

NORTHFIELD TOWNSHIP, MICHIGAN

STORMWATER MANAGEMENT PLAN

Submitted as a requirement of
Michigan General NPDES Permit MIS040000

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INTRODUCTION

The Environmental Protection Agency's (EPA) Storm Water Phase II Rule establishes a stormwater management program for small Municipal Separated Storm Sewer Systems (MS4). The program requirements are designed to improve the receiving waterways quality by reducing the quantity of pollutants that stormwater runoff carries into storm sewer systems during storm events. Common pollutants include oil and grease from roadways, pesticides from lawns, sediment from construction sites, and debris, such as cigarette butts, paper wrappers, and plastic bottles. These pollutants, when left untreated, can harm the waterways, discouraging recreational use of the resource, contaminating drinking water supplies, and interfering with the habitat for fish, other aquatic organisms, and wildlife.

This Stormwater Management Plan is proposed for Northfield Township (Washtenaw County). The Plan is a requirement of the Michigan General National Pollutant Discharge Elimination System (NPDES) Permit MIS040000 (Phase II Storm Water Permit Program). This plan was originally prepared in 2004 for both Northfield Township and Whitmore Lake Public Schools. This revision is prepared to reflect the School district applying on their own and to reflect lessons learned regarding the effectiveness of measures over the last seven years.

This plan is divided into sections corresponding to each of the six Phase II minimum control measures. These measures include:

- Public Education Program (PEP).
- Public Involvement and Participation (PIP).
- Illicit Discharge Elimination Program (IDEP).
- Post Construction Stormwater Management Program for New and Redevelopment Projects.
- Construction Stormwater Runoff Control.
- Pollution Prevention/Good Housekeeping for Municipal Operations.

These six minimum measures of the General Permit have been broken into individual tasks. For each task, Northfield Township has developed a Best Management Practice (BMP) to meet the required measure. The task and BMP are summarized in the table below. Each BMP is further described in the following report sections.

Permit Tasks

Task No.	PERMIT TASK DESCRIPTION	Corresponding BMP
Public Education Program Tasks		
1A	Educate the public about the hazards associated with illicit discharges.	1-1, 1-2, 1-4, 1-8
1B	Educate the public to encourage reporting of illicit discharges.	1-3, 1-4
1C	Establish a public hot line for reporting illicit discharges.	1-3
1D	Educate residents about the water body where their stormwater goes; educate the public about waste.	1-1, 1-2, 1-4, 1-6, 1-8
1E	Collection and recycling sites.	1-1, 1-2, 1-4
1F	Educate the public about appropriate use and handling of pesticides, herbicides, and fertilizers.	1-1, 1-2, 1-4
1G	Educate the public about residential and non-commercial car washing.	1-4
1H	Educate the public about proper septic system maintenance.	1-4
1I	Educate the public on management of riparian lands to protect water quality.	1-7
1J	Educate the public about their responsibility and stewardship in their watershed.	1-1, 1-2, 1-4
1K	Educate the public about the water quality impacts from residential de-icer use.	1-4
1L	Educate the public about the beneficial uses of native vegetation as an alternative to turf grass.	1-1, 1-2, 1-4
1M	Educate local commercial, industrial, and educational facilities about good housekeeping.	1-5
1N	Educate commercial food service business owners regarding grease and litter control.	1-10
Public Involvement and Participation Tasks		
2A	Public notice of the Stormwater Management Plan.	2-1, 2-2
2B	Participate in a citizen advisory committee.	2-3
2C	Work together with stream or watershed groups.	2-4, 2-5, 2-6
Illicit Discharge Elimination Program (IDEP) Tasks		
3A	Develop a map of the MS4.	3-1, 3-2
3B	Find illicit connections in the mapped MS4.	3-3
3C	Eliminate illicit connections inside MS4 rights-of-way.	N/A
3D	Eliminate illicit connections in the mapped MS4.	3-4
3E	Minimize illicit discharges inside MS4 rights-of-way.	N/A

Task No.	PERMIT TASK DESCRIPTION	Corresponding BMP
3F	Minimize illicit discharges in the mapped MS4.	3-4
3G	Conduct dry weather point source screening for the mapped MS4.	3-3
3H	Limit seepage from public sanitary systems.	3-6, 3-7
3I	Limit seepage from on-site sewage disposal systems (e.g., septic systems).	3-5
3J	Legally regulate pollutant contribution to the MS4.	Sewer Use Ordinance
3K	Legally prohibit illicit connections and illicit discharges to the MS4.	Sewer Use Ordinance
3L	Require compliance with ordinances, permits, etc.	Sewer Use Ordinance
3M	Conduct inspection of possible illicit sources.	Sewer Use Ordinance
3N	Conduct surveillance of possible illicit sources.	Sewer Use Ordinance
3O	Conduct monitoring of possible illicit sources.	Sewer Use Ordinance
	Post Construction Stormwater Management Tasks	
4A	Require controls for certain developments (describe developments for which controls can't be required).	4-1
4B	Ensure post construction controls to minimize water quality impacts.	4-1
4C	Address post construction flow impacts.	4-1
4D	Develop a comprehensive stormwater management plan.	Engineering Design Standards
4E	Implement a comprehensive stormwater management plan.	Engineering Design Standards
4F	Develop and implement ordinances or other regulatory mechanisms for development sites.	4-1
4G	Require post-construction BMPs by ordinance or other regulatory means.	4-1
4H	Require adequate long-term O&M of BMPs by ordinance or other regulatory means.	4-2
4I	Require post-construction erosion and sedimentation control by ordinance or other regulatory means.	4-1
4J	Regulate the flow rate into the MS4 from development sites by ordinance or other regulatory means.	4-1
4K	Review site development plans for adequate BMPs.	4-1
4L	Review commercial site development plans for inlet isolation from polluting sources.	4-1
	Construction Stormwater Runoff Control Tasks	
5A	Prohibit discharges to the MS4 that are not in compliance with the construction Permit by Rule.	5-1
5B	Notify the soil erosion agent and the department of construction deposits into the MS4.	5-2
5C	Review all preliminary construction site plans to assure space is allotted for BMPs.	4-1
5D	Review some preliminary construction site plans to assure space is allotted for BMPs.	4-1
5E	Receive and respond to complaints about construction site stormwater runoff to the MS4.	5-2

Task No.	PERMIT TASK DESCRIPTION	Corresponding BMP
	Pollution Prevention/Good Housekeeping Tasks	
6A	Ensure that public employees properly handle wastes, recyclables, chemicals, and equipment.	6-1
6B	Ensure that public employees maintain a clean work area.	6-1
6C	Ensure that public employees identify and report stormwater pollution sources.	6-1
6D	Provide public employee guidance or operation manuals.	6-1
6E	Provide public employee stormwater BMP training.	6-1
6F	Provide equipment for pollution prevention and good housekeeping.	6-1
6G	Inspect catch basins.	6-2
6H	Maintain catch basins.	6-2
6I	Inspect vegetative BMPs.	N/A
6J	Maintain vegetative BMPs.	N/A
6K	Inspect structural BMPs.	6-3
6L	Maintain structural BMPs.	6-3
6M	Add or enhance structural controls as needed to reduce stormwater runoff pollution	6-2
6N	Add or enhance cleaning schedules as needed to reduce stormwater runoff pollution.	6-2
6O	Properly dispose of operation and maintenance wastes to prevent violation of water quality standards.	6-4
6P	Provide road construct/maintenance controls.	N/A
6Q	Provide highway construct and maintenance controls.	N/A
6R	Provide parking lot construct and maintenance controls.	6-5
6S	Clean streets.	N/a
6T	Keep salt and sand (de-icing materials) out of receiving streams to the maximum extent practical.	N/A
6U	Provide good housekeeping at sand and salt storage facilities.	N/A
6V	Provide good housekeeping for fleet maintenance facilities.	6-7
6W	Maintain vehicles and equipment to prevent stormwater runoff pollution.	6-7
6X	Label newly built outfall structures.	6-9
6Y	Construct new flood controls with water quality controls.	6-10
6Z	Examine and retrofit existing flood controls for water quality control.	6-10
6AA	Assure proper storage of lawn chemicals.	6-11
6BB	Assure proper handling of lawn chemicals.	6-11
6CC	Assure proper use of lawn chemicals.	6-11
6DD	Provide public employee training to assure proper storage, handling, and use of lawn chemicals.	6-11
6EE	Provide a turf management program for public lands to control stormwater runoff pollution.	6-11
6FF	Provide soil testing on public lands where fertilizer is used.	6-12

NORTHFIELD TOWNSHIP PUBLIC EDUCATION PROGRAM

PART I, SECTION B.1 OF PERMIT

The Public Education Plan (PEP) was prepared to instill within the residents, businesses, and officials of Northfield Township a heightened level of awareness of the connection between individual actions and the health of their watershed and water resources. The objective of this plan is to promote, publicize, and facilitate watershed education for the purpose of encouraging the public to reduce the discharge of pollutants into stormwater.

Northfield Township will evaluate its PEP in terms of its effectiveness in achieving the objectives set forth in its permit. Evaluation of the activity success can be categorized in terms of short-term quantitative and long-term qualitative measurements. Examples of short-term measurements include tracking number of flyers sent. When practicable, long-term qualitative measurements that indicate actual behavior change have been incorporated into the equation. Such measures include level of participation in community programs, mail-in surveys, or redemption of coupons. When applicable, these measures will be coordinated with other communities.

Permit Requirements

According to Michigan Department of Environmental Quality (MDEQ) NPDES Wastewater Discharge General Permit No. MIS040000, the MS4 Jurisdictional General Permit:

The permittee shall have a program to promote, publicize, and facilitate education for the purpose of encouraging the public to reduce the discharge of pollutants in storm water. The public education program may involve combining or coordinating existing programs for public stewardship of water resources. Pollution prevention shall be encouraged. Appropriate BMPs for this minimum measure and measurable goals for each BMP shall be submitted to the Department in accordance with Part I.C.1.a.

"Public" shall be defined to include all persons who potentially could affect the quality of storm water discharges, including, but not limited to, residents, visitors to the area, public employees, businesses, industries, and construction contractors and developers.

The public education program shall be designed to:

- a. Educate the public on the following, as appropriate based on the potential impact on receiving waters:*
 - 1) Hazards associated with illicit discharges and improper disposal of waste. Encourage public reporting of the presence of illicit discharges or improper disposal of materials into the permittee's drainage system, and develop and publicize a hotline for public reporting. Common illicit discharges are construction site wastes and sediment, carpet cleaner wastes, household wastes and motor vehicle fluids from home owners, septage and other commercially transported wastes, and commercial power washing (except street washing that is exempted from prohibition under Part I.A.1.e).*
 - 2) The water body that would be potentially impacted by improper actions at or near a person's home.*
 - 3) The availability, location and requirements of facilities for collection and/or disposal of household hazardous wastes, travel trailer sanitary wastes, chemicals, grass clippings, leaf litter, animal wastes, and motor vehicle fluids.*
 - 4) Acceptable application and disposal of pesticides, herbicides, and fertilizers.*
 - 5) Preferred car cleaning agents and procedures for non-commercial car washing.*
 - 6) Proper septic system maintenance.*
 - 7) Management of riparian lands to protect water quality.*
 - 8) Public responsibilities and stewardship in their watershed.*
 - 9) The water quality impacts of residential de-icer use and how to minimize the impacts.*
 - 10) The role of native vegetation on residential properties as a ground cover alternative to turf grass.*

- b. Educate commercial, industrial and institutional entities likely to have significant storm water impacts. At a minimum, educate commercial food service entities to prevent grease and litter discharges to storm drains*

I.B.1.a – Public Education

BMP No. 1-1: Tax assessment stuffer.

Description: Coordinated by Huron River Watershed Council (HRWC), the Township will participate in the annual bulk printing and distribution of simple flyers that will be inserted into the Tax Assessment mailing. Topics will cover suggestions on each of the six PEP requirements, such as car care, household hazardous waste disposal, lawn care, pesticides, storm drains, illicit discharges, pet wastes, water conservation, composting, use of native plants, de-icers, septic systems, and riparian land management. Target Audience includes residents.

The flyer will include the web-site address

Schedule: Ongoing, starting in first year with one mailing per year.

Goal: Increased public awareness.

Measurable: Number of households receiving bill stuffers. The township will use the number of web site hits as a measurement of effectiveness.

Task No. Achieved on Completion of BMP: 1A, 1B, 1D – 1L

BMP No. 1-2: Stormwater brochures.

Description: The Township will keep a supply of Southeast Michigan Council of Governments (SEMCOG) -developed brochures (on such subjects as proper fertilizer application) available for the public at Township offices.

Schedule: Continually.

Goal: Increased public awareness.

Measurable: Number of brochures taken.

Task No. Achieved on Completion of BMP: 1A, 1D – 1F, 1J, 1L

BMP No. 1-3: Implement and promote a complaint tracking and response system.

Description: Northfield Township will work with Washtenaw County to develop an improved program for Countywide reporting of and response to illicit discharges or improper disposal of materials into local storm drain systems. The Township will assist in identifying problem dumping areas and installing “no dumping” signs near these areas and public access sites to lakes. Signs will contain information on potential impacts from illicit discharges and instructions for using the “hotline” for reporting illegal dumping activities. The hotline will be promoted through Northfield Township’s cable TV (at least one broadcast per week), web site (permanent page available), and other printed literature. The target audience includes residents, visitors, commercial and industrial businesses, local government officials, and employees.

Schedule: Dependant on County schedule for implementation.

Goal: Reduction of dumping.

Measurable: Number of hotline calls and results of tracking and response system.

Task No. Achieved on Completion of BMP: 1B, 1C

BMP No. 1-4: Information on web site and cable access (media information).

Description: Northfield Township will regularly publish articles or links to articles on the Township’s web site that will focus on issues represented by many PEP requirements. The web site will also be used to show calendar of events and resources for public education and involvement. Articles will be provided by sources such as Washtenaw County and HRWC. The Township will fully describe the locations, availability, and requirements of facilities for disposal of household hazardous wastes and other materials in Part I, Section B.1.a on the Township’s web site. HRWC will also provide pdf files of tip cards, stuffers, etc., for use on Northfield Township’s web site, and/or local cable channel as appropriate. Northfield Township’s web site will be improved to contain current information on all PEP requirements and/or links to additional stormwater resources, including the Washtenaw County web site. The target audience includes residents, visitors, and commercial and industrial businesses.

Schedule: Ongoing.

Goal: Educate the public.

Measurable: Quarterly compilation of articles and activities; tracking number of web site hits.

Task No. Achieved on Completion of BMP: 1A, 1B, 1D-1H, 1J – 1L

BMP No. 1-5: Promotion of educational workshops.

Description: Northfield Township will utilize website and cable access to assist in promotion of educational workshops and programs for citizens and local government officials that will be organized through government agencies such as the County Drain Commissioner, County Road Commission, MSU Extension, and SEMCOG. Programs may include the following: Watershed Management Short Course and Master Composter program, watershed-friendly golf course management workshop, illicit discharge and connections elimination workshop, road salt BMP/de-icing alternatives workshop, land use/stormwater planning workshops, and riparian land management workshop. The target audience includes residents, government officials and employees, and developers.

Schedule: Dependent on funding resources and offerings of sponsoring entities. The Township will research events and update the web site and public access TV content quarterly.

Goal: Inform the public.

Measurable: Quarterly compilation of all promotional efforts.

Task No. Achieved on Completion of BMP: 1M

BMP No. 1-6: Storm drain labeling

Description: Should Northfield Township be approached for a volunteer activity, Northfield Township will loan their stencil to label storm drains with the message of “Dump No Waste - Drains to River.” The target audience includes residents, visitors, and commercial businesses.

Schedule: Ongoing.

Goal: Educate the public and Township residents.

Measurable: Number of drains labeled and number of flyers distributed.

Task No. Achieved on Completion of BMP: 1D

BMP No. 1-7: Riparian land management brochures to local realtors and Township officials.

Description: Northfield Township will distribute a brochure promoting riparian BMPs to local riparian homeowners, realtors, developers, and Township officials. Brochures will emphasize BMPs, such as landscaping with native plants, buffer zones, and minimizing impervious surfaces to facilitate on-site water retention. The target audience includes riparian landowners, realtors, government officials and employees.

Schedule: Brochure available in third year.

Goal: Educate the public.

Measurable: Number of brochures distributed.

Task No. Achieved on Completion of BMP: 1I

BMP No. 1-8: Promotion and support of volunteer stream monitoring.

Description: Northfield Township will assist in promoting the HRWC's Adopt-A-Stream program. Promotional efforts will include availability of Adopt-A-Stream literature and posting of volunteer event opportunities at Township/City Hall and announcement of volunteer event opportunities on Northfield's web site and/or newsletter. Adopt volunteers assess habitat, water quality, and aquatic life in the Huron River and its tributaries as part of an ongoing scientific study. The program strives to educate watershed residents about their connection to the river and also the current conditions of the Huron River and its tributary streams. In addition, a central goal of the program is to inspire people to take actions that lead to better river protection at home and in their communities. The target audience includes residents.

Schedule: Start promotions in the first year; ongoing.

Measurable: Annual compilation of all promotional efforts; number of citizens participating in Adopt events.

Goal: Improve quality of water.

Task No. Achieved on Completion of BMP: 1A, 1D

BMP No. 1-9: Eliminated

I.B.1.b – Education of Commercial Entities

BMP No. 1-10: Tip cards for restaurant owners.

Description: Northfield Township will mail informational cards to local restaurants on the importance of preventing grease and litter into the storm drains.

Schedule: One mailing per permit cycle.

Goal: Increased water quality.

Measurable: Number of restaurants receiving cards.

Task No. Achieved on Completion of BMP: 1N

Other Involved Organizations

In implementing this Public Education Plan, Northfield Township will pursue cooperative partnerships and information and resource sharing with several organizations, including the following:

Organization	Program	Contact
Washtenaw County Drain Commissioner	Partners for clean streams, illicit discharge and dumping response system, educational literature.	Janis Bobrin
Washtenaw County Road Commission	Watershed signs.	Steve Puuri
Washtenaw County Health Department	Water quality monitoring program.	
Washtenaw Planning and Environment	Household hazardous waste collection site, composting, waste disposal, and recycling.	
Huron River Watershed Council	Middle Huron initiative, information and education campaign.	Elizabeth Riggs Jennifer Wolf

MSU Extension	Watershed management short course.	
Southeast Michigan Council of Governments	Headwaters video, workshops, and educational events.	Amy Mangus
River Raisin Watershed Council	Water quality monitoring, advice and service planning and education.	Gayle Mitchell
Michigan Department of Environmental Quality	Nonpoint source monitoring and aquatic nuisance control.	Rich Powers
Huron-Clinton Metropark Authority and Michigan State Parks	Environmental education and interpretive programs.	Dave Moilanen
Michigan Water Environment Association	Water source book.	

The following activity descriptions are included as part of Washtenaw County’s PEP. These activities are being coordinated by the County, but may include cooperation from local communities, including Northfield Township. These activities will complement the proposed activities of Northfield Township’s PEP and directly enhance education efforts directed toward the general public within Northfield Township.

BMP No. 1-11: Eliminated

BMP No. 1-12: Community partners for clean stream.

Description: Partnering relationships to promote environmental stewardship.

Schedule: Ongoing.

Measurable: Number of businesses participating.

Parties Involved: WCDC

BMP No. 1-13: Pollution prevention inspections.

Description: Routine inspections for illicit discharges and dumping.

Schedule: Ongoing.

Measurable: Number completed.

Parties Involved: WCPE

- BMP No. 1-14:** “Handbook for Rural Living.”
- Description:** The Handbook contains information on topics such as disposal of hazardous waste and yard waste, lawn care practices, septic systems maintenance, minimizing surface runoff and residential waste into drainage areas, illegal dumping, and management of riparian lands.
- Schedule:** Distribution throughout the five years.
- Measurable:** Number of handbooks distributed.
- Parties Involved:** Northfield Township and WCDC.
-
- BMP No. 1-15:** Septic/well inspection at point of transfer.
- Description:** Inspection of septic systems upon sale of property.
- Schedule:** Ongoing.
- Measurable:** Failure rate.
- Parties Involved:** Washtenaw County
-
- BMP No. 1-16:** Eliminated
-
- BMP No. 1-17:** Eliminated

NORTHFIELD TOWNSHIP

PUBLIC INVOLVEMENT AND PARTICIPATION

PART I, SECTION B.2 OF PERMIT

Involving the public and allowing the public to participate in stormwater planning is an important step in gaining the public's acceptance in a stormwater management plan. The Township's permit requires a plan be developed and implemented to involve the public and allow public participation.

Permit Requirements and Definitions

Public input shall be encouraged in all aspects of the storm water management program. Appropriate BMPs for this minimum measure and measurable goals for each BMP shall be submitted to the Department in accordance with Part I.C.1.a. The following minimum actions shall be taken to encourage public input:

- a. The permittee shall follow local public notice requirements, as appropriate, when notifying the public that a storm water management program must be implemented. Copies of the approvable storm water management plan shall be available for public inspection, and the public shall be notified of when and where it is available.*
- b. The permittee shall participate in a citizen advisory committee for the purpose of encouraging public involvement in all aspects of the storm water management program. The permittee may participate in an existing citizen advisory committee or may establish and implement its own.*
- c. The permittee shall pursue cooperation with local stream or watershed protection organizations, if any exist, by informing them of activities under the storm water management program, providing copies of the storm water management program plan and pursuing input on the plan, seeking volunteer assistance including water quality monitoring assistance, and seeking ways to meet general permit requirements by assisting the local organizations with their ongoing programs for water resource protection and enhancement.*

I.B.2.a – Public Notice

Providing public notice and making the plan available is a requirement of the program.

BMP No. 2-1: Public notice.

Description: Notify the public of the existence of this Management Plan and how the public can review it. This will be accomplished by the following:

- Publishing this report on the Township’s web site.
- Publishing a notice in a local newspaper.

Schedule: Year two of this permit.

Goal: Provide public notice that encompasses a large population.

Measurable: Affidavit of publication and number of web hits.

Task No. Achieved on Completion of BMP: 2A

BMP No. 2-2: Public access.

Description: Publish Stormwater Management Plan and provide access by posting a copy on-line and keeping a copy in the Township’s office and District Library.

Schedule: Year two of the permit.

Goal: Provide widespread public access to the Plan.

Measurable: Confirmation each year that plan is still accessible on the site.

Task No. Achieved on Completion of BMP: 2A

I.B.2.b – Citizen’s Advisory Committee

BMP No. 2-3: Citizen Advisory Committee.

Description: The Township has established the following committee:

- The Whitmore Lake Water Quality Board

This committee (six citizens and two Township supervisors) represents an area closely following the urbanization of the Township. This committee will serve as the required citizen advisory committee.

Schedule: At least one meeting annually.
Goal: Active and involved residents.
Measurable: Number of meetings held.
Task No. Achieved on Completion of BMP: 2B

I.B.2.c – Cooperation with Stream and Watershed Protection Organizations

Northfield Township must cooperate and assist the local watershed protection organizations on protection programs. The agencies most applicable to this task are the HRWC and WCDC.

BMP No. 2-4: Receive input on Plan.

Description: A draft copy of the Plan will be sent to the HRWC and WCDC for comment, and final versions sent to each.

Schedule: Draft in year one; final copies in year two.

Goal: Receive comments and provide final copies for reference.

Measurable: Receipt of comments on draft, and transmittal of final report.

Task No. Achieved on Completion of BMP: 2C

BMP No. 2-5: Seeking volunteer assistance.

Description: Northfield Township will advertise for volunteer assistance in programs administered by other environmental agencies. The Township will include on web site, instructions on how residents can volunteer.

Schedule: Ongoing.

Goal: An active Township population and volunteer organizations.

Measurable: Number of volunteers referred by Township staff.

Task No. Achieved on Completion of BMP: 2C

BMP No. 2-6: Assisting local organizations.

Description: Northfield Township will assist local units of government with ongoing environmental programs. Potential programs where assistance can be provided include:

- WCDC, Phase II.
- WCRC, Phase II.
- Other programs documented in PEP.

Schedule: Ongoing.

Goal: Assist local units when possible.

Measurable: Number of times assistance granted, number of residents who assist.

Task No. Achieved on Completion of BMP: 2C

NORTHFIELD TOWNSHIP

ILLICIT DISCHARGE ELIMINATION PROGRAM PLAN

PART I, SECTION B.3 OF PERMIT

An Illicit Discharge Elimination Program (IDEP) is the development, implementation, and enforcement of measures to prohibit and effectively eliminate illicit discharges, including discharges of sanitary wastewater, to the community's drainage system.

Northfield Township neither owns nor operates a public stormwater collection system. Therefore, this program will primarily focus on controlling illicit connections to drainage systems on township-owned property.

Permit Requirements and Definitions

According to MDEQ, NPDES Wastewater Discharge General Permit No. MIS040000, the MS4 Jurisdictional General Permit:

The applicant shall submit an IDEP, or an update to an existing IDEP, to prohibit and effectively eliminate illicit discharges (including the discharge of sanitary wastewater) to the applicant's separate storm water drainage system for the regulated area. At a minimum, the IDEP shall include the following, as stated in Part I, section B.3 of the NPDES permit:

- a. The permittee shall submit a listing or map of the known storm water point sources for which coverage is requested and identify the receiving waters to which these point sources discharge.*
- b. A schedule for providing, as expeditiously as practicable, a map showing the location of all point source discharges the permittee operates (this includes outfalls to waters of the state and points of discharge into another MS4), a description of the conveyances leading to these point sources, and the names and location of all waters of the state that receive discharges from the drainage system operated by the permittee.*

- c. *A program to find, prioritize and eliminate illicit connections and minimize illicit discharges to the municipal drainage system or waters of the state from commercial, industrial, private educational, public, and residential sources.*
 - 1) *A strategy to conduct routine dry weather screening of enclosed storm water point sources (i.e., outfalls from the separate storm water drainage system to waters of the state and point sources discharging into separate storm water drainage systems operated by other public bodies); and*
 - 2) *A plan to re-inspect each storm water point source every five years.*
- d. *A program to limit infiltration of seepage from sanitary sewers and on-site sewage disposal systems into the drainage system, if applicable.*
- e. *The legal authority to prohibit discharges into the drainage system operated by the permittee. The permittee shall have the legal authority, which may be a combination of state statute, municipal statute, ordinance, permit, order, rules, regulations, or other means available to the permittee, for the purpose of:*
 - 1) *regulating the contribution of pollutants;*
 - 2) *prohibiting and requiring the elimination of illicit discharges including the direct dumping or disposal of materials other than storm water into the drainage system;*
 - 3) *requiring compliance with ordinances, permits issued by the permittee, contracts or orders; and*
 - 4) *conducting all inspections, surveillance and monitoring procedures necessary to determine compliance with ordinances, permits issued by the permittee, contracts, orders, and the terms and conditions of the general permit.*

“Illicit connection” means a physical connection to the separate stormwater drainage system that 1) primarily conveys illicit discharges into the system and/or 2) is not authorized or permitted by the local authority (where a local authority requires such authorization or permit).

“Illicit discharge” means any discharge (or seepage) to the separate stormwater drainage system that is not composed entirely of stormwater, except for discharges specified in Parts I.A.1.c and d of the Permit. Examples of illicit discharges include dumping of motor vehicle fluids, household hazardous wastes, grass clippings, leaf litter, animal wastes, unauthorized discharges of sewage, industrial waste, restaurant wastes, or any other non-stormwater waste into a separate stormwater drainage system.

“Point source discharge” (PSD) means an outfall from a drainage system to waters of the State, or a point where a stormwater drainage system discharges into a system operated by another public body.

I.B.3.a – Known Point Source Discharges

Identifying the known point source discharges (PSDs) and their ownership within the urbanized area of the municipal limits is a requirement of this program. Northfield Township does not own any public storm sewers or drainage systems. They are owned by others, such as Washtenaw County Drain Commission (WCDC), Washtenaw County Road Commission (WCRC), and the Michigan Department of Transportation (MDOT). Thus, the only possible point discharges under the jurisdiction of the Township would be on Township or public school property directly into their systems or from Township or school property into MDOT’s, WCRC’s, or WCDC’s system.

BMP No. 3-1: A list of known PSD information (see following table).

Description: The table will present the Township property and the receiving stormwater conveyance system within the urbanized area.

Schedule: By year one; updated table submitted annually.

Goal: Understand all possible PSD locations.

Measurable: Completed list.

Task No. Achieved on Completion of BMP: 3A

Northfield Township PSDs

Facility	Address
Former Township Building	75 Barker Whitmore Lake, Michigan 48189
Township Offices Public Safety Department (Police and Fire)	8350 Main Street Whitmore Lake, Michigan 48189
Senior Center	9101 Main Street Whitmore Lake, Michigan 48189

BMP No. 3-2: A map of known PSDs (Figure 1).

Description: Map will present locations of the Township and school property within the urbanized area.

Schedule: By year one; updated map submitted annually.

Goal: Understand and clearly show all possible PSD locations.

Measurable: Map completion.

Task No. Achieved on Completion of BMP: 3A

Figure 1

Map of PSDs

I.B.3.b – A Schedule to Provide Map of Known PSDs

Field investigations will be performed to verify the PSDs. Upon verification, a map showing location of PSDs, description of the conveyance, and the names of receiving waters will be developed. The PSDs will be located, verified, and screened in the field within the first year. In addition and concurrently, the field investigation process will document, screen, and report any additional PSDs found that were not documented in the permit. Any PSDs found that are not in the permit, will be reported to MDEQ in the annual report. Follow-up investigations will be conducted as soon as a problem is identified and prioritized based on its impact to public health and the environment. In general, those PSDs that pose public health and environmental hazards will be given top priority for follow-up investigations.

BMP No. 3-3: Field verification and investigation.

Description: PSDs will be located, verified, and screened. (The screening process is described in Section I.3.c.1 of this Plan.)

Schedule: By year two and every five years to follow.

Goal: Determine which, if any, PSD(s) pose a public health and/or environmental hazard.

Measurable: Number of PSDs documented.

Task No. Achieved on Completion of BMP: 3B, 3G

I.B.3.c – Finding and Eliminating Illicit Discharges and Connections

This program will be done using an investigative methodology to effectively find and eliminate illicit discharges. Many and multiple steps may be ongoing simultaneously as the program is implemented. The investigative methodology includes first verifying the known PSD locations and field screening each PSD. A follow-up investigation will occur where needed to locate the source of an illicit discharge or connection. Finally, corrective action to remove illicit connections will occur and confirmation will be provided that the illicit connection has been removed.

BMP No. 3-4: Illicit connection removal.

Description: Find and eliminate illicit discharges.

Schedule: By year three.

Goal: Increase in water quality by removal of illicit discharges.

Measurable: 100 percent of found illicit connections removed.

Task No. Achieved on Completion of BMP: 3D, 3F

Tasks No. 3C and No. 3E, eliminating and minimizing illicit connections inside the MS4 right-of-way, respectively, do not apply to Northfield Township since the Township does not own the storm sewer off of Township property.

1.B.3.c.1 – Field Screening

(Part of BMP No. 3-3.)

To achieve IDEP requirements, each PSD will be screened for signs of illicit discharges or connections. Where illicit discharges or connections are suspected, a systematic investigation upstream of the PSD will be conducted to trace the discharge to the source. The PSDs will be observed in the field during dry weather conditions, typically assumed to be 72 hours with less than 0.10 inch of rainfall. Favorable seasonal conditions, such as winter freeze or summer drought, will be utilized as much as practical. When field screening PSDs in open channels, a longer dry weather duration preceding the observation may be needed. Specific dry weather duration requirements are site specific and will be determined during the field investigation.

If an initial field screening indicates that dry weather flow or no flow but the presence indicators, such as a wet pipe without flow, deposits of sanitary materials (i.e., toilet paper), or odors, suggesting an illicit connection may be present, additional investigation will be performed.

Each field check will be recorded and fully documented with descriptions of date, time, and observation notes confirming any discharge or odors, or recording that none exist using forms similar to the example form that follows this section.

A sample will be taken and tested for representative tracer parameters including:

- pH
- Temperature
- *E. coli*
- Detergents
- Ammonia

This laboratory testing will be performed to validate that the remaining water is most likely groundwater. A professional contract laboratory or the Township WWTP lab will perform all of these tests, except for pH and temperature which will be tested in the field. Test results and observations will be used to identify areas that require follow-up investigations. The following table illustrates the criterion for lab sample results; any results above these levels suggest that an illicit connection may exist.

Parameter	Cut-off Limits
E. coli	> 1,000 (counts per 100 ml)
Detergent	> 0.1 (mg/L)
Ammonia	> 10 (mg/L)

If the lab results reveal an illicit connection, dye testing of each fixture will be scheduled as the first step to positively confirm the location of the illicit connection. Prior to any dye testing, a request for dye testing approval will be submitted to MDEQ, for each dye-testing event, prior to discharging dye. This request will include the following:

1. Description and purpose of the project. A copy of any relevant standard operating procedures will be provided, if available.
2. Name of the water body (ies) potentially affected by the proposed project.
3. Geographic location(s) of the specific stream segment(s) or lake/wetland area(s) potentially affected by the proposed project. Township/Range/Section data will be included to identify the affected site(s) location.

4. Name of the material(s) to be applied to the surface water. All chemical ingredients in any trade name formulations will be listed with respective chemical abstract service (CAS) numbers. A Material Safety Data Sheet for the product will also be included. Only approved chemicals (dyes) will be used.
5. During the period of the project, a separate dye testing request will be required for each dye testing event.
6. Total load(s) and dosage concentration(s) of the material(s) to be applied to the surface water. Only recommended concentrations of approved chemicals will be applied.

The process of correcting an illicit connection or discharge will commence upon the source being identified and confirmed through laboratory results, visual inspections, dye testing, or other means to be determined. Corrective actions will begin with the field investigator notifying the Township Supervisor of the problem. The Township will make any corrections to its facilities within 60 days. If a privately owned or public school property is found to have an illicit connection, the Supervisor will then draft a letter to the responsible party notifying them of the illicit connection. The landowner will be given a 30-day notice to remove the illicit connection.

1.B.3.c.2 – Re-inspection of PSD

Field screening of PSD will be repeated in the second 5-year permit cycle unless an alternative plan is agreed to with MDEQ. The field screening implementation program for the second permit cycle will be outlined in the last annual report of the first permit cycle (see BMP No. 3-3).

1.B.3.d – Minimizing Seepage from Septic Systems and Sanitary Sewers

The Township will continue its efforts to minimize and eliminate seepage from septic systems and their sanitary sewers.

Minimizing Seepage from Septic Systems

Washtenaw County Environmental Health Department is responsible for conducting inspections of on-site sewerage disposal systems (OSSDS) in accordance with Section 6:1 of the Washtenaw County Regulations for the Disposal of Sewage and Human Excreta.

This section states that no private sewage disposal system shall be placed in operation, or otherwise used for its intended purpose, without an approval of construction and installation of such system by the health officer. County rules require each septic system be inspected at the time title is transferred (property is sold).

The regulations of Washtenaw County purposefully and specifically maximize the system performance and allow for effective on-site disposal of wastewater and minimize uncontrolled, unauthorized seepage from septic systems within the Township.

BMP No. 3-5: Inspection of on-site sewerage disposal systems.

Description: Township will rely on the Washtenaw County to perform this task.

Schedule: Continually.

Goal: Minimize uncontrolled, unauthorized seepage from septic systems within the Township.

Measurable: Number of OSSDSs inspected.

Task No. Achieved on Completion of BMP: 3I

The Township owns a sanitary sewer system through much of the urbanized area. State Code requires properties adjacent (within 300 feet) to new sanitary sewer construction be connected to the sanitary sewer. Furthermore, the same Code requires that failing septic systems be connected to the sanitary system if the sewer is close by. Since existing County and State law address septic systems, no further action is proposed for septic systems by the Township.

Minimizing Seepage from Sanitary Sewer Systems

The groundwater table is quite high in the urbanized area of Northfield Township. As a result, most of the sanitary sewer system is constructed below the groundwater table. Under these conditions, groundwater will seep into the pipe rather than wastewater seeping out of the pipe. Therefore, the potential for wastewater seepage is very low. However, the Township proposes the following BMPs to control seepage.

BMP No. 3-6: Inspection of water near sanitary sewer.

Description: Identify locations where the sanitary sewer is near the ground surface, such as stream crossings. The water bodies and pipes in these areas will be visually inspected for the presence of seepage. If seepage is noted, the sanitary sewer will be inspected and repaired, as needed.

Schedule: By year five.

Goal: Improve water quality by minimizing the potential for wastewater seepage.

Measurable: Number of locations inspected.

Task No. Achieved on Completion of BMP: 3H

BMP No. 3-7: Sanitary sewer televising.

Description: The Township periodically televises portions of the sanitary sewer to evaluate its condition. During these operations, the tapes will be viewed to evaluate the potential for seepage. If necessary, the pipes will be repaired. Approximately 100 feet of sewer will be reviewed each year.

Schedule: By year five.

Goal: Improve water quality by minimizing the potential for wastewater seepage.

Measurable: Footage televised and number of seepage points identified and corrected.

Task No. Achieved on Completion of BMP: 3H

I.B.3.e – Review of the Legal Authority

Existing legal authority and enforcement procedures will be reviewed to assure that requirements of the General Permit are fulfilled. The review will entail a two-part review. Part 1 will be a technical review to determine if there are code provisions which prohibit illicit connections or discharges and allow appropriate enforcement actions. If there are Code provisions which do this, Part 1 will also determine if the provisions are adequate. Part 2 is the legal review, which modifies, revises, or creates the ordinances and sets up the process for public comment and adoption of the new ordinances or changes to existing ordinances. These reviews will be completed by year three.

1.B.3.e.1 – Legal Authority to Regulate Pollutants

Section 6.2.3 of the Township of Northfield Sanitary Sewer Use Ordinance states that if any toxic or conventional pollutants interfere with sewage treatment process, cause damage to the receiving waters, or affect the sanitary or storm sewer systems, the allowable concentration of the substance will be reduced by order of the Superintendent. By continuing to enforce Section 6.2.3, the Township can regulate pollutants and meet Task 3J.

1.B.3.e.2 – Legal Authority to Prohibit and Eliminate Illicit Connections

Part 7.4.1 of the Township of Northfield Sanitary Sewer Use Ordinance allows the Township to order an immediate cease and desist order to stop any customer from discharging any wastewater or pollutant which presents or may present imminent or substantial endangerment to the health or welfare of persons or the environment. Enforcing Part 7.4.1 meets Task 3K.

1.B.3.e.3 – Legal Authority to Require Compliance

According to Section 2.1 of the Township of Northfield Sanitary Sewer Use Ordinance, whenever any provision or section of the ordinance is violated, the Township has the authority to cut off the sanitary sewer to the place of violation until corrections of the violation and payment of the expenses of shutting off and turning on service are made. By enforcing Section 2.1, the Township meets Task 3L.

1.B.3.e.4 – Legal Authority to Inspect, Survey, and Monitor PSDs to Ensure Compliance

Section 5.1 of the Township of Northfield Sanitary Sewer Use Ordinance, the Superintendent, and other duly authorized representatives of the Township bearing the proper credentials and identification shall be permitted to enter upon all properties served by the system at reasonable times for the purpose of inspection, observation, measurement, sampling, and testing to determine compliance with the provisions of the ordinance. This meets Tasks 3M, 3N, and 3O.

The IDEP activities will be considered effective when the activities described are implemented and shown to be consistently applied (i.e., all PSDs inspected and confirmed to be free of illicit discharges or discharges are located and removed). The IDEP activities will be documented in the annual reports by reporting quantitatively on what was accomplished each year. The need for additional programs will be evaluated at the end of the first permit cycle for inclusion in the second permit cycle.

DRAINAGE SYSTEM SCREENING

GENERAL

Date _____ Time _____
 Crew Initials _____ Chk By: _____
 Photographs: Roll # _____ Picture # _____

ID
 Air Temp _____ Clear/Sunny
 Rain Yes No Partly Cloudy
 Overcast

FLOW

Pipe Sampled: Size (in) _____ Direction _____

Depth: <input type="checkbox"/> Dry, No Water Present	General Data		Travel Time Trials
<input type="checkbox"/> Trace, insufficient to quantify	Depth, (in) _____		
Velocity: <input type="checkbox"/> Insufficient to quantify	Dist Traveled (ft) _____	#1 (sec) _____	
Method: <input type="checkbox"/> Area * Velocity	Bucket Vol. (gal) _____	#2 (sec) _____	
<input type="checkbox"/> Bucket	Channel Slope (%) _____	#3 (sec) _____	
<input type="checkbox"/> Manning's	Channel Material _____	Avg (sec) _____	
Flow: _____	Channel, n _____	Vel (fps) _____	

OBSERVATIONS (if "other" checked, describe)

Odor	<input type="checkbox"/> None	<input type="checkbox"/> Musty	<input type="checkbox"/> Sewage	<input type="checkbox"/> Rotten Egg	<input type="checkbox"/> Gas	<input type="checkbox"/> Oil	<input type="checkbox"/> Other _____
Color	<input type="checkbox"/> Clear	<input type="checkbox"/> Light Brown	<input type="checkbox"/> Dark Brown	<input type="checkbox"/> Green	<input type="checkbox"/> Grey	<input type="checkbox"/> Black	<input type="checkbox"/> Other _____
Turbidity	<input type="checkbox"/> Clear	<input type="checkbox"/> Slightly Turbid	<input type="checkbox"/> Moderate Turbid	<input type="checkbox"/> Highly Turbid	<input type="checkbox"/> Opaque		<input type="checkbox"/> Other _____
Floatables	<input type="checkbox"/> None	<input type="checkbox"/> Trash	<input type="checkbox"/> Sewage	<input type="checkbox"/> Green Scum	<input type="checkbox"/> Oil Sheen		<input type="checkbox"/> Other _____
Deposits/ Stains	<input type="checkbox"/> None	<input type="checkbox"/> Mineral	<input type="checkbox"/> Sediment	<input type="checkbox"/> Oily	<input type="checkbox"/> Grease		<input type="checkbox"/> Other _____
Vegetation	<input type="checkbox"/> None	<input type="checkbox"/> Normal	<input type="checkbox"/> Excessive	<input type="checkbox"/> Algae			<input type="checkbox"/> Other _____
Structural	<input type="checkbox"/> Normal	<input type="checkbox"/> Cracking	<input type="checkbox"/> Spalling	<input type="checkbox"/> Corrosion	<input type="checkbox"/> Settlement		<input type="checkbox"/> Other _____

CHEMICAL ANALYSIS

FIELD ANALYSIS

LAB SAMPLE COLLECTED Chem. Sample ID _____

Bact. Sample ID _____

Temperature _____ °F
 pH _____

Chemistry

Ammonia (as N) _____ mg/L
 Hardness (as CaCO3) _____ mg/L
 Total Organic Carbon _____ mg/L
 Detergent _____ mg/L
 E. Coli _____ per 100ml

If dry weather flow is present, dyed water testing will be performed for each fixture of the PSD.

NORTHFIELD TOWNSHIP

POST CONSTRUCTION STORMWATER MANAGEMENT PLAN

PART I, SECTION B.4 OF PERMIT

The Post Construction Stormwater Management Program addresses stormwater discharges into the drainage system from new development and re-development projects that disturb greater than or equal to one acre, including projects less than one acre that are part of a larger common plan of development or sale that would disturb one or more acres. The program ensures that controls are in place that will prevent or minimize water quality impacts.

Permit Requirements

According to MDEQ, NPDES Wastewater Discharge General Permit No. MIS040000, the MS4 Jurisdictional General Permit:

Under the program for new development and redevelopment, the permittee shall:

- a. Develop and implement a comprehensive storm water management plan for development, implementation, and enforcement of controls across the permittee's entire urbanized area to protect the designated uses in all receiving waters from the effects commonly associated with urbanization.*
- b. Develop and implement ordinances or other regulatory mechanisms to address post construction storm water runoff from new development and redevelopment projects to the extent allowable under state or local law. The ordinances or other regulatory mechanisms shall include the following:*
 - 1) Requirements for the implementation of non-structural and/or structural Best Management Practices (BMPs).*
 - 2) Requirements for adequate long-term operation and maintenance of BMPs.*
 - 3) Requirements to control sediment discharges from new developments and redevelopments that result from soil erosion after the local soil erosion and sedimentation permit and the State of Michigan's Permit by Rule are no longer in effect.*

- 4) *Requirement for regulating the rate at which storm water flows into the drainage system.*
- c. *Develop and implement a process for review of post-construction storm water BMPS in initial site plans, as applicable.*
- d. *Minimize the occurrence of illicit discharges and spills into the drainage system by reviewing site plans for commercial operations to ensure the storm drain inlets are adequately isolated from pollutant sources. Equipment washing and waste material handling shall not result in discharge of waste to the drainage system. Polluting materials, as defined by Part 5 Rules (Rules 324.2001 through 324.2009 of the Michigan Administrative Code), shall be stored only in areas that provide secondary containment in accordance with state and federal law.*

I.B.4.a – Development and Implementation of a Comprehensive Stormwater Management Plan

In order to protect against stream “flashiness” (higher peak flows and lower base flows), stream bank erosion, increased temperature and pollutant load, reduced stream bank vegetation, and degraded fish and aquatic habitat, Northfield Township has included stormwater system management regulations in their Engineering Design Standards (Part 4.0). Part 4.01.b of the Standards requires that all proposed stormwater improvements must be designed in accordance with the current regulations set forth by WCDC’s office.

WCDC’s objective for their design and construction standards is to manage both the quantity and quality of stormwater runoff. The design criteria address the control of both large and small storm events. The need for managing small events is directly related to urbanization and the increase of impervious area which leads to increased pollutants (metals, fertilizers, pesticides, oils, grease, etc.) in storm runoff and stream flashiness, which causes bank erosion and the destruction of aquatic life.

WCDC’s standards require new development to have a basin which captures the 100-year storm event, the bank full flood (1.5-year, 24-hour event), and the first flush volume. Release rates will typically be limited to 0.1 to 0.15 cubic feet per second (cfs) per acre. Forbays or other

appropriate BMPs (i.e., stormceptors) are required to dissipate energy and localize incoming sediments. Outlets need to be designed to dissipate velocity and minimize erosion. In riparian zones, a step pool arrangement shall be used to convey the discharge. Discharge of untreated stormwater into a natural wetland is prohibited.

Stormwater conveyance will be constructed in accordance with MDOT standards. Natural streams and channels are to be preserved and will be expected to withstand the 100-year storm without increased erosion. Swales are preferred above enclosed systems. Outlets will be designed such that velocities will be appropriate to and not damage receiving waters.

The Township Engineering Design Standards, which act as a Stormwater Management Plan, require the new developments to follow County rules, meeting Tasks No. 4A, 4D, and 4E.

1.B.4.b.1 – Requirements for the Implementation of BMPs

Part V.2.a of the Washtenaw County Drain Commissioner’s regulations states:

“Before entering any natural watercourse, protected wetland, county drain, or other body of water, best management practices will be utilized to remove pollutants, including sediment, from storm water runoff. Pollutant removal methods will include capture and treatment of the first flush and bankfull storm events, as previously described in these standards. In addition, receiving waters shall be protected as previously described.”

BMP No. 4-1: Township review of development plans.

Description: Prior to approval of any new construction, the Township Engineer will review the plans in accordance with WCDC standards to assure that adequate storm drainage is provided and that the stormwater management system provides adequately for water quantity and quality management to ensure protection of property owners, lands, and water courses both within the proposed development and downstream. The legal authority for this already exists.

Schedule: Continually.

Goal: Decrease in pollutants, sediments, stream flashiness, and bank erosion.

Measurable: Number of plans reviewed.

Task No. Achieved on Completion of BMP: 4A, 4B, 4C, 4F, 4G, 4I – 4K, 4L, 5C, 5D

I.B.4.b.2 – Requirements for Adequate Long-term Operation and Maintenance of BMPs

As a part of the approval process, the Township shall require developers and owners to prepare and follow a maintenance plan. The plan shall include the following tasks and schedule.

- Inspection for sediment accumulation – annually.
- Removal of sediment accumulation – every two years, as needed.
- Inspection for floatables and debris – annually.
- Inspection for erosion – annually.
- Re-establishment of permanent vegetation on eroded slopes – as needed.
- Replacement of stone – every three to five years, as needed.
- Cleaning of Streets – annually.
- Mowing – as needed.
- Inspect stormwater system components during wet weather – annually.
- Make repairs or adjustments to stormwater system – annually.
- Keep record of all inspections, maintenance, repairs, and costs – annually.

Prior to construction, the Drain Commissioner requires that a drainage district be created. This district will be responsible for maintenance of the BMPs in accordance with County rules.

BMP No. 4-2: Long-term operation and maintenance of BMPs.

Description: Northfield Township will rely on the County to require maintenance of all BMPs.

Schedule: Continually.

Goal: Decrease in pollutants, sediments, stream flashiness, and bank erosion.

Measurable: Number of plans reviewed.

Task No. Achieved on Completion of BMP: 4H

I.B.4.b.3 – Requirements to Control Sediment

Part 4.01.e of Northfield Township Engineering Design Standards requires erosion control at storm outlets if velocities exceed 4 feet per second (fps). The implementation of forbays, riprap, and outlet design criteria from WCDC standards will assist in controlling erosion and sediment from urbanization. Part 5.04.a of the Township's Engineering Standards requires a soil erosion and sediment control (SESC) plan that requires specific measures to permanently control erosion.

By verification that design requirements are followed (see BMP No. 4-1), Task No. 4I is met.

I.B.4.b.4 – Requirements for Regulating the Stormwater Flow Rates into the Drainage System

Part 4.01.g of Northfield Township Engineering Standards requires that each site shall have provision for on-site detention. Each site shall be capable of storing the volume of water required to limit the outflow from a 100-year design storm to an agriculture rate (0.15 cfs per acre) or to a rate that the downstream properties can accept, whichever is less. Additionally, Township standards require that WCDC rules be followed. By reviewing all development plans (BMP 4-1), verifying that all plans meet WCDC standards, including detention/retention basins, Task No. 4J is met.

I.B.4.C – Site Plan Review of Post-Construction Stormwater BMPs

Part 4.01 the Northfield Township Engineering Design Standards states that all construction plans must be submitted to the Township Engineer, and must be designed in accordance with the regulations of the Washtenaw County Drain Commissioner's office (see BMP No. 4-1).

I.B.4.D – Site Plan Review of Commercial Operations

The Township Engineer will review both residential and commercial operation site plans (see BMP No. 4-1). The review of commercial operations will include review of commercial site plans to ensure storm drain inlets are adequately isolated from pollutant sources and that washing and waste material handling results in a low probability of discharge to receiving waters.

NORTHFIELD TOWNSHIP

CONSTRUCTION STORM RUNOFF CONTROL PLAN

PART I, SECTION B.5 OF PERMIT

The Construction Storm Runoff Control Measures control stormwater discharges from construction activity that results in land disturbance of greater than or equal to one acre, or disturb less than one acre but are part of a larger common plan of development or sale that would disturb one acre or more.

Permit Requirements

According to MDEQ, NPDES Wastewater Discharge General Permit No. MIS040000, the MS4 Jurisdictional General Permit:

The permittee shall have:

e. Qualifying Local and State Soil Erosion and Sedimentation Controls

The permittee shall prohibit storm water discharges into MS4s from construction activities that are not in compliance with the following requirements of the State of Michigan's Permit by Rule (Rule 323.2190):

- 1) The construction site developer or recorded easement holder shall be subject to soil erosion and sedimentation control requirements under Part 91 of the Michigan Act.*
- 2) The construction site developer or recorded easement holder shall control waste such as discarded building materials, concrete truck washout, chemicals, litter, and sanitary waste at the construction site that may cause adverse impacts to water quality.*
- 3) Potential water quality impacts shall be considered during site plan reviews for construction activities.*
- 4) Sites shall be inspected during construction and control measures shall be enforced.*

f. Additional Construction Controls

The permittee shall develop, implement and enforce a program to address storm water runoff from areas of construction activity that discharge into the permittee's separate storm water drainage system. Appropriate BMPs for this minimum measure and measurable goals for each BMP shall be submitted to the Department in accordance with Part I.C.1.a.

Under the Construction Storm Water Runoff Control Program, the permittee shall:

- 1) Notify the appropriate Soil Erosion and Sedimentation Control Agency and the Department verbally, within 24 hours, if a construction activity results in a deposit or imminent threat to deposit solids or other waste materials into the drainage system that may endanger health or the environment. Any other soil erosion or sedimentation violations at regulated construction sites shall be reported in accordance with Part I.C.2.a. of this general permit.*
- 2) Review preliminary site plans to ensure that adequate space will be allotted for soil erosion and sedimentation controls during construction as well as permanent storm water controls, as appropriate.*
- 3) Have a procedure to receive and provide follow up on complaints or other information submitted by the public regarding construction site storm water runoff leading to the drainage system. This requirement may be met in conjunction with the illicit discharge reporting hotline in Part I.B.1.a.*

I.B.5.a.1 – Soil Erosion and Sedimentation Control Requirements

Northfield Township requires a SESC Plan be prepared for any project involving more than 50 cubic yards of excavation or fill and/or any grade change exceeding 12 inches, in accordance with the Soil Erosion and Sedimentation Control Guidebook by MDEQ and such other criteria as may be established by the local enforcing agent for the SESC Act.

These guidelines include the following:

- Design, construct, and complete earth change in a manner that limits the exposed area of disturbed land for the shortest period of time.
- Remove sediment caused by accelerated soil erosion from runoff water before it leaves the site of the earth change.
- Temporary or permanent control measures shall be installed to convey water around, through, or from the earth change at a non-erosive velocity.
- Install temporary SESC measures before or upon commencement of the earth change activity, and maintain the measures on a daily basis. Remove temporary SESC measures after permanent measures are in place and stabilized. (“Stabilized” means the establishment of vegetation or the proper placement, grading, or covering of soil to ensure its resistance to erosion, sliding, or other earth movement.)
- Complete permanent soil erosion control measures for earth change within five calendar days after final grading or upon completion of the final earth change.

Also, Part 5.04.f of the Township’s Engineering Standards requires projects involving excavation or filling be reviewed by the Washtenaw County Soil Erosion Division. The SESC program guide requires soil erosion permits for all projects that occur within 500 feet of surface water and disturb more than 225 square feet, disturb one or more acres, are classified as major project regardless of size, or include the construction of new ponds or alteration to existing ponds.

The permit requires the following:

- SESC measures as designated on plans and/or as required must be installed prior to any earth moving activities.
- Earth changes to a property must not adversely affect drainage to surrounding areas.
- Detention/retention/sedimentation ponds must be constructed and stabilized prior to other earth moving activities

- Outlets of detention/retention/sedimentation ponds shall be designed and constructed to reduce the water flow to a non-erosive velocity. Riprap must be installed on all stormwater outlets.
- Riser pipes in detention ponds must be wrapped in geotextile fabric and choked with pea gravel.
- All earth moving shall be designed, constructed, and completed in such a manner that limits the exposed area of any disturbed land for the shortest possible period of time. The site must be stabilized within five calendar days after final grading or earth-moving activity has been completed.
- Stone access drives, if required, must be installed prior to construction for purposes of eliminating mud tracking.
- Rock check dams are to be used instead of straw bales or silt fencing in concentrated flow locations, such as ditches or pipe outlets. Straw bales should never be used for soil erosion control.
- Silt fencing, if required, must be trenched in and backfilled.
- Fencing may be toed-in with pea gravel if installed in winter.
- Catch basins, if installed, must be protected with a sediment filter with overflow.
- Dewatering operations must have some type of control, e.g., filter bag and vegetative filter area. There shall be no dewatering of unfiltered water.
- Erosion control blankets are required on slopes of 4:1 or steeper.
- All areas of a project that are disturbed must be stabilized by December 1.
- All permanent erosion control measures shall be permanently maintained by the owner or homeowner association

BMP No. 5-1: SESC plan/permit.

Description: Any project involving more than 50 cubic yards of excavation or fill, and/or any grade change exceeding 12 inches, must prepare a plan in accordance with the Soil Erosion and Sedimentation Control Guidebook by MDEQ and such other

criteria as maybe established by the local enforcing agent for the SESC Act. All major projects require a permit. Major projects include those that occur within 500 feet of surface water and disturb more than 225 square feet, or that disturb one or more acres, regardless of size, or include the construction of new pond(s) or alteration to existing pond(s). This BMP is enforced by Washtenaw County.

Schedule: Continually.

Goal: Prevention or minimization of water quality impacts from construction activities.

Measurable: Number of projects that have a SESC plan and permit.

Task No. Achieved on Completion of BMP: 5A

1.B.5.a.2 – Impacts to Water Quality

The construction site developer or recorded easement holder shall control waste, such as discarded building materials, concrete truck washout, chemicals, litter, and sanitary waste at the construction site that may cause adverse impacts to water quality. As part of Washtenaw County SESC, construction sites are required to keep soil, sediment, and miscellaneous debris off streets and out of drainage ditches and catch basins throughout the duration of the project. Stockpiling of any excavated material must be kept clear of sensitive areas. Adequate controls must be in place to ensure this requirement (see BMP No. 5-1).

1.B.5.a.3 – Consideration during Review of Potential Water Quality Impacts during Construction

According to the Washtenaw County SESC program guide, a project will not get a permit if criteria are not met upon review. The criteria include activities to protect water quality (see BMP No. 5-1).

1.B.5.a.4 – Construction Site Inspection

As a part of the Washtenaw County Soil Erosion Permit, monthly (major projects) or bi-monthly (minor projects) inspections will be performed.

I.B.5.b.1 – Agency Notification

Should the Township be notified of construction activity that results in a deposit or imminent threat to deposit solids or other waste materials into the drainage system that may endanger health or the environment, the Township will immediately contact the Washtenaw County SESC.

BMP No. 5-2: Notification of County.

Description: Upon public complaint, the Township will notify the Washtenaw County SESC.

Schedule: Continually.

Goal: Prevention or minimization of water quality impacts from construction activities.

Measurable: Number of complaints and responses tracked (tracking list).

Task No. Achieved on Completion of BMP: 5B, 5E

In order to fully meet Task 5E, receive and respond to complaints about construction site stormwater runoff to the MS4, the Township will rely on the County to respond appropriately.

I.B.5.b.2 – Review Site Plans

As a part of the Township review of construction plans, the Township will ensure that there will be adequate space for SESCOs during construction, as well as permanent stormwater controls (see BMP No. 4-1).

I.B.5.b.3 – Receive Complaints

As part of the public education plan, the Township will publicize a hotline number (to the WWTP) for the purpose of reporting illicit discharges, improper disposal of materials, and negligent construction activities (see BMP No. 1-3).

NORTHFIELD TOWNSHIP
POLLUTION PREVENTION/GOOD HOUSEKEEPING FOR
MUNICIPAL OPERATIONS PLAN

PART I, SECTION B.6 OF PERMIT

Municipal operations cover a wide variety of activities and land uses that are potential sources of stormwater pollutants. These include, but are not limited to, roadways, parking lots, transportation and equipment garages, warehouses, stockpiles of salt and other raw materials, open ditches and storm sewers, turf and landscaping for township property, and waste handling and disposal areas.

Permit Requirements

According to MDEQ, NPDES Wastewater Discharge General Permit No. MIS040000, the MS4 Jurisdictional General Permit:

The permittee shall develop, implement, and ensure compliance with a program of operation and maintenance BMPs with the ultimate goal of preventing or reducing pollutant runoff from municipal operations to the maximum extent practicable. The permittee shall ensure that employees properly handle wastes, recyclables, chemicals, and equipment used on the job; maintain a clean work area; regularly maintain storm water controls; and identify and report various storm water pollution sources including illicit discharges, malfunctioning post-construction controls, and poor soil erosion and sedimentation controls at construction sites. The permittee shall provide guidance or operation manuals, employee training and testing, equipment, and any other resources necessary to prevent and reduce storm water pollution through proper implementation of BMPs in accordance with this minimum measure. The program may be developed and implemented using BMP guidance and training materials that are available from federal, state or local agencies, or other organizations. Appropriate BMPs for this minimum measure and measurable goals for each BMP shall be submitted to the Department in accordance with Part I.C.1.a.

BMP No. 6-1: Employee education and training (training plan).

Description: Employees will be trained on proper handling of wastes, recyclables, chemicals, and equipment; maintenance of a clean work space; proper identification and reporting of pollution sources, and BMPs. Operation and Maintenance manuals will be provided, along with equipment for pollution prevention and good housekeeping.

Schedule: Training at time of hire and for all employees annually.

Goal: Provide a working environment to support effective pollution prevention.

Measurable: Number of employees receiving training on pollution prevention and good housekeeping (tracking list).

Task No. Achieved on Completion of BMP: 6A – 6F

I.B.6.a – Structural Controls

Structural controls such as storm drain catch basins, vegetated swales, infiltration basins, sedimentation basins, and any controls installed or operated by the permittee to remove pollutants from stormwater shall have routine maintenance, maintenance schedules, and long-term inspection procedures adequate to provide pollution removal effectiveness to the maximum extent practicable. Structural controls and cleaning schedules may need to be added or enhanced in the future if existing structural or non-structural measures fail to adequately reduce the discharge of sediments, floatables, and other pollutants that may be found in or discharging to or from drainage systems.

The permittee shall describe and implement procedures for the proper disposal of operation and maintenance waste such as dredge spoil, accumulated sediments, floatables, and other debris the permittee removes from the drainage system. Wastes removed from a catch basin sump or other parts of a storm water drainage system shall not be discharged in a manner that would result in a violation of water quality standards.

Neither the Township nor the public schools own any vegetative BMPs. Therefore, Tasks 6I and 6J are not applicable in this plan.

BMP No. 6-2: Maintenance of catch basins.

Description: All Township-owned catch basins will be inspected and cleaned. If structure appears to be in need of repair or a more aggressive cleaning schedule, appropriate measures will be taken.

Schedule: Inspected yearly. Cleaned as needed (yearly, at a minimum).

Goal: Reduced number of parking lot flooding complaints; reduction of sediments, floatables, and other pollutants from the drainage system.

Measurable: Number of catch basins cleaned and volume of solids removed.

Task No. Achieved on Completion of BMP: 6G, 6H, 6M, 6N

BMP No. 6-3: Structural controls (i.e., stormceptors, etc.).

Description: Any Township-owned controls will be inspected and maintained.

Schedule: Inspected yearly. Cleaned as needed (yearly, at a minimum).

Goal: Reduction of sediments, floatables, and other pollutants from the drainage system.

Measurable: Number of structures maintained.

Task No. Achieved on Completion of BMP: 6K, 6L

BMP No. 6-4: Disposal of operation and maintenance waste.

Description: The Township will properly dispose of the waste cleaned from the catch basins, swales, and other structural controls through a commercial waste management company.

Schedule: When applicable.

Goal: Reduction of sediments, floatables, and other pollutants from the drainage system.

Measurable: Amount of waste disposed of properly.

Task No. Achieved on Completion of BMP: 6O

I.B.6.b – Roadways

The permittee shall construct, operate and maintain its streets, roads, highways, parking lots and other large paved surfaces in a manner so as to reduce the discharge of pollutants, including

those related to deicing activities, into the drainage system. The permittee shall, at a minimum, maintain effective street cleaning and catch basin maintenance programs. The street cleaning and maintenance program, catch basin maintenance program, and illicit discharge elimination program shall be parts of an overall plan to reduce the discharge of sediments, floatables, and associated pollutants into the roadway drainage system. Salt and sand applied for improved traction shall be prevented from entering receiving streams to the maximum extent practicable. Good housekeeping shall be required at salt and sand storage facilities to eliminate discharge of salt and sand from these areas.

The permittee shall not discharge to waters of the state any wastewater generated from cutting, grinding, drilling or hydrodemolition of concrete or asphalt without authorization under an NPDES wastewater discharge permit.

Neither the Township nor the public schools own any roads or highways. Therefore, Tasks 6P, 6Q, and 6S are not applicable in this plan.

BMP No. 6-5: Parking lot cleaning.

Description: All Township and public school lots in urbanized areas will be swept.

Schedule: As needed (yearly, at a minimum).

Goal: Reduction of sediments, floatables, and other pollutants from the drainage system.

Measurable: Number of lots swept.

Task No. Achieved on Completion of BMP: 6R

BMP No. 6-6a: Eliminated

BMP No. 6-6b: Snow removal.

Description: The Township removes snow from the parking lots of Township-owned buildings. The snow at the Public Service Safety Building is piled in the lot. Snow melt passes through a sediment trap before being discharged. At 75

Barker Road, snow will be piled on grass areas so the infiltration potential of the snow melt is maximized.

Goal: Protect receiving waters from potential pollution from snow melt.

Measurable: Verification that 100 percent of all snow removal activities comply.

Task No. Achieved on Completion of BMP: 6T

I.B.6.c – Fleet Maintenance

The permittee shall assure that vehicle maintenance activities do not pollute storm water runoff. Vehicle maintenance activities include adding or changing fluids including fuel, lubrication, mechanical repairs, parts degreasing, and vehicle or equipment washing. Discharge of wash water is not authorized by this general permit. Vehicles and equipment shall be maintained for clean and effective operation to prevent impacts on storm water quality.

BMP No. 6-7: Vehicle maintenance.

Description: The Township does not perform any vehicle maintenance and will continue sending vehicles to private facilities for maintenance.

Schedule: Routinely.

Goal: Reduction of grease and oils from the drainage system to the receiving waters.

Measurable: Number of maintenance performed as described above (tracking list).

Task No. Achieved on Completion of BMP: 6V, 6W

BMP No. 6-8: Eliminated

I.B.6.d – Storm Sewer Labeling

The permittee shall provide permanent identification (e.g., label, color coding, or other identifying characteristic) for any outfall structure that the permittee constructs or installs after March 10, 2004, that discharges storm water to waters of the state. Following the addition of permanent identification, the primary operator of the drainage system shall be readily identifiable by observation of the outfall structure.

BMP No. 6-9: Catch basin cover stenciling.

Description: Stencil “No Dumping! Stormwater Only – Drains to River” or similar warning on all existing Township-owned and school-owned catch basins and on all newly constructed catch basins.

Schedule: Completed by year three.

Goal: All catch basins stenciled.

Measurable: Number of stenciled catch basins per year.

Task No. Achieved on Completion of BMP: 6X

I.B.6.e – Flood Control Projects

The permittee shall ensure that new flood management projects assess the impacts on the water quality of the receiving water and, whenever possible, shall examine existing projects for incorporation of additional water quality protection BMPs.

BMP No. 6-10: Review all future flood management projects.

Description: Ensure the incorporation of BMPs to all newly constructed flood control projects.

Schedule: Upon completion of a flood control project.

Goal: Improved quality of receiving waters.

Measurable: Number of newly installed Township projects that have BMPs. As the Township does not routinely own drainage facilities, this is not expected to be implemented by the Township.

Task No. Achieved on Completion of BMP: 6Y, 6Z

I.B.6.f – Pesticides and Fertilizers

The permittee shall minimize the discharge of pollutants related to the storage, handling, and use of pesticides, herbicides, and fertilizers on land that the permittee manages. BMPs required under this measure include a turf management plan for maintaining public lands and parks, employee training, and soil testing for nutrients (nitrogen/phosphorus/potassium) to determine appropriate fertilizer usage on all lands that the permittee maintains by adding fertilizers. Fertilizers shall be applied only in accordance with recommendations based on soil test results.

BMP No. 6-11: Employee training/contractor education.

Description: The Township does not use pesticides. Contractor lawn maintenance companies will be required to provide training to their employees.

Goal: Reduction of chemicals in drainage system.

Measurable: Confirmation that lawn maintenance firm has training program.

Task No. Achieved on Completion of BMP: 6AA – 6EE

BMP No. 6-12: Soil testing.

Description: Township will not apply phosphorus to any parcel.

Schedule: Immediately.

Goal: Reduction of chemicals in drainage system.

Measurable: Confirmation each year that such policy is written into the lawn care contract.

Task No. Achieved on Completion of BMP: 6FF