

# **McHENRY COUNTY STORMWATER MANAGEMENT PROGRAM PLAN**



Alden Road Bridge - Alden, IL

Photo by: Wynnyth Adair

LAST REVISED MAY 2018

**COUNTY OF McHENRY**  
McHENRY COUNTY, ILLINOIS

# SMPP

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Adapted from Lake County Stormwater Management Commission

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# 1 Overview of the Stormwater Management Program Plan



Fox River – McHenry County, IL

## 1.A Introduction

This Stormwater Management Program Plan (SMPP) was developed by McHenry County to meet the minimum standards required by the United States Environmental Protection Agency (USEPA) under the National Pollutant Discharge Elimination System (NPDES) Phase II program. Federal regulations through the USEPA require that all Municipal Separate Storm Sewer Systems (MS4s), partially or fully in urbanized areas based on the 2000 census, obtain stormwater permits for their discharges into receiving waters. There are many different types of MS4s including municipalities, park districts, drainage districts, township highway departments, counties, and county and state transportation departments (MCDOT and IDOT).

The SMPP describes the procedures and practices that will be implemented by McHenry County toward the goal of reducing the discharge of pollutants within stormwater runoff in order to comply with Federal standards. Compliance with the plan is intended to protect water quality thus contributing to the following amenities:

- Cleaner lakes and streams;
- Improved recreational opportunities and tourism;
- Flood damage reduction;
- Better aesthetics and wildlife habitat; and
- A safer and healthier environment for citizens.

The SMPP addresses the primary program elements for all McHenry County activities, including the manner in which the County:

- Reviews, permits, and inspects construction activities within its corporate limits;
- Manages planning, design, and construction of projects performed within corporate limits;



- Maintains its facilities and performs day-to-day operations;
- Works toward protecting the receiving waters from illicit discharges;
- Provides public education and outreach;
- Trains its employees in carrying out and reporting program activities; and
- Continually monitors and evaluates the program.

## 1.B State & Federal Regulations



Federal environmental regulations based on the 1972 Clean Water Act (CWA) require that MS4s, construction sites, and industrial activities control polluted stormwater runoff from entering receiving bodies of water (including navigable streams and lakes). The NPDES permit process regulates the discharge from these sources based on amendments to CWA in 1987 and the subsequent 1990 and 1999 regulations by the USEPA. In Illinois, the USEPA has delegated administration of the Federal NPDES program to the Illinois Environmental Protection Agency (IEPA). On December 20, 1999, the IEPA issued a General NPDES Phase II Permit for all MS4s. The most recently updated General Permit, effective March 1, 2016, is included in Appendix 5.2. Under the General NPDES Permit No. ILR40, each MS4 was required to submit a Notice of Intent (NOI) declaring compliance with the conditions of the permit by March 10, 2003. The original NOI described the proposed activities and best management practices that occurred over the original 5-year period toward the ultimate goal of developing a compliant SMPP. At the end of the 5<sup>th</sup> year (March 1, 2008) the components of the SMPP were required to be implemented; per the ILR40 permit. The IEPA reissued the ILR40 permit with effective dates of April 1, 2009 and March 1, 2016.

Additionally, under the General Permit No. ILR10, also administered by the IEPA, all construction projects that disturb greater than one (1) acre of total land area are required to obtain an NPDES permit from the IEPA prior to the start of construction. Municipalities covered by the General Permit No. ILR40 are automatically covered under ILR10 thirty (30) days after the IEPA receives the NOI from the municipality.

## 1.C Countywide Approach to NPDES Compliance

The McHenry County Stormwater Management Commission (MCSC) is a countywide governmental agency created by county ordinance under the authority of Illinois Revised Statute 55 ILCS 5/5-1062. The MCSC's goals include the reduction of flood damage and water quality degradation. Another purpose of the MCSC is to assure that new development addresses non-point source pollution, does not increase flood and drainage hazards to others, or create unstable conditions susceptible to erosion. To accomplish this, the MCSC works cooperatively with individuals, groups, and units of government as well as serving as the corporate enforcement authority for the McHenry County Stormwater Management Ordinance (MCSMO). The MCSC enforces the MCSMO in Non-certified Communities on behalf of the municipalities. The municipality is responsible for administering and enforcing the MCSMO in a Certified Community. A municipality is considered a Certified Community after its petition is approved by the MCSC. The MCSC utilizes technical assistance, education programs, and watershed planning to increase public awareness of natural resources and the impacts of urbanization on stormwater quality. In addition, the MCSC provides solutions to problems related to stormwater and identifies effective ways of managing natural resources.

The General NPDES Permit allows for MS4s to take credit for activities being performed by a qualifying local program (QLP) toward meeting its permit requirements. The County's NPDES program is a qualifying local program for MS4s in McHenry County. As part of their ongoing services, the County performs some functions related to each of the six minimum control measures. McHenry County has been providing services under four of the six minimum control categories since it began implementing a comprehensive, countywide stormwater program in 2004. However, MS4s are required to provide additional services for each of the Minimum Control Measures with the greatest effort in the Illicit Discharge Detection and Elimination and Pollution Prevention/Good Housekeeping categories.

McHenry County sponsors informative workshops and roundtable discussions. Using the countywide approach, municipalities may take credit for the programs and ordinances developed by McHenry County as well as tailor specific local best management practice (BMP) programs for compliance with the Phase II rules.

As part of the countywide approach to comply with the NPDES Phase II program, McHenry County assists municipalities with the following:

- Supports NPDES II presentations to local boards;
- Develops model Notice of Intent (NOI);
- Provides countywide drainage system overview and receiving waters map;
- Provides general 5-year BMP Plan for NOI;
- Develops specific BMP Measurable Goals and program development tasks;
- Serves as a clearinghouse for all support information and acts as a liaison to the IEPA and the USEPA;
- Drafts a model of the Annual Performance Report and specific BMP Measurable Goals for the subsequent years;
- Provides model Illicit Discharge Ordinance language; and
- Provides a SMPP Template.

McHenry County countywide services qualify for credit under each of the six Minimum Control Measures. Additionally, the County developed the SMPP template for revision/adoption by the MS4s. This template is intended to be reviewed, revised, and accepted by MS4s within the county and describes a program intended to be in compliance with the ILR40 permit requirements. A general list below summarizes additional County services under the six minimum control categories:

1. **Public Education and Outreach on Storm Water Impacts:** McHenry County provides, through its Public Information Coordinator, various training workshops, homeowners workshops, presentations, brochures, training manuals, teacher/student education, videos, press releases, etc.
2. **Public Involvement / Participation:** McHenry County coordinates and participates in public meetings and committees, MCSC Board of Commissioners, Technical Advisory Committee (TAC), citizen watershed planning committees, and volunteer support.
3. **Illicit Discharge Detection and Elimination:** McHenry County maintains maps of sewers and conveyance structures associated with county government holdings in the unincorporated areas of the county. County staff inspect drainage structures/outfalls based on annual schedules and in response to public complaints.
4. **Construction Site Storm Water Runoff Control:** The MCSC adopted the countywide MCSMO in 2004, with the most recent amendments adopted April 5, 2016, which establishes the minimum stormwater management requirements for development in McHenry County. The MCSMO, which is enforced by the MCSC as well as by Certified Communities in the county, establishes the minimum standards for construction site runoff control.
5. **Post-Construction Storm Water Management in New Development and Redevelopment:** The MCSMO also establishes standards for post-construction runoff control.
6. **Pollution Prevention/Good Housekeeping for Municipal Operations:** McHenry County staff receive pollution prevention training, conduct inspections of all NPDES outlets on a five-year schedule, and implement pollution prevention measures including sensible salting practices, street sweeping, and vehicle maintenance in their day-to-day activities.

## **1.D Organization of the Stormwater Management Program Plan**

Chapter 1: Overview of the SMPP - discusses the format of the SMPP document and the regulations associated with NPDES Phase II through county, state and federal agencies.

Chapter 2: Program Management - discusses the logistics of the SMPP. This includes the organization, implementation, and responsible parties necessary to achieve overall compliance with the SMPP and Permit. It also identifies how the County coordinates with other county and state agencies and discusses the legal authority that the MS4s have to implement the SMPP components.

Chapter 3: The Program - addresses stormwater pollutant control measures implemented by the County per the six minimum control categories established by the USEPA:

- Public Education and Outreach on Storm Water Impacts
- Public Involvement/Participation
- Illicit Discharge Detection and Elimination
- Construction Site Storm Water Runoff Control
- Post-Construction Storm Water Management in New Development and Redevelopment
- Pollution Prevention/Good Housekeeping for Municipal Operations

Chapter 4: Program and Performance Monitoring, Evaluation, and Reporting - describes the monitoring, evaluation, and reporting procedures associated with the program. The SMPP is a guide created to protect the County receiving waters from pollution and resultant degradation. This Chapter assists in identifying best management practices and processes that may require improvement and refinement as the document becomes an effective tool.

Chapter 5: Appendices - including forms, references, exhibits, and bibliography.

## 1.E Watersheds, Sub-watersheds, and Receiving Waters



**Kishwaukee River** – Photo by Rich Quigley

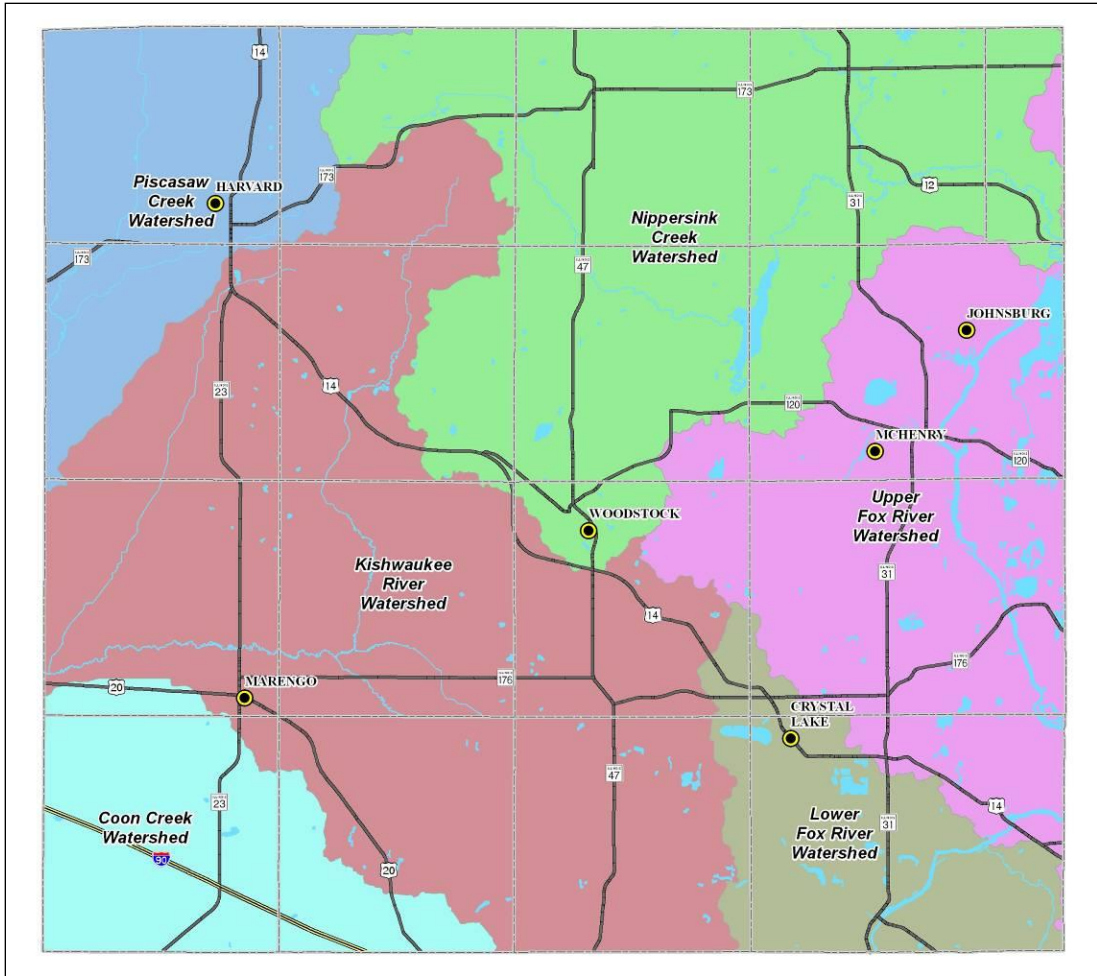
The County of McHenry is primarily located within the Fox River and Kishwaukee River Watersheds with six sub-watersheds, including: Coon Creek, Kishwaukee River, Piskasaw Creek, the Upper and Lower Fox River, and Nippersink Creek. Lakes and other on-stream bodies of water are also considered part of the receiving water system.

***Watershed:*** The land area that contributes stormwater to one of the two major rivers in McHenry County.

***Sub-watershed:*** The land area that contributes stormwater to one of the receiving waters tributary to a major river.

***Receiving Water:*** A natural or man-made system into which stormwater or treated wastewater is discharged, including the two major rivers in McHenry County, their tributary stream systems and other Waters of the U.S.

The major and sub-watersheds and receiving waters are presented on **Figure 1 Map of Major and Sub-watersheds and Receiving Waters**. The following includes a description of the County watersheds including: Coon Creek, Kishwaukee River, Piskasaw Creek, the Upper and Lower Fox River, and Nippersink Creek,.



**Figure 1: Map of Major and Sub-watersheds and Receiving Waters**

## **Piscasaw Creek Watershed**

The Piscasaw Creek Watershed is a large, 42,944-acre (67.1-square-mile) watershed that stretches from southern Wisconsin to the Kishwaukee River in northwest McHenry County and ultimately into Boone County to the west. Piscasaw Creek is the receiving stream for several smaller sub-watersheds including: West Branch Piscasaw Creek, Lawrence Creek, Mokeler Creek, Geryune Creek, and Little Beaver Creek. These sub-watersheds account for an additional 39,040 acres (61 square-miles) of drainage area, making the Piscasaw the fourth largest tributary to the Kishwaukee River (behind South Branch Kishwaukee River, Coon Creek, and Kilbuck Creek). The watershed is characterized as a rural area, dominated by row crops and rural grasslands.

About 23% of the sub-watershed soils are hydric in nature, but only 3% of the sub-watershed consists of wetlands. There are also currently eight recorded Federal and State threatened and endangered species of plants and animals.

Upstream of Chemung, Illinois, Piscasaw Creek and its tributaries, are almost entirely channelized, and the natural stream corridors have been heavily encroached upon by row crop agriculture. This region of the stream either was or currently is under the jurisdiction of the Chemung Drainage District, but the drainage district is inactive as of 2010.

Limited amount of water quality data is available for the watershed. The IEPA publishes water quality data collected for the sub-watershed. The last Intensive Basin Survey (IBS) completed was in 1997. The Piscasaw Creek is listed as impaired on the IEPA 303(d) list for fish consumption (mercury) and investigations by the USEPA in 1996 and 1997 revealed excessive nutrients in some reaches and noted violations of water quality standards in reaches downstream of point source discharges.

While Piscasaw Creek is on the Nationwide Rivers Inventory list as a Class A stream known for its fishability and other naturalistic qualities with potential to be rated for recreation, Lawrence Creek is on the draft 303(d) list dated February 2016 listed as not able to support aquatic life on account of total phosphorus, but it is the home to the Blanding's Turtle, a state threatened species. Downstream of Chemung, Mokeler Creek is also included on the 303(d) list as impaired by sedimentation/siltation for aquatic life.

## **Kishwaukee River Watershed**

The Kishwaukee River Watershed covers a total of 779,747 acres (1,218 squaremiles), originating in Woodstock in McHenry County, flowing in an east to west direction to Boone County where it becomes a tributary to the Rock River. Much of the region around the Kishwaukee River was shaped by glaciations. Several natural areas, quarry outcroppings, and the Harvard West Geologic area in McHenry County have examples of pitted outwash plains and moraines protruding down through the valleys of this watershed.

Rush Creek, originating near Harvard, Illinois is a tributary of the Kishwaukee River. It flows south through McHenry County and is 10 stream miles in length. Rush Creek is on the Nationwide Rivers Inventory as a Class A stream known for its fishability and other naturalistic qualities with potential to be rated for recreation.



For the Kishwaukee River mainstem, the headwaters segment IL\_PQ-13 does not support aquatic life nor fish consumption. The next segment IL\_PQ-07 from the confluence of the South Branch into the Main Branch of the Kishwaukee River to the county line does support aquatic life but not fish consumption. The primary causes of water quality problems are nutrients and organic enrichment (low dissolved oxygen) attributed to agriculture and municipal point source pollution. Other causes of water quality problems are sedimentation/siltation, polychlorinated biphenyls and mercury, contributing source unknown. Segment IL\_PQ-10 is also impaired for swimming on account of high fecal coliform counts.

The South Branch of the Kishwaukee River-East stream sections (IL\_PQI-10 and IL\_PQI-H-C5) are impaired for aquatic life. The primary cause of water quality problems for each segment is total phosphorus and low dissolved oxygen. Both issues can be attributed to agriculture and municipal point source pollution. Other causes of water quality problems are sedimentation/siltation and barium (segment IL\_PQI-10) and chloride and copper (segment IL\_PQI-H-C5).

### **Coon Creek Watershed**

Coon Creek is a 28.1-mile long tributary of the Kishwaukee River that flows north from DeKalb County, Illinois into the southwest corner of McHenry County. The stream continues flowing northeast from the DeKalb County-McHenry County line until it curves northwest and empties into the Kishwaukee River in Boone County to the west. The Coon Creek watershed covers approximately 101,120 acres (158 square miles) and is the second largest tributary of the Kishwaukee River behind only the South Branch Kishwaukee River. The entire section of creek in DeKalb County has been channelized. In McHenry County, Lower Coon Creek still maintains many of its natural features, such as pools and riffles, and is home to at least 34 different species of fish. Some of the species found in Coon Creek include: bluegill, black crappie, smallmouth bass, largemouth bass, and northern pike. The Blacknose Shiner (*Notropis heteropsis*) is an example of an endangered fish found in the creek. The creek is also home to the state-threatened Blanding's Turtle (*Emydoidea blandingii*) and the snapping turtle. Coon Creek has several tributaries in McHenry County including: Riley Creek, Unnamed Tributary to Coon Creek, Spring Creek, and Williamson Creek.

Lower Coon Creek and its tributaries are characterized as moderate to low gradient sand and gravel bottom stream channels that were partly channelized (72%) in the early 20<sup>th</sup> century. There are countless field tile outlets into the main stem that drain the adjacent agricultural fields. Hydric soils are thought to underlie approximately 30% of the watershed, although wetlands make up less than 3.3% of the watershed – a key indicator to the existence of presettlement wetlands. The National Wetlands Inventory (NWI) has identified 300 existing wetlands in the watershed, ranging in size from 0.001 acres to more than 73 acres, and account for 1,177 acres, or about 3.26% of the watershed land surface.

Lower Coon Creek is considered impaired under the IEPA guidelines. Though the creek is considered to be in “full support” of aquatic life, the stream is considered “non-support” for swimming. An Ambient Water Quality Monitoring Network (AWQMN) station is located in the watershed on Harmony Road. The latest draft 303(d) report dated February 2016, lists Lower



Coon Creek as being impaired by fecal coliform in the water. No specific source is known at this point in time due to insufficient data.

### **Nippersink Creek Watershed**

The Nippersink Creek is a 23-mile long creek that originates in headwaters located in the southern ends of Waukesha and Kenosha Counties, Wisconsin before flowing into Alden Township in northwestern McHenry County and then through several municipalities including: Alden, Greenwood, Wonder Lake, Spring Grove, and Fox Lake. The main channel meanders southeast to fill the 830-surface acre reservoir located in Wonder Lake before flowing back to the northeast and joining its north branch near Spring Grove. The 87,624-acre (202 square mile) Nippersink Creek Watershed empties into Pistakee Lake.

The balance of the Nippersink Creek Watershed is still largely dominated by agricultural uses, with residential uses comprised of agricultural farmsteads and low-density (>5 acres) rural parcels. However, rural areas of the Nippersink Creek Watershed are beginning to urbanize. According to current municipal comprehensive land use plans, there is a potential for significant development growth over the next twenty years. Nippersink Creek, which is the largest tributary to the Fox River, is home to at least 21 animals and 30 plants listed as Illinois endangered or threatened species and contains 46 McHenry County natural area inventory sites.

For the Nippersink Creek, the headwaters segment IL\_DKT-06, which extends to Wonder Lake, does not support aquatic life, fish consumption, primary contact, secondary contact, or aesthetic quality. The next segment IL\_DKT-04, from Wonder Lake to Pistakee Lake, does support aquatic life but not fish consumption or primary contact. The primary causes of water quality problems for both segments include polychlorinated biphenyls (possible break down of Aldrin plus other sources), mercury, and fecal coliform attributed to agriculture and municipal point source pollution. Aldrin, which is a very poisonous insecticide used in the 1970's on corn and potato crops, and nickel are also present in IL\_DKT-06 as pollution sources.

As this stream is tributary to the Upper Fox Watershed, these contaminants are contributing to its growing water quality impairment as well.

### **Upper and Lower Fox River Watersheds**

The Fox River is an approximately 202-mile long tributary to the Illinois River. The Fox River Watershed is located in McHenry, Cook, Grundy, Kane, Kendall, Lake, La Salle, and Will Counties in far northeastern Illinois, and extends north into Wisconsin. The Fox River Watershed is divided into two portions: the Upper Fox River and Lower Fox River Watersheds. The Upper Fox River Watershed covers a total of 391,680 acres (612 square miles). Several major streams which comprise the Upper Fox River Watershed flow through McHenry County including: the Fox River, Boone Creek, and Nippersink Creek. Crystal Lake, Crystal Creek, and Woods Creek are located in the Lower Fox River Watershed. The majority of these two watersheds are located in agricultural lands with expanding urban areas. Boone Creek, McCullom Lake, and the Fox Chain O' Lakes, one of the top three recreational waterways in the nation, are all located in McHenry County and receive water from the Upper Fox River Watershed.

Pistakee Lake, segment IL\_RTU, is one of the southern-most lakes on the Chain O'Lakes waterway system. It is on the IEPA 303(d) list for fish consumption and aesthetic quality on account of mercury, polychlorinated biphenyls, total phosphorus, and total suspended solids. McCullom Lake (segment IL\_RTZD) is impaired for aesthetics based on unknown causes. The primary causes of water quality problems in the Upper Fox Watershed in segment IL\_DT-23 are fish consumption (polychlorinated biphenyls) and aquatic life from other unspecified sources.

The Illinois EPA has a TMDL study underway for the Chain O'Lakes and Fox River segments DT-23 and DT-22. The lakes are listed as impaired due to phosphorous levels above the lake standard of 0.05 mg/L. The river segments are impaired due to recorded levels of dissolved oxygen (DO) that fall below standards, with dam impoundments and nutrient enrichment as likely causes of eutrophication that is contributing to the low DO levels. These two reaches cover about 15 ½-miles of the Fox River, from Pistakee Lake downstream to the confluence of Flint Creek. DT-22 is also listed as impaired due to high pH levels (likely cause is eutrophication) and high fecal coliform counts. The Stage 3 TMDL report is due to be released for public comment in 2018.

In addition, the Fox River Study Group (FRSG) is studying the Fox River from the Stratton Dam to its mouth at the Illinois River. In McHenry County, this includes segments DT-23, DT-22, DT-06 and DT-20. All these segments are listed for causes related to eutrophication, including aquatic algae and low levels of DO. The FRSG is investigating combinations of dam removal and reductions in phosphorus inputs to the Fox as means to resolve the river's DO and algal impairments. The FRSG released its Fox River Implementation Plan (FRIP) in 2015. It includes the Fox River Phosphorus Reduction Tool which allows MS4 communities to evaluate and report the phosphorus reductions that can be achieved through the use of practices such as bioretention, dry & wet detention, street sweeping, vegetated swales, conservation tillage, constructed wetlands, field borders, grassed waterways and nutrient management. The FRSG is further refining its computer models of the Fox River with an updated report due out in 2019. An update to FRIP will be completed by 2022. See <http://www.foxriverstudygroup.org/>

The Lower Fox Watershed, segment IL\_DT-22, primary causes of water quality problems are an amalgamation and accumulation of all those listed for the Nippersink Creek and Upper Fox Watersheds mostly attributed to agriculture, highway/bridge/road runoff, urban runoff, recreational activities, contaminated sediments, and dam/channel modifications. For this reach, chlorides, copper and sedimentation/siltation are causes for impairments to aquatic life; fecal coliform is the cause of primary contact impairments; and polychlorinated biphenyls are the cause of the impairment for fish consumption. Both Defiance Lake (segment IL\_RTB) and Griswold Lake (segment IL\_RTY), which both feed into the Lower Fox, are impaired for fish consumption on account of high levels of mercury. Silver Lake (segment IL\_RTW) is impaired for fish consumption (mercury). On the most recent impairment list by the IEPA, both Lily Lake (segment IL\_RTZJ), which drains northeast and into Lake County, and Lake Killarney (segment IL\_RTZV) are impaired for aesthetic quality due to unknown causes.

Moving further south on the Fox River, segment IL\_DT-06 is impaired for primary contact (fecal coliform), aquatic life (dissolved oxygen), and fish consumption (polychlorinated biphenyls).

## **Recommended Standards for Development in McHenry County Watersheds**

The MCSMO and McHenry County Unified Development Ordinance (UDO), which incorporated the Subdivision Ordinance and Conservation Design Ordinance, are documents that were adopted and set forth minimum requirements for development that provide a consistent level of protection to meet watershed specific needs including:

- Strengthening of tools for local governments to create economic development that protects natural resources and maintains quality of life;
- Improvement of intergovernmental coordination to achieve consistency of growth and resource management across the watershed;
- Creation of greater citizen awareness, appreciation, and responsibility regarding resource protection;
- Protection of sensitive environmental features and preservation of open space;
- Preserve natural stream corridors and provide vegetation buffers;
- Manage off-site discharges from construction or development to protect stream quality and aquatic habitat;
- Advocate sound land-management practices on agricultural lands to provide stream buffers, prevent erosion, and minimize water pollution; and
- Recognize the attributes of hydric soils and groundwater recharge areas for water management, ecological restoration, and limitations on development.

McHenry County has also prepared a Sensitive Aquifer Recharge Areas (SARA) Map that identifies sub-surface geology with the highest potential for aquifer recharge and contamination. The SARA Map is designed to help protect the recharge of groundwater and prevent aquifer contamination. The SARA Map is included in the UDO and is used in conjunction with regulatory language in the UDO that caps the impervious area on parcels mapped in the SARA boundaries. In addition to replenishing aquifers, protecting groundwater recharge helps protect aquatic resources by maintaining baseflow to lakes, streams, rivers and wetlands.

## 2 Program Management

This chapter describes the organizational structures of McHenry County and the IEPA. It further discusses the roles and responsibilities of the various involved parties.

### 2.A Implementation of this SMPP

The Stormwater Management Program Plan (SMPP) includes detailed discussions on the types of tasks that are required to meet the permit conditions under the NPDES Phase II program and how to perform these tasks. These tasks should be recorded and filed annually to track the progress of these tasks. At the end of the yearly reporting period (March 1 – February 28/29) the task information should be filed in a binder to document SMPP-related activities to the IEPA, or their authorized agent, in the case of an audit. It is anticipated that implementation of this SMPP constitutes compliance with the program. The SMPP must be posted on the County's NPDES website.

Annual Reports, Monitoring Data, NOI and Stormwater Management Plans shall be kept for a minimum of five (5) years after the end of the reporting year.

### 2.B Intra-Department Coordination

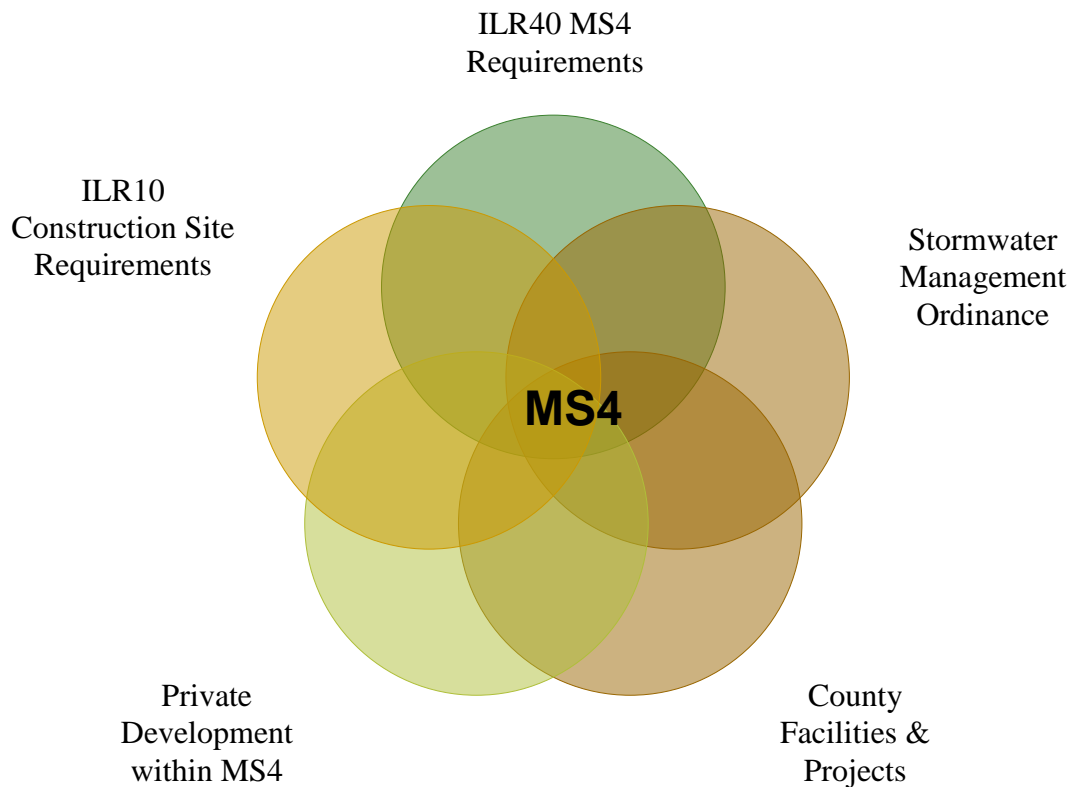
The County Board is the policy and budget-setting authority for the County. The Department of Planning and Development, Division of Water Resources, the Division of Transportation, Facilities Management, Emergency Management Agency, and the Department of Health work together to implement this SMPP. The Water Resources Manager has the primary responsibility for managing the overall program.

#### 2.B.1 Water Resources Manager

The Water Resources Manager is the NPDES Coordinator responsible for the oversight and implementation of this SMPP. Responsibilities include:

- Lead contact for coordination with the McHenry County Stormwater Management Commission, the McHenry County Planning, Environment and Development Committee, the IEPA, contractors, the development community, and other external regulatory agencies;
- Understands the requirements of General Permit No. ILR40, ensures that the SMPP meets the requirements of the permit, and that the County effectively implements the SMPP;
- Ensures, or assists the Enforcement Officer in ensuring, that the County complies with all minimum MCSMO provisions;

- Ensures that the County Facilities comply with all minimum General Permit No. ILR40 permit requirements;
- Is aware when a County Project is required to be authorized under the General Permit No. ILR10. In these cases the Permit Coordinator should ensure that the NOI is received by IEPA at least 30 days prior to the start of construction;
- Assists the development community in understanding when a General Permit No. ILR10 is required and whether construction sites comply with the General Permit No. ILR10 and MCSMO permit conditions; and
- Understands the role illicit discharges play in the overall NPDES Phase II program. In general, an incidence of non-compliance (ION) must be filed with IEPA for illicit discharges exiting an MS4's outfall into a receiving water. Additionally, if the illicit discharge is generated by a construction site, it may be necessary for both the applicant and the MS4 to file the ION form with the IEPA.



**Figure 2: Roles of MS4**  
 Provided by Gewalt Hamilton & Associates

## **2.B.2 Department of Planning and Development, Division of Water Resources**

Engineering personnel support the NPDES Coordinators in obtaining compliance with both the NPDES and McHenry County Stormwater Management Ordinance programs.

### ***For Certified Communities***

The municipality's Engineer or consultant is also frequently the Enforcement Officer with respect to the administration and enforcement of the McHenry County Stormwater Management Ordinance (MCSMO). The design and construction of all public projects shall comply with the MCSMO. As the Enforcement Officer, the municipality's Engineer or consultant has the responsibility to concur that projects meet MCSMO standards prior to the issuance of permits, and oversee site inspections during construction. Refer to Chapter 3.D-3.F for additional information on this process.

### ***For Non-Certified Communities/Unincorporated Areas***

The McHenry County Chief Stormwater Engineer is the Enforcement Officer with respect to the administration and enforcement of the McHenry County Stormwater Management Ordinance (MCSMO). The Enforcement Officer has the responsibility to ensure that projects meet MCSMO standards prior to the issuance of permits and oversee site inspections during construction. Refer to Chapter 3.D-3.F for additional information on this process.

## **2.B.3 Division of Transportation and Facilities Management**

Infrastructure maintenance activities within the MS4 are carried out by the Division of Transportation (MCDOT) personnel. Various departments including the Department of Planning and Development – Division of Water Resources, Department of Health, Emergency Management Agency, and Facilities Management personnel are designated as the primary entities responsible for performing the duties specified under Chapter 3.C Illicit Discharge Detection and Elimination and Chapter 3.F Pollution Prevention and Good Housekeeping.

## **2.C Coordination between McHenry County Departments & Divisions**

Coordination between the MS4 and McHenry County occurs through participation in the Stormwater Management Ordinance, the Stormwater Commission, the Stormwater Technical Advisory Committee, Water Resources Action Plan Task Force and Natural Hazards Mitigation Planning Group through the Certified Community Status under the McHenry County Stormwater Management Ordinance (MCSMO). The MS4's Chief Stormwater Engineer is the lead contact for the participation in the Stormwater Commission and the Stormwater Technical Advisory Committee. The Water Resources Manager is the lead contact for the Water Resources Action Plan Task Force and coordinates the NPDES program. The Director of the Emergency Management Agency is the lead contact for the Natural Hazards Mitigation Planning Group. The

Drainage Engineer at MCDOT is the lead contact for the County's drainage infrastructure concerns. If the MS4 is a Certified Community, the MS4's Enforcement Officer or consultant is responsible for enforcement of the MCSMO.

## **2.D Coordination with Fox River Study Group**

The Fox River Study Group (FRSG) is a diverse coalition of stakeholders working together to assess water quality in the Fox River watershed. Participants include Friends of the Fox River, Sierra Club, Fox River Water Reclamation District (Elgin), Fox Metro Water Reclamation District (Aurora), Fox River Ecosystem Partnership, Illinois Environmental Protection Agency (IEPA) and Blackberry Creek Watershed Plan Implementation Council as well as representatives from Algonquin, Aurora, Batavia, Crystal Lake, Elgin, Geneva, Island Lake, Kane County, Lake in the Hills, St. Charles and Yorkville.

The FRSG began meeting in the summer of 2001 to plan how to prepare for the upcoming Total Maximum Daily Load (TMDL) study on the river. A TMDL study is required by federal law because three segments of the Fox River appeared on the Illinois Environmental Protection Agency's list of impaired waters (the 1998 303(d) list). These segments, which lie between Holiday Hills and North Aurora, were listed because results from at least one water sample suggest there are water quality concerns. The most common concerns include low dissolved oxygen levels or high concentrations of fecal coliform bacteria. The 303(d) listing was updated in 2002, and now includes the entire length of the Fox River from the Wisconsin state line to the river's mouth at Ottawa with the most numerous causes listed as flow alteration, habitat alteration, low dissolved oxygen, nutrients, organic enrichment, PCBs, siltation or suspended solids.

The mission of the Fox River Study Group is to bring together a diverse coalition of stakeholders to work together to preserve and/or enhance water quality in the Fox River watershed.

The activities of the Fox River Study Group shall include, but are not limited to, the following:

- Participation in water quality monitoring efforts in the Fox River watershed;
- Development of a computer model of the Fox River watershed;
- Maintenance of the computer model as a management tool to promote efficient use of taxpayer and private money on watershed projects, assess the effect of various development options throughout the watershed, educate stakeholders, evaluate management priorities, identify sensitive regions within the watershed, develop continuing monitoring programs;
- Development of a plan to preserve and/or enhance the water quality of the Fox River; and
- Promotion, as needed, of the adoption of the watershed plan by appropriate entities who have the authority for its implementation.
- Education and outreach to raise awareness of water quality issues and promote activities that protect water quality in the watershed.

Additional information and a copy of the Fox River Implementation Plan can be found at <http://www.foxriverstudygroup.org/index.htm>.

## **2.E Coordination with Watershed Groups**

Coordination with Watershed Groups occurs on several levels. There are many active watershed groups within the county, all at different stages in programming and activity interest. Currently, the county participates in group meetings, watershed outreach projects, planning meetings, and various activities put on by the groups. Additionally, in accordance with Article 4.3.E.1.g of the McHenry County Unified Development Ordinance, watershed groups with County Board-accepted/adopted plans will be contacted and allowed the opportunity to comment as part of the zoning petition process for any property within the watershed with proposed zoning changes.

## **2.F Coordination of Contractors**

The County may hire contracted services. The County also has a responsibility to hire contractors who are knowledgeable of the applicable requirements of the IEPA General Permit Nos. ILR40 and ILR10. The County shall provide appropriate training, or require documentation that appropriate training has been attended, for all contractors responsible for municipal green infrastructure.

## **2.G Coordination with the Public**

Coordination with the public occurs on several levels. The Public Education and Outreach Program of this SMPP is discussed in Chapter 3.A. The Public Participation and Involvement Program of this SMPP is discussed in Chapter 3.B. The public has the opportunity to comment on the NPDES program through contacting any of the program coordinators and at the annual NPDES update meeting (began in Year 14).

## **2.H Coordination with the IEPA**

The County is required to complete annual reports that describe the status of compliance with the General Permit No. ILR40 permit conditions and other related information. The annual report must be posted on the County's NPDES website, which can be found at the following link [www.co.mchenry.il.us/county-government/departments-j-z/planning-development/divisions/water-resources/npdes](http://www.co.mchenry.il.us/county-government/departments-j-z/planning-development/divisions/water-resources/npdes) and submitted to the IEPA by the first day of June each year. Annual reporting to the IEPA shall consist of an "implemented SMPP" for all tasks completed in accordance with this SMPP. Additional information should be provided for areas of enhancement or tasks not completed.

Records regarding the completion and progress of the SMPP commitments must be kept by the County. The task information should be updated throughout the year. The compiled task information in the appendices should be located in a binder with necessary supporting documentation. The binder must be available for inspection by both IEPA and the general public.



## **2.I Coordination with the Development Community**

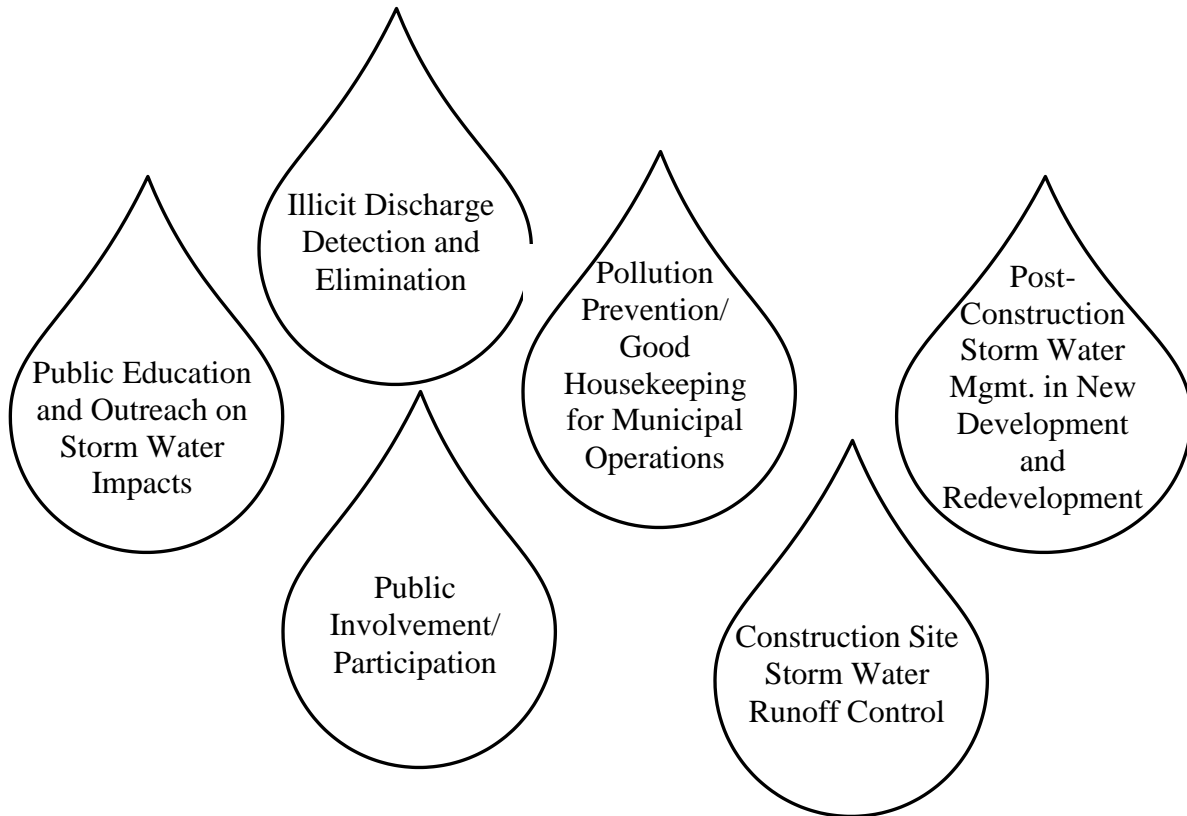
The County has a responsibility to assist the development community in understanding when a General Permit No. ILR10 is required and whether a construction site complies with the General Permit No. ILR10 and SMO permit conditions. The County should understand the role illicit discharges play in the overall NPDES Phase II program. In general, an incidence of non-compliance (ION) must be filed with the IEPA for illicit discharges exiting an MS4's outfall into a receiving water. Additionally, if the illicit discharge is generated by a construction site, it may be necessary for both the applicant and the MS4 to file the ION form with the IEPA.

Furthermore, the County has a responsibility to inform the development community that they are required to hire contractors that meet the qualifications necessary under the program. Refer to Chapter 3.D.1.a for additional information on qualified personnel.

## **2.J Coordination with Other Stakeholders**

McHenry County coordinates with other stakeholders that have interests in improving water quality. For instance, the McHenry County Department of Planning and Development has partnered with the Chicago Metropolitan Agency for Planning (CMAP) and others to develop corridor plans for two segments of the Fox River. The goals of the plans are to improve water quality, multi-modal transportation access, recreation and open space, and river-related commerce along the Fox River. The first plan focused on the section of the Fox River that flows through the Villages of Algonquin and Carpentersville. The second corridor plan, that is currently under development, will focus on a scenic portion of the river that extends from Burtons Bridge in the north, just north of Route 176, to the eastern boundary of Fox Bluff Conservation Area in the south. The planning area spans eight communities, conservation areas, forest preserves, and parks over a distance of 11 miles.

### 3 The Program



This Stormwater Management Program Plan includes six components, each of which is necessary in an effort to reduce/eliminate stormwater pollution in receiving water bodies. Chapter 3.A describes the efforts to educate the public about stormwater pollution and stormwater pollution prevention. The manner in which the County incorporates public involvement and participation into the SMPP is explained in Chapter 3.B. Chapter 3.C describes the approach to detecting and eliminating stormwater illicit discharges. Construction site and post-construction runoff control and management are addressed in Chapters 3.D and 3.E, respectively. Lastly, Chapter 3.F discusses responsibilities for the care and upkeep of its general facilities, associated maintenance yards, and county roads to minimize pollution. This chapter also discusses necessary training for employees on the implementation of the SMPP.

## 3.A Public Education and Outreach on Storm Water Impacts



The County conducts public education programs that inform the community of potential impacts to receiving waters and the contributions the public can make to reduce pollutants in stormwater runoff. The County targets public schools, public libraries, developers, contractors, homeowners, business owners, boaters, and the remaining general public as part of this Public Education and Outreach Program.

The County of McHenry, which also serves as the qualifying local program (QLP), utilizes a variety of methods to educate and provide outreach to the public about the importance of managing pollutants that potentially could enter the stormwater system. The program includes the following activities which are discussed in greater detail in this chapter.

- Distribute information sheets and brochures regarding stormwater BMPs, water quality BMPs, and proper hazardous waste use and disposal.
- Maintain a water quality/stormwater section in the County online newsletter distributed by the County.
- Attend / sponsor outreach activities to homeowners / property owner associations, commercial / industrial facilities, schools, and other events.
- Publicize and participate in local fairs and expos.
- Maintain the County website, which offers links to additional educational information and ways to contact County personnel.
- Advise on the potential impacts and effects on stormwater discharge due to climate change [www.epa.gov/climatechange](http://www.epa.gov/climatechange).

### 3.A.1 Distributed Paper Material

The County of McHenry actively pursues the acquisition of educational sheets prepared by the IEPA, USEPA, Center for Watershed Protection, Chicago Metropolitan Agency for Planning (CMAP), formerly Northeastern Illinois Planning Commission (NIPC), and other agencies and organizations. The County maintains a list of available publications in the SMPP binder and on the website. The County lists the Division of Transportation and Division of Water Resources contact information on all County outreach publications to encourage residences to contact the County with environmental concerns. See Appendix 5.3 for annual distributed paper material.

Publications are provided in the following manner:

- At take-away racks located McHenry County Division of Transportation, McHenry County Department of Planning and Development, McHenry County Department of Health;
- At outreach events;
- Through social media;
- Via the County online newsletter;
- At Earth Day/Green Day events held throughout the County; and
- At scheduled meetings with the general public. These meetings are on an as-needed or as-requested basis and may be with the affected residences, homeowners associations, businesses, or local schools.

### 3.A.2 Speaking Engagement

Although this task is not included in the current NOI and annual year-end report, the County's Water Resources Division staff and MCDOT staff have been involved in multiple speaking engagements throughout the year. See Appendix 5.4 for a list of speaking engagements.



**Water resources demonstration  
by Planning and Development staff**

### 3.A.3 Public Service Announcement

The County of McHenry recognizes the importance of disseminating information to the public. The McHenry County e-Newsletter is an electronic newsletter published monthly. This newsletter includes County construction transportation projects, Department of Health activities, and Water Resources news. The County is proactive in promoting projects and water quality issues through electronic media such as Facebook and Twitter. The articles for 2017/2018 are in Appendix 5.5.

### 3.A.4 Community Event



**Presentation at the 2017 Water Forum**

Although this task is not included in the current NOI and annual year-end report, the Water Resources Division staff have been involved in multiple community events throughout the year. When possible, the County attends and/or sponsors outreach events and scheduled meetings with the general public. These events are held on an as-needed or as-requested basis. Audiences may include the homeowners associations, lake associations, businesses, and neighborhood groups.

The Solid Waste Manager for McHenry County continually creates partnerships with local government agencies, businesses, organizations, institutions, and individuals to discuss, plan, and implement economically viable and environmentally sound solid waste disposal alternatives for McHenry County. The County's Environmental Health Educator regularly conducts presentations for school children, organizations, and individuals on a variety of Environmental Health topics including wastewater disposal, potable water, solid waste, and pollution prevention.

### 3.A.5 Classroom Education Material

Although this task is not included in the current NOI and annual year-end report, the McHenry County Schools Environmental Education Program (MCSEEP) has been involved in multiple classroom events throughout the year. MCSEEP teaches lesson plans to 2<sup>nd</sup> through 8<sup>th</sup> grade students on the importance of water. Additionally, they have lesson plans that address pollution prevention for K-12 grades, provide additional resources such as Enviroscope or Groundwater Models through their lending library, and assist schools in obtaining grants for water resources-related activities.



**Enviroscope demonstration at  
2017 Groundwater Festival**

In 2017, MCSEEP provided environmental education in 62 schools, approximately 810 classes, assisted 620 teachers and reached approximately 25,000 students. The County will continue to coordinate with MCSEEP on additional lesson plans detailing pollution prevention and water protection for greater educational outreach.

### 3.A.6 Other Public Education

Periodically, the County hosts or co-hosts workshops for the general public that focus on specific stormwater topics. These workshops typically discuss stormwater topics currently of interest within the County. They offer the opportunity to share information and facilitate a collective focus on potential solutions to the challenges faced by the County, municipalities, and other stakeholders. The County publicizes these events at take-away racks and on the website.

The County's NPDES website includes stormwater quality specific elements [www.co.mchenry.il.us/county-government/departments-j-z/planning-development/divisions/water-resources/npdes](http://www.co.mchenry.il.us/county-government/departments-j-z/planning-development/divisions/water-resources/npdes). The website contains stormwater information, brochures, articles, volunteer programs, all NPDES reports, other agency newsletters, and agency links.

The County will continue to research, compile and make available materials about the impacts of climate change on precipitation and stormwater runoff and the pollution prevention practices that can be used by private property owners, and an evaluation of the impacts of climate change on existing flood control techniques and practices used to achieve runoff volume reduction. A link to the USEPA's climate change website [www.epa.gov/climatechange](http://www.epa.gov/climatechange) is included on the County's website.

Refer to Appendix 5.3 for a more detailed description of the type of information to be posted. The website is updated by MCDOT and Planning and Development staff and tracked for hits. A significant amount of information is made available through links to other educational and informational sites.

This SMPP, the NPDES NOI, all MCDOT construction NOIs, and any previous annual reports must be posted on the County's website. Each year's annual report must be posted on the County's NPDES website and submitted to the IEPA by the first day of June each year.

The Division of Water Resources page and MCDOT page are both linked to the NPDES page. Additionally, the Water Resources page contains information on pollution prevention, stormwater, groundwater, green infrastructure, and more. The web link is [www.mchenryh2o.com](http://www.mchenryh2o.com).



### 3.A.6.a Storm Drain Stenciling & Markers



With the intent of assisting in educating the public about stormwater runoff pollution, the MCDOT incorporates the messages “Dump No Waste” and “Drains to Waterways” on all open lid inlet frames and grates, if there is not room for this message on the grate, a plaque is to be placed in the curb adjacent to the frame and grate. The specifications for these messages are required and found either in the special provisions or a general note in the plans itself.

In the future, the County will consider supporting the efforts of private entities to stencil or apply stickers to inlets, and their purchase of factory-stamped inlet grates in their own communities within McHenry County. These efforts may include applying messages at storm drain inlets.

### 3.A.6.b Household Hazardous Waste



The United States Environmental Protection Agency (USEPA) estimates that the average home can accumulate approximately 100 pounds of household hazardous waste (HHW) in the house, basement, and garage. Household hazardous waste can include oil-based paints, stains, solvents, used motor oil, pesticides, medication, and cleaning products. Improper disposal of HHW can be potentially harmful to human health and the environment.

McHenry County has participated in residential one-day HHW collections primarily funded by the Illinois Environmental Protection Agency; however, due to budgetary constraints, funding for this program has been suspended at this time. However, the McHenry County Department of Health



held a Residential Recycling Extravaganza on May 20, 2017 where they collected 1,150 pounds of batteries; 8,400 gallons of latex/oil based paint and stains; 833 pounds of clothing; 8,120 pounds of documents for destruction; and 1,824 pounds of fluorescent bulbs and Styrofoam. The Department also held a separate Residential Paint Recycling event on October 21, 2017 where approximately 3,554 gallons of latex/oil based paints and stains were collected. On November 6, 2017 the Department also collected pumpkins and organic Halloween décor for composting.



Battery and paint collection events held by Health Department

The McHenry County College's Sustainability Center publishes a Green Guide for McHenry County annually that identifies businesses and locations in the area that accept a variety of waste streams (i.e., used motor oil, electronics, etc.) for recycling. The Green Guide is also available on the county's NPDES webpage. Several Township offices in the county provide drop-off sites for their residents for paint, used motor oil, and electronics. One pharmaceutical retailer offers a mail-back program for unused pharmaceuticals to their customers and several local law enforcement agencies provide drop-off locations for disposal of expired, unused residential medications.

Several local law enforcement agencies participated in the Drug Enforcement Agency's National Take-Back Initiative for medication in 2013, 2014, 2015, 2016 and 2017. The McHenry County Department of Health sponsored electronics collection events in 2013, 2014 and 2015 which resulted in the collection of approximately 215,102 pounds of electronics for recycling. The McHenry County Department of Health did not hold electronics collection in 2017 due to funding challenges. However, the McHenry County Department of Health maintains a battery collection program and has collected approximately 3 tons of batteries between 2013 and 2017. The McHenry County Department of Health also held tire collection events in 2013, 2014 and 2015 that together collected 303.40 tons of used/waste tires. In 2016, the Illinois EPA Region 2 Used Tire Program sponsored a special tire collection event for local units of government in McHenry County that collected 157.57 tons of used/waste tires. From 2013 through 2016, the special tire events collected a combined 460.97 tons of used/waste tires.

McHenry County does not have a permanent household hazardous waste (HHW) drop-off site. Residents are encouraged to utilize four (4) Illinois HHW facilities in the area as follows:

- Naperville Household Hazardous Waste Drop-Off : 156 Fort Hill Dr., Naperville – Phone: 630-420-6095
- Rock River Reclamation District: 3333 Kishwaukee, Rockford – Phone: 815-987-5570
- Household Chemicals and Computer Recycling Facility: 1150 N. Branch on Goose Island, Chicago – Phone: 312-744-7672
- The Solid Waste Agency for Lake County: 1311 N. Estes Street, Gurnee – Phone: 847-336-9340

Complaints of illicit discharges of hazardous waste are referred to the Illinois Environmental Protection Agency, which is the enforcement authority for hazardous waste issues in Illinois.

The Solid Waste Manager for McHenry County will continue to explore opportunities to increase residents’ options for proper disposal of HHW.

### *3.A.6.c Maintenance of Onsite Wastewater Treatment Systems*

The McHenry County Department of Health is the permitting and enforcement authority for onsite wastewater treatment systems throughout McHenry County. The county has a progressive and comprehensive Health Ordinance regulating the design, installation, and operation of onsite wastewater treatment systems. The Ordinance prohibits the discharge of any non-domestic, processing or industrial wastes into onsite wastewater treatment systems. Non-domestic wastewater must be discharged into a special waste holding tank or a municipal sanitary sewer. The Ordinance does not mandate specific maintenance for all systems; however, the Ordinance does require annual registration and inspection of special waste holding tanks and aeration units serving non-residential properties. The Ordinance also requires that owners of aeration units maintain service contracts with qualified contractors.

Department of Health staff responds to all complaints of malfunctioning onsite wastewater treatment systems. Complaints may be submitted in person, via telephone, or via email ([www.mcdh.info](http://www.mcdh.info)). This is a high priority response for the Department of Health. The Department of Health also utilizes an answering service so that key staff can be reached 24 hours a day, seven days a week for emergency situations. When violations are confirmed, property owners receive a formal Notice of Violation. When voluntary compliance cannot be achieved, the Department of Health pursues legal enforcement including court appearances for Ordinance violation and/or injunctive relief. On multiple occasions, in cases of economic hardship, the McHenry County Housing Authority has provided financial assistance for repair or replacement of malfunctioning onsite wastewater treatment systems.

A variety of educational materials are available for residents regarding the proper operation and maintenance of onsite wastewater treatment systems. Brochures are available at the Department offices and also on the Department’s webpage: [www.mcdh.info](http://www.mcdh.info). Residents may request a packet of materials specifically related to the proper maintenance of onsite systems. Staff in the Private Sewage Program also spend considerable time providing one-on-one consultations with property owners regarding the operation and maintenance of onsite systems. The Environmental Health Educator and Private Sewage Program Coordinator also provide presentations to homeowners associations, realtors, individuals, and students upon request.

### 3.A.6.d Vehicle Fluid Maintenance

Dumping of automotive fluids into storm drains can cause major water quality problems since only a few quarts of oil or a few gallons of antifreeze can severely degrade a small stream. Dumping delivers hydrocarbons, oil and grease, metals, xylene, and other pollutants to streams, which can be toxic during dry-weather conditions when existing flow cannot dilute these discharges. The major culprit has been the backyard mechanic who changes his or her own automotive fluids. The public is encouraged to



use best management practices in changing fluids and vehicle maintenance through the following:

- Outreach articles and brochures on the County website;
- Referencing BMPs included in the annual Green Guide provided by MCC and the Northwest Herald;
- Outreach materials distributed at auto parts store and service stations;
- Community oil recycling centers;
- Directories of used oil collection stations;
- Pollution hotlines; and
- Fines and other enforcement actions.

### 3.A.6.e Car Washing

Car washing is a common neighborhood behavior that can produce transitory discharges of sediment, nutrients, and other pollutants to the curb, and ultimately the storm drain. The County supports the innovative outreach tools to promote environmentally safe car washing that municipalities use, including:

- Media campaigns;
- Brochures promoting nozzles with shut-off valves;
- Storm drain plug and wet vac provisions for charity car wash events;
- Water bill inserts promoting environmentally safe car washing products; and
- Discounted tickets for use at commercial car washes.

Non-domestic waste may enter into storm drains and the storm drain system as a result of outdoor rinsing and cleanup. Outdoor commercial vehicle washing activities require an NPDES permit. The desired pollution prevention methods should include purchasing less toxic products that will be used for their intended purpose, using products per label instructions, and may include the installation of a 100% recycling car wash unit or if community sewer is not available and accessible to the property, the installation of a permitted special waste holding tank meeting all requirements of Article X of the McHenry County Public Health Ordinance. Illicit non-domestic waste discharge issues will be referred to IEPA, which is the enforcement authority for these issues.

### 3.A.6.f Pool Dewatering

The County does not have an ordinance specifically addressing pool dewatering; however, the County makes the following recommendations:

Chlorinated water discharged to surface waters, roadways, or storm sewers has an adverse impact on local water quality. High concentrations of chlorine are toxic to wildlife, fish, and aquatic plants. The pH of the water should be between 6.5 and 8.5. Algaecides such as copper or silver can interrupt normal plant growth in receiving waters and should not be present when draining. Prepare appropriately before draining down a pool. It is recommended that one of the following measures be used:

- 1) De-chlorinate the water in the pool prior to draining through mechanical or chemical means; these types of products are available at local stores.
- 2) De-chlorinate the water in the pool through natural means. Pool water must sit at least 2 days with a reasonable amount of sun, after the addition of chlorine or bromine. It is recommended that the chlorine level be tested after 2 days to ensure that concentrations are at a safe level (below 0.1 mg/L).
- 3) Drain the pool slowly over a several day period across the lawn; or drain directly into the sanitary sewer using the following additional guidelines:
  - a) Avoid discharging suspended particles (e.g., foreign objects blown into the pool like leaves, seedlings, twigs, etc.) with pool water.
  - b) When draining your pool, do not discharge directly onto other private properties or into public rights-of-way, including storm sewer inlets.

A Pool Dewatering Fact Sheet has been prepared by the County and is available to the public (See Appendix 5.3).

## 3.B Public Involvement/Participation

The public involvement and participation program allows input from citizens during the development and implementation of the SMPP. The SMPP should be evaluated annually. Major highlights and deficiencies should be noted annually and the plan revised accordingly on a minimum 5-year basis, or as necessary.

### 3.B.1 Public Panel

Although this task is not included in the current NOI and annual year-end report, the annual NPDES permit, NOI, and SMPP are available on the Department of Planning and Development and MCDOT NPDES website for the public's review.

### 3.B.2 Educational Volunteer

The McHenry County Adopt-A-Highway Program ([www.co.mchenry.il.us/county-government/departments-j-z/transportation/adopt-a-highway](http://www.co.mchenry.il.us/county-government/departments-j-z/transportation/adopt-a-highway)) is a volunteer effort directed at trash collection along sections of County highways. Volunteer groups adopt ½ to two mile sections of highway for a two-year period. As of May 1, 2017, there were 162 active volunteer groups covering at least 159 of the 213 adoptable centerline miles, resulting in 75% of MCDOT adoptable miles being maintained. Participation meets the Program Policy and Safety Guidelines established by IDOT in a separate document. This program is a qualifying local program (QLP) for this minimum control measure.



### 3.B.3 Stakeholder Meeting

The County continues to participate in Watershed events and meetings sponsored by outside organizations. Through the McHenry County Stormwater Management Ordinance, the County has adopted local Watershed Plans that encompass areas within the county. In the future, the County may implement relevant sections from the plans into the countywide ordinances. Most of the Watershed Plans meet the USEPA guidance criteria for the nine minimum elements that qualify a plan as a “watershed-based plan”.

The County presents each year's annual report to the Planning, Environment and Development Committee, which is comprised of seven County Board members, during an open meeting and provides for input from the public as to the adequacy of the permittee's MS4 program. Comments are evaluated for inclusion and incorporated into the next revision of the SMPP as appropriate.

### 3.B.4 Public Hearing

Although this task is not included in the current NOI and annual year-end report, the County may consider instituting public hearings for NPDES-related issues in the future.



### 3.B.5 Volunteer Monitoring

The McHenry County Adopt-A-Highway Program volunteers report any pollution violations or concerns that they observe during trash pickups. Concerns are transmitted to the planning liaison or maintenance supervisor of MCDOT who then further sends information to the NPDES Coordinator for follow-up. During Year 14 no reports were received from program volunteers. This program is a QLP for Minimum Control Measure 3.B.

### 3.B.6 Program Involvement

The McHenry County Adopt-A-Highway program is used to fulfill this minimum control measure. This program has been in place and sponsored by MCDOT since 2004 and has been trending in a positive direction for more volunteer action and lane mile coverage per the MCDOT planning liaison who coordinates this program.

### 3.B.7 Other Public Involvement

The goal of this minimum control measure is to provide active citizen participation in detection of illicit discharges to the storm sewer system and problems with drainage infrastructure. The MCDOT uses CarteGraph software to improve the tracking, record keeping, and locating of citizen complaints. When phone calls to (815) 334-4960 and faxes to (815) 334-4989 or emails to [MCDOT@co.mchenry.il.us](mailto:MCDOT@co.mchenry.il.us) are received, they are turned into CarteGraph work requests which notifies by email the appropriate maintenance, drainage, or construction personnel. General program related calls are directed to the NPDES Coordinator, or designee. Construction activity-related telephone calls are directed to the MCDOT Construction Manager, or designee. Illicit discharge, storm sewer, or other related stormwater runoff concerns are directed to the MCDOT Drainage Engineer and/or the McHenry County Department of Health. The County maintains a website that provides contact information.



The McHenry County Department of Health responds to complaints of illicit discharges. Complaints may be submitted in person, via telephone to (815) 334-4585, or via e-mail to [Health@co.mchenry.il.us](mailto:Health@co.mchenry.il.us). This is a high priority response for the Department of Health. The Department of Health also utilizes an answering service so that key staff can be reached 24 hours a day, seven days a week for emergency situations. Complaints of illicit discharges that are outside the authority of the Department of Health are referred to the Illinois Environmental Protection Agency for action and follow up. The NPDES Coordinators should contact and coordinate with MCDOT and MCDOH all reported incidents for the permit year and determine if additional outreach is necessary.

This set of procedures is a QLP for Minimum Control Measure B.7.

### *3.B.7.a Environmental Justice Areas*

Environmental justice (EJ) is the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. The EPA has this goal for all communities and persons across this nation. It will be achieved when everyone enjoys:

- The same degree of protection from environmental and health hazards; and
- Equal access to the decision-making process to have a healthy environment in which to live, learn, and work.

Potential EJ communities are identified based on IEPA guidance to include communities with a low-income and/or minority population greater than twice the statewide average. In addition, a community may be considered a potential EJ community if the low-income and/or minority population is less than twice the statewide average but greater than the statewide average and that has identified itself as an EJ community. If the low-income and/or minority population percentage is equal to or less than the statewide average, the community should not be considered a potential EJ community. The following web application is another resource that can be used to determine if an area would qualify for consideration as an EJ community. [ejscreen.epa.gov/mapper/index.html](https://ejscreen.epa.gov/mapper/index.html). Additional information on EJ concerns may be found at [www.epa.gov/environmentaljustice](https://www.epa.gov/environmentaljustice).

The County has not identified any environmental justice areas within the jurisdictional area; therefore, no further reporting is required.

## 3.C Illicit Discharge Detection and Elimination<sup>1</sup>

Currently, illicit discharges (defined in 40 CFR 122.26(B)(2)) contribute considerable pollutant loads to receiving waters. There are two primary situations that constitute illicit discharges; these include non-stormwater runoff from contaminated sites and the deliberate discharge or dumping of non-stormwater. Illicit discharges can enter the storm sewer system as either an indirect or direct connection.



### 3.C.1 Sewer Map Preparation

The outfall inventory was completed by the McHenry County Division of Transportation (MCDOT). This investigation was completed with a visual survey conducted by the Drainage Engineer and notes compiled on aerial exhibits of the entire MCDOT right-of-way. The outfall inventory was supplemented by data provided by the McHenry County Soil and Water Conservation District. These two data sources were combined to create an ***Outfall Inventory Map***. This map is used in combination with the previously existing ***Storm Sewer Atlas*** to help determine the extent of discharged dry weather flows, the possible sources of the dry weather flows, and the particular water bodies these flows may be affecting. The inlets and outfall locations have been numbered to facilitate detection and tracking of identified illicit discharges. The ***Storm Sewer Atlas*** and ***Outfall Inventory Map*** can be obtained in ArcMAP from McHenry County Division of Transportation and is referenced in Appendix 5.13. The outfall map should be revised annually to incorporate permitted outfalls associated with new developments. An outfall inventory should be updated as necessary (***Outfall Inventory Map***).

#### 3.C.1.a Understanding Outfalls and Illicit Discharges

Understanding the potential locations and the nature of illicit discharges in urban watersheds is essential to find, fix, and prevent them.

#### 3.C.1.b Identifying Outfalls and Receiving Waters

An Outfall (defined in 40 CFR 122.26(B)(9)) means a point source (as defined by 40 CFR 122.2) at the point where a municipal separate storm sewer discharges into a Waters of the United States “receiving water”. Open conveyances connecting two municipal storm sewers, pipes, tunnels, or other conveyances which connect segments of the same stream or other Waters of the United States are not considered Outfalls. For the purposes of this manual the following definition shall be used:

***Outfall:*** Storm sewer outlet, or other open conveyance point discharge location, that discharges into a Waters of the U.S. receiving water or another MS4.

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<sup>1</sup> Section 3.C is a revision of the Lake Michigan Watershed Stormwater Outfall Screening Program Training Program (April 1994 by SMC), and incorporates material from the Illicit Discharge Detection and Elimination: A Guidance Manual for Program Development and Technical Assessments (October 2004 by the Center for Watershed Protection and Robert Pitt, University of Alabama).



Regulated systems include the conveyance or system of conveyances including roads with drainage systems, municipal streets, catch basins, gutters, ditches, swales, manmade channels, or storm sewers. High priority outfalls are defined, for the purpose of implementing this SMPP, as those that discharge into or from areas of high potential for contamination. To date 74 outfalls have been identified through visual inspections by the County. Additionally, 21 ponds or detention/retention facilities have also been identified. Of these outfalls or water features, 14 have been classified as high priority areas to be inspected annually. See Appendix 5.6 for a complete list of outfalls and those identified as high priority outfalls.

### **3.C.2 Regulatory Control Program**

In McHenry County, the McHenry County Department of Health investigates complaints of illicit discharges under the authority of the McHenry County Public Health Ordinance. Complaints of illicit discharges that are outside the authority of the Department of Health are referred to the Illinois Environmental Protection Agency for action and follow up. McHenry County Planning and Development maintains a suite of codes and ordinances with staff and an Enforcement Officer to investigate possible illegal discharges in unincorporated areas of McHenry County. State and local law effectively prohibit through regulatory mechanism all non-stormwater discharges into the County's area covered by the MS4 permit. These regulatory controls are McHenry County's qualifying local program for fulfilling this minimum control measure.

#### *3.C.2.a Regulatory Authority*

Effective implementation of an Illicit Discharge Detection and Elimination (IDDE) program requires adequate legal authority to remove illicit discharges and prohibit future illicit discharges. State and local law effectively prohibit all non-stormwater discharges into the County's MS4. The McHenry County Public Health Ordinance prohibits the discharge of non-domestic waste into an onsite wastewater treatment system or onto the ground surface. The IEPA has regulatory authority to control pollutant discharges and can take the necessary steps to correct or remove an inappropriate discharge over and above MS4 jurisdiction.

#### *3.C.2.b Illicit Discharge Ordinance*

At this point in time, the County regulates illicit discharges utilizing different mechanisms.

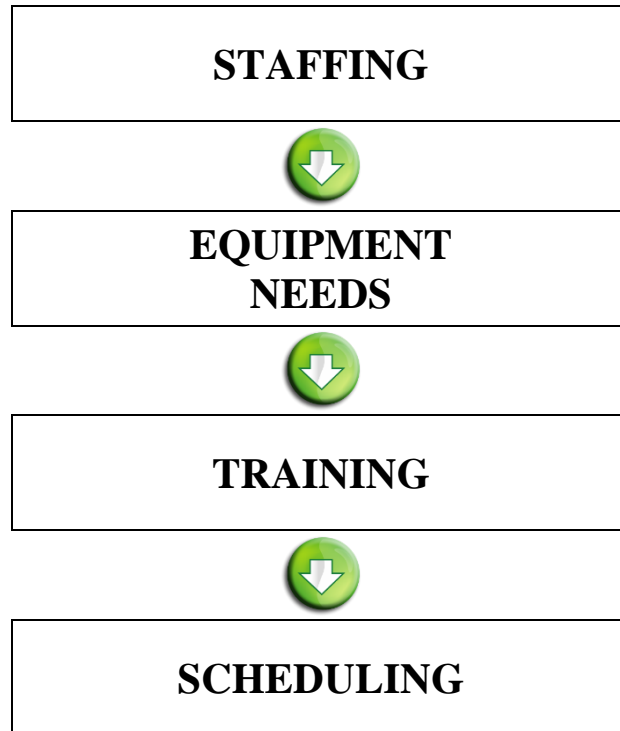
### **3.C.3 Detection/Elimination Prioritization Plan**

The McHenry County Department of Health receives complaints of suspected illicit discharges countywide. If determined to be an issue, the responsible party or property owner will hire an environmental engineering consultant to perform testing and/or enforce property owner responsibility and referring the issue to the appropriate agency (i.e., IEPA) for follow-up and resolution.

McHenry County Division of Transportation employees conduct visual outfall screenings to minimize and eliminate illicit discharges in the County right-of-way according to the established guidelines below. These guidelines are McHenry County's qualifying local program for fulfilling this minimum control measure.

### 3.C.3.a Program Planning

The program planning component is primarily office work related to assembling the necessary information and equipment for efficiently conducting outfall screening activities. This component of the program addresses the following issues (see **Figure 3**).



**Figure 3: Program Elements**

#### *STAFFING*

Personnel for an outfall inspection screening program are required for program administration, effort for conducting the outfall screening, and any follow-up investigations. Typically, a person with a camera is required for the outfall screening and follow-up portions of the program. Based on the number of identified outfalls and program goals, it is anticipated that McHenry County personnel will be required to perform inspections as specified in the NOI.



#### *EQUIPMENT NEEDS*

General field equipment for outfall screening are required for IDDE programs. The method of collecting and managing inspection screening data is driven by available technology. Inspection personnel carry basic safety items, such as cell phones, cameras, and first aid kits, along with the inspection forms.

## TRAINING

Inspection personnel should have attended the culvert inspection seminar offered through IDOT's T<sup>2</sup> program to be able to identify stormwater outfalls. Review of the ***Stormwater Outfall Inspection Form (Appendix 5.6)*** should be accomplished before going into the field for adequate preparation.



## SCHEDULING

Pre-screening is on-going, in coordination with the outfall inventory. High priority dry weather flow locations were identified in 2016, in accordance with the new ILR40 permit. High priority locations are identified in Appendix 5.6. High priority outfalls will be inspected annually and all remaining outfalls will be inspected on a rotating basis over five-year intervals.

Scheduling for pre-screening or outfall inspections is dependent on staff availability and weather. Pre-screening generally takes place during the late summer or fall months, ideally in August, September, or October, although other summer or fall months may be acceptable, depending on weather conditions. This time period is generally warm, which improves field efficiency as well as reliability and consistency of field testing. This time period is also more likely to have extended dry periods with little or no precipitation, which is required for the inspection activities.

### 3.C.3.b Outfall Inspection Procedure

#### OUTFALL INSPECTION SETUP AND PRECAUTIONS

Of particular concern in daily setup is whether any safety issues will be associated with the day's screening activities. For example, does traffic need to be controlled or is access to the outfall difficult. Before leaving an outfall inspection location, field crews must ensure that all necessary equipment is available, operable, and calibrated (as appropriate).

Safety is the primary consideration while inspecting outfalls. In general, the rule "*if in doubt, don't*" is followed. A first aid kit is included in each vehicle to treat minor injuries. Obtain medical help for major injuries as soon as possible. Report all injuries, minor and major, to appropriate persons.

#### ACCESS TO PRIVATE PROPERTY

If an illicit discharge is reported on private property and poses a health concern, the McHenry County Department of Health will follow internal procedures to investigate the complaint, then refer to the appropriate agency for assistance. The McHenry County Division of Transportation only inspects outfall points within County rights-of-way.



*TRAFFIC*



All traffic control measures are to be in accordance with the requirements of the *Manual on Uniform Traffic Control Devices* and other internal Policies and Procedures as set forth by the MCDOT.

In general, the following additional policies are applicable. County personnel generally work on streets only during the hours of 7 a.m. to 4 p.m. except in emergency situations. All field crews are required to wear personal protection equipment (PPE) in accordance with Standard Operating Procedures set forth by the MCDOT Procedures Manual.

*CONFINED SPACE ENTRY*

Confined space entry for this program would include climbing into or inserting one’s head into a pipe, manhole, or catch basin. In general, do not cross the vertical plane defining an outfall pipe or the horizontal plane defining a manhole, unless properly prepared for confined space entry. **IN NO CASE SHALL FIELD CREW MEMBERS ATTEMPT TO ENTER CONFINED SPACES.**

*OTHER HAZARDS*

**Table 1: Other Outfall Inspection Hazards**

<b>Hazard</b>	<b>Prevention</b>
Access	Avoid steep slopes, dense brush and deep water. Report unsafe locations and move on to next location.
Stuck	Avoid wading where bottom sediments are easily disturbed or depths are unknown.
Strong Gas/Solvent Odor	Do not select manhole for sampling.
Bodily Harm From Manhole Covers	Use manhole hook and watch for pinch points.
Slip	Proper foot gear and use of rope if warranted.
Falls	Use extended sample collection device; don’t cross horizontal or vertical plane at end of outfall.
Heat and Dehydration	Adequate water intake; avoid excessive exertion on hot days.
Sunburn	Sunscreen and appropriate clothing.
Poisonous Plants/Animals	Identify and avoid.
Vicious Dogs	Avoid; use animal repellent if necessary.
Water Bodies	Flotation devices.
Ticks	Check entire body at end of each day.
Mosquitoes	Apply repellent.

## OUTFALL INSPECTION



An outfall inspection is required for outfalls on a routine basis. Annual inspection of all high priority outfalls, as identified in Chapter 3.C.3.a, is required. Upon arriving at an outfall, the inspection personnel inspect the outfall by approaching the outfall on foot to a proximity that allows visual observations to be made.

Outfalls are assessed to determine which one of the three following conditions applies:

- (1) The outfall is dry or damp with no observed flow;
- (2) Flowing discharges are observed from the outfall; or
- (3) The outfall is partially or completely submerged with no observed flow or is inaccessible.

**Scenario 1: No Observed Flow.** Under Scenario 1, the field crew should photograph the outfall and complete the *Stormwater Outfall Inspection Form (Appendix 5.6)*.

**Scenario 2: Observed Flow.** Under Scenario 2, the field crew photographs the outfall and completes the *Stormwater Outfall Inspection Form (Appendix 5.6)*. If a flow from the outlet is a suspected illicit discharge, the IEPA is notified for further investigation, testing, and resolution.

**Scenario 3: Submerged or Inaccessible Outfall.** Under Scenario 3, if standing water is present in an outfall or if it is inaccessible, then complete the appropriate sections of the *Stormwater Outfall Inspection Form (Appendix 5.6)*, with remarks in the last section of being submerged and to put on a follow up inspection list to be inspected during a drier period in the year. Otherwise, locate the next upstream access point and evaluate for illicit discharges.

Locating an upstream access point may be required if any of the following conditions exist at an outfall:

- The outfall discharge is submerged or partially submerged due to backwater conditions;
- Site access and safety considerations prevent visual inspection;
- The outfall is from a facility providing water quality treatment (for example, detention basin outlet); or
- Other special considerations.

Determine the upstream access point using the MCDOT's storm sewer atlas. Manholes, catch basins, or culvert crossings can be used for upstream access. Make reasonable efforts to locate upstream access points that are easily accessible and exhibit flow. If inaccessible, reschedule the outlet inspection during a drier period in the year.





**Figure 4: Characterizing Submersion and Flow**  
Center for Watershed Protection

#### *OUTFALL ASSESSMENT AND DOCUMENTATION*

Complete the ***Stormwater Outfall Inspection Form*** (**Appendix 5.6**) for all outfall inspections. All completed forms must be dated, legible, and contain accurate documentation of each outfall inspection. Include pictures in the file for the outlet for comparison. A separate data form must be completed for each outfall. It is recommended that non-smearing pens be used to complete the forms and that all data be objective and factual. Once completed, these data forms are considered accountable documents and are maintained as part of the MCDOT's files. In addition to standard information, the data form is used to record other information that is noted at the time the outfall inspection is conducted (e.g. observations of dead or dying plants, fish kills, algal blooms (excessive algae growth), construction activities, and other activities that might provide information regarding the potential for illicit connections or inappropriate discharges).

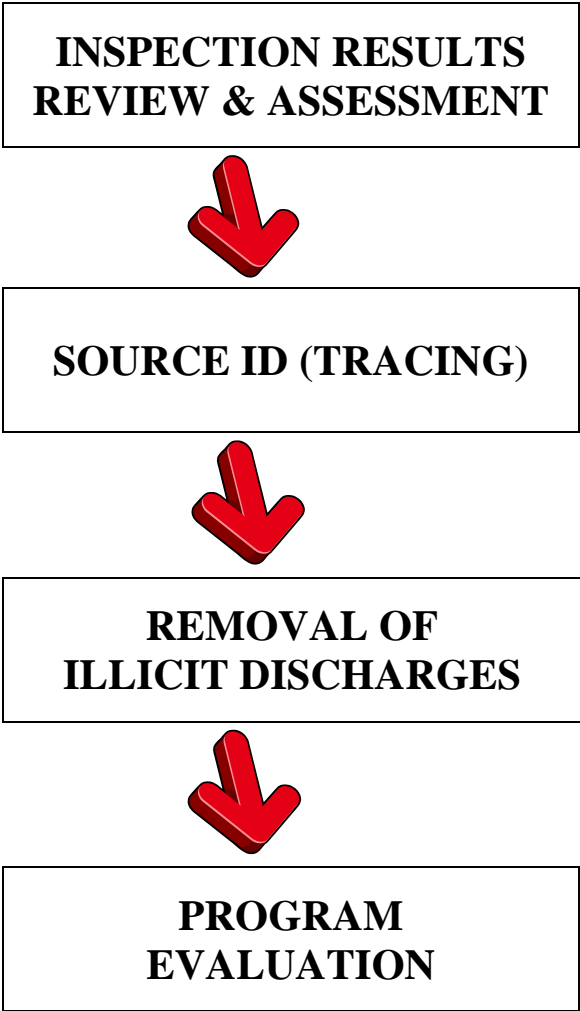
#### *OFFICE CLOSEOUT*

In the office, file copies of completed data forms with pictures. Also, update CarteGraph database with results from outfall screening. Schedule and plan the next screening activities.



3.C.3.c Follow Up Investigation and Program Evaluation

Follow up investigation is required for all outfalls with positive indicators for pollutant discharges. The outfall assessment results are reviewed to determine the magnitude of the dry-weather pollution problem and to determine the necessary steps to identify and remove the sources of any detected pollutants. **Figure 5** provides a flow chart to aid in follow up investigations of potential illicit discharges.



**Figure 5: Follow Up Procedure**

## *OUTFALL SCREENING RESULTS REVIEW AND ASSESSMENT*

Detailed investigations of the storm sewer system may be required upstream of the outfalls to locate sources of illicit discharges or improper disposal. The need for detailed investigations is based on evaluation of the data from the initial outfall inspection. This element of the program serves to detect and remove pollutant sources. This is accomplished by reviewing the questionable ***Stormwater Outfall Inspection Form (Appendix 5.6)*** to determine if there are outfalls that require a follow up investigation, target sewer system areas for detailed investigation and then conducting intensive field investigations upstream of the polluted outfall to identify potential sources.

### *SOURCE IDENTIFICATION*

Follow up investigation is required for all outfalls with positive indicators for pollutant discharges during the inspection efforts. The procedure for detailed storm sewer investigation and source identification has three major components: 1) Mapping and evaluation; 2) Storm sewer investigation; and 3) Tracing.



### *MAPPING AND EVALUATION*

For each outfall to be investigated, a large-scale working map should be obtained (digitally or in paper form) that includes the entire upstream storm sewer network, outfall locations, and parcel boundaries indicated. This map product is based on information from the ***Storm Sewer Atlas*** and ***Outfall Inventory Map*** and can be obtained from the MCDOT. Land use information is evaluated to determine the types of residential, commercial, and industrial areas that might contribute the type of pollution identified at the outfall.

If the contributing area is determined to be non-residential, the available Industrial/Business information should also be reviewed. All business types with “Reportable Quantities” of specific materials are logged into CAMEO, a system of software applications used widely to plan for and respond to chemical emergencies, which is used by the McHenry County Emergency Management Agency.

Business types, at the time of the SMPP creation, include:

- Assembly
- Automotive
- Bank-Loans
- Car Wash
- Church
- Contractor
- Food Processing (Pet, Candy)
- Government/School
- Grocery Store
- Health Club/Gym
- Landscaping/Nursery

- Laundromat/Dry Cleaning
- Manufacturing
- Meat Packing
- Medical/Dental/Pharmaceutical
- Office
- Printing/Photography
- Recreations/Park District
- Residential (Single and Multi-Family)
- Restaurants/Bars
- Retail
- Salon/Barber Shop
- Utility
- Warehouse/Distribution

Make attempts to match detected indicators with upstream activities.

#### *STORM SEWER INVESTIGATION*

After conducting the mapping evaluation, a manhole-by-manhole inspection is conducted to pinpoint the location of the inappropriate discharge, into the storm sewer / conveyance system. This inspection requires a field crew to revisit the outfall where the polluted dry-weather discharge was detected. The field crew should be equipped with the same testing and safety equipment and follow similar procedures as used during the outfall inspection.



After confirming that dry-weather flow is present at the outfall, the field crew continues moving to the next upstream manhole or access point investigating for dry-weather flow. In cases where more than one source of dry-weather discharge enters a manhole, the field crew records this information on the screening form and then tracks each source separately. All sources are tracked upstream, manhole-by-manhole, until the dry-weather discharge is no longer detected. Finally, the last manhole where dry-weather flow is present is identified and potential sources to that manhole are accessed. This data is important for source identification.

The field crew should also determine whether there has been a significant change in the flow rate between manholes. If the flow rate appears to have changed between two manholes in the system, the illicit connection likely occurs between the two manholes. Changes in the concentration of pollutant parameters could also aid in confirming the presence of an illicit connection between the two manholes.

### 3.C.3.d Potential Sources of Illicit Discharges

**Table 2** shows that direct connections to storm sewer systems most likely originate from commercial/industrial facilities. Thus, the focus on Chapter 3.C is on the identification of illicit discharges from commercial/industrial facilities.

**Table 2: Potential Sources of Illicit Discharges to Storm Sewers**

Potential Sources	Storm Sewer Entry		Flow Characteristics	
	Direct	Indirect	Continuous	Intermittent
<b>Residential Sources</b>				
Sanitary Wastewater	√	X	√	X
Septic Tank Effluent	-	√	√	X
Household Chemicals	X	√	-	√
Laundry Wastewater	√	-	-	√
Excess Landscaping Watering	-	√	-	√
Leaking Potable Water Pipes	-	√	√	-
<b>Commercial Sources</b>				
Gasoline Filling Stations	√	X	-	√
Vehicle Maint./Repair Facilities	√	X	-	√
Laundry Wastewater	√	-	√	X
Construction Site Dewatering	X	√	√	X
Sanitary Wastewater	√	X	√	X
<b>Industrial Sources</b>				
Leaking Tanks and Pipes	X	√	√	X
Misc. Process Waters	√	X	√	X

√: Most likely condition.

X: May Occur

-: Not very likely

Source: Adapted From: USEPA. January 1993. *Investigation of Inappropriate Pollutant Entries Into Storm Drainage Systems: A User's Guide*. Cincinnati, Ohio.

### 3.C.3.e USEPA Exclusions

It is noted that not all dry-weather flows are considered inappropriate discharges. Under certain conditions, the following discharges are not considered inappropriate by USEPA:

- Water line flushing
- Landscaping irrigation
- Diverted stream flows
- Rising ground waters
- Uncontaminated groundwater infiltration
- Uncontaminated pumped groundwater
- Discharges from potable water sources
- Flows from foundation drains
- Air conditioning condensation
- Irrigation water
- Springs
- Water from crawl spaces

- Lawn watering
- Individual car washing
- Flows from riparian habitats and wetlands
- Dechlorinated swimming pool water
- Street wash water

### 3.C.3.f Pollutant Indicators

#### PHYSICAL INDICATORS

*Adapted from New Hampshire Estuaries Project and the IDDE Guidance Manual by the Center for Watershed Protection.*

#### *Odor*

Water is a neutral medium and does not produce odor; however, most organic and some inorganic chemicals contribute odor to water. Odor in water may originate from municipal and industrial waste discharges, from natural sources such as decomposition of vegetative matter or from associated microbial activity.



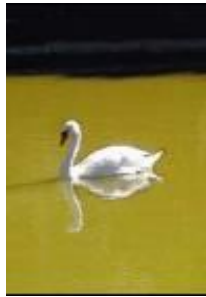


**Table 3: Odor or Potential Illicit Discharges** (adapted from CWP)

<b>Odor</b>	<b>Possible Cause</b>
Sewage	Wastewater treatment facilities, domestic waste connected into storm drain, failing septic system.
Sulfide (rotten eggs)	Decaying organic waste from industries such as meat packers, dairies, and canneries.
Rancid/sour	Many chemicals, including pesticides and fertilizers, emit powerful odors that may produce irritation or stinging sensations.
Petroleum/gas	Industry associated with vehicle maintenance or petroleum product storage; gas stations.
Laundry	Laundromat, dry cleaning, household laundry.



#### *Color*

Color is a numeric computation of the color observed in a water quality sample, as measured in cobalt-platinum units. Both industrial liquid wastes and sewage tend to have elevated color values. Unfortunately, some “clean” flow types can also have high color values. A color value higher than 500 units may indicate an industrial discharge.

**Table 4: Color of Potential Illicit Discharges** (adapted from CWP)

Water Color	Possible Cause	Images
<p><b>Brown Water</b> – water ranging in color from light-tea to chocolate milk; it may have a rotten egg odor.</p>	<p>Human causes may be eroded, disturbed soils from construction sites; animal enclosures; destabilized stream banks; and lake shore erosion due to boat traffic.</p>	
<p><b>Yellow</b> –</p>	<p>Human causes may include textile facilities, chemical plants, or pollen.</p>	
<p><b>Gray Water</b> – water appears milky and may have a rotten egg smell and/or soap odor. There may also be an appearance of cottony slime.</p>	<p>Human causes may be illicit connections of domestic wastewater; untreated septic system discharge; illegal boat discharge; and parking lot runoff.</p>	
<p><b>Green Water</b> – ranging from blue-green to bright green color and may impart odor. Conditions typically occur from May to October.</p>	<p>Human causes may be over-fertilizing lawns; boat discharges; septic systems; agriculture operations; or discharging poorly treated wastewater.</p>	
<p><b>Orange/Red</b> –</p>	<p>Human causes may include meat packing facilities or dyes.</p>	
<p><b>Green Flecks</b> – resembling floating blue-green paint chips or grass clippings. These <i>Blooms</i> and are potentially toxic.</p>	<p>Human cause is excessive nutrients. Fertilizers used on lawns can contaminate surface and groundwater.</p>	

**Table 4 (continued)**

Water Color	Possible Cause	Images
<b>Green Hair-Like Strands</b> – bright or dark green, resembling cotton candy and often in floating mats.	Human causes are excessive nutrients from fertilizers or failed on-shore septic systems.	
<b>Multi-Color Water</b> – various or uniform color, other than brown, green or gray. For rainbow sheen, see floatables.	Human causes include oil or hazardous waste spill; paint and paint equipment rinsed into storm drains or into failing septic systems.	

*Turbidity*

Turbidity is a measure of the clarity of water. Turbidity may be caused by many factors, including suspended matter such as clay, silt, or finely divided organic and inorganic matter. Turbidity is a measure of the optical properties that cause light to be scattered and not transmitted through a sample. The presence of turbidity is to be assessed by comparing the sample to a clean glass sample container with colorless distilled water.

Turbidity and color are related terms but are not the same. Remember, turbidity is a measure of how easily light can penetrate through the sample bottle, whereas color is defined by the tint or intensity of the color observed.

**Figure 6: Turbidity Severity Examples**  
(adapted from CWP)



Turbidity  
Severity 1



Turbidity  
Severity 2



Turbidity  
Severity 3



## *Floatables*

The presence of sewage, floating scum, foam, oil sheen, or other materials can be obvious indicators of an illicit discharge. However, trash originating from areas adjacent to the outfall is described in this section.

- If you think the floatable is sewage, you should automatically assign it a severity score of three, since no other source looks quite like it.
- Suds are rated based on their foaminess and staying power. A severity score of three is designated for thick foam that travels many feet before breaking up. Natural foam breaks apart easily, can be brown, black or yellowish and may smell fishy or musty.
- Surface oil sheens are ranked based on their thickness and coverage. In some cases, surface sheens may not be from oil discharges, but instead created by in-stream processes. A petroleum sheen does not break apart and quickly flows back together.

**Figure 7: Natural Sheen versus Synthetic**  
(adapted from CWP)



Sheen from natural bacteria forms a swirl-like film that cracks if disturbed



Synthetic oil forms a swirling pattern

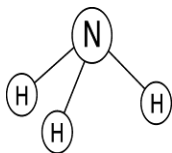


**Table 5: Floatables in Potential Illicit Discharges** (adapted from CWP)

<b>Floatables</b>	
<p>Sewage</p> 	<p>Human causes include connection of domestic wastewater; leaking sanitary sewers; or failing septic systems.</p>
<p>Suds and Foam</p> 	<p>Common human causes of unnatural foam include leaking sewer lines; boat discharges; improper sewer connections to storm sewers; or detergents from car washing activities.</p>
<p>Petroleum (oil sheen)</p> 	<p>Human causes may include a leaking underground storage tank or illegal dumping.</p>
<p>Grease</p> 	<p>Common human causes include overflow from sanitary systems (due to clogging from grease) or illegal dumping.</p>

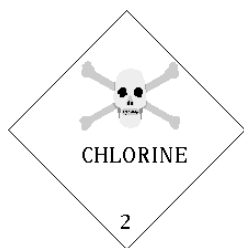
## TESTING INDICATORS

### Ammonia



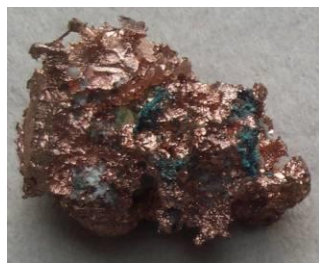
Ammonia is a good indicator of sewage, since its concentration is much higher there than in groundwater or tap water. High ammonia concentrations (>50 mg/L) may also indicate liquid wastes from some industrial sites. Ammonia is relatively simple and safe to analyze. Some challenges include the potential generation of wastes from non-human sources, such as pets or wildlife.

### Chlorine



Chlorine is used throughout the country to disinfect tap water, except where private wells provide the water supply. Chlorine concentrations in tap water tend to be significantly higher than most other discharge types. Unfortunately, chlorine is extremely volatile and even moderate levels of organic materials can cause chlorine levels to drop below detection levels. Because chlorine is non-conservative, it is not a reliable indicator, although if very high chlorine levels are measured, it is a strong indication of a water line break, swimming pool discharge, or industrial discharge from a chlorine bleaching process.

### Copper



Concentrations of copper in dry-weather flows can be a result of corrosion of water pipes or automotive sources (for example, radiators, brake lines, or electrical equipment). The occurrence of copper in dry-weather flows could also be caused by inappropriate discharges from facilities that either use or manufacture copper-based products. A copper value of >0.025 mg/L indicates an industrial discharge is present.

Industrial sources of copper include the following:

- Copper manufacturing (smelting)
- Copper metal processing/scrap remelting
- Metal plating
- Chemicals manufacturing
- Analytical laboratories
- Power plants
- Electronics
- Wood preserving
- Copper wire production

In each of these industries, wastes containing copper would normally be discharged to a treatment facility. Sludge from the waste treatment facility, whether on-site (including lagoons) or publicly operated treatment facilities, would contain copper. If the sludge (or the treatment process) is not managed properly, copper could enter the storm sewer system.

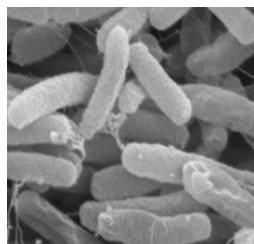
## Detergents



Most illicit discharges have elevated concentration of detergents. Sewage and washwater discharges contain detergents used to clean clothes or dishes, whereas liquid wastes contain detergents from industrial or commercial cleansers. The nearly universal presence of detergents in illicit discharges, combined with their absence in natural waters or tap water, makes them an excellent indicator. Research has revealed three indicator parameters that measure the level of detergent or its components – surfactants, fluorescence, and surface tension. Surfactants have been the most widely applied and transferable of the three indicators.

Fluorescence and surface tension show promise, but only limited field testing has been performed on these more experimental parameters; therefore, these are not tested. Refer to the *Surfactants* description.

## *E. coli*, *Enterococci* and *Total Coliform*



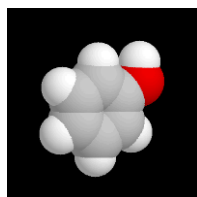
Each of these bacteria is found at very high concentrations in sewage compared to other flow types and is a good indicator of sewage or seepage discharges, unless pet or wildlife sources exist in the subwatershed. Overall, bacteria are good supplemental indicators and can be used to find “problem” streams or outfalls that exceed public health standards.

## Fluoride



Fluoride, at a concentration of two parts per million, is added to drinking water supplies in most communities to improve dental health. Consequently, fluoride is an excellent conservative indicator of tap water discharges or leaks from water supply pipes that end up in the storm drain. Fluoride is obviously not a good indicator in communities that do not fluorinate drinking water, or where individual wells provide drinking water. Fluoride levels greater than 0.6 mg/L indicates a potable water source is connected to the stormwater system.

## Phenol



Phenol is a very commonly occurring chemical and can be found in foods, medicines, and cleaning products, as well as industrial products and by-products. Generally, the appearance of phenols in stormwater would indicate a misconnected industrial sewer to a storm drain or ditch. Exceptions would include runoff from treated wood storage yards (for example, treated lumber and telephone poles) and improper disposal (flash dumping) of cleaning products. A phenol value greater than 0.1 mg/L indicates an illicit discharge is present.

Industrial sources of phenol include the following:

- Chemical manufacturing (organic)
- Textile manufacturing
- Paint and coatings manufacturing
- Metal coating
- Resin manufacturing
- Tire manufacturing
- Plastics fabricating
- Electronics
- Oil refining and re-refining
- Naval stores (turpentine and other wood treatment chemicals)
- Pharmaceutical manufacturing
- Paint stripping (for example, automotive and aircraft)
- Military installations (rework and repair facilities)
- Coke manufacturing
- Iron production
- Ferro-alloy manufacturing

Other sources of phenol include improper handling and disposal of cleaning compounds by institutions such as hospitals and nursing homes.

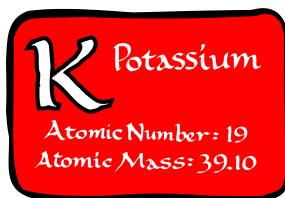
### *pH*



Potential ID Range:  $<6.5$  and  $>8.5$

Most discharge flow types are neutral, having a pH value around 7, although groundwater concentrations can be somewhat variable. pH is a reasonably good indicator for liquid wastes from industries, which can have very high or low pH (ranging from 3 to 12). The pH of residential wash water tends to be rather basic (pH of 8 or 9). The pH of a discharge is very simple to monitor in the field with low cost test strips or probes. Although pH data is often not conclusive by itself, it can identify problem outfalls that merit follow up investigations using more effective indicators.

### *Potassium*



Potassium is found at relatively high concentrations in sewage and extremely high concentrations in many industrial process waters. Consequently, potassium can act as a good first screen for industrial wastes, and can also be used in combination with ammonia to distinguish wash waters from sanitary wastes. An ammonium to potassium ratio of  $>1$  or  $<1$  indicates waste water or wash water discharge, respectively. A potassium value of  $>20$  mg/L is a good indicator for industrial discharges.

## Surfactants



Surfactants are the active ingredients in most commercial detergents and are typically measured as Methyl Blue Active Substances (or MBAS). They are a synthetic replacement for soap, which builds up deposits on clothing over time. Since surfactants are not found in nature, but are always present in detergents, they are excellent indicators of sewage and wash waters. The presence of surfactants in cleansers, emulsifiers, and lubricants also makes them an excellent indicator of industrial or commercial liquid wastes. A surfactant value of  $>0.25$  mg/L within residential areas indicates that either a sewage or wash water is present in the stormwater; a value of  $>5$  mg/L within non-residential areas indicates that there is an industrial discharge (refer to Table 46 from the *Illicit Discharge Detection and Elimination Manual* by the Center for Watershed Protection for use in determining industrial flow types).



### 3.C.3.g Indirect Connection Program



Indirect connections are subtle connections, such as dumping or spillage of materials into storm sewer drains. Flash dumping is a common type of indirect connection. Generally, indirect modes of entry produce intermittent or transitory discharges, with the exception of groundwater seepage. There are five main modes of indirect entry for discharges.

#### *GROUNDWATER SEEPAGE*

Seepage discharges can be either continuous or intermittent, depending on the depth of the water table and the season. Groundwater seepage usually consists of relatively clean water that is not an illicit discharge by itself, but can mask other illicit discharges. If storm drains are located close to sanitary sewers, groundwater seepage may intermingle with diluted sewage. Addressing seepage that is observed during the outfall screening process is described in more detail in this Chapter.

#### *SPILLS*

These transitory discharges occur when a spill travels across an impervious surface and enters a storm drain inlet. Spills can occur at many industrial, commercial, and transport-related sites. A very common example is an oil or gas spill from an accident that then travels across the road and into the storm drain system. The Spill Response Plan is described in Chapter 3.F.6.c.

#### *DUMPING*

Dumping a liquid into a storm drain inlet:

This type of transitory discharge is created when liquid wastes such as oil, grease, paint, solvents, and various automotive fluids are dumped into the storm drain. Liquid dumping occurs intermittently at sites that improperly dispose of rinse water and wash water during maintenance and cleanup operations. A common example is cleaning deep fryers in the parking lot of fast food operations. The Storm Drain Stenciling, Household Hazardous Waste collections, and Vehicle Fluid Maintenance are designed to minimize dumping; these programs are described in Chapter 3.6.a, b, d, and f. Additionally, complaints can be made to the Department of Health.

### *OUTDOOR WASHING ACTIVITIES*

Outdoor washing may or may not be an illicit discharge, depending on the nature of the generating site that produces the wash water. For example, hosing off individual sidewalks and driveways may not generate significant flows or pollutant loads. On the other hand, routine washing of fueling areas, outdoor storage areas, parking lots (power washing), and construction equipment cleanouts may result in unacceptable pollutant loads. Individual washing activities are addressed through the Public Education and Outreach Program in Chapter 3.A.6.d whereas observed/documentated routine washing activities should be addressed through the Removal of Illicit Discharges Procedure in Chapter 3.C.5.a.

### *NON-TARGET IRRIGATION FROM LANDSCAPING OR LAWNS*

Irrigation can produce intermittent discharges from over-watering or misdirected sprinklers that send tap water over impervious areas. In some instances, non-target irrigation can produce unacceptable loads of nutrients, organic matter, or pesticides. The most common example is a discharge from commercial landscaping areas adjacent to parking lots connected to the storm drain system. This type of discharge is addressed by the Public Education and Outreach Program in Chapter 3.A.

#### *3.C.3.h Direct Connection Illicit Discharge Program*



Direct connections enter through direct piping connections to the storm sewer system, and since direct connections exist regardless of whether or not a stormwater event (e.g., rain or melting snow) is occurring, they are most easily detected during dry-weather periods. Inspection of stormwater outfalls during dry-weather conditions reveals whether non-stormwater flows exist. If non-stormwater flows are observed, they can be screened and tested to determine whether pollutants are present. If the presence of pollutants is indicated, the detective work of identifying the source of the discharge can begin. Once the source is identified, it can then be corrected. A direct connection illicit discharge program consists of three principal components: 1) Program planning; 2) Outfall screening; and 3) Follow up investigation and program evaluation.

1. **Program Planning** involves the office work, planning, and organization required to conduct the subsequent outfall screening and follow up investigative activities of the program. Program planning identifies the regulatory authority to remove directly connected illicit



discharges and the identification of the outfalls and receiving waters in the municipality (both discussed earlier in this chapter). Program planning for the direct connection portion of the overall program also includes the identification of the staffing and equipment needed to conduct the outfall screening, and scheduling of the outfall screening activities (Chapter 3.C.3).

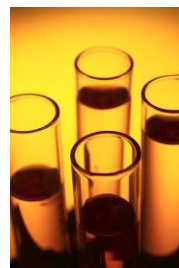
2. **Outfall Screening** consists of pre-screening to determine whether dry-weather flows are present and outfall inspection to determine whether pollutants are present in any observed dry-weather flows (Chapter 3.C.3.b).
3. **Follow Up Investigation and Program Evaluation** are the steps necessary to determine the source of any identified pollutant flows and eliminate them. The major follow up investigation and program evaluation components include:
  - Reviewing and assessing outfall inspection results;
  - Internal coordination;
  - Conducting detailed storm sewer investigations to identify pollutant sources (*tracing*); and
  - Exercising the appropriate legal means to achieve enforcement of the program objective (*removal of pollutants at the source*), and evaluating the program to determine whether subsequent screening activities are necessary.

### 3.C.4 Illicit Discharge Tracing Procedures

The McHenry County Division of Transportation uses the tracing methods below as the qualifying local program (QLP) for fulfilling Minimum Control Measure C.4.

#### 3.C.4.a Tracing

Once the manhole inspection has identified the reach area, between two manholes suspected of containing an inappropriate discharge, testing may be necessary. If there is only one possible source to this section of the storm sewer system in the area, source identification and follow-up for corrective action is straightforward. Multiple sources, or non-definitive sources, may require additional evaluation and testing in order to identify the contributing source. Potential testing methods include dye testing, smoke testing, and/or remote video inspections. Once identified, clearly log the contributing source.



### 3.C.5 Illicit Source Removal Procedures

The McHenry County Department of Health (MCDH) is responsible for overseeing this process per the steps below. These steps are the qualifying local program for fulfilling Minimum Control Measure C – IDDE.

### 3.C.5.a Removal of Illicit Discharges

Removal of illicit discharge connections is required at all identified contributing sources. Six steps are taken to definitively identify and remove an inappropriate discharge to the storm sewer system. These steps are as follows:

- Step 1: Complaint is evaluated and forwarded to the appropriate agency for further investigation. If the discharge is septic in nature, it is forwarded to the MCDH. Non-septic system discharges are not regulated by the MCDH. These types of suspected illegal discharges are address by notifying the regional IEPA office and coordinating with their investigation.
- Step 2: MCDH inspects the problem location.
- Step 3: MCDH conducts a visual inspection and checks for odors. If circumstances warrant further examination, MCDH may conduct dye testing and/or collect water samples for analysis.
- Step 4: Conduct an internal meeting with appropriate personnel to discuss inspection and testing results and remedial procedures. Determine if discharge is illicit in nature. *If not, no further action required.* If the discharge is illegal, the MCDH shall send a 10-day notification letter to the owner/operator of the property/site suspected of discharging a pollutant to correct the deficiency.
- Step 5: A follow up inspection is conducted. *If the deficiency is corrected, no further action is required.* If not, the MCDH sends a final notification to correct the deficiency with a timely manner.
- Step 6: Another follow up inspection is conducted. *If the deficiency is corrected, no further action is required.* If the owner remains in non-compliance the case is then turned over to the State's Attorney, who then pursues legal action to enforce remediation of the illegal discharge.

### 3.C.6 Program Evaluation and Assessment

Although this task is not included in the current NOI and annual year-end report, the County intends to incorporate this step into the future NPDES permit program.

#### 3.C.6.a Program Evaluation

Review the results of the screening program to examine whether any trends can be identified that relate the incidence of dry-weather flow observations to the age or land use of a developed area. Experience gained from the USEPA NPDES program indicates a lower chance of observing polluted dry-weather flows in residential and newer development areas, while older and industrial land use areas having a higher incidence of observed dry-weather flows. See **Table 6** for areas that may be more likely to exhibit dry-weather flows. Examine the screening results to determine

whether any such obvious conclusions can be made. If so, these conclusions may guide future outfall screening activities.

Outfalls with positive indicators of potential pollution are investigated to identify upstream pollutant sources. Identified illicit direct connections must be eliminated. However, new sources may appear in the future as a result of mistaken cross-connections from redevelopment, new development, or remodeling. Indirect or subtle discharges such as flash dumping are difficult to trace to their sources and can only be remedied through public education and reporting. Therefore, it is expected that to some degree they will continue, although at a reduced magnitude and frequency. Although the outfall screening program will be successful in identifying and eliminating most pollutants in dry-weather discharges, the continued existence of dry-weather flows and associated pollutants will require an ongoing commitment to continue the outfall screening program.

The annual inspection screening will determine the effectiveness of the program on a long-term basis and show ongoing improvement through a reduced number of outfalls having positive indicators of potential pollutants. It is logical to assume that after several years of annual screening, the majority of the dry-weather pollution sources will be eliminated.

*While this minimum control measure was never specified in the County's NOI, it is an integral part of the IDDE screening process from above.*

**Table 6: NPDES-Identified Industrial Facilities**

SIC Code	Description
	Facilities subject to stormwater effluent limitations guidelines, new source performance standards, or toxic pollutant effluent standards under 40 CFR Subchapter N (except facilities with toxic pollutant effluent standards that are exempted).
1000-1400	Mineral industry, including active and inactive mining operations, with exceptions, and certain oil and gas exploration, production, processing, or treatment operations or transmission facilities.
2400	Lumber and wood products except furniture (except 2434-wood kitchen cabinets)
2600	Paper and allied products (except 2650-paperboard containers and boxes from purchased paperboard and 2670-converted paper and paperboard products)
2800	Chemicals and allied products (except 2830-drugs)
2900	Petroleum refining and related industries (except discharges subject to 40 CFR 419)
3110	Leather tanning and finishing
3200	Stone, clay, glass, and concrete products (except discharges subject to 40 CFR 419)
3300	Primary metal industries
3441	Fabricated structural metal
3730	Ship and boat building and repair
	Hazardous waste treatment, storage, or disposal facilities, including those that are operating under interim status or a permit under Subtitle C of RCRA
	Landfills, land application sites, and open dumps that receive or have received any industrial wastes, including those that are subject to regulation under Subtitle D of RCRA
	Facilities involved in the recycling of materials, including metal scrap yards, battery reclaimers, salvage yards, and automobile junkyards, including, but not limited to, those classified as SIC codes 5015 (used motor vehicle parts) and 5093 (scrap and waste materials).
	Stream electric power generating facilities including coal handling sites
	Transportation facilities with vehicle maintenance shops, equipment cleaning operations, or airport deicing operations (except facilities with SIC codes 4221 through 4225) (only those portions of the station that are either involved in vehicle maintenance including vehicle rehabilitation, mechanical repairs, painting, fueling, and lubrication), equipment cleaning operations, airport deicing operations, or that are otherwise identified as an industrial station.
	Construction activity including clearing, grading, and excavation activities except: operations that result in the disturbance of less than 5 acres of total land that are not part of a larger common plan of development or sale.
<b>THE FOLLOWING CODES REQUIRE A NPDES PERMIT IF CERTAIN ACTIVITIES ARE EXPOSED TO SW</b>	
2000	Food and kindred products manufacturing or processing
2100	Tobacco products
2200	Textile mill products
2300	Apparel and other finished products made from fabrics and similar materials
2434	Wood kitchen cabinets
2500	Furniture and fixtures
2650	Paperboard containers and boxes
2670	Converted paper and paperboard products
2700	Printing, publishing, and allied industries
2830	Drugs
2850	Paperboard containers and boxes
3000	Rubber and miscellaneous products
3100	Leather and leather products (except 3110-leather tanning and finishing)
3230	Glass products, made of purchased glass
3400	Fabricated metal products, except machinery and transportation equipment (except 3441-fabricated structural metal)
3500	Industrial and commercial machinery and computer equipment
3600	Electronic and other electrical equipment and components, except computer equipment
3700	Transportation equipment (except 3730-ship and boat building and repairing)
3800	Measuring, analyzing, and controlling instruments; photographic, medical, and optical goods; watches and clocks
3900	Miscellaneous manufacturing industries
4221-25	Farm products warehousing and storage, refrigerated warehousing and storage, general warehousing and storage

### **3.C.7 Visual Dry Weather Screening**

The MCDOT conducts inspections of storm sewer outfalls, at appropriate times of year, to detect non-stormwater discharges and illegal dumping. A portion of the outfalls are inspected on an annual basis so that all outfalls are inspected over five year intervals. The MCDOT has also identified high priority outfalls that are inspected annually. Appendix 5.6 lists all outfalls and identifies the high priority outfalls.

### **3.C.8 Pollutant Field Testing**

This minimum control measure (MCM) is not presently identified in our permit program; however, the McHenry County Department of Health (MCDH) does annual sampling of all public beaches in McHenry County.

To ensure residents enjoy a safe and healthy swimming season, MCDH tests the County's 38 beaches at least once every 2 weeks, from Memorial Day to Labor Day. Samples are taken from both shallow and deep areas, tested for bacterial levels and compared to acceptable limits set by the State Health Department. Results are posted regularly and can include a swimmer's advisory or closure of the beach, if elevated E. coli levels are found. Check online for beach results at [www.co.mchenry.il.us/county-government/departments-a-i/health-department/environmental-health/public-beaches](http://www.co.mchenry.il.us/county-government/departments-a-i/health-department/environmental-health/public-beaches).

Additional sampling data will be incorporated into future SMPPs.

### **3.C.9 Public Notification**

This minimum control measure (MCM) is not presently included in our permit program. This MCM will be reevaluated at a later date for possible inclusion.

### **3.C.10 Other Illicit Discharge Controls**

This minimum control measure (MCM) is not presently included in our permit program. This MCM will be reevaluated at a later date for possible inclusion.

## 3.D Construction Site Storm Water Runoff Control



The goal of the McHenry County Stormwater Management Ordinance (MCSMO) is to ensure that new development does not increase existing stormwater problems or create new ones. The MCSMO establishes countywide standards for runoff maintenance, detention areas, soil erosion and sediment control, water quality, wetlands, and floodplains. These provisions are only applicable for regulated development activities as defined by the MCSMO. Applicants that hydrologically disturb greater than one acre are also required to seek coverage under the statewide construction General Permit No. ILR10 by filing a Notice of Intent (NOI) with the IEPA.

The MCSMO is implemented at the County level and at the municipal level. Currently there are sixteen “Certified Communities” whose corporate limits are entirely within the county. There are six additional Certified Communities whose corporate limits straddle the county border. However, the number of Certified Communities is subject to change at any time. The designation allows those communities to enforce MCSMO standards within their own jurisdictions. The McHenry County Department of Planning and Development, Water Resources Division administers the MCSMO and issues permits for the developments within unincorporated McHenry County and the Non-Certified Communities, of which there are eight.

### 3.D.1 Regulatory Control Program

The McHenry County Stormwater Management Ordinance (MCSMO), most recently amended April 5, 2016, fulfills the minimum control measure D.1 as its qualifying local program. All McHenry County facilities adhere to the MCSMO for all internal development construction projects as well.

Applicants are directed to the McHenry County Department of Planning and Development for information pertaining to the permitting process. Developments that exceed the MCSMO minimum thresholds are provided with a McHenry County Stormwater Management Permit application form. Applicants submit the completed form and supporting documentation to the Department of Planning and Development for review and comment. After the Department of Planning and Development concurs that the applicable provisions of the MCSMO have been addressed, a Stormwater Permit is issued. Each permit lists any additional conditions that are applicable to the development.

Ordinance provisions include, but are not limited to, the following:

- Grading plan and soil erosion and sediment control plan. The plan must:
  - Prevent discharge of sediment from the site through the implementation of soil erosion control practices, primarily, and sediment control secondarily; and
  - Protect receiving waters, natural areas, and adjacent properties from damage which may result from the proposed grading.
- Water quality;
- Established inspection duties for the applicant and procedures for inspections;
- Record keeping and reporting procedures;
- Security deposits to ensure faithful performance for subdivision developments, gravel pit reclamation plans, and certain building demolition projects;
- Enforcement measures to achieve compliance; and
- One year warranty period, for applicable developments.

The McHenry County Technical Reference Manual and the Illinois Urban Manual (2014 edition or as amended) include detailed guidance on selection and implementation on related best management practices.

As part of the permit review process, applicants that hydrologically disturb greater than one acre are also required to seek coverage under the statewide construction General Permit No. ILR10 by filing a Notice of Intent (NOI) with the IEPA. During construction, applicants are required to submit to IEPA Incidence of Noncompliance (ION) forms, as necessary. After the site is substantially stabilized, the applicant is required to submit a Notice of Termination (NOT). All forms are filed with the construction project itself.

#### *3.D.1.a Responsible Parties*

##### *APPLICANT*

The applicant is ultimately responsible for ensuring compliant soil erosion and sediment control, other waste control, and other construction site runoff control measures on-site during construction. General contractors, sub-contractors, and other hired employees of the applicant can assist the applicant in maintaining a compliant site; however, the applicant remains the responsible party. The applicant is also responsible for obtaining all other required state and federal permits, including an NOI with IEPA, and upholding all permit conditions (including completing inspection logs).

##### *ENFORCEMENT OFFICER*

The Enforcement Officer (EO) is responsible for the administration and enforcement of the provisions of the MCSMO. Additionally, the EO is responsible for performing spot inspections of development. Review and inspection efforts can be performed by personnel under his/her direct supervision. A full description of the EO responsibilities is included in Article X, Section D of the MCSMO. The EO follows established procedures for notifying applicants of deficiencies and obtaining site compliance (i.e., enforcement).



It is also both the right and the responsibility of the EO to ensure that all incidences of non-compliance received from an inspector or complainant are resolved.

### *QUALIFIED INSPECTOR*

The purpose of the qualified inspector (QI) program is to facilitate positive communication between the County and the permit holder by creating a single point of contact for soil erosion and sediment control issues with the idea that it is easier to prevent soil erosion and sediment control problems than it is to correct them after they have occurred. Further, the program is intended to improve site conditions, minimize environmental impacts, and educate contractors/developers/inspectors about proper soil erosion and sediment control Best Management Practices.

The applicant, for developments with one acre or more of hydrologic disturbance per the MCSMO, is required to hire or employ a QI. The QI can work for the permittee's contractor, subcontractor, consultant, etc. The QI does not have to be a direct employee of the permittee.

The QI has the responsibility to conduct inspections as required, document inspections, keep inspections and project plans available on-site, report non-compliance issues promptly, and recommend soil erosion and sediment control measures as necessary. Assuming the QI is competently completing these steps, the QI is considered to meet the requirements of the program. Ultimately, liability for a development in non-compliance may fall to the owner, the applicant, the contractor, the developer, the QI, or anyone else involved as determined on a case-by-case basis.

Currently all sites with greater than one acre or more of hydrologic disturbance require a permit from IEPA and a designated inspector. A designated inspector, under the IEPA program, does not need to be a QI recognized by the County; however, a QI can fulfill both roles. Additionally, the site inspection logs can typically meet the permit conditions of both the MCSMO and the IEPA.

### **3.D.2 Erosion and Sediment Control BMPs**

All McHenry County unincorporated areas, non-certified communities, certified communities, McHenry County Division of Transportation and other facilities adhere to the following:

- McHenry County Stormwater Management Ordinance (MCSMO) and all amendments;
- Illinois Environmental Protection Agency;
- United States Army Corps of Engineers;
- Illinois Department of Natural Resources;
- Illinois Urban Manual; and
- McHenry-Lake County Soil & Water Conservation District soil and erosion control standards.

The MCSMO specifies the soil erosion and sediment control measures that must be used in conjunction with any land disturbing activities conducted on a development site. Ordinance provisions include but are not limited, to the following:

- Grading, soil erosion and sediment control plan. The plan must:
  - Minimize soil disturbance
  - Prevent discharge of sediment from the site through the implementation of soil erosion control practices, primarily, and sediment control secondarily
  - Protect receiving waters, natural areas and adjacent properties from damage which may result from the proposed grading
  - Complete installation of soil erosion and sediment control features prior to commencement of hydrologic disturbance
  - Stabilize disturbed areas within 7 days of active disturbance
  - Avoid disturbance of streams and sensitive areas, whenever possible
  - Use controls that are appropriate for the size of the tributary drainage area
  - Protect functioning storm sewers from sediment
  - Prevent sediment from being tracked onto adjoining streets
  - Limit earthen embankments to slopes of 3H:1V
  - Identify soil stockpile areas
  - Utilize statewide standards and specifications as guidance for soil erosion and sediment control
- Waste control;
- Runoff Volume Reduction Hierarchy and Water Quality;
- Established inspection duties for the applicant and procedures for inspections;
- Record keeping and reporting procedures; and
- Enforcement measures to achieve compliance.

See Appendix 5.7 for these standards which fulfill this minimum control measure.

### **3.D.3 Other Waste Control Program**

#### *3.D.3.a Construction Site Waste Control*

The MCSMO includes several provisions that address illicit discharges generated by construction sites. The applicant is required to prohibit the dumping, depositing, dropping, throwing, discarding or leaving of litter and construction material and all other illicit discharges from entering the stormwater management system. Although this minimum control measure is not included in the County's NOI and annual year-end report, the County enforces these requirements already.

#### *3.D.3.b Development Tracking*

The McHenry County Department of Planning and Development, Water Resources Division tracks development utilizing Devnet, a database program that tracks permitting and development permits. Each permit is given a unique permit number based on property address and/or Parcel Identification Number (PIN).

### *3.D.3.c Pavement Projects*

Pavement resurfacing and maintenance projects are determined through pavement evaluation studies that take place approximately every 5 years. Project work shall follow IDOT Standard Specifications and applicable provisions of the MCSMO. At a minimum, protect drainage structures with inlet filter bags during construction activities.

## **3.D.4 Site Plan Review Procedures**

### *3.D.4.a Minimum Construction Site Practices*

The County enforces the McHenry County Stormwater Management Ordinance (MCSMO) for all unincorporated areas of the county. Applicants are directed to the Department of Planning & Development (P&D) for information pertaining to the permitting process. Developments that exceed the MCSMO minimum thresholds are provided with a Stormwater Management Permit Application form. Applicants submit the completed form and supporting documentation to P&D for review and comment. P&D performs a review of the proposed site plan and provides comments to the applicant on any plan deficiencies and/or recommended plan enhancements. The plan review also assists in identifying other approvals that the applicant may be required to obtain. The permit is issued once all applicable provisions of the MCSMO have been addressed. The permit lists any additional conditions that are applicable for the development. The applicant is required to post the permit at the construction site.

As stated above, a site plan is required to comply with minimum prescribed practice requirements set forth in the MCSMO. The MCSMO also allows for the County to require additional measures, above and beyond minimum control measures, to prevent the discharge pollutants from construction sites. Design and implementation guidance is available in the McHenry County Technical Reference Manual (TRM) and other reference materials identified in Appendix 5.7 of the SMPP. Some minimum control measures include the following:

- Construction site sequencing and phasing;
- Preservation of existing vegetation and natural resources (through the runoff volume reduction hierarchy provisions);
- Stormwater conveyance systems (including concentrated flows, diversions, etc.);
- Stockpile management;
- Soil erosion control measures (including blanket and seeding);
- Stabilized construction entrances/exits and haul routes;
- Sediment control (including silt fence, inlet/outlet protection, ditch checks, sediment traps, sediment basins, etc.);
- Wind and dust control measures;
- Non-stormwater management (including dewatering practices, waste management practices, spill prevention and control practices, etc.);
- Construction buffers;
- Construction details;
- Water quality protection; and
- Standard soil erosion and sediment control notes.

### **3.D.5 Public Information Handling Procedures**

Although the County did not include this minimum control measure in its current NOI and annual year-end report, all departments have procedures in place for this MCM. Various ways include speaking engagements, interviews, website, and newsletter updates.

### **3.D.6 Site Inspection/Enforcement Procedures**

The McHenry County Stormwater Management Ordinance (MCSMO) Article VI, Sections A.4, A.5, and A.6 mandate periodic inspections of erosion and sediment control measures as required in BMP D.6. These sections are used as the qualifying local program.

Representatives of the County are authorized to enter upon any land or water to inspect development activity and to verify the existing conditions of a development site that is under permit review.

The County may inspect site development at any stage in the construction process. For major developments (projects with one acre or more of disturbance), the McHenry-Lake County Soil and Water Conservation District, on behalf of the County, shall conduct site inspections, at a minimum, at the end of the construction stages listed below. Those projects with less than one acre of disturbance are also inspected by McHenry County staff, but at construction stages 1, 2, 4, and 7. Appendix 5.10 includes a listing of major development projects that have been inspected by McHenry-Lake Soil and Water Conservation District. Construction plans approved by the Enforcement Officer shall be maintained at the site during progress of the work. Recommended inspection intervals are listed below:

1. Prior to the start of construction;
2. Upon completion of installation of soil erosion and sediment control measures (including perimeter controls and diversions), prior to proceeding with any other earth disturbance or grading;
3. After stripping and clearing;
4. After rough grading;
5. After final grading;
6. After seeding and landscaping; and
7. After final stabilization and landscaping, prior to removal of sediment controls.

Additionally, a qualified inspector, hired by the applicant, is required to inspect the development site (if the project is one acre or greater of disturbance) at the following intervals:

1. Upon completing installation of soil erosion & sediment control measures (including perimeter controls and diversions), prior to proceeding with any other earth disturbance or grading;
2. After stripping and clearing;
3. After rough grading;
4. After final grading;
5. After seeding and landscaping;
6. After final stabilization and landscaping, prior to removal of sediment controls;
7. At least every seven (7) calendar days; and
8. Within 24 hours of the end of a storm that is 0.5 inch or greater rain event or a discharge of snowmelt.

### MCDOT Site Inspection Process:

Per IDOT Construction Memorandum 03-07, the owner/contractor must attend pre-construction meetings for all transportation projects. The McHenry County Division of Transportation attends the pre-construction meeting on all County-owned transportation projects. During the pre-construction meeting, the ***Storm Water Pollution Prevention Plan Erosion Control Inspection Report*** (see example in Appendix 5.8) is reviewed by all parties for needs and compliance. Also, before the project breaks ground, the MCDOT holds another pre-sediment and erosion control meeting with MCSWCD who inspects for McHenry County Department of Planning and Development and the U.S. Army Corps of Engineers when the project is in their jurisdiction.

### Site Inspection Process:

The McHenry County Department of Planning and Development, who oversees the MCSMO, strongly recommends pre-construction meetings with the developer. The developer is required to notify the County at various stages of work.

The recommended site inspection process is outlined below:

- The applicant notifies the appropriate County department when initial sediment and runoff controls measures have been installed.
- The County representative inspects the initial sediment and runoff control measures and authorizes the start of general construction.
- The County representative inspects the stormwater management system and authorizes additional site improvement activities.
- The applicant performs site inspections at the recommended intervals listed above and completes the ***SE/SC Inspection Form*** (Appendix 5.8).
- The appropriate County department requires as-built documentation of the stormwater management system after final site stabilization. Tags of the seed mixes are kept by the developer and/or contractor for inspection and approval.

#### ***3.D.6.a Complaints***

The County frequently receives phone calls regarding developments, either during the review or construction phase. Both site design and construction-related phone calls are directed to the County's Enforcement Officer or designee and/or MCDOT Construction department, and logged. Site design comments are handled on a case-by-case basis. Construction-related calls are typically addressed by performing a site inspection.

#### ***3.D.6.b Performance Guarantees***

Pre-construction meeting – No deposit required.

Performance Guarantee (surety) is required for new subdivision improvements (i.e., sewer, water, right-of-way work), stormwater management system, and landscaping. The engineer's opinion of probable construction cost (EOPCC) is provided to the Enforcement Officer for their review/approval. The required surety amount shall be 150% of the approved EOPCC.

Refer to the McHenry County Stormwater Management Ordinance and Unified Development Ordinance for information regarding the surety requirements.

### **3.D.7 Other Construction Site Runoff Controls**

The McHenry County Stormwater Management Ordinance (MCSMO) fulfils the minimum control measure D.7 as its qualifying local program. The MCSMO requires the following notifications:

“To facilitate inspections by the Enforcement Officer and to ensure compliance with the stormwater management permit, and this Ordinance, the applicant shall notify the Enforcement Officer within 2 working days of the construction stages specified below:

- i) Prior to the start of construction;
- ii) Upon completion of installation of soil erosion and sediment control measures (including perimeter controls and diversions), prior to proceeding with any other earth disturbance or grading;
- iii) After stripping and clearing;
- iv) After rough grading;
- v) After final grading;
- vi) After seeding and landscaping; and
- vii) After final stabilization and landscaping, prior to removal of sediment controls.
- viii) If stripping, clearing, grading and/or landscaping are to be done in phases or areas, the applicant shall give notice at the completion of each of the above work stages in each phase or area.

For regulated development disturbing less than one acre, notifications are required at stages i), ii), iv), and vii) of the above list.”

#### **3.D.7.a Violation Notification Procedures**

##### *REQUEST FOR ENFORCEMENT VIOLATIONS*

A Request for Enforcement (RFE) is when a person makes a complaint about stormwater-related issues via phone calls, letters, or in person. All complaints are allowed to be anonymous. Once a complaint is made, it must be investigated by either a stormwater representative or one of the inspectors who are assigned to that area of the County. This section addresses the initial complaint and how to locate an RFE file (already created).

- 1) Once a request is received regarding a potential violation, an RFS form is completed. RFS forms are located in the applications/checklists drawer at the counter or on the department’s computer server. Once it is filled out, it is placed in the inspection drawer for the next day.
- 2) The inspector visits the site to document the potential violation. Visual observations are made and photographs are taken.
- 3) When the inspectors complete an RFS form with their findings, the form and photos are given to administrative assistants to log in, and then to the Code Enforcement Officer to start an RFS file. The file is then given to the Department of Planning and Development,

Water Resources Division to determine by looking at the photos and through research on the property if there is a Stormwater Management Ordinance violation.

- 4) If it is determined that there is not a violation, the file will be closed. The Water Resources Division is responsible for calling back the complainant, if requested, to notify them of the results.
- 5) If it is determined that there is a violation, a 14-day letter will be written to the property owner explaining the reason for the violation. The County Chief Engineer/Enforcement Officer signs the 14-day letter. The date the 14-day letter was sent is noted on the front of the file and in Devnet and is given back to Code Enforcement Officer to file.
- 6) If the property owner has not responded to the letter within the 14-day time period, either by phone or by applying for a Stormwater Management Permit, a 10-day letter is sent. The County Chief Engineer/Enforcement Officer signs the 10-day letter. The 10-day letter is sent via certified mail. The date the letter was sent is noted on the file and in Devnet and is given back to Code Enforcement Officer to file.
- 7) If the owner responds to the letter, staff discusses with the owner what needs to be done to address the violation. A note is placed on the RFS file cover of what was discussed, and the information is logged into Devnet. A day/date that a Stormwater Management Permit application or further contact will be made is established by both parties. This is noted on the file as well. This will be used as a re-check status day/date.
- 8) If a Stormwater Management Permit application is made, staff will review and log the permit as if a typical application. Note the RFS file number on the new permit file and note the date and permit number on the cover of the RFS file.
- 9) If the owner applies, but does not provide any additional information after two weeks, a call is made to the owner to find out the status. A time is provided to the owner to either get the County the information or remove the violation. In two weeks, if no information has been received, send a ten-day letter. If no information has been received by established date and the violation has not been removed (photos taken by Enforcement Officer), one courtesy call is provided before court papers are sent. The file containing the signed court papers are given to the Code Enforcement Officer who files the court papers with the State's Attorney's Office. The County Chief Engineer/Enforcement Officer and Code Enforcement Officer attend weekly court proceedings (Monday morning), in order to get the property owner to comply.
- 10) The timing of each of these steps depends on the time of year. A wetland delineation can only be performed during the growing season (typically May 1 through October 31 – there are exceptions), and obtaining a wetland consultant to hire and perform the work could take two to three weeks. A topographic survey can be difficult to do with snow on the ground (there are exceptions), and it could take an engineer or surveyor six weeks from the date of hire to completion of the first submittal. If the violation has taken place during a portion of the season that makes it impossible for the owner to promptly provide the necessary plans and reports, the Water Resources Division will work out a reasonable schedule and timeline for completion with the property owner.
- 11) If an engineer or consultant is required, the property owner will be responsible for providing the County with a letter from the engineer or consultant stating that they have been hired to perform the work, and a timeline explaining when the work will be performed.



- 12) Projects that will need inspections, review and permits from the U.S. Army Corps of Engineers and/or the Illinois Department of Natural Resources could take several months. During the time we are waiting to hear from these government agencies, the Water Resources Division will request continuous communication on the status of the project with the agencies and the property owner.
- 13) If the property owner does not submit the required information according to the established timeline, the Water Resources Division will call one time and request an updated timeline. If a second deadline is missed, or if an updated timeline is not provided promptly, the Water Resources Division will continue with the next enforcement action.
- 14) If a permit is issued, the violation is closed. If a permit is issued but the violation has not been removed, the Stormwater Management Permit file will remain open with special conditions provided to the property owner and established inspections per the County Chief Engineer/Enforcement Officer.

### 3.E Post-Construction Storm Water Management in New Development and Redevelopment

The County complies with NDPES permit requirements by incorporating McHenry County Stormwater Management Ordinance (MCSMO) and best management practice (BMP) standards to minimize the discharge of pollutants of development and transportation projects. This chapter describes how the compliance with stormwater discharge permit requirements for long-term post-construction practices that protect water quality and control runoff flow is achieved.



This SMPP creates and references extensive policies and procedures for regulating design and construction activities for protecting receiving waters. The design and construction site practices selected and implemented by the responsible party for a given site are expected to meet BMP measures described in the MCSMO and Technical Reference Manual and the IEPA’s Program recommendations. All proposed permanent stormwater treatment practices must be reviewed and approved by the designated County representative.

#### 3.E.1 Community Control Strategy

McHenry County has not included this minimum control measure in its permit program. We will review and consider inclusion in future permits. The County’s “Request for Enforcement” procedure, as outlined in Section 3.D.7.a above, is also relevant for information submitted to the County by the public.

#### 3.E.2 Regulatory Control Program

McHenry County has adopted and enforces the Stormwater Management Ordinance (MCSMO), which regulates construction site and post-development stormwater runoff. The county’s Department of Planning and Development administers and enforces this stormwater program in unincorporated areas of the County as well as non-certified communities that do not have the in-house resources to administer and enforce the Ordinance. The McHenry County Division of Transportation (MCDOT) enforces these ordinances for their internal construction projects. MCDOT will continue to comply with the BMPs set forth for permanent erosion and sediment control standards specified by the IEPA, U.S. Army Corps of Engineers, Illinois Department of Natural Resources, Illinois Urban Manual, and McHenry-Lake County Soil and Water Conservation District and other county ordinances. This program is the qualifying local program for BMP E.2.

The MCSMO includes numerous performance standards on grading, stormwater detention, and soil erosion and sediment control that must be met for all parties undertaking construction. The McHenry County Technical Reference Manual is a guidance tool that describes BMP and

implementation procedures for enforcing the MCSMO. All permit applicants must utilize stormwater management strategies that minimize increases in stormwater runoff rates, volumes, and pollutant loads from development sites. Proposed stormwater management strategies must address the runoff volume reduction requirements of the MCSMO and must include appropriate stormwater BMPs to address the other applicable post-construction runoff control requirements of the ordinance.

Within both the MCSMO and McHenry County Unified Development Ordinance, development that is proposed within areas with moderate or high infiltration characteristics are limited on scope and size. Infiltration basins are prohibited in certain areas of the county per ordinance regulations.

### *3.E.2.a Runoff Volume Reduction Hierarchy*

The current MCSMO contains a section on Runoff Volume Reducion Hierarchy (Article VI, Section B.6) that requires an applicant to choose strategies that minimize increased runoff volumes from a development site. Measures include preservation of natural features, existing streams, channels, and drainageways; minimization of impervious surfaces; use of open vegetated swales for conveyance; and naural landscaping. The site plan will include a combination of structural and/or non-structural BMPs that will reduce the discharge of pollutants, the volume and velocity of stormwater flow to the maximum extent practicable.

### *3.E.2.b Green Infrastructure*

Each permittee should adopt strategies that incorporate stormwater infiltration of *good quality water*, reuse, and evapotranspiration of stormwater into the project to the maximum extent practicable. Site plan design and review should ensure that the development plan incorporates green infrastructure and/or low impact design techniques when possible. Types of techniques include green roofs, rain gardens, rain barrels, bioswales, permeable piping, dry wells (with appropriate pre-treatment), and permeable/porous pavement.

## **3.E.3 Long Term Operation and Maintenance Procedures**

Development involving a stormwater management facility, wetlands or buffers must have a long term operation and maintenance plan. This plan is enforced by the McHenry County Department of Planning and Development and MCDOT. The MCSMO Article X.D.7 gives the McHenry County Department of Planning and Development Enforcement Officer the right to require deed restrictions, performance bonds or sureties, as-built certification, or maintenance guarantees as stipulated in the Ordinance to assure projects are built and maintained according to permitted plans.

The MCDOT Access Management Ordinance (AMO) Section 4.4.4 requires a maintenance guarantee for a 1-year minimum maintenance period from the developer before the MCDOT accepts maintenance responsibilities for road improvements.

### **3.E.4 Pre-Construction Review of BMP Designs**

Projects are reviewed with respect to stormwater by the McHenry County Department of Planning and Development, Division of Water Resources and MCDOT depending upon jurisdiction, but all projects (development or road infrastructure) will receive a thorough review. All regulated development in unincorporated McHenry County and in non-certified communities is reviewed by the McHenry County Department of Planning and Development, Division of Water Resources to ensure adherence to the MCSMO.

On all road projects by McHenry County and all development projects fronting a County Route, the MCDOT Drainage Engineer is responsible in reviewing all stormwater structural and non-structural BMPs used within the road right-of-way.

These review processes are the qualifying local program for BMP E.4.

### **3.E.5 Site Inspections During Construction**

The McHenry County Stormwater Management Ordinance (MCSMO) Article VI, Sections A.4, A.5, and A.6 mandate periodic inspections of soil erosion and sediment control practices for minimum control measure D.6 in the SMPP. These sections are used as the qualifying local program.

Additionally, the IDOT Construction Memorandum No. 03-07 requires the owner/contractor to attend a pre-construction meeting for all County road projects, while the MCSMO Articles VI.A.4, VI.A.5, and VI.A.6 requires periodic soil erosion and sediment control inspections during construction for both development and County road projects. If the development is greater than one acre of disturbance, additional inspections are required on behalf of the permit applicant.

The inspection program for its general facilities is discussed in detail in Chapter 3.F.2. The inspection procedure for site inspections related to construction activities is discussed in detail in Chapter 3.E.5.

### **3.E.6 Post-Construction Inspections**

The following ordinances and State standard act as the qualifying program for this minimum control measure. The MCSMO Article VI.A.5 requires a final inspection by an appropriate County Representative for all development projects in unincorporated areas and non-certified communities. For any developments that also have a MCDOT Major Access Highway Permit, the MCDOT Access Management Ordinance 5.8 requires a final inspection by the MCDOT for all associated road work. With respect to County road projects, the IDOT Standard Specifications for Road and Bridge Construction Article 105-13 requires a final inspection upon completion of construction.

### **3.E.7 Other Post-Construction Runoff Controls**

Although this minimum control measure is not included in the County's NOI and annual year-end report, the County enforces these requirements already per the MCSMO.

One additional control that the County has employed is the adoption of a number of watershed-based plans throughout the County. The County will adopt watershed plans that extend into its corporate limits and review recommended individual site-specific projects and programmatic actions. The County encourages private property owners to implement the recommendations. Implementation of recommendations by the County will be evaluated on a yearly basis as part of its fiscal planning/budgeting process keeping in mind that **ONLY** the implementation of individual site-specific projects or programmatic actions **WITHOUT** the use of 319 funding can be cited by an MS4 community toward meeting ILR40 permitting requirements.

## 3.F Pollution Prevention and Good Housekeeping for Municipal Operations

The County is responsible for the care and upkeep of the general facilities, county roads, and associated maintenance yards. Many maintenance activities are most regularly performed directly by staff; however, from time to time contractors are employed to perform specific activities. This chapter describes how the compliance with permit requirements is achieved by incorporating pollution prevention and good housekeeping stormwater quality management into day-to-day operations. On-going education and training is provided to ensure that all of its employees have the knowledge and skills necessary to perform their functions effectively and efficiently.



### 3.F.1 Employee Training Program

The County's practice is to provide education and training to all of its employees to ensure that they have the knowledge and skills necessary to perform their functions effectively and efficiently. Within the County, the separate departments train their employees on procedures and policies which incorporate best management practices for pollution prevention and stormwater.



#### 3.F.1.a Training Approach

Employees are encouraged to attend all relevant training sessions offered by the qualifying local program and other entities on topics related to the goals/objectives of the SMPP. Additionally, the County will develop employee training with curricula and materials tailored to specific functional groups. Refer to Table 7. The materials focus on pollution prevention measures and practices involved in routine activities carried out by the various functional groups. Training materials primarily focus on revisions to the various programs (that were in place prior to the acceptance of the SMPP).

**Table 7: Department Responsibilities**

<b>Department</b>	<b>Area of Responsibility</b>	<b>Training</b>
Planning and Development	Stormwater Construction/waste disposal Pollution Prevention Sediment and Erosion Control Water Resources Inspections	Attend workshops and conferences Attend webinars Internal employee training
Department of Health	Illicit Discharge, Detection and Elimination Waste Disposal	Attend workshops and internal trainings
MCDOT	Pollution Prevention Stormwater Salting Construction Waste Disposal Spill Response	Winter Snow and Ice Workshop Snow and Ice Road-eo Attend workshops, webinars, conferences and seminars
Facilities Management	Pollution Prevention Waste Disposal Grounds maintenance and landscaping Valley Hi	Attend workshops and internal trainings
Emergency Management Agency	Hazardous Materials & Spill Response Reporting	Attend workshops and internal trainings
Sheriff	Spill response Ammunition Storage and Handling Narcotic Disposal	Attend workshops and internal trainings
Animal Control	Waste disposal Medication Disposal	Attend workshops and internal trainings
Coroner	Narcotic Disposal	Attend workshops and internal trainings

\*Please refer to Appendix 5.9 for a detailed list of department training.

### *3.F.1.b Training Schedule and Frequency*

Ongoing training is sought to meet the needs of the departments and NPDES permit. Digital and hard copies of the training materials will be kept and shared with applicable new employees as part of their job introduction. Revisions/enhancements to the SMPP will be approved by the NPDES Coordinators and then shared with applicable departments and employees. The NPDES Coordinators will monitor the potential need for overall refresher material distributions and offer additional training as necessary.

Employees are encouraged to share information with other employees via e-mail or other formats. Information may include:

- Updates and news which might enhance pollution control activities;
- Feedback from field implementation of best management practices; or
- New product information.



### 3.F.2 Inspection and Maintenance Program

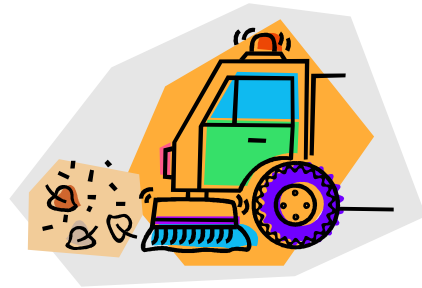
Each department maintains inspection and maintenance programs according to internal procedures relevant to their specific responsibilities. In the County's annual permit, the County has focused on inspection of all stormwater outfalls, detention/retention facilities, and stream channels which fall under the jurisdiction of the County. The specified County personnel within each department are responsible for inspecting and overseeing the maintenance of related stormwater facilities and activities.

A master list of ponds, detention/retention facilities, stream channel outfalls, and storm drainage outfalls are listed and associated stormwater outfall inspection forms are noted in Appendix 5.6.

### 3.F.3 Municipal Operations Storm Water Control

#### 3.F.3.a Street Sweeping

Street sweeping has a direct beneficial impact on water quality. Street sweeping operations are performed to reduce potential illicit discharges and to provide a clean environment. The McHenry County Division of Transportation maintains approximately 23 miles of curb line.



The curb lines of all streets are cleaned on a rotating basis. The rotation maybe changed or interrupted if heavy rain occurs, the sweeper is out of order due to mechanical problems, or the MCDOT maintenance crew experiences heavy workload. Each street is typically swept/cleaned approximately 2 to 4 times per year. See Appendix 5.11 for the street sweeping map.

Sweeper waste is collected and put in a contained area to drain and dry, then disposed of in the waste dumpster to be hauled to an appropriate landfill. MCDOT Sweeper Truck operators submit daily operation reports detailing location and debris amount. Evaluation of cleaning frequency is ongoing.

#### 3.F.3.b Drainageways

Drainageways include any river, stream, creek, brook, branch, natural or artificial depression, ponded area, lakes, flowage, slough, ditch, conduit, culvert, gully, ravine, swale, wash, or natural or man-made drainageway, in or into which surface or groundwater flows, either perennially or intermittently. Primary drainageways are listed in Appendix 5.12 and on the annual NOI report. Minor drainageways include roadside and side yard swales, overland flow paths, pond outlets, etc. Detention/retention ponds are part of the Storm Sewer Atlas and Outfall Inventory Map (refer to Appendix 5.6).

## *POND OUTLETS*

The ***Detention/Retention Pond Checklist*** is part of the ***Storm Sewer Atlas*** and ***Outfall Inventory Map*** (that can be requested), and is used to determine inspection locations. Structures are added to the checklist after new facilities are approved and accepted. Locations identified on the checklist are to be inspected every three years. Ponds are inspected and evaluated for a low, medium, and high level of flood height according to the following classifications.

### Flood Height Classification

- Low – normal water level (NWL)
- Medium – NWL to top of grate
- High – top of grate and above

### Condition

- Good – outlet is unimpaired, not blocked
- Fair –outlet obstructions observed, although outlet is discharging
- Poor – outlet is blocked or obstructed

### Comments

- Note structural defects or other observances.
- If obstructions are observed, a maintenance request is submitted to clear and remove debris. If water levels are too high, a follow-up inspection will take place when water recedes.

## *BOX CULVERTS AND BRIDGES*

Box Culverts & Bridges are listed on the ***Storm Sewer Atlas*** and ***Outfall Inventory Map*** (that can be requested). Structures are added to the map after new facilities are approved and accepted. Locations identified on the map are inspected every three years as well. Inspection procedures follow the Pond Outlet discussion above.

## *DRIVEWAY CULVERTS*

Maintenance and replacement of driveway culverts is the property owner's responsibility. A minimum 15" diameter culvert is required per County Standards. Permits are required for culvert replacement; a soil erosion and sediment control plan may be required as part of the permit. The MCDOT inspects the culvert when it is set to grade and prior to backfilling. They also may rod/clean culverts on an as-needed basis.

## *CATCH BASINS AND OUTFALLS*

Catch basin locations are identified on the ***Storm Sewer Atlas***. Locations of cleaned catch basins are tracked. MCDOT uses a vacuum truck to clean out outfalls and catch basins. The vacuum truck operates approximately 3 to 4 days a week, clearing an average of 6 to 10 locations per day. Vacuum waste is



**MCDOT vacuum truck**

collected and put in a contained area to drain and dry, then disposed of in the waste dumpster to be hauled to an appropriate landfill.

Catch basins found to have structural deficiencies and need remedial actions are reported to and completed by the MCDOT Maintenance Department. If maintenance cannot remediate, then repairs will be incorporated into a capital improvement project. Catch basins that have been cleaned are tracked on the GIS database using a color coded system.

#### *STORM SEWERS*

If catch basin debris is at the invert elevation of the downstream pipe (i.e., has completely filled the sump area), then the downstream storm sewer system is also cleaned. Likewise, if a water main break or other heavy flow occurs that flushes potential illicit discharges into the storm sewer system, the receiving storm sewer lines are inspected and then cleaned as necessary.

#### *OTHER INLET AND GRATE CLEANING*

Cleaning of these areas occurs on an as-needed basis (e.g., complaints, incidences, standing water, etc.). Spoil waste that is obtained from inlet and grate cleaning or vacuuming is disposed of properly.

#### *DITCHES/SWALES AND OVERLAND FLOW PATHS*

Right-of-way Drainage Swales: The MCDOT documents observed or reported erosion or sediment accumulation. Areas of significant concern are incorporated into a maintenance program.

#### *3.F.3.c Landscape Maintenance*

The County of McHenry maintains care and upkeep of its general facilities, County roads and rights-of-way, and associated maintenance yards. County staff is responsible for weed management. The County annually selects and contracts with a landscape contractor for County facilities. This contractor is responsible for the landscape maintenance program under the supervision of the Facilities Management Department. The contractor provides weed control and fertilizing two times per year, with pest control provided on an as-needed basis.



Along County rights-of-way, the MCDOT oversees noxious weed vegetation control along specific locations within the county system. Additionally, the MCDOT maintains approximately 12 miles of guardrail along County highways. The use of herbicides for broadleaf weed control along guardrail is limited to locations of guardrail in the county and the time of year. The DOT contracts this work, which is performed from mid-April to mid-May. The contractor uses herbicides having low toxicity to aquatic life. BMPs reflected in the County's maintenance activities include triple rinsing of herbicide containers and application of the rinsate to the area

being treated, spill prevention during storage, use minimization, application by licensed operators, and careful selection of pesticide materials to minimize any potential adverse water quality impacts.

The County is responsible for ensuring that their landscape contractors are aware of the NPDES requirements to ensure that they adhere to the County's SMPP. Additionally, the County retains copies of contractor permits for the application of herbicides and pesticides.

#### *LITTER AND DEBRIS*

The County's litter control and waste programs serve to protect water quality and enhance the visual aesthetics of the County. Litter and debris can accumulate on County property and roadway rights-of-way and should be removed. Each County facility is responsible for the clean-up of their respective facilities.

Despite efforts committed to public education, litter removal, street sweeping, dumping of trash along public rights-of-way, and litter from other sources still enters the stormwater system. The MCDOT performs a cleanup of all public rights-of-way once a year in spring to augment the Adopt-A-Highway Program (see Section 3.B.2.) This clean up consists of all maintenance personnel walking and collecting all garbage along the road-side. After the clean-up is performed, maintenance crews continue to perform weekly checks of the rights-of-way and pick up any large garbage that is found.

#### *PRIVATE RESIDENCE YARD WASTE*

The disposal of landscape waste is regulated by the McHenry County Public Health Ordinance. The Ordinance establishes the minimum standards for the county; however, multiple municipalities have more stringent requirements. The Solid Waste Manager actively promotes waste reduction and beneficial reuse of residential landscape waste as follows:

- Mulching and grass recycling;
- Backyard composting; and
- Native landscaping.

Information regarding these options is available on the Department of Health webpage [www.mcdh.info](http://www.mcdh.info), and the Department offers multiple brochures on this topic at the Department offices.

All licensed municipal waste haulers operating in McHenry County are required to offer landscape removal services to their customers. Residents who choose to have the landscape waste removed from their property may use a licensed waste hauler, landscaping service, or take their landscape waste to two (2) local IEPA-permitted composting facilities that offer drop-off options for residents.

Enforcement to address accumulations of landscape waste or open dumping of landscape waste is pursued under the authority of the Public Health Ordinance or Environmental Protection Act.

The Solid Waste Manager, Environmental Health Educator, and Community Information Coordinator provide ongoing education outreach through traditional and social media outlets, on the Department’s webpage, as part of field enforcement activities, and through one-on-one consultations with the general public.

#### *FERTILIZERS*

The annual landscape contractor is required to be a licensed applicator for fertilizers. Weed killer and fertilizers are typically scheduled two and four times per season, respectively. Contractor specifications incorporate low impact products. The use of pesticides and fertilizers shall be managed in a way that minimizes the volume of stormwater runoff and pollutants per Illinois General Permit 87 (See Appendix 5.14).

#### *3.F.3.d Snow Removal and Ice Control*

The McHenry County Division of Transportation (MCDOT) continues to maintain a “bare pavement” policy as soon as possible after a storm event has ended. During snow removal and ice control activities, salt, de-icing chemicals, abrasives, and snow melt may pollute stormwater runoff. To maintain safe roadways, the need for de-icing materials continues to grow along with the materials potential deleterious effects on water quality. To address these potential pollutants, the MCDOT has internal policies and procedures that they follow. The MCDOT policies for snow removal and the MCDOT procedures for snow removal are available and can be obtained through the MCDOT maintenance department. In brief, the following procedures for the “winter season” are implemented.



#### *ROADWAY ICE CONTROL*

Use the minimal amount of salt, de-icing chemicals, and additives necessary to maintain safe road conditions. Prior to winter season, preparation work to obtain seasonal readiness is completed. These tasks include: inspecting and re-conditioning of spreaders and spinners; install these items onto snow removal vehicles; performing test operations; calibrating distribution rates per National Salt Institute Application Guidelines; and conducting better driver training. During the winter season, “anti-icing” practices are implemented prior to storm events, including the use of liquids and additives such as beet juice, to prevent ice from forming. By preventing the formation of ice



on the roadways, the need for repeated salt applications before, during and after a storm event are reduced or eliminated. When de-icing measures are required, the de-icing agents are pre-wetted to improve their effectiveness and reduce the number of re-applications. The MCDOT closely monitors weather conditions to determine when they will need to initiate “anti-icing” measures or



**Striping on road from liquid “anti-icing” application**

plan for effective de-icing and snow removal operations. They follow the guidelines established within the Snow and Ice Policy and Procedures Manual.

#### *SNOW FENCE & LIVING SNOW FENCE PROGRAM*

Annually, MCDOT installs approximately 6 miles of snow fence on county highways to decrease the blowing and drifting of snow over the roads. The locations where the snow fences are installed are prone to hazardous road conditions and have to be monitored closely by the MCDOT to ensure the roads stay passable in snowy and windy weather.

Numerous passes with snow plows and salting may be necessary over the course of an event to maintain safe roadways. The snow fences offer a wind break that diminishes the amount of drifting snow on a road, therefore decreasing the amount of de-icing materials needed.

In 2017, MCDOT began implementing a “living snow fence” program by working with farmers to leave rows of corn standing throughout the winter to reduce snow from drifting onto roadways. This improves road safety, eliminates the need for MCDOT crews to install/take down snow fence, and reduces the need for repeated applications of salt along those sections of roadway. Through this new program, the MCDOT seeks to expand the implementation of living snow fences throughout the county.

#### *SALT DELIVERY AND STORAGE*

The MCDOT takes steps to ensure that the delivery, storage, and distribution of salt does not pollute stormwater runoff from their facilities. The MCDOT has a salt dome where all runoff from the dome, parking lots, and loading areas drain to stormwater detention basins that are designed to capture and settle pollutants.

All building floor drains in the vehicle storage facility and mechanic shop lead to an inline oil/water separator before being pumped to a county-owned sewage treatment facility. There are no floor drains in the salt dome. The floor of the salt storage building and adjacent receiving/unloading area are constructed of asphalt or concrete. Delivered salt is unloaded onto a conveyor system that directs the salt into the dome. The limits of the salt pile are pushed back from the door opening to minimize potential illicit runoff. In the event that there is runoff from the salt storage building or unloading area, it drains to the stormwater detention basins.

Additionally, the McHenry County UDO has requirements for the safe storage of “de-icing” agents. The storage of over 50,000 pounds of de-icing agent must conform the requirements of Illinois Administrative Code Part 615, Subpart L: De-Icing Agent Storage and Handling Units. The requirements for storing less than 50,000 pounds of de-icing agent outdoors includes: maintaining de-icers in locations that prevent drainage on materials that contain the product and properly covering the de-icers with an impermeable membrane.



**Improperly stored salt pile**

### *SENSIBLE SALTING TRAINING AND CERTIFICATION*

Since 2009, the MCDOT and the Department of Planning and Development in coordination with the public works departments from the Crystal Lake, Spring Grove, and Algonquin have provided annual Sensible Salting workshops. In that time, over 700 people have received training in Sensible Salting practices including staff from public works departments or municipalities, schools, private operators and the general public. The workshops provide a combination of classroom



**Sensible Salting Workshop**

education and hands-on training. The education component addresses the environmental impacts of road salt use, the use of various sensible salting strategies, proper anti-icing/de-icing chemicals and application rates based upon pavement temperature and weather conditions, followed by a written exam. The hands-on training includes detailed instruction and practice for calibrating and maintaining salt spreaders. Participants who attend the day-long workshop and pass the exam earn a Sensible Salting Certificate that is valid for three years.

### *SNOW PLOWING*

#### **Facilities Maintenance – Parking Lots**

Snow plow/removal activities include snow removal and de-icing of all county facilities, sidewalks, and parking lots. Facilities management de-ices the county-owned sidewalks and parking lots; however, they contract out snow plowing/removal.

#### **McHenry County Department of Transportation – Roadways**

Snow plowing activities direct snow away from the lanes of travel. This activity reduces the amount of salt, chemical additives, abrasives, or other pollutants that go directly into the drainage system. Refer to the Snow and Ice Policy and Procedures Manual for additional operations information.



### *3.F.3.e Vehicle and Equipment Operations*

Vehicle and equipment fueling and maintenance procedures and practices are designed to minimize or eliminate the discharge of pollutants to the stormwater management system, including receiving waters.



#### *VEHICLE FUELING*

##### Sheriff

The vehicle fueling area contains two tanks and two fuel pumps. These tanks are monitored by an electronic leak detection system. Leaking is constantly monitored by the system, whereas the system itself is tested weekly. Surface runoff, in the vicinity of the tank farm, sheet flows to a field south of the facility.

##### MCDOT

The vehicle fueling area contains two tanks and two fuel pumps. These tanks are monitored by an electronic leak detection system. Leak tests are performed annually. Surface runoff, in the vicinity of the tank farm, is directed to the stormwater detention ponds to the west of the facility. Any spills on the refueling pad or parking lot are immediately contained with oil dry or kitty litter, then swept up and properly disposed.

#### *VEHICLE MAINTENANCE*

This section includes proper handling and disposal of vehicle maintenance by-products such as waste oil, antifreeze, batteries, and tires. See below.

##### Sheriff

Vehicle maintenance procedures and practices are designed to minimize or eliminate the discharge of petroleum-based pollutants to the stormwater management system, including receiving waters. All building, maintenance shop, and truck storage floor drains lead to an inline triple catch basin oil/water separator. The trapped oil and sediments are pumped dry once a year by a hazardous waste vendor. All water after the settling process flows to the sanitary sewer system.

##### MCDOT

Vehicle maintenance procedures and practices are designed to minimize or eliminate the discharge of petroleum-based pollutants to the stormwater management system, including receiving waters. All building, maintenance shop, and truck storage floor drains lead to an inline triple catch basin oil/water separator. The trapped oil and sediments are pumped dry twice a year by a hazardous waste vendor. All water after the settling process is then pumped to a county-owned sewage treatment facility.

## *WASTE OIL, ANTIFREEZE, BATTERIES, TIRES, AND OTHER*

### Sheriff

Used fluids, including motor oil, transmission fluids, gear lubes, brake fluids, and other vehicle fluids (except antifreeze) are collected and stored inside the facility. Typically, the waste oil tank is emptied and the contents removed for recycling.

Used antifreeze is stored inside separately in two 55-gallon drums. When one drum is full, a special waste hauler is contacted for collection and disposal.

Used batteries are stored on top of a receiver pan inside the facility in case of leakage. Typically, the batteries are collected weekly by a local vendor.

Used tires are transported to a local vendor for recycling. Tires are stored inside the facility until enough are collected for a disposal run. Additionally, tires are stored in a manner preventing stagnant water conditions and vector mosquitoes.

### Facilities Maintenance

Private certified companies perform all air conditioning-related work; therefore, the disposal of freon is not handled directly by the County. Cleaning fluids and solvents are contained within an enclosed area and maintained by a private licensed special waste company.

### MCDOT

Used fluids, including motor oil, transmission fluids, gear lubes, brake fluids, and other vehicle fluids (except antifreeze) are collected and stored in a designated room in the maintenance shop. Typically, the waste oil tank is emptied and the contents removed for recycling on a bi-monthly schedule.

Procedures are in place for waste oil storage tanks, used oil filters, and lead batteries awaiting pick-up for recycling to be located inside the vehicle shop in a room with containment and a drain leading to the triple catch basin oil/water separator as a safety measure. All used oil and antifreeze are periodically picked up for off-site reclamation by a waste oil service. There are no “significant” materials that are exposed to stormwater.

Used batteries are stored in an enclosed covered container at the maintenance shop. Typically, the batteries are collected by a local vendor periodically as new batteries are brought to the MCDOT.

Used truck tires are disposed of as new tires are purchased. Tires collected from County rights-of-way are stored outside on a rack away from the building until the MCDOT Maintenance Department transports them to a local tire vendor for proper disposal. Additionally, tires are stored in a manner preventing stagnant water conditions and vector mosquitoes.

### 3.F.3.f Pet Waste

McHenry County operates an Animal Control and Adoption Center in Crystal Lake. Staff utilize established procedures to prevent any negative public health or environmental impact from the animal waste. Solid animal waste on the outside premises is routinely picked up by staff and disposed of with the municipal solid waste. Animal waste on the inside of the building is routinely collected and disposed of with the municipal solid waste (e.g., cat litter, etc.) or washed into drains which discharge into the sanitary sewer (kennels).



The McHenry County Public Health Ordinance regulates the handling and disposal of animal waste to prevent nuisance, public health, or environmental concerns. Department of Health staff responds to complaints of accumulations of animal waste on private or public properties and follows its normal enforcement process to achieve compliance.

A brochure on the proper handling of pet waste has been developed by the McHenry County Department of Planning & Development, Water Resources Division and is available on the Water Resources webpage at [www.mchenryh2o.com](http://www.mchenryh2o.com) (Appendix 5.3).

### 3.F.3.g Animal Nuisance Control

The MCDOT, upon receiving notification or visible inspection, collects “road kill” from right-of-way areas. The carcasses are disposed of in an appropriate manner.

*All policies, procedures, and maintenance activities in this section serve as the qualifying local program for BMP F.3.*

### 3.F.4 Municipal Operations Waste Disposal

#### 3.F.4.a Waste Management

Waste management consists of implementing procedural and structural practices for handling, storing, and disposing of wastes generated by a maintenance activity. This helps prevent the release of waste materials into the stormwater management system including receiving waters. Waste management practices include removal of materials such as asphalt and concrete maintenance by-products, excess earth excavation, contaminated soil, hazardous wastes, sanitary waste and material from within the triple basins. While this minimum control measure is not presently acknowledged in our permit program, the County does apply BMPs for this minimum control measure.



At a later date, we will review current policies and procedures and consider including this minimum control measure in our five year program plan.

#### *CONTAMINATED SOIL MANAGEMENT*

Collect or manage contaminated soil/sediment generated during an emergency response or identified during construction activities for treatment or disposal. In the event of an emergency, the County contacts an environmental remediation contractor to clean up the spill and associated contaminated soils. If the MCDOT encounters contaminated soils during roadway construction, the County follows IDOT procedures for handling and clean-up.

#### *HAZARDOUS WASTE*

Store all hazardous wastes in sealed containers constructed of compatible material and labeled. The containers are located in non-flammable storage cabinets or on a containment pallet. These items include paint, aerosol cans, gasoline, solvents, and other hazardous wastes. Please refer to Chapter 3.F.3.e for vehicle-related hazardous wastes. Do not overfill containers. Paint brushes and equipment used for water and oil-based paints are cleaned within the designated cleaning area. Contain associated waste and other cleaning fluids within an enclosed tank. The tank is maintained by a private licensed special waste company.

#### *SANITARY WASTE*

Discharge sanitary waste a sanitary sewer or designated area managed by a licensed waste hauler.

#### *TRIPLE BASINS*

McHenry County has 4 locations of triple basins, including: MCDOT Facility, Animal Control facility, Sheriff's garage and Jail. Floor drains in the garage bay floor area of the 4 previously mentioned locations are directed to underground triple basins. The triple basins are contracted by each Facility for pumping and removing solids by a licensed waste hauler.

## *AMMUNITION STORAGE AND HANDLING*

Ammunition is stored and handled in accordance with the manufacturer's specifications. Standards are governed by CALEA, ACA, and OSHA, in addition to the EPA requirements for outdoor ranges. The McHenry County Sheriff's Office uses EPA 902-b-01-001 "Best Management Practices for Lead at Outdoor Shooting Ranges" to protect surface and groundwater from lead contamination.

### **3.F.5 Flood Management/Assessment Guidelines**

This minimum control measure (MCM) is not presently included in our permit program. This MCM will be reevaluated at a later date for possible inclusion.

### **3.F.6 Other Municipal Operations Controls**

While this minimum control measure (MCM) is not presently acknowledged in our permit program, the County does apply BMPs for this MCM. At a later date, we will review current policies and procedures and consider including this minimum control measure in our five year program plan.

#### *3.F.6.a Water Conservation & Irrigation*

Water conservation practices minimize water use and help to avoid erosion and/or the transport of pollutants into the stormwater management system. McHenry County has two facilities that have underground irrigation: Valley Hi Nursing Home and the Administration Building. Each building has a soil moisture gauge for operations. Section III: Water Conservation of the Water Resources Action Plan can be found at [www.mchenryh2o.com](http://www.mchenryh2o.com).



#### *3.F.6.b Green Infrastructure*

McHenry County completed the replacement of HVAC motors with higher efficiency motors, installation of a 15.4 KWH solar panels on the Administration Building, retrofitted lighting at MCDOT and new skylights. Installation of new windows, demand control ventilation for the courtrooms, and lighting occupancy sensors in all County facilities by the beginning of 2011. Equipment is added to the Facilities Management computerized maintenance system for preventive and corrective maintenance schedules as recommended per manufacturer.



**Native vegetation at entrance of the  
McHenry County Administration Building**

In summer of 2011, the Departments of Facilities Management and Planning and Development installed demonstration xeriscape and rain gardens near the entrance of the County's Administrative Building that provide examples of how native vegetation can be used in landscaping. Landscaping with native plants helps conserve water and protect water quality because they do not require fertilizer and do not need additional watering once established. The demonstration gardens provide opportunities to educate and inspire the public about using native plants in the landscape. In 2017, McHenry County obtained a grant to remove remaining non-

native evergreen shrubs from the demonstration gardens and replanted the areas with additional native plants. Planning and Development staff will continue to improve and expand the educational opportunities of the demonstration gardens.



### 3.F.6.c Spill Response Plan



Spill prevention and control procedures are implemented wherever non-hazardous chemicals and/or hazardous substances are stored or used. These procedures and practices are implemented to prevent and control spills in a manner that minimizes or prevents discharge to the stormwater management system and/or receiving waters. The following general guidelines are implemented, when cleanup activities and safety are not compromised, regardless of the location of the spill:

- Cover and protect spills from stormwater run-on and rainfall, until they are removed;
- Dry cleanup methods are used whenever possible;
- Dispose of used cleanup materials, contaminated materials, and recovered spill material in accordance with the Hazardous Waste Management practices or the Solid Waste Management practices of this plan;
- Contaminated water used for cleaning and decontamination shall not be allowed to enter the stormwater management system;
- Keep waste storage areas clean, well organized, and equipped with appropriate cleanup supplies; and
- Maintain perimeter controls, containment structures, covers, and liners to ensure proper function.

### 3.F.6.d Non-Hazardous Spills/Dumping

Non-hazardous spills typically consist of an illicit discharge of household material(s) into the street or the stormwater management system. Upon notification or observance of a non-hazardous illicit discharge, County personnel implement the following procedure:

- Sand bag the receiving inlet to prevent additional discharge into the storm sewer system, as necessary. It may be necessary to sand bag the next downstream inlet.
- Check structures (immediate and downstream). If possible, materials are vacuumed out. The structure(s) are then jetted to dilute and flush the remaining unrecoverable illicit discharge.
- Clean up may consist of applying “Oil Dry” or sand and then sweeping up the remnant material.



- After the spill on a County right-of-way has been mitigated, all correspondence between departments is filed appropriately.
- If a person is observed causing an illicit discharge, Health Department is notified and the appropriate citation(s) is issued.

#### *3.F.6.e Hazardous Spills*

Upon notification or observance of a hazardous illicit discharge, the County follows the procedure below:

- Call 911, explain the incident. The fire department responds.
- The Sheriff or local police department provides emergency traffic control, as necessary.
- The fire department evaluates the situation and applies “No Flash” or “Oil Dry” as necessary.
- The fire department’s existing emergency response procedure, for hazardous spill containment clean-up activities, is followed.
- The Sheriff or the local fire department documents the location, type of spill, and action taken submits directly to the IEPA.

# 4 Program and Performance Monitoring, Evaluation, and Reporting



The SMPP represents an organized approach to achieving compliance with the stormwater expectations of the NPDES Phase II program for both private and public activities within the County. Land development, redevelopment, and transportation improvement projects were required to comply with the provisions of the MCSMO prior to acceptance of the SMPP. Additionally, the County had numerous written and unwritten procedures for various tasks. This SMPP documents and organizes previously existing procedures and incorporates the objectives of the MCSMO and other procedure and policy manuals to create one cohesive program addressing pre-development, construction, post-development activities and municipal operations.

This chapter describes how the County will monitor and evaluate the proposed stormwater pollution prevention plan based on the above-stated objective. As part of the stormwater management program, the County:

- Reviews its activities;
- Inspects its facilities;
- Oversees, guides, and trains its personnel; and
- Evaluates the allocation of resources available to implement stormwater quality efforts.

This chapter describes how program monitoring, evaluation, and reporting will be accomplished.

## 4.A Performance Milestones

Previously established ordinances and programs implement many of the anticipated tasks. The following schedule describes general performance expectations.

- Training regarding the implementation of the SMPP is ongoing.
- Support public education, outreach, and involvement.
- Update the sewer maps to reflect changes.
- Keep updated maps and forms.
- Support training by all departments.
- Perform all inspections within our commitments according to the set schedule.

## **4.B Program Monitoring and Research**

There are extensive monitoring efforts already underway across the County including efforts by the McHenry County Department of Health to monitor numerous lakes and beaches and the Fox River Study Group.

### **4.B.1 Fox River Study Group**

In accordance with ILR40 V.A.2.b.x, the Fox River Study Group (FRSG), previously described in Chapter 2.D, satisfies the monitoring requirement for the portion of the community located within the Lower Fox River Watershed.

By agreement between the Illinois EPA and the FRSG, the Fox River Implementation Plan (FRIP) will take the place of a traditional TMDL for dissolved oxygen and nuisance algae in the Fox River. No written agreement has been implemented between the Illinois EPA and the FRSG regarding the FRIP, but the Illinois EPA has worked closely with the FRSG in developing the FRIP since 2001. Because the Illinois EPA's authority to implement and enforce the Clean Water Act comes from the federal government, the FRIP will need to be approved by the U.S. EPA before it officially replaces the TMDL process. The need for a TMDL will be revisited by IEPA after implementation of the FRIP, by evaluating whether the listed reaches are still impaired.

The ISWS developed a calibrated QUAL2K water quality model application for the Fox River (Bartosova, 2013). This model was used to simulate future Fox River water quality in response to management actions considered in the FRIP. In 2016, the FRSG will develop a strategy for future data collection and prepare written plan(s) that may potentially include additional water quality monitoring and discussion with IEPA and IDNR of biological data to assess actual condition of aquatic community and potentially identify gaps in existing biological data.

The County is committed to participating in the FRSG and supporting its efforts.

### **4.B.2 McHenry County Department of Health**

In accordance with ILR 40 V.A.2.b.ii and ILR 40 V.A.2.b.v, the monitoring efforts performed by the McHenry County Department of Health satisfies the monitoring requirement for the portions of the watershed tributary to an assessed Lake. Due to the length of monitoring efforts performed by the county, trends in water quality impairments and improvements can be best gauged by reviewing current and historic lakes reports.

#### **ANALYSIS**

From May to September, bacteria concentrations are monitored bimonthly at inland beaches and recreational areas by the Health Department. Currently, 38 licensed beaches on 13 different lakes are being studied and data collected. The water samples are tested for E. coli bacteria, which are found in the intestines of almost all warm-blooded animals. Note that not all strains of E. coli are the same, and certain strains can make humans sick if ingested in high enough concentrations. If water samples come back high for E. coli (235 E coli/100 ml), the management body for the

bathing beach is notified and a sign is posted indicating the beach closure. Additionally, since rain events tend to lead to elevated bacteria levels in the water column, the County advises that persons avoid swimming for 48 hours after a large rain event.

The IEPA uses the number and duration of swim bans to assess whether or not the beaches support designated uses for primary contact recreation. Within Illinois, beaches are found to be “not supporting” of primary contact use when, on average over a three-year period: (1) one or more beach closures occurred per year lasting less than a 2 week; or (2) less than one beach closure occurred per year, but the average closure duration was one week or greater.

#### SUMMARY REPORTS

Lake summary reports can be found on the Health Department’s website: <https://www.co.mchenry.il.us/county-government/departments-a-i/health-department/environmental-health/public-beaches>

### **4.B.3 County Monitoring**

A portion of the County is located outside of existing monitoring efforts. In accordance with ILR40 V.A.1, the County has compiled a list of all BMPs implemented throughout the MS4 area (Appendix 5.16). An estimate of pollution reduction resulting from the installation of the BMPs, utilizing published research, has also been provided in the appendix.

## **4.C Program Evaluation**

At the end of each year, the BMPs implemented by the MS4 should be evaluated in order to determine the effectiveness of the program. Include a description of observed areas of program effectiveness, at the end of Part B Stormwater Management Program Assessment within each Annual Report submitted to IEPA. Program areas which do not appear to be improving should also be identified and described within this portion of the Annual Report. This information will be used to provide insight into how the program may need to evolve. The following are some indicators that the BMPs are appropriate.

- A reduced number of outfalls having positive indicators for potential pollutants.
- An improvement, or no change, in the annual monitoring results.
- An increase in public outreach and education about water resources.
- Improved community awareness of water quality and other NPDES program aspects.
- Increased quantities of Household Hazardous Wastes, batteries, and other materials collected by the County.
- Reduced number of septic system failures.
- Increased stakeholder involvement.
- Reduced number of SE/SC violations.
- Increase in streambank and shoreline stabilization projects, or a decrease in the extent of projects necessary.

- Improved detention pond quality (including conversion of dry bottom or turf basins to naturalized basins; removal of excess sediment accumulation and a general increase in maintenance activity on detention ponds throughout the MS4).
- Reduced use of chloride and phosphorus by the MS4.
- Improved awareness of water quality and other NPDES program aspects by both County staff and its contractors.

#### **4.C.1 Monitoring Program Evaluation**

The results of the monitoring are used to further gauge the effects of the SMPP on the physical/habitat-related aspects of the receiving waters and the effectiveness of BMPs. Possible causes of any documented degradation will be investigated and any appropriate corrective actions will be incorporated into future Stormwater Management Program Plan (SMPP). Additional documentation on TMDLs, an assessment of the regional and local water quality monitoring and watershed group efforts, an estimate of the effectiveness of the regional efforts will be included in the Annual Report Part C Annual Monitoring and Data Collection.

#### **4.C.2 Illicit Discharge Detection and Elimination (IDDE) Program Evaluation**

Experience gained from the USEPA NPDES program indicates a lower chance of observing polluted dry-weather flows in residential and newer development areas, while older and industrial land use areas have a higher incidence of observed dry-weather flows. Review the results of the screening program to examine whether any trends can be identified that relate the incidence of dry-weather flow observations to the age or land use of a developed area. If so, these conclusions may guide future outfall screening activities.

Indirect or subtle discharges such as flash dumping are difficult to trace to their sources and can only be remedied through public education and reporting. Therefore, it is expected that to some degree they will continue although at a reduced magnitude and frequency. Although the outfall screening program will be successful in identifying and eliminating most pollutants in dry-weather discharges, the continued existence of dry-weather flows and associated pollutants will require an ongoing commitment to continue the outfall screening program.

The first phase of the program was to complete the MS4-wide pre-screening effort, investigate those outfalls exhibiting dry-weather flow and then eliminate identified illicit direct connections. The ILR40 permit issued in 2016 requires that all high-priority outfalls be evaluated annually. It is logical to assume that after completion of the Phase 1 efforts and several years of annual screening, the majority of the dry-weather pollution sources will be eliminated. However, new sources may appear in the future as a result of mistaken cross connections from redevelopment, new development or remodeling. These efforts will determine the effectiveness of the program on a long-term basis and show ongoing improvement through a reduced number of outfalls having positive indicators of potential pollutants. Include a description of the screening and dry-weather flow investigation, in Annual Report Part C IDDE Monitoring and Data Collection submitted to IEPA annually.

### 4.C.3 SMPP Document Evaluation

The following types of questions/answers need to be discussed in the future, with respect to the SMPP, between the NPDES Coordinators and County Administration.

- Are proper stormwater management practices integrated into planning, designing, and constructing both County and private projects?
- Are efforts to incorporate stormwater practices into maintenance activities effective and efficient?
- Is the training program sufficient?
- Is the SMPP sufficient with respect to both the BMPs and measurable goals described for each of the six MCM?
- Are the procedures for implementing the SMPP adequate?
- Are there any TMDL Reports within the County's MS4 jurisdiction and if yes, is there an action plan for compliance?
- Were there any issues of non-compliance and if yes, determine the plan for achieving compliance with a timeline of actions?

### Summary

Through education and outreach, the Water Resources Manager of MCP&D, Maintenance Superintendent of MCDOT, MCSEEP educational lesson plans, and Health Department targets a variety of different age and education levels of audiences. However, it is very hard to make a direct correlation of their impact on McHenry County waters.

The best tell-tale sign of our program's effectiveness is the health and quality of our streams. Those McHenry County streams on the Nationwide Rivers Inventory (NRI) have not lost their place on this list. Rush Creek and Piscasaw Creek are noted for their fishability and other naturalistic qualities with potential to be rated for recreation. The Fox River from Elgin to the West Dundee Dam has a high recreational value as well on this list. Since this section is downstream of McHenry County's entire eastern developed area and has not been downgraded, it is a testament to the efficacy of our stormwater and construction ordinances, in conjunction with our maintenance program and educational outreach efforts.

Over the past year, McHenry County has increased its participation with watershed groups, the McHenry County Conservation District (MCCD), local environmental groups, as well as other regional stakeholders and will continue to expand such partnerships to add more monitoring data to our program to continue to monitor the health of our major receiving waters.

# 5 Appendices

## 5.1 List of Acronyms

BMP	Best Management Practice
CWA	Clean Water Act
DECI	Designated Erosion Control Inspector
EO	Enforcement Officer (McHenry County SMO)
HHW	Household Hazardous Waste
ID	Identification
IDDE	Illicit Discharge Detection and Elimination
IDOT	Illinois Department of Transportation
IEPA	Illinois Environmental Protection Agency
ION	Incidence of Non-compliance (with IEPA)
IUM	Illinois Urban Manual
LOC	Letter of Credit (surety)
MCCD	McHenry County Conservation District
MCDOT	McHenry County Division of Transportation
MCHD	McHenry County Department of Health
MCP&D	McHenry County Department of Planning and Development
MCSC	McHenry County Stormwater Management Commission
MCSEEP	McHenry County Schools Environmental Education Program
MCSMO	McHenry County Stormwater Management Ordinance
MS4	Municipal Separate Storm Sewer System
NOI	Notice of Intent (with IEPA)
NOT	Notice of Termination (with IEPA)
NPDES	National Pollutant Discharge Elimination System
PPE	Personal Protection Equipment
QLP	Qualifying Local Program
SE/SC	Soil Erosion and Sediment Control
SMPP	Stormwater Management Program Plan
TAC	Technical Advisory Committee
TRM	Technical Reference Manual
USACE	United States Army Corps of Engineers
USEPA	United States Environmental Protection Agency



## 5.2 General Permit ILR40

## 5.3 Distributed Paper Material

- Informational sheets/pamphlets regarding storm water best management practices:
  - “The Solution to Stormwater Pollution” USEPA – Division of Transportation brochure
  - “After the Storm” USEPA - Division of Transportation brochure
  - “Floodplains” County of McHenry – Dept. of Planning and Development brochure
  - “Wetlands” County of McHenry – Dept. Planning and Development brochure
  - “After the Flood” County of McHenry – Health Dept. brochure
  - “After the Flood” County of McHenry – Emergency Management Agency brochure
  - “Flash floods and floods... the Awesome Power!” - Emergency Management Agency brochure
  - “Stormwater Management Permit” - Dept. Planning and Development brochure
  
- Informational sheets/pamphlets regarding water quality best management practices:
  - “Residential Deicing” County of McHenry – Division of Water Resources brochure,
  - “Saving Water Saves Energy” – Water Sense Partner
  - “Water Conservation” – Division of Water Resources brochure
  - “Preparing your Lawn and Garden for Drought” – Division of Water Resources
  - “Coal Tar” County of McHenry – Division of Water Resources
  - “Phosphorus” County of McHenry – Division of Water Resources
  - “So You Are Applying for a Septic Permit” – Department of Health
  - “How to Disinfect a Private Water Supply” – Department of Health
  - “Everything You Wanted To Know About Your Septic System” – Department of Health
  - “Everything You Wanted To Know About Your Private Well System” – Department of Health
  - “West Nile Virus” – Department of Health
  - “Trees and Septics” – Department of Health
  - “Pool Dewatering” – Division of Water Resources
  
- Informational sheets/pamphlets regarding construction site activities (soil erosion and sediment control best management practices):
  - Stormwater Management Ordinance Technical Reference Manual – Department of Planning and Development
  
- Informational sheets/pamphlets regarding the hazards associated with illegal discharges and improper disposal of waste and the manner in which to report such discharges:
  - “Unused and Expired Medications” County of McHenry – Division of Water Resources brochure
  - “How to Dispose of Medicines Properly” County of McHenry – Division of Water Resources brochure
  - “Proper Disposal of Animal Waste” County of McHenry – Division of Water Resources brochure

## 5.3 Distributed Paper Material (cont.)

- “Household Hazardous Waste” County of McHenry – Division of Water Resources brochure
- Informational sheets/pamphlets regarding green infrastructure strategies such as green roofs, rain gardens, rain barrels, bioswales, permeable piping, dry wells and permeable pavement:
  - “Water Friendly Landscaping Alternatives” County of McHenry – Division of Water Resources brochure
  - “Lawn Care” County of McHenry – Division of Water Resources brochure
  - “Conservation Design” County of McHenry – Division of Water Resources brochure
  - “Outdoor Water Conservation” County of McHenry – Division of Water Resources brochure
- A water quality/stormwater section in the County online newsletter
- Informational booklet on pollution prevention:
  - “2004 Emergency Response Guidebook” Emergency Management Agency brochure
- Other educational information distributed:
  - “Green Guide” McHenry County College – Division of Water Resources booklet
  - “Climate Change & You – What You Can Do At Home” USEPA – Division of Water Resources handout

## 5.4 Speaking Engagements

### Water Resources Division

- Groundwater Festival – May 11, 2017
- Radio Interview: Speaking of Nature – June 29, 2017
- McHenry County Fair, Conservation World Tent – August 4-6
- Woodstock Farmers Market: Water Resources – September 16, 2017
- Groundwater Festival – September 29, 2017
- Crystal Lake Johnny Appleseed Festival: Water Resources – September 30, 2017
- McHenry County Farm Bureau: Permitting Requirements for Agricultural Properties - January 24, 2018
- Sensible Salting Workshop – November 1& 2, 2017
- McHenry County Water Forum – November 8, 2017
- Sensible Salting Presentation for Loyola Winter Ecology Class – January 10, 2017
- Agricultural Drainage Workshop – January 24, 2018

### Division of Transportation

- MCDH Presentation – March 21, 2017
- Thunderbirds School Group, MCDOT Field/Site Visit – April 19-21, 2017
- Information booth at Veteran’s Resource Fair, McHenry VFW April 27, 2017
- Information booth at Mental Health Board Townhall
- McHenry Co. Active Communities Forum, Cetengra-Huntley Hospital - June 16, 2017
- Information booth at Senior Fair at St. John’s Lutheran Church – July 27, 2017
- Chemung Township Trustees’ meeting – October 11, 2017
- Township Supervisors Meeting – October 19, 2017
- Sensible Salting Workshop – November 1-2, 2017
- McHenry Township Board Meeting – November 9, 2017
- Harvard and Richmond Outreach – December 12, 2017
- Informational booth at People in Need Forum at MCC – January 27, 2018
- Conservation Congress, McHenry County Conservation District – February 10, 2018
- Presentation: McHenry Co. Task Force on Aging at Senior Services – February 22, 2018
- Presentation to MCC Autism Awareness Club – February 26, 2018

### Department of Health

- Groundwater Festival – May 11, 2017
- Food Protection Program & Potable Water, Woodstock Farmers Market – May 20, 2017
- Private Sewage and Nuisance, Woodstock Farmers Market – June 3, 2017
- Larvicide Training – June 8, 2017
- McHenry County Fair, Conservation World Tent – August 1-6
- Emergency Preparedness (flooding)-Ice Cream Social – September 21, 2017
- Groundwater Festival – September 29, 2017
- McHenry County Water Forum – November 8, 2017

**Emergency Management Division**

- Flood Preparedness Briefing – March 10, 2017
- McHenry Co. Green Drinks: Natural Hazard Mitigation Plan – August 2, 2017
- Marengo Hazard Mitigation Presentation/Discussion – October 5, 2017
- Hazard Mitigation Update Meeting – November 30, 2017

**Animal Control****Sheriff**

## 5.5 Articles

### **Division of Transportation**

- Facebook page has numerous articles including Adopt-A-Highway program highlights, salt storage and usage, road construction updates, storm drainage maintenance, street sweeping activities, and recycling events.

### **Water Resources Division**

- National Groundwater Awareness Week – March 8, 2017
- National Fix a Leek Week – March 20, 2017
- World Water Day – March 21, 2017
- Numerous E-Postings throughout the growing season promoting the use of native species in landscaping by highlighting individual native species, and their landscape benefits, that are planted in the demonstration gardens at the County Administration Building.
- Daily Herald: County Forum to Educate Public on Water Resources – November 2, 2017
- NW Herald: Find Out Where Water Comes From at Water Forum – November 5, 2017
- NW Herald: Residents, Municipalities Must Address Water Sustainability – November 9, 2017

### **Department of Health**

- After a Disaster Debris Management Guidance – July 21, 2017
- Water Sample Test Kits Flyer – July 27, 2017
- Flood Clean-Up – FAQ's About Onsite Wastewater Treatment Systems – July 27, 2017
- Flood Clean-Up – FAQ's about Genral Clean-Up – July 27, 2018
- Flood Clean-Up – FAQ's about Water Wells-Water Supplies – July 28, 2017
- Disinfection of a Water Well and How to Collect a Water Sample – July 31, 2017
- How to Collect a Water Sample for Bacterial Analysis – July 31, 2017

### **Emergency Management Division**

### **Animal Control**

### **Sheriff**

### **Administration Department**

- Facebook page has numerous articles including links to the monthly countywide newsletter, Hazard Mitigation Plan Update meeting reminders, Christmas tree, tire, medication and battery recycling activities, and free water testing events.

## **5.6 Master List of Ponds, Detention/Retention Facilities, Stream Channel Outfalls, and Storm Drainage Outfalls and Stormwater Outfall Inspection Form**

- 1. Algonquin Road over Gravel Pit Creek Str # 056-3166**
- 2. Algonquin Road over Crystal Creek Str # 056-3165**
3. Algonquin Road over Woods Creek (east of Randall Road) Str # 056-3164
4. Algonquin Road over Woods Creek (west of Randall Road) Str # 056-3172
5. Randall Road over Woods Creek Str # 056-3204
6. Randall Road over Tributary to Woods Creek Str # 056-3206
- 7. Rakow Road over Crystal Creek Str # 056-3157**
8. Lakewood Road over South Branch Kishwaukee Creek
9. Main Street over South Branch Kishwaukee River Str # 056-3018
10. Marengo Road over South Branch Kishwaukee River
11. Harmony Road over Tributary to Coon Creek Str # 056-3170
12. Maple Street over Tributary to Coon Creek Str # 056-3027
13. Harmony Road over Coon Creek Str # 056-3138
14. Genoa Road over Tributary to Spring Creek
15. Coral Road over Tributary to Riley Creek
16. South Union Road over Tributary to West Branch Union Creek
17. Marengo Road over West Branch Union Creek East
18. Marengo Road over Tributary to West Branch Union Creek East Str # 056-3160
19. Marengo Road over East Branch Union Creek East
20. South Union Road over the South Branch Kishwaukee River Str # 056-3178
21. Franklinville Road over Kishwaukee River Str # 056-3017
22. Franklinville Road over Franklinville Creek Str # 056-3016
23. Union Road over Kishwaukee River Str # 056-3026
24. Garden Valley Road over North Branch Kishwaukee River Str # 056-3028
25. Millstream Road over Kishwaukee River Str # 056-3022
26. Millstream Road over South Branch Kishwaukee River Str # 056-3023
27. Deerpass Road over Kishwaukee River Main Channel Str # 056-3030
28. Deerpass Road over Kishwaukee River Auxiliary Channel Str # 056-3029
29. Kishwaukee Valley Road over Mud Creek Str # 056-3203
30. Kishwaukee Valley Road over Rush Creek Str # 056-3150
31. Kishwaukee Valley Road over Tributary to Rush Creek Str # 056-3202
32. Kishwaukee Valley Road over North Branch Kishwaukee River Str # 056-3177
33. Dunham Road over North Branch Kishwaukee River Str # 056-3179
34. McGuire Road over Tributary to Rush Creek
35. McGuire Road over Rush Creek Str # 056-3008
36. Flat Iron Road over Mokeler Creek Str # 056-3019
37. Hunter Road over Little Beaver Creek Str # 056-3034
38. Lawrence Road over Tributary to Lawrence Creek Str # 056-3012
39. Lawrence Road over Lawrence Creek Str # 056-3181
40. Lawrence Road over Piskasaw Creek Str # 056-3010
41. Lawrence Road over West Branch Piskasaw Creek Str # 056-3020
42. Lawrence Road over West Branch Piskasaw Creek (No STR #)
43. Alden Road over Tributary to Nippersink Creek



## 5.6 Master List of Ponds, Detention/Retention Facilities, Stream Channel Outfalls, and Storm Drainage Outfalls and Stormwater Outfall Inspection Form (cont.)

44. Oak Grove Road over Tributary to Nippersink Creek (headwaters west of Reece Road)
45. Oak Grove Road over Tributary to Nippersink Creek (east of Wright Road)
46. Alden Road over Nippersink Creek Str # 056-3174
47. Altenburg Road over North Branch Kishwaukee River
48. Durkee Road over Tributary to North Branch Kishwaukee River
49. Johnson Road over Nippersink Creek Str # 056-3128
50. Alden Road over Tributary to North Branch Kishwaukee River
51. McGuire Road over North Branch Kishwaukee River Str # 056-3161
52. Alden Road over Headwaters of Slough Creek
- 53. Nelson Road over Slough Creek Str # 056-3201**
54. Charles Road over Slough Creek Str # 056-3006
55. Charles Road over Silver Creek Str # 056-3211
56. Greenwood Road over Nippersink Creek Str # 056-3155
57. Tryon Grove Road over Tributary to Nippersink Creek
58. Keystone Road over Tributary to North Branch Nippersink Creek
59. Tryon Grove over Tributary to Nippersink Creek
60. Tryon Grove over Tributary to Nippersink Creek (just east of #63)
61. Blivin Street over Nippersink Creek Str # 056-3191
- 62. Wilmot Road over Nippersink Creek Str # 056-3001**
63. Johnsbury Road over Dutch Creek Str # 056-3159
64. Johnsbury Road over Tributary to Dutch Creek
- 65. Chapel Hill Rd over Fox River Str # 056-3134**
66. Bay Road over Lily Lake Drain Str # 056-3106
67. Bull Valley Road over Tributary to Fox River
- 68. Charles J. Miller Road over Fox River Str # 056-3149**
- 69. Charles J. Miller Road over Fox River Str # 056-3190**
70. River Road over Defiance Lake Stream Str # 056-3000
71. River Road over Tributary to Fox River
72. River Road over Griswold Lake Stream
73. Roberts Road over Tributary to Fox River
74. Walkup Road over Sleepy Hollow Creek
75. Rakow Road cross culvert east of Pyott Road
76. Cross Culvert under Charles J. Miller Road from Detention/Retention Pond (on the north side) to the discharge to the Fox River on the south
77. Main Street cross culvert east of Blivin Street

## 5.6 Master List of Ponds, Detention/Retention Facilities, Stream Channel Outfalls, and Storm Drainage Outfalls and Stormwater Outfall Inspection Form (cont.)

- A. Algonquin Road Pond at SE corner Hanson Road
- B. Algonquin Road (3 ponds in series) east of Church Street
- C. Algonquin Road pond west of Church Street
- D. Rakow Road pond on NW corner McHenry Avenue**
- E. Rakow Road pond on NE corner Pyott Road**
- F. Animal Control Facility pond
- G. Charles J. Miller Road pond west of Green Street**
- H. Charles J. Miller Road pond 500' east of Green Street
- I. Walkup Road Pond east side south of Anvil Drive
- J. Walkup Road Pond east side south of Raintree Drive
- K. Walkup Road Pond east side north of Mason Hill Road
- L. Walkup Road Pond east side, Outlot A of Patriot Estates**
- M. County Administration Building Pond south side of building
- N. County Administration Building 2 ponds on north side of building parking area
- O. County Court Facility pond fronting IL 47
- P. Health Department inline detention pond east along entire parking lot
- Q. Health Department pond southwest of entrance
- R. County Records Storage facility fronting Nelson Road
- S. Valley Hi Nursing Home pond
- T. McHenry County Division of Transportation west pond**
- U. McHenry County Division of Transportation south ponds**
- V. Johnsburg Road bioswale on south side, 330' feet west of Spring Grove Road
- W. Route 31 Park&Ride lot bio-surface and 3 settling basins west side, south of Virginia Rd.

Inspection sites shown in **BOLD** are High Priority areas that are monitored annually. The remaining areas will be monitored, on a rotating basis, so that all outfalls/ponds/basins are monitored at least once in a five-year cycle.

## 5.7 Design and Implementation Guidelines Above and Beyond the MCM4 Minimum Control Measures

Design standards by the following agencies:

- U.S. Army Corps of Engineers;
- Illinois Environmental Protection Agency;
- Illinois Department of Natural Resources;
- Illinois Department of Transportation Standards;
- Illinois Urban Manual;
- McHenry-Lake County Soil and Water Conservation District; and
- McHenry County Department of Planning and Development.

Reference information includes, but is not limited to, the following sources:

- Native Plant Guide;
- McHenry County Dept. of Planning and Development's Technical Reference Manual;
- Illinois Urban Manual;
- McHenry County Dept. of Planning and Development's and/or MCDOT's:
  - Soil erosion and sediment checklist;
  - Soil erosion and sediment control notes; and
  - Typical construction sequencing;
- Chicago Metropolitan Agency for Planning (previously Northeastern Illinois Planning Commission) Course Manuals;
- IDOT manuals;
- Center for Watershed Protection documents; and
- IEPA and USEPA publications.

**5.8 Stormwater Pollution Prevention Plan/Soil Erosion  
and Sediment Control Inspection Form Example**

### Field Observation Report

<b>SMO Permit #</b>	PERMIT #	<b>USACE Reference #</b>	USACE Permit #	<b>NPDES Permit #</b>	NPDES Permit #
<b>SMO Permit Issued To</b>	SMO Permitte	<b>Inspection Log Compliant</b>	<input type="checkbox"/> Yes <input type="checkbox"/> No	<b>SWPPP Compliant</b>	<input type="checkbox"/> Yes <input type="checkbox"/> No
<b>Community Name</b>	Community Name	<b>Enforcement Officer</b>	E.O. Name	<b>Observer:</b>	Name of Inspector
<b>Permitted Plan Information</b>	Permitted Plan Set – date, title, # of sheets, etc.				
<b>Date &amp; Time of Inspection</b>	Date & Time of Inspection	<b>Weather Conditions</b>	Weather & Temperature	<b>24hr Rainfall</b>	Inches of Rain
<b>Reason for Inspection</b>	<input type="checkbox"/> Weekly <input type="checkbox"/> Rain <input type="checkbox"/> Other (explain)		<b>Stage of Construction</b>	Pre-Construction	
<b>Project Name</b>	Project Name	<b>Enforcement Officer Information</b>		Enforcement Officer Name/Phone/Email	
<b>Address/Location</b>	Address/Location of the project site and the nearest intersection				
<b>Field Contact Information</b>	Field contact name and phone/Email	<b>SE/SC Contractor Information</b>		Primary SE/SC Contractor contact information	
<b>DECI Information</b>	Designated Erosion Control Inspector contact information				
<b>In Attendance</b>	Who attended Inspection				
<b>Disturbed Area</b>	Area of Disturbance	<b>Disturbed Area Permitted</b>	Overall Permitted Disturbance	<b>Site Area</b>	Size of Site
<b>Floodplain/Floodway On Site</b>	<input type="checkbox"/> Yes <input type="checkbox"/> No	<b>IWLC On Site/Adjacent</b>	<input type="checkbox"/> Yes <input type="checkbox"/> No	<b>WOUS On Site/Adjacent</b>	<input type="checkbox"/> Yes <input type="checkbox"/> No
<b>Floodplain/Floodway Impact</b>	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<b>IWLC Impacted</b>	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<b>WOUS Impacted</b>	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
<b>Violation Correction Time</b>	<input type="checkbox"/> 1 day <input type="checkbox"/> 3 day <input type="checkbox"/> 7 day <input type="checkbox"/> 10 day <input type="checkbox"/> 30 day <input type="checkbox"/> _____		<b>Violation Rating</b>	0 - No Violation <input type="checkbox"/> Notify E.O.	
<b>Water Sample NTU Reading</b>	____ NTUs <input type="checkbox"/> N/A	<b>Photos Taken</b>	<input type="checkbox"/> Yes <input type="checkbox"/> No	<b>Next Site Visit</b>	Days until next Inspection
<b>Follow up Needed</b>	Note follow up needed, ie; violation, E.O. notification, etc. - & who is responsible			Compliant <input type="checkbox"/>	Non-Compliant <input type="checkbox"/>
<b>Copy Report To:</b>	Note who should receive an email copy of this report				
<b>Concrete Washout</b>	<input type="checkbox"/> Satisfactory <input type="checkbox"/> Unsatisfactory <input type="checkbox"/> N/A		<b>Construction Entrance/Pavement</b>	<input type="checkbox"/> Satisfactory <input type="checkbox"/> Unsatisfactory <input type="checkbox"/> N/A	
<b>Construction Sequencing</b>	<input type="checkbox"/> Satisfactory <input type="checkbox"/> Unsatisfactory <input type="checkbox"/> N/A		<b>Detention/Sediment Basin</b>	<input type="checkbox"/> Satisfactory <input type="checkbox"/> Unsatisfactory <input type="checkbox"/> N/A	
<b>Dewatering Facility</b>	<input type="checkbox"/> Satisfactory <input type="checkbox"/> Unsatisfactory <input type="checkbox"/> N/A		<b>Ditch Checks</b>	<input type="checkbox"/> Satisfactory <input type="checkbox"/> Unsatisfactory <input type="checkbox"/> N/A	
<b>Dust Control</b>	<input type="checkbox"/> Satisfactory <input type="checkbox"/> Unsatisfactory <input type="checkbox"/> N/A		<b>ECB/TRM Installation</b>	<input type="checkbox"/> Satisfactory <input type="checkbox"/> Unsatisfactory <input type="checkbox"/> N/A	
<b>Inlet Protection</b>	<input type="checkbox"/> Satisfactory <input type="checkbox"/> Unsatisfactory <input type="checkbox"/> N/A		<b>Offsite Tracking/Offsite Impacts</b>	<input type="checkbox"/> Satisfactory <input type="checkbox"/> Unsatisfactory <input type="checkbox"/> N/A	
<b>Perforated Riser</b>	<input type="checkbox"/> Satisfactory <input type="checkbox"/> Unsatisfactory <input type="checkbox"/> N/A		<b>Polyacrylamide Application</b>	<input type="checkbox"/> Satisfactory <input type="checkbox"/> Unsatisfactory <input type="checkbox"/> N/A	
<b>SE/SC Installation</b>	<input type="checkbox"/> Satisfactory <input type="checkbox"/> Unsatisfactory <input type="checkbox"/> N/A		<b>SE/SC Maintenance</b>	<input type="checkbox"/> Satisfactory <input type="checkbox"/> Unsatisfactory <input type="checkbox"/> N/A	
<b>Soil Stockpile Stabilized/Protected</b>	<input type="checkbox"/> Satisfactory <input type="checkbox"/> Unsatisfactory <input type="checkbox"/> N/A		<b>Stabilization Measures</b>	<input type="checkbox"/> Satisfactory <input type="checkbox"/> Unsatisfactory <input type="checkbox"/> N/A	
<b>Stormwater System (sewer, swale, etc.)</b>	<input type="checkbox"/> Satisfactory <input type="checkbox"/> Unsatisfactory <input type="checkbox"/> N/A		<b>Turbidity Curtain</b>	<input type="checkbox"/> Satisfactory <input type="checkbox"/> Unsatisfactory <input type="checkbox"/> N/A	
<b>Vegetative Cover</b>	<input type="checkbox"/> Satisfactory <input type="checkbox"/> Unsatisfactory <input type="checkbox"/> N/A		<b>Wetland Buffers Protected</b>	<input type="checkbox"/> Satisfactory <input type="checkbox"/> Unsatisfactory <input type="checkbox"/> N/A	
<b>Wetland/Waters Protection</b>	<input type="checkbox"/> Satisfactory <input type="checkbox"/> Unsatisfactory <input type="checkbox"/> N/A		<b>Other (not listed)</b>	<input type="checkbox"/> Satisfactory <input type="checkbox"/> Unsatisfactory <input type="checkbox"/> N/A	

**Observations:**

<p><b>Concrete Washout</b></p> <ul style="list-style-type: none"> <li>• Is there an available on site concrete washout?</li> <li>• Is the concrete washout self-contained?</li> <li>• Is the concrete washout well maintained and functional?</li> </ul>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A</p>
<p><b>Construction Entrance/Pavement</b></p> <ul style="list-style-type: none"> <li>• Are all ingress and egress points covered by a temporary construction entrance?</li> <li>• Is the entrance constructed with 3" coarse aggregate?</li> <li>• Has an appropriate geotextile material been installed underneath the stone?</li> <li>• Is the entrance appropriately sized, both in width and length?</li> <li>• Is the entrance adequately preventing tracking of dirt, mud, and sediment onto roadways?</li> </ul>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A</p>
<p><b>Construction Sequencing</b></p> <ul style="list-style-type: none"> <li>• Is the project in step with the approved/permitted construction sequencing?</li> <li>• Does the construction sequencing best utilize SE/SC performance?</li> <li>• Is the stormwater management system for the project installed and functional?</li> </ul>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A</p>
<p><b>Detention/Sediment Basin</b></p> <ul style="list-style-type: none"> <li>• Is the basin installed?</li> <li>• Is the basin adequately stabilized?</li> <li>• Is there evidence of sufficient coverage of native vegetation?</li> <li>• Is the emergency overflow constructed with the required materials?</li> </ul>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A</p>
<p><b>Dewatering Facility</b></p> <ul style="list-style-type: none"> <li>• Is dewatering directly entering a waterway or wetland?</li> <li>• Are dewatering activities conveying sediment laden water?</li> <li>• Are appropriate dewatering BMP's in place and functioning effectively?</li> <li>• If a sediment bag is being used, is it capturing sediment effectively?</li> </ul>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A</p>
<p><b>Ditch Checks</b></p> <ul style="list-style-type: none"> <li>• Are ditch checks installed at all required locations, as needed?</li> <li>• Are ditch checks installed correctly?</li> <li>• Are ditch checks being maintained/cleaned routinely?</li> </ul>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A</p>
<p><b>Dust Control – sweeping, vacuuming, spraying, etc.</b></p> <ul style="list-style-type: none"> <li>• Are dust control measures being used as needed?</li> <li>• Is dust observed moving offsite due to wind?</li> <li>• Are roadways being swept or swept and vacuumed when needed?</li> </ul>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A</p>
<p><b>ECB/TRM Installation</b></p> <ul style="list-style-type: none"> <li>• Are all Erosion Control Blanket or Turf-Reinforcement Mats installed per plan?</li> <li>• Are all ECB/TRM installed with the correct staple pattern?</li> <li>• Are all ECB/TRM properly trenched in where necessary?</li> <li>• Are all ECB/TRM installed perpendicular to the slope?</li> </ul>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A</p>
<p><b>Inlet Protection – Catch-All basket, filter, silt fence, silt dike, straw bales, gravel dam, etc.</b></p> <ul style="list-style-type: none"> <li>• Are all storm sewer inlets that are or will be functional during construction protected?</li> <li>• Is the inlet protection installed correctly to protect the entire inlet?</li> <li>• Is the inlet protection being maintained?</li> </ul>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A</p>

<p><b>Offsite Tracking/Offsite Impacts</b></p> <ul style="list-style-type: none"> <li>• Are all permitted overland flow routes constructed?</li> <li>• Are all permitted overland flow routes free from obstruction?</li> <li>• Are all permitted overland flow routes stabilized?</li> <li>• Are all pre-construction overland flow routes protected?</li> <li>• Are all pre-construction overland flow routes free from obstruction?</li> <li>• Are all points of offsite drainage (i.e. water leaving the site) stabilized?</li> <li>• Are all points of offsite drainage protected from erosion and sedimentation?</li> <li>• Are all offsite access points free from erosion and/or sedimentation?</li> </ul>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A</p>
<p><b>Perforated Riser</b></p> <ul style="list-style-type: none"> <li>• Is the perforated riser installed at the outlet?</li> <li>• Is the perforated riser sized correctly (one pipe size smaller than the outlet pipe)?</li> <li>• Is the perforated riser wrapped in hardware cloth or chicken wire, and filter fabric?</li> <li>• Is the perforated riser adequately mortared in?</li> <li>• Is there an adequate amount of stone at the base of the riser?</li> </ul>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A</p>
<p><b>Polyacrylamide Application</b></p> <ul style="list-style-type: none"> <li>• Are polyacrylamides (PAMs) being used per plan?</li> <li>• Are PAMs being appropriately contained and are flocculated sediments being captured?</li> <li>• Are PAMs systems being properly maintained?</li> </ul>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A</p>
<p><b>SE/SC Installation</b></p> <ul style="list-style-type: none"> <li>• Are all perimeter soil erosion/sediment controls in place and maintained?</li> <li>• Are adjacent wetlands/waters/properties being impacted by SE/SC failures?</li> <li>• Are all site SE/SC controls installed correctly?</li> <li>• Does the silt fence meet the AASHTO 288-00 Standard?</li> </ul>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A</p>
<p><b>SE/SC Maintenance</b></p> <ul style="list-style-type: none"> <li>• Is silt fence maintained and kept free of sediment buildup?</li> <li>• Are ditch checks maintained and cleaned?</li> <li>• Is the perforated riser fabric clear of sediment blinding and functional?</li> <li>• Is the construction entrance clean and functional?</li> </ul>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A</p>
<p><b>Soil Stockpile Stabilized/Protected</b></p> <ul style="list-style-type: none"> <li>• Is the soil stockpile located in an approved location (ie. not in floodplain or wetland)?</li> <li>• Is the soil stockpile adequately stabilized?</li> <li>• Is the soil stockpile properly enclosed with silt fence?</li> </ul>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A</p>
<p><b>Stabilization Measures</b></p> <ul style="list-style-type: none"> <li>• Have all disturbed areas been stabilized with temporary or permanent measures within 14 days of the end of active hydrologic disturbance?</li> <li>• Are stabilization measures effective?</li> <li>• Are there areas of disturbance that need additional stabilization measures?</li> </ul>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A</p>
<p><b>Stormwater System (sewer, swale, etc.)</b></p> <ul style="list-style-type: none"> <li>• Is the stormwater management system installed and functional, prior to building construction?</li> <li>• Are all points of concentrated discharge appropriately installed for energy dissipation?</li> <li>• Are all inlets and catch basins adequately protected from sediment conveyance into the system?</li> <li>• Is hydrocarbon removal technology in place, functional and maintained where needed?</li> </ul>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A</p>

<b>Turbidity Curtain</b> <ul style="list-style-type: none"> <li>• Is the turbidity curtain installed per plan, in the correct location?</li> <li>• Is the turbidity curtain maintained clear of debris?</li> <li>• Is the turbidity curtain properly and securely anchored?</li> <li>• Is the turbidity curtain holding/floating above the water surface?</li> </ul>	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
<b>Vegetative Cover</b> <ul style="list-style-type: none"> <li>• Is vegetative cover adequate, based on application, species, and time of year?</li> </ul>	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
<b>Wetland Buffers Protected</b> <ul style="list-style-type: none"> <li>• Are all required wetland buffers protected?</li> <li>• Are all required wetland buffers free of erosion and/or sedimentation?</li> <li>• Are all required wetland buffers free of unpermitted disturbance?</li> </ul>	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
<b>Wetlands/Waters Protection</b> <ul style="list-style-type: none"> <li>• Are all delineated wetlands on site protected by 4' IDOT Standard Construction Fencing?</li> <li>• Are all adjacent offsite wetlands protected from impact?</li> <li>• Are illicit discharges into wetlands or bodies of water being prevented?</li> <li>• Are wetland buffers protected?</li> </ul>	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
<b>Other</b> <ul style="list-style-type: none"> <li>• Other SE/SC concerns or issues (please explain in the text box on page one, or below)</li> </ul>	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
<p>Explain:</p>	

Inspector's Signature _____	Date of Inspection _____
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## 5.9 Department Training

### **Water Resources Division** [Educational Event (Attendance)]

- ASCE - Illinois MS4 Implementation Seminar – March 1, 2017 (2)
- IAFSM Conference – March 8-9, 2017 (3)
- Fox River Summit –March 10, 2017 (1)
- Tri-State Forestry Stewardship Conference – March 11, 2018 (1)
- IAEP - USACE Update of the Regional Permit Program – March 14, 2017 (1)
- USDA-NRCS Cultural Resources Training (on-line) – May 23, 2017 (1)
- USDA-NRCS Air Quality, Climate Change, & Energy (on-line) – May 23, 2017 (1)
- FEMA Substantial Damage Estimator Software Training – July 26, 2017
- Wetland Training Institute-Wetland Plants 40-Hr E-Session – October 2017 (1)
- USDA-NRCS Intro to Water Quality (on-line) – October 17, 2017
- ASCE - Sustainability Workshop (Envision) – October 18, 2017 (1)
- CRS Green Guide Webinar Series: CRS Green Guide and Natural & Beneficial Floodplain Functions – October 30, 2017 (1)
- Beyond Runoff Reduction Webinar - November 1, 2017
- CRS Green Guide Webinar: CRS Open Space Preservation – November 13, 2017 (1)
- CRS Green Guide Webinar: ASFPM & CSO's CRS Green Guide – November 28, 2017 (1)
- STARR NFIP Basics Webinar – November 30, 2017 (1)
- AGI Webinar: Geologic Mapping-Great Lakes – December 10, 2017 (1)
- STARR Floodplain Development Permit Review Webinar – December 14, 2017 (1)
- STARR Inspecting Floodplain Development Webinar – December 14, 2017(1)
- IAEP - USACE Regulatory Update – January 10, 2018 (1)
- STARR Elevation Certificate Webinar – January 11, 2018 (1)
- STARR: Tools for Determining Base Flood Elevation – January 18, 2018 (1)
- EPA Webinar-Managing Runoff Using Green Infrastructure – January 31, 2018 (1)
- IAEP - USACE Regulatory Update – January 10, 2018 (1)
- MCFB-Permitting Requirements-Variou Regulatory Agencies – January 24, 2018 (1)
- EPA Webinar - National Stormwater Calculator for Managing Runoff Using Green Infrastructure: Addition of a Cost Module & Mobile Web App – January 31, 2018 (2)
- Wisconsin Wetlands Association Annual Conference – February 21, 2018
- ASCE - Illinois MS4 Implementation Seminar – February 27, 2018 (1)

### **Department of Health** [Educational Event (Attendance)]

- Water Vending Units for Non-Community Program – March 15, 2017
- Loop Installer Seminar – March 27, 2017
- DuPage Co. HD NIPC Spring 2017 Water Well Training – April 26, 2018
- The Private Well Conference – May 23-25, 2017
- Safe Drinking Water (Non-Community Public Water Systems) Program -- Implementation of Level I & II Assessment Forms Conference Call – June 8, 2017
- Private Well Assessment and Outreach for EHPs – June 26, 2017
- IDPH Water Training – November 8, 2017
- Grove Concrete/Supply Inc. 2017 Plumbing & Wastewater Conference – December 7, 2017
- Water Well and Onsite Wastewater Training – February 27, 2018

### **Division of Transportation** [Educational Event (Attendance)]

- McHenry Co. Sensible Salting Workshop – November 1, 2017
- MCDOT Annual testing/calibrating of 32 trucks/salt spreading equipment November 1-21, 2017
- ASHTO Training – November/December, 2017 (5)
- Winter Maintenance Treatment Design Tool: on-line training (numerous)
- Winter Equipment Maintenance: on-line training (numerous)
- Proper Plowing Techniques: on-line training (numerous)

### **Facilities Management** [Educational Event (Attendance)]

- Facilities Management Trains employees on the County policy prohibiting the use of coal tar sealants.
- Snow and ice operations includes annual calibration of drop spreaders to control excess use of ice melting chemicals on the County's sidewalks.
- The proper recycling of waste oil is practiced by Maintenance Division.
- All staff are trained on the proper handling of materials potentially containing pathogens.

### **Emergency Management Division**

- McHenry County EMA Creation of Debris Management Annex – March 2017
- Pipeline Emergency Response – March 15, 2017
- Flood VTTX – May 25, 2017
- Flood message PIO Meeting – July 8, 2017
- Flood Response – July 2017
- Flood Recovery – August 2017
- 2017 Flood Hotwash-After Action Review – September 2, 2017

### **Sheriff's Office**

- All operational staff from Corrections and Merited ranks are required to maintain current certification in Blood Borne Pathogens. Training is provided biennially for certification, and several times during the year in roll call settings. Non-operational staff is trained according to their assignments or on a voluntary basis.
- The Evidence Division is responsible for the handling and destruction of Narcotics. The Narcotics are stored in a humidity/temperature controlled environment inside the property of the Sheriff's Office. The disposal of narcotics is done through the utilization of the State Police crime lab, the Coroner's Office, and incineration.

### **Sheriff's Garage**

- Upon hire, all new employees are trained on departmental policies and procedures.

### **Animal Control**

- Proper waste disposal.

### **Coroner**

- The Evidence Division is responsible for the handling and destruction of Narcotics. The Narcotics are stored in a humidity/temperature controlled environment inside the property of the Sheriff's Office. The disposal of narcotics is done through the utilization of the State Police crime lab, the Coroner's Office, and incineration.

## 5.10 McHenry-Lake County Soil and Water Conservation District Soil Erosion and Sediment Control Inspections

SWCD file number	NPDES number	County Stormwater permit number	Applicant name	Date
17-005-130	ILR10Y625		Patti and Dan McGrath	5/15/17
17-006-131	ILR10Y139	SW16-0030	George Bright	5/23/17
17-007-132		J-7362	Joe Miller	5/31/17
17-008-133	ILR10Y737	J-6985	R&R Steakhouse	6/6/17
17-009-134	ILR10W130		Speedway	7/13/17
17-010-135	ILR10Z039		Bodnar	8/28/17
17-011-136	ILR10Y891		NI Gas	9/14/17
17-012-137	ILR10Y923		Indian Ridge Subd.	9/19/17
17-013-138	ILR10Z149	J-7742	Snap-on	9/22/17
17-014-139	ILR10Z400	SW17-0104	Chojniak	10/30/17
17-015-140	ILR10X911	SW-17-0262	Barrington Hills Farm	10/31/17
17-016-141	ILR10Y892	TBD	NiCor Gas Ramer Rd	12/5/17
18-001-142	ILR10		Sopt	1/9/18
18-002-143	ILR10Z598	TBD	NiGas Valley Hill Rd	1/23/18
18-003-144	ILR10Z685	SW18-0005	MCCD Brookdale	1/25/18
18-004-145	ILR10		McHenry County	2/19/18

## **5.11 Street Sweeping Schedule and Map**

This information can be obtained through the MCDOT Drainage Engineer.

## 5.12 List of Primary Drainageways

### **Kishwaukee River Watershed**

1. Kishwaukee River
2. North Branch Kishwaukee River
3. South Branch Kishwaukee River
4. Rush Creek
5. Kishwaukee Creek
6. Piscasaw Creek
7. West Branch Piscasaw Creek
8. Lawrence Creek
9. Mokeler Creek
10. Geryune Creek
11. Little Beaver Creek
12. Coon Creek
13. Riley Creek
14. Spring Creek
15. Williamson Creek
16. Franklinville Creek
17. Union Creek East
18. Newman Creek

### **Fox River Watershed**

19. Nippersink Creek
20. North Branch Nippersink Creek
21. Slough Creek
22. Silver Creek
23. Sleepy Hollow Creek
24. Boone Creek
25. Powers Creek
26. Dutch Creek
27. Fox River
28. Cotton Creek
29. Cary Creek
30. Crystal Creek (Crystal Lake Outlet)
31. Woods Creek
32. Spring Creek
33. Lily Lake Drain
34. Defiance Lake Stream
35. Griswold Lake Stream

## **5.13 Storm Sewer Atlas and Outfall Inventory Map**

The Storm Sewer Atlas and Outfall Inventory Map refers to those outlets and ponds listed in Appendix 5.6 and can be obtained from the MCDOT.

## **5.14 Illinois General Permit 87—Stormwater Runoff and Pollutants**



## **5.15 MCDOT Snow and Ice Policies and Procedures Manual**

The MCDOT Snow and Ice Policies and Procedures Manual can be obtained from the MCDOT Maintenance Department.

The Division of Water Resources also maintains a website ([www.mchenryh2o.com](http://www.mchenryh2o.com)) with general handbooks and a model policy for both public and private entities. Annually, the Division of Water Resources and MCDOT partner to provide training to snow control entities.

## 5.16 BMPs Implemented within MS4 Jurisdiction and Estimated Effectiveness

Best management practices (BMPs) are utilized to capture and remove contaminants and sediment from stormwater runoff both during and post-construction. BMPs can range from those practices constructed in the field to pre-purchased devices. Each BMP is site-specific and is designed to treat and/or retain stormwater based on the specific development, existing and proposed site parameters, and potential contaminants that may enter the BMP.

The USEPA's "Stormwater Best Management Practice Design Guide: Volume 1 General Considerations" contains guidance on the appropriateness and effectiveness of different types of BMPs in varying applications. Appendix D of the document provides a table of pollutant yields based on land use categories. In Appendix E of the document, pollutant removal information is provided as compiled by the Center for Watershed Protection. The data shows median pollutant removal efficiency as a percentage.

**Table D-1 Typical Urban Areas and Pollutant Yields (Burton & Pitt, 2002)**

POLLUTANT	LAND USE (lb/acre/yr) <sup>a</sup>								
	Com-mercial	Parking Lot	Residential - Density			High-ways	Ind-ustry	Parks	Shop-ping Center
			High	Medim	Low <sup>b</sup>				
Total Solids	2100	1300	670	450	65	1700	670	NA <sup>c</sup>	720
SS	1000	400	420	250	10	880	500	3	440
Cl	420	300	54	30	9	470	25	NA	36
TP	1.5	0.7	1	0.3	0	0.9	1.3	0.03	0.5
TKN	6.7	5.1	4.2	2.5	0.3	7.9	3.4	NA	3.1
NH <sub>3</sub>	1.9	2	0.8	0.5	0	1.5	0.2	NA	0.5
NO <sub>3</sub> + NO <sub>2</sub>	3.1	2.9	2	1.4	0.1	4.2	1.3	NA	0.5
BOD <sub>5</sub>	62	47	27	13	1	NA	NA	NA	NA
COD	420	270	170	50	7	NA	200	NA	NA
Pb	2.7	0.8	0.8	0.1	0	4.5	0.2	0	1.1
Zn	2.1	0.8	0.7	0.1	0	2.1	0.4	NA	0.6
Cr	0.15	NA	NA	0	0	0.09	0.6	NA	0.04
Cd	0.03	0.01	0	0	0	0.02	0	NA	0.01
As	0.02	NA	NA	0	0	0.02	0	NA	0.02

<sup>a</sup> The difference between lb/acre/yr and kg/ha/yr is less than 15%, and the accuracy of the values shown in this table cannot differentiate between such close values

<sup>b</sup> The monitored low-density residential areas were drained by grass swales

<sup>c</sup> NA = Not available

*Stormwater Best Management Practice Design Guide: Volume 1 General Considerations, September 2004, Page D-2*

## 5.16 BMPs Implemented within MS4 Jurisdiction and Estimated Effectiveness (cont.)

Table E-1 Median Pollutant Removal of Stormwater Treatment Practices (CWP 2000)

Treatment BMP	Median Pollutant Removal Efficiency (%)						
	TSS	TP	Sol P	TN	NOx	Cu	Zn
Stormwater Detention Ponds	47	19	-6.0	25	4	26 <sup>(1)</sup>	26
Stormwater Retention Ponds	80 (67)	51(48)	66 (52)	33 (31)	43 (24)	57 (57)	66 (51)
Stormwater Wetlands	76 (78)	49 (51)	35 (39)	30 (21)	67 (67)	40 (39)	44 (54)
Filtering Practices <sup>(2)</sup>	86 (87)	59 (51)	3 (-31)	38 (44)	-14 (-13)	49 (39)	88 (80)
Infiltration Practices	95 <sup>(1)</sup>	70	85 <sup>(1)</sup>	51	82 <sup>(1)</sup>	N/A	99 <sup>(1)</sup>
Water Quality Swales <sup>(3)</sup>	81 (81)	34 (29)	38 (34)	8 <sup>(41)</sup>	31	51 (51)	71 (71)

1. Data based on fewer than five data points

2. Excludes vertical sand filters and filter strips

3. Refers to open channel practices designed for water quality

Notes: Data in parentheses represent values from the First Edition; N/A = data are not available, TSS = Total Suspended Solids; TP = Total Phosphorus; Sol P = Soluble Phosphorus; TN = Total Nitrogen; NOx = Nitrate and Nitrite Nitrogen; Cu = Copper; Zn = Zinc.

*Stormwater Best Management Practice Design Guide: Volume 1 General Considerations, September 2004, Page E-2*

The County has installed and maintains numerous BMPs throughout the MS4's jurisdiction. A list and location of each of the BMPs can be found below. Both appendices from the above-referenced report were used to calculate an estimate of both the pollutant load to the BMP and the median pollutant reduction for each BMP. Totals are shown at the bottom of the table. Overall, the BMPs throughout the MS4's jurisdiction remove a total of 149,000 lb/yr of total suspended solids (TSS), 45.6 lb/yr of total Phosphorus (TP), and 194.7 lb/yr of total Nitrogen (TN) that would otherwise reach our waterways and continue to impact the water quality.

Watershed	Location	Type	Dimensions	Drainage Area to BMP (ac)	Land Use Draining to BMP	BMP Effectiveness (lb/yr) based on drainage area and land use to BMP		
						TSS	TP	TN
Kishwaukee R	Algonquin Road - SEC at Church St	Dry detention basin (3)	250' long x 40' wide	3.6731	Highway	2,934.80	0.63	7.25
Kishwaukee R	Algonquin Road - SWC at Church St	Dry detention basin	60' long x 50' wide	0.9183	Highway	733.70	0.16	1.81
Kishwaukee R	Franklinville Road over Franklinville Cr - SEC at creek	Bioswale	200' long x 4' wide	0.7805	Highway	1,074.79	0.24	0.49
Kishwaukee R	Franklinville Road over Franklinville Cr - SWC at creek	Bioswale	80' long x 4' wide	0.3214	Highway	442.56	0.10	0.20
Kishwaukee R	Franklinville Road over Kishwaukee R - NEC at river	Bioswale	110' long x 4' wide	0.8035	Highway	1,106.40	0.25	0.51
Kishwaukee R	Franklinville Road over Kishwaukee R - NWC at river	Bioswale	100' long x 4' wide	0.2755	Highway	379.34	0.08	0.17
Kishwaukee R	Kishwaukee Valley Road over N Br Kishwaukee R - NWC at river	Bioswale	140' long x 4' wide	1.0331	Highway	1,422.52	0.32	0.65
Kishwaukee R	Kishwaukee Valley Road over N Br Kishwaukee R - SWC at river	Bioswale	180' long x 4' wide	3.6731	Highway	5,057.85	1.12	2.32
Piscasaw Cr	Lawrence Road over Piscasaw Cr - NWC at creek	Wetland basin	145' long x 85' wide	1.1478	Highway	1,561.07	0.53	2.99
Lower Fox R	Algonquin Road - SEC at Hanson Rd	Dry detention basin	90' long x 90' wide (triangle)	0.2296	Highway	183.43	0.04	0.45
Lower Fox R	IL Route 31 - SWC at Virginia Rd	Bio-surface	210' x 60' wide	1.2626	Parking Lot	1,329.55	0.30	0.52
Lower Fox R	IL Route 31 - SWC at Virginia Rd	Dry detention basin	180' long x 130' wide (triangle)	2.2957	Parking Lot	1,402.66	0.31	2.93
Lower Fox R	IL Route 31 - SWC at Virginia Rd	Dry detention basin	70' diameter	2.5253	Parking Lot	1,542.93	0.34	3.22
Lower Fox R	IL Route 31 - SWC at Virginia Rd	Dry detention basin	60' long x 25' wide	0.5510	Parking Lot	336.64	0.07	0.70
Lower Fox R	McHenry Co Animal Control Facility - 100 N. Virginia St, Crystal Lake	Wetland basin	325' long x 200' wide	10.6749	Commercial	17,933.88	8.17	23.60
Lower Fox R	Rakow Road - NEC at Pyott Rd	Dry detention basin	600' long x 180' wide (triangle)	6.6575	Highway	5,319.33	1.14	13.15
Lower Fox R	Rakow Road - NWC at McHenry Ave	Wetland basin	330' long x 150' wide	6.8871	Highway	9,366.39	3.16	17.95
Lower Fox R	Rakow Road - SEC at Virginia Rd	Stormceptor	N/A	12.3967	Highway	10,537.19	-	-
Lower Fox R	Randall Road - SWC at Ackman Rd	Stormceptor	N/A	1.6070	Highway	1,365.93	-	-
Nippersink Cr	Alden Road over Nippersink Cr - NEC at creek	Stormceptor	N/A	0.1263	Highway	107.32	-	-
Nippersink Cr	Alden Road over Nippersink Cr - SWC at creek	Stormceptor	N/A	1.3774	Highway	1,170.80	-	-
Nippersink Cr	County Records Storage Facility - 15611 Nelson Rd, Woodstock	Biofilter - grass swale	1000' long x 5' wide	8.4940	Commercial	14,448.35	4.33	4.55
Nippersink Cr	McHenry Co Administration Building - 667 Ware Rd, Woodstock	Biofilter - grass swale	220' long x 14' wide	1.3085	Parking Lot	1,377.89	0.31	0.53
Nippersink Cr	McHenry Co Administration Building - 667 Ware Rd, Woodstock	Dry detention basin	140' long x 75' wide	1.1019	Commercial	1,087.60	0.31	1.85
Nippersink Cr	McHenry Co Administration Building - 667 Ware Rd, Woodstock	Dry detention basin	280' long x 70' wide	6.6575	Commercial	6,570.94	1.90	11.15
Nippersink Cr	McHenry Co Administration Building - 667 Ware Rd, Woodstock	Rain garden	44' long x 14' wide	0.0141	Commercial	25.54	0.01	0.04
Nippersink Cr	McHenry Co Administration Building - 667 Ware Rd, Woodstock	Xeriscape	100' long x 20' wide	0.0459	Commercial	82.92	0.04	0.12
Nippersink Cr	McHenry Co Court Facility - 2200 N. Seminary Ave, Woodstock	Dry detention basin	500' long x 40' wide	5.5096	Parking Lot	3,366.39	0.73	7.02
Nippersink Cr	McHenry Co Division of Transportation - 16111 Nelson Rd, Woodstock	Wet detention basin	170' long x 65' wide	8.2645	Commercial	13,884.30	6.32	18.27
Nippersink Cr	McHenry Co Division of Transportation - 16111 Nelson Rd, Woodstock	Wetland basin	260' long x 100' wide	5.3949	Commercial	9,063.36	4.13	11.93
Nippersink Cr	McHenry Co Health Department - 2200 N. Seminary Ave, Woodstock	Dry detention basin	470' long x 20' wide	4.1322	Parking Lot	2,524.79	0.55	5.27
Nippersink Cr	McHenry Co Health Department - 2200 N. Seminary Ave, Woodstock	Dry detention basin	200' long x 60' wide	1.6070	Commercial	1,586.09	0.46	2.69
Nippersink Cr	Valley Hi Nursing Home - 2402 Hartland Rd, Woodstock	Bioswale	300' long x 25' wide	1.0331	Commercial	1,757.23	0.53	0.55
Nippersink Cr	Valley Hi Nursing Home - 2402 Hartland Rd, Woodstock	Wet detention basin	450' long x 90' wide (triangle)	5.7392	Commercial	9,641.87	4.39	12.69
Upper Fox R	Charles J. Miller Road - SEC at Green St	Dry detention basin	400' long x 130' wide (triangle)	1.7218	Highway	1,375.69	0.29	3.40
Upper Fox R	Charles J. Miller Road - SWC at Green St	Dry detention basin	640' long x 50' wide	4.0174	Highway	3,209.94	0.69	7.93
Upper Fox R	Charles J. Miller Road over Fox R - NEC at river	Wetland basin	200' long x 40' wide	1.5381	Highway	2,091.83	0.71	4.01
Upper Fox R	Charles J. Miller Road over Fox R - SWC at River Rd	Dry detention basin	285' long x 130' wide	1.7218	Highway	1,375.69	0.29	3.40
Upper Fox R	Johnsburg Road - SWC at Spring Grove Rd	Bioswale	185' long x 20' wide	1.0331	Highway	1,422.52	0.32	0.65
Upper Fox R	S. Crystal Lake Road - NEC at Mason Hill Rd	Dry detention basin	1400' long x 25' wide	2.0661	Highway	1,650.83	0.35	4.08
Upper Fox R	S. Crystal Lake Road - SEC at Cunat Dr	Dry detention basin	750' long x 20' wide	1.7218	Highway	1,375.69	0.29	3.40
Upper Fox R	S. Crystal Lake Road - SEC at Raintree Dr	Dry detention basin	100' long x 100' wide	2.4105	Highway	1,925.96	0.41	4.76
Upper Fox R	Walkup Road - SEC at Anvil Dr	Wetland basin	280' long x 90' wide (triangle)	2.8696	Highway	3,902.66	1.32	7.48
<b>TOTALS =</b>						<b>149,057.17</b>	<b>45.63</b>	<b>194.72</b>