

Stormwater Management Program Plan



Deep Lake

VILLAGE OF LAKE VILLA

LAKE COUNTY, ILLINOIS

OCTOBER 14, 2015

SMPP

Prepared with the assistance of
The Lake County Stormwater Management Commission
333 Peterson Road
Libertyville, IL 60048
Phone 847-918-5260 • Fax 847-918-9826

and

The Village of Mundelein
440 E. Hawley Street
Mundelein, IL 60060
Phone 847-949-3200 • Fax 847-949-0143

and

Bleck Engineering Company, Inc.
313 East Lake Street
Silver Lake, WI 53170
Phone 262-889-2218 • Fax 262-889-2226

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1 Overview of the Stormwater Management Program Plan



Des Plaines River – Lake County, IL Photo by Dave Piasecki

1.1 Introduction

This Stormwater Management Program Plan (SMPP) was developed by Village of Lake Villa (Village) based off a SMPP template provided by the Lake County Stormwater Management Commission for the purpose of meeting 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 obtain storm water permits for its discharges into receiving waters. The Village of Lake Villa is one of many different types of MS4s which include municipalities, park districts, drainage districts, township highway departments, counties and transportation departments (LCDOT and IDOT). 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.

The SMPP describes the procedures and practices that can be implemented by Village of Lake Villa 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 the citizens.

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

- reviews, permits and inspects construction activity within its limits;
- manages the planning, design and construction of projects performed within its limits;
- maintains its facilities and performs its 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.

1.2 History



James Thomas
Cleveland Press Collection
Cleveland State University Library

The Act was further refined in 1977, to extend deadlines and better define types of pollutants. It became commonly referred to as the Clean Water Act.

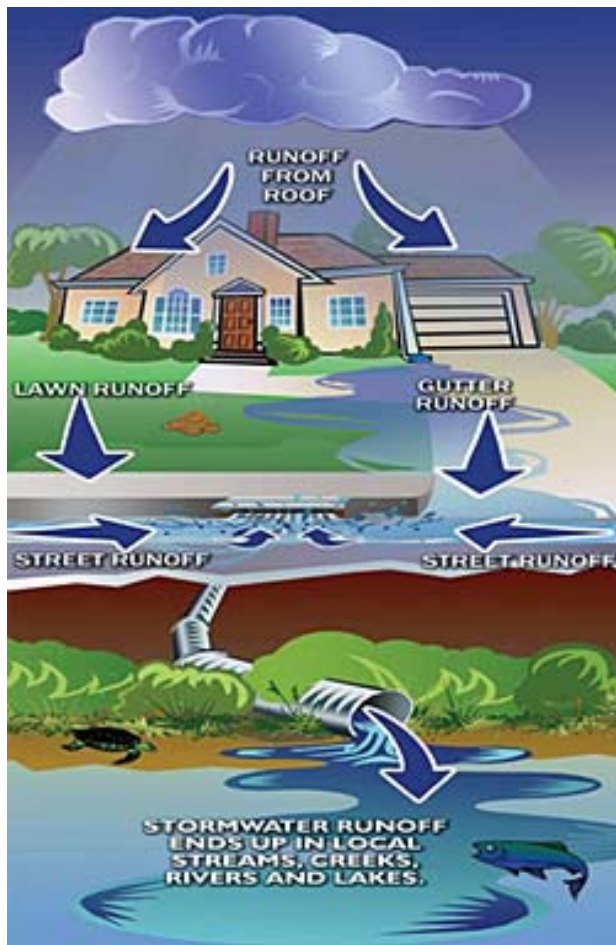
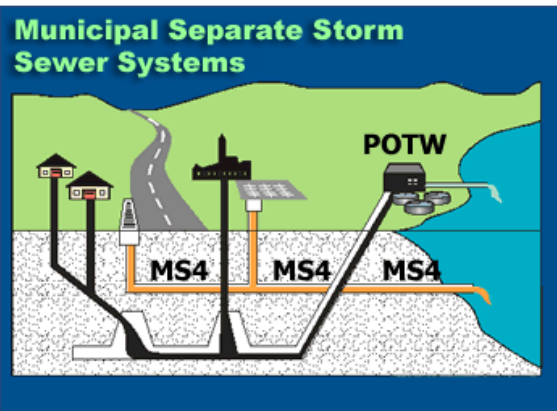


Figure 1: MS4 as point source



The NPDES permit process regulates the discharge from MS4s, construction sites and industrial activities based on amendments to CWA in 1987 and the subsequent 1990 and 1999 regulations by the U.S. Environmental Protection Agency (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. Under the General Permit 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 describes the proposed activities and best management practices that occurred over the original 5-year period toward the ultimate goal of developing a compliant SWaMP. At the end of the 5th year (March 1, 2008) the components of the SWaMP were required to be implemented; per the ILR40 permit. The IEPA reissued the ILR 40 permit on April 1, 2009.

Additionally, under the General ILR10 permit also administered IEPA, all construction projects that disturb greater than 1 acre of total land area are required to obtain an NPDES permit from IEPA prior to the start of construction. Municipalities covered by the General ILR40 permit, are automatically covered under ILR10 30 days after the IEPA receives the NOI from the municipality.

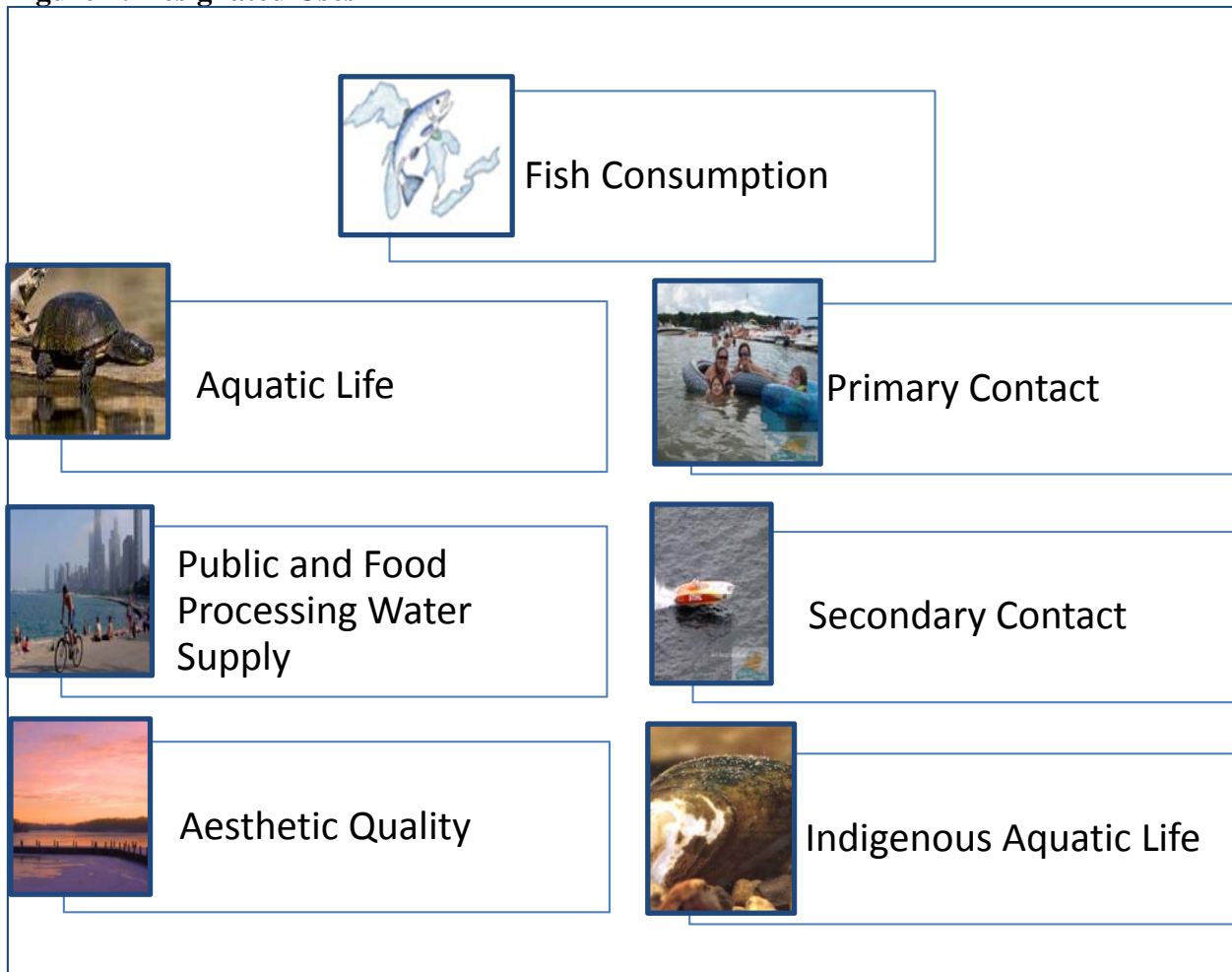
1.3 Water Quality Standards

The 1987 Water Quality Act also established new requirements and funding, through the Clean Water Act Section 319, for states to develop and implement nonpoint source pollution control. Specifically, Section 319 required each state to: (1) identify navigable waters that, without government action to control non-point sources of pollution, cannot be reasonably expected to maintain applicable water quality standards or goals; (2) identify nonpoint sources that add significant amounts of pollution to affected waters; and (3) develop a nonpoint source water pollution plan on a watershed-by-watershed basis. The Illinois Environmental Protection Agency (IEPA) created a program to comply with these federal regulations. This program has 3 basic components.

1.3.A Designated Uses

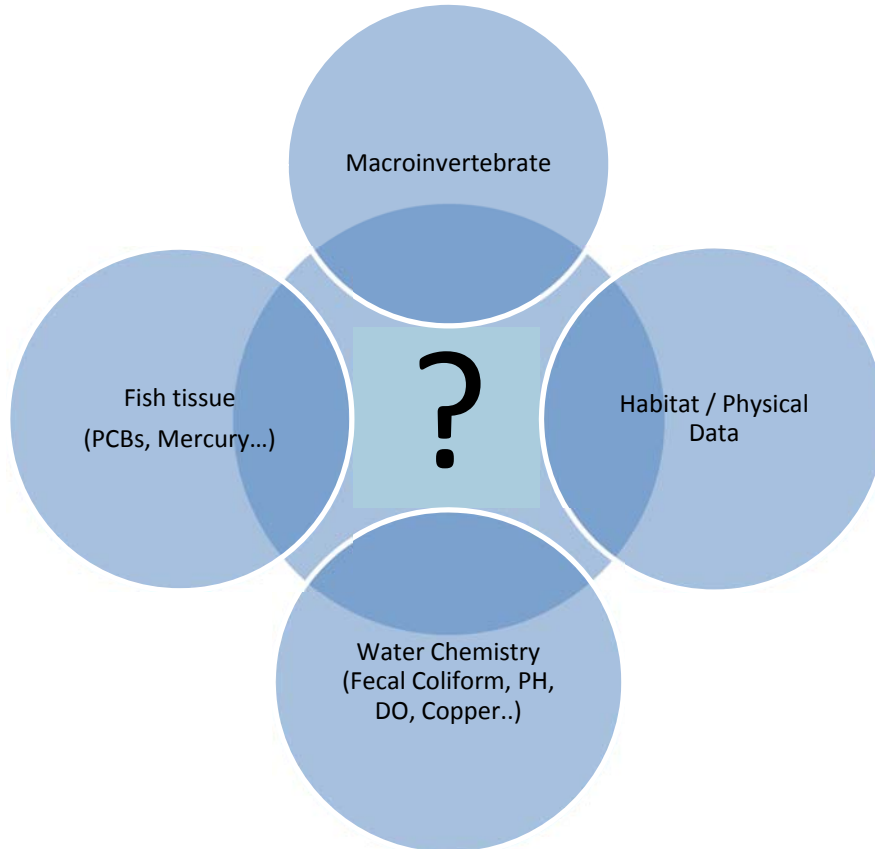
One of IEPA's first steps in achieving compliance with the Act was to identify all uses its waters should support. IEPA identified 7 designated uses, as depicted on **Figure 2**. Then each navigable water was evaluated to identify the designated uses it should support.

Figure 2: Designated Uses



1.3.B Water Quality Criteria

IEPA determined a set of water quality criteria that need to meet based on each of the 7 designated uses. Some criteria are applicable for multiple Designated Uses.

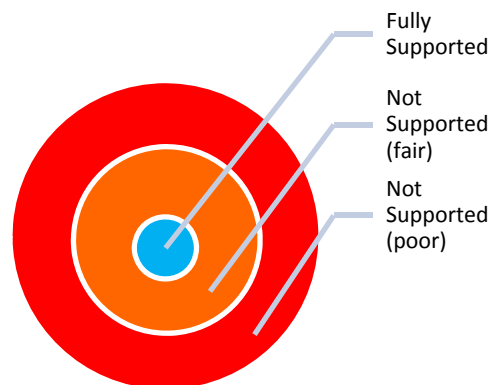


1.3.C Monitoring

IEPA is required to conduct a monitoring program for all of its receiving streams based on the water quality criteria it should be meet for each of its designated uses according to the following process.

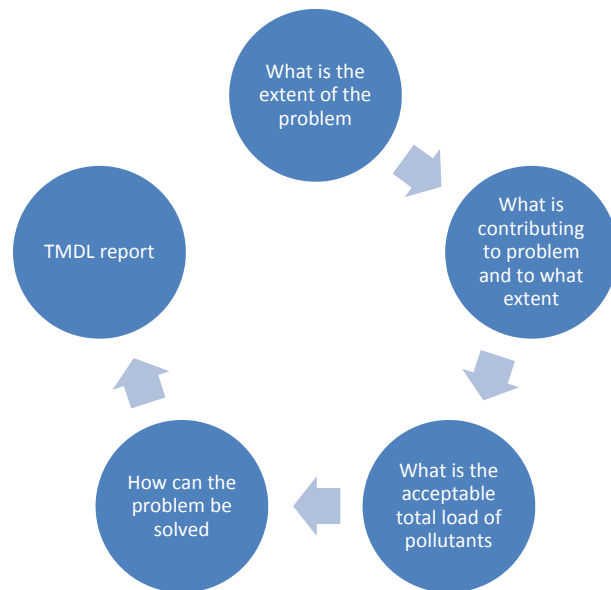
- Conduct Monitoring per Designated Use
- Determine if Water Quality Criteria are met
- Include Non-Supporting Waters on Impaired Waters report
- Rank non-supporting waters based on severity of problem.

IEPA is required to submit the monitoring results [305(b) report] to USEPA every 2 years. The impaired waters report [303(d) report] and ranking are part of this report.



1.3.D Total Maximum Daily Load (TMDL)

Total Maximum Daily Load (TMDL) reports are created by IEPA for impaired waters. These reports are created by IEPA based on severity. IEPA creates TMDL reports for impaired waters with the highest ranks. The majority of impaired waters do not yet have TMDL reports. This graphic identifies the pieces of a TMDL report. Once the TMDL report is approved by the USEPA, the recommended strategies should be implemented by the affected MS4.



1.4 Watershed, Sub-watersheds and Receiving Waters



All storm water runoff from the Village discharges into the Illinois River, a tributary to the Mississippi River. There are several receiving streams tributary to the Des Plaines River (a tributary to the Illinois River) located within the Village. These streams include Bull Creek, Seavey Drainageway and the Indian Creek/Diamond Lake Drain. A small portion of the Village drains into the Fox River via Squaw Creek. Topographic characteristics of the Village are typical of those in northeastern Illinois. Floodplains tend to be broad and flat with relatively small channels.

Figure 3: Mississippi River Watershed

Watershed: The land area that contributes storm water to one of the four major Rivers in Lake County.

Sub-Watershed: The land area that contributes storm water to one of the receiving waters tributary to a major River.

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

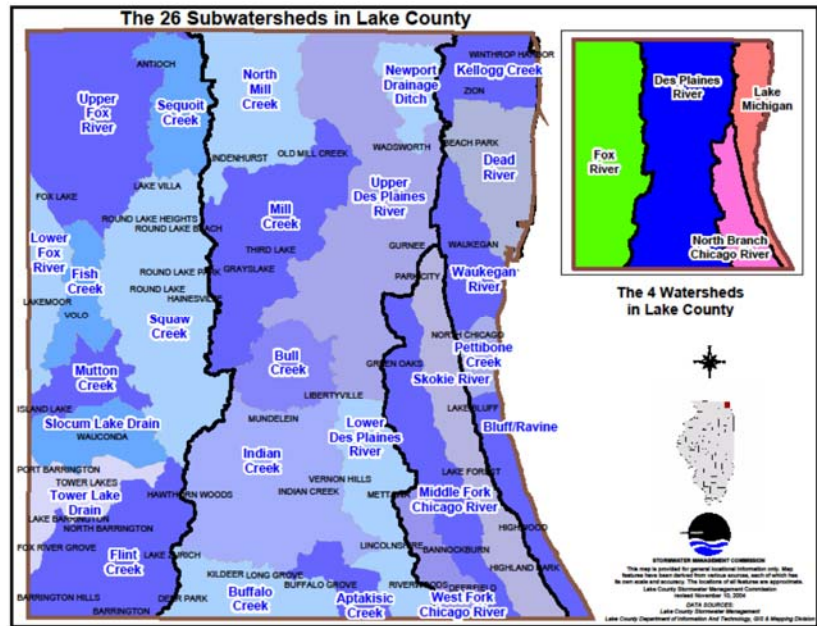


Figure 4: Lake County's Watersheds and Sub-watersheds

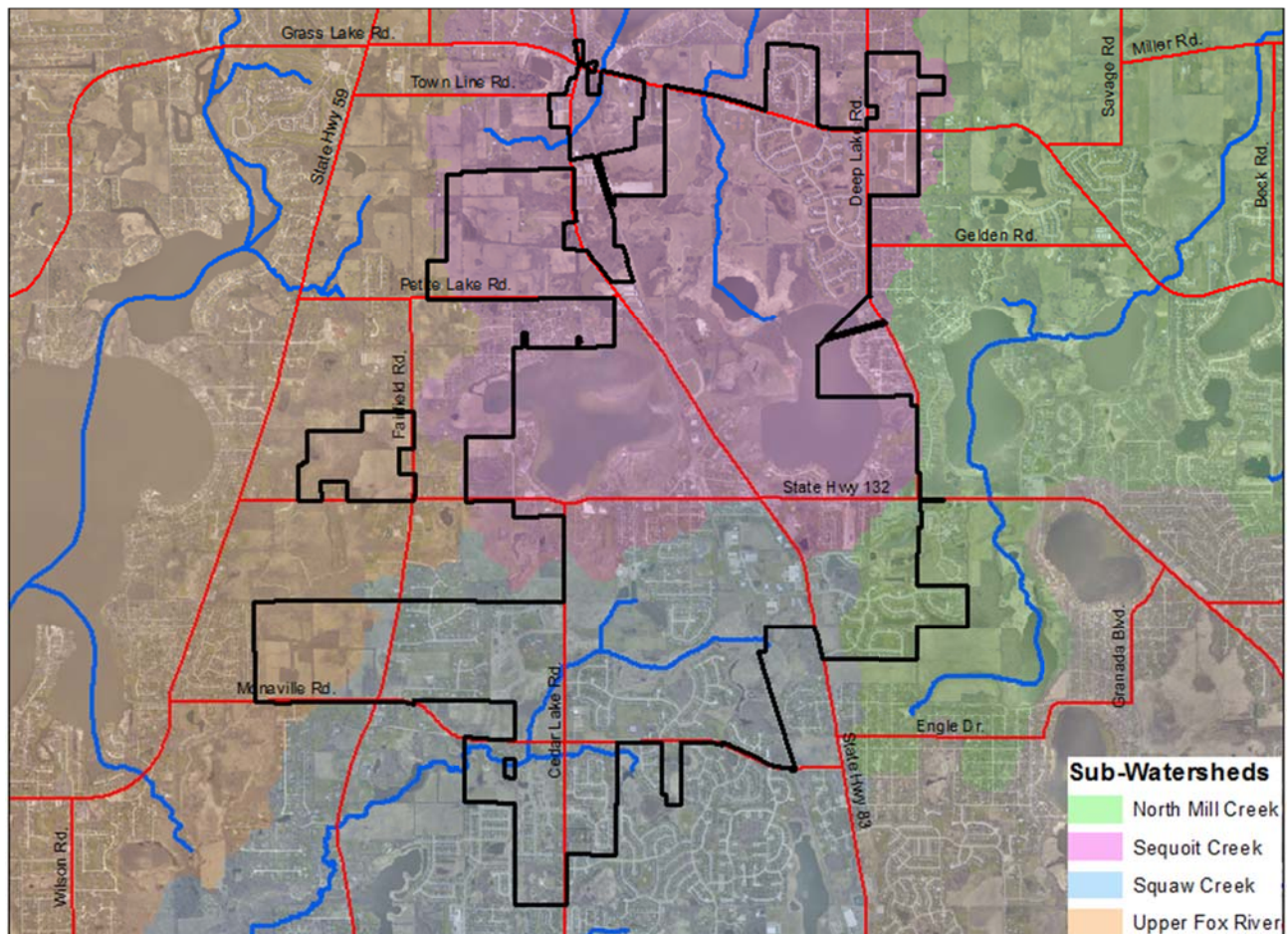


Figure 5: Major Sub-watersheds and Receiving Streams

Des Plaines River Watershed (North Mill)

The Des Plaines River watershed originates in Racine and Kenosha Counties in Wisconsin flowing south into Illinois. The Des Plaines watershed in Lake County drains an area of approximately 202 square miles or 129,577 acres. It is the largest of the county's four major watersheds. The topography of the watershed is dominated by a gently rolling landscape with numerous wet marshy areas. The Lake County portion of the watershed is divided into nine sub-watersheds.

The Des Plaines River watershed wholly or predominantly includes the communities of Arlington Heights, Buffalo Grove, Deer Park, Grayslake, Gurnee, Hawthorn Woods, Indian Creek, Kildeer, Libertyville, Lincolnshire, Lindenhurst, Long Grove, Mettawa, Mundelein, Old Mill Creek, Riverwoods, Third Lake, Vernon Hills, Wadsworth and Wheeling. New development has centered on the many lakes in the watershed. Open space areas are concentrated along the Des Plaines River, where the Lake County Forest Preserve District has substantial holdings, which stretch uninterrupted from the Wisconsin-Illinois border into Cook County. Watershed planning activities continue for the entire Des Plaines River watershed and planning sponsors include the Illinois Department of Natural Resources, U.S. Army Corps of Engineers, Lake, Cook and DuPage Counties. The Lake County Stormwater Management Commission has completed watershed management plans for the Indian Creek, Bull Creek/Bull's Brook, and Squaw Creek sub-watersheds to date. As funding becomes available, future watershed planning efforts will be implemented.

Fox River Watershed (Sequoit, Upper Fox, Squaw)

The Fox River originates about 15 miles northwest of Milwaukee, Wisconsin. The river enters the northwest corner of Lake County in the Chain O'Lakes area and then enters McHenry County, but reenters Lake County south of Fox River Valley Gardens. About 163 square miles of Lake County drains to the Fox River.

Along the Fox River from the state line to Algonquin, the terrain is flat and contains many lakes and low-lying wetlands. The upland areas of the watershed include gently sloping topography to steep hilly terrain.

Major tributaries to the Fox River in Lake County include the Chain O'Lakes, Sequoit Creek, Squaw Creek, Mutton Creek, Slocum Lake Drain, Tower Lake Drain and Flint Creek. The northern area around the Chain O'Lakes is substantially developed around the many lakes while the middle of the watershed is experiencing an increase in suburbanization. The same can be said for the southern area of the watershed, which includes existing and new development with estate and rural estate development.

The Fox River watershed includes all or portions of the communities of Antioch, Barrington, Barrington Hills, Deer Park, Fox Lake, Fox River Grove, Grayslake, Hainesville, Hawthorn Woods, Island Lake, Lake Barrington, Lake Villa, Lake Zurich, Lakemoor, Mundelein, North Barrington, Port Barrington, Round Lake, Round Lake Beach, Round Lake Heights, Round Lake Park, Tower Lakes, Volo and Wauconda.

SMC has completed watershed management plans for the Fish Lake Drain, Flint, Mutton, Sequoit, Slocum and Squaw subwatersheds. In 2007, the Flint Creek Watershed Partnership completed a new plan that meets the EPA's criteria for watershed-based plans under section 319 of the Clean Water Act. SMC is currently completing a similar upgrade for the Fish Lake Drain watershed.

1.4.A Identifying Outfalls

An Outfall (is defined at 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 "receiving water". Open conveyances connecting two municipal storm sewers, or 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 definitions shall be used:

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

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.

The outfall inventory is currently being completed by the Village. The Village intends on having this document completed in 2016. A map of the significant outfalls will be created upon completion of the inventory. The Village is using a GPS receiver (Trimble Unit) and ArcPad software to collect outfall information. The outfall inventory was supplemented by data provided by SMC, for several of the receiving streams, through their prior stream inventory work. 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 Village's ***Storm Sewer Atlas and Outfall Inventory Map*** can be obtained from the Village Hall.

The outfall map should be revised to incorporate permitted outfalls associated with new developments. An outfall inventory should be performed every 5 years; the focus of this effort is to search for new outfalls (i.e. those not already included on the existing ***Outfall Inventory Map***). The search for new outfalls should be combined with the pre-screening efforts (Chapter 3.3.D.2).

1.5 Status of Waters

As can be seen on **Figure 6** not all of the receiving streams within the Village have been assessed by IEPA. The lakes that have all been identified as impaired. Additional information about these waters can be obtained from <http://www.epa.state.il.us/water/tmdl/303d-list.html>.

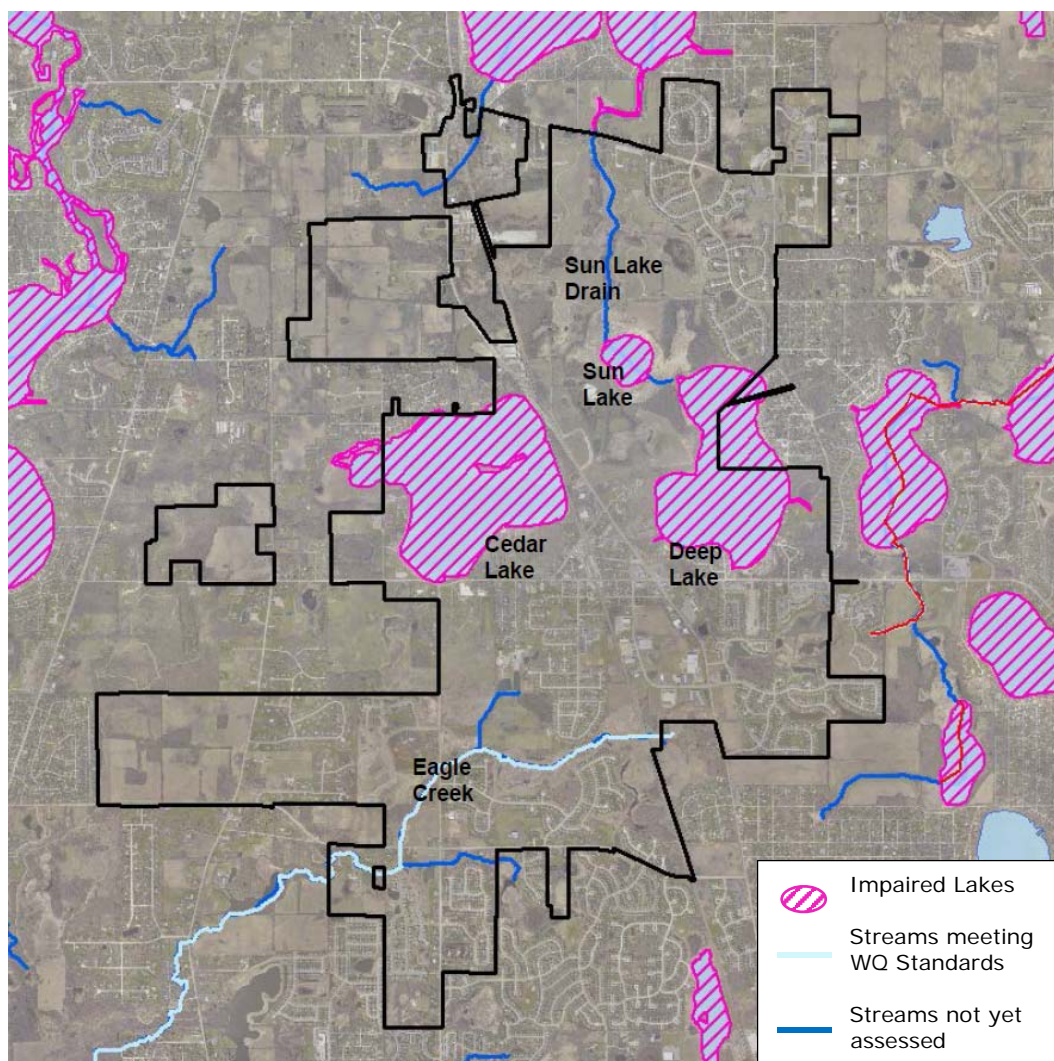


Figure 6: Impaired Waters 2014 303d and 305b Reports by IEPA

Segment	Impaired DU	Potential Cause	Potential Source	TMDL Status
Cedar Lake	Fish Consumption	Mercury	Unknown	
Deep Lake	Fish Consumption, Primary Contact, Aesthetic Quality	Mercury, Fecal Coliform, Aquatic Plants, Unknown	Atmospheric Deposition – Toxics, Unknown	Stage 2 (fecal)
Sun Lake	Aesthetic Quality	Aquatic Plants, Unknown	Unknown	Stage 2 (phosphorus)

1.6 Countywide Approach to NPDES Compliance

The Lake County Stormwater Management Commission (SMC) is a countywide governmental agency created by county ordinance under the authority of Illinois Revised Statute 55/5-1062. SMC's goals include the reduction of flood damage and water quality degradation. Another purpose of SMC 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 SMC works cooperatively with individuals, groups, and units of government as well as serving as the corporate enforcement authority for the Lake County Watershed Development Ordinance. SMC enforces the WDO in non-certified communities on behalf of the municipality. The municipality is responsible for enforcing the WDO in Certified Communities. A municipality is considered a Certified Community after its petition is approved by SMC. SMC 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, SMC provides solutions to problems related to stormwater and identifies effective ways of managing natural resources.

The General Permit allows for MS4s to take credit for activities being performed by a Qualifying Local Program (QLP) toward meeting its permit requirements. The Lake County Stormwater Management Commission (SMC) is a Qualifying Local Program for MS4s in Lake County. As part of their ongoing services, SMC performs some functions related to each of the six minimum control measures. SMC has been providing services under four of the six minimum control categories since it began implementing a comprehensive, countywide stormwater program in 1991. 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.

SMC sponsors informative workshops and roundtable discussions. It formed the Municipal Advisory Committee (MAC) to receive input on how SMC can best assist local governments during the permit application process and implementation period. Through these discussions, it was decided that each municipality (or MS4) submit its own "Notice of Intent" (NOI) to be covered under IEPA's statewide general permit. However, using the countywide approach, municipalities may take credit for the programs and ordinances developed by SMC as well as tailor specific local BMP programs for compliance with the Phase II rules.

As part of the countywide approach to comply with the NPDES Phase II program, SMC 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 IEPA and USEPA,

- Supports an on-going Municipal Advisory Committee (MAC),
- Drafts a model of the Annual Performance Report and specific BMP Measurable Goals for the subsequent years, and
- Provides model Illicit Discharge Ordinance language.
- Provides SMPP Template.

SMC countywide services qualify for credit under four of the six Minimum Control Measures. Additionally, SMC 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 SMC services under the 6 minimum control categories:

1. **Public Education and Outreach:** SMC provides, through its Public Information Coordinator, various training workshops, homeowners workshops, brochures, training manuals, teacher/student education, videos, etc.,
2. **Public Participation and Involvement:** SMC coordinates and participates in public meetings and committees, including the Municipal Advisory Committee (MAC), SMC Board of Commissioners, Technical Advisory Committee (TAC), citizen watershed planning committees, Watershed Management Board (WMB), and volunteer support.
3. **Construction Site Runoff Control:** SMC adopted the countywide Watershed Development Ordinance in 1992, which establishes the minimum stormwater management requirements for development in Lake County. The WDO, which is enforced by SMC as well as by certified communities in the county, establishes standards for construction site runoff control.
4. **Post-Construction Runoff Control:** The Watershed Development Ordinance also establishes standards for post-construction runoff control.

1.7 Organization of SMPP

The SMPP identifies best management practices to be implemented in six different categories. These categories are:

- Public Education and Outreach,
- Public Participation/Involvement,
- Construction Site Runoff Control,
- Post-Construction Runoff Control,
- Illicit Discharge Detection and Elimination, and
- Pollution Prevention/Good Housekeeping.

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

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

Chapter 3: The Program - addresses storm water pollutant control measures implemented by the Village per the six minimum control categories established by the USEPA:

- Public Education and Outreach,
- Public Participation/Involvement,
- Construction Site Runoff Control,
- Post-Construction Runoff Control,
- Illicit Discharge Detection and Elimination, and
- Pollution Prevention/Good Housekeeping.

Chapter 4: Monitoring, Reporting and Program Evaluation - describes the monitoring, evaluation and reporting procedures associated with the program. The SMPP is a guide created to protect the Village's receiving streams from pollution and the 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.

2 Program Management

This Chapter describes the organizational structures of the Village, the County and IEPA. It further discusses the roles and responsibilities of the various involved parties.

2.1 Implementation of this SMPP

The SMPP includes detailed discussions on the types of tasks that are required to meet the permit conditions under the NPDES II program and how to perform these tasks. **Appendix 5.10** includes an annual tracking form. This form should be printed annually and the progress of all tasks tracked. At the end of the yearly reporting period (March 1 – February 28/29) the form should be filed in a binder to document SMPP related activities to 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 Village's website.

2.2 Intra-Department Coordination

The Board of Trustees is the policy and budget setting authority for Village. The Department of Public Works implement this SMPP. The Stormwater Coordinator has primary responsibility for managing the overall program.

2.2.A Stormwater Coordinator

The Public Works Director is the Stormwater Coordinator and is responsible for the oversight and implementation of this SMPP. The Stormwater Coordinator has many different responsibilities, he/she:

- is the lead contact for coordination with the Lake County Stormwater Management Commission, the Illinois Environmental Protection Agency, contractors, the development community and other external regulatory agencies;
- understands the requirements of ILR40, ensures that the SMPP meets the requirements of the permit and that the (Village) effectively implements the SMPP;
- ensures, or assists the Enforcement Officer in ensuring, that the (Village) complies with all minimum Watershed Development Ordinance (WDO) provisions;
- ensures that the Municipal Facilities comply with all minimum ILR40 permit requirements;
- is aware when a Municipal Project is required to be authorized under the ILR10 permit. In these cases the Stormwater Coordinator should ensure that the NOI is received by IEPA at least 30 days prior to the start of construction; and

- assists the development community in understanding when a ILR10 permit is required and whether construction sites comply with the general ILR10 and WDO permit conditions; and
- should understand the role illicit discharges play in the overall NPDES II program. In general, an incidence of non-compliance 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 IEPA.

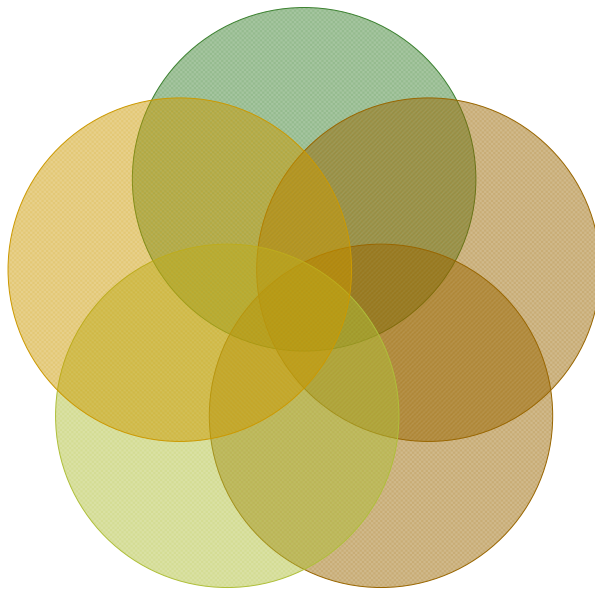


Figure 7: Roles of MS4
provided by Gewalt Hamilton & Associates

2.2.B Public Works Department

Infrastructure maintenance activities within the Village are carried out by Public Works personnel. Public Works personnel are designated as the primary entity responsible for performing the duties specified under Chapter 3.3 Illicit Discharge Detection and Elimination and Chapter 3.6 Pollution Prevention and Good Housekeeping.

2.3 Coordination with Consultants

The Village enlists the services of consultants to assist in the implementation of the WDO (including, but not limited to, plan review, site inspections and enforcement), and the design of municipal projects. The Village Administrator has the responsibility of administering these contracts. Consultants support the Stormwater Coordinator in maintaining compliance with both the NDPES and WDO programs.

The Village Engineer, is a consultant contracted by the Village. The Village Engineering is also the Enforcement Officer with respect to the administration and enforcement of the Lake County Watershed Development Ordinance (WDO). As the Enforcement Officer, the Village Engineer has the responsibility to concur that projects meet WDO standards prior to the issuance of permits, and oversee site inspections during construction. Refer to Chapter 3.4-3.5 for additional information on this process.

2.4 Coordination with LCSMC

Coordination between the Village and the Lake County Stormwater Management Commission (SMC) occurs through both participation in the SMC sponsored MAC forums and through the Certified Community Status under the Lake County Watershed Development Ordinance (WDO). The Stormwater Coordinator is the lead contact for participation in the MAC forums. The Village's Enforcement Officer, is a consultant contracted by the Village, and is responsible for enforcement of the WDO. The Village designates their Enforcement Officer to the SMC.

2.5 Coordination of Contractors

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

2.6 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 3.1. The Public Participation and Involvement Program of this SMPP is discussed in Chapter 3.2. The Public has the opportunity to comment on proposed preliminary and final plats through the Plan Commission and Municipal Board process established in the Municipal Code.

2.7 Coordination with the IEPA

The Village is required to complete annual reports which describes the status of compliance with the ILR40 permit conditions and other related information as presented on the annual report template provided by the QLP. The annual report must be posted on the Village's website and submitted to the IEPA by the first day of June each year. Annual reporting to IEPA should consist of "implemented SMPP" for all tasks completed in accordance with this SMPP. Additional information should be provided for areas of enhancement or tasks not completed.

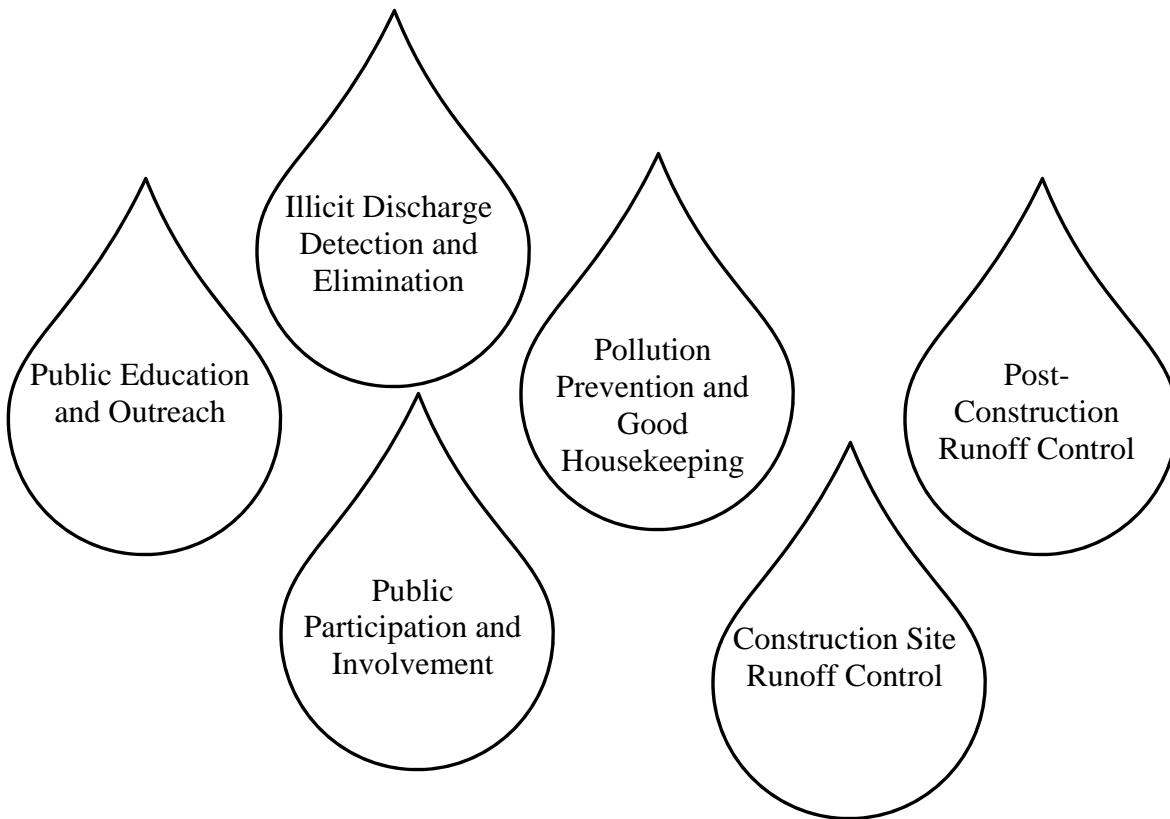
Records regarding the completion and progress of the SMPP commitments must be kept by the community. The task sheets, described in Chapter 2.1, should be updated throughout the year. The completed task sheets should be located in a binder with necessary supporting documentation. The binder must be available for inspection by both IEPA and the general public.

2.8 Coordination with the Development Community

The Village of Lake Villa has a responsibility to assist the development community in understanding when an ILR10 permit is required and whether construction sites comply with the general ILR10 and WDO permit conditions. The Village should understand the role illicit discharges play in the overall NPDES II program. In general, an incidence of non-compliance 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 IEPA.

Furthermore, the municipality has a responsibility to inform the development community that they are required to hire contractors which meet the qualifications necessary under the program, refer to Chapter 3.4.B for additional information on qualified personnel.

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 3.1 describes the efforts to educate the public about stormwater pollution and stormwater pollution prevention. The manner in which Village incorporates public participation and involvement into the SMPP is explained in Chapter 3.2. Chapter 3.3 describes the approach to detecting and eliminating stormwater illicit discharges. Construction and post construction runoff control is addressed in Chapters 3.4 and 3.5. Lastly, Chapter 3.6 discusses responsibilities for the care and upkeep of its general facilities, associated maintenance yards, and municipal roads and to minimize pollution. This chapter also discusses necessary training for employees on the implementation of the SMPP.

3.1 Public Education and Outreach



The Village of Lake Villa 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 Village of Lake Villa, in cooperation with the 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 regarding stormwater BMP, water quality BMP, and proper hazardous waste use and disposal.
- Maintain Village website which offers links to additional educational information, and ways to contact Village personnel.
- Attend/sponsor outreach activities to homeowners / property owner associations, commercial / industrial facilities, schools, technical workshops and other events.
- Maintain a stormwater section in the Village newsletter distributed by the Village bi-monthly.
- Publicize SWALCO events.

3.1.A Distribution of Paper Materials

The Village of Lake Villa promotes educational sheets prepared by the QLP, IEPA, USEPA, Center for Watershed Protection, Chicago Metropolitan Agency for Planning “CMAP”(previously Northeastern Illinois Planning Commission “NIPC”), University of Wisconsin Extension, Solid Waste of Lake County (SWALCO) and other agencies and organizations. Village lists the Public Work Departments telephone number on all Village outreach publications to encourage residences to contact Village with environmental concerns.

Types of materials distributed include:

- The “Guidelines for Draining Swimming Pools”,
- The “Protect Our Water” door hanger,

- Informational sheets/pamphlets regarding storm water best management practices,
- Informational sheets/pamphlets regarding water quality best management practices,
- Informational sheets/pamphlets regarding construction site activities (soil erosion and sediment control best management practices),
- Informational sheets/pamphlets regarding the hazards associated with illegal discharges and improper disposal of waste and the manner in which to report such discharges.
- Informational sheets/pamphlets regarding green infrastructure strategies such as green roofs, rain gardens, rain barrels, bioswales, permeable piping, dry wells and permeable pavement.
- Informational sheets/pamphlets published by SWALCO regarding proper hazardous waste use and disposal, and
- A storm water section in the municipal newsletter.

Publications are provided in the following manner:

- At take-a-away rack located at Village Hall,
- At outreach events,
- The municipal newsletter, a bi-monthly publication,
- At scheduled meetings with the general public. These meetings are on an as needed or as requested basis and may be with the home owners associations, businesses, or local schools.

3.1.B Web Site



The Village's web site includes stormwater quality specific elements. The web-site provides information related to stormwater in areas such as stormwater water quality, solid waste and hazardous material, green infrastructure, illicit discharges, stormwater and general environmental health, refer to Chapter 3.1.A for a more detailed description of the type of information to be posted. The web-site is updated by Village staff and tracked for hits. A significant amount of information is made available through links to other educational and informational sites.

This SMPP and NOI must be posted on the Village's website. The Village's annual report must be posted on the Village's website and submitted to the IEPA by the first day of June each year.

3.1.C Outreach Events & Technical Workshops



When possible, the Village 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 home owners associations, lake associations, businesses, and neighborhood groups.

Periodically, the QLP hosts or co-host 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, Villages, and other stakeholders.

Village may publicize these events through targeted mailing, posting on the Village Hall bulletin board or on the web-site.

3.1.D Household Hazardous Wastes - SWALCO



The average garage contains a lot of products that are classified as hazardous wastes, including paints, stains, solvents, used motor oil, pesticides and cleaning products. While some household hazardous waste (HHW) may be dumped into storm drains, most enters the storm drain system as a result of outdoor rinsing and cleanup. Improper disposal of HHW can result in acute toxicity to downstream aquatic life. The desired neighborhood behavior is to participate in HHW collection days, and to use appropriate pollution prevention techniques when conducting rinsing, cleaning and fueling operations. The Village supports the initiatives of the Solid Waste Agency of Lake County to employ a range of tools to improve resident participation. These include:

- Mass media campaigns to educate residents about proper outdoor cleaning/ rinsing techniques
- Conventional outreach materials notifying residents about HHW and collection days

SWALCO provides solid waste management programs to Lake County (in both incorporated and unincorporated areas). These programs are aimed at reducing our reliance on landfills through source reduction, recycling and energy recovery. In general, the programs help residents dispose of problem wastes, such as household chemicals, electronic equipment, and yard waste. Their recycling programs are targeted at both commercial and residential markets in order to divert as much solid waste as possible from reaching landfills. Public information and education efforts include the “Earth Flag” and “Earth Flag Every Day” programs in the schools, promoting SWALCO events, and publishing various resources.

The Village encourages participation SWALCO collection events by publicizing in the Village's newsletter and on the Village web-site.

3.1.E 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 Village employs a range of tools to improve septic system maintenance. These include:

- Outreach materials distributed at auto parts store and service stations
- Fines and other enforcement actions

Annually the Village conducts an inspection for Fats, Oils and Grease (FOG) in accordance with Municipal Code Title 5, Chapter 4, Article B (as amended by Ordinance No 2006-07-01) for any business with triple basins (such as mechanic/automotive, restaurant). Grease interceptors (triple catch basins) are required for facilities not implementing approved Best Management Practices.

3.1.F Pool Dewatering



Chlorinated water discharged to surface waters, roadways or storm sewers has an adverse impact on local stormwater 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 the normal algal and 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 right-of-way **including storm sewer inlets**.

This information is available at the take-a-way racks and is included in the fall issue of Village's newsletter

3.2 Public Participation and Involvement

The public participation and involvement 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-yr basis, or as necessary.

3.2.A Public Review Process

Prior to the acceptance of the SMPP, the draft document was presented to the Public Committee. Comments on the SMPP are continually accepted through the web-site, phone calls or other media. Comments are evaluated for inclusion and incorporated into the next revision of the SMPP as appropriate. Present each year's annual report to the Board during an open meeting.

3.2.B Complaints, Suggestions and Requests



Calls are screened, logged and routed to the appropriate department for action. Village maintains a website which enables and encourages public contact on these issues.

3.2.C Watershed Planning and Stakeholders Meetings

The Village of Lake Villa participates (and encourage the participation of local stakeholders) in QLP or other sponsored watershed planning events. The Village will adopt Watershed Plans per the direction and in coordination with the QLP.

3.2.D LCSMC Municipal Advisory Committee (MAC)

The Village of Lake Villa participates in MAC meetings and events hosted by the QLP.

3.3 Illicit Discharge Detection and Elimination¹



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.

Program objectives and procedures for the identification and removal of direct connections of pollutants into the storm water management systems (including wetlands and receiving waters) are included in this manual. Step-by-step instructions for identifying storm sewers suspected of containing pollutants, suggestions for actions to be taken to determine the sources of identified pollutants, and steps for correcting identified problems are provided. The results of the procedures presented in this manual are intended to serve as indicators of pollution, rather than to provide specific quantitative analysis. 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.

3.3.A Regulatory Authority

Effective implementation of an IDDE program requires adequate legal authority to remove illicit discharges and prohibit future illicit discharges. This regulatory authority is achieved through adoption of the Lake County Watershed Development Ordinance (WDO) and the Village's IDDE Ordinance. Additionally, IEPA has regulatory authority to control pollutant discharges and can take the necessary steps to correct or remove an inappropriate discharge over and above SM4 jurisdiction.

¹ Section 3.3 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).

3.3.A.1 Watershed Development Ordinance

Several provisions of the Lake County Watershed Development Ordinance (WDO) prohibit illicit discharges as part of the development process. These provisions are only applicable for regulated development activities as defined by the WDO. Regulated developments are required to meet the soil erosion and sediment control standards of the WDO. Furthermore, the WDO requires that the applicant prohibit illicit discharges into the stormwater management system generated during the development process.

The WDO allows the Village to require inspection deposits, performance bonds, and to adopt/enforce violation procedures. These tools assist in achieving complaint construction sites. These items are further discussed in Chapters 3.4 and 3.5.

3.3.A.2 Illicit Discharge Ordinance

The Village of Lake Villa created and adopted an Illicit Discharge Ordinance (Municipal Code Title 5, Chapter 5, Article C). The Ordinance is the mechanism to allow for the execution and enforcement of the SMPP and is enforced. Dumping in any lake, pond, stream, river or any other navigable water is further prohibited under Title 4, Chapter 4.

3.3.A.3 Subdivision Ordinance

The Village of Lake Villa adopted a Subdivision Ordinance, Title 11 of the Municipal Code. This Ordinance is administered by the Public Works Department and can be used to further support the activities required by the SMPP.

3.3.A.4 Regulation of Fertilizer Containing Phosphorus

In 2015 the Village amended their Village Code to include regulations pertaining to the application of fertilizers. This ordinance prohibits both Commercial and Non-Commercial Applicators, including homeowners and renters, from applying any fertilizer which contains any amount of phosphorus/phosphate except as noted in the code. Additionally, all fertilizer is prohibited from application in drainage ditches, waterways or within twenty feet therefor and any delineated wetland or designated buffer area.

3.3.B Understanding Illicit Discharges

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

3.3.B.1 Potential Sources of Illicit Discharges

Inspecting storm water outfalls during dry-weather conditions reveals whether non-storm water flows exist. If non-storm water flows are observed, they can be screened and tested to determine whether pollutants are present.

There are two primary situations that constitute illicit discharges; these include non-storm water runoff from contaminated sites and the deliberate discharge or dumping of non-storm water. Deliberate discharge or dumping can enter the storm sewer system in two ways:

- direct connections – through direct piping connections to the storm sewer system, and
- indirect connections – through subtle connections, such as dumping or spillway of materials into storm sewer drains.

Direct connections are more likely to result in continuous pollutant discharges than indirect connections, which often produce limited, intermittent discharges of pollutants. USEPA guidance indicates that direct connections to storm sewer systems most likely originate from commercial/industrial facilities. Thus, the focus of this manual is the identification of illicit discharges from commercial/industrial facilities.

3.3.B.2 USEPA Exclusions

It is noted that not all dry-weather flows are considered inappropriate discharges and reflected in the Village's IDDE ordinance. Under certain conditions, the following discharges are not considered inappropriate by USEPA:

- Water line flushing,
- Landscaping irrigation,
- Diverted stream flows,
- Rising groundwater,
- 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, and
- Street wash water.

3.3.B.3 Physical Pollutant 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 1: Odor or Potential Illicit Discharges (adapted from CWP)

Odor		Possible Cause
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 2: Color of Potential Illicit Discharges (adapted from CWP)








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

Table 2 (continued)

Water Color	Possible Cause	Images
Green Hair-Like Strands - 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.	
Multi-Color Water – 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 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 8 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 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 sheens doesn't break apart and quickly flows back together.

Figure 9 Natural Sheen versus Synthetic
(adapted from CWP)







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



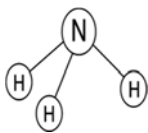
Synthetic oil forms a swirling pattern

Table 3: Floatables in Potential Illicit Discharges (adapted from CWP)

Floatables	
<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 and detergents from car washing activities.</p>
<p>Petroleum (oil sheen)</p> 	<p>Human causes may include 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) and illegal dumping.</p>

3.3.B.3.a CHEMICAL POLLUTANT 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.

Potential ID NH₃-N: > 0.1 mg/L

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, and 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, and
- Copper wire production.

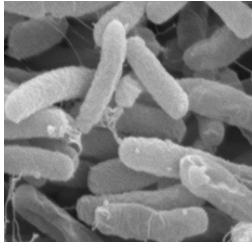
In each of these industries, wastes containing copper would normally be discharged to a treatment facility. Sludge from the waste treatment facility, whether on-site (including lagooning) or publicly operated treatment facilities, would contain copper. If the sludge (or the treatment process) is not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

Detergents



Most illicit discharges have elevated concentration of detergents. Sewage and wash water 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 Boron and Surfactants descriptions.

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.

Potential ID Range: Fecal Coliform > 2,000 mg/L indicates waste water contamination.

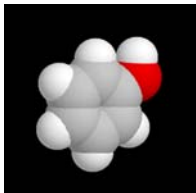
Potential ID Range: E. coli bacteria > 1,000/100 ml indicates waste water contamination.

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 indicate 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 indicate 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,
- Pharmaceutical manufacturing,
- Paint stripping (for example, automotive and aircraft),
- Military installations (rework and repair facilities),
- Coke manufacturing,
- Iron production, and
- Ferro-alloy manufacturing.

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

pH



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.

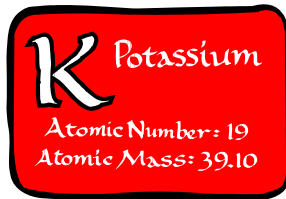
Potential ID Range: <6.5 and > 8.5

Phosphorus

Phosphorus is recognized as the controlling factor in plant and algae growth. Small increases in phosphorus can fuel substantial increases in aquatic plant and algae growth. In addition to reducing the recreational use of the water body the increased plant and algae growth lowers dissolved oxygen levels. Low dissolved oxygen levels often results in the death of certain fish, invertebrates and other aquatic animals. reduce recreational use, property values and public health. A key source of phosphorus comes from runoff pollution, as rain or melting snow wash over fertilized areas or manure.

Potential ID Range: >1 mg/L

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 indicate 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).

3.3.C 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.

Upon observing or receiving notification of a potential illicit discharge, the Illicit Discharge Incident Tracking Form, found in **Appendix 5.7** is used to log and investigate the incident. Appropriate procedures found within this chapter are implemented in the event an illicit discharge has been confirmed.

3.3.C.1 *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.

3.3.C.2 *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 3.6.B.

3.3.C.3 *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 Household Hazardous Wastes, Vehicle Fluid Maintenance and Pool Dewatering programs are designed to minimize dumping; these programs are described in Chapter 3.1.F, G, I and K. The procedure for handling a dumping incident is described in Chapter 3.6.B.1.

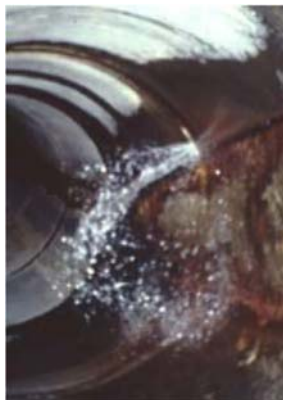
3.3.C.4 *Outdoor washing activities*

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, and 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 3.1.J whereas observed/documentated routine washing activities should be addressed through the Removal of Illicit Discharges Procedure in Chapter 3.3.E.4.

3.3.C.5 *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 3.1.

3.3.D 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 inspection, 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 3.3.D.1).

2. **Outfall Inspection** consists of pre-screening to determine whether dry-weather flows are present and outfall inspection which includes field-testing and grab samples to determine whether pollutants are present in any observed dry-weather flows (Chapter 3.3.D.2).

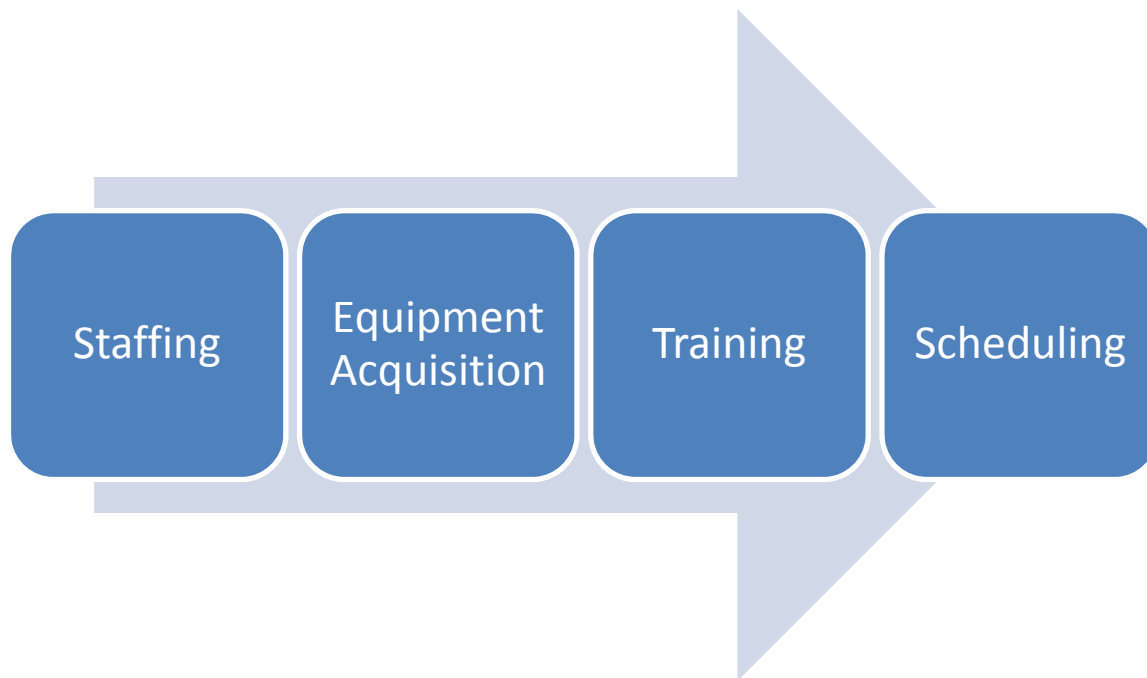
3. **Follow-Up Investigation and Program Evaluation** are the steps necessary to determine the source of any identified pollutant flows and eliminate them. The major follow-up investigation and program evaluation components (Chapter 3.3.D.3.) include:

- reviewing and assessing outfall inspection results,
- internal coordination,
- conducting detailed storm sewer investigations to identify pollutant sources (*tracing*),

4. **Removal** consists of exercising the appropriate legal means to achieve enforcement of the program objective, *removal of pollutants at the source* (Chapter 3.3.D.4).

3.3.D.1 Program Planning

Program Planning involves the office work, planning, and organization required to conduct outfall screening and follow-up investigative activities of the program. This includes the identification of the staffing and equipment needed to conduct the outfall screening and scheduling inspection activities. Program planning also 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).



3.3.D.1.a 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 two-member Public Works crew is utilized 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 inspections will need to be performed at annually for the first 5-year period.

3.3.D.1.b EQUIPMENT NEEDS



General field equipment and specialized outfall screening equipment are required for IDDE programs. The method of collecting and managing inspection screening data is driven by available technology. A complete list of recommend equipment and supplies is found on ***Stormwater Outfall Screening Equipment Checklist (Appendix 5.2)***. Field Crews carry basic safety items, such as cell phones, surgical gloves, and first aid kits. Additional safety precautions are described following the Equipment Checklist,

3.3.D.1.c TRAINING

Applicable Public Works personnel shall thoroughly read and understand the objectives of the IDDE subchapters of this manual. Applicable field personnel shall have completed a standard training session. It is recommended that applicable Public Works personnel accompany a Public Works supervisor on at least two outfall inspections to learn the use of the ***Stormwater Outfall Inspection Data Form (Appendix 5.3)*** and the use of sampling equipment and test kits. As a training exercise, new Public Works personnel should independently conduct outfall screening activities until two outfall screening data forms are accurate and consistent with the Public Works supervisor investigator's forms.

3.3.D.1.d SCHEDULING

Perform all pre-screening and follow-up inspections preceding a dry-weather period, a period of 72 hours of dry weather. A period of 72 hours is selected to allow local detention facilities to drain and local groundwater flows to recede after precipitation events. However, some judgment may be exercised in evaluating the 72-hour period to sampling. For example, if very light rain or drizzle occurred and no runoff was experienced, it is likely that dry-weather conditions would exist and outfall inspection could be conducted.

Pre-Screening:

Pre-screening is on-going, in coordination with the outfall inventory, refer to Chapter 3.3.D.2.a. High priority dry weather flow locations will be identified at the completion of the inventory. It is recommended that all outfalls be re-screened in 2021 and every 5 years thereafter.

Pre-screening should generally take place during the late summer or fall months, ideally in August, September, or October, although other summer 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.

Outfall Inspections:

Upon completion of the pre-screening efforts, review collected data to identify outfalls with observed dry weather flow or other indicators of an illicit discharge, refer to Chapter 3.3.D.2.b. Schedule outfall inspections so that all identified outfalls with potential illicit discharges are investigated within the following 5-years, 20% of identified outfalls per year.

3.3.D.2 Outfall Inspection



The identification of potential illicit discharge locations is primarily a two part process, pre-screening and follow-up inspections. Pre-screening is performed by a rapid inspection of all outfalls in a pre-determined area such as along a receiving water. Follow-up inspections are required for those pipes found to have dry weather flow. Once probable illicit discharges are found, identify the sources of illicit discharges and correct per the removal procedure of Chapter 3.3.C.4. Outfall inspection consists of the following tasks:

- (1) Pre-Screening
- (2) Outfall Inspection, and
- (3) Outfall Assessment and Documentation.

3.3.D.2.a PRE-SCREENING

Pre-screening consists of a rapid inspection of outfalls, during dry weather flow conditions. Pre-screening results can be seen by viewing the associated Outfall Inventory Database. During pre-

screening basic information should be obtained for each outfall. Recommended information includes basic data about the structure (such as size, shape, material, condition), presence of dry weather flow determination and a photograph. It is recommended that a Trimble GPS device (or similar unit) be used to collect the data.

The intent is to gather additional information to determine if an illicit discharge is present. Upon arriving at an outfall, the field crew should inspect the outfall by approaching the outfall on foot to a proximity that allows for visual observations to be made. Outfalls should be screened to determine which one of the three following conditions applies:

- The outfall is dry or damp with no observed flow,
- Flowing discharges are observed from the outfall, or
- The outfall is partially or completely submerged with no observed flow or is inaccessible.

The field crew should photograph the outfall and complete applicable sections of the ***Storm Water Outfall Inspection Data Form, Appendix 5.3.***

3.3.D.2.b OUTFALL INSPECTION



An outfall inspection is required for those outfalls identified during pre-screening inspections with dry weather flow or other indicators of a potential illicit discharge. The need for on-site testing and obtaining grab samples for laboratory analysis is determined by using the flow chart as guidance. Testing results are used to identify potential sources. Instructions for Completing the Storm Water Outfall Inspection Data Form and an associated Outfall Inspection Procedure Flow Chart (used to identify applicable sections of the form that must be filled out) are included in **Appendix 5.3**. Initial testing results are NOT intended to document the event for future removal and/or enforcement actions. If the initial testing results identify a potential illicit discharge, proceed to the follow-up investigation procedures discussed in Chapter 3.3.D.3.

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

- The outfall discharge is submerged / partially submerged due to backwater conditions,
- Site access and safety considerations prevent sample collection,
- Other special considerations.

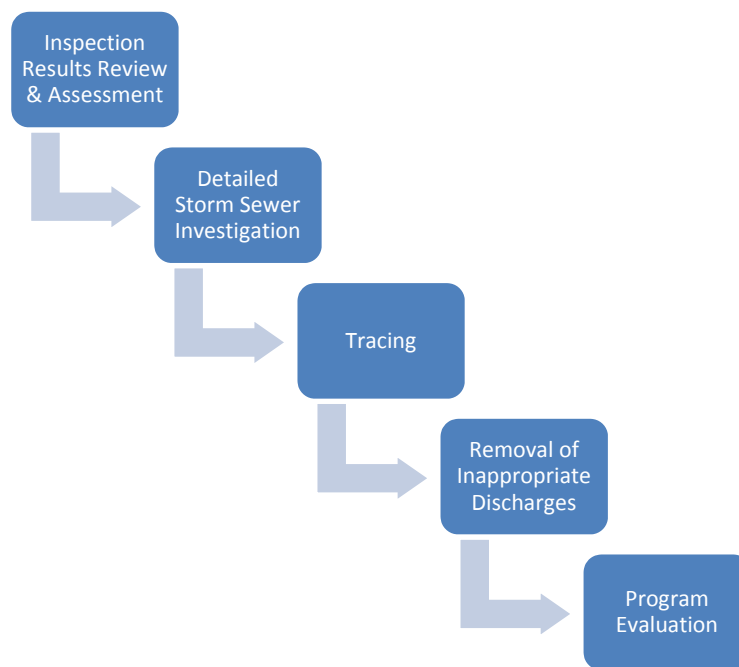
 <p>Submerged: More than ½ below water</p>	 <p>Partially submerged: Bottom is below water</p>	 <p>Fully submerged: Can't see outfall</p>
 <p>Outfall fully submerged by debris</p>	 <p>Fully submerged from downstream trees trapping debris</p>	 <p>Partially submerged by leaf debris "back water"</p>
 <p>Trickle Flow: Very narrow stream of water</p>	 <p>Moderate Flow: Steady stream, but very shallow depth</p>	 <p>Significant flow (Source is a fire hydrant discharge)</p>

Figure 10: Characterizing Submersion and Flow
Center for Watershed Protection

3.3.D.2.c OUTFALL ASSESSMENT AND DOCUMENTATION

Complete the ***Storm Water Outfall Inspection Data Form (Appendix 5.3)*** for all outfall screening and grab sampling activities. All completed forms must be dated, legible, and contain accurate documentation of each outfall inspection. *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 municipality'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. For example, 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 should be recorded on the form.

3.3.D.3 Follow Up Investigation and Program Evaluation



3.3.D.3.a OUTFALL SCREENING RESULTS REVIEW AND ASSESSMENT



Follow up inspections are required for outfalls identified to have potential illicit discharges during the outfall inspection procedure. This is accomplished by reviewing the ***Stormwater Outfall Inspection Data Forms (Appendix 5.3)*** collected during outfall investigations to determine which outfalls require a follow up investigation, target sewer system areas (using available mapping and atlas information) for detailed investigation.

3.3.D.3.b 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 screening. This element of the program serves to detect and remove pollutant sources. This is accomplished by reviewing the ***Outfall Inspection Data Forms (Appendix 5.3)*** 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.



3.3.D.3.c INDEPENDENT VERIFICATION

If the initial outfall assessment identifies potential illicit discharges (through either the on-site or off-site testing procedures), additional sampling is required. Use the established procedure to coordinate the independent laboratory sample and testing. The results of the inspection and testing should be discussed with the Stormwater Coordinator.

3.3.D.3.d SOURCE IDENTIFICATION

Mapping and Evaluation

For each outfall to be investigated, a large-scale working map should be used (digitally or in paper form) that includes the entire upstream storm sewer network, outfall locations and parcel boundaries indicated. 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 Business Registration List should also be reviewed. The pre-treatment inspection, performed by the Public Works Department or the Fox Lake Reclamation Plant typically indicates chemicals located on-site at each business. The Village supports the pre-treatment Reclamation Plants pre-treatment ordinance. The business type is identified on the Zoning Compliance Application. Annually this information is updated and on-site chemicals are listed on the Business Registration Form. The Inventory is screened for probable pollutant matches.

Storm Sewer Investigation

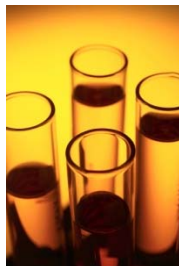


After conducting the mapping evaluation, a manhole-by-manhole inspection is conducted to pinpoint the location of the inappropriate discharge, into the storm sewer / conveyance system. This inspection requires a field crew to revisit the outfall where the polluted dry-weather discharge was detected. 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.

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. The method of testing must be approved by the Stormwater Coordinator prior to testing. Potential testing methods include fluorometric dye testing, smoke testing, and/or remote video inspections.

3.3.D.4 Removal of Illicit Discharges

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

- Step 1. Have an outside laboratory service take a grab sample and test for the illicit discharge at the manhole located immediately downstream of the suspected discharge connection.
- Step 2: Conduct an internal meeting with appropriate personnel likely including Public Works Personnel, Public Works Director, Village Administrator and Building Department Code Enforcement Officer to discuss inspection and testing results and remedial procedures.
- Step 3: The Public Works Director shall send a notification letter to the owner/operator of the property/site suspected of discharging a pollutant. The letter should request that the owner/operator describe the activities on the site and the possible sources of non-stormwater discharges including information regarding the use and storage of hazardous substances, chemical storage practices, materials handling and disposal practices, storage tanks, types of permits, and pollution prevention plans.
- Step 4: Arrange a meeting for an inspection of the property with Public Works Personnel and the owner/operator of the property where the pollution source is suspected. Most illicit connections and improper disposal can probably be detected during this step. Notify the site owner/operator of the problem and instruct them to take corrective measures.

- Step 5: Conduct additional tests as necessary if the initial site inspection is not successful in identifying the source of the problem. The Public Works Director is responsible for determining the appropriate testing measure to pinpoint the source.
- Step 6: If the owner/operator does not voluntarily initiate corrective action, the Public Works Director issues a notification of noncompliance. The notification includes a description of the required action(s) a time frame in which to assess the problem and take corrective action. Upon notification of noncompliance, the owner can be subject to any penalties stipulated in the Illicit Discharge Ordinance (Municipal Code Title 5, Chapter 5, Article C).
- Step 7: Conduct follow-up inspections after stipulated time frame has elapsed to determine whether corrective actions have been implemented to: 1) remove the illicit connection or 2) eliminate the improper disposal practice.
- Step 8: If corrective actions have been completed (i.e. and the illicit discharge has been eliminated) the Public Works Administration sends a notification of compliance letter to the owner/operator of the property/site suspected of discharging a pollutant.
- If corrective actions have not been completed an additional internal meeting with appropriate (municipal) personnel (likely including involved Public Works Personnel, Public Works Director, Building Department Code Enforcement Officer, and Stormwater Coordinator) is held to determine appropriate steps to obtain compliance. Appropriate actions may include monetary or other penalties.

3.4 Construction Site Runoff Control



The goal of the Lake County Watershed Development Ordinance (WDO) is to ensure that new development does not increase existing stormwater problems or create new ones. The WDO establishes countywide standards for runoff maintenance, detention sites, soil erosion and sediment control, water quality, wetlands and floodplains. These provisions are only applicable for regulated development activities as defined by the WDO. Applicants that hydrologically disturb greater than 1-acre are also required to seek coverage under the statewide construction general permit by filing a Notice of Intent (NOI) with IEPA.

The WDO is implemented primarily at the local level. In October of 2008, forty-two of fifty-three municipalities in the county were "Certified Communities." The designation allows those communities to enforce WDO standards within their own jurisdictions. SMC administers the WDO and issues permits for the developments within the Non-Certified Communities.

The Village of Lake Villa has adopted the Lake County Watershed Development Ordinance (WDO) and is currently a Certified Community for the review, permitting, inspection and enforcement of the provisions of the WDO. The community designates an Enforcement Officer; this person is responsible for the administration and enforcement of the WDO.

3.4.A Regulatory Program

Applicants are directed to Building Department for information pertaining to the permitting process. Developments that exceed the WDO minimum thresholds are provided with a Lake County Watershed Development Ordinance (WDO) application form. Applicants submit the completed form and supporting documentation to the Building Department for review and comment. After the Building Department concurs that the applicable provisions of the WDO have been addressed, a 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, 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.
- Waste control;
- Runoff Volume Reduction Hierarchy and Water Quality;
- Established inspection duties for the applicant and procedures for inspections;
- Record keeping and reporting procedures;
- Security deposits to ensure faithful performance;
- Enforcement measures to achieve compliance; and
- One year warranty period, for applicable developments.

The Lake County Technical Reference Manual and the Illinois Urban Manual 2002, 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 1-acre are also required to seek coverage under the statewide construction general permit by filing a

Notice of Intent (NOI) with 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).

3.4.B Responsible Parties

3.4.B.1 Applicant

The applicant is ultimately responsible for ensuring compliant soil erosion and sediment 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).

3.4.B.2 DECI – Designated Inspectors

The purpose of the DECI program is to facilitate positive communication between the Village and the permit holder by creating a single point of contact for soil erosion/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/sediment control Best Management Practices.

The applicant, for sites that exceed the WDO thresholds per Art. IV, Section B.1.j.2., is required to hire or employ a Designated Erosion Control Inspector (DECI).

- All development with 10 acres or more of hydrologic disturbance
- All development with 1 acre or more of hydrologic disturbance **and** regulatory floodplain **or** wetlands on site or on adjoining properties.
- At the discretion of the Enforcement Officer, development less than or equal to 1 acre of hydrologic disturbance **and** regulatory floodplain **or** wetlands on site or on adjoining properties.

The DECI can work for the permittee's contractor, subcontractor, consultant, etc. He does not have to be a direct employee of the permittee. SMC keeps a list of DECIs that have been approved.

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

Sites that do not require a DECI may still require a designated inspector under the NPDES II permit process. Significant efforts have been made to minimize overlap between the two programs. Currently all sites with greater than 1-ac or more of hydrologic disturbance require a permit from IEPA and a designated inspector (which is more stringent than the DECI requirements). A designated inspector, under the IEPA program, does not need to be a DECI recognized by SMC; however a DECI can fulfill both rolls. Site inspection logs typically meet the permit conditions of both the WDO and the IEPA.

The DECI reports to the Enforcement Officer. However, SMC administers the DECI program. During the course of a project, the DECI must notify the EO within any if the development site is determined to be noncompliant with the soil erosion and sediment control plan. The Village's Stormwater Coordinator should also be contacted within 24-hours. It is highly recommended that the Stormwater Coordinator remind the DECI to also file an Incidence of Noncompliance (ION) with IEPA. If the discharge from the construction site enters a receiving water within the MS4 jurisdictional boundaries, it is highly recommended that the MS4 also file an ION with IEPA.

3.4.B.3 Enforcement Officer

The Village of Lake Villa has the responsibility to designate a contact with both the SMC and the IEPA. The Village has designated the Public Works Director to fulfill both roles. SMC refers to this person as the Enforcement Officer. The IEPA considers this person the Stormwater Coordinator. Chapter 2.2.A provides additional information regarding the role of the Stormwater Coordinator.

The Enforcement Officer is responsible for administration and enforcement of the provisions of the WDO. Additionally, the Enforcement Officer is responsible for performing inspections and monitoring the 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 Appendix E of the WDO. 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 Enforcement Officer to ensure that all incidences of non-compliance received from a DECI are resolved. Furthermore it is the Enforcement Officer's right and the responsibility to notify the SMC if a DECI listed by SMC is not adequately performing the DECI responsibilities. SMC may remove a DECI from the approved DECI list. However, a DECI may be removed from a development by the Enforcement Officer at their sole discretion.

3.4.C Minimum Construction Site Practices

A site plan is required to comply with minimum prescribed practice requirements set forth in the WDO. The WDO also allows for the Village 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 Lake County Technical Reference Manual (TRM) and other reference materials identified in Appendix 5.12 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, and
- Construction Details.

3.4.D Site Plan Review

The Village is a certified community for the enforcement of the Stormwater Provisions of the WDO. The Village provides applicants with a variety of documents necessary to obtain municipal permits. Included in the packet is relevant Watershed Development Permit (WDP) information including the performance guarantee information and WDP application form.

The Building Department performs an initial review of the proposed site plan. Projects requiring a Watershed Development Permit are forwarded to the Village's engineering consultant. The Village Engineer 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. After the Village Engineer concurs that the applicable provisions of the WDO have been addressed a permit is issued. The permit lists any additional conditions that are applicable for the development. Village attendance of the pre-construction meeting shall be made a condition of the permit for all major developments. The applicant is required to post the permit at the construction site.

3.4.E Site Inspection Procedures

Representatives of the Village 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 Village may inspect site development at any stage in the construction process. For major developments, the Village shall conduct site inspections, at a minimum, at the end of the construction stages 1 and 7 listed below. 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. Upon completion of installation of sediment and runoff 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 deadlines,
6. After every seven (7) calendar days or storm event with greater than 0.5-inches of rainfall,
7. After final stabilization and landscaping, prior to removal of sediment controls.

Site Inspection Process:

- The Village attends the pre-construction meeting on applicable development sites. During the pre-construction meeting the ***Pre-Construction Meeting Form (Appendix 5.4)*** is filled out by the Village attendee. It is also recommended that the inspector request to see the SMPP and IEPA NOI for applicable construction sites.
- The applicant notifies the Village when initial sediment and runoff controls measures have been installed.
- The Village inspects the initial sediment and runoff control measures and authorizes the start of general construction.
- The Village inspects the stormwater management system and authorizes additional site improvement activities.
- The Village performs site inspections at the recommended intervals listed above and completes the ***SE/SC Inspection Form (Appendix 5.5)***.
- For sites that exceed the WDO thresholds per Art. IV, Section B.1.j.2. a DECI is required, refer to Chapter 3.4.B.2 for additional information regarding the program.
- The Village requires as-built documentation of the stormwater management system prior to final site stabilization. Tags of the seed mixes are kept by the developer for inspection and approval. Upon approval of the as-builts, the applicant shall permanently stabilize the site.

3.4.F Complaints

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

3.4.G Performance Guarantees

Performance Guarantee (surety) is required for public improvements (i.e. sewer, water, right-of-way work), stormwater management system and landscaping. The Engineers Opinion of Probable Construction Cost (EOPCC) is provided to the Village for their review/approval. The required surety amount, in the form of a Letter of Credit, shall be 125% of Village approved EOPCC. In cases where the SMC requires a surety the Village will only hold a surety for the portions of the EOPCC that is not being held by SMC. Alternatively, the Village will provide SMC with a letter indicating that the Village will hold the surety and not reduce the surety amount until SMC approval has been obtained.

The Village will typically hold 5% of the original Letter of Credit, for a minimum of 2-yr after site stabilization is complete to ensure that the vegetation is established and no failures occur. For sites with native vegetation, this portion of the surety will be held for a minimum of 3-yr after site stabilization. The applicant may apply for reductions of surety. Refer to the Subdivision Ordinance for information regarding the surety requirements.

3.4.H Violation Notification Procedures

In general the compliance due date should be within 5-working days. However, if the inspector determines that the violation is or will result in significant environmental, health or safety hazards a 24-hour due date should be set. For time-critical violations, the developer should also be advised to complete an Incidence of Non-Compliance (ION) report with IEPA for all sites that were required to obtain an Notice of Intent (NOI) with IEPA. If the discharge from the construction site enters a receiving water within the MS4 jurisdictional boundaries, it is highly recommended that the MS4 also file an ION with IEPA. The **SE/SC Inspection Form** is found in **Appendix 5.5**. The Village's violation procedure is included in **Appendix 5.6** along with a sample letter of violation.

3.4.I BMP Reference Information

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

- Native Plant Guide,
- Lake County SMC's Technical Reference Manual,
- Illinois Urban Manual,
- SMC's
 - soil erosion and sediment checklist,
 - soil erosion and sediment control notes,
 - 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.

3.4.J Construction Site Waste Control

The WDO 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.

3.4.K Pavement Projects

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

3.5 Post Construction Runoff Control



The Village of Lake Villa complies with NDPES permit requirements by incorporating Ordinance and BMP standards to minimize the discharge of pollutants of development 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 through the Lake County Technical Reference Manual and IEPA's Program recommendations. All proposed permanent stormwater treatment practices must be reviewed and approved by the Enforcement Officer.

3.5.A Regulatory Program

The WDO includes numerous performance standards on Grading, Stormwater and Soil Erosion/Sediment Control that must be met for all parties undertaking construction. The Lake County Technical Reference Manual is a guidance tool that describes BMP and implementation procedures for enforcing the WDO.

3.5.B Runoff Volume Reduction Hierarchy

The WDO includes performance standards which require that the site plan include a combination of structural and/or non-structural BMPs that will reduce the discharge of pollutants, the volume and velocity of storm water flow to the maximum extent practicable. The permittee should ensure that the development plan addresses these provisions during the plan review process.

3.5.C Green Infrastructure

Each permittee should adopt strategies that incorporate storm water infiltration, reuse and evapotranspiration of storm water into the project to the maximum extent practicable. Site plan design and review comments should encourage that the development's design incorporate green infrastructure or low impact design techniques when possible. Types of techniques include green roofs, rain gardens, rain barrels, bioswales, permeable piping, dry wells and permeable pavement.

3.5.D Long Term Operation and Maintenance

The SMPP includes two long term maintenance plans. These sample maintenance plans are included in **Appendix 5.9**.

- The first plan is the recommended plan for existing detention and stormwater management facilities, whether publicly or privately maintained. The intent of this sample plan is to provide guidance for the maintenance of facilities that do not have an approved plan. If an existing facility already has an adequate plan adequate; this document would supersede the sample plan. Attempts should be made to provide the sample maintenance plan to pre-WDO sites with stormwater management facilities.
- The second plan is provided to applicants during the permit review period. This plan should be reviewed and enhanced by the applicant to reflect the sites specific design. Receipt of the signed and recorded maintenance plan is required prior to issuance of the WDP or listed as a permit condition.

3.5.E Site Inspections

The inspection program for its general facilities is discussed in detail in Chapter 3.6.A. The inspection procedure for site inspections related to construction activities is discussed in detail in Chapter 3.4.E. This section focuses on post-construction inspections of previously developed sites, streambanks / shorelines, streambeds, and detention / retention ponds.

3.5.E.1 *Previously Developed Sites*

The Village is working toward developing a post-construction inspection program. The first step is to identify all existing properties with stormwater management facilities, if there is a maintenance plan. Identified locations will be broken down into 10 inspection zones. Once the program is established, the Village will attempt to inspect one zone a year, resulting in a re-occurrence inspection interval of every 10-years.

- Previously accepted developments are inspected with respect to the approved maintenance plan. A letter indicating the maintenance activity highlights, deficiencies or additional enhancements to the plan should be provided to the responsible party.
- For older developments that do not have a maintenance plan, the Village inspects facilities with respect to the sample existing facilities maintenance plan. A letter indicating the maintenance activity highlights and deficiencies should be provided to the responsible party. The sample maintenance plan is provided with the letter and the responsible party is encouraged to implement an annual maintenance program.

3.5.E.2 *Detention Pond Shorelines and Sediment Accumulation*



As part of the post-construction inspection program, the Village is working toward developing a detention pond inspection program. Observed erosion, seeding/re-seeding or slope stabilization needs are documented. Remedial actions might include notifying the property owner or including maintenance activities in the Village's work program.

Ensure that new detention/retention ponds are over excavated during construction to account for sediment accumulation. The developer is responsible for ensuring that the design grade is

established prior to Village's acceptance of the pond. Concerns regarding permanent pool depth should be noted as part of the inspection program.

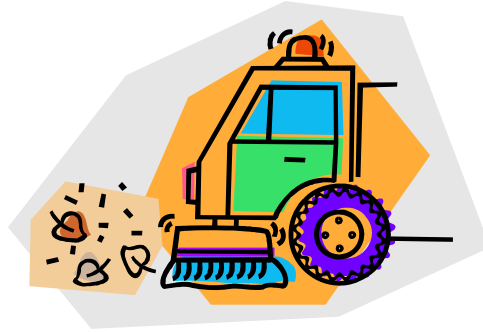
New developments are required to provide a maintenance plan for constructed detention/retention facilities. The recorded maintenance plan for developments permitted through the Lake County Watershed Development Ordinance (WDO) is used, if available, for shoreline areas. Typical BMP for maintenance of these areas are similar to those for a construction site. SMC's streambank/shoreline stabilization manual is used as a starting point in choosing the appropriate BMP for remediation activities.

3.6 Pollution Prevention and Good Housekeeping



The Village is responsible for the care and upkeep of the general facilities, municipal roads, its general facilities 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.

3.6.A Inspection and Maintenance Program



The following chapters describe areas/items that require inspection and their recommended inspection frequency. It further details recommended maintenance activities and subsequent tracking procedures for each of the tasks.

3.6.A.1 *Street Sweeping*

Street sweeping operations are performed, under contract, to reduce potential illicit discharges and to provide a clean environment. The curb lines of all streets are cleaned on a rotating basis. Each street is typically swept/cleaned approximately 2 times per year, once in spring and once in fall. Sweeper waste is collected and disposed of in the spoil waste area.

3.6.A.2 *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, include the Village's receiving streams described above in Chapter 2. Minor drainageways include roadside and sideyard swales, overland flow paths, pond outlets, etc.

3.6.A.2.a DRIVEWAY CULVERTS

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

3.6.A.2.b CATCH BASINS

Catch basin locations are identified on the **Storm Sewer Atlas**. The Public Works Department's cleans out catch basins on an as needed basis. Spoil waste obtained from catch basin cleaning is disposed of in the spoil waste area. Locations of cleaned catch basins are tracked.

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.

3.6.A.2.c 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 at is disposed of in the spoil waste area. Any waste jetted out is picked up with a clapper bar if possible.

3.6.A.2.d SWALES AND OVERLAND FLOW PATHS

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

Privately Owned Drainage Swales (side/rear yard): Observed or reported erosion or sediment accumulation in privately owned swales are referred to the Public Works Department for follow-up. The Public Works Department notifies the property owner on an as needed basis for appropriate remediation required.

3.6.A.3 *Landscape Maintenance*



The Village maintains care and upkeep of its general facilities, municipal roads, associated maintenance yards, and other public areas. Municipal staff is responsible for Litter and Debris control described in Chapter 3.6.A.4.a below. The Village annually selects and contracts with a landscape contractor. The landscape contractor is responsible for the remainder of the landscape maintenance program under the supervision of the Public Works Department. The Village is responsible for ensuring that their landscape contractors are provided with training and/or other information to ensure that they adhere to the Village's SMPP.

3.6.A.3.a LITTER AND DEBRIS

Litter and debris can accumulate on Village property and roadway right-of-ways and should be removed. Each Public Works Department is responsible for the cleanup of their respective facilities. Clean-up at park and recreation areas, Village properties and right-of-ways (including municipal, County and State right-of-ways within the MS4 limits) are cleaned by Public Works personnel or volunteer groups on an as-needed basis.

3.6.A.3.b PRIVATE RESIDENCE YARD WASTE

Yard waste from private residences can be collected through a garbage collection contract. Yard waste is collected weekly throughout the growing season, typically April through November.

Leaves from private residences are collected by the Village Public Works Department via leaf vacuum. Leaf collection typically starts in October and runs for approximately six weeks. The Village also offers leaf vacuuming in the spring for approximately one month.

3.6.A.3.c FERTILIZERS

The annual landscape contractor is required to be a licensed applicator for fertilizers. Contractor specifications incorporate low impact products. The Village has adopted an Ordinance prohibiting the use of Phosphorus, refer to Chapter 3.3.A.4. The use of pesticides and fertilizers shall be managed in a way that minimizes the volume of storm water runoff and pollutants.

3.6.A.4 *Snow Removal and Ice Control*



During snow removal and ice control activities, salt, de-icing chemicals, abrasives and snow melt may pollute stormwater runoff. To address these potential pollutants, the following procedures for the “winter season” (November 1 through May 1) are implemented.

3.6.A.4.a ROADWAY ICE CONTROL

Use the minimal amount of salt, de-icing chemicals and additives necessary for effective control. Prior to November 1, 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, and calibrating distribution rates per National Salt

Institution Application Guidelines. The completion of these preparatory tasks helps to ensure that only the necessary level of salt is applied.

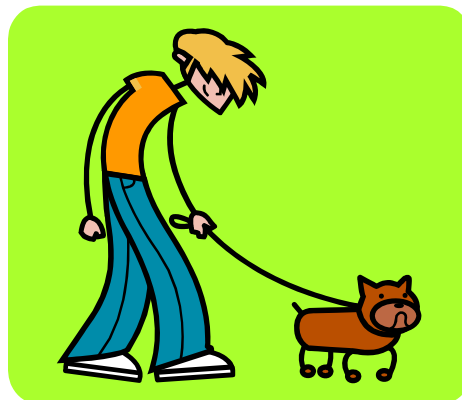
3.6.A.4.b SALT DELIVERY AND STORAGE

Steps are taken to ensure that the delivery, storage and distribution of salt does not pollute stormwater runoff from the Maintenance Facility. The floor of the salt storage building and adjacent receiving/unloading area are constructed of asphalt. Delivered salt is unloaded **outside, loaded in, salt piles outside remain covered**. The limits of the salt pile are pushed back from the door opening to minimize potential illicit runoff.

3.6.A.4.c SNOW PLOWING

Snow plowing activities direct snow off the pavement and onto the parkways. This reduces the amount of salt, chemical additives, abrasives or other pollutants that go directly into the storm sewer system. When deemed necessary, the Public Works Department hauls accumulated snow to designated stockpile locations. These locations are gravel surface areas. Snow blowing, plowing or dumping into drainageways is not allowed.

3.6.A.5 *Pet Waste*



The Village Code requires that animal waste on any public ground be immediately removed. All Village parks provide waste disposal bags to further encourage the proper disposal of pet waste, reduce illicit discharges and improve public relations. Public Works personnel remove and dispose of the accumulated waste.

3.6.A.6 *Vehicle and Equipment Operations*

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

3.6.A.6.a VEHICLE MAINTENANCE

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. This chapter discusses proper handling and disposal of vehicle maintenance by-products such as waste oil, antifreeze, batteries and tires.

Waste Oil

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

Antifreeze

Used antifreeze is stored inside the maintenance building.

Batteries

Used batteries are stored in an enclosed covered container in the maintenance building. Typically, the batteries are collected through an exchange program.

Tires

Used tires are disposed of yearly by a vendor. Tires are stored outside at the Public Works Complex until picked up for disposal.

Other

Private certified companies handle the disposal of Freon. Cleaning solvents are disposed of in the enclosed oil waste tank which is managed by a private licensed special waste company.

3.6.A.7 *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.

3.6.A.7.a SPOIL STOCK PILE

Asphalt and concrete maintenance by-products and excess earth excavation materials are temporarily stored in a stock pile. Attempts are made to recycle asphalt and concrete products prior to storage in the spoil stock pile. Licensed waste haulers are contracted to remove and dispose the contents of the spoil stock pile at a licensed landfill.

3.6.A.7.b CONTAMINATED SOIL MANAGEMENT

Collect or manage contaminated soil/sediment generated during an emergency response or identified during construction activities for treatment or disposal. Attempts are made to avoid stockpiling of the contaminated soil. If temporary stock piling is necessary, place the stockpile on an impermeable liner. Additionally, BMP (presented in the SMC's Technical Reference Manual or the Illinois Urban Manual) are used to protect the downslope of the stockpiled area for erosion downstream. Locate the construction access on the upstream side of the temporary stock pile.

3.6.A.7.c SANITARY WASTE

Discharge sanitary waste into a sanitary sewer or managed by a licensed waste hauler.

3.6.B 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 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.

3.6.B.1 *Spill Prevention*

Ensure all hazardous substances are properly labeled. Store all hazardous wastes in sealed containers constructed of compatible material and labeled. Locate items, such as paint, aerosol cans, gasoline, solvents and other hazardous wastes, in non-flammable storage cabinets or on a containment pallet. Do not overfill containers. Provide secondary containers when storing hazardous substances in bulk quantities (>55gal). Dispense and/or use hazardous substances in a way that prevents release.

3.6.B.2 *Non-Hazardous Spills/Dumping*

Non-hazardous spills typically consist of an illicit discharge of household material(s) into the street or stormwater management system. Upon notification or observance of a non-hazardous illicit discharge, 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 containment and cleanup activities have been performed, the on-site Public Works personnel fills out the ***Spill Response Notice (Appendix 5.8)*** and distributes to adjoining residences/businesses on both sides of the street.

- Public Works personnel document the location, type of spill and action taken on the ***Illicit Discharge Incident Tracking Form (Appendix 5.7)***. .
- If a person is observed causing an illicit discharge, Public Works Department is notified and appropriate citations issued by the Police Department.

3.6.B.3 Hazardous Spills

Upon notification or observance of a hazardous illicit discharge, Public Works follows the following procedure:

- Call 911, explain the incident. The Fire Department responds;
- Public Works 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;
- Public Works documents the location, type of spill and action taken on the Illicit Discharge Incident Tracking Form (**Appendix 5.10**); and,

If the Village’s Fuel Tank leaks, immediately call 911. Shut pump off, if pump won’t shut off, shut Shop 2 electric off. Contain spill, put booms around storm sewer.

3.6.C Employee Training



The Village’s practice is to promote education and training employees to ensure that they have the knowledge and skills necessary to perform their functions effectively and efficiently. Employees are encouraged to attend all relevant training sessions offered by the QLP and other entities on topics related to the goals/objectives of the SMPP. Key educational topics include the following:

- Stormwater characteristics and water quality issues;
- The roles and responsibilities regarding implementation of the SMPP to consistently achieve Permit compliance;

- Activities and practices that are, or could be sources, of stormwater pollution and non-stormwater discharges;
- Managing and maintaining green infrastructure and low impact design features; and,
- How to use the SMPP and available guidance materials to select and implement best management practices.

4 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 Village. Land development, redevelopment and transportation improvement projects were required to comply with the provisions of the WDO prior acceptance of the SMPP. Additionally, the Village had numerous written and unwritten procedures for various tasks. This SMPP documents and organizes previously existing procedures and incorporates the objectives of the WDO to create one cohesive program addressing pre-development, construction, post-development activities and municipal operations.

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

- 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.

4.1.A.1 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 having 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.

The first phase of the program is to complete the MS4 wide pre-screening effort, investigate those outfalls exhibiting dry-weather flow and then eliminate identified illicit direct connections. This phase has been estimated to take five years to complete. MS4 wide pre-screening is planned to occur at the end of Phase 1 (and then be repeated every five years). It is logical to assume that after several years of 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 Part C **IDDE Monitoring and Data Collection** within each **Annual Report** submitted to IEPA.

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.

4.2 Performance Milestones

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

- Within 6 months following the acceptance of the SMPP, applicable employees will receive training regarding the implementation of the SMPP.
- Within 1 year following the acceptance of the SMPP, program enhancement items within Chapter 3 will be implemented, except for the IDDE program milestones discussed below. Refer to Chapter 2.1 for a description of tasks associated with the implementation of the SMPP.
- Complete Outfall Inventory by the end of 2016.
- Within 3 years following the acceptance of the SMPP, the Outfall Inspection Procedure will be completed for all pipes identified, during the pre-screening efforts, as having dry weather flow.
- Within 5 years following the acceptance of the SMPP, tracing and removal procedures will be completed for all pipes identified, during the Outfall Inspection Procedure, as contributing illicit discharges to receiving waters.

4.3 Program Monitoring and Research

As of April 2009, the IEPA requires annual monitoring of receiving waters at points upstream and downstream of MS4 discharges. The results of the monitoring are used to gauge the effects of the MS4 stormwater discharges on the physical/habitat-related aspects of the receiving waters and the effectiveness of BMPs.

The Village has selected a total of 8 locations to perform annual water quality monitoring; refer to **Figure 11 Annual Monitoring Locations**. Monitoring is performed on each receiving stream that flows through the MS4; specific locations were selected at points both upstream and downstream of the MS4's stormwater discharges. At these locations, the physical characteristics of the sampling point were observed and a grab sample collected. The outfall inspection form, found in Appendix 5.3, is used to evaluate the outfall. Grab samples are tested in accordance with the pollutants included on the form.

The Stormwater Coordinator will monitor annual monitoring results to determine if there are any noticeable decreases in physical parameters or increase in assessed water quality parameters between upstream and downstream sampling locations. Possible causes of any documented degradation will be investigated and any appropriate corrective actions will be incorporated into the MS4's Stormwater Management Program Plan (SMPP). Include a description of the annual monitoring results, in Part C **Annual Monitoring and Data Collection** within each **Annual Report** submitted to IEPA.

At the end of each year the BMPs implemented by the MS4 should be evaluated in order to determine the effectiveness of the program. The following are some indicators that the SMPPP is appropriate.

- A reduced number of outfalls having positive indicators for potential pollutants.
- An improvement, or no change, in the annual monitoring results.
- Improved community awareness of water quality and other NPDES program aspects.
- Increased number of hits on website information related to the NPDES program.
- Increased quantities of Household Hazardous Wastes or Electronic collected by SWALCO.
- 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 Village staff and its contractors.

Describe 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

section of the Annual Report. This information will be used to provide insight into how the program may need to evolve.

The Village will continue to seek innovative stormwater practices and technologies. Information and guidance obtained through the MAC meetings and other sources will be incorporated into this SMPP as practical.

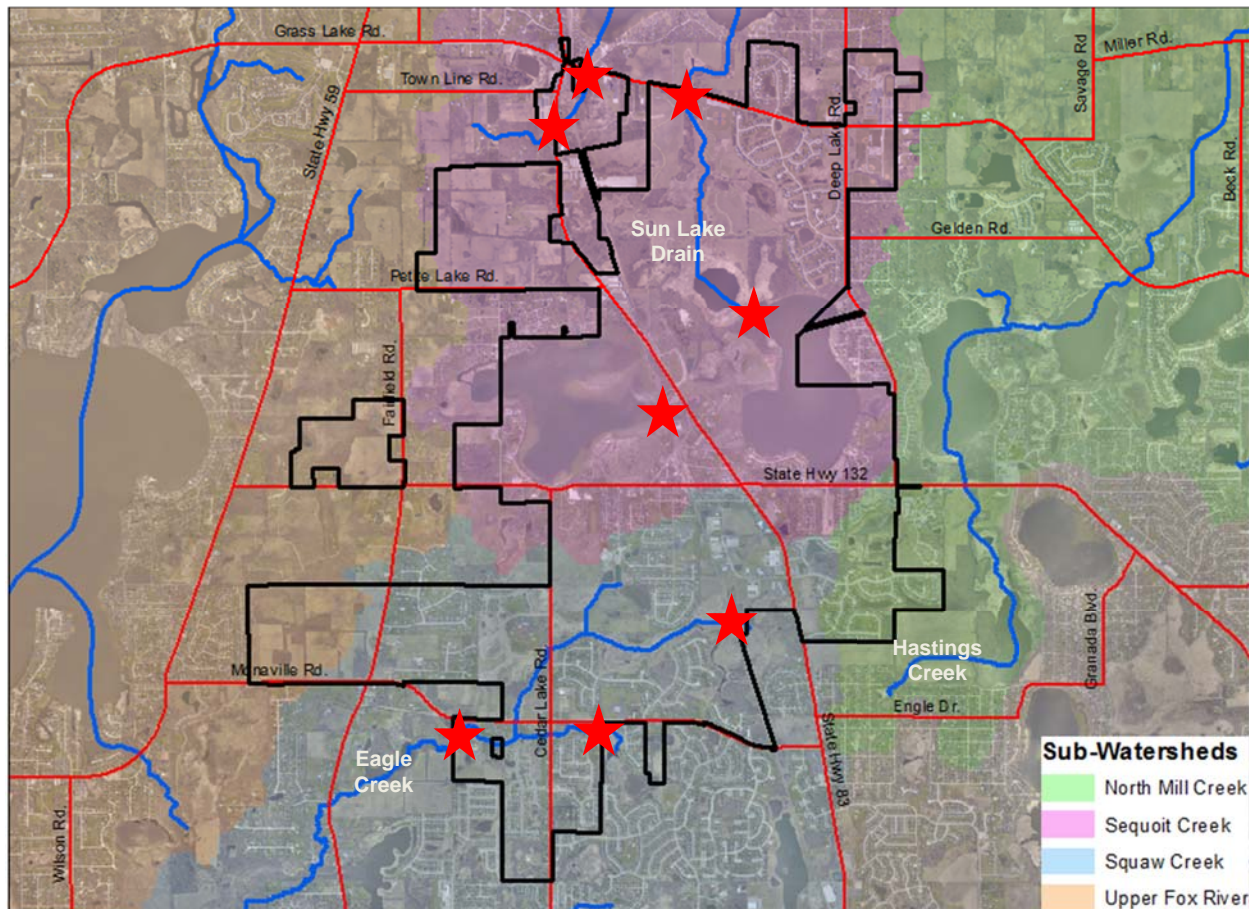


Figure 11: Monitoring Locations

4.4 Program Evaluation

The primary mechanism for evaluating the program and ensuring that the field staff has adequate knowledge is supervision by responsible managers. Management personnel include the Public Works Directors and Village Administrator. Management support tasks include observing and evaluating design, construction and field personnel as they implement the requirements of the SMPP on both municipal and private projects, and maintenance personnel as they conduct their assigned activities. These responsibilities were outlined in detail in Chapter 2: Program Management.

The following types of questions/answers are discussed annually between the Stormwater Coordinator, Managers and field staff.

- Are proper stormwater management practices integrated into planning, designing and construction of both Village and private projects?
- Are efforts to incorporate stormwater practices into maintenance activities effective and efficient?
- Is the training program sufficient?
- Is the SMPP sufficient?
- Are the procedures for implementing the SMPP adequate?

5 Appendices

5.1 List of Acronyms

BMP	Best Management Practices
CMAAP	Chicago Metropolitan Agency for Planning
CWA	Clean Water Act
CWP	Center for Watershed Protection
DECI	Designated Erosion Control Inspector
EO	Enforcement Officer (designated to SMC)
EOPCC	Engineer's Opinion of Probable Construction Cost
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)
LCDOT	Lake County Division of Transportation
MAC	Municipal Advisory Committee (Countywide)
MS4	Municipal Separate Storm Sewer Systems
NOI	Notice of Intent
NOT	Notice of Termination (with IEPA)
NPDES	National Pollutant Discharge Elimination System
PPE	Personal Protection Equipment
QLP	Qualify Local Program
RVR	Runoff Volume Reduction
SE/SC	Soil Erosion and Sediment Control
SMC	Lake County Stormwater Management Commission
SWALCO	Solid Waste Agency of Lake County
SMPP	Stormwater Management Program Plan
TAC	Technical Advisory Committee
TMDL	Total Maximum Daily Load
USEPA	United States Environmental Protection Agency
WDO	Lake County Watershed Development Ordinance
WDP	Watershed Development Permit

5.1 List of Acronyms

5.2 Stormwater Outfall Screening Equipment Checklist

STORM WATER OUTFALL SCREENING EQUIPMENT CHECKLIST		
Field Analysis		pH Testing Strips
		Chlorine Testing Strips
		Copper Test Strip
		Ammonia Test Strip
		Phenols Test Kit (Minimum of 15 Tests)
		Detergents Test Kit (Minimum of 15 Tests)
		Color Chart
		Thermometer
		Wash Bottle with Tap Water
Sampling		Extended Sampler
		250-ml and 500-ml glass sample containers with labels
		Cooler with ice or ice packs
Other		Outfall Screening Data Form (Minimum of 10)
		Outfall Sampling Report (Minimum of 10)
		Clipboard and Pens
		Resident Form Letters (Minimum of 10)
		Training Manual
		Storm Sewer Atlas
		Digital Camera
		Flashlight
		Manhole Cover Hook
		Tape Measure
		Folding Rule
		Brush Clearing Tool
		Plastic Trash Bags
		Paper Towels
Safety (PPE Equipment)		Traffic Cones/Flags/Light Sticks
		Traffic Safety Vest
		First Aid Kit
		Steel-Toe Boots
		Work Gloves
		Safety Glasses/Goggles
		Rubber Boots
		Disposable Gloves (Latex)
		ID Badge
Personal (supplied by employee if desired)		Insect Repellant
		Sunscreen

5.2 Storm Water Outfall Screening Equipment Checklist

Safety is the primary consideration while inspecting upstream sampling locations. In general, the rule “*if in doubt, don’t*” is followed. Latex gloves are worn while collecting and handling samples. 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

In some cases, it may be necessary for personnel to enter or cross private property to investigate discovered illicit discharges. A form letter should be prepared that includes a short description of the project, the purpose of the access to the property, and the name of a project contact person with a telephone number. Attempt to contact each home, or business, owner for permission. Personnel shall have identification indicating that they are municipal employees. If the owner is not present, a letter should be left at the premises to facilitate return inspection. If permission to access property is denied, a public official should then contact the owner at a later date. All access by Village personnel onto private property shall conform to the Access to Premises Ordinance #92-7-15 (Chapter 14.08.100 of the Municipal Code).

Avoid confrontational situations with citizens and attempt to answer questions concisely and without being alarmist. Personnel should be coached on appropriate responses to questions from citizens. If a field crew feels uncomfortable or threatened, they should remove themselves from the situation and report to the incident to their supervisor.

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 Public Works and Engineering Department.

In general the following additional Village Policies are applicable. Public Works personnel generally work on streets only during the hours of 9 a.m. to 3 p.m. except in emergency situations. All field crews are required to wear Personal Protection Equipment (PPE) in accordance with Village Standard Operating Procedures set forth by the Public Works Department.

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 WHO ARE UNTRAINED AND/OR UNEQUIPPED FOR CONFINED SPACE ENTRY ATTEMPT TO ENTER CONFINED SPACES.** Confined space entry shall be conducted only by trained personnel with appropriate rescue and monitoring equipment. All Confined Space Entry shall comply with the most current Village of Mundelein SOP.

5.2 Storm Water Outfall Screening Equipment Checklist

Other Hazards

Table 5: Other Outfall Inspection Hazards

Hazard	Prevention
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

5.3 Stormwater Outfall Inspection Data Form

Section 1: Background Data

Subwatershed:	Outfall ID:	
Date:	Time (Military):	
Temperature:	Inspector(s):	
Previous 48 Hours Precipitation:	Photo's Taken (Y/N)	If yes, Photo Numbers:
Land Use in Drainage Area (Check all that apply):	<input type="checkbox"/> Open Space <input type="checkbox"/> Industrial <input type="checkbox"/> Institutional <input type="checkbox"/> Residential <input type="checkbox"/> Other: _____ <input type="checkbox"/> Commercial <input type="checkbox"/> Known Industries: _____	

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE		DIMENSIONS (IN.)	SUBMERGED
Storm Sewer (Closed Pipe)	<input type="checkbox"/> RCP <input type="checkbox"/> CMP <input type="checkbox"/> PVC <input type="checkbox"/> HDPE <input type="checkbox"/> Steel <input type="checkbox"/> Clay / drain tile <input type="checkbox"/> Other: _____	<input type="checkbox"/> Circular <input type="checkbox"/> Elliptical <input type="checkbox"/> Box <input type="checkbox"/> Other: _____	<input type="checkbox"/> Single <input type="checkbox"/> Double <input type="checkbox"/> Triple <input type="checkbox"/> Other: _____	Diameter/Dimensions: _____ _____	In Water: <input type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Fully With Sediment: <input type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Fully
Open drainage (swale/ditch)	<input type="checkbox"/> Concrete <input type="checkbox"/> Earthen <input type="checkbox"/> rip-rap <input type="checkbox"/> Other: _____	<input type="checkbox"/> Trapezoid <input type="checkbox"/> Parabolic <input type="checkbox"/> Other: _____		Depth: Top Width: Bottom Width:	

Section 3: Physical Indicators

INDICATOR	CHECK if Present	DESCRIPTION	COMMENTS
Outfall Damage	<input type="checkbox"/>	<input type="checkbox"/> Spalling, Cracking or Chipping <input type="checkbox"/> Peeling Paint <input type="checkbox"/> Corrosion	
Deposits/Stains	<input type="checkbox"/>	<input type="checkbox"/> Oily <input type="checkbox"/> Flow Line <input type="checkbox"/> Paint <input type="checkbox"/> Other: _____	
Abnormal Vegetation	<input type="checkbox"/>	<input type="checkbox"/> Excessive <input type="checkbox"/> Inhibited	
Poor pool quality	<input type="checkbox"/>	<input type="checkbox"/> Odors <input type="checkbox"/> Colors <input type="checkbox"/> Floatables <input type="checkbox"/> Oil Sheen <input type="checkbox"/> Suds <input type="checkbox"/> Excessive Algae <input type="checkbox"/> Other: _____	
Pipe algae/growth	<input type="checkbox"/>	<input type="checkbox"/> Brown <input type="checkbox"/> Orange <input type="checkbox"/> Green <input type="checkbox"/> Other: _____	
Do physical indicators suggest an illicit discharge is present (Y/N):			

Flow Present?	<input type="checkbox"/> Yes <input type="checkbox"/> No If No, Skip to Section 7 and Close Illicit Discharge Investigation
Flow Description	<input type="checkbox"/> Trickle <input type="checkbox"/> Moderate <input type="checkbox"/> Substantial
Sample Location	

Section 4: Physical Indicators (Flowing Outfalls Only)

INDICATOR	CHECK if Present	DESCRIPTION	RELATIVE SEVERITY INDEX (1-3)		
Odor	<input type="checkbox"/>	<input type="checkbox"/> Sewage <input type="checkbox"/> Rancid/sour <input type="checkbox"/> Sulfide <input type="checkbox"/> Petroleum/gas <input type="checkbox"/> Other:	<input type="checkbox"/> 1-Faint	<input type="checkbox"/> 2 – Easily detected	<input type="checkbox"/> 3 – Noticeable from a distance
Color (color chart)	<input type="checkbox"/>	<input type="checkbox"/> Clear <input type="checkbox"/> Brown <input type="checkbox"/> Gray <input type="checkbox"/> Yellow <input type="checkbox"/> Green <input type="checkbox"/> Orange <input type="checkbox"/> Red <input type="checkbox"/> Other:	<input type="checkbox"/> 1-Faint colors in sample bottle	<input type="checkbox"/> 2 – Clearly visible in sample bottle	<input type="checkbox"/> 3 – Clearly visible in outfall flow
Turbidity	<input type="checkbox"/>	See severity	<input type="checkbox"/> 1-Slight cloudiness	<input type="checkbox"/> 2 – Cloudy	<input type="checkbox"/> 3 – Opaque
Floatables -Does Not Include Trash!!	<input type="checkbox"/>	<input type="checkbox"/> Sewage <input type="checkbox"/> Suds <input type="checkbox"/> Petroleum (oil sheen) <input type="checkbox"/> Grease <input type="checkbox"/> Other:	<input type="checkbox"/> 1-Few/slight; origin not obvious	<input type="checkbox"/> 2 – Some; indications of origin	<input type="checkbox"/> 3 - Some; origin clear
Do physical indicators (flowing) suggest an illicit discharge is present (Y/N):					

Section 5: On-Site Sampling / Testing (Flowing Outfalls Only)

PARAMETER	RESULT	ACCEPTABLE RANGE	WITHIN RANGE (Y/N)	EQUIPMENT
Temperature		NA	NA	Thermometer
pH		6 – 9		5-in-1 Test Strip
Ammonia		<3 mg/L April – Oct < 8 mg/L Nov - March		Test Strip
Free Chlorine		NA	NA	5-in-1 Test Strip
Total Chlorine		< 0.05 mg/L		5-in-1 Test Strip
Phenols		< 0.1mg/L		Test Kit
Detergents as Surfactants		> 0.25 mg/L residential > 5 mg/L non-residential		Test Kit
Copper		<0.025 mg/L		Test Strip
Alkalinity		NA	NA	5-in-1 Test Strip
Hardness		NA	NA	5-in-1 Test Strip

(Note NA values used for future tracing procedures)

Section 6: Data Collection for Lab Testing (see flow chart)

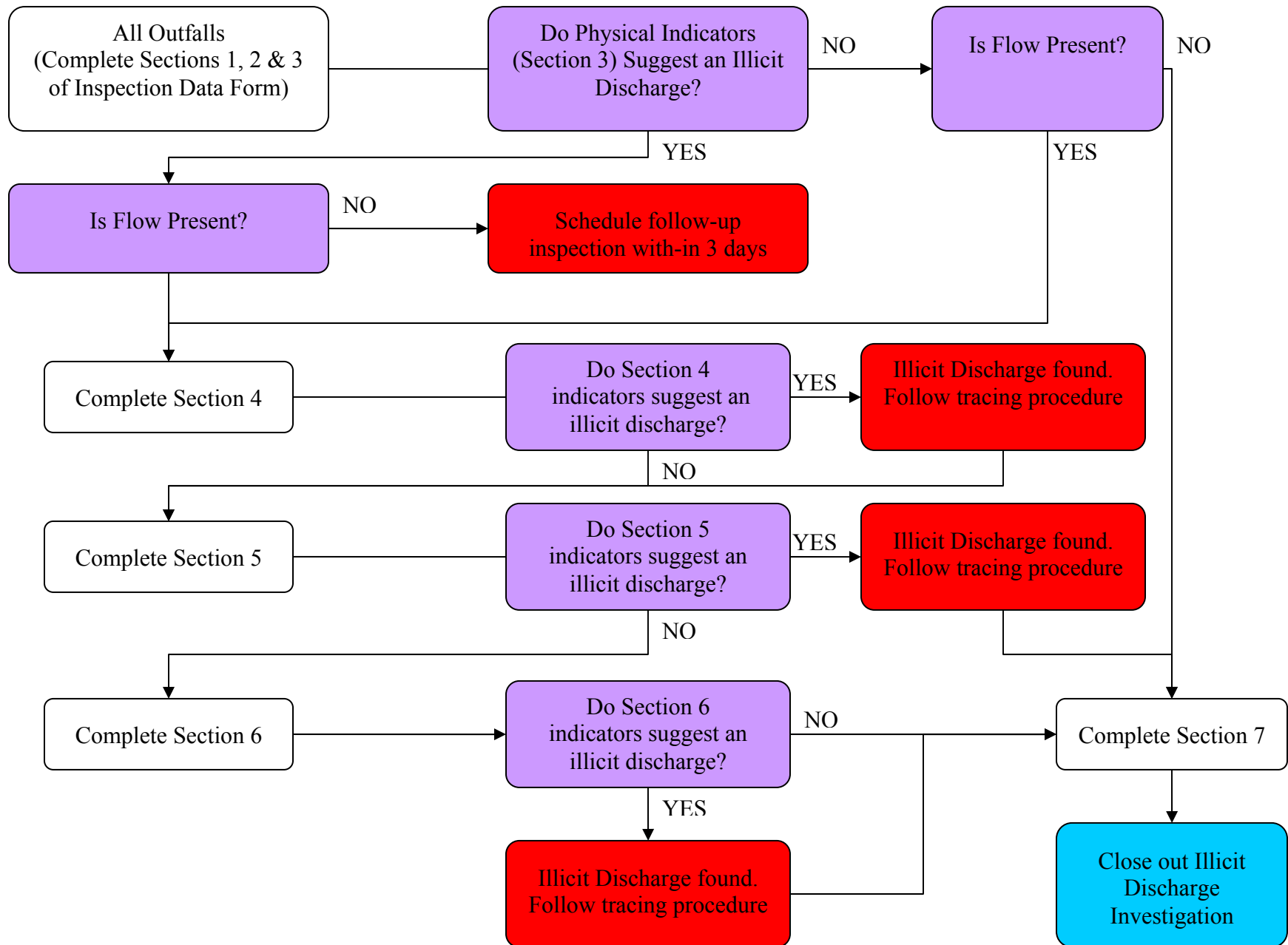
1. Sample for the lab?	<input type="checkbox"/> Yes <input type="checkbox"/> No
2. If yes, collected from:	<input type="checkbox"/> Flow <input type="checkbox"/> Pool

PARAMETER	RESULT (from lab)	ACCEPTABLE RANGE	WITHIN RANGE (Y/N)
Fecal Coliform		400 per 100 mL	
Fluoride		0.6 mg/l	
Potassium		Ammonium/Potassium ratio or > 20mg/l	

*note label sample with outfall number

Section 7: Any Non-Illicit Discharge Concerns (e.g., trash or needed infrastructure repairs)?

Figure 4: Outfall Inspection Procedure Flow Chart



Instructions for completing the *Storm Water Outfall Inspection Data Form*

Strike out incorrect entries with a single line; correct values or descriptions are written above or near the struck-out entries. Do not use a new data entry form to correct an incorrect entry. At the completion of each outfall inspection, the field crews are responsible for ensuring that a *Storm Water Outfall Inspection Data Form* has been completely and correctly filled out and that all data and remarks are legible. **It is important to check that values for all chemical parameters have been entered.**

Section 1: Background Data

Subwatershed: The receiving water from the storm water outfall inventory to be entered here.

Outfall ID: Enter the outfall identification number from the storm water outfall inventory.

Date: To avoid confusion, dates are to be written in the following manner: DAY MONTH YEAR. For example, 10 MARCH 2007.

Time: Military time (24-hour clock) to be used (for example, 8:30 a.m. would be written as 0830; likewise, 1:30 p.m. would be written as 1330).

Temperature: A concise description of the weather conditions at the time of the screening is to be recorded (for example, Clear, 75° F).

Inspector: The name(s) of the field personnel.

Previous 48 Hours Precipitation: The total amount of precipitation during the 48 hours preceding the inspection is to be noted (for example, none-72 Hours or 0"=4 days). If the total precipitation is not known, it is appropriate to enter a qualitative assessment if the precipitation was minor. For example, *Drizzle-36 Hours* if appropriate. If the precipitation amount was significant, actual precipitation totals is obtained from a local rain gage, if available.

Photo's Taken (Yes/No): Photographs are to be taken with a camera that superimposes a date and time on the film. The date and time should correspond to the date and time recorded on the data form.

Photo Numbers: If photographs are taken, the number(s) is recorded.

Land Use: Check all that apply, noting which land use is predominate. If the industrial box is checked, any known industries are listed to facilitate potential tracing efforts.

Section 2: Outfall Description

Type of Outfall: Storm Sewer (Closed Pipe) or Open Drainage (Swale/Ditch):

First check if the outfall is either from a Closed Pipe or Open Drainage. Then complete table row to describe outfall characteristics.

Section 3: Physical Indicators

Complete table rows describing outfall characteristics (Outfall Damage, Deposits/Stains, Abnormal Vegetation, Poor pool quality, Pipe algae/growth). This section is filled out regardless of current flow conditions. No flow during the time of the inspection, does not rule out the potential of illicit discharges. Corroding or stained pipes, dead or absence of vegetation, are potential indicators of illicit discharges from direct or indirect (i.e. dumping) sources.

After inspecting the physical conditions of the outfall, the likelihood of an illicit discharge is assessed. Use this assessment in the supporting flow chart.

Flow Present (Yes/No): A *Yes* or *No* is entered here to indicate the presence or absence of dry-weather flow. If the outfall is submerged or inaccessible, “See Notes” is entered and an explanation provided in the “Notes” section.

If *No* is entered in the “Flow Present” block, then skip to Section 7.

If *Yes* is entered, then the remainder of the outfall screening data form is filled out.

Flow Description: A description of the quantity of the dry-weather flow is provided.

Sample Location: A description of the actual sampling location is to be recorded (for example, at end of outfall pipe). If the outfall is submerged or is inaccessible for sampling, an upstream sampling location may be required. A description of any upstream sampling locations is recorded here. Grab sample are collected from the middle, both vertically and horizontally, of the dry-weather flow discharge in a critically cleaned glass container. Samples can be collected by manually dipping a sample container into the flow. Rinse the sample container with the discharge water prior to collection of sample for analysis.

If no dry weather flow was observed and no non-flowing physical indicators appear present the inspection can be closed, skip to Section 7 of the form. If no dry weather flow was observed but indicators appear present the outfall is placed back on the follow-up inspection log to ensure future inspections of the outfall, skip to Section 7. If dry weather flow was observed (regardless of the presence of non-flowing physical indicators), test the outfall discharge and complete the remainder of the form, continue to Section 4.

Section 4: Physical Indicators (Flowing Outfalls Only)

Complete table rows describing outfall characteristics (Odor, Color, Turbidity, Floatables). This section is filled out for flowing outfalls only.

Odor: The presence of an odor is to be assessed by fanning the hand toward the nose over a wide-mouth container of the sample, keeping the sample about 6 to 8 inches from the face. Be careful not to be distracted by odors in the air. Provide a description of the odor, if present.

Color: The presence of color in the discharge is to be assessed by filling a clean glass sample container with a portion of the grab sample and comparing the sample with a color chart, if color is present. If a color chart is used, the number corresponding to the color matching the sample is to be entered in this blank. Color is not assessed by looking into the discharge.

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 clean glass sample container with colorless distilled water. Describe turbidity as;

- Clear,
- Cloudy (translucent), or
- Opaque.

Floatables: The presence of floating scum, foam, oil sheen, or other materials on the surface of the discharge are to be noted. Describe of any floatables present that are attributable to discharges from the outfall. Do not include trash originating from areas adjacent to the outfall in this observation.

After inspecting the physical conditions of the outfall discharge, the likelihood of an illicit discharge is assessed. If flowing physical indicators are present the tracing procedure are immediately implemented by one of the field crew. The second member of the field crew continues with the inspection by performing the on-site testing in Section 5.

Section 5: On-Site Sampling/Testing (Flowing Outfalls Only)

On-site tests are performed for each of the categories. Testing is done by either a test strip or test kit as applicable (refer to the equipment column). The result are compared with the Acceptable Range and within or outside of range determination noted with a Yes or No. Note that the Temperature, Alkalinity and Hardness are determined although these results do not need to be compared with an acceptable range. These values can be used to determine the source of an illicit discharge during the tracing procedure.

After completing the on-site testing of the outfall discharge, the results of the within range column are reviewed. If any parameter is outside of the acceptable range then testing can be stopped, proceed to Section 7. If none of the parameters are outside of the acceptable range then a sample is taken for lab testing, proceed to Section 6.

Section 6: Data Collection for Lab Testing

If required, as determined by the supporting flow chart, a sample is collected for the lab. The location of the sample is noted. Additionally, the sample is labeled with the outfall ID number.

After the lab testing has been completed the results are entered onto the form. If any parameters are outside of the acceptable range then the tracing procedure is implemented. If none of the parameters are outside of the acceptable range then the investigation can be closed. Note if non flowing physical indicators were present, re-inspect the outfall as practical.

Section 7 Any Non-Illicit Discharge Concerns

Any problems or unusual features are to be entered here. If the outfall appears to be potentially impacted by inappropriate discharges, this can be recorded here. This section is to be completed even if no flow is observed.

5.4 Pre-Construction Meeting Form

AGENDA
PRE-CONSTRUCTION CONFERENCE

PROJECT: _____ CONFERENCE DATE: _____

CONTRACTOR: _____ Phone: _____

Project Manager: _____ Email: _____

Site Superintendent: _____ Phone: _____

Cell: _____

ENGINEER: _____ Phone: _____

Project Manager: _____ Email: _____

Field Representative: _____ Cell: _____

DECI: _____

Phone: _____ Email: _____ Cell: _____

1. Welcome, Introductions, and Sign-in

2. Contract Dates

a. Start _____

b. Duration of Contract _____

c. Substantial Completion _____

d. Final Completion _____

3. Utilities

a. Water

b. Sewer

c. Electric (ComEd)

d. Comcast

e. Telephone (SBC)

f. Gas (Nicor/Northshore)

**Contact JULIE 1-800-892-0123

4. Permits
 - a. Water
 - b. Sewer (IEPA)
 - c. Building
 - d. Watershed Development Permit
 - e. LCSMC Wetlands Development
 - f. IEPA / NPDES (Erosion Control)
 - g. LCDOT/IDOT
 - h. Easements
5. Contractors Insurance (Certificate of Insurance) Name Village of Lake Villa as additionally insured.
6. Performance Guarantee
7. Reference Points/Surveying/Staking
 - a. Who provides: _____
8. Construction Schedule / Sequencing
 - a. Preliminary for first 30 days by _____
 - b. Sequencing
9. List of Subcontractors/Suppliers
10. Special Structures needing Shop Drawings
11. As-builts required at completion of project.
12. Operation and Maintenance of Existing Facilities
 - Utilities
 - Driveways
 - Construction entrance and silt fence etc.
13. Defective Work will be brought to contractor and general contractor attention as soon as seen or determined.
14. Traffic Control
 - a. Traffic Control Subcontractor: _____
15. Soil Erosion / Sediment Control
 - a. Floodplain/Floodway On/Adj. to Site (Y/N)
 - b. WOUS or IWLC On/Adj to Site (Y/N)
 - c. Initial SE/SC Inspection at PreCon (Y/N)
 - d. Village to receive weekly DECI Inspection Reports (Y/N)
 - f. Key Discussion Items/Areas of Focus

<input type="checkbox"/> Communication Chain	<input type="checkbox"/> Construction Entrance	<input type="checkbox"/> Detention/Sediment Basin
<input type="checkbox"/> Dewatering	<input type="checkbox"/> Ditch Checks/Silt Dikes	<input type="checkbox"/> Dust / Mud Control
<input type="checkbox"/> General Phasing	<input type="checkbox"/> Inlet Protection	<input type="checkbox"/> Inspection Log
<input type="checkbox"/> Overland / Offsite Drainage	<input type="checkbox"/> Perforated Riser	<input type="checkbox"/> Perimeter SE/SC BMPs
<input type="checkbox"/> Restrictor Plate/Structure	<input type="checkbox"/> Silt Fence (ASSHTO 288-00)	<input type="checkbox"/> Soil Stockpile Stabilization
<input type="checkbox"/> Stormwater Management System	<input type="checkbox"/> Stabilization Measures	<input type="checkbox"/> SWPPP on Site & Updated
<input type="checkbox"/> Stormwater System	<input type="checkbox"/> Vegetative Cover/Type	<input type="checkbox"/> Wetlands/Waters Protection

16. Temporary Facilities and Controls

- a. Relocations (Utilities, roadway, etc.)
- b. Job Trailer location, phone numbers, address,

17. Testing (by Whom?)

- a. Materials
- b. Water main Installation
- c. Sewer Installation
- d. Pavement construction

18. Chain of Command (contacts)

- a. Contractor
- b. Consultant
- c. Village of Mundelein

19. Safety – OSHA/IDOT

20. Fire Protection / Police Department

21. Rescue Access

22. Work By Others

23. Progress Meetings

Weekly/Bi-weekly beginning _____

24. Easement Requirements

- a. Existing/Proposed
- b. Construction Easements

- c. Drainage Easements
- d. Restoration/Staging of Materials

25. Inspections

- a. Special inspections
- b. By consultant and/or Village
- c. By DECI
- d. Date of next inspection _____

26. Working Hours

- a. Contractor construction (by Village Ordinance)
Mon-Fri: 7:00AM-6:00PM, Saturday 8:00AM – 5:00PM, Sunday and Holidays – no work.
- b. Public Works Office
Mon-Fri 7:30AM-4:00PM

28. Comments, Q&A

5.5 Soil Erosion and Sediment Control Inspection Form

Village of Lake Villa

Soil Erosion and Sediment Control Inspection Form

WDO Permit #		USAGE Reference #					
Date/Time of Inspection		Observer/DECI					
Project Name							
Field Contact Information							
In Attendance							
Weather Conditions		Reason for Inspection	<input type="checkbox"/> monthly <input type="checkbox"/> rain <input type="checkbox"/> DECI follow-up <input type="checkbox"/> other				
Disturbed Area		Stage of Construction					
Floodplain Impacted	<input type="checkbox"/> Yes <input type="checkbox"/> No	Floodway Impacted	<input type="checkbox"/> Yes <input type="checkbox"/> No				
Wetland Impacted	<input type="checkbox"/> Yes <input type="checkbox"/> No	Violation Observed	<input type="checkbox"/> Yes <input type="checkbox"/> No				
Violation Correction Time	<input type="checkbox"/> 1 day <input type="checkbox"/> 5 day <input type="checkbox"/> 30 day	Violation Rating	<input type="checkbox"/> Moderate <input type="checkbox"/> Severe				
Next Site Visit		Photos Taken	<input type="checkbox"/> Yes <input type="checkbox"/> No				
Copy To:							
Construction Entrance/Pavement	<input type="checkbox"/> Satisfactory <input type="checkbox"/> Unsatisfactory <input type="checkbox"/> N/A	Detention/Sediment Basin Condition	<input type="checkbox"/> Satisfactory <input type="checkbox"/> Unsatisfactory <input type="checkbox"/> N/A				
Dewatering Facility	<input type="checkbox"/> Satisfactory <input type="checkbox"/> Unsatisfactory <input type="checkbox"/> N/A	Ditch Checks/Silt Dikes	<input type="checkbox"/> Satisfactory <input type="checkbox"/> Unsatisfactory <input type="checkbox"/> N/A				
Dust Control	<input type="checkbox"/> Satisfactory <input type="checkbox"/> Unsatisfactory <input type="checkbox"/> N/A	Inlet Protection	<input type="checkbox"/> Satisfactory <input type="checkbox"/> Unsatisfactory <input type="checkbox"/> N/A				
Native Vegetation	<input type="checkbox"/> Satisfactory <input type="checkbox"/> Unsatisfactory <input type="checkbox"/> N/A	Overland Flow/Offsite Drainage Paths	<input type="checkbox"/> Satisfactory <input type="checkbox"/> Unsatisfactory <input type="checkbox"/> N/A				
Perforated Riser	<input type="checkbox"/> Satisfactory <input type="checkbox"/> Unsatisfactory <input type="checkbox"/> N/A	Perimeter SE/SC Controls	<input type="checkbox"/> Satisfactory <input type="checkbox"/> Unsatisfactory <input type="checkbox"/> N/A				
Restrictor Plate/Structure	<input type="checkbox"/> Satisfactory <input type="checkbox"/> Unsatisfactory <input type="checkbox"/> N/A	Silt Fence	<input type="checkbox"/> Satisfactory <input type="checkbox"/> Unsatisfactory <input type="checkbox"/> N/A				
Soil Stockpile Stabilized/Protected	<input type="checkbox"/> Satisfactory <input type="checkbox"/> Unsatisfactory <input type="checkbox"/> N/A	Stabilization Measures	<input type="checkbox"/> Satisfactory <input type="checkbox"/> Unsatisfactory <input type="checkbox"/> N/A				
Stormwater System	<input type="checkbox"/> Satisfactory <input type="checkbox"/> Unsatisfactory <input type="checkbox"/> N/A	Wetlands/Waters Protection Measures	<input type="checkbox"/> Satisfactory <input type="checkbox"/> Unsatisfactory <input type="checkbox"/> N/A				
Detention Basin — Sediment Basin • Is the basin installed? • Is the basin adequately stabilized with evidence of sufficient coverage of native vegetation? • Is the emergency overflow constructed with the required materials?	Yes <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	No <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	N/A <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Restrictor Plate — Restrictor Structure • Is the restrictor plate or restrictor structure installed?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
Dewatering • Is dewatering directly entering a waterway or wetland? • Are dewatering activities conveying sediment laden water? • If a sediment bag is being used, is it capturing sediment effectively?	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Silt Fence • Does the silt fence meet the AASHTO 288-00 Standard? • Is the silt fence trenched, backfilled and compacted in properly? • Is the silt fence maintained and in good condition?	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Dust Control - sweeping, vacuuming, spraying, etc. • Are dust control measures being used as needed? • Is dust observed moving offsite due to wind?	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Site Stabilization • Have all disturbed areas been stabilized with temporary or permanent measures within 14 days of the end of active hydrologic disturbance?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Inlet Protection - Catch-All basket, filter, silt fence, silt dike, straw bales, gravel dam, etc. • Are all storm sewer inlets that are or will be functional during construction protected? • Is the inlet protection installed correctly to protect the entire inlet? • Is the inlet protection being maintained?	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Soil Stockpile • Is the soil stockpile located in an approved location (ie. not in floodplain or wetland)? • Is the soil stockpile adequately stabilized and enclosed with silt fence?	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>
Miscellaneous • Is there an adequately sized receptacle on site for deposition of construction material debris? • Is there a dedicated, protected area for concrete wash out activities? • Are the permitted plans available on site? The Stormwater Pollution Prevention Plan (SWPPP)? • If polymers are used, are they being used appropriately in an approved manner? • Have any SE/SC measures that are no longer needed been removed?	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Stormwater Management System • Is the stormwater management system installed and functional, prior to building construction? • Are all points of concentrated discharge appropriately installed for energy dissipation? • Are all inlets and catch basins adequately protected from sediment conveyance into the system? • Is hydrocarbon removal technology in place, functional and maintained where needed?	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Overland Flow — Offsite Drainage • Are all permitted overland flow routes constructed? • Are all permitted overland flow routes free from • Are all permitted overland flow routes stabilized? • Are all points of offsite drainage (ie. water leaving the site) stabilized?	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Temporary Construction Entrance • Are all ingress and egress points covered by a temporary construction entrance constructed properly? • Is the entrance adequately preventing tracking of dirt, mud, and sediment onto roadways?	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>
Perforated Riser • Is the perforated riser installed properly at the outlet? • Is the perforated riser sized correctly (one pipe size smaller than the outlet pipe)?	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	Triangular Silt Dike • Are triangular silt dikes installed properly in all locations shown on the permitted plan set?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Perimeter SE/SC Controls • Are all perimeter soil erosion/sediment controls in place and maintained? • Are adjacent wetlands/waters/properties being impacted by SE/SC failures?	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	Wetlands and Waters Protection • Are all delineated wetlands on site protected by 4' IDOT Standard Construction Fencing? • Are all adjacent offsite wetlands protected from impact? • Are illicit discharges into wetlands protected from impact? • Are wetland buffers protected?	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
COMMENTS:							
Inspector's Signature _____ Date of Inspection _____							

5.6 Violation Procedure

Violation Notification Procedure

In general the compliance due date should be within 5-working days. However, if the inspector determines that the violation is or will result in significant environmental, health or safety hazards a 24-hour due date should be set. For time-critical violations, the developer should also be advised to complete a Notice of Incidence report with IEPA for all sites that were required to obtain an NOI with IEPA. The **SE/SC Inspection Form** is in **Appendix 5.5**. Step 1 can be initiated by observation of a violation during a routine inspection by the Village, or in response to a notice of non-compliance received from a DECI.

Step 1: Violation Is Observed

- The Village inspector completes the **SE/SC Inspection Form** and **Inspectors Report**.
- Photographs of the violation(s) should be taken and saved into the specific subdivision or building permit address folder on the 'T:' drive.
- The Violation shall be described to the construction site contact.
- A copy of the **SE/SC Inspection Form** and the **Inspectors Report** will be provided to the contractor and the developer. The **Inspectors Report** will indicate the remedial measures required and a maximum time frame for action.
- At the end of the indicated time frame the Village will perform a follow-up site inspection. The inspector will attempt to schedule the follow-up inspection with the construction site contact.

Step 2: 1st Follow-Up Site Inspection

The construction site contact shall be notified of the anticipated inspection time. The site is inspected including all items previously documented on the previous **SE/SC Inspection Form** and **Inspectors Report**. The inspector will determine if the remedial measures have all been satisfactorily addressed, substantially completed, or if significant non-compliance remains.

- If the remedial measures have been satisfactorily addressed then the **SE/SC Inspection Form** and **Inspectors Report** is filled out indicating compliance and provided to the contractor and developer.
- If the inspector determines that the remedial measures have been substantially completed, but not entirely resolved, the inspector shall follow Step 1 above.
- If the inspector determines that the remedial measures have not been substantially completed, the inspector shall follow Step 3 discussed below. Photographs of the violations should be taken and saved.

Step 3: 1st Notice of Violation

A formal **Notice of Violation** letter will be sent to the contractor and developer (see sample letter following). A copy of the Notice of Violation shall also be provided to the Building Department. The letter will include the following information.

- Description of the violations (including ordinance provisions),
- Mandatory remedial measures, and
- Maximum time frame for resolution,

Step 4: 2nd Follow-Up Site Inspection

The inspector will determine if the remedial measures have all been satisfactorily addressed, substantially completed, or if significant non-compliance remains.

- If the remedial measures have been satisfactorily addressed then the **SE/SC Inspection Form** and **Inspectors Report** is filled out indicating compliance and provided to the contractor and developer.
- If the inspector determines that the remedial measures have been substantially completed, but not entirely resolved, the inspector shall follow Step 1 above.
- If the inspector determines that the remedial measures have not been substantially completed, the inspector shall follow Step 3 discussed below. Photographs of the violations should be taken and saved.

Step 5: 2nd Notice of Violation

A formal **Notice of Violation** letter will be sent, via certified mail, to the contractor and developer (see sample letter following). A copy of the Notice of Violation shall also be provided to the Building Department. The letter will include the following information.

- Description of the violations (including ordinance provisions),
- Mandatory remedial measures, and
- Maximum time frame for resolution.

Step 6: 3rd Follow-Up Site Inspection:

The inspector will determine if the remedial measures have all been satisfactorily addressed, substantially completed, or if significant non-compliance remains.

- If the remedial measures have been satisfactorily addressed then the **SE/SC Inspection Form** and **Inspectors Report** is filled out indicating compliance and provided to the contractor and developer.
- If the inspector determines that the remedial measures have been substantially completed, but not entirely resolved, the inspector shall follow Step 1 above.
- If the inspector determines that the remedial measures have not been substantially completed, the inspector shall follow Step 3 discussed below. Photographs of the violations should be taken and saved.
- Representatives from the Building and Engineering Departments shall conduct an internal meeting to discuss the violation and subsequent actions. These actions may include: meeting with the Village and developer/contractor; with-holding building or occupancy permits; draw from surety to enable Village to have the remedial measures corrected; seeking Village counsel and pursuing injunctive or other legal relief.

Step 7: 3rd Notice of Violation

A formal **Notice of Violation** letter will be sent, via certified mail, to the contractor and developer (see sample letter following). A copy of the Notice of Violation shall also be provided to the Building Department and the Village Administrator. The letter will include the following information.

- Description of the violations (including ordinance provisions),
- Mandatory remedial measures,
- Maximum time frame for resolution, and
- States additional penalties or measures that will be undertaken by the Village if the violation(s) persist, as agreed to between the Building and Engineering Departments.

Repeat Steps 6 & 7 until resolution

5.7 Illicit Discharge Incident Tracking Form

Date:

1ST NOTICE OF VIOLATION

Applicant Name

Company

Address

City State Zip

Subject: Project Name
Watershed Development Permit No.
1st Notice of Violation

Dear Permittee:

You are hereby notified of the following violation(s) to your Watershed Development Permit:

- ☐ Failure to notify Lake Villa Public Works Department prior to construction.
- ☐ Failure to display Permit placard visible from street.
- ☐ Failure to install/maintain a non-erosive outlet from the structure to the watercourse (Art. IV, Sec. B.1.j.1.b).
Location(s) _____
- ☐ Failure to install/maintain soil erosion and sediment control features prior to the hydrologically disturbing upstream areas (Art. IV, Sec. B.1.j.1.c).
Location(s) _____
- ☐ Failure to install/maintain temporary or permanent seeding (Art. IV, Sec. B.1.j.1.d.).
Location(s) _____
- ☐ Failure to install/maintain sod (Art. IV, Sec. B.1.j.1.d.).
Location(s) _____
- ☐ Failure to install/maintain erosion control blanket (Art. IV, Sec. B.1.j.1.d.).
Location(s) _____
- ☐ Failure to install/maintain silt fence, meeting AASHTO Std. Spec 288-00 (Art. IV, Sec. B.1.j.1.f.i).
Location(s) _____
- ☐ Failure to install/maintain sediment traps (Art. IV, Sec. B.1.j.1.f.ii).
Location(s) _____
- ☐ Failure to install/maintain sediment basins with perforated filtered riser pipe (Art. IV, Sec. B.1.j.1.f.iii).
Location(s) _____
- ☐ Failure to install/maintain storm inlet protection (Art. IV, Sec. B.1.j.1.g).
Location(s) _____
- ☐ Failure to route dewatering services through an effective sediment control measure (Art. IV, Sec. B.1.j.1.h).

Location(s) _____

☐ Failure to install/maintain stabilized construction entrance. Failure to clean right of way/pavement. (Art. IV, Sec. B.1.j.1.j).

Location(s) _____

☐ Failure to install/maintain runoff diversion controls (Art. IV, Sec. B.1j.1.m).

Location(s) _____

☐ Failure to prevent erosion from stockpile, or the placement of stockpile in a flood-prone area, buffer, WOUS or IWLC (Art. Iv, Sec. B.1j.1.n).

Location(s) _____

☐ Failure to maintain dust control (Art. IV, Sec. B.2.b.8.e.).

Location(s) _____

☐ Failure to follow permitted construction sequencing (Art. IV, Sec. B.2.b.8.j).

Location(s) _____

You must take immediate action and cure all deficiencies identified above within five (5) working days, or the Village may invoke Article VII –Penalties and Legal Actions of the WDO that provides for up to a \$500 fine for each offense each day the violation continues. Once all deficiencies have been cured, please call our office to schedule a re-inspection. If you have any questions please contact the Engineering Department at (847) 356-6100.

Sincerely,

Enforcement Officer

Summary of Violation Notification Procedure

1st Notice: Village will furnish a Violation Notification to applicant and/or representative via fax and Certified Mail outlining necessary corrective measures to be completed and re-inspected within 5-working days of said notification. After which time, if violations are still not corrected, a *Red Tag* will be issued for the site (i.e. all work to stop except for activities related to correcting violations).

2nd Notice: Village issues a *Red-Tag* for the site along with a Conditional Stop Work Order via fax and Certified Mail granting an additional 5-working day deadline to complete remedial work to cure said WDO violation(s). At this time a \$500 per day fine per violation is levied until corrective measures are complete.

3rd and Final Notice: If corrective measures have not been completed within the period allowed by 2nd Notice, the Village shall modify the *Red-Tag*, halting all site work, and send via fax and Certified Mail a Stop Work Order allowing no further site work to continue until applicant/developer meets with Village staff and submits a plan and schedule within which the necessary remedial measures will be completed. Fines continue to accrue.

NOTE: Building Permits and/or occupancy will be withheld until all levied fines are paid to the Village of Mundelein.

5.8 Spill Response Notice

Stormwater Pollution Found in Your Area!

This is not a citation.

This is to inform you that our staff found the following pollutants in the storm sewer system in your area. This storm sewer system leads directly to

-
- ☐ Motor oil
 - ☐ Oil filters
 - ☐ Antifreeze/transmission fluid
 - ☐ Paint
 - ☐ Solvent/degreaser
 - ☐ Cooking grease
 - ☐ Detergent
 - ☐ Home improvement waste (concrete, mortar)
 - ☐ Pet waste
 - ☐ Yard waste (leaves, grass, mulch)
 - ☐ Excessive dirt and gravel
 - ☐ Trash
 - ☐ Construction debris
 - ☐ Pesticides and fertilizers
 - ☐ Other
-

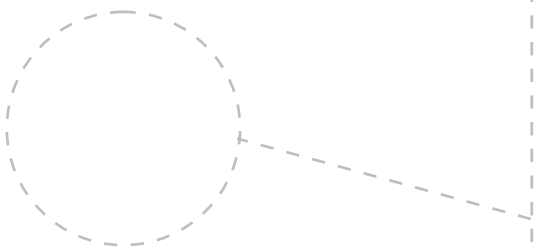


For more information or to report an illegal discharge of pollutants, please call:



www.epa.gov/npdes/stormwater

EPA 833-F-03-002
April 2003



Stormwater runoff is precipitation from rain or snowmelt that flows over the ground. As it flows, it can pick up debris, chemicals, dirt, and other pollutants and deposit them into a storm sewer system or waterbody.

Anything that enters a storm sewer system is discharged *untreated* into the waterbodies we use for swimming, fishing, and providing drinking water.

Remember: Only Rain Down the Drain

To keep the stormwater leaving your home or workplace clean, follow these simple guidelines:

- ◆ Use pesticides and fertilizers sparingly.
- ◆ Repair auto leaks.
- ◆ Dispose of household hazardous waste, used auto fluids (antifreeze, oil, etc.), and batteries at designated collection or recycling locations.
- ◆ Clean up after your pet.
- ◆ Use a commercial car wash or wash your car on a lawn or other unpaved surface.
- ◆ Sweep up yard debris rather than hosing down areas. Compost or recycle yard waste when possible.
- ◆ Clean paint brushes in a sink, not outdoors. Properly dispose of excess paints through a household hazardous waste collection program.
- ◆ Sweep up and properly dispose of construction debris like concrete and mortar.



5.9 Sample Maintenance Plans

STORMWATER MANAGEMENT SYSTEM MAINTENANCE PLAN FOR NEW FACILITIES

Subject: **INSERT DEVELOPMENT NAME HERE**

SUCH PROPERTY BEING THE REAL PROPERTY NOW DULY PLATTED AS **INSERT DEVELOPMENT NAME HERE**, AS SUCH PLAT IS NOW RECORDED AS DOCUMENT NO. **INSERT DOCUMENT NUMBER**, IN THE OFFICE OF THE RECORDER OF DEEDS OF THE COUNTY OF LAKE, STATE OF ILLINOIS, HEREBY MAKES THE FOLLOWING DECLARATIONS OF MAINTENANCE RESPONSIBILITIES.

Responsibilities

Adequate provisions for maintenance of the stormwater system are an essential aspect of long-term drainage performance. Responsibility for the overall maintenance shall rest with the **insert responsible party name here**.

Purpose and Objective:

Detention and water quality treatment facilities, storm sewers, swales and native vegetation/buffer areas define a development's stormwater management system. When land is altered to build homes and other developments, the natural system of trees and plants is replaced with impervious surfaces like sidewalks, streets, decks, roofs, driveways, or lawns over highly compacted soils. As a result more rain water / storm water flows off the land at a faster rate and less rain water is absorbed into the soil. This can lead to streambank erosion, downstream flooding and increased concentrations of pollutants. The storm water management system was designed to help slow the rate of runoff from the development and improve the quality of the storm water leaving the site.

Interpretation as to Requirements Under This Maintenance Plan:

The requirement for this Maintenance Plan is generated by the Lake County Watershed Development Ordinance. Therefore, the interpretation of the maintenance requirements set forth in this Maintenance Plan shall be interpreted on the basis of the intent and requirements of said Ordinance.

Inspection Frequency:

Inspection experience will determine the required cleaning frequencies for the components of the stormwater management system. At a minimum, the attached checklist items should be inspected annually. Detention ponds (including the outlet control structure and restrictors) should be inspected on a monthly basis during wet weather conditions from March to November.

Maintenance Considerations:

Whenever possible, maintenance activities should be performed during the inspection. These activities should be supplemented by repair / replacement as required. A Registered Professional Engineer (PE) shall be hired for design resolution of specific items as indicated on the checklist below.

Cost Considerations:

Frequent maintenance program work execution will lead to less frequent and less costly long-term maintenance and repair. The attached checklist items may need to be amended based on experience recorded over the initial period of occupancy of the subdivision.

Record Keeping:

Separate and distinct records shall be maintained by the responsible party for all tasks performed associated with this plan. The records shall include the dates of maintenance visits, who performed the inspection, and a description of the work performed.

_____, the owner's agent, has caused these presents to be signed and acknowledged,
this _____ day of _____, 2_____.

By: _____

Post-Construction Stormwater Management System Inspection Checklist

The following checklist describes the suggested routine inspection items and recommended measures to be taken to ensure that the Stormwater Management System functions as designed. When hiring a PE is the recommended measure, the PE shall inspect, evaluate and recommend corrective actions. The General section outlines items that should be taken into consideration during inspection and maintenance activities. While performing an overall inspection of your system, please check for the following items.

General -

- Litter and debris shall be controlled.
- Accumulated sediment shall be disposed of properly, along with any wastes generated during maintenance operations.
- Riprap areas shall be repaired with the addition of new riprap, as necessary, of adequate size and shape.
- Roads and parking lots shall be swept or vacuumed on a periodic basis.
- Access path to storm water management facilities should be free from obstructions (woodpiles, sheds, vegetation).
- Fences, gates and posts shall be maintained.
- Signs shall be maintained.

Dams and berms

- _____ Settlement. If settlement observed, hire a PE.
- _____ Breaks or failures. If failure observed, notify the Village immediately and hire a PE.
- _____ Erosion. Repair as needed.
- _____ Signs of leakage, seepage or wet spots. If observed, hire a PE.
- _____ Unwanted growth or vegetation. Remove as needed.

Shorelines

- _____ Erosion or rip-rap failures. Repair as needed
- _____ Undermining. Stabilize and repair as needed.

Outlet and inlet structure

- _____ Obstructions blocking outlet pipe, restrictor, channel or spillway. Remove obstructions immediately.
- _____ Separation of joints. Repair as needed.
- _____ Cracks, breaks, or deterioration of concrete. Repair as needed
- _____ Scour and erosion at outlet. If observed, repair (consider additional or alternative stabilization methods).
- _____ Condition of trash racks. Remove any collected debris.
- _____ Outlet channel conditions downstream. Stabilize soil or remove obstructions as needed.

Storage Volume

- _____ Facilities shall be inspected to ensure that the constructed volume for detention is maintained. No sediment, topsoil, or other dumping into the facility shall be allowed. If a detention facility includes specific locations designed to accumulate sediment these locations should be dredged every 5-yrs or when 50% of the volume has been lost.
- _____ Wet ponds lose 0.5 - 1.0% of their volume annually. Dredging is required when accumulated volume loss reaches 15%, or approximately every 15-20 years.

Storm Sewers

- _____ System is free draining into collection channels or catch basins. If concerned, clean or repair.
- _____ Catch basins. Remove sediment when more than 50% of basin sump is filled.
- _____ Siltation in Culvert. Culverts shall be checked for siltation deposit, clean out as necessary.

Bridges

- _____ Any scouring around wing walls. Stabilize and repair as needed. If concerned, hire a PE.
- _____ Any undermining of footings. Stabilize and repair as needed. If concerned, hire a PE.

Swales –

- _____ All ditches or pipes connecting ponds in series should be checked for debris that may block flow.
- _____ Repair and replace permanent check-dams as necessary.
- _____ Verify systems (both drainage ditches and sideyard swales) are maintaining originally constructed design slope and cross-sectional area. If fill or sediment contributes to elevation changes in swale, re-grading and re-shaping shall be performed. Licensed surveyors shall be hired to lay-out and check grades. No landscaping, earthen fill, gardens, or other obstructions (including sheds and other structures) shall be allowed in the swales that would impede design drainage flow patterns.

Vegetated Areas –

- _____ Need for planting, reseeding or sodding of native areas. Supplement alternative native vegetation if a significant portion has not established (50% of the surface area). Reseed with alternative grass species if original grass cover has not successfully established.
- _____ Need for planting, reseeding or sodding of turf areas. Supplement alternative native vegetation if a significant portion has not established (75% of the surface area). Reseed with alternative grass species if original grass cover has not successfully established.

- _____ Invasive vegetation (refer to the Native Plant Guide for Streams and Stormwater Facilities in Northeastern Illinois, or hire an environmental or landscape specialist). Remove as necessary.

Wetland Buffers –

- _____ Inspect for evidence of erosion or concentrated flows through or around the buffer. All eroded areas should be repaired, seeded and mulched. A shallow stone trench should be installed as a level spreader to distribute flows evenly in any area showing concentrated flows.
- _____ All existing undergrowth, forest floor duff layer, and leaf litter must remain undisturbed except in designated paths or permitted encroachment areas.
- _____ No tree cutting is allowed except for normal maintenance of dead, diseased and damaged trees or; the culling of invasive, noxious or non-native species that are to be replaced by more desirable and native vegetation.
- _____ A buffer must maintain a dense, complete and vigorous cover of "non-lawn" vegetation which should not be mowed no more than once a year. Vegetation may include grass and other herbaceous species as well as shrubs and trees.
- _____ Use or maintenance activities within the buffer shall be conducted so as to prevent damage to vegetation and exposure of soil.

STORMWATER MANAGEMENT SYSTEM ANNUAL MAINTENANCE PLAN FOR EXISTING FACILITIES

Purpose and Objective:

Detention and water quality treatment facilities, storm sewers, swales and native vegetation/buffer areas define a development's stormwater management system. When land is altered to build homes and other developments, the natural system of trees and plants is replaced with impervious surfaces like sidewalks, streets, decks, roofs, driveways, or lawns over highly compacted soils. As a result more rain water / storm water flows off the land at a faster rate and less rain water is absorbed into the soil. This can lead to streambank erosion, downstream flooding and increased concentrations of pollutants. The existing storm water management system was designed to help slow the rate of runoff from the development and maintain the quality of the storm water leaving the site.

Inspection Frequency:

Inspection experience will determine the required cleaning frequencies for the components of the stormwater management system. At a minimum, the attached checklist items should be inspected annually. Detention ponds (including the outlet control structure and restrictors) should be inspected on a monthly basis during wet weather conditions from March to November.

Maintenance Considerations:

Whenever possible, maintenance activities should be performed during the inspection. These activities should be supplemented by repair / replacement as required. A Registered Professional Engineer (PE) shall be hired for design resolution of specific items as indicated on the checklist below.

Cost Considerations:

Frequent maintenance program work execution will lead to less frequent and less costly long-term maintenance and repair. The attached checklist items may need to be amended based on inspection experience.

Record Keeping:

Separate and distinct records should be maintained by the responsible party for all tasks performed associated with this plan. The records shall include the dates of maintenance visits, who performed the inspection, and a description of the work performed.

Post-Construction Stormwater Management System Inspection Checklist

The following checklist describes the suggested routine inspection items and recommended measures to be taken to ensure that the Stormwater Management System functions as designed. When hiring a PE is the recommended measure, the PE shall inspect, evaluate and recommend corrective actions. The General section outlines items that should be taken into consideration during inspection and maintenance activities. While performing an overall inspection of your system, please check for the following items.

General -

- Litter and debris shall be controlled.
- Accumulated sediment shall be disposed of properly, along with any wastes generated during maintenance operations.
- Riprap areas shall be repaired with the addition of new riprap, as necessary, of adequate size and shape.
- Roads and parking lots shall be swept or vacuumed on a periodic basis.
- Access path to storm water management facilities should be free from obstructions (woodpiles, sheds, vegetation).
- Fences, gates and posts shall be maintained.
- Signs shall be maintained.

Storage Facilities (Detention, Retention and Water Quality Treatment Facilities)

Dams and berms

- ___ Settlement. If settlement observed, hire a PE.
- ___ Breaks or failures. If failure observed, notify the Village immediately and hire a PE.
- ___ Erosion. Repair as needed.
- ___ Signs of leakage, seepage or wet spots. If observed, hire a PE.
- ___ Unwanted growth or vegetation. Remove as needed.

Shorelines

- ___ Erosion or rip-rap failures. Repair as needed
- ___ Undermining. Stabilize and repair as needed.

Outlet and inlet structure

- ___ Obstructions blocking outlet pipe, restrictor, channel or spillway. Remove obstructions immediately.
- ___ Separation of joints. Repair as needed.
- ___ Cracks, breaks, or deterioration of concrete. Repair as needed
- ___ Scour and erosion at outlet. If observed, repair (consider additional or alternative stabilization methods).
- ___ Condition of trash racks. Remove any collected debris.

- _____ Outlet channel conditions downstream. Stabilize soil or remove obstructions as needed.

Storage Volume

- _____ Facilities shall be inspected to ensure that the constructed volume for detention is maintained. No sediment, topsoil, or other dumping into the facility shall be allowed. If a detention facility includes specific locations designed to accumulate sediment these locations should be dredged every 5-yrs or when 50% of the volume has been lost.
- _____ Wet ponds lose 0.5 - 1.0% of their volume annually. Dredging is required when accumulated volume loss reaches 15%, or approximately every 15-20 years.

Storm Sewers

- _____ System is free draining into collection channels or catch basins. If concerned, clean or repair.
- _____ Catch basins. Remove sediment when more than 50% of basin sump is filled.
- _____ Siltation in Culvert. Culverts shall be checked for siltation deposit, clean out as necessary.

Bridges

- _____ Any scouring around wing walls. Stabilize and repair as needed. If concerned, hire a PE.
- _____ Any undermining of footings. Stabilize and repair as needed. If concerned, hire a PE.

Swales –

- _____ All ditches or pipes connecting ponds in series should be checked for debris that may block flow.
- _____ Repair and replace permanent check-dams as necessary.
- _____ Verify systems (both drainage ditches and sideyard swales) are maintaining originally constructed design slope and cross-sectional area. If fill or sediment contributes to elevation changes in swale, re-grading and re-shaping shall be performed. Licensed surveyors shall be hired to lay-out and check grades. No landscaping, earthen fill, gardens, or other obstructions (including sheds and other structures) shall be allowed in the swales that would impede design drainage flow patterns.

Vegetated Areas –

- _____ Need for planting, reseeding or sodding of native areas. Supplement alternative native vegetation if a significant portion has not established (50% of the surface area). Reseed with alternative grass species if original grass cover has not successfully established.
- _____ Need for planting, reseeding or sodding of turf areas. Supplement alternative native vegetation if a significant portion has not established (75% of the surface area).

Reseed with alternative grass species if original grass cover has not successfully established.

- _____ Invasive vegetation (refer to the Native Plant Guide for Streams and Stormwater Facilities in Northeastern Illinois, or hire an environmental or landscape specialist, or hire an environmental or landscape specialist). Remove as necessary.

Wetland Buffers –

- _____ Inspect for evidence of erosion or concentrated flows through or around the buffer. All eroded areas should be repaired, seeded and mulched. A shallow stone trench should be installed as a level spreader to distribute flows evenly in any area showing concentrated flows.
- _____ All existing undergrowth, forest floor duff layer, and leaf litter must remain undisturbed except in designated paths or permitted encroachment areas.
- _____ No tree cutting is allowed except for normal maintenance of dead, diseased and damaged trees or; the culling of invasive, noxious or non-native species that are to be replaced by more desirable and native vegetation.
- _____ A buffer must maintain a dense, complete and vigorous cover of "non-lawn" vegetation which should not be mowed no more than once a year. Vegetation may include grass and other herbaceous species as well as shrubs and trees.
- _____ Use or maintenance activities within the buffer shall be conducted so as to prevent damage to vegetation and exposure of soil.

5.10 Yearly Tracking Forms

Village of Lake Villa
Summary of Annual Commitments

BMP	Task	Goal Date	Date Compl'd	SWMP Section
A.1, A.4	Attend/sponsor outreach events and scheduled meetings with the general public, distribute materials	As-Needed		3.1.A & 3.1.C
A.1, A.6	Include SWPPP related article in Mundelein Matters (pool dewatering in Sept)	Quarterly		3.1.A & 3.1.F
A.1	Maintain take-a-way racks (4)	On-going		3.1.A
A.4	Support SWALCO collections and outreach efforts	May-Nov		3.1.D
A.6, B.3	Maintain list of available publications, link to SMC, link to SWALCO kids page, pet station locations, SW outreach activities and technical workshops on web-site	On-going		3.1.B, C
A.6	Administer FOG (Fats, Oils, Grease) Ordinance	As-needed		3.1.E
B.3	Participate in QLP or other sponsored watershed planning events (stakeholder groups) and MAC	As-Needed		3.2.C & D
B.4	Present summary of program implementation at public mtg	May		3.2.A
B.7	Include PWD phone number on all village outreach publications	On-going		3.1.A
B.7	Maintain Indirect Illicit Discharge Tracking forms	On-going		3.3.C & 3.6.B.2
B.7, D.5	Screen, log and route complaints/suggestions/requests to appropriate department for action	On-going		3.2.B
C.1	Maintain outfall map (new permits, outfall inventory updates)	As-Needed (Nov)		1.4 & 3.3.D.1, 2
C.1, C.7	Pre-screen 100% of outfalls and search for new outfalls	2016, every 5 years		3.3.D.1.d
C.2	Enforce IDDE Related Ordinances (WDO; Illicit Discharge, Subdivision, FOG, Fertilizer Ordinances)	On-going		3.3.A
C.3	Complete outfall inspection procedure for 20% of all outfalls with observed dry weather flow	annually (2017) Sept		3.3.D.1.d & 3.3.D.2
C.4, C.7	Complete tracing procedures for identified illicit discharges	As-needed		3.3.D.3
C.5	Complete removal procedures for found illicit discharges	As-needed		3.3.D.4
C.6	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.	annually (May)		4.1.A.1
C.6	Participates in MAC meetings and events hosted by the QLP	On-going		3.2.D
C.9	Provide illicit discharges door hangers for observed discharges	As-needed		3.6.B.2
D.1-D.6	Enforce WDO provisions (plan review, permitting and inspections)	On-going		3.4
D.5	Keep log of se/sc complaints	On-going		3.2.B & 3.4.F
D.6	Obtain performance guarantees	As-needed		3.4.G
D.6	Enforce Village's Violation Notification Procedure	As-needed		3.4.H
D.6	Attend pre-construction meetings, make site inspections and final walk-through. Complete meeting checklists	On-going		3.4.E
E.2- E.5	Enforce WDO provisions (plan review, permitting and inspections)	On-going		3.5

Village of Lake Villa
Summary of Annual Commitments

BMP	Task	Goal Date	Date Compl'd	SWMP Section
E.3	Obtain stormwater management system maintenance plans for new developments	On-going		3.5.D
E.6	Establish post development inspection program, inspect 10% annually	On-going		3.5.E
E.3	Inspect / Maintain drainageways	On-going		3.6.A.2
E.7	Maintain pet waste stations, inspect & clean/restock stations.	On-going		3.6.A.5
E.7	Collect yard waste/leaf collection	On-going		3.6.A.3.b
E.7, F.2	Street sweeping	On-going		3.6.A.1
F.1	Encourage employees to attend all relevant training sessions offered by the QLP and other entities on topics related to the goals/objectives of the SWPPP	On-going		3.1.D.1.c & 3.6.C
F.2, F.3	Enforce Phosphorus Ordinance	On-going		3.6.A.3.c
F.2, F.3	Remove litter/debris from Village property, roadway right-of-ways, facilities, park & recreation areas	On-going		3.6.A.3.a
F.3	Administer Snow Removal and Ice Control Program	On-going		3.6.A.4
F.2, F.3	Administer Vehicle and Equipment Operations Program	On-going		3.6.A.6
F.4	Administer Waste Management Program	On-going		3.6.A.7
F.6	Administer Spill Response Program	As-needed		3.6.B
F.3	Monitor upstream and downstream locations on receiving streams	annually (April)		4.3
	Evaluate Program, Describe in Annual Report to IEPA	Annually		4.3 & 4.4
	Complete Annual Tracking Form	Annually (April)		2.1
	Revise SMPP (to be SWaMP) per ILR40 changes and other edits noted	2020, every 5 years		3.2

5.11 General Permit ILR40



ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 • (217) 782-3397

PAT QUINN, GOVERNOR

JOHN J. KIM, INTERIM DIRECTOR

217/782-0610

FEB 03 2012

Village of Lake Villa
Frank Loffredo
65 Cedar Ave, PO Box 519
Lake Villa, IL 60046

Re: Village of Lake Villa -- Municipal Separate Storm Sewer System
Notice of Coverage Under General Permit - NPDES Permit No. ILR400369 -- Lake County

Dear NPDES Permittee:

We have received your Notice of Intent and have determined that storm water discharges from your municipal separate storm sewer system are appropriately covered by the attached NPDES general permit issued by the Agency.

This permit as issued covers Notice of Intent requirements, storm water management plan requirements, and monitoring, recordkeeping and reporting requirements. Attached is an Annual Inspection form that you must complete and submit to the Agency by the first day of June for each year that this permit is in effect. You may also submit the Annual Inspection form electronically to epa.ms4annualinsp@illinois.gov.

Failure to meet any portion of the permit could result in civil and/or criminal penalties. The Agency is ready and willing to assist you in interpreting any of the conditions of the permit as they relate to your municipal separate storm sewer system.

Your municipal separate storm sewer system was automatically covered by this permit 30 days after your Notice of Intent application was received by the Agency pursuant to the General Storm Water Permit for MS4's, Part I.D.3. The Agency realizes that you may have implemented part of your program, however, we have reviewed your application for any deficiencies and applicability of the general permit versus an individual permit. The final determination is that the general permit is applicable to your system.

This letter shows your permit number below your name. Please reference this number in all future correspondence. Should you have any questions concerning the permit, please contact the Permit Section at 217/782-0610 or at the above address.

Very truly yours,


Alan Keller, P.E.

Manager, Permit Section
Division of Water Pollution Control

cc: DesPlaines Region, Billing Unit



Illinois Environmental Protection Agency

Bureau of Water • 1021 N. Grand Avenue E. • P.O. Box 19276 • Springfield • Illinois • 62794-9276

Division of Water Pollution Control ANNUAL FACILITY INSPECTION REPORT

for NPDES Permit for Storm Water Discharges from Separate Storm Sewer Systems (MS4)

This fillable form may be completed online, a copy saved locally, printed and signed before it is submitted to the Compliance Assurance Section at the above address. Complete each section of this report.

Report Period: From March, _____ To March, _____

Permit No. ILR40 _____

MS4 OPERATOR INFORMATION: (As it appears on the current permit)

Name: _____ Mailing Address 1: _____

Mailing Address 2: _____ County: _____

City: _____ State: _____ Zip: _____ Telephone: _____

Contact Person: _____ Email Address: _____
(Person responsible for Annual Report)

Name(s) of governmental entity(ies) in which MS4 is located: (As it appears on the current permit)

THE FOLLOWING ITEMS MUST BE ADDRESSED.

A. Changes to best management practices (check appropriate BMP change(s) and attach information regarding change(s) to BMP and measurable goals.)

- | | | | |
|--|--------------------------|---|--------------------------|
| 1. Public Education and Outreach | <input type="checkbox"/> | 4. Construction Site Runoff Control | <input type="checkbox"/> |
| 2. Public Participation/Involvement | <input type="checkbox"/> | 5. Post-Construction Runoff Control | <input type="checkbox"/> |
| 3. Illicit Discharge Detection & Elimination | <input type="checkbox"/> | 6. Pollution Prevention/Good Housekeeping | <input type="checkbox"/> |

B. Attach the status of compliance with permit conditions, an assessment of the appropriateness of your identified best management practices and progress towards achieving the statutory goal of reducing the discharge of pollutants to the MEP, and your identified measurable goals for each of the minimum control measures.

C. Attach results of information collected and analyzed, including monitoring data, if any during the reporting period.

D. Attach a summary of the storm water activities you plan to undertake during the next reporting cycle (including an implementation schedule.)

E. Attach notice that you are relying on another government entity to satisfy some of your permit obligations (if applicable).

F. Attach a list of construction projects that your entity has paid for during the reporting period.

Any person who knowingly makes a false, fictitious, or fraudulent material statement, orally or in writing, to the Illinois EPA commits a Class 4 felony. A second or subsequent offense after conviction is a Class 3 felony. (415 ILCS 5/44(h))

Owner Signature:

Date:

Printed Name:

Title:

EMAIL COMPLETED FORM TO: epa.ms4annualinsp@illinois.gov

or Mail to: ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
WATER POLLUTION CONTROL
COMPLIANCE ASSURANCE SECTION #19
1021 NORTH GRAND AVENUE EAST
POST OFFICE BOX 19276
SPRINGFIELD, ILLINOIS 62794-9276

This Agency is authorized to require this information under Section 4 and Title X of the Environmental Protection Act (415 ILCS 5/4, 5/39). Failure to disclose this information may result in: a civil penalty of not to exceed \$50,000 for the violation and an additional civil penalty of not to exceed \$10,000 for each day during which the violation continues (415 ILCS 5/42) and may also prevent this form from being processed and could result in your application being denied. This form has been approved by the Forms Management Center.

5.12 Bibliography and References

<http://www.epa.state.il.us/>

<http://www.epa.gov/>

<http://www.co.lake.il.us/>

<http://www.mundelein.org/>

<http://www.co.lake.il.us/swalco/>

Handbook for Identifying Illicit Stormwater Discharges, Charlotte County Edition, Charlotte County, Florida.

Industrial User Inspection and Sampling Manual for POTWs, The Office of Wastewater Enforcement and Compliance Water Enforcement Division – USEPA, April 1994.

Illicit Discharge Detection and Elimination, A Guidance Manual for Program Development and Technical Assessments, Center for Watershed Protection, October 2004.

Lake County Illicit Discharge Detection and Elimination (IDDE) Guidance Manual, Lake County Stormwater Management Commission, November 2006.