

Leyden Township, Illinois
STORMWATER MANAGEMENT PLAN
Cook County



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1.0 Overview of the Stormwater Management Program Plan

This Stormwater Management Program Plan (SMPP) was developed by Leyden Township based off a SMPP template provided by the Illinois Environmental protection Agency Department. The purpose of the SMPP is to meet the minimum standards required by the United States Environmental Protection Agency (USEPA) under the National Pollutant Discharge Elimination System (NPDES) Phase II program. Federal regulations through the USEPA require that all Municipal Separate Storm Sewer Systems (MS4s), partially or fully in urbanized areas, obtain stormwater permits for their discharges into receiving waters.

1.1 Introduction

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

- cleaner lakes and streams,
- improved recreational opportunities and tourism,
- flood damage reduction,
- better aesthetics and wildlife habitat, and
- a safer and healthier environment for the citizens.

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

- manages the planning, design and construction of projects performed within its limits;
- maintains its facilities and performs its day to day operations;
- works toward protecting the receiving waters from illicit discharges;
- provides public education and outreach;
- trains its employees in carrying out and reporting program activities; and
- continually monitors and evaluations the program.

1.2 State and Federal Regulations

Federal environmental regulations based on the 1972 Clean Water Act (CWA) require that MS4s, construction sites and industrial activities control polluted stormwater runoff from entering receiving bodies of water. The NPDES permit process regulates the discharge from these sources based on amendments to CWA in 1987 and the subsequent 1990 and 1999 regulations by the U.S. Environmental Protection Agency (USEPA). In Illinois, the USEPA has delegated administration of the Federal NPDES program to the Illinois Environmental Protection Agency (IEPA). On December 20, 1999 the IEPA issued a general NPDES Phase II permit for all MS4s. Under the General ILR 40 Permit each MS4 was required to submit a Notice of Intent (NOI) declaring compliance with the conditions of the permit by March 10, 2003. The original NOI describes the proposed activities and best management practices that occurred over the original 5 year period toward the ultimate goal of developing a compliant SMPP. At the end of the 5th year (March 1, 2008) the components of the SMPP were required to be implemented per the ILR40 permit. The IEPA reissued the ILR 40 permit on April 1, 2009.

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

The General Permit allows for MS4s to take credit for activities being performed by a Qualifying Local Program (QLP) toward meeting its permit requirements. As part of our ongoing services, Leyden Township performs functions related to each of the six minimum control measures. MS4s are required to provide services for each of the Minimum Control Measures with the greatest effort in the Illicit Discharge Detection and Elimination and Pollution Prevention/Good Hou

1.3 Organization of SMPP

Leyden Township Stormwater Management Program Plan (SMPP) consists of policies, programs, and practices that implement and enforce stormwater management throughout the Township. The plan is structured to meet the six minimum control measures as defined in the General NPDES Permit No. ILR40. Leyden Township's Stormwater plan goals are to reduce the discharge of pollutants from our stormwater system to the maximum extent practicable and to protect water quality, among other requirements.

The SMPP identifies best management practices to be implemented in six categories:

1. Public Education and Outreach,
2. Public Participation/Involvement,
3. Construction Site Runoff Control,
4. Post Construction Runoff Control,
5. Illicit Discharge Detection and Elimination, and
6. Pollution Prevention/Good Housekeeping.

1.4 Watersheds, Sub-Watersheds and Receiving Waters

Leyden Township is primarily located within the Upper Des Plaines River Watershed. Silver Creek is the main receiving water, tributary to the Des Plaines River, which is located within the Township.

2.0 Program Management

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

2.1 Intra Department Coordination

The Township Board is the policy and budget setting authority for Leyden Township. The Public Works Department and the Township Engineering Department work together to implement this SMPP.

2.1.1 Stormwater Coordinator

Leyden Township Director of Sewer and Water is the Stormwater Coordinator and responsible for the oversight and implementation of this SMPP.

Duties of the Stormwater Coordinator:

- a. Is the lead contact for coordination with the Illinois Environmental Protection Agency, contractors, the development community and other external regulatory agencies;
- b. Understands the requirements of ILR40, ensures that the SMPP meets the permit requirements and that Leyden Township effectively implements the SMPP;
- c. Ensures that Leyden Township complies with all minimum Stormwater & Floodplain Ordinance and Municipal Code provisions;
- d. Ensures that the Municipal Facilities comply with all minimum ILR40 permit requirements;

- e. Is aware when a Municipal Project is required to be authorized under the ILR10 permit. In these cases, the Stormwater Coordinator should ensure that the NOI is received by IEPA at least 30 days prior to the start of construction; and
- f. Assists the development community in understanding when an ILR10 permit is required and whether construction sites comply with the general ILR10, the Leyden Township Municipal Code and Stormwater & Floodplain Ordinance permit conditions; and
- g. Should understand the role illicit discharges play in the overall NPDES II program. In general, an incidence of noncompliance 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 NOI form with IEPA.

2.1.2 Department of Community and Economic Development

The Leyden Township Engineer supports the Stormwater Coordinator in obtaining compliance with the NPDES program. CED is the enforcement hand for the Township.

The Township Engineer has the responsibility to concur that projects meet NPDES standards prior to the issuance of permits and oversee site inspections during construction. Refer to Chapter 3.4 and 3.5 for additional information on this process.

2.1.3 Public Works Department

Public Works personnel carry out infrastructure maintenance activities within the MS4. Public Works Engineering Division personnel, along with personnel from the Township's Code Enforcement Team are designated as the primary entities responsible for performing the duties specified under Chapter 3.3 Illicit Discharge Detection and Elimination and Chapter 3.6 Pollution Prevention and Good Housekeeping.

2.1.4 Engineering

The MS4 may enlist the services of consultants to assist in the implementation of (including, but not limited to, plan review, site inspections and enforcement), and the design of MS4 projects. The Stormwater Coordinator has the responsibility of administering these contracts. The stormwater portion of the plan review is conducted by the Township Engineer. The Township Assistant Director of Public Works/Township Engineer performs the municipal end of the plan review in house including but not limited to roadway, geometrics, utilities, signage, etc.

2.1.5 Fire District

Fire protection for Leyden Township is provided by the Leyden Township Fire District. Depending upon product, size or location of a hazardous waste spill, the Fire District is contacted if not already aware of the situation. The Fire District would assess the scene and depending upon the product, mitigate the spill. If product or size warrants it, the Fire District would call for hazardous material cleanup.

3.0 The Program

This Stormwater Management Program Plan includes six components, each of which is necessary in an effort to reduce/eliminate stormwater pollution in receiving water bodies. Chapter 3.1 describes the efforts to educate the public about stormwater pollution and stormwater pollution prevention. The manner in which Leyden Township incorporates public participation and involvement into the SMPP is explained in Chapter 3.2. Chapter 3.3 describes the approach to detecting and eliminating stormwater illicit discharges. Construction and post construction runoff control is addressed in Chapters 3.4 and 3.5. Lastly, Chapter 3.6 discusses responsibilities for the care and upkeep of its general facilities, associated maintenance yards, and municipal roads and to minimize pollution. This chapter also discusses intended training for employees on the implementation of the SMPP.

3.1 Public Education and Outreach

Leyden Township endorses and utilizes the IEPA Quality Education Program. The Township's water quality education program reaches the public through our website. This information provides educational information to the public that outlines the steps that the public can take to reduce pollutants in storm water runoff that fulfill the requirements for the Public Education and Outreach minimum control measure in the General NPDES Permit No. ILR40.

- **Speaking Opportunities.**

Leyden Township staff coordinates opportunities for the Public to have open discussions pertaining to stormwater throughout the year. These events are held annually for residents, community groups, professional organizations, businesses and governmental agencies to come in and voice concerns or ask questions. Once every month at the annual Township Board meetings any resident is given the opportunity to speak particularly about Stormwater concerns within our community. This is in accordance with the updated ILR40 requirements. Given the opportunity the Township also tries to invite outside speakers who are experts on particular topics to present.

- **Public Service Announcements & Media.**

Leyden Township has taken advantage of technology to enhance outreach efforts. The department runs information located on the website pages that detail water quality trends and highlight practices that can reduce the transport of pollutants into waterways. The Township promotes available informational which has the potential to reach all residents via internet to promote seasonal BMPs, events and other stormwater-related news.

3.2 Public Participation/Involvement

For many years the control of stormwater runoff has been a long-standing policy objective in Leyden Township. Through the years the Township has enacted storm water control ordinances to provide the ability for staff to enforce stormwater issues. Township staff actively participates in the Silver Creek Watershed Group which has a focus on stormwater management and water quality. Public involvement and participation is an integral part of water quality improvement programs. When residents are engaged in the process, change is more likely to occur in everyday practices, which can greatly improve water quality throughout the watershed.

3.3 Illicit Discharge Detection and Elimination (IDDE)

Currently, illicit discharges contribute considerable pollutant loads to receiving waters. There are two primary situations that constitute illicit discharges:

- 1) non-stormwater runoff from contaminated sites and
- 2) deliberate discharge or dumping of non-stormwater. Illicit discharges can enter the storm sewer system as either an indirect or direct connection.

Leyden Township has an established policy for Illicit Discharge Detection and Elimination program for the Leyden Township's Municipal Separate Storm Sewer System. The Township responds to suspected illicit discharge and manages enforcement procedures.

3.3.2 Watershed Development Ordinance

Leyden Township Municipal Code which prohibits illicit discharges as part of the development process. These provisions are applicable for regulated development activities as defined by the Municipal Code. Furthermore, the Municipal Code requires that the applicant prohibit illicit discharges into the stormwater management system generated during the development process. The Municipal Code allows Leyden Township to require inspections, performance bonds, and to adopt/enforce violation procedures.

3.3.3 Understanding Outfalls and Illicit Discharges

Understanding the potential locations and the nature of illicit discharges in urban watersheds is essential to find, fix and prevent them. An Outfall means a point source at the point where a municipal separate storm sewer discharges into waters of the United States "receiving water". Open conveyances connecting two municipal storm sewers, or pipes, tunnels or other conveyances which connect segments of the same stream or other Waters of the United States are not considered Outfalls.

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.

3.3.3 A Potential Sources of Illicit Discharges

The Table shows that direct connections to storm sewer systems most likely originate from commercial/industrial facilities. Thus, the focus on Chapter 3.3 is on the identification of illicit discharges from commercial/industrial facilities.

Table 1: Potential Sources of Illicit Discharges to Storm Sewers

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

√: Most likely condition.

X: May Occur

-: Not very likely

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

3.3.3 B USEPA Exclusions

The illicit discharge detection and elimination program does not need to address the following categories of non-stormwater discharges or flows unless the Township identifies them as significant contributors of pollutants to its MS4 per the USEPA. Not all dry-weather flows are considered inappropriate discharges.

- 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 C Pollutant Physical Indicators

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

Odor

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

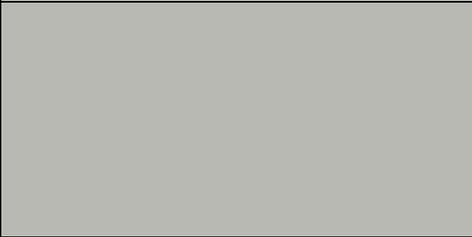
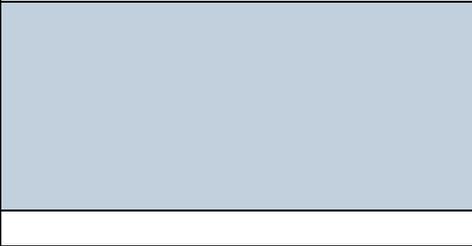
Table 2: Odor or Potential Illicit Discharges

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

Color

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

Table 3: Color of Potential Illicit Discharges (adapted from CWP)

Water Color	Possible Cause	Images
<p>Brown Water – ranging in color from light tea to chocolate milk; it may have a rotten egg odor.</p>	<p>Human causes may be eroded, disturbed soils from constr. sites, animal enclosures, destabilized streambanks and lake shore erosion due to boat traffic.</p>	
<p>Yellow –</p>	<p>Human causes may include textile facilities, chemical plants or pollen.</p>	
<p>Gray Water – appears milky and may have a rotten egg smell and/or soap odor. May be an appearance of cottony slime.</p>	<p>Human causes may be illicit connections of domestic wastewater; untreated septic system discharge; illegal boat discharge; and parking lot runoff.</p>	
<p>Green Water – ranging from blue green to bright green color and may impart odor. Conditions typically occur from May to October.</p>	<p>Human causes may be over fertilizing lawns, boat discharges, septic systems, agriculture operations, or discharging poorly treated wastewater.</p>	

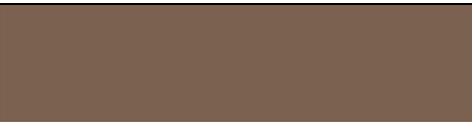
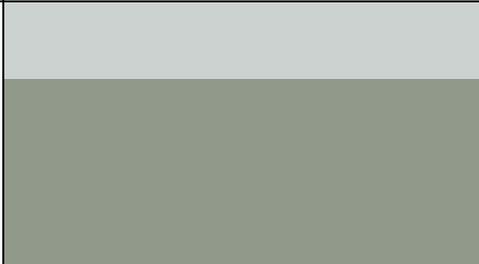
<p>Orange/Red.</p>	<p>Human causes may include meat packing facilities or dyes.</p>	
<p>Green Flecks – resembling floating blue green paint chips or grass clippings. These <i>Blooms</i> and are potentially toxic.</p>	<p>Human cause is excessive nutrients. Fertilizers used on lawns can contaminate surface and ground water.</p>	

Table 3 (continued)

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

Turbidity

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

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

Figure: Turbidity Severity Examples



Floatables

- The presence of sewage, floating scum, foam, oil sheen, or other materials can be obvious indicators of an illicit discharge. However, trash originating from areas adjacent to the outfall is this section.
- If you think the floatable is sewage, you should automatically assign it a severity score of three since no other source looks quite like it.
- Suds are rated based on their foaminess and staying power. A severity score of three is designated for thick foam that travels many feet before breaking up. Natural foam breaks apart easily, can be brown, black or yellowish and may smell fishy or musty.
- Surface oil sheens are ranked based on their thickness and coverage. In some cases, surface sheens may not be from oil discharges, but instead created by in-stream processes. A petroleum sheens doesn't break apart and quickly flows back together.

Table 4: Floatables in Potential Illicit Discharges (adapted from CWP)

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

3.3.3 D Testing Indicators

Ammonia

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

Chlorine

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

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

Industrial sources of copper include the following:

Copper manufacturing (smelting),

- Copper metal processing/scrap remelting,
- Metal plating,
- Chemicals manufacturing,
- Analytical laboratories,
- Power plants,
- Electronics,
- Wood preserving, and
- Copper wire production.

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

Detergents

Most illicit discharges have elevated concentration of detergents. Sewage and wash water discharges contain detergents used to clean clothes or dishes, whereas liquid wastes contain detergents from industrial or commercial cleansers. The nearly universal presence of detergents in illicit discharges, combined with their absence in natural waters or tap water, makes them an excellent indicator. Research has revealed three indicator parameters that measure the level of detergent or its components-- surfactants, fluorescence, and surface tension. Surfactants have been the most widely applied and transferable of the three indicators. Fluorescence and surface tension show promise, but only limited field testing has been performed on these more experimental parameters; therefore, these are not tested. Refer to Boron and Surfactants descriptions

E. coli, Enterococci and Total Coliform

Each of these bacteria is found at very high concentrations in sewage compared to other flowtypes and is a good indicator of sewage or seepage discharges, unless pet or wildlife sources exist in the sub watershed. Overall, bacteria are good supplemental indicators and can be used to find “problem” streams or outfalls that exceed public health standards. A Fecal Coliform count greater than 400 per 100 mL indicates waste water contamination.

Fluoride

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

Phenol

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

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

PH

Potential ID Range: <6.5 and > 8.5

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

Potassium

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

Surfactants

Surfactants are the active ingredients in most commercial detergents and are typically measured as Methyl Blue Active Substances (or MBAS). They are a synthetic replacement for soap, which builds up deposits on clothing overtime. Since surfactants are not found in nature, but are always present in detergents, they are excellent indicators of sewage and wash waters. The presence of surfactants in cleansers, emulsifiers and lubricants also makes them an excellent indicator of industrial or commercial liquid wastes. A surfactant value of > 0.25 -mg/L within residential areas indicates that either a sewage or wash water is present in the stormwater; a value of >5 -mg/L within non-residential areas indicates that there is an industrial discharge.

3.3.3 E Indirect Connection Program

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

Groundwater Seepage

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

Spills

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

Dumping

Dumping a liquid into a storm drain inlet: This type of transitory discharge is created when liquid wastes such as oil, grease, paint, solvents, and various automotive fluids are dumped into the storm drain. Liquid dumping occurs intermittently at sites that improperly dispose of rinse water and wash water during maintenance and cleanup operations.

Outdoor washing activities

Outdoor washing may or may not be an illicit discharge, depending on the nature of the generating site that produces the wash water. For example, hosing off individual sidewalks and driveways may not generate significant flows or pollutant loads. On the other hand, routine washing of fueling areas, outdoor storage areas, and parking lots (power washing), and construction equipment cleanouts may result in unacceptable pollutant loads. Individual washing activities are addressed through the Public Education and Outreach Program in Chapter 3.1. whereas observed/documented routine washing activities should be addressed through the Removal of Illicit Discharges Procedure in Chapter 3.3.

Non-target irrigation from landscaping or lawns

Irrigation can produce intermittent discharges from overwatering or misdirected sprinklers that send tap water over impervious areas. In some instances, non-target irrigation can produce unacceptable loads of nutrients, organic matter or pesticides. The most common example is a discharge from commercial landscaping areas adjacent to parking lots connected to the storm drain system. This type of discharge is addressed by the Public Education and Outreach Program in Chapter 3.1.

3.3.4 Enforcement

Sewer Use Ordinance includes Storm Sewer prohibitions. The Township investigates all reports of spills and illegal hook-ups. This is complaint driven and reactionary. Investigations can be cooperative with Township Public Works Department and the Illinois Environmental Protection Agency.

During annual business license renewal, business premises are inspected for the presence of potential illicit discharge.

3.3.4 A Complaints

Arrange a meeting for an inspection of the property with the CED Department and the owner/operator of the property where the pollution source is suspected. Most illicit connections and improper disposal can be detected during this step. Notify the site owner/operator of the problem and instruct them to take corrective measures via 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. The owner may be subject to penalties if corrective action is not achieved within the applicable time frame.

Conducting follow-up inspections after the stipulated time frame has elapsed determines whether corrective actions have been implemented to:

- 1) remove the illicit connection or
- 2) eliminate the improper disposal practice.

If corrective actions have been completed (i.e. and the illicit discharge has been eliminated) CED 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 Township personnel (likely including involved Public Works Personnel, Public Works Director and CED Inspector) is held to determine appropriate steps to obtain compliance. Appropriate actions may include monetary or other penalties.

3.3.5 Inspection

Going forward, high priority outfalls will be inspected on a minimal annual basis with reminders and scheduling managed through the Township system. The Township welcomes reporting of illicit discharges through the Township online customer response, telephone or in-person notification. The Township will track notifications and follow-through on issues. Enforcement is handled through CED. Depending upon the severity of issue, a correction notice is given with a timeframe or immediate shut-down until violation is remedied. Weightiness is based on life safety, health and welfare.

Most common issues are:

- Contaminated run-off from leaking chemical drums and tanks, dumpsters, grease containers;
- Truck lots with poorly maintained or abandoned vehicles;
- Gasoline, Antifreeze, Diesel spills caused by accidents;
- Outside power washing of equipment;
- Heavy solids / siltation from construction sites;
- Direct dumping of illicit material into storm sewers

3.4 Construction Site Runoff Control

The goal is to ensure that new development does not increase existing stormwater problems or create new ones. Township-wide 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.

3.4.1 Applicant

Building applications and review are handled directly by the Cook County Building Department. However, Leyden Township on its own, ensures that 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 applicant in maintaining a compliant site; however, the applicant remains the responsible party. Any violations are reported to Cook County then the County administers violations or fines to the applicant.

3.4.2 Site Plan Review

Cook County is the enforcement agent for Leyden Township regarding any and all building permits. The Township does however, has the Township engineer review all plans in regards to the handling of the Stormwater Provisions. If the engineer finds any discrepancies notification is made to Cook County to and provides comments to the County 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. Concurrently, the Township Engineer reviews for any site or stormwater issues.

3.4.3 Construction Site Inspection Process

During construction the Township's Code Enforcement Department (CED) along with the Township engineer make routine visits to the construction to ensure the contractor is abiding by any and all stormwater practices. Both site design and construction related concerned phone calls are directed to CED, and the Township Engineer. Site design comments are handled on a case by case basis. Construction related calls are typically addressed by performing a site inspection.

The Township routinely inspects sites for erosion and sediment control Best Management Practices (BMP) along with the control of construction material debris. The Township inspects sites during construction, however it should be noted that all construction and construction regulations are governed by Cook County Building and Highway. The Township inspects sites on its own to ensure such regulations are being followed. These policies form the fundamental regulatory control programs that enforce rules to reduce pollutants in storm water runoff from construction activities.

Inspection aims to determine if the erosion control measures are in good working order so they prevent materials from leaving the site and potentially ending up in storm drain system. This includes proper installation of silt fencing, additional BMPs installed at drainage outfalls, proper location of construction entrance and dewatering discharge filters. This reduces solids which would otherwise enter the creek system.

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 IEPA's Program recommendations. All proposed permanent stormwater treatment practices must be reviewed and approved by the Township Engineer.

3.4.4 Minimum Construction Site Practices

Some minimum control measures include the following:

- Construction site sequencing and phasing,
- Preservation of existing vegetation and natural resources
- 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

All projects that require a stormwater permit must have a SWPPP designed by a licensed engineer. The Township does not designate control measure, that is handled through Cook County, but does inspect those listed and designed in the SWPPP.

3.4.8 Township Construction

The Township follows the direction of the Cook County Building Department construction standards to which private developers adhere. This includes using filter fabric, sediment logs and inlet filter bags for excavation work

3.5 Post-Construction Runoff Control

Leyden Township complies with NDPEs permit requirements by incorporating Ordinance and BMP standards to minimize the discharge of pollutants of development projects. The township is an active participant in ensuring compliance with stormwater discharge permit requirements for long-term post-construction practices so that protection of water quality and control runoff flow is achieved.

3.6 Pollution Prevention / Good Housekeeping

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

3.6 A - Inspection and Maintenance Program

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

3.6 A.1 - Street Clean-up

Street clean-up operations are performed to reduce potential illicit discharges and to provide a clean environment. The parkway lines of all streets are cleaned on a rotating basis. The in-house street clean-up crew handles all service requests, special events and in-house construction jobs. Township streets are completely and constantly cleaned resulting in pollution load reductions.

3.6 A.2 - Catch Basins

The Township began an aggressive catch basin cleaning program at the start of 2016 with the intent to vacuum out 100% of the catch basins annually. Locations of cleaned catch basins are tracked. Catch basins found to have structural deficiencies are reported to the proper Public Works Division for repair. This program catches the solids which would otherwise enter the creek system.

3.6 A.3 - Landscape Maintenance

Leyden Township maintains its general facilities, municipal roads, associated maintenance yards, and other public areas. Municipal staff is responsible for Litter and Debris control described in Chapter 3.6.A.3.a. The Township also is responsible for the remainder of the landscape maintenance program under the supervision of the Public Works Department. Leyden Township is responsible for ensuring that their landscape workers are provided with training and/or other information to ensure that they adhere to the Leyden Township's SMPP.

3.6 A.3.a - Litter and Debris

Litter and debris can accumulate on Township property and roadway rights-of-way. Township properties and rights-of-way, (including municipal, Township, County and State rights-of-way within the MS4 limits) are cleaned by Public Works personnel on an as-needed basis.

3.6 A.3.b - Private Residence Yard Waste

Yard waste and leaves from private residences are collected through the refuse collection contractor. Yard waste is collected weekly from April till November which reduces debris from landing in the street and being caught in catch basins and flowing to the creek system.

3.6 A.3.c - Fertilizers

The Township employs turf maintenance personnel required to be a licensed applicator for fertilizers. Weed killer and fertilizers are scheduled up to three times per year. The use of pesticides and fertilizers is to be managed in a way that minimizes the volume of storm water runoff and pollutants.

3.6 A 4 - Snow Removal and Ice Control

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

3.6 A. 4.a - Roadway Ice Control

The Township’s goal is to use the minimal amount of salt, de-icing chemicals and additives necessary for effective control. Prior to November 1, preparation work to obtain seasonal readiness is completed. These tasks include: inspecting and re-conditioning of spreaders and spinners, installing these items onto snow removal vehicles, performing test operations, and conducting effective driver training. Performing these preparatory tasks helps ensure that only the necessary level of salt is applied.

Township Public Works staff has been taking measures to limit the use of salt due to its high cost and environmental impacts. Staff has reduced road salt usage by lowering the application rates for the salt when possible. Under certain circumstances only hills, curves, intersections, arterials, and collector streets and neighborhood connector roadways have been salted. Procedures have also been modified to, under certain conditions: postpone application of salt to residential side streets until after snow plowing has been completed. As a result, although residential streets may not be completely free of snow and ice, they will be safe and passable based on the traffic volume for vehicles driving at a reasonable speed for the conditions.

3.6 A 4.b - Salt Delivery and Storage

Steps are taken to ensure that the delivery, storage and distribution of salt does not pollute stormwater runoff from the Public Works Facility. The floor of the salt storage holding areas and adjacent receiving/unloading area are constructed of concrete. Delivered salt is unloaded at the salt holding area located at the Township Highway Facility. The Township has several salt storage bins.

3.6 A 4.c - Snow Plowing

Snow plowing activities direct snow off the pavement and onto the parkways. This reduces the amount of salt, chemical additives, abrasives or other pollutants that go directly into the storm sewer system. Snow blowing, plowing or dumping into drainageways is not allowed.

3.6 A 5 - Vehicle and Equipment Operations

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

3.6 A 5.a - Vehicle Fueling

The vehicle fueling area contains three above ground double wall steel storage tanks. The Township employees are responsible to follow Fuel/Oiling procedures, i.e. Mowers shall not be fueled or oiled in grass areas. All equipment shall be moved to a concrete area to be fueled.

3.6 A 5.b - Vehicle Maintenance

Vehicle maintenance procedures and practices are designed to minimize or eliminate the discharge of petroleum-based pollutants to the stormwater management system, including receiving waters. This chapter discusses proper handling and disposal of vehicle maintenance byproducts such as waste oil, antifreeze, batteries and tires.

Waste Oil: Used motor oil, transmission fluids, gear lubes, brake fluids and other vehicle fluids (except antifreeze) are collected and stored in a 250 gallon tank. Typically, the waste oil tank is emptied and the contents removed for recycling.

Antifreeze: Used antifreeze is stored in a specialized 55 gallon drum. When accumulated, a special waste hauler is contacted for collection and disposal.

Batteries: Used batteries are recycled by local vendor when buying a replacement.

Tires: Used tires are disposed of at a local vendor.

3.6 A.6 - 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. Public Works material storage bins at the Public Works facility run-off is conveyed storm sewers located throughout the Public Works yard. Each storm basin contains a filter basket to separate any effluents from reaching the storm water system.

3.6. A. 6.a - Spoil Stock Pile

The spoil stock pile is located at the Public Works Facility. 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. Asphalt and concrete are separated and put into material storage bins separately and are hauled away separately. Licensed waste haulers are contracted to remove and dispose the contents of the spoil stock pile at a licensed landfill when designated waste storage bins are approaching capacity.

3.6 A. 6.b - Hazardous Waste

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

3.6 A. 6.c - Triple Basins

Floor drains in the garage bay floor area of the Public Works Facility are directed to an underground Triple Basin. At a minimum, the Triple Basin is vacuumed out and completely cleaned twice a year.

3.6 B Employee Training

The Township's intent is to provide education and training to all 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 appropriate employees about:

- 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 nonstormwater discharges;
- On managing and maintaining green infrastructure and low impact design features; and, - How to use the SMPP and available guidance materials to select and implement best management practices.

The Township maintains good housekeeping habits:

- Clean Facility – picking up trash/debris; sweeping out Public Works garage minimally monthly
- Sludge Hauling – if spill occurs, Township employee is responsible to clean up immediately
- Containers are stored orderly and away from traffic to prevent spills
- Dumpsters are covered and reported if a leak is detected
- Vehicles are cleaned inside garage which drains directly to triple basin
- Storage containers are properly labeled
- Plant chemicals, petroleum is stored inside the Public Works garage

4.0 Complaint Procedure

The Township welcomes and encourages the public to report issues that may affect the Township waterways. The form below will be used and will be found at the Township website.

Leyden Township Stormwater Complaint

The storm drains and ditches in the street outside your home flow directly to waterways, without any treatment. It is therefore very important that no one be allowed to dump waste of any kind onto the street surface, drainage pipes, and ditches, or into storm drains – they are only for rainwater. If you see someone dumping anything onto street surfaces, into storm drains, or into any other device built to contain rainfall or runoff, please report it immediately by calling the Township at 847-455-8616 or by completing the form below.

Fill in the information and Leyden Township will investigate all reports received and take any and all enforcement actions necessary to rectify by discharge.

Erosion and Sediment Complaints: observed excessive erosion and sedimentation from active construction sites.

Illicit Drainage Complaints: observed illegal dumping into the stormwater system and / or streams. Anything entering the stormwater system that is not stormwater is considered illicit discharge.

Complaint can be made anonymously.

Name:

Address:

Telephone:

Email:

Date / Time of Occurrence:

Location:

Description of Problem:

Was a Commercial Vehicle Involved? YES / NO If Yes,
what was company name or license plate?