHARGE STRUCTURE TYPE

- ❑ PSD
- ❑ Manhole
- ❑ Catch Basin
- ❑ Culvert Outlet
- ❑ Point in Open Channel
- ❑ Abandoned
- ❑ Unknown

PSD Status

- ❑ PSD
- ❑ Not a PSD
- ❑ PSD Not in Permit (New)
- ❑ PSD Not Permittable
- ❑ Structure within Drainage Network

LOCATION (see back side for location sketch)

Latitude

Longitude

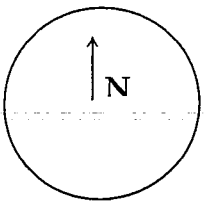
Invert Elevation

Offset Description:

Receiving Waterbody: _____

DISCHARGE SRUCTURE INFORMATION

Pipe ID						
Direction from MH						
Shape						
Diameter (in)						
Width (in) (Open Channel)						
Depth (in)						
Measure Down (ft) (Manhole)						
Invert Elevation (ft) (Pipes)						
Conduit Material						
US/DS End						



Comments

LOCATION SKETCH

LOCATION SKETCH CHECK LIST

Label Street Names

Indicate North

Locate manholes by dimensions from property lines, back of curb, or edge of pavement

Sketch catch basins and connections (no measurements necessary).

Indicate (if possible) distance to upstream and downstream manholes

Landmarks/nearest address, if any

Flow direction

Sample point

Special access/traffic control notes

Between mile markers _____ & _____ or _____ tenths past mile marker _____

Velocity/depth measure location

DRAINAGE SYSTEM SCREENING

GENERAL ID _____

Date _____ Time _____ Air Temp _____

Rain ❑Yes ❑No

❑Clear/Sunny

Crew Initials _____ Chk By: _____ ❑Partly Cloudy

Photographs: Roll #_____ Picture #_____ ❑Overcast

DRY WEATHER FLOW PRESENT

❑ Yes, Dry Weather Flow Present

❑ Trace, Insufficient

❑ No Dry Weather Flow Present

❑ Standing Water

❑ Submerge

❑ Inundated

❑ N/A

FLOW MEASUREMENTS

Pipe Sampled: Size (in) _____ Direction _____

Method:	General Data			Travel Time Trials
❑ Tt Method				
❑ Area * Velocity	Depth, (in)	_____		
❑ Bucket	Dist Traveled, (ft)	_____	#1 (sec)	_____
❑ Manning's	Bucket Vol, (l)	_____	#2 (sec)	_____
	Channel Slope (%)	_____	#3 (sec)	_____
	Channel Material	_____	Avg (sec)	_____
Flow: _____	Channel, n	_____	Vel (fps)	_____

Intermittent ❑ Not Checked

Flow Check ❑ Left Sand Bag in Channel

❑ Removed Sand Bag, intermittent DWF present ❑ Yes ❑ No

if possible describe frequency, duration, time of day of flow slugs – put in comments section

DISCHARGE OBSERVATIONS (if "other" checked fill in description at bottom of page)

Odor	❑None	❑Musty	❑Sewage	❑Rotten Egg	❑Gas	❑Oil	❑Other
Floatables	❑None	❑Trash	❑Sewage	❑Bacterial Sheen	❑Oil Sheen	❑ Suds	❑Other
Deposits/ Stains	❑None	❑Mineral	❑Sediment	❑Oily	❑Grease	❑ Suds	❑Other
Vegetation	❑None	❑Normal	❑Excessive	❑Algae	❑Slime		❑Other
Structural	❑Normal	❑Cracking	❑Spalling	❑Corrosion	❑Settlement	❑Staining	❑Other
Color	_____	Enter #					
Turbidity	_____	Enter #					

Description:

RECEIVING WATER OBSERVATIONS (if "other" checked fill in description at bottom of page)

Odor	❑None	❑Musty	❑Sewage	❑Rotten Egg	❑Gas	❑Oil	❑Other
Floatables	❑None	❑Trash	❑Sewage	❑Bacterial Sheen	❑Oil Sheen	❑ Suds	❑Other
Deposits/ Stains	❑None	❑Mineral	❑Sediment	❑Oily	❑Grease	❑ Suds	❑Other
Vegetation	❑None	❑Normal	❑Excessive	❑Algae	❑Slime		❑Other
Bank	❑Excessive Vegetation	❑❑Staining of Banks	❑Erosion	❑Trash			❑Other
Color	_____	Enter #					
Turbidity	_____	Enter #					

Description:

DRAINAGE SYSTEM SCREENING (Continued)

ID [_____]

CHEMICAL ANALYSIS

FIELD ANALYSIS LAB SAMPLE COLLECTED ID _____

Surfactants	_____ mg/L	Temperature	_____
Ammonia	_____ mg/L	pH	_____
Boron	_____ mg/L	Specific Cond.	_____
Potassium	_____ mg/L		
E. Coli	_____ per 100ml		

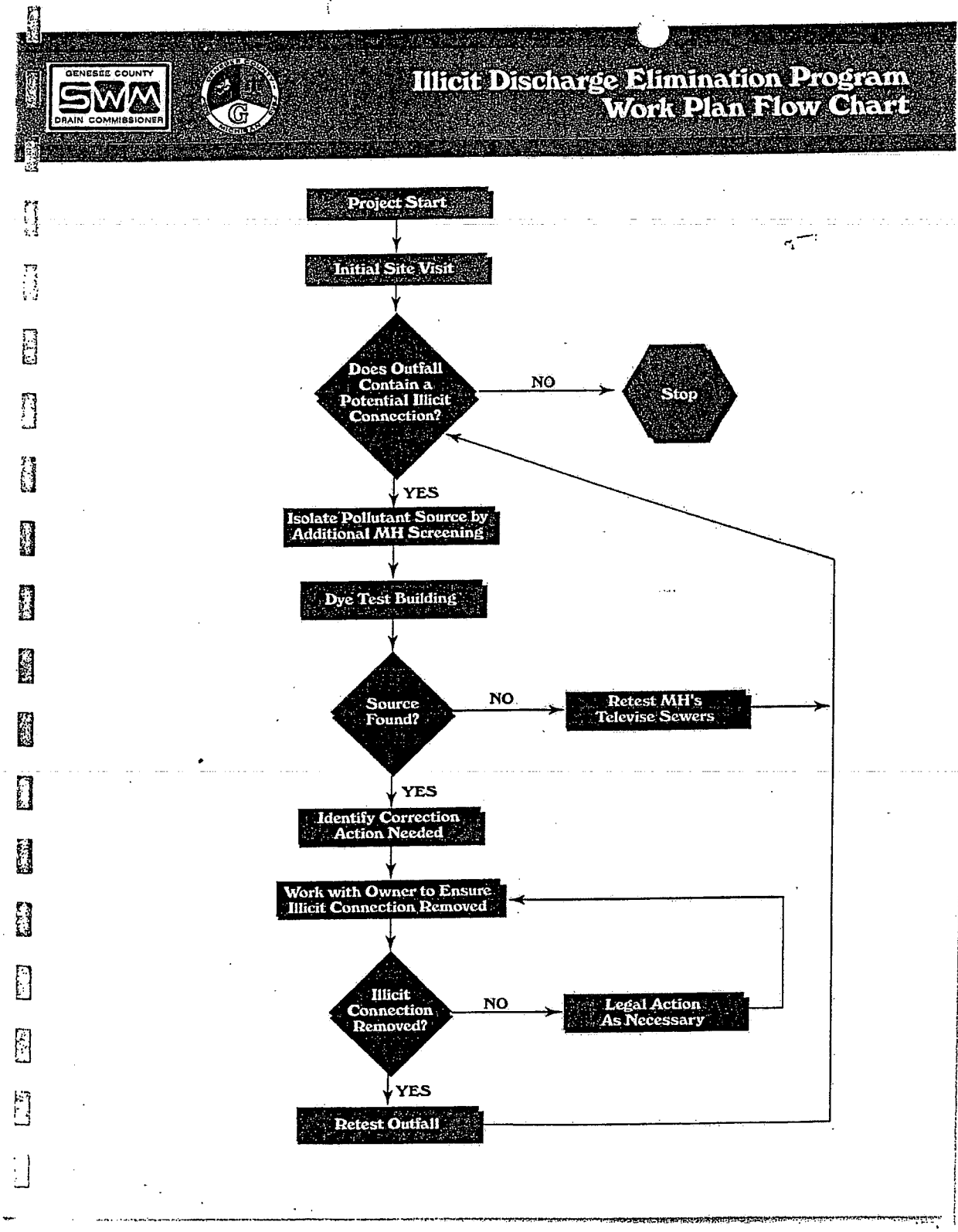
RESULTS

- ❑ Illicit Connection Ruled Out
- ❑ Illicit Connection (undocumented connection)
- ❑ Pending
- ❑ Notify City
- ❑ Not a PSD

ACTION

- ❑ None Required
- ❑ Illicit Removed
- ❑ Waiting on Lab Results
- ❑ Dye Test
- ❑ Televise
- ❑ Investigate Further
- ❑ Illicit Connection

Comments



Michigan Drain Cod5 eff. 1956

Attachment "A"	Drain Code excerpt
Attachment "B"	PA283 of 1909 excerpt
Attachment "C"	*How to spot Illicit Discharge Brochure
Attachment "D"	(Left Blank)
Attachment "E"	Spill Notification

Attachment "A"
DRAIN CODE

280.423 Discharge of certain sewage or waste matter into drains prohibited; construction to purify flow; petitions; order of determination; findings; construction of drain; plans and specifications; contracts; costs; review; acquisition of land; application and fee for sewer connections; connections; powers of drain commissioner or drain board; failure to comply with section; violation as misdemeanor; fine; "person" defined.

Sec. 423. (1) A person shall not continue to discharge or permit to be discharged into any county drain or intercounty drain of the state any sewage or waste matter capable of producing in the drain detrimental deposits, objectionable odor nuisance, injury to drainage conduits or structures, or capable of producing such pollution of the waters of the state receiving the flow from the drains as to injure livestock, destroy fish life, or be injurious to public health. This section does not prohibit the conveyance of sewage or other waste through drains or sewers that will not produce these injuries and that comply with section 3112 of part 31 (water resources protection) of the natural resources and environmental protection act, Act No. 451 of the Public Acts of 1994, being section 324.3112 of the Michigan Compiled Laws.

(2) Disposal plants, filtration beds, and other mechanical devices to properly purify the flow of any drain may be constructed as a part of any established drain, and the cost of construction shall be paid for in the same manner as provided for in this act for other drainage costs. Plants, beds, or devices may be described in the petition for the location, establishment and construction of drains or in the petition for the cleaning, widening, deepening, straightening, or extending of drains, or in the application for the laying out of a drainage district. Petitions for the construction of plants, beds, and devices for use on any established drain may be filed by the same persons and shall be received and all proceedings on the petitions in the same manner as other petitions for any drainage construction under this act.

(3) If the department of environmental quality determines that sewage or wastes carried by any county or intercounty drain constitutes unlawful discharge as prescribed by section 3109 or 3112 of part 31 of Ad No. 451 of the Public Acts of 1994, being sections 324.3109 and 324.3112 of the Michigan Compiled Laws, that 1 or more users of the drain are responsible for the discharge of sewage or other wastes into the drain, and that the cleaning out of the 'drain or the construction of disposal plants, filtration beds, or other mechanical devices to purify the flow of the drain is necessary, the department of environmental quality may issue to the drain commissioner an order of determination identifying such users and pollutants, under section 3112 of Act No. 451 of the Public Acts of 1994, being section 324.3112 of the Michigan Compiled Laws. The order of determination constitutes a petition calling for the construction of disposal facilities or other appropriate measures by which the unlawful discharge may be abated or purified. The order of determination serving as a petition is in lieu of the determination of necessity by a drainage board pursuant to chapter 20 or 21 or section 122 or 192 or a determination of necessity by a board of determination pursuant to section 72 or 191, whichever is applicable. A copy of the findings of the department shall be attached to the order of determination which shall require no other signature than that of the director of the department of environmental quality. Upon receipt of the order of determination, the drain commissioner or the drainage board shall proceed as provided in this act to locate, establish, and construct a drain. If the responsible users of the drain are determined to be public corporations in the drainage district, the drain commissioner or the drainage board shall proceed as provided in chapters 20 and 21, as may be appropriate, using the order of determination as the final order of determination of the drainage board. If the responsible users are determined to be private Persons, the drain commissioner shall proceed as provided in chapters 8 and 9, using the order of determination as the first order of determination.

(4) Plans and specifications for the construction as part of a drain of any disposal plant, filtration bed, or

other mechanical device to properly purify the flow of the drain shall be prepared by the drain commissioner or the drainage board. Contracts for construction shall be let in the manner provided in this act. To meet the cost of any preliminary engineering studies for the construction of abatement or purification facilities, the drain commissioner or the drainage board shall apportion the cost among the several parcels of land, highways, and municipalities benefited thereby in the same manner as provided in chapter 7 or against the public corporations affected by the order of determination in the sane manner as provided in chapters 20 and 21. The costs and charges for maintenance shall be apportioned and assessed each year. If the apportionment is the same as the last recorded apportionment, a day of review' or a hearing on apportionments is not necessary, but if tire apportionment is changed, notice of a day of review or a hearing on apportionment shall be given to each person whose percentage is raised.

(5) Land may be acquired as a site for the construction of such plants, beds, and devices, and releases of land may be obtained in the same manner as provided in this act for other lands acquired for right of way.

(6) A person shall not connect sewage or other waste to a county or intercounty drain except with the written approval of the appropriate commissioner or the drainage board indorsed upon a written application for such service and the payment of a service fee of not to exceed $50.00 for each connection to a covered drain. The application shall include information showing that all other local, state, and federal approvals related to the sewage or waste have been obtained.

(7) The fee provided for in subsection (6) shall be set and collected by the drain commissioner, as approved by the county board of commissioners or the drainage board, and deposited with the county treasurer, to be credited to the drain fund set up for the maintenance or construction of the drain. The commissioner or the drainage board shall keep a record of applications made and the action on the applications. The commissioner or the drainage board may reject applications for or require such modification in requested applications for sewer connections to county drains as necessary to attain the objectives set forth in this section.

(8) Subject to the review and approval of the department of environmental quality, the drain commissioner or drainage board may study the requirements of persons for flood control or drainage projects including sewage disposal systems, storm sewers, sanitary sewers, combined sanitary and storm sewers, sewage treatment plants, and all other plants, works, instrumentalities, and properties useful in connection with the collection, treatment, and disposal of sewage and industrial wastes or agricultural wastes or run-off, to abate pollution or decrease the danger of flooding. The objective of such studies shall be that sewers, drains, and sewage disposal facilities are made available to persons situated within the territorial limits of any drainage district or proposed drainage district as necessary for the protection of public health and the promotion of the general welfare.

(9) The drainage board or drain commissioner may cooperate, negotiate, and enter into contracts with other governmental units and agencies or with any public or private corporation including the United States of America, and to take such steps and perform **such** acts and execute such documents as may be necessary to take advantage of any act of the congress of the United States which may make available funds for any of the purposes described in this section.

(10) Failure to comply with any of the provisions of this section subjects the offender to the penalties described in section 602. However, for each offense, a person who violates subsection (6) is guilty of a misdemeanor punishable by a fine of not more than $25,000.00 or imprisonment for not more than 90 days, or both. In addition, the person may be required to pay the costs of prosecution and the costs of any emergency abatement measures taken to protect public health or the environment. Payment of a fine or costs under this subsection does not relieve a person of liability for damage to natural resources or for response activity costs under the natural resources and environmental protection act, Act No. 451 of the Public Acts of 1994, being sections 324.101 to 324.98106 of the Michigan Compiled Laws.

11) **As** used in this section, "person" means an individual, partnership, public or private corporation, association, governmental entity, or other legal entity.

History: 1956,Act 40, Imd. Eff. **Mar.** *28,1956* ;--Am. 1972,*Act 298,* Imd. Eff. Dec.

14,1972;--*b.1996,* Act *60,* Imd . Eff. Feb. 26,1996 ;-Am. 1996,Act 552, Eff. Mar. 31,1997.

Attach B

PUBLIC HIGHWAYS AND PRIVATE ROADS (EXCERPT)
Act 283 of 1909
(Act 212 of 1980)

224.19b Working within right-of-way of county road; permit required; exceptions; permit requirements and schedule of fees; itemization of costs; annual and emergency permits; security.

Sec. 19b.

(1) A person, partnership, association, corporation or governmental entity shall not construct, operate, maintain or remove a facility or perform any other work within the right of way of a county road except sidewalk installation and repair without first obtaining a permit from the county road commission having jurisdiction over the road and from the township, city or village in which the county road is located when a permit is required by ordinance of the township, city or village, pursuant to authority conferred by article VII, section 29 of the Michigan constitution of 1963. The adjacent property owner shall not be required to obtain a permit for work incidental to the maintenance of the right of way lying outside of the shoulder and roadway.

(2) A county road commission and a local unit of government may adopt after a public hearing of which notice has been given by publication at least twice in a newspaper circulated in the county not more than 30 days nor less than 7 days prior to the hearing, reasonable permit requirements and a schedule of fees to be charged sufficient to cover only the necessary and actual costs applied in a reasonable manner for the issuance of the permit and for review of the proposed activity, inspection and related expenses. After the work authorized in the permit has been completed, itemization of all costs shall be supplied upon request of the permit holder.

(3) When a road commission adopts procedures for the issuance of permits or adopts a schedule of fees in accordance with the provisions of this section, separate procedures and fee schedules shall be adopted for the issuance of annual and emergency permits which reflect the minimal administrative burden of issuing an annual permit for frequent but routine and unobtrusive work such as surveying and the extraordinary emergency repairs to municipal or public utilities.

(4) A county road commission may not refuse a permit requested by a government entity for the installation of a facility or utility owned by that entity if security is given by the permittee or its contractor to the county road commission sufficient to insure restoration of the road and appurtenances thereto and adjacent right of way to a condition reasonably equal to or better than that existing prior to such installation nor may a county road commission charge a government entity a permit fee exceeding $300.00 per permit or $1,000.00 total for all permits per project.

History: Add. 1980, Act 212, Eff. Mar. 31, 1981

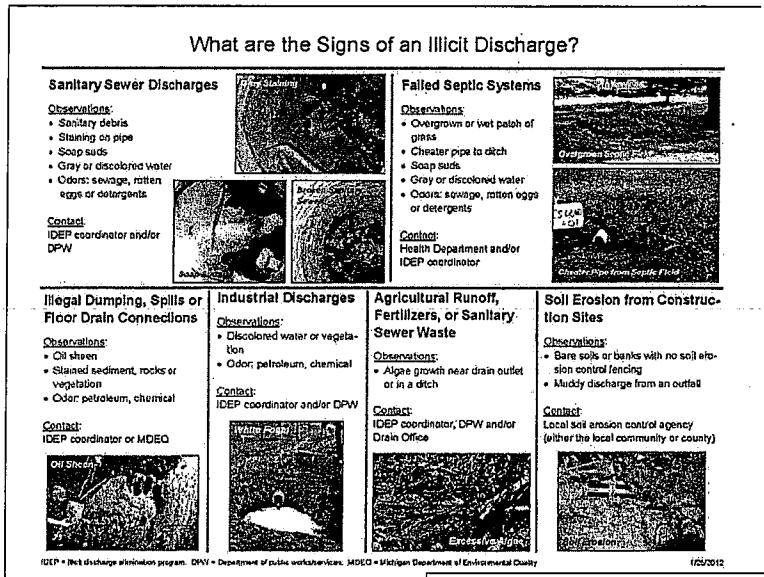
Attachment "C"

How to spot an Illicit Discharge Brochure:

This brochure is under development. It is modeled on the alliance of rouge communities IDEP Tip Card. (shown below) It may be used to train staff and can be made available to the public.

- What is an illicit discharge and how to identify
- Hazards associated with illegal discharges
- What to report
- Who to report to

Schedule: PEP subcommittee/ Tetra Tech will have brochure complete by July 1, 2014 for distribution.



What are the Signs of an Illicit Discharge?

Sanitary Sewer Discharges

Observations:
- Sanitary debris
- Staining on pipe
- Soap suds
- Gray or discolored water
- Odors: sewage, rotten eggs or detergents

Contact:
IDEP coordinator and/or DPW

Failed Septic Systems

Observations:
- Overgrown or wet patch of grass
- Cheater pipe to ditch
- Soap suds
- Gray or discolored water
- Odors: sewage, rotten eggs or detergents

Contact:
Health Department and/or IDEP coordinator

Illegal Dumping, Spills or Floor Drain Connections

Observations:
- Oil sheen
- Stained sediment, rocks or vegetation
- Odor: petroleum, chemical

Contact:
IDEP coordinator or MDEQ

Industrial Discharges

Observations:
- Discolored water or vegetation
- Odor: petroleum, chemical

Contact:
IDEP coordinator and/or DPW

Agricultural Runoff, Fertilizers, or Sanitary Sewer Waste

Observations:
- Algae growth near drain outlet or in a ditch

Contact:
IDEP coordinator, DPW and/or Drain Office

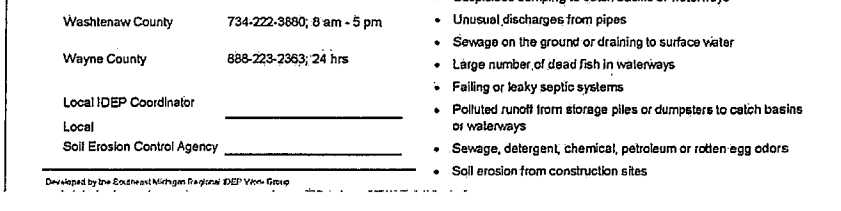
Soil Erosion from Construction Sites

Observations:
- Bare soils or banks with no soil erosion control fencing
- Muddy discharge from an outfall

Contact:
Local soil erosion control agency (either the local community or county)

IDEP = illicit discharge elimination program. DPW = Department of public works/services. MDEQ = Michigan Department of Environmental Quality

1/29/2012



Important Numbers

EMERGENCIES	
• Police/Fire	911
• MDEQ Pollution Alert System (PEAS)	800-292-4706; 24 hrs
NON-EMERGENCIES	
Livingston County:	
Health Department	517-546-9858; 8 am - 5 pm
Drain Office	517-546-0040; 8 am - 5 pm
Macomb County:	
Health Department	586-469-5236; 8 am - 5 pm
IDEP Hotline	877-679-4337; after 5 pm
IDEP e-mail	IDEP@macombcountymi.gov
Oakland County	248-858-0931; 24 hrs
St. Clair County	877-504-SWIM (7946); 24 hrs
Washtenaw County	734-222-3680; 8 am - 5 pm
Wayne County	888-223-2363; 24 hrs
Local IDEP Coordinator	_____
Local Soil Erosion Control Agency	_____

Developed by the Southeast Michigan Regional IDEP Work Group

How to Spot Illicit Discharges

A Tip Card for Municipal Staff

An illicit discharge is any discharge containing polluting material, such as sediment, nutrients, oil and bacteria. These discharges can drain to lakes and streams via storm drains. The communities in Southeast Michigan are required to prevent illicit discharges from entering storm water. You can do your part by notifying the appropriate agency when you spot a potential illicit discharge.

What to Report?

- Spills and contamination to lakes, rivers and streams
- Suspicious dumping to catch basins or waterways
- Unusual discharges from pipes
- Sewage on the ground or draining to surface water
- Large number of dead fish in waterways
- Failing or leaky septic systems
- Polluted runoff from storage piles or dumpsters to catch basins or waterways
- Sewage, detergent, chemical, petroleum or rotten egg odors
- Soil erosion from construction sites

Attachment "E"
Spill Notification Complaint Reporting Form

Spill Notification Complaint Reporting Form
Illicit Discharge Elimination Program
Genesee County

Municipality: _____

TWP Section where incident occurred: _____

Complaint made by: _____

Phone #: _____

Date: _____ Time: _____

Location of Discharge: _____ Offending Party (if known) _____

Nature of Problem (i.e. paper waste, odor, color, etc.): _____

_____

_____

Is this an Emergency?
Yes ☐ (Then Phone 911) ☐ No
Nature of Emergency: _____

_____

Initial Contact made to:
- 911
- Fire Dept. _____
- Police Dept. _____
- GCDC 732-1590
- GCHD 257-3612
- GCRC 767-4920
- PEAS Hotline (State) 1-800-292-4706
- Other _____

Additional Comments:

_____

_____

_____

_____

_____

Site Investigation

Date of Observation: _____
Investigating Agency: _____
Location of Discharge:

_____

☐ Initial Investigation
☐ Follow-up Investigation

Crew Members:

_____

_____

Investigation Location:

_____

_____

Observations (odor, color, volume, etc):

_____

_____

Actions Taken:

_____

_____

_____

Danger to health and/or environment:
☐ Yes ☐ No

Were photos taken: ☐ Yes* ☐ No
Date Corrected: _____
* Please attach copies

If necessary:

Agency Referred to: _____
Agency Contact: _____
Method of Communication:
☐ E-mail ☐ Letter/memo ☐ Phone

Content of Communication:

_____

_____

1. Take down co
2. Fill out the Spi
3. Inform the call
4. If the problem
5. If the problem
6. If the spill/ dis
   State the appr
   call 24-hour P
7. Please fax cor

Stepha
kamme
Phone

GCHD: Fax: (
GCRC: Fax: (

K:\Stormwater Management\SWPPI\2010\Spill form (landscape) III.doc

Illicit Discharge Ordinance/ Regulatory Mechanism

Attachment 2 to MDEQ Stormwater Discharge Permit Application

Community Name: City of Mt. Morris

20. Provide the ordinance or regulatory mechanism in effect that prohibits non-stormwater discharges into the applicant's MS4 (except the non-stormwater discharges addressed in Questions 21 and 22).
23. Provide the ordinance or regulatory mechanism that regulates the contribution of pollutants to the applicant's MS4.
24. Provide the ordinance or regulatory mechanism that prohibits illicit discharges, including illicit connections and the direct dumping or disposal of materials into the applicant's MS4.
25. Provide the ordinance or regulatory mechanism with the authority established to inspect, investigate, and monitor suspected illicit discharges into the applicant's MS4.
26. Provide the ordinance or regulatory mechanism that requires and enforces elimination of illicit discharges into the applicant's MS4, including providing the applicant the authority to eliminate the illicit discharge.

(pick the correct box below and delete the one that is not appropriate)

Our Community has an existing Ordinance(s) or regulatory mechanism(s) that would prohibit non-stormwater discharges into our MS4's. (satisfy Questions 20, 23-26) Referenced here with copies attached.

-
-
-
-

or

Our Community does NOT have an existing Ordinance or regulatory mechanism that would prohibit non-stormwater discharges into our MS4's. (satisfy Questions 20, 23-26) We are currently working on passing/ modifying an Ordinance(s)/ regulatory mechanism(s). Referenced here is a DRAFT of what we are developing/modifying with copies attached.

-
-
-
-

Because this is not able to be done by April 1, 2014, we are including a schedule of when it will be completed by. We understand that it must be complete before Oct 1, 2014. Milestones are listed below:

- Municipal Lawyer will have reviewed and commented by this date: _8/22/14_____
-
- Board will have voted on it by this date: _9/8/14_____
-
- It will be adopted by this date: _9/20/14_____
-

- Effective date: __10/1/14_____

Model Illicit Discharge and Connection Stormwater Ordinance

MODEL

ORDINANCE NO. _____

SECTION 1. PURPOSE/INTENT.

The purpose of this ordinance is to provide for the health, safety, and general welfare of the citizens of (_____) through the regulation of non-storm water discharges to the storm drainage system to the maximum extent practicable as required by federal and state law. This ordinance establishes methods for controlling the introduction of pollutants into the municipal separate storm sewer system (MS4) in order to comply with requirements of the National Pollutant Discharge Elimination System (NPDES) permit process. The objectives of this ordinance are:

(1) To regulate the contribution of pollutants to the municipal separate storm sewer system (MS4) by stormwater discharges by any user

(2) To prohibit Illicit Connections and Discharges to the municipal separate storm sewer system

(3) To establish legal authority to carry out all inspection, surveillance and monitoring procedures necessary to ensure compliance with this ordinance

SECTION 2. DEFINITIONS.

For the purposes of this ordinance, the following shall mean:

Authorized Enforcement Agency: employees or designees of the director of the municipal agency designated to enforce this ordinance.

Best Management Practices (BMPs): schedules of activities, prohibitions of practices, general good house keeping practices, pollution prevention and educational practices, maintenance procedures, and other management practices to prevent or reduce the discharge of pollutants directly or indirectly to stormwater, receiving waters, or stormwater conveyance systems. BMPs also include treatment practices, operating procedures, and practices to control site runoff, spillage or leaks, sludge or water disposal, or drainage from raw materials storage.

Clean Water Act. The federal Water Pollution Control Act (33 U.S.C. § 1251 et seq.), and any subsequent amendments thereto.

Construction Activity. Activities subject to NPDES Construction Permits. Currently these include construction projects resulting in land disturbance of 5 acres or more. Beginning in March 2003, NPDES Storm Water Phase II permits will be required for construction projects resulting in land disturbance of 1 acre or more. Such activities include but are not limited to clearing and grubbing, grading, excavating, and demolition.

Hazardous Materials. Any material, including any substance, waste, or combination thereof, which because of its quantity, concentration, or physical, chemical, or infectious characteristics may cause, or significantly contribute to, a substantial present or potential hazard to human health, safety, property, or the environment when improperly treated, stored, transported, disposed of, or otherwise managed.

Illegal Discharge. Any direct or indirect non-storm water discharge to the storm drain system, except as exempted in Section X of this ordinance.

Illicit Connections. An illicit connection is defined as either of the following:

SECTION 3. APPLICABILITY.

This ordinance shall apply to all water entering the storm drain system generated on any developed and undeveloped lands unless explicitly exempted by an authorized enforcement agency.

SECTION4. RESPONSIBILITY FOR ADMINISTRATION.

The_____ [authorized enforcement agency] shall administer, implement, and enforce the provisions of this ordinance. Any powers granted or duties imposed upon the authorized enforcement agency may be delegated in writing by the Director of the authorized enforcement agency to persons or entities acting in the beneficial interest of or in the employ of the agency.

SECTION 5. SEVERABILITY.

The provisions of this ordinance are hereby declared to be severable. If any provision, clause, sentence, or paragraph of this Ordinance or the application thereof to any person, establishment, or circumstances shall be held invalid, such invalidity shall not affect the other provisions or application of this Ordinance.

SECTION 6. ULTIMATE RESPONSIBILITY.

The standards set forth herein and promulgated pursuant to this ordinance are minimum standards; therefore this ordinance does not intend nor imply that compliance by any person will ensure that there will be no contamination, pollution, nor unauthorized discharge of pollutants.

SECTION 7. DISCHARGE PROHIBITIONS.

Prohibition of Illegal Discharges.

No person shall discharge or cause to be discharged into the municipal storm drain system or watercourses any materials, including but not limited to pollutants or waters containing any pollutants that cause or contribute to a violation of applicable water quality standards, other than storm water.

The commencement, conduct or continuance of any non authorized discharge to the storm drain system is prohibited except as described as follows:

(a) The following discharges are exempt from discharge prohibitions established by this ordinance: water line flushing or other potable water sources; landscape irrigation or lawn watering, and irrigation waters; diverted stream flows and flows from riparian habitats and wetlands; rising ground water and springs; uncontaminated ground water infiltration and seepage; uncontaminated pumped ground water except for groundwater cleanups specifically authorized by NPDES permits; foundation drains, water from crawl space pumps, footing drains and basement sump pumps (not including active groundwater dewatering systems); air conditioning condensation; waters from non-commercial washing of vehicles; street wash water; dechlorinated swimming pool water from single, two, or three family residences; firefighting activities; and any other water source not containing Pollutants.

(b) Dye testing done under the authorization of the MDEQ (general Rule 97) is an allowable discharge, but requires a complete Notice of Intent to the MDEQ prior to the time of the test.

(c) The prohibition shall not apply to any non-storm water discharge permitted under an NPDES permit, waiver, or waste discharge order issued to the discharger and administered under the

This section applies to all facilities that have storm water discharges associated with industrial activity, including construction activity.

B. **Access to Facilities.**

(a) The_____ [authorized enforcement agency] shall be permitted to enter and inspect facilities subject to regulation under this ordinance as often as may be necessary to determine compliance with this ordinance. If a discharger has security measures in force which require proper identification and clearance before entry into its premises, the discharger shall make the necessary arrangements to allow access to representatives of the authorized enforcement agency.

(b) Facility operators shall allow the _____[authorized enforcement agency] ready access to all parts of the premises for the purposes of inspection, sampling, examination and copying of records that must be kept under the conditions of an NPDES permit to discharge storm water, and the performance of any additional duties as defined by state and federal law.

(c) The _____ [authorized enforcement agency] shall have the right to set up on any permitted facility such devices as are necessary in the opinion of the authorized enforcement agency to conduct monitoring and/or sampling of the facility's storm water discharge.

(d) The _____ [authorized enforcement agency] has the right to require the discharger to install monitoring equipment as necessary. The facility's sampling and monitoring equipment shall be maintained at all times in a safe and proper operating condition by the discharger at its own expense. All devices used to measure stormwater flow and quality shall be calibrated to ensure their accuracy.

(e) Any temporary or permanent obstruction to safe and easy access to the facility to be inspected and/or sampled shall be promptly removed by the operator at the written or oral request of the _____[authorized enforcement agency] and shall not be replaced. The costs of clearing such access shall be borne by the operator.

(f) Unreasonable delays in allowing the _____ [authorized enforcement agency] access to a permitted facility is a violation of a storm water discharge permit and of this ordinance. A person who is the operator of a facility with a NPDES permit to discharge storm water associated with industrial activity commits an offense if the person denies the authorized enforcement agency reasonable access to the permitted facility for the purpose of conducting any activity authorized or required by this ordinance.

(g) If the _____ [authorized enforcement agency] has been refused access to any part of the premises from which stormwater is discharged, and he/she is able to demonstrate probable cause to believe that there may be a violation of this ordinance, or that there is a need to inspect and/or sample as part of a routine inspection and sampling

within three business days of the phone notice. If the discharge of prohibited materials emanates from a commercial or industrial establishment, the owner or operator of such establishment shall also retain an on-site written record of the discharge and the actions taken to prevent its recurrence. Such records shall be retained for at least three years.

SECTION 14. ENFORCEMENT.

Notice of Violation.

Whenever the _____ [authorized enforcement agency] finds that a person has violated a prohibition or failed to meet a requirement of this Ordinance, the authorized enforcement agency may order compliance by written notice of violation to the responsible person. Such notice may require without limitation:

(a) The performance of monitoring, analyses, and reporting;

(b) The elimination of illicit connections or discharges;

(c) That violating discharges, practices, or operations shall cease and desist;

(d) The abatement or remediation of storm water pollution or contamination hazards and the restoration of any affected property; and

(e) Payment of a fine to cover administrative and remediation costs; and

(f) The implementation of source control or treatment BMPs.

If abatement of a violation and/or restoration of affected property is required, the notice shall set forth a deadline within which such remediation or restoration must be completed. Said notice shall further advise that, should the violator fail to remediate or restore within the established deadline, the work will be done by a designated governmental agency or a contractor and the expense thereof shall be charged to the violator.

SECTION 15. APPEAL OF NOTICE OF VIOLATION.

Any person receiving a Notice of Violation may appeal the determination of the authorized enforcement agency. The notice of appeal must be received within __ days from the date of the Notice of Violation. Hearing on the appeal before the appropriate authority or his/her designee shall take place within 15 days from the date of receipt of the notice of appeal. The decision of the municipal authority or their designee shall be final.

SECTION 16. ENFORCEMENT MEASURES AFTER APPEAL.

If the violation has not been corrected pursuant to the requirements set forth in the Notice of Violation, or , in the event of an appeal, within __ days of the decision of the municipal authority upholding the decision of the authorized enforcement agency, then representatives of the authorized enforcement agency shall enter upon the subject private property and are authorized to take any and all measures necessary to abate the violation and/or restore the property. It shall be unlawful for any person, owner, agent or person in possession of any premises to refuse to allow the government agency or designated contractor to enter upon the premises for the purposes set forth above.

SECTION 22. REMEDIES NOT EXCLUSIVE.

The remedies listed in this ordinance are not exclusive of any other remedies available under any applicable federal, state or local law and it is within the discretion of the authorized enforcement agency to seek cumulative remedies.

SECTION 23. ADOPTION OF ORDINANCE.

This ordinance shall be in full force and effect __ days after its final passage and adoption. All prior ordinances and parts of ordinances in conflict with this ordinance are hereby repealed.

PASSED AND ADOPTED this ____ day of _____, 19__, by the following vote:

Attachment 3

To MDEQ Stormwater Discharge Permit Application

(PPP Plan)

Public Participation Plan (PPP)

Attachment 3 to MDEQ Stormwater Discharge Permit Application

2.Provide the procedure for making the SWMP available for public inspection and comment. The procedure shall include a process for notifying the public when and where the SWMP is available and of opportunities to provide comment. The procedure shall also include a process for complying with local public notice requirements, as appropriate.

If you had an Ordinance you wanted to pass, you would have to provide the public with the opportunity to comment. Below, please describe the process you are going to follow to provide the public the opportunity to see and comment on your application (after April 1, 2014). You will also want to give them the opportunity to see and comment on the issued permit (after Date of Issue) that the State approves. Is the process the same for both. Suggestions(you may want to make the application/ Stormwater Management Plan (SWMP) available on your web site. You may want to include a mechanism for how they can comment.) Remember, this is your individual comment for your permit.

Ordinances are published in the Herald, and put on the City Council agenda for two meetings. Publication fo the application is not practical, therefore the application will be posted on the city website and a copy will be available in City Hall for public review.

3.Provide the procedure for inviting public involvement and participation in the implementation and periodic review of the SWMP.

The implementation is your Annual Report (or every 2 years depending on when the permit says we have to submit). The periodic review of the SWMP would occure if there is going to be major modifications and/ 2020. This procedure can be the same (if so see same as above in box below) if you are going to follow a different procedure then please specify below.

SAB.

Attachment 4

To MDEQ Stormwater Discharge Permit Application

(PEP plan- Table 2)

(Procedure for assessment and effectiveness of PEP)

Attachment 4 – Public Education

Procedure for assessment and effectiveness of PEP

The Genesee County Drain Commissioner's Office leads a consortium of communities (through the provisions of a 342 agreement) that collaboratively work to meet their Phase II stormwater permit requirements, including their Public Education activities. Additionally, there are several nested jurisdiction under Genesee County participating in the group that participate.

The PEP sub-committee (derived from a selection of 342 community representatives) annually review the public education activities/actions to be undertaken for the forthcoming year. The actions are reviewed to make sure they are meeting their goals before a budget for those actions is voted on for implementation. All actions that are proposed address one or more of the Education Topics (A through K) identified in the Stormwater Discharge Permit Application in #5. Table 2 outlines those actions being done.

Question 4- procedure with assessment of high priority, community wide issues and targeted issues to reduce pollutants in the stormwater runoff as part of the PEP.

Chapter 6 of the watershed plan:

Water Quality Concerns
Water quality concerns were solicited from the public and stakeholders though a series of workshops and meetings, Described in Section 5.
A list of the public's concerns is provided below:

- Flooding Problems
- Concerns Affecting Drainage Ditches
- Parking Lot Spills
- Landfill Runoff/Groundwater Leachate
- Car Wash
- Groundwater pumping, irrigation affecting local wells
- Over-fertilization
- Sedimentation and soil erosion
- Source of Funding to Address the Above Concerns
- Wetland Destruction
- Need for Ordinance and Permit Compliance Enforcement for Environmental Protections
- Development Concerns
- Negative Public Perception of Flint River
- Need for Cooperation with Health Department
- Lack of Citizen and Municipal Education
- Lack of access to recreational opportunities

The concerns identified by the stakeholders are ranked and presented below. The public and stakeholders ranked their concerns to determine which issues they felt were more important. Each Concern is labeled as Rural (R), Urban (U) or Both (B) to indicate where in the watershed the concern is of most relevance.

1. Funding (B)
2. Education for planning commissions and zoning boards-municipals, government officials (B)

3. Need innovative ideas and solutions implemented locally-pilot project w/education component (B)
4. Sanitary Connections to storm sewer (U)
5. Education for builders and developers (B)
6. Stormwater treatment with BMPs must be maintained (U)
7. Streets directly discharge into river within minutes of rain events (U)
8. Flooding due to new development (B)
9. Master Gardeners-Volunteer Work link to projects (U)
10. Promote education at a publicly planned event (B)
11. Time of Sale Homeowner Packet (U)
12. Education (B)
13. More recreational opportunities (B)

We also looked at DESIGNATED USES IN THE STATE

The Michigan Department of Environmental Quality (MDEQ), acting under authority of the federal Clean Water Act, aims to make waters in the state meet certain designated uses (State of Michigan, 1999):
• Agricultural Water Supply • Industrial Water Supply
• Public Water Supply • Warm water Fishery
• Other Aquatic Life / Wildlife • Partial Body Contact
• Coldwater Fisheries (specifically identified waterbodies only)
• Total Body Contact (May 1st – October 31st)
• Navigation

This was used to develop the Public Education program. Based on the work done we have determined that the high priority community wide issues are:

- Educate the public (residential) on how their actions impact the water.
- Educate the public on how the water system is interconnected.
- Promote proper disposal practices for pollutants. (residential)

The high priority targeted issues are:

- Manage riparian lands to protect water quality
- Educate on septic system use and maintenance
- Educate developers on Green infrastructure and LID

The following topics has been ranked from 1 to 11, with 1 being highest and 11 being lowest:

• A=1	• G=10
• B=2	• H=6
• C=8	• I=9
• D=3	• J=7
• E=5	• K=11
• F=4	

Note at this time we do not have enough information on commercial, industrial, and institutional entities within Genesee County Communities to develop an effective program for **K.** Identify and educate commercial, industrial, and institutional entities likely to contribute pollutants to stormwater runoff.

During the new permit cycle the Public Education Committee will inventory the commercial, industrial, and institutional entities to determine where an effective public education program can be developed.

Question 6 – Determining Effectiveness

From the watershed plans:

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."

Additionally, there is a second iteration of the social survey planned for this permit cycle aimed at assessing the public's knowledge, attitudes, and behaviors. Also, please note the last column in Table 2 that indicates the specific evaluation measure to be undertaken for each public education activity.

Attachment 5

To MDEQ Stormwater Discharge Permit Application

(Construction Stormwater Runoff Control)

You may have an existing policy written or unwritten, ordinance or other regulatory mechanism that you currently use. Describe below.

If any pollutants from a construction activity are discharged to MS4's that we own and operate, our procedure to notify the MDEQ is. *(When do you notify the DEQ, how do you notify the DEQ, every time or under what circumstances)* Attachments referenced and provided as needed:

Any time city staff becomes aware of pollutants discharged into the MS4 the DEQ will be notified.

30. Provide the procedure for ensuring that construction activity one acre or greater in total earth disturbance with the potential to discharge to the applicant's MS4 obtains a Part 91 permit, or is conducted by an approved Authorized Public Agency as appropriate. Note: For applicants that conduct site plan review, the procedure must be triggered at the site plan review stage.

You may have an existing policy written or unwritten, ordinance or other regulatory mechanism that you currently use. Describe below.

For site plan review, we use the following procedure to ensure that a soil erosion permit or waiver has been acquired. Attachments referenced and provided as needed:
For construction activity that requires an Act 91 permit, no building permit will be issued until a siol erosion permit is obtained. The site plan review will show whether 1 acre of soil will be disturbed which will trigger the need for a soil erosion permit.

31. Provide the procedure to advise the landowner or recorded easement holder of the property where the construction activity will occur of the State of Michigan Permit by Rule (Rule 323.2190).

You probably do NOT have an existing policy written or unwritten, ordinance or other regulatory mechanism that you currently use. Describe how you will comply going forward.

For site plan review, we use the following procedure to notify the property owner that they may need to meet the requirements of (Rule 323.2190). (*This can be a line added to your building permit. Or a separate paper notifying them that is given at the same time as the Building Permit)*

We will inform the applicant and a building permit will not be issued until a soil erosion permit is obtained.

FYI

Genesee County Drain Commissioner's Office
Water and Waste Services
G4610 Beecher Road
Flint MI 48532
(810) 732-7870

Attachment 6
To MDEQ Stormwater Discharge Permit Application

(Insert ordinance or regulatory mechanism here)
(Procedure for Post Construction Stormwater Runoff Program)

9 with relevant appendices) will provide information on water quality and quantity standards as well a list of acceptable storm water treatment practices, including the specific design criteria for each storm water practice. This document and the State LID manual may be updated and expanded from time to time based on federal and state requirements, improvements in engineering, science, monitoring, and local maintenance experience. Storm water treatment practices that are designed and constructed in accordance with these design and sizing criteria contained in the State LID manual should meet the minimum water quality and channel protection performance standards outlined in this document.

- Design Manual and Standards, page 7, Storm water master plan info requirements, C.6.t.v: Analysis of existing soil conditions and groundwater elevation and bedrock depth (including submission of soil boring logs) as required for proposed retention and infiltration facilities
- Design Manual and Standards, page 7, Storm water master plan info requirements, G: Drinking water wells, public ***wellheads, Wellhead Protection Areas (WHPAs), underground storage tanks, and brownfields***
- State LID manual, Page 54, Step 3, Contaminated sites have followed state "due care" requirements for soil and groundwater?
- State LID manual, Page 135 talks about bioretention and contaminated soils
- State LID manual, Page 348-355 talks about Implementing LID on Brownfield (contaminated) Sites and Implementing LID in High Risk Areas.

42. Does the ordinance or other regulatory mechanism require BMPs to address the associated pollutants in potential hot spots as part of meeting the water quality treatment and channel protection standards for new development or redevelopment projects? Hot spots include areas with the potential for significant pollutant loading such as gas stations, commercial vehicle maintenance and repair, auto recyclers, recycling centers, and scrap yards. Hot spots also include areas with the potential for contaminating public water supply intakes.

Our above mechanism requires development and redevelopment draining to our MS4's to be approved by the GCDC-SWM office to the standards in this permit. The GCDC-SWM procedure for requiring BMPs to address the associated pollutants in potential Hot Spots as defined in question 42 is as stated above in the answer to question 41.

53. Does the ordinance or other regulatory mechanism include a requirement to submit a site plan for review and approval of post-construction stormwater runoff BMPs?

- Ordinance, page 20-21, Article VII. :Storm Water Easements and Maintenance Agreements
- State LID manual, Appendix F: Maintenance Inspection Checklist
- State LID manual, Appendix G: Stormwater Management Practices Maintenance Agreements

OR

56. Does the ordinance or other regulatory mechanism require the long-term operation and maintenance of all structural and vegetative BMPs installed and implemented to meet the performance standards in perpetuity?

MUNICIPAL ORDINANCE REFERENCE:

- Ordinance, page 14, Section 2.07: No Change in Approved Facilities
  3. Storm water runoff facilities, after construction and approval, shall be maintained in good condition, in accordance with the approved storm water plan, and shall not be subsequently altered, revised or replaced except in accordance with the approved storm water plan, or in accordance with approved amendments or revisions in the plan.
  4. The municipality has the right to take corrective action if alterations to approved storm water facilities occur and to seek compensation from the responsible party for all costs associated with the corrective action.
- Ordinance, page 17-18, Article V. : Inspection, Monitoring, Reporting and Recordkeeping.
- Ordinance, page 18-20, Article VI. :Enforcement
- Ordinance, page 20-21, Article VII. :Storm Water Easements and Maintenance Agreements
- State LID manual, Appendix F: Maintenance Inspection Checklist
- State LID manual, Appendix G: Stormwater Management Practices Maintenance Agreements

57. Does the ordinance or other regulatory mechanism require a maintenance agreement between the applicant and owners or operators responsible for the long-term operation and maintenance of structural and vegetative BMPs installed and implemented to meet the performance standards?

The answer for question 57 is the same for question 56 above.

MUNICIPALITY/TOWNSHIP
STORM WATER ORDINANCE
MUNICIPALITY COUNCIL
MUNICIPALITY/TOWNSHIP
GENESEE COUNTY, MICHIGAN

ORDINANCE NO. _XXX__

TABLE OF CONTENTS

OPENING STATEMENT

AN ORDINANCE TO AMEND THE CODE OF ORDINANCES, FOR <INSERT COMMUNITY NAME>, MICHIGAN, BY **ADDING A NEW ARTICLE** (ADD YOUR NUMBER) **TO CHAPTER** (ADD YOUR NUMBER) **TO REGULATE STORM WATER CONTROL**; TO PROVIDE FOR **STORM WATER PERMITS** AND FOR PAYMENT OR REIMBURSEMENT OF COSTS INCURRED BY THE MUNICIPALITY DUE TO STORM WATER PERMITS; AND TO **PROVIDE PENALTIES FOR VIOLATIONS.**

THE MUNICIPALITY/TOWNSHIP ORDAINS:

Section 1. Amendment. Chapter (ADD YOUR NUMBER) of the Code of Ordinances of the Municipality/Township, Michigan is amended by adding Article (ADD YOUR NUMBER) to read as follows:

Article I. Storm Water

Section 1.01 Title

This ordinance shall be known as the "<INSERT COMMUNITY NAME> Stormwater Management Ordinance" and may be so cited.

Section 1.02 Findings

The <INSERT COMMUNITY NAME> finds that:

(a) Water bodies, roadways, structures, and other property within, and downstream of the <INSERT COMMUNITY NAME> are at times subjected to flooding;

(b) Flooding is a danger to the lives and property of the public and is also a danger to the natural resources of the <INSERT COMMUNITY NAME> and the region;

(c) Land development alters the hydrologic response of watersheds, resulting in increased storm water runoff rates and volumes, increased flooding, increased stream channel erosion, and increased sediment transport and deposition;

(d) Storm water runoff produced by land development contributes to increased quantities of water-borne pollutants;

(e) Increases of storm water runoff, soil erosion, and non-point source pollution have occurred as a result of land development, and cause deterioration of the water resources of the <INSERT COMMUNITY NAME> and downstream municipalities;

(f) Storm water runoff, soil erosion, and non-point source pollution, due to land development within the <INSERT COMMUNITY NAME>, have resulted in a deterioration of the water resources of the <INSERT COMMUNITY NAME> and downstream municipalities;

(g) Increased storm water runoff rates and volumes, and the sediments and pollutants associated with storm water runoff from future development projects within the <INSERT COMMUNITY NAME> will, absent

development or redevelopment projects or earth disturbing activities less than 1-acre on parcels with greater than or equal to 50% (≥ 50%) impervious surface which will alter storm water drainage characteristics of the development site. Typically these developments require approval of a plat, a site development plan, building permit, and other permits to be obtained. However, this ordinance shall not apply to the following:

(a) Development on one single-family lot, parcel, or condominium unit where the <INSERT COMMUNITY NAME> determines that due to the size of the development site or other circumstances, the quantity, quality, and or rate of stormwater flow does not materially alter storm water flow from the property in terms of rate and/or volume.

(b) The installation or removal of individual mobile homes within a mobile home park. This exemption shall not be construed to apply to the construction, expansion, or modification of a mobile home park.

(c) Ongoing farm operations such as tilling or plowing. Earth disturbances that are not directly related to farming are not exempt from this ordinance.

(d) Plats with preliminary plat approval and other developments with final land use approval prior to the effective date of this ordinance, where such approvals remain in effect.

Consider adding:

(1) *Additions or modifications to any single family or duplex structure disturbing less than 20,000 square feet of land.*

(2) Landscaping or gardening involving less than 5,000 square feet of land. (optional)

(3) Construction of a dwelling on a legal lot within a development that itself previously received approval under this article, provided that less than 5,000 square feet of land is cleared or graded for such construction. (optional)

Section 1.05 Definitions

For the purpose of this ordinance, the following words and phrases shall have the meanings respectively ascribed to them by this Section unless the context in which they are used specifically indicates otherwise:

(a) Best Management Practices (BMPs) - A practice, or combination of practices and design criteria that comply with the Michigan Department of Natural Resources and Environment's Guidebook of BMPs for Michigan Watersheds, the Low Impact Development Manual for Michigan, or equivalent practices and design criteria that accomplish the purposes of this ordinance (including, but not limited to minimizing storm water runoff and preventing the discharge of pollutants into storm water) as determined by the Municipality Engineer, and, where appropriate, the standards of the Genesee County Drain Commissioner.

(b) Building Opening - Any opening of a solid wall such as a window or door, through which floodwaters could penetrate.

(c) Construction Site Storm Water Runoff - Storm water runoff from a development site following an earth change.

(p) Flood or Flooding - A general and temporary condition of partial or complete inundation of normally dry land areas resulting from the overflow of water bodies or the unusual and rapid accumulation of surface water runoff from any source.

(q) Floodplain - Any land area subject to periodic flooding ($\geq$ 2 square miles

(r) Flood Protection Elevation (FPE) - The Base Flood Elevation plus one (1) foot at any given location.

(s) Grading - Any stripping, excavating, filling, and stockpiling of soil or any combination thereof and the land in its excavated or filled condition.

(t) Hazardous or Toxic Material – OSHA defines hazardous and toxic substances as those chemicals which are capable of causing harm. In this definition, the term chemical includes dusts, mixtures, and common materials such as paints, fuels, and solvents. OSHA currently regulates exposure to approximately 400 substances and the OSHA Chemical Sampling Information file contains listings for approximately 1500 substances. Some industrial libraries maintain files of material safety data sheets (MSDS) for more than 100,000 substances.

(u) Illicit Connection - Any method or means for conveying an illicit discharge into water bodies or the Municipality/Township 's storm water system.

(v) Illicit Discharge - Any discharge to water bodies that does not consist entirely of storm water, discharges pursuant to the terms of an NPDES permit, or exempted discharges as defined in this ordinance.

(w) Impervious Surface - Surface that does not allow storm water runoff to slowly percolate into the ground.

(x) Improvements - Means those features and actions associated with a project that are considered necessary by the body or official granting zoning approval to protect natural resources or the health, safety, and welfare of the residents of a local unit of government and future users or inhabitants of the proposed project or project area, including roadways, lighting, utilities, sidewalks, screening, and drainage. Improvements do not include the entire project that is the subject of zoning approval.

(y) MS4 – Municipal Separate Storm Water Sewer System

(z) MDNRE - Michigan Department of Natural Resources and Environment.

(aa) Municipality – County, Municipality, Village, or Township or their designated representative.

(bb) NPDES - National Pollution Discharge Elimination System.

(cc) Person - An individual, firm, partnership, association, public or private corporation, public agency, instrumentality, or any other legal entity.

(dd) Planning board/commission - Means a county planning commission created under the Michigan Zoning Enabling Act, 2006 PA 110, MCL 125.3101 et. seq.

(ee) Pollutant - A substance discharged which includes, but is not limited to the following: any dredged spoil, solid waste, vehicle fluids, yard wastes,

ponds (detention and retention ponds or lagoons) used solely for wastewater conveyance, treatment, or control:

- The Great Lakes and their connecting waters
- All inland lakes
- Rivers
- Streams
- Impoundments
- Open drains
- Other surface bodies of water within the confines of the state

(ss) Waterbody - A river, lake, stream, creek or other watercourse or wetlands.

(tt) Watercourse – One that has not been altered artificially.

(uu) Wetlands (regulated) - Land characterized by the presence of water at a frequency and duration sufficient to support wetland vegetation or aquatic life.

Article II. Storm Water Permits

Section 2.01 Storm Water Standards

Developments subject to this ordinance shall require a storm water permit and a storm water plan, and shall be designed, constructed, and maintained to prevent flooding, minimize stream channel impacts, protect water quality, and achieve the purposes of this Ordinance, as stated above. **<Insert Community Name>** has adopted the *Genesee County Storm Water and Flood Control Design Standard Requirements* to meet the objectives of managing the quantity and quality of storm water runoff from a site as its municipality engineering standards.

Section 2.02 Storm Water Permit Review Procedures

<Insert Community Name> shall grant a storm water permit, which may impose terms and conditions in accordance with Section 2.08, and which shall be granted only upon compliance with each of the following requirements:

(1) The developer will engage in the following sequence of events:

(a) **Pre-Development Information Gathering:** For all applicable projects, developers will contact representatives from each of the following: the County Road Commission, Health Department, municipal officials (zoning, planner, engineer, DPW, building official), and Drain Commissioner's office (Water and Waste Services and Surface Water). The purpose will be to gather information on design standards, development guidelines, and to identify the type of information developers and their representatives must furnish to comply with this ordinance. In some instances it may be expedient to hold one conference with all the involved parties.

(b) **Development and Review of Conceptual Site Plan:** Review of the conceptual site plan for approval at the County level by the appropriate personnel in Water & Waste Services, soil erosion, surface water, the Road Commission and the Health Department. Comments are returned to the

compliance with the approved storm water plan and this Ordinance. The maintenance agreement shall be acceptable to the <Insert Community Name> in form and substance and at minimum contain the requirements outlined in Article VII.

Section 2.03 Storm Water Plan

The Storm Water Management Plan must be designed to meet the Genesee County Storm Water Standards as set out in the companion document to the Low Impact Development Manual for Michigan. The County is authorized to establish minimum design standards for storm water discharge release rates and to require dischargers to implement on-site retention, detention or other methods necessary to control the quality, rate and volume of surface water runoff discharged into the storm water drainage system and surface waters of the state. The County water quality and quantity standards are to be achieved through the techniques and methodologies outlined in the Low Impact Development Manual for Michigan (Chapters 6,7 and 9). The storm water plan shall identify and contain all of the following:

(1) The location of the development site and water bodies that will receive storm water runoff (National Wetland database). Information to consider and include where appropriate should be the drainage district ID, zoning, aerial imagery, soils and floodplain maps, traffic and utility information.

(2) The existing and proposed natural feature of the development site, including the vegetation, topography, and alignment and boundary of the natural drainage courses, with contours having a maximum interval of two (2) foot (using USGS datum). The information shall be superimposed on the pertinent Genesee County soil map.

(3) The development drainage area to each point of discharge from the development.

(4) Calculations for the existing and final peak discharge rates (Based on Design criteria).

(5) Calculations for any facility or structure size and configuration.

(6) A drawing showing all proposed storm water runoff facilities with existing and final grades, as well as storm water easements.

(7) The sizes and locations of upstream and downstream culverts serving the major drainage routes flowing into and out of the development site. Any significant off-site and on-site drainage outlet restrictions other than culverts should be noted on the drainage map.

(8) An implementation plan for construction and inspection of all storm water runoff facilities necessary to the overall storm water plan, including a schedule of the estimated dates of completing construction of the storm water runoff facilities shown on the plan and an identification of the proposed inspection procedures to ensure that the storm water runoff facilities are constructed in accordance with the approved storm water plan.

(9) Drawings, profiles, and specifications for the construction of the storm water runoff facilities (BMP) reasonably necessary to ensure that storm water runoff will be drained, stored, or otherwise controlled in accordance with this ordinance.

(10) A maintenance agreement, in form and substance acceptable to the municipality, for ensuring maintenance of any privately-owned storm water runoff facilities. The maintenance agreement shall include the Developer's written commitment to

Section 2.05 Financial Guarantee

(1) The Municipality Engineer shall not approve a storm water permit until the Developer submits to the Municipality, in a form and amount satisfactory to the Municipality, a letter of credit or other financial guarantee for the timely and satisfactory construction of all storm water runoff facilities and site grading in accordance with the approved storm water plan. Upon certification by a registered professional engineer that the storm water runoff facilities have been completed in accordance with the approved storm water plan including, but not limited to, the provisions contained in Section 2.03(8), the Municipality may release the letter of credit, or other financial guarantee subject to final Municipality acceptance and approval.

(2) The letter of credit or other financial guarantee may be accessed when:

(a) violation of this ordinance has occurred as determined by the municipality,

(b) three notifications to the developer detailing the infraction have been issued,

(c) no corrective action has being taken by the developer within 30 days of final notification.

(3) Except as provided in subsection (5), the amount of the financial guarantee shall be as determined by the Municipality Council in a Resolution of Fees for Municipality Services, unless the Municipality determines that a greater amount is appropriate, in which case the basis for such determination shall be provided to the Developer in writing. In determining whether an amount greater than the amount established by Resolution of Municipality Council is appropriate, the Municipality shall consider the size and type of the development, the size and type of the on-site storm water system, and the nature of the off-site storm water runoff facilities the development will utilize.

(4) The letter of credit or other financial guarantee will not be permitted to expire until any necessary maintenance agreements for storm water facilities established by the developer has been signed.

(5) A maintenance bond shall be provided to the appropriate agency. The maintenance bond shall be provided for a period of two years commencing from the date of the final approval of the storm water plan.

(6) The Municipality Manager may reduce or waive the amount of the financial guarantee for a development that will not increase the percentage of impervious surface of the development site by more than ten percent (10%).

(7) This ordinance shall not be construed or interpreted as relieving a developer of its obligation to pay all costs associated with on-site private storm water runoff facilities as well as those costs arising from the need to make other storm water improvements in order to reduce a development's impact on a drain consistent with adopted design standards.

Section 2.06 Certificate of Occupancy

No certificate of occupancy shall be issued until storm water runoff facilities have been completed in accordance with the approved storm water plan; provided, however, the Municipality may issue a certificate of occupancy if an acceptable letter of credit or other financial guarantee has been submitted to the Municipality, for the timely and satisfactory

(4) Where appropriate, permanent setbacks based on site slopes and soils will be established in accordance with the specifications outlined in the Genesee County Requirement Manual.

Section 3.04 Building Openings

(1) No building openings, including basement walkouts, shall be constructed below the following elevations:

(a) One foot above the 100-year floodplain.

(b) The building opening established at the time of plat or development approval and on file in the Municipality Engineering Department.

(c) Three feet above the top of any downstream culvert.

(d) Four feet above the bottom of any permanent and defined drain.

(e) One foot above an adjacent detention basin design high water.

(2) A waiver from elevations stated in Section 3.06(1a) may be granted by the Municipality Engineer following receipt of a certification from a registered professional engineer demonstrating that the proposed elevation does not pose a risk of flooding.

(3) Upon completion of construction of the structure's foundation and or slab on grade, a registered land surveyor shall certify any minimum building opening elevation specified by this ordinance. This certificate shall attest that the building opening elevation complies with the standards of this ordinance. The permittee for the building permit shall submit the certificate to the Municipality Building Inspections official prior to the commencement of framing and/or structural steel placement. If the surveyor should find that the minimum building opening elevation is below the elevation specified in Section 79.276(a)(2) or (3), that opening must be raised using a method that meets with the approval of the Municipality. After reconstruction, a registered land surveyor or engineer shall re-certify that the minimum building opening elevation complies with the standards of this ordinance prior to the commencement of framing and or structural steel placement.

Section 3.05 Sump Pump Discharge (Optional; Note: May need to be modified based on individual community requirements)

(1) When a sump pump is employed to discharge a buildings footing drains a check valve will be installed between the pump and the storm system. A gravity discharge to an enclosed system is not permitted unless it can be shown that the discharge point is above the overflow elevation for the storm water system.

(2) A storm water lateral shall be provided for each parcel at the time of storm sewer construction. Laterals shall have a check valve.

Section 3.06 Public Health, Safety or Welfare

Protection of the public health, safety or welfare shall be a primary consideration in the design of all storm water runoff facilities.

Section 4.04 Storage of Hazardous or Toxic Materials in Drainageway

Except as permitted by law, it shall be unlawful for any person to store or stockpile within a drainageway any hazardous or toxic materials unless adequate protection and/or containment has been provided so as to prevent any such materials from entering a waterway.

Article V. Inspection, Monitoring, Reporting, and Recordkeeping

Section 5.01 Investigate, Inspect, and Monitor suspected illicit discharges

To investigate potential illicit discharges or connections and to assure compliance with the standards set forth in this ordinance, the Municipality may investigate, inspect and/or obtain monitor any discharge. Upon request, the discharger shall allow the Municipality's properly identified representative to enter upon the premises of the discharger at all hours necessary for the purposes of such inspection or sampling. The Municipality shall provide the discharger reasonable advance notice of such inspection and/or sampling. The Municipality or its properly identified representative may place on the discharger's property the equipment or devices used for such sampling, monitoring or inspection.

Section 5.02 Storm Water Monitoring Facilities

The Municipality may require, in writing, that a discharger of storm water runoff provide and operate equipment or devices for the monitoring of storm water runoff, so as to provide for inspection, sampling, and flow measurement of each discharge to a water body or a storm water runoff facility. The Municipality may require a discharger to provide and operate such equipment and devices if it is necessary or appropriate for the inspection, sampling and flow measurement of discharges in order to determine whether adverse effects from or as a result of such discharges may occur. All such equipment and devices for the inspection, sampling and flow measurement of discharges shall be installed and maintained in accordance with applicable laws, ordinances and regulations. All monitoring results will be made available and reported to the Municipality at an agreed upon time.

Section 5.03 Accidental Discharges

(1) Any discharger who accidentally discharges into a MS4 or water of the state any substance other than storm water or an exempted discharge shall inform the Municipality within 24 hours of knowledge of the incident. If such information is given orally, a written report concerning the discharge shall be filed with the Municipality within five (5) days. The written report shall specify:

(a) The composition of the discharge and the cause thereof.

(b) The exact date, time, and estimated volume of the discharge.

(c) All measures taken to clean up the accidental discharge, and all measures proposed to be taken to reduce and prevent any recurrence.

(d) The name and telephone number of the person making the report, and the name of a person who may be contacted for additional information on the matter.

(2) A properly-reported accidental discharge shall be an affirmative defense to a civil infraction proceeding brought under this ordinance against a discharger for such discharge. It shall not, however, be a defense to a legal action brought to obtain

such protective measures shall be the responsibility of the owner of the property upon which the work is being done and the responsibility of any person carrying out or participating in the work, and such cost shall be a lien upon the property.

Section 6.03 Failure to Comply; Completion

In addition to any other remedies, should any owner fail to comply with the provisions of this ordinance, the Municipality may, after the giving of reasonable notice and opportunity for compliance, have the necessary work done, and the owner shall be obligated to promptly reimburse the Municipality for all costs of such work.

Section 6.04 Emergency Measures

When emergency measures are necessary to moderate a nuisance, to protect public safety, health and welfare, and/or to prevent loss of life, injury or damage to property, the Municipality is authorized to carry out or arrange for all such emergency measures. Property owners shall be responsible for the cost of such measures made necessary as a result of a violation of this ordinance, and shall promptly reimburse the Municipality for all of such costs.

Section 6.05 Cost Recovery for Damage to Storm Drain System

A discharger shall be liable for all costs incurred by the Municipality as the result of causing a discharge that produces a deposit or obstruction, or causes damage to, or impairs a storm drain, or violates any of the provisions of this ordinance. Costs include, but are not limited to, those penalties levied by the Environmental Protection Agency or MDNRE for violation of an National Pollutant Discharge Elimination System permit, attorney fees, and other costs and expenses.

Section 6.06 Collection of Costs; Lien

Costs incurred by the Municipality pursuant to Sections 6.02, 6.03, 6.04 and 6.05 shall be a lien on the premises which shall be enforceable in accordance with Act No. 94 of the Public Acts of 1933, as amended from time to time. Any such charges which are delinquent for six (6) months or more may be certified annually to the Municipality Treasurer who shall enter the lien on the next tax roll against the premises and the costs shall be collected and the lien shall be enforced in the same manner as provided for in the collection of taxes assessed upon the roll and the enforcement of a lien for taxes. In addition to any other lawful enforcement methods, the Municipality shall have all remedies authorized by Act No. 94 of the Public Acts of 1933, as amended, and any other remedies available under applicable law.

Section 6.07 Appeals

Any person as to whom any provision of this ordinance has been applied may appeal in writing, not later than 30 days after the action or decision being appealed from, to the Municipality Council the action or decision whereby any such provision was so applied. Such appeal shall identify the matter being appealed, and the basis for the appeal. The Municipality Council shall consider the appeal and make a decision whereby it affirms, rejects or modifies the action being appealed. In considering any such appeal, the Municipality Council may consider the recommendations of the Municipality Engineer and the comments of other persons having knowledge of the matter. In considering any such appeal, the Council may grant a variance from the terms of this ordinance so as to provide relief, in whole or in part, from the action being appealed, but only upon finding that the following requirements are satisfied:

(1) The application of the ordinance provisions being appealed will present or cause practical difficulties for a development or development site; provided, however, that practical difficulties shall not include the need for the developer to incur additional reasonable expenses in order to comply with the ordinance; and

County> County Register of Deeds prior to the effectiveness of the approval of the <Insert Community Name> Board/Council.

(3) If it has been found by the <Insert Community Name> Board/Council, following notice and an opportunity to be heard by the property owner, that there has been a material failure or refusal to undertake maintenance as required under this ordinance and/or as required in the approved maintenance agreement as required hereunder, the <Insert Community Name> shall then be authorized, but not required, to hire an entity with qualifications and experience in the subject matter to undertake the monitoring and maintenance as so required, in which event the property owner shall be obligated to advance or reimburse payment (as determined by the <Insert Community Name>) for all costs and expenses associated with such monitoring and maintenance, together with a reasonable administrative fee. The maintenance agreement required under this Ordinance shall contain a provision spelling out this requirement and, if the applicant objects in any respect to such provision or the underlying rights and obligations, such objection shall be resolved prior to the commencement of construction of the proposed development on the property.

Section 7.04 Establishment of County Drains

Prior to final approval, all storm water management facilities for platted subdivisions shall be established as county drains, as authorized in Section 433, Chapter 18 of the Michigan Drain Code (P.A. 40 of 1956, as amended) for long-term maintenance.

Article VIII. Performance and Design Standards

Section 8.01 Reference to Requirement Manual

The municipality or its designate shall use the policy, criteria, and information, including technical specifications and standards, in the Genesee County Requirement Manual as the basis for decisions about storm water permits and about the design, implementation and performance of structural and non-structural storm water BMPs.

The State LID Manual includes a list of storm water treatment practices, including the specific design criteria for each them. Storm water treatment practices that are designed and constructed in accordance with these design and sizing criteria should meet the minimum water quality and channel protection performance standards outlined in the Genesee County Storm Water and Flood Control Design Standard Requirements and the federal Phase II Storm Water Rules. Calculations to demonstrate that BMP designs will perform to meet required water quality, channel protection and flood control standards are to be submitted to the appropriate reviewing agency. Failure to construct storm water treatment practices in accordance with these standards may subject the violator to a civil penalty as described in Section 6 of this ordinance.

the respective definitions given in that section. Technical words and technical phrases that are not defined in this ordinance but which have acquired particular meanings in law or in technical usage shall be construed according to such meanings.

Section 9.02 Catch-Line Headings

The catch-line headings of the articles and sections of this ordinance are intended for convenience only, and shall not be construed as affecting the meaning or interpretation of the text of the articles or sections to which they may refer.

Section 9.03 Severability

The provisions of this ordinance are hereby declared to be severable, and if any part or provision of this ordinance should be declared invalid or unenforceable by any court of competent jurisdiction, such invalidity or unenforceability shall not affect any other part or provision of the ordinance.

Section 9.04 Other Ordinances

This ordinance shall be in addition to other ordinances of the Municipality and shall not be deemed to repeal or replace other ordinances or parts thereof except to the extent that such repeal is specifically provided for in this Article.

Section 9.05 Effective Date

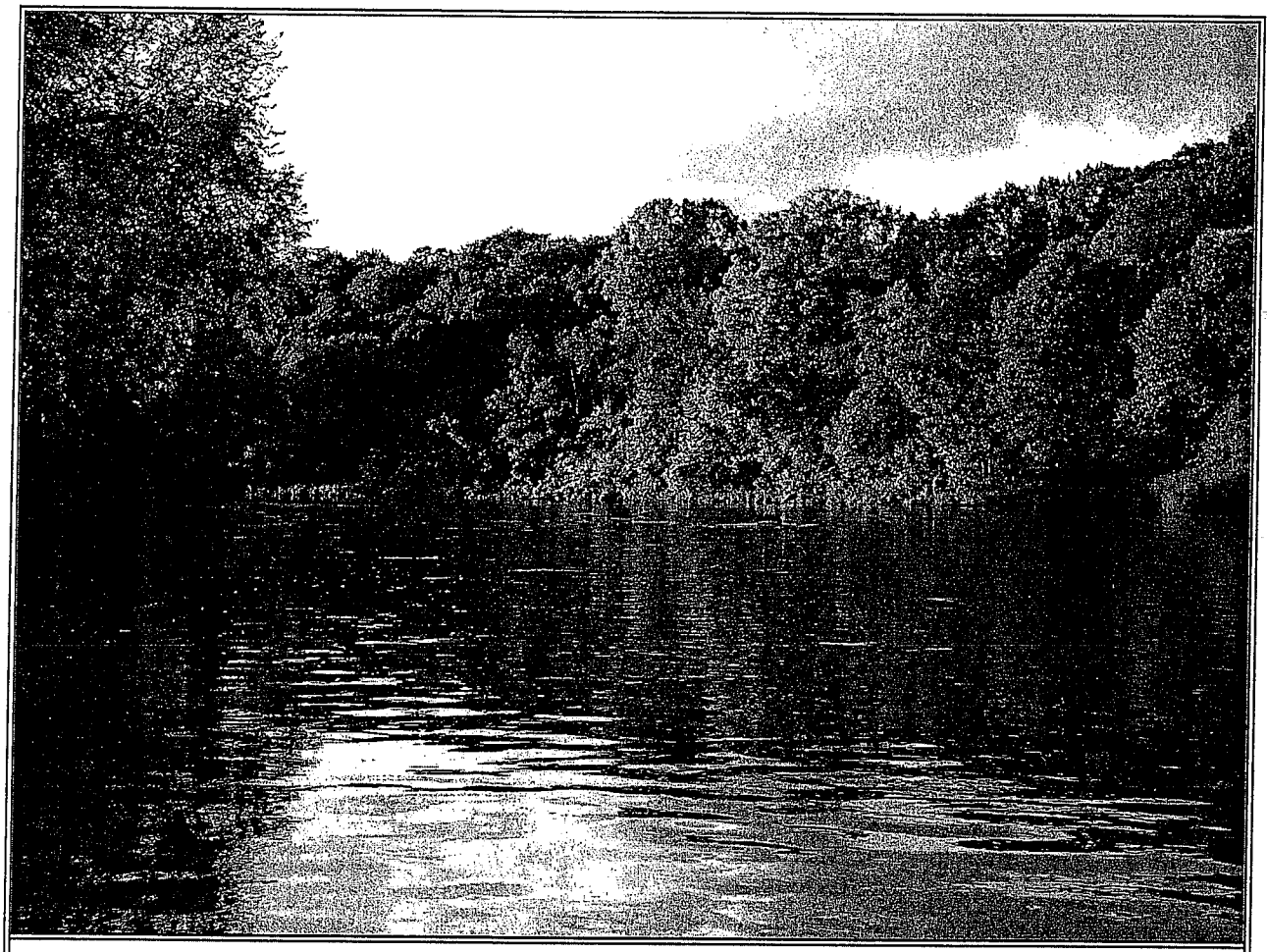
This ordinance shall become effective _____, following its publication or following the publication of a summary of its provisions in a local newspaper of general circulation.

Section 9.06 Repeal [if applicable]

Ordinance No. ___, titled _____, is hereby repealed, as of the effective date of this ordinance.

CERTIFICATION

I certify that this Ordinance was adopted by the Municipality Council of the Municipality at a regular meeting of the Municipality Council held on Insert Date, and published in *Insert Newspaper*, a newspaper of general circulation in the Municipality, on Insert Date.



Genesee County
Storm Water and Flood Control
Design Standard Requirements

GENESEE COUNTY
SWM
DRAIN COMMISSIONER

Effective date: _____

TABLE OF CONTENTS

INTRODUCTION

The intent of this document is to provide information specific to Genesee County Drain Commissioner's design standards to address storm water quantity and quality. This manual will provide the policy framework, implementation procedures and design standards for storm water controls. **Note:** additional standards and requirements not in this document are required for storm systems that are to be dedicated to this office as public.

This document outlines design requirements for storm water quantity and storm water quality. The Drain Commissioner's office has adopted the *State's Low Impact Development (LID) Manual for Michigan* to guide the design of proposed Best Management Practices (BMPs) for water quality that target the standards provided in this document.

This edition of the design standards and requirements of the Genesee County Drain Commissioner reflects a storm water management philosophy that considers not only flood control, but also stream channel protection and storm water quality management. These revisions are based upon the most current State Permit requirements concerning storm water management. This manual will be updated periodically as additional BMPs are developed and/or as requirements change.

The following section outlines basic ideas and principals of storm water management, and provides a conceptual foundation for the design standards contained in this document.

THE ROLE OF THE GENESEE COUNTY DRAIN COMMISSIONER

The Office of the Drain Commissioner will review all plans submitted to the standards outlined in this document. Those sites that must submit to this office for review are listed on page 3. This office exercises authority over permitted activities of structural facilities that convey and treat storm water runoff that will be generated from a site as a result of its design. The Drain Commissioner's Rules will govern the design of such management facilities with the following objectives:

- Incorporate design standards to control both water quantity and quality.
- Encourage innovative storm water management practices that meet the criteria contained within these rules.
- Ensure future maintenance of facilities by planning for it as a part of system design.
- Make the safety of facilities a priority.
- Strengthen the protection of natural features.
- Encourage more effective soil erosion and sedimentation control measures.

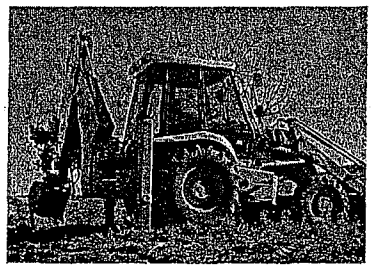
The preferred hierarchy discussed above and summarized in Table 1, below, provides a comprehensive framework for evaluating the place and function of individual BMPs within a storm water management system. While the most important BMPs are source controls that preserve and protect the natural environment, the Genesee County Drain Commissioner cannot mandate these. We must look to the staff and officials of local governments, as well as to developers and their design engineers and planners, to implement source reduction approaches.

Table 1: Hierarchy of Preferred Best Management Practices (BMPs)

Non-Structural (Source) Controls	Structural (Site) Controls
1. Preservation of the natural environment 2. Minimization of impervious surfaces 3. Use of vegetated swales and natural storage	1. Infiltration of runoff on-site (trenches, etc.) 2. Structural (Site) Controls 3. Storm water detention structures 4. Storm water retention ponds * 5. Conveyance off-site 6. Proper maintenance

*Storm water retention is allowed when no acceptable outlet is available and soil conditions allow.

APPLICABILITY



To prevent an increase in non-point source pollution, these Standards requirements shall apply to any earth-disturbing activities greater than or equal to 1-acre (≥1 ac.) on new development or redevelopment projects. Earth disturbing activities less than 1-acre but are a part of a larger plan or development apply because the earth disturbance actives are considered cumulative. For those individual parcels with earth disturbing activities less than 1-acre but have more than > 0.5 acres of impervious surface shall apply.

Typically these sites require approval of a plat, a site development plan, building permit, and other permits to be obtained. The aforementioned requirements will include storm water plans that shall be designed, constructed, and maintained to prevent flooding, minimize stream channel impacts, protect water quality, and achieve the purposes of each local community's storm water ordinance for managing the quantity and quality of storm water runoff.

DESIGN MANUAL AND STANDARD DETAILS

Local communities may furnish additional policy, criteria and information, for the proper implementation of their own local ordinance. This document together with the State Low Impact Development manual (State LID manual) (Chapter 5 through 9 with relevant appendicies) will provide information on water quality and quantity standards as well a list of acceptable storm water treatment practices, including the specific design criteria for each storm water practice. This document and the State LID manual may be updated and expanded from time to time based on federal and state requirements, improvements in engineering, science, monitoring, and local maintenance experience. Storm water treatment practices that are designed and constructed in accordance with these design and sizing criteria contained in the State LID manual should meet the minimum water quality and channel protection performance standards outlined in this document. Calculations to demonstrate that BMP designs will perform to meet required water quality, channel protection and flood control standards are to be submitted to the appropriate reviewing agency. Failure to construct storm water treatment practices in accordance with these standards may subject the violator to a civil penalty as described in section 6 of the storm water ordinance.

STORM WATER PLAN Submittal Requirements

These requirements have been developed in the context of plat submittal under Act 288 of the Public Acts of 1967, as amended, the Michigan Land Division Act. However, they shall also be followed for all other categories of development, including site condominiums and site plans.

The following developments will be submitted to the Genesee County Drain Commissioner's Office for review and approval:

1. Plats submitted under Act 288 of the Public Acts of 1967, as amended, the Michigan Land Division Act

2. Applications for permits to discharge to or perform work on a county drain under P.A. 40 of 1956, as amended. Permits are required for any work done to a drain, work within the drain easement or work done that will increase flow to a county drain.

3. All new and redevelopment projects undertaken by Genesee County that disturb one (1) acre or more, including projects less than one (1) acre that are part of a larger common plan of development or sale that would disturb one (1) acre or more. This includes Genesee County Road Commission plans that include changes to the storm water system that serves the road.

4. Review of storm water system plans in other classes of developments or redevelopments, when required by local municipalities.

5. Site Condominium plans prepared under Act 59, P.A. 1978, as amended, where local government ordinances require.

6. Mobile home plans prepared under Act 96, PA. 1987.

The developer will describe the mechanism to be established for long-term maintenance of the development's private storm water management system, including maintenance schedule and enforcement. County enforcement of private development is limited to permitted actives. (See Requirement E)

Should the proprietor plan to subdivide or develop a given area but wishes to begin with only a portion of the total area, the original preliminary plan will include the proposed general layout for the entire area. The first phase of the subdivision will be superimposed upon the overall plan in order to illustrate clearly the method of development that the proprietor intends to follow. Each subsequent plat or phase will follow the same procedure until the entire area controlled by the proprietor is developed.

Final acceptance by the Drain Commissioner of only one portion or phase of the development does not ensure final acceptance of any subsequent phases or the overall general plat for the entire area; nor does it mandate that the overall general plat or plan be followed as originally proposed, if deviations or modifications acceptable to the Drain Commissioner are proposed.

Preliminary plan approval shall remain in effect for one year. Extensions must be requested in writing.

SUBMITTAL PROCESS

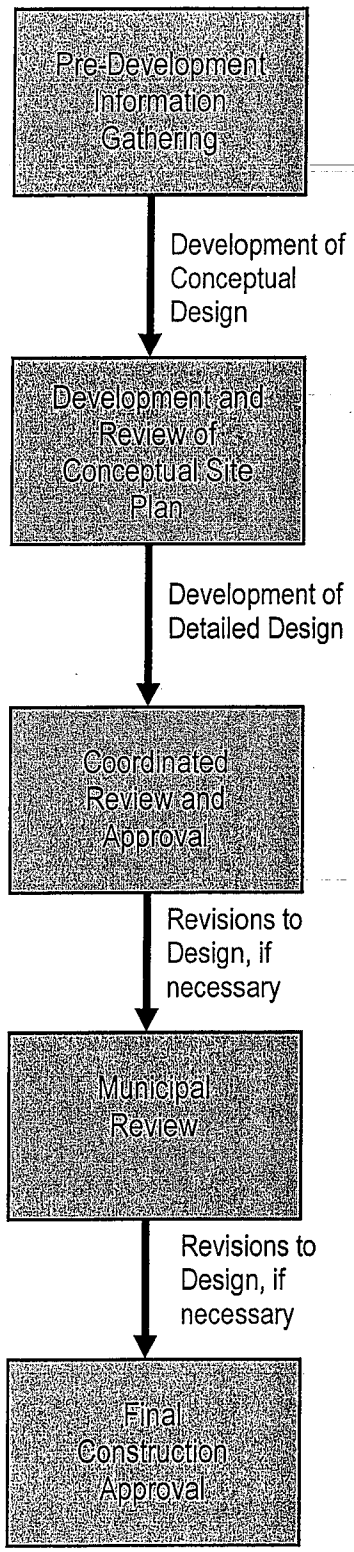
STEP 1: Pre Development Information Gathering - For all applicable projects, developers (or their designated design representatives) will contact representatives from each of the following: the County Road Commission, Health Department, municipal officials (zoning, planner, engineer, DPW, building official), and Drain Commissioner's office (Water and Waste Services and Surface Water). The purpose will be to gather information on design standards, development guidelines, and to identify the type of information developers and their representatives must furnish to comply with this ordinance. In some instances it may be expedient to hold one conference with all the involved parties. Communication between the project designer and developer, as well as the relevant local officials and developer, are two key components of this framework.

STEP 2: Development and Review of Conceptual Site Plan - Review of the conceptual site plan for approval at the County level by the appropriate personnel in Water & Waste Services, soil erosion, surface water, the Road Commission and the Health Department. Comments are returned to the owner/client and designer. **At this time the developer will have his design engineer submit a statement that their site has been reviewed to determine if it's size is capable of accommodating soil erosion and soil conservation measures during construction.**

STEP 3: Coordinated Review and Approval: Review of the Storm Water Plan and the proposed BMPs will occur at the same time as the review of the site plan by representatives from the appropriate agencies. All required documentation should be submitted two weeks prior to the meeting.

STEP 4: Municipal Review and Approval - Developers shall provide a storm water plan for post-construction management of storm water to the Municipality for review and approval. Guidance will be provided to zoning administrators and local planning commission members on the ordinance and design standards and they will be provided with

Figure 1:
Submittal Process Flow Chart



a checklist for reference during site plan review. At this stage all necessary permits should have been obtained from Federal, State, and County agencies. Once all of the above documents have been obtained construction approval will be given by the municipality.

GENERAL INFORMATION REQUIREMENTS

All preliminary plans will include the following information:

1. The location of the proposed development by means of a small location map.
2. The township, city, or village in which the parcel is situated.
3. The section and part of section in which the parcel is situated.
4. The number of acres to be developed.
5. Contours, at 2-foot intervals or less, shown in a U.S.G.S. datum that is marked on prints.
6. The proposed drainage system for the development.
7. The proposed street, alley and lot layouts and approximate dimensions.
8. The location and description of all on-site and adjacent off-site features that may be relevant in determining the overall requirements for the development. These features may include, but are not limited to, the following:
   - Adjoining roads, subdivisions, and other developments
   - Schools, parks, and cemeteries
   - Drains, sewers, water mains, septic fields and wells
   - High tension power lines, underground transmission lines, gas mains, pipelines, or other utilities
   - Railroads
   - Existing and proposed easements
   - Natural and artificial watercourses, wetlands and wetland boundaries, floodplains, lakes, bays, and lagoons
   - Designated natural areas
   - Soils description in accordance with the USDA NRCS standard soils criteria
   - Any proposed environmental mitigation features
9. Soil borings, may be required at various locations including the sites of proposed retention/ detention facilities, and in areas where high ground water tables exist.

STORM WATER MASTER PLAN INFORMATION REQUIREMENTS

All plans will include the following storm water management information:

A. Stormwater Plan Preparation

The Stormwater Plan shall be prepared by a registered civil engineer. Other persons and professionals may assist in the preparation of the plan.

B. Scale for Mapping

The Stormwater Plan shall be drawn at an appropriate scale to be legible

C. Required Information

1. The Stormwater Plan must be sufficiently detailed to specify the type, location, and size of stormwater management facilities, using preliminary calculations. Detailed construction drawings are not required at the Stormwater Plan review stage.
2. The storm water management plan for the proposed development will indicate and where the drainage will outlet.
3. If it is proposed to develop a parcel in two or more phases, the Stormwater Plan shall be prepared and submitted for the total project.
4. The location by means of a small location map, drawn to a scale no less than 1" = 2000'.
5. Zoning classification of petitioner's parcel and all abutting parcels.
6. The location and description of all on-site features and all adjacent off-site features within 50 feet, and all other off-site features that may be impacted in determining the overall requirements for the development. This includes:
   (a) Existing site topography with contours at two-foot intervals or less based on the NAVD88 datum
   (b) Adjoining roads and developments
   (c) Railroads
   (d) High tension power lines or underground transmission lines
   (e) Cemeteries
   (f) Parks
   (g) Natural and artificial watercourses, wetlands and wetland boundaries, environmental feature boundaries,
   (h) floodplains, lakes, bays, existing stormwater storage facilities, conveyance swales (natural or artificial) with identification of permanent water elevations
   (i) Information supporting that the outlet is acceptable. An acceptable outlet is a natural watercourse under regulation of Act 451 part 301 Inland Lake and Stream, county drain, county road ditch, or a regulated wetland with an acceptable outlet. The development may discharge across a neighboring private property with the appropriate written approvals/easements.
   (j) Location of woodlands
   (k) Designated natural areas
   (l) Any proposed environmental mitigation features
   (m) Drains, sewers, and water mains
   (n) Existing and proposed easements
   (o) A map, at the U.S.G.S. scale, showing the drainage boundary of the proposed development and its relationship with existing drainage patterns
   (p) Boundaries of any off-site drainage area contributing flow to the development
   (q) Any watercourse passing through the development, along with the following:
      (i) Area of upstream watershed and current zoning
      (ii) Calculations of runoff from the upstream area for both the 100-year and two-year 24-hour design storms, for fully developed conditions according to the current land use plan for the area.

(iii) A description of how drainage, which originates outside of the development boundaries and flows onto or across the development, will be managed.

(r) Soil borings may be required at various locations including the sites of proposed retention/detention and infiltration facilities, and as needed in areas where high groundwater tables or bedrock near the surface exist

(s) Proposed site improvements including lot divisions and building footprints

(t) Stormwater BMP information including:

(i) Location of all stormwater BMPs

(ii) Identification of stormwater quality and quantity treatment facilities and method of stormwater conveyance

(iii) Sizing calculations for stormwater quality and quantity, including preliminary estimates of runoff volume captured by BMPs, (e.g., infiltration losses,) for treatment facilities

(iv) Tributary area map for all stormwater management facilities indicating total size and average runoff coefficient for each subarea

(v) Analysis of existing soil conditions and groundwater elevation and bedrock depth (including submission of soil boring logs) as required for proposed retention and infiltration facilities

D. Landscaping plan for stormwater BMPs

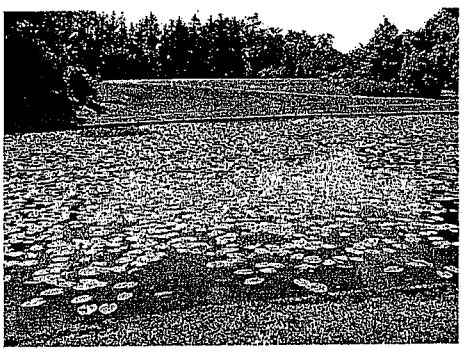
E. Easements for stormwater management facilities

F. Required natural features setbacks

G. Drinking water wells, public wellheads, Wellhead Protection Areas (WHPAs), underground storage tanks, and brownfields

Proposed drainage for the development will conform to any established County drainage districts. Proposed drainage should complement any local storm water management plans that may exist and/or comply with any ordinance in effect in the municipality/ies where the proposed development is located.

GENESEE COUNTY DESIGN CRITERIA



In an effort to standardize design procedures for storm sewers and open channels in Genesee County, the Genesee County Drain Commissioner has developed these standards. It is hoped that these standards will facilitate planning from both the position of the design and reviewing engineer.

It is recognized that design conditions vary and there is no substitute for the professional judgment of an experienced engineer. In all cases this judgment should be applied.

The development shall meet the following storm water *design requirements*:

A A minimum treatment volume standard to minimize water quality impacts.

B *Channel protection criteria to prevent resource impairment resulting from flow volumes and rates.*

C *Flood Control*

D *Operation and maintenance requirements.*

E *Enforcement mechanisms with recordkeeping procedures.*

EXPLANATION OF REQUIREMENTS

Requirement A: "A minimum treatment volume standard to minimize water quality impacts."

There are several different ways to calculate a minimum treatment volume (commonly referred to as first flush). The developers design representative shall determine the minimum treatment volume for water quality by one of the following methods:

- using 1" of runoff from the entire site
- the statewide analysis by region for the 90-percent annual non-exceedance storms that is summarized in the March 24' 2006 MDEQ memo. (Genesee County is considered to be part of the Detroit Metro Area for calculating runoff) A copy of this memo is available on the Drain Commissioner's website. www.gcdcswm.com

Treatment methods shall be designed on a site-specific basis to achieve the following:

- A minimum of 80 percent removal of total suspended solids (TSS), as compared with uncontrolled runoff, or
- Discharge concentrations of TSS not to exceed 80 milligrams per liter (mg/l).

A minimum treatment volume standard is not required where site conditions are such that TSS concentrations in storm water discharges will not exceed 80 mg/l.

Sites are in compliance with this permit requirement if the minimum treatment volume from the site is treated by properly designed BMPs that achieve either 80% removal of total suspended solids, or discharge 80 mg/l or less of total suspended solids according to accepted literature. It is also important to note that new development will often be in compliance with this permit requirement if the volume control specified in the channel protection requirement of this permit is achieved.

Compliance may be shown through calculation or through direct measurement. Calculations or measurements must show reductions to the calculated TSS concentration in uncontrolled runoff using the data provided here or another acceptable literature source. Table 7.1 (pp. 122) in the State LID Manual summarizes the potential application and the quantity and quality function for most BMPs, When designed correctly, either individually or as a suite of BMPs, the treatments listed in Table 7 will meet the permit's stormwater requirements.

Requirement B: "Channel protection criteria to prevent resource impairment resulting from flow volumes and rates."

The channel protection criteria established in the NPDES Ph II permit is necessary to maintain post-development site runoff volume and peak flow rate at or below existing levels for all storms up to the **2-year, 24-hour event.**

"Existing levels" means the runoff flow volume and rate for the last land use prior to the planned new development or redevelopment.

An acceptable source of rainfall data for calculating runoff volume and peak flow rate is: *Rainfall Frequency Atlas of the Midwest*, Huff & Angel, NOAA Midwest Climate Center and Illinois State Water Survey, 1992. A copy of this is available on the Drain Commissioner's website. www.gcdcswm.com

Methods for estimating pre-development and post-development runoff shall follow curve number evaluations. Any of the following methods are allowed:

- Computing Flood Discharges for Small Ungaged Watersheds
- TR55
- Hec-Raz
- Hec-HMS
- SWIM

Requirement C: "Flood Control Requirements"

Flood Control requirements are for all storms events between the **2-year, 24-hour event** and the **100-year 24-hour event.**

Many streams located in this county do not have stream gauging data available or the period of record is not of sufficient length to allow the design engineer to estimate flood flows by using flood-frequency analysis as developed by U.S.G.S. Prior to design of any storm drain improvement or enclosure, the developer or their designated design representative shall investigate any gauging station, partial record gauging station, or crest stage gages on the drainage basin for available pertinent data on flood flows.

Where insufficient data is available to develop basin hydrology by the above method, the developer shall determine flows along the watercourse by the S.C.S. method, the rational method, the brater method, or a combination of these methods. The basin hydrology shall be approved by the Genesee County Drain Commissioner's office prior to proceeding with the final design of a given project.

Implementing stormwater control BMPs can reduce the frequency and intensity of flooding even on C and D soils. And while the State LID manual does provide guidance on designing BMPs to address flooding the standard is more restrictive that Genesee County standards. Therefore, developments/Flood controls shall be developed in accordance with the following flood frequencies. For each of the frequency categories below:

A. The following basin development projects are to be designed to the 100 year storm:
    1. Culverts or bridges crossing state highways or expressways where the upstream drainage area is in excess of 2 square miles;
    2. Detention ponds;
    3. Drainage enclosures in excess of 100 feet where the upstream drainage area is in excess of 2 square miles.

B. The following basin development projects are to be designed to the 25 year storm:
    1. County road cross culverts and bridges.
    2. Open channel development or improvement (flow to be contained within the channel).
    3. Drain enclosures where the drainage area is greater than 300 acres but less than 2 square miles.

C. The following basin development projects are to be designed to the 10 year storm:
    1. Open channels, culverts or drain enclosures where the drainage area is not in excess of 300 acres.
    2. Enclosed storm sewers flowing full under gravity conditions in proposed plats/ developments.

Flow Estimation: Hydrology:

Many different methods of arriving at a given flow (cfs) for a selected spot in a drainage outlet have been developed over the years. Because of its general recognition and wide use within the county, the drain commissioner will accept the rational method for flow computation where the drainage area is less than 100 acres. Engineers electing to use this method for larger drainage area will be requested to also use an alternate method for comparison.

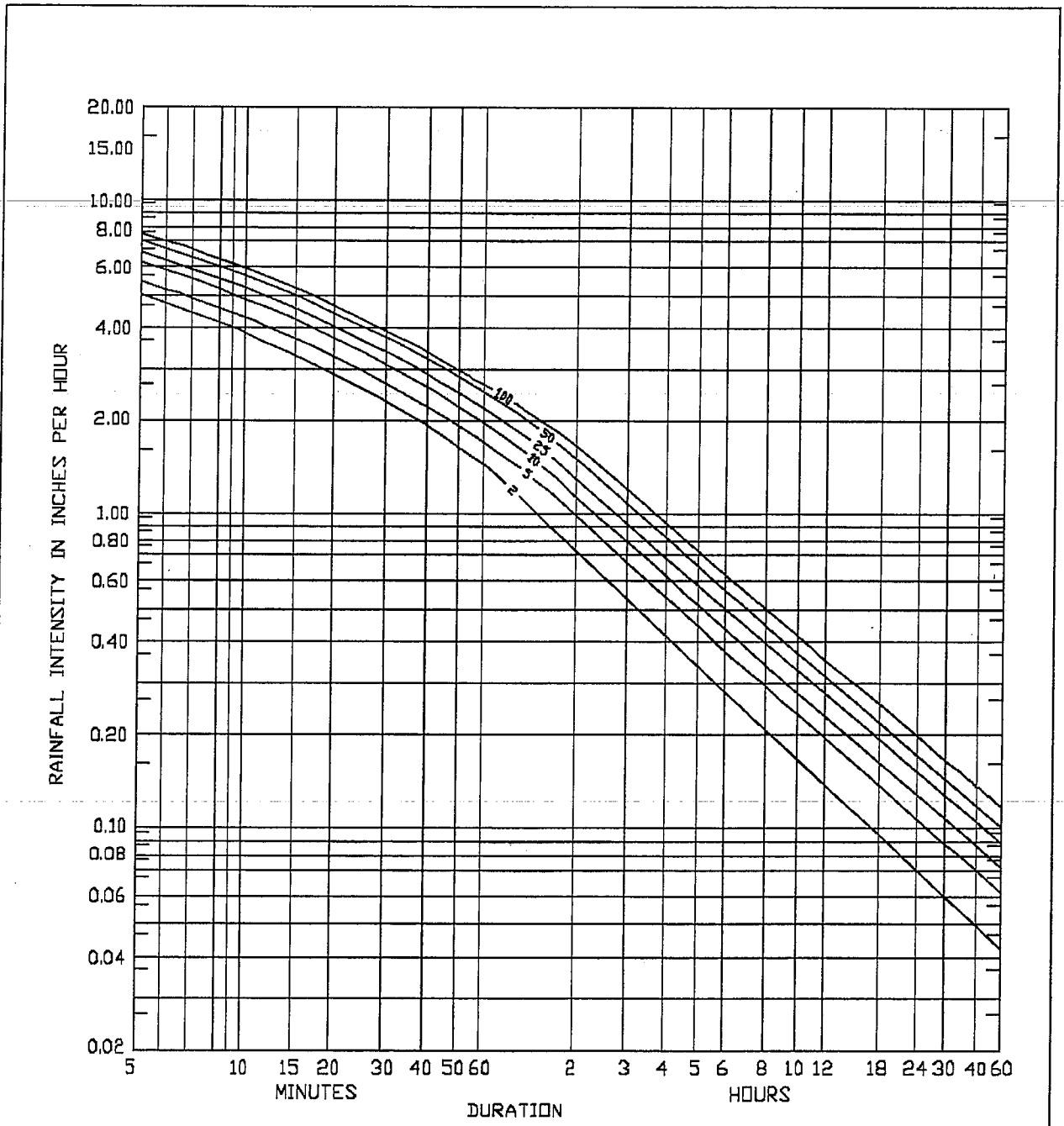
The following criteria shall be used in determining the variables of the rational formula Q=CIA.

1. Runoff coefficient - the runoff coefficient must be determined on the basis of this projected development using the following:

	C-factor
– Flat undeveloped lands, farms, non-wooded	0.25
– Woodlands & sloped undeveloped land	0.30
– Parks, cemeteries, playgrounds, disturbed ground*	0.35
– Residential*	0.40
– Apartments, condominiums or light manufacturing*	0.50
– Commercial and industrial*	0.70
– Impervious areas (parking, roof, etc.)	0.95
– Open water	1.00

*These are average C-factors for typical types of development. A C-weighted value may be calculated to more accurately reflect the site conditions.

2. Intensity - the rainfall intensity - Computation of an accurate time of concentration is critical to the use of these curves. For urban storm sewers time of concentration shall be the summation of the inlet time plus the time of flow in the sewer. For urbanized area a minimum initial time of 20 minutes, plus time of travel, shall be acceptable for design and for average rural basins an initial time of concentration of 30 minutes, plus time of travel, will present an adequate time for storm flows to peak. The flow time in an enclosed system shall be calculated by standard design charts. For channel velocity the standard manning equation v=1.486 r 2/3 s 1/2 shall be accepted. A chart based on *Technical Paper 40* listing accepted N values for storm sewer design is located on page 12 for use in design analysis.
3. Area - the area of a basin or sub-basin shall be determined by use of 2' contour maps available at the county GIS department with an appropriate field check or by use of established county drain maps on file at the Drain Office, 4608 Beecher Road.



GENESEE COUNTY SWM DRAIN COMMISSIONER

RAINFALL INTENSITY - DURATION - FERQUENCY CURVES
FOR FLINT, MI
BASED ON U.S. DEPARTMENT OF COMMERCE TECHNICAL PAPER 40

Outlet conditions:

All storm systems shall be designed to exit into an outlet with sufficient carrying capacity to carry the additional design flow. The maximum velocity allowable for an outlet to open ditch is 5 ft/s. Maximum velocity may be reduced based on poor soil conditions.

The designer engineer shall analyze this condition and submit data substantiating his conclusions. This information shall be submitted to the drain commissioner along with the required design forms.

In the event the design engineer does not have sufficient capacity in the outlet the following criteria shall apply:

1. The system shall be designed to outlet only existing runoff. Existing runoff shall consist of all water presently contributed to the drainage district. This shall mean the 2-year storm under existing conditions using agricultural land (c= 0. 25). All excess shall be retained on site for duration of time necessary to pass the design storm without downstream flooding. The outlet discharge shall not exceed 0.2 cfs/acre under any event.
2. The township shall petition the drain commissioner to improve the outlet to the required size to pass the additional water at the design storm. In the event this petition is not successful criteria #1 above shall apply.

Requirement D: "Operation and maintenance requirements."

All structural and vegetative BMPs installed shall include a plan for maintaining maximum design performance through long-term operation and maintenance (O&M). The O&M plans will ensure that the BMP continues to meet the **water quality treatment, channel protection & flood** controls outlined in this manual.

O&M maintenance agreements that are required under a municipal storm water ordinance will be between the property owner and the Municipality, and contain within the maintenance agreement, at the minimum, the following factors:

- Operating instructions for the outlet component;
- Vegetation maintenance schedule;
- Responsible party designation;
- Inspection checklists;
- Maintenance checklists; and
- Tracking requirements.
- As-builts showing the storm maintenance plan was built to design.

An example of a storm water maintenance agreement can be found in Appendix G (pgs 455 – 461 of the LID Manual for Michigan.

For projects located within communities that do not have a storm water ordinance, but do drain into a Road System or County Drain and would require a Genesee County Road Commission permit or Drain Commissioner's Office – SWM permit have to provide a maintenance plan that would provide the same above information as in a maintenance agreement. If it is found that a site is not being maintained and violates the County permit issued, the Drain Commissioner's Office and/or Road Commission will revoke the permit allowing discharge to their system and refer the violator to the local municipality.

Requirement E: "Enforcement mechanisms with record keeping procedures."
Enforcement of the NPDES requirements will be achieved through a combination of County agencies (the Drain Commissioner and Road Commission) and local municipalities that have a storm water ordinance. Any municipality may adopt the storm water ordinance. It is assumed that each permitted municipality will adopt a storm water ordinance (a state requirement) that supports the Genesee County storm water requirements or its own storm water requirements. The individual municipality will retain records.

Post Construction authority for the Road Commission's and Drain Commissioner's Office begins and ends at the right of ways or easements. If the site violates the permit the GCRC or GCDC has the right to block or deny the site access to an outlet. The laws do not give either agency the right to enter the site or do any work outside our right of ways or easements. For non-Phase II communities, where the site drains to a wetland, water of the state (not a drain or road ditch) or MDOT drainage system, the County does not have any post construction authority.

The BMP/owner operator must track and record, and if required by the permittee, report all field inspection findings to ensure proper O&M occurs for the life of the BMP.

As per the ordinance, the BMP/owner operator must maintain inspection and maintenance information for the life of the BMP and make this information available to Municipality (permitee) staff during an inspection.

Municipality will maintain records of site plan process, approvals, any post construction inspection reports and non-compliance issues and resolution.

Attachment 7
To MDEQ Stormwater Discharge Permit Application

(Facility Table 3)
(Pollution Prevention Procedure)

Per Stephanie: Basically, the State is looking for the permittee to indicate that they did an assessment on each of the facilities listed in Question 59 for the potential to discharge pollutants to surface water based on the criteria listed in the application or other criteria if applicable. They should indicate that new facilities will be assessed within (timeframe) and existing facilities will be reassessed within (timeframe) of determining a need to update/revise the facility assessment.

Mt. Morris has few facilities to start with, and overall they are low or medium potential for discharge of pollutants into the waters of the state. Based on the factors listed under question 62 on the application, all facilities have been assessed at low or medium potential for discharge with the exception of the DPW yard, which includes a fueling station and salt storage.. New facilities will be assessed each January, and current facilities will be reassessed each January.

69. Provide the procedure identifying the BMPs currently implemented or to be implemented during the permit cycle to prevent or reduce pollutant runoff at each facility with the medium and lower potential for the discharge of pollutants to surface waters of the state using the assessment and prioritized list in Questions 62 and 63.

For those facilities that you prioritized as medium and low potential for pollutant runoff you will need:

- *To have identified the BMPs you currently have (catch basin cleanout/ street sweeping/ detention basins…)*
- *Identify BMPs needed.*
- *Schedule for implementation of new BMPs*

You may write a procedure here or attach your existing procedure. Reference in Application

Procedure:
Mt. Morris will use the BMP's listed in the Best Practices for Municipal Operations attachment 7)published by the Genesee County Drain Commissioner for catch basin and detention maintenance, inspection, and cleaning. The city will also use the catch basin cleaning activities guidance document published by the EPA (attachment 7).

70. Provide the procedure for prioritizing each catch basin for routine inspection, maintenance, and cleaning based on preventing or reducing pollutant runoff. The procedure shall include assigning a priority level for each catch basin and the associated inspection, maintenance and cleaning schedule based on preventing or reducing pollutant runoff. The procedure shall include a process for updating/revising the priority level for a catch basin giving consideration

Mt. Morris will use the BMP's listed in the Best Practices for Municipal Operations attachment 7)published by the Genesee County Drain Commissioner for catch basin and detention maintenance, inspection, and cleaning. The city will also use the catch basin cleaning activities guidance document published by the EPA (attachment 7).

73. Provide the procedure for dewatering and disposal of materials extracted from catch basins. *A compliance assistance document titled Catch Basin Cleaning Activities Guidance Document is available at*

http://www.michigan.gov/documents/deq/wb-stormwater-CatchBasinGuidance_216198_7.pdf.

You may have already you may have already answered this in question 72. When you or your contractor cleans a catchbasin, how is the waste product (solids and liquids) handled? If you do not cleanout or maintain your own catchbasins, your procedure needs to explain how you are going to ensure your contractor will handle the waste products to meet the requirements in the Guidance Document referenced by the State. Reference in Application

Mt. Morris will use the BMP's listed in the Best Practices for Municipal Operations attachment 7)published by the Genesee County Drain Commissioner for catch basin and detention maintenance, inspection, and cleaning. The city will also use the catch basin cleaning activities guidance document published by the EPA (attachment 7).

74. Provide the procedure for inspecting and maintaining the structural stormwater controls identified in Question 59, excluding the structural stormwater controls included in an SOP as part of Question 64 and catch basins.. The procedure shall include a description and schedule for inspecting and maintaining each structural stormwater control and the process for disposing of maintenance waste materials. **The procedure shall require that controls be maintained to reduce to the maximum extent practicable the contribution of pollutants to stormwater.** The procedure shall include a process for updating/revising the procedure to ensure a maintenance and inspection program for each structural stormwater control. *A recommended timeframe for updating/revising the procedure is 30 days following the implementation of a new structural stormwater control.*

Table 3- Column 5 through 15 is your Stormwater Controls. This question is in regards to those facilities that had a Medium or Low potential for the discharge of pollutants. Column 4 (catchbasins) has already been addressed in question 72 and 73. Reference in Application

Mt. Morris will use the BMP's listed in the Best Practices for Municipal Operations attachment 7)published by the Genesee County Drain Commissioner for catch basin and detention

- Cold weather operations (e.g., plowing, sanding, application of deicing agents, and snow pile disposal)
- Vehicle washing and maintenance of applicant-owned vehicles (e.g., police, fire, school bus, public works)

You may want to create a table for this if you have a lot of operation and maintenance activities. Reference in Application or N/A if you do not have any of these activities. (Example: operation activity- Storing and spreading salt. Pollutant- excessive salt. Measures taken- Salt dispensing equipment is calibrated to discharge salt at recommended rates based on speed of vehicle. Salt stockpile is kept indoors. Excess salt is swept back inside.)

Mt. Morris will conduct road, parking lot, sidewalk, right of way , and unpaved road maintenance, along with cold weather operations and vehicle washing IAW BMP's in the GCDC Pollution Prevention/Good Housekeeping for Municipal Operations Manual of Best Management Practices.

77. Provide the procedure for prioritizing applicant-owned or operated streets, parking lots, and other impervious infrastructure for street sweeping based on the potential to discharge pollutants to surface waters of the state. The procedure shall include assigning a priority level for each parking lot and street and the associated cleaning schedule (i.e., sweeping frequency and timing) based on preventing or reducing pollutant runoff. The procedure shall include a process for updating/revising the priority level giving consideration to street sweeping findings and citizen complaints. *A recommended timeframe for updating/revising the prioritization is 30 days following the construction of a new street, parking lot, or other applicant-owned or operated impervious surface or within 30 days of identifying a need to revise a priority level.*

If you are a Township and only own parking lots, you should not have to prioritize, but you should still discuss how you determine if and when your parking lots get swept. Reference in Application or N/A if you do not have any of these activities.

Procedure:

78. Provide the geographic location of the streets, parking lots, and other impervious surfaces in each priority level using either a narrative description or map.

Reference in Application if appropriate:

Procedure: Street sweepings at facilities will be prioritized according to the priority given them in table 3. Street sweeping on major streets will be deemed to be medium priority while street sweeping on local streets will be low priority. The priorities will be reviewed annually in January based on inspections, citizen complaints, and construction.	

82. Provide the employee training program to train employees involved in implementing the pollution prevention and good housekeeping program. The program shall include the training schedule. At a minimum, existing staff shall be trained once during the permit cycle and new hires within the first year of their hire date.

How does your community make sure your employees get trained. There is a goddhousekeeping manuel available online. The County does provide periodic training. You do not have to have ALL you staff attend training. You can have 1 or 2 staff bring the training backand train in house. Reference in Application:

Program: The DPW Superintendent will attend county provided training when it becomes available. If he is not available another employee may go in his place. The trained employee will train the rest of the DPW staff.

Schedule: As soon as possible, when the training is available.

83. Provide the procedure requiring contractors hired by the applicant to perform municipal operation and maintenance activities comply with all pollution prevention and good housekeeping BMPs as appropriate. The procedure shall include the process implemented for providing oversight of contractor activities to ensure compliance.

How your contracts are written can really make a difference with this requirement. Specifying how the contractor has to handle the waste products. Requiring training or a preconstruction meeting to go over storm water or other concerns. Etc. What kind of oversight do you have in place? How are you going to ensure compliance? Reference in Application:

Procedure: Contracts will be written to include waste disposal specifications that are IAW BMP's for handling waste and preventing pollution of stormwater.

Oversight: City Manager will review contract documents to assure this has been included in contracts.

Michigan Department of Environmental Quality – Water Resources Division

STORMWATER DISCHARGE PERMIT APPLICATION

Table 3: Inventory of Applicant Owned or Operated Facilities and storm water structural controls with a discharge of Stormwater to surface waters of the state.

Applicant Owned/ Operated Facility	Address or Parcel ID of Facility	Potential to discharge pollutants to surface waters of the state.	Catch basins	Detention basins	Oil/water separators	Pump Stations	Secondary containment	Constructed wetlands	Infiltration basins and trenches	Porous pavement	Rain gardens	Underground storage vaults or tanks	Vegetated swales	Other structural storm water controls – Provide a description below:
	Saginaw @ Walker													
Public works yards	720 Hughes Mt Morris	H	1											
Salt storage facilities	720 Hughes Mt. Morris	H	1											
Vacant land and open space	SW property	L		1										
Outdoor wash areas														
Animal Control Building														
Bus Stations and Garages														
Composting facilities														
Fire Stations	11649 Saginaw Mt. Morris	L												
Hazardous waste disposal facilities														
Landfills														
Libraries	Saginaw St Mt. Morris	L	1											
Mosquito Control Facility														

Delete Rows that are not Applicable. Add address/ PID, Potential Discharges are Low, medium or High, see Attachment 7 for facility assessment and priority guide, place the number of storm water controls in each box, (Example: your administration bldg has 3 catch basins you would put [3] in the appropriate box) you can put N/A or 0 for those storm water controls that you do not have on those facilities.

Michigan Department of Environmental Quality – Water Resources Division

STORMWATER DISCHARGE PERMIT APPLICATION

Table 3: Inventory of Applicant Owned or Operated Facilities and storm water structural controls with a discharge of Stormwater to surface waters of the state.

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Pesticide storage facilities														
Public golf courses														
Public schools														
Recycling facilities														
Solid waste handling and transfer facilities														
Vehicle storage and maintenance yards														
Other facilities – Provide a description below:														

If you have any other facilities not listed above enter here

Other Facility: _____ Address/ PID _____

Narrative of storm water controls on other facility.

Delete Rows that are not Applicable. Add address/ PID, Potential Discharges are Low, medium or High, see Attachment 7 for facility assessment and priority guide, place the number of storm water controls in each box, (Example: your administration bldg has 3 catch basins you would put [3] in the appropriate box) you can put N/A or 0 for those storm water controls that you do not have on those facilities.

Catch Basin Cleaning

Catch Basin Cleaning Activities Guidance Document

Catch Basin Cleaning Activities

Catch basins are included in storm sewer system designs in order to remove solids such as gravel, sand, oils, and organic material carried by storm water. Catch basins also contain elevated concentrations of metals (attached to the solids) from street runoff or drainage from industrial, commercial and residential properties. In order to maintain the storm sewer systems effectiveness, catch basins must be periodically cleaned out. The Department of Environmental Quality (DEQ) Water Bureau (WB) and Waste and Hazardous Materials Division (WHMD) oversee environmental regulations pertaining to this activity. The Michigan Occupational Safety and Health Administration (MIOSHA) within the Department of Labor and Economic Growth oversee confined space entry and other worker health and safety standards.

In the past, the waste generated from the catch basin cleaning activities was typically discharged back into the storm sewer system. This type of discharge is unauthorized per Part 31, Water Resources Protection (Part 31) of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (NREPA) and is therefore illegal. The combined solid and liquid waste stream (solid/liquid waste) from cleaning storm sewers systems is legally defined as "liquid industrial waste" pursuant to Part 121, Liquid Industrial Wastes (Part 121) of NREPA.

The following are options recommended to properly deal with the waste stream generated from catch basin cleaning activities:

1. Have the waste transported to drying beds to separate the solid/liquid waste. This is usually performed at a publicly owned treatment plant or at a privately owned permitted facility where the liquid portion of the waste stream is separated from the solids and treated.

2. Request permission from the local wastewater treatment plant operator to discharge the combined solid/liquid waste into the sanitary system. Most treatment plants will require pre-treatment prior to the discharge. All applicable local ordinance provisions must be followed.

3. When conducting catch basin maintenance activities where the above options are not available, the following method can be used as long as there are no discharges to surface waters during dry weather conditions.

transport the waste must be kept closed except when adding or removing the waste, and the exteriors must be kept free of the liquid waste and residue.

The facility accepting the solid/liquid waste must meet operating requirements:

- They must notify the WHMD that they are operating a liquid industrial waste designated facility, obtain a site identification number, and meet operating requirements under Part 121. This includes practices to prevent unauthorized discharge of the waste, sign manifests, and keep required records. If waste containers are used, they must be kept closed and protected from the weather, fire, physical damage and vandals.

- The discharge of the liquids into the treatment plant that is permitted by the WB must meet the wastewater treatment plant requirements. Any other discharge of the liquids would require a separate DEQ discharge permit.

- The resulting solid waste must be managed under Part 115 requirements. Dispose of the solid waste in a licensed landfill. Contact the landfill authority for their specific disposal requirements, including any tests they require to document the solids are not hazardous or liquid waste. Do not use the solids as fill on local government or private property, or for any other use, unless it meets the conditions of being an inert material according to the solid waste rules R299.4114 through R299.4118. See the Waste Characterization Guidance for information how to determine if the waste is hazardous or not.

Street sweeping activities are also subject to the above solid waste requirements. Street sweeping involves the use of specialized equipment to remove litter, loose gravel, soil, pet waste, vehicle debris and pollutants, dust, de-icing chemicals, and industrial debris from road surfaces. See the BMPs for Street Sweeping and Parking Lot and Street Cleaning.

Follow-up Answers Can be Found as Follows:	
Topic	**Contact:**
Using the solids as fill or other use under Part 115	Duane Roskoskey at 517-335-4712
Part 121 transportation requirements and HMTA	WHMD District Office
Managing waste under Part 31, or general questions regarding this guidance	Mark Fife at 517-241-8993
Confined space entry requirements	MIOSHA Consultation, Education and Training Division at 517-322-1809

SOP FOR POLLUTION PREVENTION

AT THE CITY OF MT. MORRIS

DEPARTMENT OF PUBLIC

WORKS YARD

SOP for Stormwater Pollution Prevention City of Mt. Morris Department Public of Works Yard

720 Hughes, Mt. Morris, MI

Facility Contact:

Jeff Roth

Superintendent of Public Works

810-577-0074

11649 N. Saginaw St.

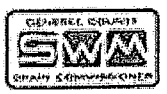
Mt. Morris, MI 48458

Owner and Operator: The City of Mt. Morris

Certified Storm Water Operator : Jeff Roth

Emergency Contact: Jeff Roth

POLLUTION PREVENTION/GOOD HOUSEKEEPING FOR MUNICIPAL OPERATIONS: MANUAL OF BEST MANAGEMENT PRACTICES



Genesee County Drain Commissioner
Surface Water Management

November 2010

Introduction

This Manual of Pollution Prevention/Good Housekeeping Best Management Practices is intended to minimize the effects that municipal operations have on stormwater (see Table 1 and 2). The information contained in the manual is intended as guidance material for implementing measures to comply with a Stormwater Phase II Municipal Separate Storm Sewer System (MS4) Permit and is not designed to be comprehensive in all aspects of each topic. Municipalities should be "flexible" in their use of this information as pertains to their own unique municipal operations.

1.0 Pollution Prevention through BMPs

What are BMPs?

BMPs are the practices, procedures, policies, prohibitions, schedules of activities, structures or devices that are implemented to prevent or minimize pollutants coming in contact with precipitation, storm water runoff, or non-storm water flows. Table 1 illustrates the pollutants associated with Municipal *facilities* while Table 2 presents the pollutants associated with municipal *activities*. BMPs are also structures or devices that remove pollutants from storm water runoff before the runoff enters a storm water drainage system or surface water. Therefore, BMPs are often categorized as either "source control" BMPs or "treatment control" BMPs.

Source control BMPs include all types of measures designed to prevent pollution at the source, that is, to keep storm water from contacting pollutants in the first place. Source control BMPs are generally simple, low-maintenance, cost-effective and are broadly applicable. They may be categorized as either non-structural or structural. Good housekeeping is an example of a non-structural source control BMP; a canopy is an example of a structural source control BMP. Preventative maintenance may be required for both non-structural and treatment controls.

Treatment control BMPs are methods of treating storm water runoff to remove pollutants and are frequently more costly to design, install, and operate than source control BMPs. More importantly, treatment control BMPs are typically not as effective as source control BMPs, and the effectiveness is highly dependent on regular maintenance. Nevertheless, they can be appropriate and effective under certain conditions. However, treatment controls typically do not remove all pollutants from storm water runoff and should not be regarded as disposal systems.

The Manual is divided into two sections: 1) Good Housekeeping and 2) preventative maintenance of Treatment Controls.

2.0 Good Housekeeping

Good housekeeping practices include activities that are intended to maintain a clean site and keep equipment in good working order to prevent storm water quality problems from occurring. Daily cleanup and inspections are the most effective means of achieving good housekeeping. For the most part, good housekeeping is a day-to-day activity that does not require a large expenditure of time or expense, and should be implemented on an ongoing basis. Examples of good housekeeping practices are:

- Tools and materials should be returned to designated storage areas after use;
- Waste materials should be collected and properly disposed after the completion of each job, shift, or day as appropriate;
- Indoor work areas should be neat, uncluttered, and well-ventilated to discourage outdoor work and to allow leaks and spills to be quickly detected and controlled;
- Outdoor work areas should be swept regularly (not hosed) and kept neat and clean;
- Occasionally outdoor work areas may need cleaning beyond sweeping. In such cases, all wash waters should be contained, collected, and properly disposed; and
- Outdoor waste or trash receptacles should be covered and emptied regularly and the adjacent areas inspected for misplaced or wind-blown litter.

Preventive Maintenance

Preventive Maintenance BMPs include regular inspections and maintenance intended to minimize storm water pollution by performing maintenance activities before problems arise. The NPDES Storm Water permit stipulates that municipalities must implement maintenance schedules for municipal sites and practices aimed at reducing the introduction of pollutants to waterways. Therefore, in addition to your good housekeeping practices it is necessary to periodically inspect the facilities and sites themselves. For example, an annual inspection of maintenance sheds for potential sources of pollutants is warranted as is inspection of municipal properties (e.g. city parks) to determine if BMPs are being kept up on site.

2.2 Spill Response and Prevention

For spills, the old saying, "an ounce of prevention is worth a pound of cure" is appropriate. Spill clean-up can be labor-intensive and costly involving expenses to contain the spill, collecting the spilled substance, proper disposal of spill materials, and report filing to regulatory agencies, not to mention possible monetary fines. Spills and leaks are some of the most significant sources of water pollution and are, in most cases, avoidable.

Spill prevention and control procedures include:

- Placing bollards, berms and containment features around structures or areas where fluids are stored, so releases can be prevented, easily detected, and controlled;
- Using drip pans for maintenance operations involving fluids and under leaking vehicles and equipment waiting repair;
- Placing spill kits in areas where fluids are stored or in areas where activities may result in a spill;
- Providing training for proper use of materials and equipment used during operations and maintenance activities;
- Providing training for proper use of spill response equipment and supplies; and
- Conducting outdoor maintenance activities on paved surfaces to allow for easy detection, control, and cleanup of spills.

Spill prevention, control, and cleanup applies to all materials and wastes—not only hazardous substances. The toxic water quality effects from spills of hazardous substances (e.g., acids, oils, greases, fuels, solvents, pesticides) are commonly understood. However, non-hazardous materials—for example, sand, litter, corn oil, sweeteners, soaps, and milk, among others—can also greatly impact water quality.

Identify Materials That Impact Stormwater/Receiving Waters (Surface Waters)

- Liquids associated with vehicle/equipment maintenance products (oils, fuels, antifreeze, etc.)
- Rock salt
- Chemicals (fertilizers, pesticides)

2. Problem Evaluation: Assess Impact on Receiving Waters, Prioritize

- Toxicity
- Biochemical oxygen demand

3. Identify (and choose appropriate) Solutions (BMP's)

- Keep all materials properly stored in closed, labeled containment systems
- Use secondary containment systems where appropriate
- Obtain spill recovery materials for immediate response to a spill

4. Inspection Procedures

- Inspect secondary containment systems, oil/water separators periodically
- Inspect containers for leaks, areas near storm receiver inlets and outlets, floor drains for indications of spills

2.3 Pest Control

1. Identify Impacts to/on Stormwater/Receiving Waters (Surface Waters)

- Runoff of pesticides may harm aquatic life, may contaminate water/sediment

2. Problem Evaluation: Assess Impact on Receiving Waters, Prioritize

- Toxicity to aquatic plants and animals

3. Identify (and choose appropriate) Solutions (BMP's)

- Purchase only enough pesticides necessary for one year – store properly to avoid waste generation (spills, leaks, product deterioration)
- Minimize/eliminate pesticide application, use lowest toxicity pesticides
- Do not apply pesticides immediately prior to or during rain events
- Ensure that employees are properly trained and certified in pesticide application techniques and safety
- Develop zero input, low input lawns
- Eliminate food, water, and shelter for pests
- Adopt integrated pest management (IPM) techniques
- Adopt alternatives to pesticides options (use physical, mechanical, or biological controls)

4. Inspection Procedures

- Identify pests – are levels acceptable or must action be taken to control pests?
- Inspect pesticide inventory – properly dispose of out-of-date pesticide materials

5. Maintenance Procedures

- Inspect pest traps (i.e. bait boxes) regularly – remove (and properly dispose of) dead pests
- Block/eliminate access to buildings/structures for pests
- Remove pests (insects) by hand

6. Advisory

- Refer to MSU's Integrated Pest Management site: IPM: www.ipm.msu.edu

2.6 *Vehicle/Equipment Maintenance*

1. Identify Impacts to/on Stormwater/Receiving Waters (Surface Waters)

- Trace amounts of metals/hydrocarbons are found in materials (e.g. fuels, antifreeze, batteries, motor oils, grease, parts cleaning solvents) that are typically used in maintenance operations

2. Problem Evaluation: Assess Impact On Receiving Waters, Prioritize

- Toxicity
- Biochemical oxygen demand

3. Identify (and choose appropriate) Solutions (BMP's)

- Conduct maintenance work indoors – if work must be performed outside, guard against spillage of materials that could discharge to storm receivers
- Seal floor drains that discharge directly to the environment, if possible
- Initiate single purpose use of vehicle bays – dedicate one (or more) bays that have no (or sealed) floor drains for repairs/maintenance
- Clean up spilled materials immediately, using "dry" methods
- Install pretreatment systems (oil/water separators) where necessary in sewer lines to capture contaminants (oil, grit), and maintain as needed
- Never leave vehicles unattended while refueling
- Identify appropriate recycling/disposal options for wastes

4. Inspection Procedures

- Inspect (for maintenance purposes) floor drain systems, oil/water separators
- Monitor "parked" vehicles/equipment for leaks

5. Maintenance Procedures

- Maintain a clean work area – remove contaminants from floors, drains, catch basins, using "dry" methods
- Use non-hazardous cleaners. Use non chlorinated solvents instead of chlorinated solvents
- Repair or replace any leaking containers
- Use steam cleaning /pressure washing instead of solvent for parts cleaning
- Store waste fluids in properly capped, labeled storage containers
- Store batteries in leak-proof, compatible (i.e. non reactive) containers
- Rinse grass from lawn care equipment on permeable (grassed) areas
- Protect against pollution if outside maintenance is necessary (cover storm receivers, use secondary containment vessels, etc.)

6. Advisory

- Report petroleum spills to 911

2.7 *Vehicle/Equipment Washing*

1. Identify Impacts to/on Stormwater/Receiving Waters (Surface Waters)

- Nutrients (biodegradable soaps)
- Metals
- Hydrocarbons

2. Problem Evaluation: Assess Impact On Receiving Waters, Prioritize

- Biochemical oxygen demand from nutrient sources
- Toxicity
- Hydraulic loading

3. Identify (and choose appropriate) Solutions (BMP's)

- Initiate single purpose use of vehicle bays - dedicate only one bay for washing (with floor drain system)
- Rinse with hoses that are equipped with automatic shutoff devices and spray nozzles
- Steam clean (without soap) where wastes can be captured for proper disposal (i.e. oil/water separator)

4. Inspection Procedures

- Inspect floor drain systems regularly - use only those that discharge to a sanitary sewer, identify the need for cleaning of catch basins, oil/water separators

5. Maintenance Procedures

- Map storm drain locations accurately to avoid illegal discharges
- Perform steam cleaning or pressure washing where wastes can be captured for proper disposal
- Take precautions against excess use of/spillage of detergents

6. Advisory

- Require all facilities to connect floor drain systems to sanitary sewers (if available)
- See MDNRE for http://www.michigan.gov/deq/0,1607,7-135-3313_3682_3716-24366--,00.html and http://www.michigan.gov/documents/deq/wb-sw-FleetMaintenance_Guidance_304720_7.pdf additional information.

2.8 *Roadway and Bridge Maintenance*

1. Identify Impacts to/on Stormwater/Receiving Waters (Surface Waters)

- Road salt components - sodium, calcium, and chlorides
- Hydrocarbons
- Particulates – such as dry paint or abrasive compounds
- Debris

2. Problem Evaluation: Assess Impact On Receiving Waters, Prioritize

- Particulate matter
- Toxicity

3. Identify (and choose appropriate) Solutions (BMP's)

- Incorporate preventive maintenance and planning for regular operations & maintenance activities
- Pave in dry weather only.
- Stage road operations and maintenance activity (patching, potholes) to reduce spillage. Cover catch basins and manholes during this activity.
- Clean up fluid leaks or spills from paving equipment/materials immediately
- Restrict the use of herbicides/pesticide application to roadside vegetation
- Sweep and vacuum paved roads and shoulders to remove debris and particulate matter
- Maintain roadside vegetation; select vegetation with a high tolerance to road salt
- Control particulate wastes from bridge sandblasting operations
- Use calcium magnesium acetate for deicing around bridges to minimize corrosion
- Clean out bridge scuppers and catch basins regularly
- Direct water from bridge scuppers to vegetated areas
- Mechanically remove (i.e. sweep) debris from bridge deck and structure prior to washing

4. Inspection Procedures

- Inspect paving, sweeping, vacuuming, and all other maintenance vehicles/equipment as appropriate
- Inspect roads and bridges for implementation of applicable BMP's

5. Maintenance Procedures

- Clean bridge scuppers routinely and keep free of debris
- Direct runoff water from bridges to vegetated areas
- Install catch basins in place of bridge scuppers
- Use tarps, booms, and vacuums during painting or blasting activities (refer to reference information to control/capture particulate matter)
- Repair leaking/defective containers or equipment on paving equipment

2.9 *Hazardous and Waste Materials Management*

1. Identify Impacts to/on Stormwater/Receiving Waters (Surface Waters)

- Lube oils
- Coatings and their compatible solvents (paints, thinners, etc.)
- Anti freeze
- Cleaning agents
- Fuels (gas, diesel, kerosene)

2. Problem Evaluation: Assess Impact on Receiving Waters, Prioritize

- Biochemical oxygen demand
- Toxicity to aquatic plants and wildlife
- Particulate loading

3. Identify (and choose appropriate) Solutions (BMP's)

- Ensure that all materials are stored in closed, labeled containers – if stored outside, drums should be placed on pallets, away from storm receivers – inside storage areas should be located away from floor drains
- Eliminate floor drain systems that discharge to storm drains, if possible
- Use a pretreatment system to remove contaminants prior to discharge
- Reduce stock of materials "on hand" – use "first in/first out" management technique
- Use the least toxic material (i.e. non hazardous) to perform the work
- Install/use secondary containment devices where appropriate
- Eliminate wastes by reincorporating coating/solvent mixtures into the original coating material for reuse
- Recycle materials if possible, or ensure proper disposal of wastes

4. Inspection Procedures

- Physical on-site verification of sealed floor drains (or redirected to sanitary sewer)
- Regular inspection of material storage areas (inside and outside)
- Regular inspection and cleaning of oil/water separators by qualified contractor
- Inspect stormwater discharge locations regularly (for contaminants, soil staining, plugged discharge lines)

5. Maintenance Procedures

- Repair or replace any leaking/defective containers, and replace labels as necessary
- Maintain caps and/or covers on containers
- Maintain aisle space for inspection of products/wastes

6. Advisory

- None

2.11 Catch Basin and Storm Drain System Cleaning

1. Identify Impacts to/on Stormwater/Receiving Waters (Surface Waters)

- **Catch basins** capture grit and debris, which, if not removed in a timely fashion, can discharge toxic and biological pollutants during rain and/or snow melt events
- **Storm drainage** systems, while not designed for capture of solid materials, can perform in the same manner with similar results.
- **Storm ditches**, if stripped of vegetation during cleaning, can result in silt deposition in receiving waters

2. Problem Evaluation: Assess Impact on Receiving Waters, Prioritize

- Toxicity – heavy metals, organic compounds, etc.
- Biochemical oxygen demand
- Sediment loading

3. Identify (and choose appropriate) Solutions (BMP's)

- Address:
  - storm drain receivers and (below grade) storm sewer systems
  - parking lot receivers
  - open ditches
  - catch basins and floor drain systems inside of buildings should be either:
    - sealed to prevent discharge
    - "permitted" by if required
    - discharged to sanitary sewers
- Contaminated wastewaters should not be discharged to a catch basin/street receiver
- Increase frequency of cleaning, as necessary
- Repair/replace storm drain receiver and catch basin receiver grates as necessary

4. Inspection Procedures

- Physical inspection – prioritize storm drain systems and catch basins – catch basins on steep grades may need more frequent cleaning
- Clean catch basin when depth of deposits are >1/3 the depth from the bottom of the basin to the invert of the lowest pipe/opening into or out of basin – Institute temporary street parking bans to facilitate access to catch basins
- Ditch inspections – ID problems while traveling to job site
- Storm event inspection – identify pollution problems (i.e. sediments) to determine the need for additional protective measures
- Post storm event inspection – ID problems (i.e. blockages)

5. Maintenance Procedures

- Catch basins/storm sewer pipe – cleaning in spring to remove sand/grit/salt from winter road maintenance, cleaning in fall to remove leaves/silt/debris

2.12 Street Cleaning and Maintenance

1. Identify Impacts to/on Stormwater/Receiving Water (Surface Waters)

- Poorly maintained streets allow for a "build up" of trash, grit, and debris, from which sediment and toxic/biological pollutants can be "washed out" during rain and/or snow melt events.
- Street repair/paving processes use materials that can contaminate receiving waters if they interact with stormwater.

2. Problem Evaluation: Assess Impact on Receiving Waters, Prioritize

- Particulate matter – can cause sediment loading
- Biochemical oxygen demand
- Toxicity to aquatic plants and wildlife

3. Identify (and choose appropriate) Solutions (BMP's)

- Street sweeping/vacuuming - at regular intervals, and "as needed"
- Perform operations such as paving in dry weather only.
- Prior to road reconstruction, consider the use of "shouldered roads" instead of "curbed roads"
- Maintain roadside vegetation; select plants/trees that can withstand the action of road salt and direct runoff to these areas.

4. Inspection Procedures

- Inspect streets, and plan (as needed) for maintenance/repairs
- Prioritize – some streets (i.e. those on flat grades/with many trees) may need more frequent cleaning

5. Maintenance Procedures

- Spring sweeping/vacuuming – remove salt/sand residues
- Fall sweeping, collection of leaves at appropriate time intervals
- Dry sweep or vacuum streets during dry weather
- Initiate temporary street by street parking bans to allow access for cleaning
- Maintain equipment - check for/repair fluid leaks
- Stage road operations and maintenance activity (patching, potholes) to reduce spillage of materials. Cover catch basins and manholes during activity

6. Advisory

- Also see: http://www.michigan.gov/deq/0,1607,7-135-3313_3682_3716-24366--,00.html (Total Suspended Solids Reductions for Roadways, Parking Lots, and Bridges (Draft)).

2.14 Road Kill/Composting Operations

1. **Identify Impacts to/on Stormwater/Receiving Waters (Surface Waters)**
   - Potential for leaching of biologic contaminants to receiving waters

2. **Problem Evaluation: Assess Impact on Receiving Waters, Prioritize**
   - Biochemical oxygen demand
   - Bateria

3. **Identify (and choose appropriate) Solutions (BMP's)**
   - Establish compost pile/windrow on a well drained, impervious surface that has minimal slope – segregate from other operations
   - Identify the proper types of materials that should be composted
   - Locate compost piles at least 200 ft. from receiving waters or wetlands
   - Prevent access by vermin/scavengers – erect barriers (i.e. snow fence) around pile

4. **Inspection Procedures**
   - Check for odors, temperature of compost, exposed carcasses
   - Keep records (use a daily log)

5. **Maintenance Procedures**
   - Monitor temperatures
   - Take samples, analyze for pathogens
   - Establish windrows
   - Prevent erosion
   - Recycle completely composted material

6. **Advisory**
   - None

2.16 Marina Operations

1. Identify Impacts to/on Stormwater/Receiving Waters (Surface Waters)

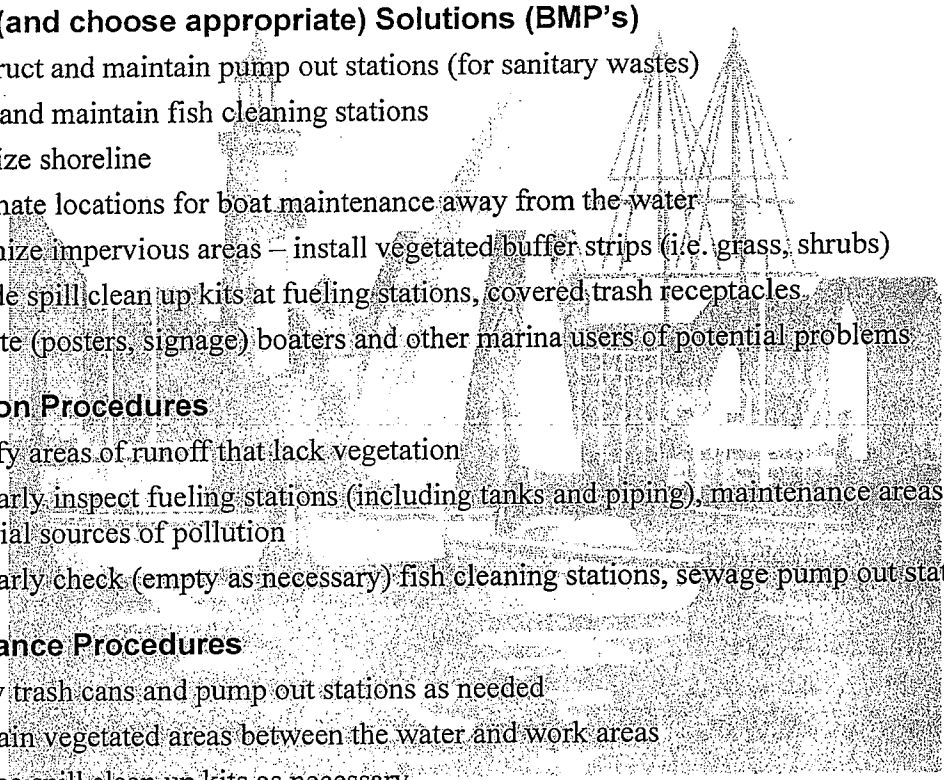
- Liquids associated with boat maintenance products (oils, fuels, antifreeze, wood preservatives, etc.) and particulate matter (i.e. boat bottom paint from hull sanding) can contain toxics
- Boat sewage can contain pathogenic bacteria that contribute increased biochemical oxygen demand to waterways
- Barren soils can contribute to sedimentation

2. Problem Evaluation: Assess Impact on Receiving Waters, Prioritize

- Biochemical oxygen demand
- Toxicity
- Sediment loading

3. Identify (and choose appropriate) Solutions (BMP's)

- Construct and maintain pump out stations (for sanitary wastes)
- Build and maintain fish cleaning stations
- Stabilize shoreline
- Designate locations for boat maintenance away from the water
- Minimize impervious areas – install vegetated buffer strips (i.e. grass, shrubs)
- Provide spill clean up kits at fueling stations, covered trash receptacles
- Educate (posters, signage) boaters and other marina users of potential problems



4. Inspection Procedures

- Identify areas of runoff that lack vegetation
- Regularly inspect fueling stations (including tanks and piping), maintenance areas for spills, other potential sources of pollution
- Regularly check (empty as necessary) fish cleaning stations, sewage pump out stations, trash cans

5. Maintenance Procedures

- Empty trash cans and pump out stations as needed
- Maintain vegetated areas between the water and work areas
- Replace spill clean up kits as necessary

6. Advisory

- Refer to: Shipshape Shores and Waters: A Handbook for Marina Operators and Recreational Boaters -http://www.epa.gov/owow/nps/marinashdbk2003.pdf

3. Select BMPs for each site (that are already in place or that you are considering) and calculate the TSS load, after implementation, for each site based on the chosen BMPs. The following references are approved for use in calculating reduction efficiencies for TSS load reduction controls:

   - The National Pollutant Removal Performance Database, at:
     www.cwp.org/Resource_Library/Center_Docs/SW/NPRPD_ver3.mdb
     The technical memo is at:
     www.cwp.org/Resource_Library/Center_Docs/SW/bmpwriteup_092007_v3.pdf

   - The Environmental Protection Agency's database of BMPs at:
     http://cfpub.epa.gov/npdes/stormwater/menuofbmps/index.cfm

   - The Environmental Protection Agency's Urban BMP effectiveness tool at:
     http://cfpub.epa.gov/npdes/stormwater/urbanbmp/bmpeffectiveness.cfm

4. Add up the new loads for each site that discharge to the same water body. This is the TSS load for that system after BMPs are implemented.
5. Divide the sum of the TSS loading from the system, after BMPs are applied, by the sum of the loading from the same system, before BMPs are applied.
6. 1- The result, times 100, is the percentage reduction.

$$1 - \frac{TSSLoad1 \times BMPefficiency1 + ... + TSSLoadN \times BMPefficiencyN}{TSSLoad1 + ... + TSSLoadN} \times 100 = \%TSS\ reduced$$

Some BMPs may not be listed or detailed in these references. Therefore, the Department agrees that permittees – or their consultants – may use other acceptable literature, or their own studies, provided they are scientifically defensible and submitted to the Department for review.

Example Community

Using 30 inches (2.5 feet) for the annual precipitation for this community, calculate the uncontrolled loading, assuming all listed sites are located in one watershed (one system). Remember, the formula is:

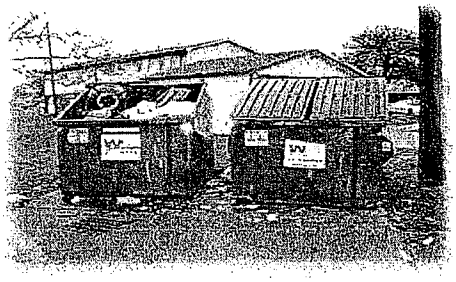
Gallons X MG X 3.785 L X 1 Pound

Facility	Load rate	Impervious Area	Precipitation/year	lbs of TSS/year
TWP Hall	77 mg/l	150,000 ft2	2,805,000 gallons	1,802 pounds
Police/Fire Station 1	77 mg/l	250,000 ft2	4,675,000 gallons	3,004 pounds
Storage Yard	149 mg/l	150,000 ft2	2,805,000 gallons	3,487 pounds
Athletic Park	51 mg/l	220,000 ft2	4,114,000 gallons	1,751 pounds
Uncontrolled TSS Annual Loading				**10,044 pounds**

2.18 Identifying Illicit Discharges

1. Recognize Sources

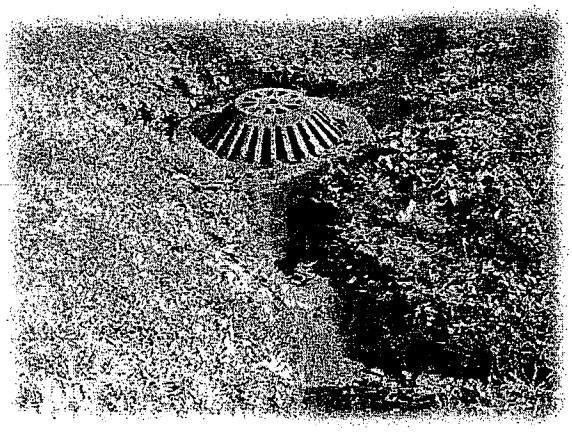
- Dry Weather Flow (no rain event in the last 72 hours)
- Staining
- Smell – Sanitary, Surfactant, Other
- Pipes to Catch Basin or Drain
- Debris/Waste (e.g. foam, leaks)
- Sediment

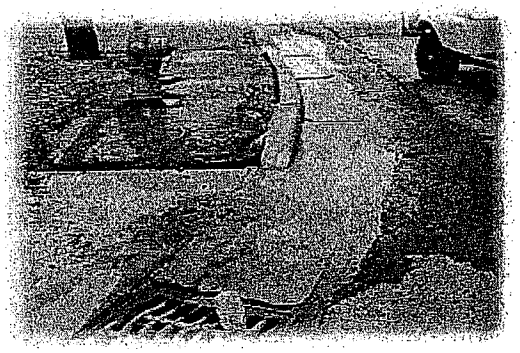


2. Typical Examples

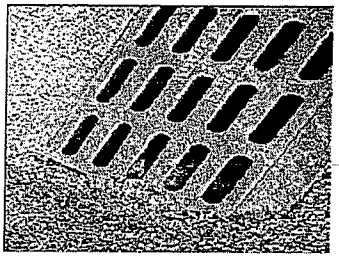
- Laundry Connections
- Leaky Dumpsters
- Car Washing
- Equipment Washing
- Construction Sites

For incident reporting, please use the Illicit Discharge Reporting Sheet.



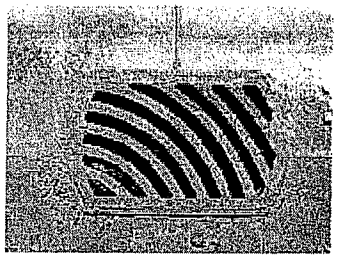


3.1 Catch Basins



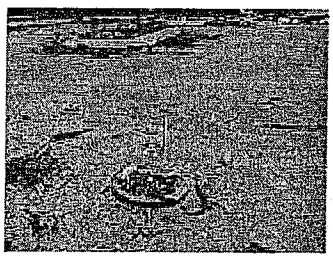
GOOD

Structurally Sound
Grate/Cover Free of Debris
Sump Clean or Less than 50% Full
No Evidence of Illicit Discharge



FAIR

Structure Slightly Damaged
Some Debris On/Around Grate/Cover
Sump Near 50% Full of Sediment
No Evidence of Illicit Discharge
Minor Construction Runoff Entering Sump



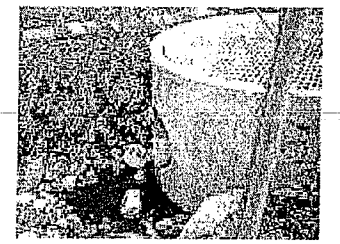
POOR

Surrounding Structure Failing
Not Functioning, Evidence of Flooding
Sump More Than 50% Full
Evidence of Illicit Discharge

Table 3.2: Catch Basins: Typical Maintenance

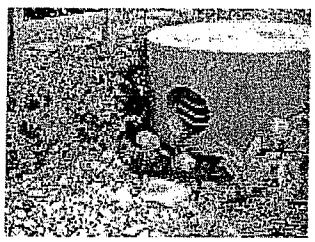
Activity	Schedule
• Stabilize Erosion • Repair Broken or Failing Concrete/Asphalt Around Structure • Repair Earth Scouring Around Structure • Replace Broken or Cracked Covers • Report Illicit Discharge • Protect Inlet from Construction Runoff	As needed
• Vactor Sump • Remove Debris	Semi-annually / Annually

3.3 Oil/Grit Separator



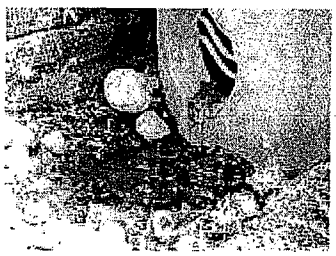
GOOD

Structurally Sound
Clean Outflow
No Trash or Debris Buildup
Unit Less Than 10% Full



FAIR

Structurally Sound
Clean Outflow
Minor Trash/Debris Buildup
Unit Less Than 30% Full



POOR

Structure Compromised
Outflow Carrying Debris or Solids
Excessive Trash/Debris Buildup
Unit More Than 50% Full

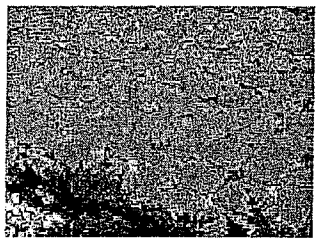
Table 3.3: Oil/Grit Separator: Typical Maintenance

Activity	Schedule
• Repair Structural Defects	As needed
• Pump Accumulated Oil • Vactor Grit/Sediment out of Chamber • Clean up Trash/Debris	Semi-annually / Annually

3.5 Porous Pavement

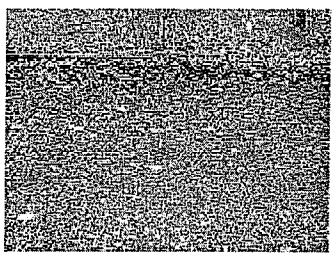
GOOD

Pavement Clean of Dirt/Organic Debris
No Surface Ponding
No Settling
No Excessive Grass/Moss Growth



FAIR

Minor Dirt/Debris Accumulation
No Surface Ponding
No Settling
Moderate Grass/Moss Growth



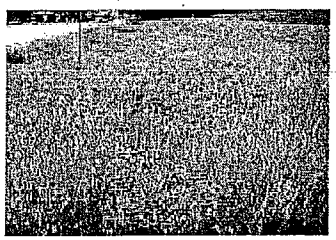
POOR

Excessive Dirt/Debris
Surface Ponding or Runoff
Pavement/Pavers Settling
Excessive Plant Growth

Table 3.5: Permeable Pavement: Typical Maintenance

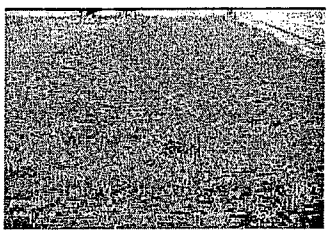
Activity	Schedule
• Do Not Power Wash • Remove Excessive Grass, Weeds or Moss around Pavers • Clean Up Oil and Grease • Replace Gravel Fill Between Pavers	As needed
• Remove accumulated sediment and particulates from the permeable pavement void spaces with high efficiency vacuum sweepers	Annually

3.7 Infiltration Basin



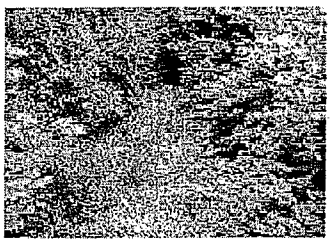
GOOD

Inlets Free From Debris
Vegetation Healthy, Covers Structure
No Scalping from Mowing
No Standing Water 1 Day After Rain
Small Amount of Trash or Debris



FAIR

Debris Around Inlet Pipe
Bare Spots in Vegetation Cover
Mowed Too Low (Scalping)
Limited Standing Water 1 Day After Rain
Small Amount of Erosion
Trash and Debris Present



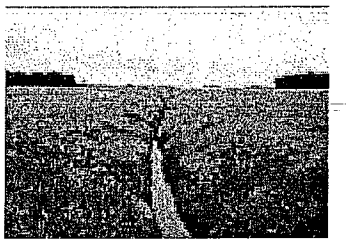
POOR

Inlets Clogged with Debris
Vegetation Mostly Absent
Severe Scalping/Erosion
Evidence of Runoff or Excessive Ponding
Excessive Trash Present

Table 3.7: Infiltration Basin: Typical Maintenance

Activity	Schedule
• Mow at High Setting (Greater than 6 inches) • Inspect pretreatment area and trench and remove accumulated sediment and debris • Remove Trash • Check for Standing Water	As needed
• Remove Sediment from Inlet	Semi-annually
• Stabilize any eroded areas in pretreatment area • Check Inlet Integrity • Assess Plant Health and Abundance • Check Energy Dissipaters • Check for Channelization and Scouring	Annually

3.9 Filter Strip



GOOD

Providing Good Filter Buffer Around Water Body

Minimal Sedimentation

Vegetation Healthy

Mowed High or Not at All

FAIR

Some Erosion, Sediment Runoff Reaching Water Body

Vegetation Sparse

Vegetation Mowed Too Low, Scalping

Poorly Protected from Construction

POOR

Severe Erosion, Sediment Reaching Water Body

Vegetation Dead or Missing

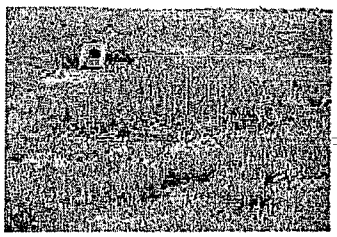
Severe Scalping from Mowing

Protection from Construction Activity Failing or Missing

Table 3.9: Filter Strip: Typical Maintenance

Activity	Schedule
• Water vegetation as necessary during establishment period • Repair Eroded Areas • Maintain Gravel Edging if Present • Protect from Construction Activities • Mow grass to 3 or 4 inches in height or do not mow	As needed
• Inspect and remove accumulated sediment from gravel diaphragm • Inspect filter strip for rill and gullies. Reseed or re-sod as needed • Clean Up Trash	Annually
• Remove accumulated sediment at the bottom of the filter strip	Every 2 to 3 years

3.11 Constructed Wetland



GOOD

Healthy Plant Life

Non-Native Plant Species Few or Absent

Minimal Litter or Trash

Inlet/Outlets Clean and free Flowing

Sediment in Forebay More Than one Foot

FAIR

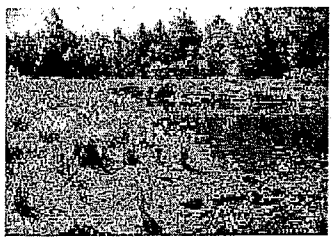
Plants Unhealthy or Sparse

Some Non-Native, Invasive Plant Species

Litter or Trash Present

Inlets/Outlets Contain Sediment Buildup or Debris

Sediment in Forebay More Than one foot



POOR

Plants Dead or Missing

Excessive Non-Native, Invasive Plant Species

Excessive Litter or Trash

Inlets/Outlets Clogged or Not Functioning

Sediment in Forebay Less than One Foot From Water Surface

Table 3.11: Stormwater Wetland: Typical Maintenance

Activity	Schedule
• Remove and replace unsuccessful or diseased plants • Remove trash and debris • Inspect Security Fence/Gate and Repair as Necessary • Repair Erosion Damage • Mow Bank on High Setting	As needed
• Remove accumulated sediment and debris from the wetland and its control structures • Remove Debris/Sediment from Forebay	Annually

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Parking Lot and Street Cleaning

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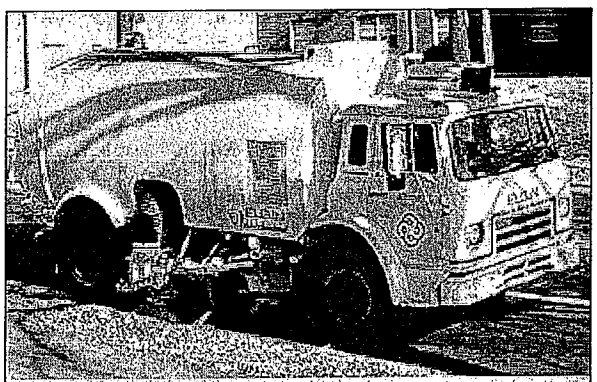
Minimum Measure: Pollution Prevention/Good Housekeeping for Municipal Operations

Subcategory: Municipal Activities

Description

Streets, roads, highways and parking lots accumulate significant amounts of pollutants that contribute to stormwater pollutant runoff to surface waters. Pollutants, including sediment, debris, trash, road salt, and trace metals can be minimized by street sweeping. Street sweeping can also improve the aesthetics of municipal roadways, control dust and decrease the accumulation of pollutants in catch basins. An effective municipal street sweeping program can meet regulatory requirements, assess street sweeping effectiveness, and minimize pollutants in roadways.



A street sweeper cleans up pollutants and sediments on the street to reduce the amount of pollutants entering receiving waters

Street Sweepers

Municipalities can choose between the three different types of street sweepers (mechanical, regenerative air and vacuum filter) keeping in mind the targeted pollutants, pollutant type (large debris to particles less than 10 microns in diameter (PM10)), types of surfaces, travel distances, noise ordnances, and costs. Municipals often find it useful to have a compliment of each type of street sweeper in their fleet (CASQA, 2003).

Each type of street sweeper has it advantages and disadvantages concerning pollutant removal effectiveness, traveling speed, and noise generated by the street sweeper. With the different types of modern street sweepers capable of removing PM10 particles, price and personal preference are the primary selection criteria for most users (Keating, no date). No definitive independent studies have yet been staged to determine "the best" sweeping system. Anecdotal data has also been inconclusive (Keating, no date).

Applicability

Street sweeping is practiced in most urban areas, often as an aesthetic practice to remove trash, sediment buildup, and large debris from curb gutters (RIPDES, no date). Effective street sweeping programs can remove several tons of debris a year from city streets minimizing pollutants in stormwater runoff. In colder climates, street sweeping can be used during the spring snowmelt to reduce pollutants in stormwater runoff from road salt, sand and grit.

Implementation

inventory and properly stock parts to prevent downtime and decrease productivity. Old sweepers should be replaced with new technologically- advanced sweepers, preferably modern sweepers that maximize pollutant removal (CASQA, 2003).

Limitations and Cost Considerations

Street sweeping programs are limited by costs. The largest expenditures include staffing and equipment (CASQA, 2003). The capital cost for a conventional street sweeper is between $60,000 and $120,000 with newer technologies approaching $180,000 (CASQA, 2003). Street sweepers have an average life span of 4 years yet more modern street sweepers have been reported to surpass the 4 year average, therefore programs must budget for equipment replacement. The following table shows cost estimates compared to equipment life span and operation and maintenance for two types of sweepers: mechanical and vacuum.

Table 1: Estimated costs for two types of street sweepers

Sweeper Type	Purchase Price ($)	Life (Years)	O&M Cost ($/curb mile)	Sources
Mechanical	75,000	5	30	Finley, 1996 SWRPC, 1991
Vacuum-assisted	150,000	8	15	Finley, 1996 Satterfield, 1991

Cost data for two cities in Michigan provide some guidance on the overall cost of a street cleaning program. Table 2 contains a review of the labor, equipment, and material costs for street cleaning for the year 1995 (Ferguson et al., 1997). The average cost for street cleaning was $68/curb mile and approximately 11 curb miles/day were swept.

Table 2. The cost of street cleaning for two cities in Michigan

City	Labor	Equipment	Material and Services	Total
Livonia	$23,840	$85,630	$5,210	$114,680
Plymouth Township	$18,050	$14,550	$280	$32,880

Effectiveness

Street sweeping can be an effective measure in reducing pollutants in stormwater runoff. During the year 2000, the Department of Highway Services and Bethesda Urban Partnership in Montgomery County, Maryland swept approximately 14,373 miles of roadways and removed 2,464 tons of materials (Curtis, 2002). Decreasing the amount of pollutants in roads before they are picked up by stormwater runoff reduces pollutants in surface waters.

Using modern efficient street sweepers may reduce the need for other structural stormwater controls. Municipal stormwater managers should compare potential benefits and costs of street sweeping. Street sweeping may prove to be more cost-effective than certain structural controls, especially in more urbanized areas with greater areas of pavement (SMRC, Rhode Island).

References

California Stormwater Quality Association (CASQA). 2003. *Best Management Practices (BMP) Handbook, Municipal.* [http://www.cabmphandbooks.com/Documents/Municipal/SC-70.pdf [PDF - 132 KB - 9 pp] Exit Disclaimer]. Accessed May 3, 2006

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