



# Lake County Stormwater Management Program Plan (SMPP)

## NPDES Phase II – General Permit ILR40



# Foreword

Lake County Government is committed to protecting the environmental water quality and natural resources that are prevalent throughout the County. This is achieved through progressive leadership, sound financial management, and environmental responsibility, all of which are part of the overall goal of providing sustainable infrastructure and the highest quality services to Lake County residents.

Pursuant to the National Pollutant Discharge Elimination System (NPDES) Phase II regulations set forth by the Federal Clean Water Act, Lake County is considered a Municipal Separate Storm Sewer System (MS4). As such, the County is required to obtain a Phase II stormwater permit for discharges into waters of the US. The County holds this permit and continuously strives to meet or exceed the stated requirements.

To this end, the County has developed the following Stormwater Management Program Plan (SMPP) to document its MS4 Program for implementing the requirements of the NPDES Phase II permit. The SMPP describes the program, procedures, and practices that have been developed and implemented to achieve the goal of reducing the discharge of pollutants within stormwater runoff. The SMPP documents the departmental responsibilities for developing, implementing, and enforcing the County's MS4 program and its primary control measures.

Lake County is committed to administering the MS4 Program and assuring that each County department responsible for developing and implementing the MS4 Program does its part in preserving our natural resources.



# Contents

<b>Section 1 – Overview of the Stormwater Management Program Plan .....</b>	<b>1- 1</b>
<b>1.1 – Introduction .....</b>	<b>1-1</b>
<b>1.2 – State &amp; Federal Regulations .....</b>	<b>1-1</b>
<b>1.3 – Countywide Approach to NPDES Compliance .....</b>	<b>1-2</b>
<b>1.4 – Organization of the SMPP .....</b>	<b>1-3</b>
<b>1.5 – Lake County Watersheds .....</b>	<b>1-4</b>
<b>1.6 – Impaired Waterbodies within Lake County.....</b>	<b>1-6</b>
<b>1.7 – TMDL Waterbodies within Lake County .....</b>	<b>1-6</b>
<b>Section 2 –Program Management .....</b>	<b>2-1</b>
<b>2.1 – Program Implementation.....</b>	<b>2-1</b>
<b>2.2 – Lake County Organization .....</b>	<b>2-1</b>
2.2.1 – Stormwater Coordinator .....	2-3
2.2.2 – Lake County Division of Transportation.....	2-3
2.2.3 – Lake County Planning, Building and Development Department .....	2-3
2.2.4 – Lake County Health Department.....	2-4
2.2.5 – Solid Waste Agency of Lake County.....	2-4
2.2.6 – Lake County Public Works Department.....	2-4
2.2.7 – Lake County Finance and Administrative Services.....	2-4
<b>2.3 – Coordination with SMC .....</b>	<b>2-5</b>
<b>2.4 – Coordination with Consultants.....</b>	<b>2-5</b>
<b>2.5 – Coordination of Contractors.....</b>	<b>2-5</b>
<b>2.6 – Coordination with the Public .....</b>	<b>2-5</b>
<b>2.7 – Coordination with the IEPA .....</b>	<b>2-5</b>
<b>2.8 – Coordination with the Development Community.....</b>	<b>2-5</b>
<b>Section 3 – The Program .....</b>	<b>3- 1</b>
<b>3.1 – Public Education and Outreach .....</b>	<b>3-1</b>
3.1.1 – Distribution of Paper Materials .....	3-2
3.1.2 – Speaking Engagements .....	3-2
3.1.3 – Public Service Announcements .....	3-2
3.1.4 – Community Events/Workshops.....	3-2
<b>3.2 – Public Participation/Involvement .....</b>	<b>3-3</b>
3.2.1 – Complaints, Suggestions and Requests.....	3-3
3.2.2 – Public Hearings.....	3-3

3.2.3 – Stakeholders Meetings.....	3-3
3.2.4 – Illicit Discharge/Illegal Dumping Hotline .....	3-4
3.2.5 – LCSMC Municipal Advisory Committee (MAC) and Technical Advisor Committee (TAC) .....	3-4
3.2.6 – Volunteer Monitoring - Adopt-A-Highway .....	3-4
<b>3.3 – Illicit Discharge Detection and Elimination.....</b>	<b>3-4</b>
3.3.1 – Regulatory Authority.....	3-5
3.3.1.1 – Watershed Development Ordinance .....	3-5
3.3.1.2 – Environmental Nuisances Ordinance .....	3-5
3.3.1.3 – Other Health Department Ordinances .....	3-5
3.3.2 – Identifying Outfalls and Receiving Waters .....	3-6
3.3.3 – Illicit Discharge Detection and Elimination Program.....	3-6
3.3.3.1 – Program Planning.....	3-7
3.3.3.1.1 – Staffing.....	3-7
3.3.3.1.2 – Equipment Needs.....	3-8
3.3.3.1.3 – Training.....	3-8
3.3.3.1.4 – Scheduling .....	3-8
3.3.3.2 – Outfall Inspection Procedure.....	3-8
3.3.3.2.1 – Pre-Screening.....	3-9
3.3.3.2.2 – Outfall Inspection Setup and Precautions .....	3-9
3.3.3.2.3 – Outfall Inspection .....	3-10
3.3.3.2.4 – Outfall Assessment and Documentation.....	3-11
3.3.3.2.5 – Daily Closeout .....	3-12
3.3.3.3 – Follow Up Investigation and Program Evaluation .....	3-12
3.3.3.3.1 – Outfall Screening Results Review and Assessment.....	3-12
3.3.3.3.2 – Independent Verification .....	3-12
3.3.3.3.3 – Source Identification.....	3-12
3.3.3.4 – Removal of Illicit Discharges.....	3-14
3.3.3.5 – Program Evaluation.....	3-15
<b>3.4 – Construction Site Runoff Control.....</b>	<b>3-16</b>
3.4.1 – Regulatory Program.....	3-16
3.4.2 – Responsible Parties.....	3-17
3.4.2.1 – Applicant.....	3-17
3.4.2.2 – DECI – Designated Inspectors.....	3-17
3.4.2.3 – Enforcement Officer .....	3-18
3.4.3 – Minimum Construction Site Practices.....	3-18
3.4.4 – Site Plan Review .....	3-19
3.4.5 – Site Inspection Procedure .....	3-19
3.4.6 – Complaints .....	3-20
3.4.7 – Performance Guarantees .....	3-20
3.4.8 – Complaints and Violation Notification Procedures.....	3-20
3.4.9 – BMP Reference Information.....	3-20
3.4.10 – Construction Site Waste Control.....	3-21
3.4.11 – Highway Improvement Projects.....	3-21
3.4.12 – County Capital Construction Projects.....	3-22

<b>3.5 – Post Construction Runoff Control.....</b>	<b>3-22</b>
3.5.1 – Regulatory Program .....	3-22
3.5.2 – Runoff Volume Reduction Hierarchy.....	3-23
3.5.3 – Green Infrastructure.....	3-23
3.5.4 – Long Term Operation and Maintenance.....	3-23
3.5.5 – Site Inspections .....	3-23
3.5.5.1 – Previously Developed Sites.....	3-24
3.5.5.2 – Shorelines.....	3-24
3.5.5.3 – Streambanks and Stream Bed Sediment Accumulation.....	3-24
3.5.5.4 – Detention/Retention Pond Sediment Accumulation.....	3-24
<b>3.6 – Pollution Prevention / Good Housekeeping.....</b>	<b>3-25</b>
3.6.1 – Inspection and Maintenance Program.....	3-25
3.6.1.1 – Street Sweeping.....	3-25
3.6.1.2 – Detention Basin Maintenance Program.....	3-25
3.6.1.3 – Catch Basins and Storm Sewers.....	3-26
3.6.1.4 – Snow Removal And Ice Control.....	3-26
3.6.1.4.1 – Roadway Ice Control.....	3-26
3.6.1.4.2 – Salt Delivery and Storage .....	3-26
3.6.1.4.3 – Snow Plowing.....	3-26
3.6.1.4.4 – Facility Control.....	3-26
3.6.1.5 – Vehicle and Equipment Operations.....	3-27
3.6.1.5.1 – Vehicle Fueling .....	3-27
3.6.1.5.2 – Vehicle Maintenance.....	3-27
3.6.1.6 – Animal Nuisance Control.....	3-27
3.6.1.7 – Waste Management .....	3-28
3.6.1.7.1 – Spoil Stock Pile.....	3-28
3.6.1.7.2 – Contaminated Soil Management.....	3-28
3.6.1.7.3 – Hazardous Waste .....	3-28
3.6.1.7.4 – Sanitary Waste .....	3-28
3.6.1.7.5 – Triple Basins.....	3-28
3.6.1.8 – Water Conservation & Irrigation .....	3-28
3.6.2 – Spill Response Plan.....	3-29
3.6.3 – Employee Training .....	3-30
3.6.3.1 – Training Approach.....	3-30
<b>Section 4 – Program and Performance Monitoring, Evaluation and Reporting ....</b>	<b>4- 1</b>
<b>4.1 – Program Monitoring and Research .....</b>	<b>4-1</b>
<b>4.2 – Program Evaluation.....</b>	<b>4-2</b>
<b>4.3 – Reporting.....</b>	<b>4-2</b>
<b>Section 5 – References .....</b>	<b>5- 1</b>

## Figures

<b>Figure 1 – Lake County Watersheds</b> .....	<b>1-5</b>
<b>Figure 2 – Lake County Program Organization Chart</b> .....	<b>2-2</b>

## Appendices

<i>Appendix A – NPDES Phase II General Permit</i>	
<i>Appendix B – Lake County Impaired Water Bodies</i>	
<i>Appendix C – Lake County TMDLs</i>	
<i>Appendix D – SMPP Tracking Forms</i>	
<i>Appendix E – Indirect Illicit Discharge Tracking and Summary Forms</i>	
<i>Appendix F – Stormwater Outfall Screening Equipment Checklist</i>	
<i>Appendix G – Stormwater Outfall Inspection Data Form</i>	
<i>Appendix H – Outfall Inspection Screening Summary Form</i>	
<i>Appendix I – Pre-Construction Meeting Form</i>	
<i>Appendix J – SE/SC Inspection Form</i>	
<i>Appendix K – Sample Maintenance Plans</i>	
<i>Appendix L – Detention / Retention Pond Checklist</i>	
<i>Appendix M – Spill Response Notice</i>	

# Section 1

## Overview of the Stormwater Management Program Plan

### 1.1 Introduction

This Stormwater Management Program Plan (SMPP) was developed by Lake County (County) to document the County's program for implementing the requirements of the United States Environmental Protection Agency (USEPA) under the National Pollutant Discharge Elimination System (NPDES) Phase II regulations (Program). Federal regulations require that all Municipal Separate Storm Sewer Systems (MS4s), partially or fully in urbanized areas obtain Phase II stormwater permits for their discharges into receiving waters. Lake County is considered an MS4 within these regulations. The SMPP describes the program, procedures and practices that have been developed and implemented by Lake County to achieve the goal of reducing the discharge of pollutants within stormwater runoff in order to comply with the County's Phase II NPDES MS4 permit (MS4 Permit).

The SMPP describes the primary elements of all Program activities, including the manner in which the County:

- Protects the receiving waters from illicit discharges;
- Manages stormwater quality planning throughout the County;
- Reviews, permits and inspects NPDES construction activity;
- Maintains County facilities and performs day-to-day operations;
- Provides public education and outreach;
- Trains its employees to implement and report program activities; and
- Continually monitors and evaluates the Program.

The SMPP was developed based upon a template provided by the Lake County Stormwater Management Commission, modified to describe the County's unique Program.

### 1.2 State & Federal Regulations

Federal environmental regulations based on the 1972 Clean Water Act (CWA) require that MS4s, construction sites and industrial activities control polluted stormwater runoff from entering receiving water bodies (including navigable streams and lakes). The NPDES permit process regulates the discharge from these sources based on amendments to the CWA in 1987 and the subsequent 1990 and 1999 regulations by USEPA. In Illinois, USEPA has delegated administration of the Federal NPDES program to the Illinois Environmental Protection Agency (IEPA). On December 20, 1999, IEPA issued a general NPDES Phase II permit for all MS4s in Illinois. The General Permit is included in Appendix A. Per General Permit ILR40, each MS4

was required to submit a Notice of Intent (NOI) to comply with the conditions of the permit by March 10, 2003. The original NOI described the proposed activities and best management practices that occurred over the original 5-year period toward developing a SMPP. At the end of the 5th year (March 1, 2008) the components of the SMPP were required to be implemented. IEPA reissued the ILR40 permit on February 20, 2009 (effective April 1, 2009) with new and modified requirements.

Additionally, 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, under IEPA's General Permit ILR10. Municipalities covered by General Permit ILR40 are automatically covered under General Permit ILR10 thirty days after IEPA receives the NOI from the municipality.

### 1.3 Countywide Approach to NPDES Compliance

The Lake County Stormwater Management Commission (SMC) provides direction and materials for a countywide approach to NPDES program implementation. 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 serves as the corporate enforcement authority for the Lake County Watershed Development Ordinance (WDO). 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 assistance with problems related to stormwater and identifies effective ways of managing natural resources.

In 2002, SMC formed an Ad Hoc Municipal Advisory Committee (MAC) specifically to advise MS4s on the NPDES Phase II Permit program. Municipalities, townships, drainage districts, consultants and county representatives comprise the MAC. SMC advised and assisted MS4s in preparing NOIs, but is not a permittee as it does not own or operate a storm drain system.

The General Permit allows for MS4s to take credit for activities being performed by a Qualifying Local Program (QLP) toward meeting its permit requirements. SMC is a QLP for MS4s in Lake County. As part of their ongoing services, SMC performs functions related to each of the MS4 Permit's six minimum control measures. However, MS4s are required to provide additional services to address each of the minimum control measures, with the greatest amount of additional effort required in the Illicit Discharge Detection and Elimination (IDDE) and Pollution Prevention/Good Housekeeping categories.

SMC assists the County by:

- Supporting NPDES II presentations to local boards,
- Developing model NOIs,
- Providing countywide drainage system overview and receiving waters maps,
- Providing a general 5-year Best Management Practices (BMP) Plan,

- Developing specific measurable goals and program development tasks,
- Serving as a clearinghouse for all support information and as a liaison to IEPA and USEPA,
- Supporting the MAC,
- Drafting a model Annual Performance Report and specific BMP Measurable Goals for the subsequent years, and
- Providing model Illicit Discharge Ordinance language.

SMC services qualify for credit under all six of the minimum control measures, as noted in the summary below:

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 MAC, the SMC Board of Commissioners, the Technical Advisory Committee (TAC), citizen watershed planning committees, the Watershed Management Board (WMB), and volunteer support groups.
3. **Illicit Discharge Detection and Elimination:** SMC provides model ordinance language for prohibiting non-stormwater discharges and continuing education on illicit discharge detection and elimination through workshops. The WDO also includes provisions that prohibit illegal discharges to the storm drain system.
4. **Construction Site Runoff Control:** SMC adopted the countywide WDO 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.
5. **Post-Construction Runoff Control:** The WDO establishes standards for post-construction runoff control.
6. **Pollution Prevention / Good Housekeeping:** SMC provides guidance, information, and resources related to employee training to prevent and reduce stormwater pollution from municipal activities.

## 1.4 Organization of the SMPP

The SMPP provides a program overview and details on the implementation of the following:

- Requirements of the Program
- Lake County watersheds
- Structure of the Program, including County department roles and responsibilities
- BMPs to be implemented for the Program's six minimum control measures:
  - *Public Education and Outreach,*
  - *Public Participation/Involvement,*
  - *Illicit Discharge Detection and Elimination,*

- *Construction Site Runoff Control,*
- *Post-Construction Runoff Control, and*
- *Pollution Prevention/Good Housekeeping.*

The following information is contained within each section:

- Section 1: Overview of the Stormwater Management Program Plan - the format of the SMPP document and the regulations.
- Section 2: Logistics of the SMPP - including the organization, implementation and responsible parties necessary to achieve overall compliance with the SMPP and MS4 Permit. It also identifies how the different County agencies coordinate with each other and the legal authority that the MS4s have to implement the Program.
- Section 3: Stormwater pollutant control measures implemented by the County per the six minimum control measures.
- Section 4: The monitoring, evaluation and reporting procedures associated with the Program.
- Section 5: References used in the SMPP

Appendices include forms, references and exhibits.

## 1.5 Lake County Watersheds

Lake County is primarily located within the Des Plaines River, Fox River, North Branch of the Chicago River, and Lake Michigan watersheds. There are several tributaries to these receiving waters located within the County. Lakes and other on-stream bodies of water are also considered part of the receiving water system.

The major watersheds and receiving waters are presented in Figure 1.

### *Des Plaines River Watershed*

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 subwatersheds.

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; planning sponsors include the Illinois Department of Natural Resources, U.S. Army Corps of Engineers, and Lake, Cook and DuPage Counties.

### *Fox River Watershed*

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

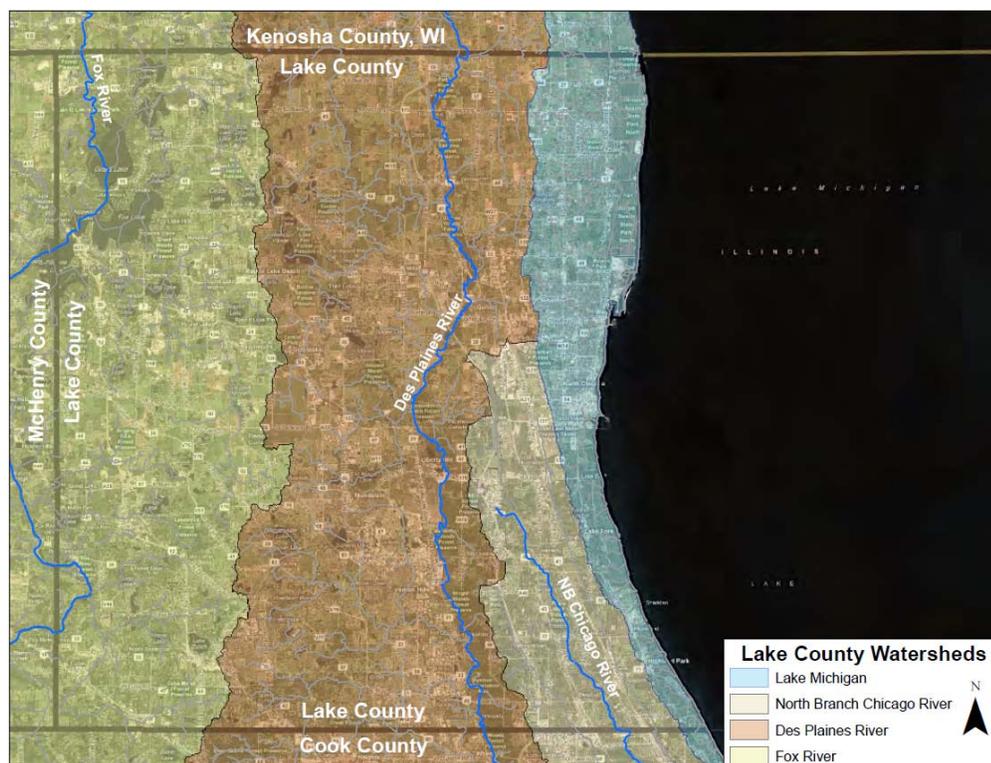
County, but reenters Lake County south of Port Barrington. About 163 square miles of Lake County drains to the Fox River. Along the Fox River, from the state line to Algonquin, the terrain is flat and contains many lakes and low-lying wetlands. The upland areas of the watershed include gently sloping 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 urbanization. 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.

#### *North Branch of the Chicago River Watershed*

The North Branch of the Chicago River watershed in Lake County extends roughly from Route 132 (Grand Avenue - Waukegan) on the north and continues into Cook County. The western boundary is approximately ½ mile to a mile west of Interstate 94; the eastern boundary follows Green Bay Road. The North Branch watershed is a subwatershed of the larger Chicago River Watershed that is formed from the North and South Branches of the Chicago River. The Chicago River Watershed is a sub-basin of the larger Illinois River Watershed. The North Branch of the Chicago River watershed area covers an area of about 50 square miles in Lake County, and is the most urbanized of the four major Lake County watersheds.



**Figure 1 – Lake County Watersheds**

There are three main tributaries of the North Branch Chicago River, each of them having their own subwatersheds: the West Fork subwatershed, the Middle Fork subwatershed, and the Skokie River subwatershed. Portions of Gurnee, Park City, Waukegan, North Chicago, Lake Bluff, Green Oaks, Mettawa, Lake Forest, Highwood, Highland Park, Deerfield, Riverwoods, Lincolnshire and Bannockburn make up the North Branch Chicago River watershed.

*Lake Michigan Watershed*

The Lake Michigan watershed drains 54 square miles of Lake County. Channels in this area generally flow toward the east into Lake Michigan with the western limits at about Green Bay Road. Subwatersheds include Bluff/Ravine, Dead River, Kellogg Creek, Pettibone Creek and Waukegan River.

The topography of the Lake Michigan watershed ranges from gently sloping topography to a steep/ravine bluff system. A coastal beach-ridge plain is located along the lakeshore from the state line south to the Waukegan harbor. The northern third of the watershed has become increasingly suburbanized while the southern third is mostly entirely suburbanized. While the Lake Michigan watershed contains some of the most urbanized portions of the county, it does boast the Illinois Beach State Park and Spring Bluff and Fort Sheridan Forest Preserves with high quality water resources.

Lake County communities located wholly or predominantly in the watershed include Beach Park, Lake Bluff, Lake Forest, Highwood, Highland Park, North Chicago, Winthrop Harbor, Waukegan and Zion.

## 1.6 Impaired Waterbodies within Lake County

Lake County's MS4 program is implemented to protect and enhance all waters within the County, with particular emphasis on impaired waters. Illinois EPA conducts water quality assessments and produces the State's Integrated Water Quality Report, which contains the "303d list" of impaired water bodies. The conditions and water quality impairments for Lake County waters are contained within the integrated report. The 303d list is updated every few years by Illinois EPA.

A list of the impaired water bodies and their specific impairments within Lake County may be reviewed in Appendix B.

## 1.7 TMDL Waterbodies within Lake County

Illinois EPA periodically completes Total Maximum Daily Load (TMDL) analyses upon the impaired water bodies within Lake County. A TMDL is a calculation that determines the greatest amount of a given pollutant that a water body can receive without violating water quality standards and designated uses. TMDLs set pollution reduction goals that are necessary to improve the quality of impaired waters.

On water bodies that receive MS4 discharges and a TMDL or other watershed management plan is completed and approved, the County reviews its program to determine whether the TMDL or watershed management plan includes requirements for control of stormwater discharges. If TMDL allocations are not being met, the County adjusts its program elements per the TMDL or watershed management plan within eighteen months of notification by the Agency of the TMDL's approval. Where a TMDL or watershed management plan is approved, the County:

- Determines whether the approved TMDL is for a pollutant likely to be found in stormwater discharges from its system.
- Determines whether the TMDL includes a pollutant wasteload allocation (WLA) or other performance requirements specifically for stormwater discharge from its system.
- Determines whether the TMDL addresses a flow regime likely to occur during periods of stormwater discharge.

After the above determinations have been made and if it is found that the County must implement specific WLA provisions of the TMDL, the County assesses whether the WLAs are being met through implementation of existing stormwater control measures or additional control measures as necessary. The County documents control measures currently being implemented or planned to be implemented within its annual MS4 report, including a schedule of implementation for planned controls. The County also documents the calculations or other evidence that shows that the WLA will be met.

The County implements a monitoring program to evaluate and determine whether the stormwater controls are adequate to meet the WLA and documents the program and its findings within the annual report. If the evaluation shows that additional or modified controls are necessary, the type and schedule for the control additions/revisions is documented within the annual report. These actions are continued until two continuous monitoring cycles show that the WLAs are being met, or that WQ standards are being achieved.

A list of the TMDLs adopted or being developed on Lake County water bodies is provided in Appendix C.



## Section 2

# Program Management

*Section 2 describes the organizational structure of the County with respect to the Program, its coordination between departments, and its coordination with outside agencies and other groups. It presents the roles and responsibilities of the departments involved in implementing the Program.*

### 2.1 Program Implementation

The SMPP includes the tasks that are required to be implemented and/or performed to meet MS4 Permit requirements. It is anticipated that implementation of this SMPP constitutes compliance with the MS4 Permit. The SMPP must be posted on the County's website.

Implemented tasks are documented within tracking forms provided for Program reporting. The tracking forms are organized into three categories (based on the frequency of occurrence): Annual, As-Needed and On-Going. These forms should be printed and completed annually. At the end of the yearly reporting period (March 1 – February 28/29), the forms should be filed to document SMPP related activities. Appendix D includes the related tracking forms.

### 2.2 Lake County Organization

The Lake County Board is the policy and budget setting authority for the County. The Lake County Administrator's Office is in charge of implementing the Board's policies and oversees the budget. Key responsibilities pertaining to stormwater management include implementing the Watershed Development Ordinance (WDO), the Unified Development Ordinance (UDO), and the SMPP. Additionally, the County Administrator is the name of record for the County's MS4 Permit.

Several County departments work together to implement the Program and this SMPP, including:

- The County Administrator's Office
- The Lake County Division of Transportation (DOT)
- The Lake County Planning, Building and Development Department (PB&D)
- The Lake County Health Department
- The Solid Waste Agency of Lake County (SWALCO)
- The Lake County Public Works Department
- Lake County Finance and Administrative Services (FAS)

Refer to Figure 2 for the County's Program organization chart as it pertains to the SMPP. The Stormwater Coordinator has primary responsibility for managing the overall program.



Figure 2 – Lake County Program Organization Chart

### 2.2.1 Stormwater Coordinator

The Administration Department (Assistant County Engineer) within DOT serves as the Stormwater Coordinator and is responsible for the implementation of the Program and SMPP. The Stormwater Coordinator has several responsibilities, including:

- Serving as the lead contact for coordination with the SMC, the Illinois Environmental Protection Agency, contractors, the development community and other external regulatory agencies;
- Understanding the requirements of ILR40, ensuring that the SMPP meets the requirements of the permit, and that the County effectively implements the SMPP;
- Ensuring that the County complies with all minimum Watershed Development Ordinance (WDO) provisions;
- Ensuring that the Municipal Facilities comply with all minimum ILR40 permit requirements;
- Being 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;
- Understanding 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 Incidence of Noncompliance (ION) form with IEPA.

### 2.2.2 Lake County Division of Transportation

Along with serving as the Stormwater Coordinator, the DOT has several other responsibilities in the Program. The department has responsibilities in all six of the minimum control measures of the MS4 Permit. The major role of the department within the SMPP is to work with the SMC to comply with the provisions of the WDO for construction and maintenance activities undertaken within the right-of-ways of the County Highway System. The DOT also has a key role in the Illicit Discharge Detection and Elimination portion of the SMPP by identifying all outlets in their jurisdiction and periodically screening them for potential illegal discharges. The DOT is also responsible for spill control response within the County Highway System right-of-ways and their own facilities, street sweeping and snow/ice control, staying actively involved in construction projects, and maintaining detention basins and storm sewers along the County Highway System. They are also an active participant in community outreach programs.

### 2.2.3 Lake County Planning, Building and Development Department

The Lake County Planning, Building and Development Department (PB&D) serves a significant role in four of the six minimum control measures of the MS4 permit. The major role of the department is enforcing the WDO and UDO for any site development projects that have a hydrologic disturbance of more than 1,000 square feet in unincorporated portions of the County (including townships). PB&D fulfills this responsibility before, during, and after construction by reviewing site plans and inspecting sites for appropriate and adequate soil erosion and sediment control measures, discussing the requirements with developers, and by issuing violation notices for noncompliant sites. PB&D also enforces the Public Nuisance and Solid Waste Hauling and Recycling Ordinances. Additionally, the department plays an active role in public education and participation, including through its involvement in the Federal Emergency Management Agency's (FEMA) Community Rating System (CRS).

### 2.2.4 Lake County Health Department

The Lake County Health Department serves a role in all six of the minimum control measures of the MS4 Permit. The major role of the department is within the Illicit Discharge Detection Elimination (IDDE) portion of the program by enforcing the Public Nuisance Ordinance. The ordinance prohibits pollution of any lake or canal by sewage or industrial wastes or any other substance harmful to human beings. Additionally, two other ordinances help achieve the objectives of this portion of the program: the Sewage System Disposal System Ordinance, which mandates effluent limits and monitoring for surface discharge septic systems and minimum setback distances for soil absorption septic systems, and the Regulation of Sewage and Waste Disposal from Boats Ordinance, which controls disposal aboard recreational boats. The department also assists in achieving the objectives of several portions of the program through their water quality monitoring program. Additionally, the Health Department addresses complaint calls pertaining to water quality throughout the County. The department also adheres to the Pollution Prevention / Good Housekeeping portion of the MS4 Permit and is significantly involved with education and outreach programs.

### 2.2.5 Solid Waste Agency of Lake County

The Solid Waste Agency of Lake County (SWALCO) is involved in several different aspects of the Program, primarily through their enforcement of the Solid Waste Hauling and Recycling Ordinance. The ordinance requires a Construction Material Management Plan for certain construction projects. The plan determines the amount of construction waste that can be recycled. SWALCO teams with PB&D to educate developers on recycling construction waste. They are also a key participant in community outreach and education events, including their household chemical waste collection events. The events allow residents to safely dispose of wastes that might otherwise end up contaminating waterways.

### 2.2.6 Lake County Public Works Department

The Lake County Public Works Department serves a role in two of the six minimum control measures of the MS4 Permit. Primarily through their Spill Control and Response Plan, the department is responsible for responding to spills at their own facilities. The department works with the DOT, PB&D, and the Health Department in fulfilling the objectives of the Illicit Discharge Detection and Elimination (IDDE) Program and adheres to the Pollution Prevention/Good Housekeeping portion of the MS4 Permit.

### 2.2.7 Lake County Finance and Administrative Services

Lake County Finance and Administrative Services (FAS) consists of two divisions that play a role in the Program: Construction Management and Facilities Operations. The Construction Management Division administers capital programs for County buildings. They are responsible for identifying projects requiring an NOI. The division provides feedback regarding the soil erosion and sediment control measures selected by the engineer of record. The Construction Management Division is responsible for ensuring that the controls in the plan are implemented onsite.

The Facilities Operations Division is responsible for maintaining implemented soil erosion and sediment control measures, as well as other pollution prevention measures. The division also maintains BMPs for wetlands and retention basins for small developments (considered unregulated wetlands) to protect water quality. The division is responsible for all County buildings, except for Public Works, DOT, and Health Department facilities, and responsible for

adhering to the Pollution Prevention/Good Housekeeping portion of the MS4 Permit for these facilities.

## 2.3 Coordination with SMC

The County coordinates with SMC on two levels. As a Certified Community under the WDO, the County coordinates with SMC through the Municipal Advisory Committee (MAC) and Technical Advisory Committee (TAC). As an applicant to the Program, the County coordinates with SMC through the Watershed Development Permit application process, as well as through the MAC and TAC. Lake County's Stormwater Coordinator (DOT) is the lead contact for participation in the MAC forums.

## 2.4 Coordination with Consultants

Lake County may enlist 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 MS4 projects.

## 2.5 Coordination of Contractors

Lake County may hire contracted services as necessary. The County has a responsibility to hire contractors who are knowledgeable of the applicable requirements of the ILR40 and ILR10 General Permits. The County shall provide appropriate training, or require documentation that appropriate training has been attended.

## 2.6 Coordination with the Public

Coordination with the public occurs on several levels. The Public Education and Outreach Program is discussed in Section 3.1. The Public Participation and Involvement Program is discussed in Section 3.2. The programs and forums discussed in these two sections allow the public an opportunity to comment on stormwater management issues.

## 2.7 Coordination with IEPA

The County is required to complete annual reports which describe the status of compliance with the MS4 Permit conditions. The annual report must be posted on the County's website and submitted to IEPA by the first day of June each year. Annual reporting to IEPA should consist of tasks denoted as "implemented" for those that were 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 Program and SMPP commitments must be kept by the County. The task sheets described in Section 2.1 should be updated throughout the year. Completed task sheets should be filed with necessary supporting documentation. The files must be available for review by both IEPA and the general public.

## 2.8 Coordination with the Development Community

Lake County has a responsibility to assist the development community in understanding when an ILR10 General Permit is required and whether construction sites comply with the ILR10 General Permit and WDO conditions. In general, an Incidence of Non-Compliance (ION) must be filed with IEPA for illicit discharges exiting an MS4's outfall into a receiving water. Additionally,

if the illicit discharge is generated by a construction site, it may be necessary for both the applicant and the MS4 to file the ION form with IEPA.

As a Certified Community, Lake County oversees the development community's management of post-construction stormwater runoff in accordance with ILR40 through administration of the WDO and UDO. Furthermore, the County 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 Section 3.4.2 for additional information on qualified personnel.

## Section 3

# The Program

*The Program is developed around the six minimum control measures of the MS4 permit, each of which is aimed at reducing and eliminating stormwater pollution in receiving water bodies. Section 3.1 describes the Program's efforts to educate the public about stormwater pollution and stormwater pollution prevention. The manner in which the County incorporates public participation and involvement into the Program is explained in Section 3.2. Section 3.3 describes the approach to detecting and eliminating illicit discharges. Control of construction and post construction runoff is addressed in Sections 3.4 and 3.5, respectively. Lastly, Section 3.6 describes responsibilities for the care and upkeep of the County's facilities, associated maintenance yards, and County highways to minimize receiving water pollution. This section also describes necessary training for employees on the implementation of the Program and this SMPP.*

### 3.1 Public Education and Outreach

The Public Outreach program includes distributing educational material to the community and conducting outreach activities about the impacts of stormwater discharges on water bodies and the steps that the public can take to reduce pollutants to stormwater runoff.

Lake County, in cooperation with SMC, 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 section:

- Distribute information sheets regarding stormwater BMPs, water quality BMPs, and proper hazardous waste use and disposal.
- Organize speaking engagements for groups of interested residents on stormwater related topics.
- Produce and air public service announcements on the local cable access channel focusing on water quality issues.
- Attend/sponsor outreach activities directed at educating the public on improving water quality.
- Coordinate, publicize, and participate in SWALCO events.

The following Lake County departments are responsible for implementing the Public Education and Outreach component of the Program:

- Lake County Administrator's Office – Communications Division
- Planning, Building and Development Department (PB&D)
- Health Department
- Division of Transportation (DOT)
- Solid Waste Agency of Lake County (SWALCO)

### 3.1.1 Distribution of Paper Materials

Lake County produces its own educational materials and uses materials with permission from other agencies and organizations. The types of materials distributed include:

- The manual “A Citizen’s Guide to Maintaining Stormwater Best Management Practices”
- The manual “Living with Wetlands: A Handbook for Homeowners in Northeastern Illinois”
- Health Department newsletters including “Cattail Chronicles” – a biannual newsletter dedicated to public education on water quality issues specific to Lake County, “Wastewater News” and “Waterlines”
- Health Department publications regarding water quality and best management practices
- PB&D outreach letter to homeowners subject to repeated flooding as part of the Federal Emergency Management Agency’s (FEMA) Community Rating System (CRS)
- PB&D publications regarding erosion control best practices
- PB&D publications regarding general regulatory information as it relates to site development
- PB&D publications regarding site development requirements

Publications are provided in the following manner:

- At take-a-away racks located at the SMC
- On the SMC website
- Distributed to permit applicants
- At outreach events
- Through newsletters

### 3.1.2 Speaking Engagements

Upon request, Lake County makes employees available for speaking engagements to groups of interested residents on stormwater related topics. The program is administered by the Lake County Communications Division. The speakers are selected based upon their expertise on a requested topic.

### 3.1.3 Public Service Announcements

Lake County has produced and aired public service announcements (PSAs) on the local cable access channel operated by the County (LCTV) and on the County website. PSAs have focused on citizen participation in preserving stormwater quality. The PSAs are made available for use by other MS4’s in Lake County.

### 3.1.4 Community Events/Workshops

Lake County participates in community events directed at improving water quality. These events are generally geared towards developers, engineers, municipalities, and enforcement officers. In the past, the County has attended, sponsored, and/or publicized the following events:

- SMC sponsored Designated Erosion Control Inspector (DECI) Workshops

- SWALCO household chemical waste collection events, rain barrel sales
- Snow and ice control workshop, sponsored by the Health Department, DOT, IEPA, and SMC

## 3.2 Public Participation/Involvement

The Public Participation / Involvement program includes attending and publicizing watershed stakeholder meetings, presenting program information at a public meeting (at least annually), and publicizing IDDE reporting contact numbers. The following Lake County departments are responsible for implementing the Public Participation / Involvement portion of the Program:

- Lake County Administrator’s Office - Lake County Board
- Health Department - Lake County Board of Health
- Division of Transportation (DOT)
- Planning, Building and Development Department (PB&D)
- SMC – Lake County Stormwater Management Commission

### 3.2.1 Complaints, Suggestions and Requests

Complaint, suggestion, and/or request calls are screened, logged and routed to the appropriate department for action. General program related calls are directed to the Stormwater Coordinator, or designee. Construction activity, illicit discharge, storm sewer, and other related stormwater runoff concerns are directed to PB&D, DOT, the Health Department and/or the Public Works Department. Lake County maintains a website that enables and encourages public contact on these issues.

### 3.2.2 Public Hearings

The following public meetings are held by Lake County throughout the year, typically covering stormwater quality issues:

- Lake County Board – monthly meetings to conduct the business of Lake County. These meetings are broadcast on local cable television access.
- Lake County Board of Health – monthly meetings to approve the Health Department’s budget, grants, and program initiatives.
- Zoning Board of Appeals – hearings to consider applications for rezoning, conditional use permits, and requests for variation and administrative appeals.
- Regional Planning Commission – meetings held twice per month that cover issues related to land development.
- Lake County Stormwater Management Commission – meetings held monthly on stormwater management.

### 3.2.3 Stakeholders Meetings

Lake County publicizes and participates in stakeholder meetings throughout the County conducted for ongoing planning and project implementation efforts. The County has participated with the following watershed planning committees and other stakeholder groups:

- Chicago Wilderness Aquatic Task Force
- Barrington Area Council of Governments (BACOG) – Water Quality Committee

- Lake County Framework Plan and Unified Development Ordinance Committees (regarding water supplies and water quality)
- Fremont Township Well Committee
- Indian Creek Watershed Committee
- Bull Creek / Bull's Brook Watershed Committee
- Upper Des Plaines River Watershed Committee
- Flint Creek Watershed Committee
- North Mill Creek Watershed Committee
- North Branch Chicago River Watershed Committee
- Fox River Watershed Committee
- Waukegan River Watershed Committee
- ISD (Onsite Wastewater) Steering Committee
- Management entities for individual lakes in Lake County (Homeowners Associations, Villages, and/or Townships)

### 3.2.4 Illicit Discharge/Illegal Dumping Hotline

Lake County maintains, operates and publicizes a call-in phone number where parties can contact county staff for environmental concerns. Primary advertisement venues include the website and all related municipal publications. Telephone calls received from residents, other internal departments or other agencies are logged on the Indirect Illicit Discharge Tracking Form (Appendix E). The DOT should transfer information from the tracking form to the Indirect Illicit Discharge Summary Form (Appendix E) monthly. This tracking form should be reviewed with the Stormwater Coordinator annually to determine if trends can be seen and if there are additional outreach efforts needed.

### 3.2.5 LCSMC Municipal Advisory Committee (MAC) and Technical Advisory Committee (TAC)

Lake County officials from DOT, PB&D, and the Health Department actively serve on the MAC. Officials from DOT and PB&D serve on the TAC. Both the MAC and the TAC are hosted by the Lake County SMC. The TAC meets once a month and the MAC meets once every other month. Both meetings are open to the public.

### 3.2.6 Volunteer Monitoring - Adopt-A-Highway

Lake County supports Adopt-A-Highway Programs for the County Highway System. The objective of the programs is to improve and promote the image of the entire community by removing litter and debris and reducing potential illicit discharges.

## 3.3 Illicit Discharge Detection and Elimination

Illicit discharges can contribute considerable pollutant loads to receiving waters. There are two primary situations that constitute illicit discharges: 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. The requirements of an Illicit Discharge Detection and Elimination (IDDE) program include the following:

- Develop a storm sewer system map that shows the locations of all outfalls and the names and locations of all waters that receive discharges from those outfalls.
- Prohibit non-stormwater discharges into the storm sewer system and implement appropriate enforcement procedures and actions.
- Develop and implement a plan to detect and address illicit discharges into the storm sewer system.
- Educate public employees, businesses, and the general public of hazards associated with illegal discharges and improper disposal of waste.
- Identify appropriate best management practices (BMPs) and measureable goals.

The following Lake County departments are responsible for the IDDE component of the Program:

- Division of Transportation (DOT)
- Health Department
- Public Works Department
- Solid Waste Agency of Lake County (SWALCO)
- Planning, Building and Development Department (PB&D)

### 3.3.1 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 Unified Development Ordinance (UDO). 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 the MS4 jurisdiction.

#### 3.3.1.1 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 Lake County to require inspection deposits, performance bonds, and to adopt/enforce violation procedures. These tools assist in achieving compliant construction sites. These items are detailed further in Sections 3.4 and 3.5.

#### 3.3.1.2 Public Nuisance Ordinance

The Public Nuisance Ordinance prohibits the pollution of any well, cistern, spring, underground water stream, lake, canal, or body of water by sewage or industrial wastes, or other substance harmful to human beings. Additionally, the ordinance prevents accumulation of waste and harmful materials that otherwise could enter the storm sewer system.

#### 3.3.1.3 Other Health Department Ordinances

Two other Health Department Ordinances help achieve the objectives of the IDDE program. The Sewage System Disposal System Ordinance mandates effluent limits and monitoring for

surface discharge septic systems and minimum setback distances for soil absorption septic systems. The Regulation of Sewage and Waste Disposal from Boats Ordinance contains regulations to control disposal from recreational boats.

### 3.3.2 Identifying Outfalls and Receiving Waters

An outfall is the point where a municipal separate storm sewer discharges into receiving water. Open conveyances connecting two municipal storm sewers, or pipes, tunnels, or other conveyances which connect segments of the same stream or other receiving waters are not considered outfalls.

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.

An outfall inventory was completed by DOT staff. All storm sewers along the Lake County Highway System have been previously mapped and outfalls identified. All outfalls were initially inspected by SMC staff. The SMC staff used a GPS receiver to document the spatial coordinates of all outfalls. This data was given to the DOT and is now stored in a GIS database. This data can be used 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 outfall locations have been numbered to facilitate detection and tracking of identified illicit discharges. The outfall data can be obtained from DOT.

The outfall data is revised as needed to incorporate permitted outfalls associated with new developments and to trace illicit discharges as identified through complaint investigations.

### 3.3.3 Illicit Discharge Detection and Elimination Program

Illicit discharges may occur due to indirect or direct connections. Indirect connections can be caused from groundwater seepage, spills, dumping, outdoor washing activities, or non-target irrigation from landscaping. Direct connections enter through direct piping connections to the storm sewer system. Both exist regardless of whether or not a stormwater event (e.g. rain or melting snow) is occurring; therefore, 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, identifying the source of the discharge can begin. Once the source is identified, it can then be corrected. An illicit discharge program consists of three principal components: 1) program planning, 2) outfall screening, and 3) follow-up investigation and program evaluation.

1. **Program Planning** involves the office work, planning, and organization required to conduct the subsequent outfall screening and follow-up investigative activities of the program. Program planning identifies the regulatory authority to remove illicit discharges and the identification of the outfalls and receiving waters in the municipality. 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

2. **Outfall Screening** 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

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

- Reviewing and assessing outfall inspection results,
- Internal coordination,
- Conducting detailed storm sewer investigations to identify pollutant sources (*tracing*),
- Exercising the appropriate legal means to achieve enforcement of the program objective (*removal of pollutants at the source*), and evaluating the program to determine whether subsequent screening activities are necessary.

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

- Water line flushing,
- Landscaping irrigation,
- Diverted stream flows,
- Rising groundwaters,
- 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.

### 3.3.3.1 Program Planning

The program planning component is primarily office work related to assembling the necessary information and equipment for efficiently conducting outfall-screening activities. This component of the program addresses the items in the following subsections.

#### 3.3.3.1.1 Staffing

Personnel for an outfall inspection screening program are required for program administration, conducting outfall screening, and any follow-up investigations. Typically, a two-member crew is required for the outfall screening and follow-up portions of the program.

#### 3.3.3.1.2 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 F). Field Crews carry basic safety items, such as cell phones, surgical gloves, and first aid kits.

#### 3.3.3.1.3 Training

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

#### 3.3.3.1.4 Scheduling

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

In order to ensure that samples collected are representative of dry-weather flows, pre-screening and follow-up inspections are conducted after a dry-weather period of 72 hours. 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 for sampling. For example, if very light rain or drizzle occurred and no runoff was experienced, it is likely that dry-weather conditions could exist and outfall inspection could be conducted.

### 3.3.3.2 Outfall Inspection Procedure

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, the sources of illicit discharges are identified and corrected per the removal procedure of Section 3.3.3.4. Outfall inspection consists of the following tasks:

- Pre-Screening
- Outfall Inspection Setup,
- Outfall Inspection,
- Outfall Assessment and Documentation, and
- Daily Closeout.

#### *3.3.3.2.1 Pre-Screening*

Pre-screening consists of a rapid inspection of outfalls during dry weather flow conditions. During pre-screening outfalls are rapidly inspected, after a dry-weather period a period of at least 72 hours. Outfalls observed to have dry weather flow are documented along with the quantity of flow (such as trickle, moderate or substantial). Additionally, outfalls that are partially or fully submerged should be documented for follow-up inspection. Outfalls with dry weather flows shall be scheduled for an outfall inspection. The initial screening of the outlets along the Lake County Highway System was completed by SMC staff (in association with DOT) in August/September 2009.

#### *3.3.3.2.2 Outfall Inspection Setup and Precautions*

In this step, an attempt is made to visualize the outfall locations and anticipate any potential problems that could affect the screening activities – in particular, identifying any safety issues (e.g., access to outfall, traffic, etc.). Before leaving an outfall inspection location, field crews must ensure that all necessary equipment is available, operable, and calibrated (as appropriate).

Safety is the primary consideration while inspecting upstream sampling locations. Latex gloves are to be worn while collecting and handling samples. A first aid kit is to be included in each vehicle to treat minor injuries. Obtain medical help for major injuries as soon as possible. All injuries, minor and major, are to be reported 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. An attempt should be made to contact each home or business owner for permission. Personnel shall have identification indicating that they are County employees. If the owner is not present, a letter should be left at the premises to facilitate a return inspection. If permission to access property is denied, a public official should then contact the owner at a later date. All access by personnel onto private property shall be consistent with Health Department and PB&D regulatory authority.

Confrontational situations with citizens are avoided. 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 the incident to their supervisor.

#### *Traffic*

All traffic control measures are to be in accordance with the requirements of the Lake County Traffic Control Plan as set forth by the DOT. DOT personnel generally work on streets only during the hours of 8 a.m. to 2 p.m. except in emergency situations. All field crews are required to wear Personal Protection Equipment (PPE) in accordance with Standard Operating Procedures set forth by the DOT.

#### *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.

#### *Other Hazards*

- Access – avoid steep slopes, dense brush and deep water. Report unsafe locations; do not try to access these sites.
- Becoming Stuck – avoid wading where bottom sediments are easily disturbed or depths are unknown.
- Strong Gas / Solvent Odor – do not select manhole for sampling where strong odor is present.
- Bodily Harm from Manhole Covers – use manhole hook and watch for pinch points.
- Slipping – wear proper foot gear and use rope if warranted.
- Falls – use extended sample collection device; do not cross horizontal or vertical plane at end of outfall.
- Heat and Dehydration – intake adequate water; avoid excessive exertion on hot days.
- Sunburn – apply sunscreen and wear appropriate clothing.
- Poisonous Plants / Animals – identify and avoid.
- Vicious Dogs – avoid; use animal repellent if necessary.
- Water Bodies – wear flotation devices.
- Ticks – check entire body at the end of each day.
- Mosquitoes – apply repellent.

#### *Test Kit Analysis Safety*

In general, safety procedures established by the USEPA Industrial User Inspection and Sampling Manual for POTWs and related IEPA publications are used. The following are general guidelines.

1. Appropriate gloves (latex or rubber) are worn at all times when handling samples or conducting test kit analyses. Other appropriate Personal Protection Equipment (PPE) is also worn, as required.
2. Copies of Material Safety Data Sheets (MSDS) are maintained with all test kits. Be familiar with instructions provided in the MSDSs.
3. Always conduct test kit analyses in a well-ventilated area.
4. Wash hands thoroughly with soap and water at every opportunity.

#### *3.3.3.2.3 Outfall Inspection*

An outfall inspection is required for outfalls determined to have dry weather flow, or with submerged outlets, based on the pre-screening efforts. Upon arriving at an outfall, the field crew inspects the outfall by approaching the outfall on foot to a proximity that allows visual observations to be made.

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

1. The outfall is dry or damp with no observed flow,

2. Flowing discharges are observed from the outfall, or
3. The outfall is partially or completely submerged with no observed flow or is inaccessible.

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

**Scenario 2: Observed Flow.** Under Scenario 2, the field crew photographs the outfall and complete applicable sections of the Stormwater Outfall Inspection Data Form (Appendix G). The intent is to gather additional information to determine if an illicit discharge is present. The need for on-site testing is determined and grab samples are obtained for laboratory analysis based on the flow chart guidance. Testing results are then used to identify potential sources.

The initial testing results are not intended to document the event for future removal and/or enforcement actions. If the preliminary test results identify a potential illicit discharge an independent laboratory shall be contracted to test an additional sample prior to initiating removal procedures.

**Scenario 3: Submerged or Inaccessible Outfall.** Under Scenario 3, complete available information from Sections 1, 2, 3 and 7 of the Stormwater Outfall Inspection Data Form (Appendix G) if standing water is present in an outfall or if it is inaccessible. Add appropriate comments in the “Remarks” section of the data form. Locating an upstream sampling point may be required if any of the following conditions exist at an outfall:

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

Upstream sampling locations are determined using DOT storm sewer data. Manholes, catch basins, or culvert crossings can be used for upstream sampling locations. Reasonable efforts are made to locate upstream sampling points that are accessible and exhibit flow. If inaccessible, problems are resolved in the office with appropriate supervisory personnel.

#### 3.3.3.2.4 Outfall Assessment and Documentation

The Stormwater Outfall Inspection Data Form (Appendix G) is to be completed 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. Once completed, these data forms are considered accountable documents and are maintained as part of the County files. In addition to standard information, the data form is used to record other information that is noted at the time the outfall inspection is conducted (e.g. observations of dead or dying plants, fish kills, algal blooms, construction activities, and other activities that might provide information regarding the potential for illicit connections or inappropriate discharges).

#### 3.3.3.2.5 Daily Closeout

##### *Disposal and Clean-up*

Test waste items must be properly disposed of. Before leaving any field inspection site, the area is checked to ensure that all equipment has been cleaned, collected, and stored.

- Grab sample (uncontaminated) – dispose of on-site
- Grab sample (contaminated) – place in liquid waste container on-site; final disposal via sanitary sewer
- Test kit ampoule – use ampoule containers on-site; dispose container as a hazardous waste
- Paper towels / latex gloves – use trash bags on site; final disposal via municipal garbage

##### *Office Closeout*

In the office, copies of completed data forms are filed. Outfall screening scheduling and completion forms are updated and the next screening day's activities are planned. Problems locating outfalls are discussed with appropriate supervisory personnel so that alternate sampling locations can be identified. Data are compiled from the Stormwater Outfall Inspection Data Form (Appendix G) onto the Outfall Inspection Screening Summary Form (Appendix H) as new outfalls are discovered.

### 3.3.3.3 Follow Up Investigation and Program Evaluation

Follow up investigation is required for all outfalls with positive indicators for pollutant discharges. The outfall assessment results are reviewed to determine the magnitude of the dry-weather pollution problem and to determine the necessary steps to identify and remove the sources of any detected pollutants.

#### 3.3.3.3.1 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 Screening Summary Form (Appendix H) 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.

#### 3.3.3.3.2 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. The results of the inspection and testing should be discussed with the Stormwater Coordinator. Coordination with the Health Department to take and test an additional sample and verify preliminary findings should occur.

#### 3.3.3.3.3 Source Identification

Follow up investigation is required for all outfalls with positive indicators for pollutant discharges during the pre-screening efforts. The procedure for detailed storm sewer investigation and source identification has three major components: 1) mapping and evaluation, 2) storm sewer investigation, and 3) tracing.

### *Mapping and Evaluation*

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

If the contributing area is determined to be non-residential, the available industrial/business information should also be reviewed. The pre-treatment inspection, performed by the Public Works Department or Waste Water Treatment Plant, typically indicates chemicals located on-site at each business. The business type and on-site chemicals are logged into the Industrial/Business Inventory. The Inventory is screened for probable pollutant matches. Business types include:

- Assembly,
- Automotive,
- Bank-Loans,
- Car Wash,
- Church,
- Contractor,
- Food Processing (Pet, Candy),
- Government/School,
- Grocery Store,
- Health Club/Gym,
- Landscaping/Nursery,
- Laundromat/Dry Cleaning,
- Manufacturing,
- Meat Packing,
- Medical/Dental/Pharmaceutical,
- Office,
- Printing/Photography,
- Recreations/Park District,
- Residential (Single and Multi-Family),
- Restaurants/Bars,
- Retail,
- Salon/Barber Shop,
- Utility, and
- Warehouse/Distribution.

*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 /manhole, the field crew continues moving to the next upstream manhole or access point to investigate 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. 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 may be 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 management staff prior to testing. Potential testing methods include fluorometric dye testing, smoke testing, and/or remote video inspections. Once identified, the contributing source is logged.

**3.3.3.4 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: The Stormwater Coordinator will decide the appropriate County agency and personnel to be involved in the subsequent steps to remove the illicit discharge. An internal meeting will be held to discuss inspection and testing results and remedial procedures.
- Step 3: The appropriate agency 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 the appropriate agency 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 appropriate agency 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 appropriate agency issues a notification of noncompliance. The notification includes a description of the required action(s) and 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 applicable agency's ordinance.
- 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., the illicit discharge has been eliminated) the appropriate agency 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 personnel is held to determine appropriate steps to obtain compliance. Appropriate actions may include monetary or other penalties.

### 3.3.3.5 Program Evaluation

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

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

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

## 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 have a hydrologic disturbance 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. Lake County is a Certified Community, which allows it to implement the review, permitting, inspection, and enforcement provisions of the WDO within its own jurisdiction. The County designates an Enforcement Officer, and this person is responsible for the administration and enforcement of the WDO. The County has created an Inspection and Violation Notification Procedure to ensure compliance with the WDO. Additionally, as an applicant to the Program, the County must also ensure all County projects (e.g., DOT highway work, FAS county facility projects) adhere to all applicable regulations, including those set forth in the WDO and UDO.

The following Lake County departments are responsible for the Construction Site Runoff Control component of the Program:

- Lake County Administrator's Office
- Division of Transportation (DOT)
- Planning, Building and Development Department (PB&D)
- Health Department
- Solid Waste Agency of Lake County (SWALCO)
- Finance and Administrative Services (FAS)

### 3.4.1 Regulatory Program

The WDO has been incorporated into the Unified Development Ordinance (UDO) by Lake County and serves as the regulatory mechanism to require erosion and sediment controls for construction activities in unincorporated Lake County (including townships). At a minimum, these standards apply to any development that has a hydrologic disturbance of 1,000 square feet or more. Applicants are directed to PB&D (or DOT for highway work, FAS for county facility projects) for information pertaining to the permitting process. When the PB&D concurs that the applicable provisions of the UDO and WDO have been addressed, a permit is issued. Each permit lists any additional conditions that are applicable to the development. For projects along the County Highway System the SMC ensures that the WDO has been followed and issues permits accordingly. New County facilities adhere to the permitting procedures and requirements of the applicable local permitting authority.

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;
- Performance guarantees on applicable developments
- Enforcement measures to achieve compliance; and
- Maintenance guarantees 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).

### 3.4.2 Responsible Parties

#### 3.4.2.1 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).

#### 3.4.2.2 DECI – Designated Inspectors

The purpose of the Designated Erosion Control Inspector (DECI) program is to facilitate positive communication between the County 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 is required to hire or employ a DECI if one of the following conditions is met:

- Development with 10 acres or more of hydrologic disturbance.
- Development with 1 acre or more of hydrologic disturbance **and** regulatory floodplain **or** wetlands on site or on adjoining properties.

- At the Enforcement Officer's discretion.

Note that the DOT employs a DECI on all County Highway construction projects.

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

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-acre 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. The site inspection logs can typically meet the permit conditions of both the WDO and IEPA.

#### **3.4.2.3 Enforcement Officer**

The EO is responsible for administration and enforcement of the provisions of the WDO. Additionally, the EO 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 EO to ensure that all incidences of non-compliance received from a DECI are resolved. Furthermore it is the EO's right and 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.

#### **3.4.3 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 County to require additional measures, above and beyond minimum control measures, to prevent the discharge of pollutants from construction sites. Design and implementation guidance is available in the Lake County Technical Reference Manual (TRM) and other reference materials identified in Section 5. 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.

#### 3.4.4 Site Plan Review

PB&D requires a Site Development Permit for sites that meet the minimum requirements of the UDO. As part of the permit review process, the agency conducts detailed reviews of site plans for compliance with minimum soil erosion and sediment control measures. Comments are provided 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 PB&D concurs that the applicable provisions of the UDO and WDO have been addressed, a permit is issued. The permit lists any additional conditions that are applicable for the development, including providing prior notification of the pre-construction meeting to the County. The County's attendance at 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. SMC enforces the WDO for all public road development that takes place in Lake County including County Highway projects. County facility projects are regulated by SMC or the certified community having jurisdiction including the review and approval of site plans and issuance of permits.

#### 3.4.5 Site Inspection Procedure

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

The County may inspect site development at any stage in the construction process. The County inspects critical construction sites monthly or after rain events greater than 0.5 inches. Additional recommended inspection intervals are listed below. Construction plans approved by the EO shall be maintained at the site during progress of the work.

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, and
7. After final stabilization and landscaping, prior to removal of sediment controls.

#### *Site Inspection Process:*

The site inspection process listed below is a general procedure followed by all County agencies. Additions to the general procedure are noted.

- The County attends the pre-construction meeting on applicable development sites. PB&D conducts pre-construction meetings for sites that have larger areas of disturbance, contain detention basin construction, have more complex natural resource concerns, or are anticipated to be problematic during construction. During the pre-construction meeting, the Pre-Construction Meeting Form (Appendix I) is filled out by the County attendee. PB&D fills out and issues the Pre-Construction Requirement Form (Appendix I). It is also recommended that the inspector request to see the SWPP and IEPA NOI for applicable construction sites.
- The applicant notifies the County when initial sediment and runoff control measures have been installed.
- The County inspects the initial sediment and runoff control measures and authorizes the start of general construction.
- The County inspects the stormwater management system and authorizes additional site improvement activities.
- The County performs site inspections at the recommended intervals and completes the SE/SC Inspection Form (Appendix J; note that PB&D has a separate form that is filled out via a computer program).
- For sites that exceed the WDO thresholds per Art. IV, Section B.1.j.2. a DECI is required. Refer to Section 3.4.2.2 for additional information regarding the program.
- The County requires as-built documentation of the stormwater management system prior to final site stabilization for applicable projects. 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.

### **3.4.6 Complaints**

The County receives complaint calls regarding a development, either during the review or construction phase. Both site design and construction related calls are directed to PB&D and logged for follow up. Site design comments are handled on a case by case basis. Construction related calls are typically addressed by performing a site inspection.

### **3.4.7 Performance Guarantees**

Details regarding performance guarantees are discussed in Article 8 and 10 of the UDO for PB&D projects, and the Access Control Ordinance for DOT projects.

### **3.4.8 Complaints and Violation Notification Procedures**

Refer to the PB&D, Building and Engineering Division, guidance document on complaints and violation procedures.

### **3.4.9 BMP Reference Information**

Reference information is available from, 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,*
- Construction details are available from the DOT, PB&D, and SMC website,
- Chicago Metropolitan Agency for Planning (previously Northeastern Illinois Planning Commission) Course Manuals,
- IDOT manuals,
- Center for Watershed Protection documents, and
- IEPA and USEPA publications.

### 3.4.10 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.

The Solid Waste Hauling and Recycling Ordinance lists provisions for controlling construction waste. An intergovernmental agreement between PB&D and SWALCO was developed to inform and educate developers of subdivisions and commercial projects of the ordinance and how it pertains to construction waste. Applicants are informed of the program during the building permit application process. Thresholds for inclusion in the program, which include the submission of a Construction Material Management Plan, are as follows:

- Any proposed subdivision containing 5 or more lots (with 5 or more new homes)
- Any non-residential development, including additions, consisting of new floor area in the amount of 10,000 square feet or more.

### 3.4.11 Highway Improvement Projects

Highway improvement projects shall follow IDOT Standard Specifications and applicable provisions of the WDO. Lake County DOT holds pre-construction meetings with the contractor to review site requirements and the soil erosion and sediment control plan for all highway improvement projects. Appropriate erosion control measures are specified in the plan in accordance with best management practices. SMC staff conducts site inspections on permitted public road development projects in accordance with WDO provisions. DOT is responsible for management of the site and the activities of the contractor(s) on highway projects. Project sites with any deficiencies as compared to the approved soil erosion and sediment control plan may be issued violation notices by the SMC inspector; it is the responsibility of the DOT staff to have the contractor bring the site into compliance by correcting any deficiencies. Refer to DOT documents regarding inspection procedures and complaints and violation notification procedures.

### 3.4.12 County Capital Construction Projects

The Construction Management Division, within the FAS, is responsible for ensuring that capital construction projects adhere to the WDO. FAS is responsible for identifying capital construction projects that require an NOI. Additionally, they review site plans to ensure adequate soil and erosion control measures are in place and that the stormwater pollution prevention plan (SWPPP) is adhered to. FAS is also responsible for hiring DECIs to inspect their sites.

## 3.5 Post Construction Runoff Control

Lake County complies with NDPES permit requirements by incorporating ordinance and BMP standards to minimize the discharge of pollutants for new development projects. As a Certified Community, the County enforces this portion of the Program by performing post-construction site inspections on developments throughout unincorporated Lake County. As an applicant, the County is responsible for the inspection of its own facilities, including the County Highway System, for compliance with this portion of the Program.

This section describes how compliance with stormwater discharge permit requirements for long-term post-construction practices that protect water quality and control runoff flow is achieved.

This SMPP creates and references extensive policies and procedures for regulating design and construction activities for protecting receiving waters. The design and construction site practices selected and implemented by the responsible party for a given site are expected to meet BMP measures described in the 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.

The following Lake County departments are responsible for the Post Construction Runoff Control component of the Program:

- Lake County Administrator's Office
- Division of Transportation (DOT)
- Planning, Building and Development Department (PB&D)
- Health Department
- Finance and Administrative Services (FAS)

### 3.5.1 Regulatory Program

The WDO includes numerous performance standards on grading, stormwater, and soil erosion/sediment control that must be met by all parties undertaking construction. These standards apply to any new development or redevelopment resulting in over 0.5 acres of new impervious area. The Lake County Technical Reference Manual is a guidance tool that describes BMP and implementation procedures for enforcing the WDO. In unincorporated Lake County, the WDO has been incorporated into the UDO and is enforced by PB&D; the SMC enforces the WDO for all County highway and facility projects.

The applicant must develop a stormwater management strategy that minimizes the increase in runoff volumes and rates and addresses the water quality treatment requirements of the ordinance. The proposed drainage plan must use the runoff reduction hierarchy in the

ordinance and implement BMPs as required. The ordinance also requires the use of buffers when adjacent to existing water bodies.

### 3.5.2 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 and the volume and velocity of storm water flow to the maximum extent practicable. The County ensures that the development plan addresses these provisions during the plan review process.

### 3.5.3 Sustainable 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 should encourage that the development plan incorporates sustainable 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.

### 3.5.4 Long Term Operation and Maintenance

The WDO requires that a maintenance plan be prepared for all stormwater management system components for major developments (as defined in the ordinance). The maintenance plan must include: maintenance tasks, the party responsible, a description of all permanent public or private access maintenance easements, overland flowpaths, and compensatory storage areas, and a description of dedicated sources of funding for the required maintenance.

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

- The first plan is recommended 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, 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.

The PB&D requires long term maintenance plans as part of their permitting process. After a site has been developed, the responsibility of enforcing the plan shifts to the owner. PB&D will conduct site inspections to enforce the long term plan if a complaint is filed or if a severe failure is observed by staff during regular work activity. DOT is preparing a long term maintenance plan to be used at their facilities.

### 3.5.5 Site Inspections

The inspection program for the County's general facilities is discussed in detail in Section 3.6.1. The inspection procedure for site inspections related to construction activities is discussed in detail in Section 3.4.5. This section focuses on post-construction inspections of previously developed sites, streambanks / shorelines, streambeds, and detention / retention ponds.

Inspections are performed on an as-needed basis, typically when complaints are filed to the applicable agency.

#### **3.5.5.1 Previously Developed Sites**

The County inspects existing properties with stormwater management facilities on an as-needed basis. These facilities are typically owned by the Homeowners Association or private owner; therefore, the responsibility of post-construction runoff control shifts away from the County. Inspections are performed when a complaint is filed or when staff observes a severe failure during regular work activity. Inspections are completed based on the follow criteria:

- 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 County 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.

#### **3.5.5.2 Shorelines**

Detention basin shorelines are inspected on an as-needed basis. Inspections should be performed in the spring and/or fall, depending upon weather conditions. Basin locations are listed on the Detention/Retention Pond Checklist (Appendix L). Observed erosion, seeding/re-seeding or slope stabilization needs are documented. Documented deficiencies should be reported to the appropriate agency to evaluate and determine appropriate remediation activities. Remedial actions might include notifying the property owner or including maintenance activities in the County's work 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.

#### **3.5.5.3 Streambanks and Stream Bed Sediment Accumulation**

Streambanks of receiving waters are inspected for erosion and stream beds are inspected for sediment plumes on an as-needed basis. Inspections should be performed in the spring and/or fall, depending upon weather conditions. Observed erosion and/or sediment accumulation is documented. Documented deficiencies should be reported to the appropriate agency to evaluate and determine appropriate remediation activities. Remedial actions might include notifying the property owner or including maintenance activities in the County's work program.

#### **3.5.5.4 Detention/Retention Pond Sediment Accumulation**

The County ensures that new detention/retention ponds are over excavated during construction to provide for future sediment accumulation. The developer is responsible for ensuring that the design grade is established prior to County's acceptance of the pond. Pond information, including the design permanent pool pond depths, is added to the Detention/Retention Pond Checklist (Appendix L) upon acceptance of the pond.

Sediment accumulation for detention basins is inspected on an as-needed basis, though the DOT has a proactive procedure in place to inspect detention basins, inlets, and outlets that are part of the County Highway System. Observed depths are logged onto the Detention/Retention Pond Checklist (Appendix L). If the inspected pond depth is found to be 2 feet or less from the design depth (i.e. shallower than the design permanent pool depth) this information should be reported to the applicable agency to evaluate and determine appropriate remediation activities.

## 3.6 Pollution Prevention / Good Housekeeping

The County is responsible for the implementation of an operation and maintenance program to reduce the discharge of pollutants from municipal operations. This section describes how compliance with permit requirements is achieved by incorporating pollution prevention and good housekeeping to stormwater quality management. 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.

The following Lake County departments are responsible for the Pollution Prevention / Good Housekeeping component of the Program:

- Division of Transportation (DOT)
- Health Department
- Public Works Department
- Finance and Administrative Services (FAS)

### 3.6.1 Inspection and Maintenance Program

The following sections detail the areas encompassed by the Inspection and Maintenance Program.

#### 3.6.1.1 Street Sweeping

Street sweeping operations are performed to reduce the amount of pollution that accumulates on roads that have the potential to reach waterways as runoff. All curb and gutter lane miles that are part of the County Highway System are cleaned on a rotating basis. Waste collected is disposed of in drying beds for solid waste disposal through a Memorandum of Understanding with the Public Works Department. Additional details, including sweeping frequency, schedule, and waste disposal, are recorded as a performance measure in the Annual Facility Inspection Report.

#### 3.6.1.2 Detention Basin Maintenance Program

The DOT has a program in place to inventory all County detention basins, including wetland basins, and detention basin features, such as outlet structures and emergency overflow spillways. The program calls for the basins to be inspected on a semi-annual basis and to perform any necessary maintenance to ensure that they are operating to maximize water quality benefits and detention storage. Maintenance may also include prescriptive burns on basins that incorporate prairie landscapes and critical preventative maintenance on wetlands. Refer to the FAS Facilities and Operations Division and DOT operation and maintenance plan(s) for additional details including inspection schedule, inspection checklist, inspection staff, and record-keeping procedures.

### 3.6.1.3 Catch Basins and Storm Sewers

The DOT's goal is to annually inspect 5 percent of the Lake County Highway System's storm sewer network and catch basins, and clean as needed. Catch basins are cleaned using the County's vacuum truck and waste obtained is disposed of in drying beds for solid waste disposal through a Memorandum of Understanding with the Public Works Department. Locations of cleaned catch basins are tracked. Catch basins found to have structural deficiencies are reported.

### 3.6.1.4 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 15 through April 15) are implemented.

#### 3.6.1.4.1 Roadway Ice Control

The minimal amount of salt, de-icing chemicals and additives necessary for effective control are to be used. Prior to November 15, preparation work to obtain seasonal readiness is completed. These tasks include: inspecting and reconditioning of spreaders and spinners, install these items onto snow removal vehicles, performing test operations, calibrating distribution rates per National Salt Institution Application Guidelines, and conducting better driver training. The completion of these preparatory tasks helps to ensure that only the necessary level of salt is applied.

DOT employs liquid deicer applications to reduce the amount of salt applied. Bridge decks are treated with liquids 2-3 times per week. This activity virtually eliminates the need to deploy trucks to apply salt during a frost event.

Snow plow trucks apply a blend of liquids to salt as it is being dispensed from the truck. The adopted name for the blend of liquids is Supermix. It consists of 80% salt brine, 10% non-chloride deicer, and 10% calcium chloride. The percentages of this mix change as the weather conditions change. The liquid lowers the freezing point of water, controls the salt bounce off the road, and reduces the amount of salt required to treat the road.

#### 3.6.1.4.2 Salt Delivery and Storage

Steps are taken to ensure that the delivery, storage and distribution of salt does not pollute stormwater runoff from DOT facilities. Delivered salt is unloaded into one of two salt domes owned by the County. The salt is loaded by conveyors to control gradation, prevent lumping and minimize potential illicit runoff. Additional procedures for salt delivery and storage are documented in the DOT's annual Snow and Ice Control Plan.

#### 3.6.1.4.3 Snow Plowing

Snow plowing activities push snow off of 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 DOT hauls accumulated snow to designated stockpile locations. These locations are asphalt surface areas. Snow blowing, plowing or dumping into drainageways is not allowed. Once the snow has melted, the stockpile areas are cleaned with a street sweeper removing any debris deposited.

#### 3.6.1.4.4 Facility Control

DOT, the Health Department, and the Public Works Department are responsible for snow and ice control at their own facilities. FAS contracts out snow and ice control responsibilities for

their facilities. DOT uses smaller pickup trucks with plows and push buckets on a loader for snow and ice control at their facilities. Salt and liquids are applied as needed to the parking areas and drives leading to the parking lots.

### **3.6.1.5 Vehicle and Equipment Operations**

DOT operates the central fleet maintenance facility for all Lake County department vehicles and equipment. DOT also operates a satellite fleet maintenance facility several days a week as a convenience for drivers / operators that work in the vicinity. Vehicle and equipment maintenance practices are performed to minimize or eliminate the discharge of pollutants to the stormwater system and receiving waters.

#### *3.6.1.5.1 Vehicle Fueling*

DOT maintains a fueling facility at the main DOT campus. The facility has two 10,000-gallon underground gasoline tanks and two 10,000-gallon underground diesel tanks. There are four gasoline and four diesel dispensers with breakaway nozzles. There are two emergency shut-offs located at the facility.

#### *3.6.1.5.2 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 section discusses proper handling and disposal of vehicle maintenance by-products such as waste oil, antifreeze, batteries and tires.

#### *Waste Oil*

All waste oil products are held in storage tanks. The product is collected by an outside vendor for recycling.

#### *Antifreeze*

All used antifreeze / coolant products are held in a storage tank and periodically collected by an outside vendor for recycling.

#### *Batteries*

All vehicle batteries are returned to the original supplier at the time of restocking. All used batteries are stored outside in an enclosed cabinet.

#### *Tires*

Tires are stored outside in a bin and are disposed of through a local recycler on an as-needed basis.

#### *Other*

Air conditioning related work is performed by certified DOT technicians. All Freon is recycled onsite. Freon use and information regarding vehicle HVAC system repairs are recorded and stored in the electronic maintenance program "Faster".

### **3.6.1.6 Animal Nuisance Control**

The DOT, upon receiving notification, collects animal carcasses from right-of-way areas. The carcasses are placed in a designated waste dumpster located on the DOT main campus where they are periodically picked up and disposed of by a licensed waste disposal company.

### **3.6.1.7 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 triple basins.

#### *3.6.1.7.1 Spoil Stock Pile*

The spoil stock pile is located on the DOT campus; the Public Works Department campus also contains a spoil stock pile for their operations. Asphalt and concrete maintenance by-products and excess earth excavation materials are temporarily stored in the stock pile. Attempts are made to recycle asphalt and concrete products prior to storage in the spoil stock pile. Surface runoff passes through a silt fence and is routed through a detention / water quality basin.

#### *3.6.1.7.2 Contaminated Soil Management*

Contaminated soil/sediment generated during an emergency response or identified during construction activities is collected or managed for treatment or disposal by a licensed contractor. Attempts are made to avoid stockpiling of the contaminated soil. If temporary stock piling is necessary, the stockpile is placed 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. Construction access is located on the upstream side of the temporary stock pile.

#### *3.6.1.7.3 Hazardous Waste*

Hazardous wastes are stored in sealed containers constructed of compatible material and labeled. The containers are located in non-flammable storage cabinets or on a containment pallet. These items include paint, aerosol cans, gasoline, solvents and other hazardous wastes. Refer to Section 3.6.1.5 for vehicle related hazardous wastes. Paint brushes and equipment used for water and oil-based paints are cleaned within the designated cleaning area. Associated waste and other cleaning fluids are contained within an enclosed tank. The tank is maintained by a private licensed special waste company.

#### *3.6.1.7.4 Sanitary Waste*

Sanitary waste is discharged into a sanitary sewer or is managed by a licensed waste hauler.

#### *3.6.1.7.5 Triple Basins*

Floor drains in the garage bay floor area of maintenance facilities are directed to a sanitary sewer via an underground triple basin. Triple Basins are vacuumed out and completely cleaned as needed. Vacuumed out material is transported to the wastewater treatment station to air-dry on a protected impervious surface. The dried material is then transported to a landfill.

### **3.6.1.8 Water Conservation & Irrigation**

Water conservation practices minimize water use and help to avoid erosion and/or the transport of pollutants into the stormwater management system. During periods of dry weather, a sprinkling/irrigation schedule is enforced. Maintenance activities (performed by the staff or its contractors) preserve water by utilizing vacuum recovery as opposed to water based cleaning when practicable. Additionally, the water main replacement program decreases the

possibility for water main leaks. In the event that a water main leak occurs, the leaking section is valved off as soon as possible and then repaired.

### 3.6.2 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. Refer to the County's Spill Control Plan. 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.

#### *Non-Hazardous Spills/Dumping*

Non-hazardous spills are typically consistent with an illicit discharge of household material(s) into the street or stormwater management system. Upon notification or observance of a non-hazardous illicit discharge, appropriate County personnel (as directed by the Stormwater Coordinator) 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 to be 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 personnel fill out the Spill Response Notice (Appendix M) and distributes to adjoining residences/businesses. In residential areas, a door hanger should be provided to residences on both sides of the spill and on both sides of the street.
- Personnel document the location, type of spill and action taken on the Indirect Illicit Discharge Tracking Form (Appendix E).
- The on-site personnel provide the tracking form to their supervisor. The supervisor, or his designee, takes the information from the form and transfers it to the Indirect Illicit Discharge Summary Form (Appendix E). If a person is observed causing an illicit discharge, PB&D is notified and appropriate citations are issued.

Non-hazardous spills that occur at County facilities are handled as outlined in the County's Spill Control Plan.

*Hazardous Spills*

Upon notification or observance of a hazardous illicit discharge, the procedures documented in the County's Spill Control Plan shall be followed. The Lake County Risk Management Department provides an environmental consultant to cleanup and dispose of waste material from a hazardous spill or release.

### 3.6.3 Employee Training

The County provides education and training to its employees to ensure that they have the knowledge and skills necessary to perform their functions effectively and efficiently. The purpose of the Employee Stormwater Training Program is to teach employees that implement the Program about the following:

- Stormwater characteristics and water quality issues;
- The roles and responsibilities of the various Departments, and individuals within these Departments, 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,
- Use of the SMPP and available guidance materials to select and implement best management practices.

#### 3.6.3.1 Training Approach

The County's training approach is geared towards employees maintaining their professional registrations and certifications. Training is available through seminars, webinars offered through various agencies, and new product / procedure demonstrations offered through SMC.

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

Digital and hard copies of the training materials will be kept and shared with applicable new employees as part of their job introduction. Revisions/enhancements to the SMPP will be approved by the Stormwater Coordinator and then shared with applicable employees. The Stormwater Coordinator will monitor the potential need for overall refresher material distributions and offer additional training as necessary.

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

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

## Section 4

# Program and Performance Monitoring, Evaluation and Reporting

*The SMPP represents an organized approach to achieving compliance with the requirements of the NPDES Phase II program for both private and public activities within the County. Land development, redevelopment and transportation improvement projects were required to comply with the provisions of the WDO prior to acceptance of the SMPP. Additionally, the County had numerous written and unwritten procedures for various tasks. This SMPP documents and organizes the 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 section describes how the County will monitor and evaluate the proposed stormwater pollution prevention plan based on the above stated objective. As part of the stormwater management program, the County:*

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

*This section describes how program monitoring, evaluation and reporting are performed.*

### 4.1 Program Monitoring and Research

Currently, water quality sampling/monitoring is not required under the NPDES Phase II program. Therefore, monitoring efforts focus on qualitative, not quantitative examination of stormwater practices. Future efforts may involve collecting information on the characterization of discharges from outfalls, identifying other sources of pollutants, characterizing the receiving waters, sampling construction site discharges, or identifying the performance of existing and potential enhanced stormwater pollution control measures. The County will comply with future federal and state mandates.

The Stormwater Coordinator will monitor research conducted by others regarding the effectiveness of various alternative stormwater practices, procedures and technologies. The County 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. This information will be used to provide insight into how the program may need to evolve

## 4.2 Program Evaluation

Program evaluation is performed on an annual basis. The primary mechanism for evaluating the program and ensuring that staff has adequate knowledge is supervision by responsible department managers. 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.

The following questions / topics are discussed annually among the Stormwater Coordinator, Department Managers, and staff.

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

Any program elements in need of modification and agreed upon by the Department Managers will be incorporated into the Program, and the applicable sections of the SMPP will be revised.

## 4.3 Reporting

The Stormwater Coordinator prepares an annual report of Program activities and performance each year. Each department with Program responsibilities provides the information necessary for producing the report to the Stormwater Coordinator. By June 1 of each Program year, the annual report is submitted to IEPA to meet the reporting requirements of the County's MS4 Permit.

For any spill, release, or other noncompliance that may endanger health or the environment, an oral report to IEPA is required within 24 hours, followed by a written report within 5 days. Specific reporting requirements are contained within the MS4 Permit Standard Conditions.

For any event that may result in remediation requirements, including any spill, release, or any noncompliance that may endanger health, the environment, or damage to property, or any type of potential claim to a third party or employee, please notify Lake County Risk Management immediately at (847) 377-2241 or [risk@lakecountyl.gov](mailto:risk@lakecountyl.gov).

## Section 5

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