

Report for City of Moraine, OH

Illicit Discharge Detection and Elimination Plan



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1.0 OVERVIEW/BACKGROUND

This Illicit Discharge Detection and Elimination Plan (IDDEP) is intended to summarize the City of Moraine's (City) plan to detect and eliminate illicit discharges and connections to the City's municipal separate storm sewer system (MS4). This IDDEP is one component of the City's overall Illicit Discharge Detection and Elimination Program, which includes, municipal storm system sewer mapping, an ordinance, the IDDEP, public education, reporting, recordkeeping, and staff training.

An illicit discharge is defined as any direct or indirect non-storm water discharge to the MS4. The National Pollutant Discharge Elimination System (NPDES) regulates the discharge of storm water under the authority of the Federal Clean Water Act. The Ohio Environmental Protection Agency (Ohio EPA) is the designated authority to administer the NPDES program within the State of Ohio. Under this authority, Ohio EPA has issued NPDES permits regulating the discharge of storm water. The City is under the regulation on the MS4 NPDES General Permit No. OHQ000003 (General permit) issued on September 11, 2014. The current General Permit will remain in effect until September 10, 2019, after which a new General Permit will be issued.

This document was created by the City to describe its approach to address public health concerns and water quality issues related to illicit discharges in the City. Historically, failing home sewage treatment systems (HSTS), illegal connections to storm sewer lines, and spills have typically been the major sources of illicit discharges in the City's jurisdictional area.

This plan describes specific responsibilities of the City under the Storm Water Management Plan (SWMP), updated in September 2019, which is available on the City's website. The City's IDDEP includes a dry weather storm water outfall screening protocol, the plan and approach for investigation, as well as the elimination of specific types of discharges. **Table C** lists Ohio EPA permit requirements for illicit discharges and the City's corresponding response as contained in its SWMP (located in Appendix C). The City is responsible for administering the plan and compiling compliance data for annual reporting to Ohio EPA.

The City of Moraine's Small MS4 Storm Water General Permit (OHQ000003) issued by the Ohio EPA, addresses the following six Minimum Control Measures (MCM):

1. Public education and outreach
2. Public participation and involvement
3. Illicit discharge detection and elimination (IDDE)
4. Construction site runoff control
5. Post-construction runoff control
6. Pollution prevention/good housekeeping for municipal operations

This document is required to assist the City in fulfilling MCM 3 of their MS4 Permit.

2.0 STORM WATER AND HSTS IDENTIFICATION

As described in the City's SWMP, the City has developed a comprehensive storm water system map from record drawings and field records. The City will add information required in the permit (Part III.B.3.b.) to the map by December 31, 2019. Additionally, the City will coordinate with the Montgomery County Public Health Department to identify existing and planned HSTS within its service area. The City will compile and add known HSTS to the storm water system map by December 31, 2020. The City will evaluate the feasibility to connect HSTS properties to the local sanitary sewer system by December 31, 2021.

This comprehensive storm sewer map, storm water and non-storm water discharge information, and information collected from dry-weather screening can be used throughout the permit term to highlight areas with the highest potential for illicit discharges. A general map of the City of Moraine is included in Appendix A.

2.1 Priority Areas

A priority area within the community is a key area where the potential for an illicit discharge exists. The following list, taken from *Illicit Discharge Detection and Elimination: A Guidance Manual for Program Development and Technical Assessments* (CWP 2004), describes several screening factors that should be considered when determining the potential for priority areas of illicit discharges.

1. History of discharge complaints and reports.
2. Poor dry weather water quality.
3. Density of generating sites or industrial National Pollutant Discharge Elimination System (NPDES) storm water permits.
4. Storm water outfall density.
5. Age of sub-watershed development.
6. Sewer conversion.
7. Historic combined sewer systems.
8. Presence of older industrial operations.
9. Aging or failing sewer infrastructure.
10. Density of aging HSTSs.

A list of the City's general priority areas has been identified in **Table 1**.

Table 1. Priority Areas within the City of Moraine for Illicit Discharges

Priority Area	Illicit Discharge
Old Subdivisions	Illegal Connections, HSTS
Industrial Park	Spills, Illegal Connections
Highway Areas	Spills/Accidents

The identification of priority areas is anticipated to be an adaptive or evolving process over the next MS4 permit term as the City collects more data. As the City updates the above GIS data with more current information, it intends to reassess the mapping overlay to highlight potential changes.

to priority areas for illicit discharges. This effort will inform the future plans for the prioritization of dry-weather screening within the MS4 area.

2.2 Non-Storm Water Discharges or Flows

According to the General Permit, the following discharges only need to be addressed if the City has identified them as significant contributors of pollutants to the MS4. This list is not all inclusive and specific categories should be agreed upon with Ohio EPA, if needed.

- Water line flushing
- Landscape irrigation
- Diverted stream flows
- Rising ground waters
- Uncontaminated ground water infiltration
- Uncontaminated pumped ground water
- Discharges from potable water sources
- Foundation drains
- Air conditioning condensation
- Irrigation water
- Springs
- Water from crawl space pumps
- Footing drains
- Lawn watering
- Individual residential car washing
- Flows from riparian habitats and wetlands
- Dechlorinated swimming pool discharges
- Street wash water
- Discharges or flows from firefighting activities

2.3 Dry Weather Outfall Identification

Dry weather outfall screening involves locating all known outfalls within the MS4 and performing inspections at these locations. The objective of dry weather field screening is to develop an assessment of dry weather discharges from MS4s to target future illicit discharge investigations toward sources with the highest probability of causing water quality concerns.

Dry weather inspections are a visual inspection of the outfall location. USEPA defines dry weather as a period of 72 hours or more in which there is no precipitation. When dry weather flows are observed at an outfall, the flow could potentially be from an illicit discharge or another action. Likewise, if no flow is observed during a dry weather screening, it does not mean there are no problems upstream.

3.0 INSPECTION PROCESS

A multi-faceted inspection process has been established to inspect outfalls and identify illicit discharges within the MS4. Once priority areas are established within the City as hot spots, visual inspection/identification and sampling/analysis will ensue.

3.1 Dry Weather Outfall Visual Screening

The City uses an outfall field inspection sheet to characterize the general condition of the outfalls as well as indicate the potential for illicit discharges. Collecting this information at each outfall enables the City to assess the condition of the storm water infrastructure and identify potential illicit discharges. The City's field inspection sheet is included as Appendix B to this IDDEP.

The dry weather inspection process will follow several steps including:

1. When possible, notify the public prior to the field inspection visit through the utility bill, City Web site, newsletter, etc.
2. Current City GIS storm system map highlighting unique structure numbers, outfall locations, other storm infrastructure, streets, streams and other applicable landmark features to assist in field locating the outfall. If not already in the GIS database, the spatial location of the outfall must be documented in the field.
3. For each outfall screening, a City field inspection sheet must be completed. Once in the office, the data collected will be entered into an electronic database which contains geographic references that will allow the data to be mapped and integrated in the City's GIS system. At a minimum, the observation will involve the following:
 - a. Outfall identification
 - b. Date, time, crew members' names
 - c. Time and date of last rainfall
 - d. Flows during dry-weather conditions
 - e. Water clarity and color
 - f. Presence of foam, oil sheen, trash, and/or floatable materials*
 - g. Presence of bacterial sheen or slimes*
 - h. Staining of banks, outfall structure, and/or vegetation*
 - i. Excessive vegetative growth*
 - j. Odor*
 - k. Verify location of the outfall matches the field map data
 - l. A picture of the outfall

*The characteristics above should be documented even if no flow was present at time of inspection.

3.2 Staff Observations

The City will utilize volunteers and City Staff to perform field investigations to locate and record outfalls. The City will use ArcGIS database of known outfalls to conduct dry-weather screening activities. To better assist with the field assessment activities, the following list of equipment is recommended for locating and documenting storm water outfalls, as well as testing for illicit discharges during dry-weather screening activities:

1. Waders
2. Measuring Tape
3. Watch
4. Camera
5. Spray Paint (or other marking equipment)
6. Gloves
7. Sampling Equipment (e.g. bottles, pH test strips, thermometer, etc.)
8. Device with Explorer for ArcGIS (i.e., smart phone)
9. First Aid Kit
10. Flashlights and Batteries

During normal daily operations conducted by the City, staff may observe evidence of illicit discharges. Through the City's IDDE program, staff will be trained regarding illicit discharges and provided information on appropriate methods for reporting them. This training is closely aligned with training regarding pollution prevention/good housekeeping activities under Minimum Control Measure (MCM) 6 and will be incorporated as part of the City's annual training program. Field staff that will participate in illicit discharge detection and elimination related activities will be trained regarding:

- The definition of illicit discharges/connections
- Techniques for finding and identifying and reporting
- Techniques for analyzing and recording
- Methods/procedures for eliminating

3.3 Visual Inspections

A visual inspection along with odors and observations of the area surrounding the outfall can often provide sufficient evidence to determine if illicit discharges are present. For example, sewage can often be identified by the odor and the presence of floatable materials. Similarly, petroleum products can often be identified by odor and a rainbow sheen that exists on the surface of the water. If a flow is present, grab samples can be collected and tested for indicator parameters identified in *Illicit Discharge Detection and Elimination: A Guidance Manual for Program Development and Technical Assessments* (CWP 2004). If a grab sample is collected, a third party or City contracted laboratory will perform any required water quality testing. Some of the indicator parameters include:

1. Ammonia
2. Boron
3. Chlorine
4. Color
5. Conductivity
6. Detergents
7. *E. coli*
8. Fluoride
9. Hardness
10. pH
11. Potassium
12. Turbidity

If a discharge is determined to be illicit through a visual and sensory assessment, City staff may obtain a sample of water for quality analysis. Using these methods and techniques will allow for an efficient collection of field data. As the City gains a better understanding of any illicit discharges that may be occurring within the MS4 system, the above parameters may be tested, changed, and/or eliminated from the list.

4.0 TRACING ILLICIT DISCHARGES

If the City has confirmed the presence of an illicit discharge, attempts will be made to trace the source of the illicit discharge. The magnitude of the efforts to trace the source will be dependent upon the type of connection. The City may implement a combination of methods to isolate the specific source of the illicit discharge. The following highlights appropriate approaches for tracing a suspected illicit discharge.

1. Storm Drain Networks

- a. Follow storm piping to first upstream manhole or catch basin.
- b. Remove manhole cover and visually determine if discharge still present.
- c. If discharge is still present, repeat procedure on next manhole upstream. If storm lines split, follow one path and if discharge not present come back to last manhole where discharge was present and trace up the next branch.
- d. After discharge has been pinpointed to an area, i.e. present in manhole downstream but absent upstream, then investigate the area for possible sources.
- e. If no obvious sources exist, methods such as sandbagging or damming the trunk, dye testing, smoke testing, and or CCTV, may be used to determine the source.

2. Stream Networks

If the discharge is in the main stem of a stream or creek, follow the discharge upstream. If it can be traced back to a pipe, follow the above steps to pinpoint the illicit discharge. If the discharge is not found to be coming from a pipe a watershed or drainage area investigation can be performed. This method relies on an analysis of land use or other characteristics of the drainage area that is producing the illicit discharge. The investigation can be as simple as a "windshield" survey of the drainage area or a more complex mapping analysis of the storm drain network and potential generating sites. Drainage area investigations work best when prior indicator monitoring reveals strong clues as to the likely generating site producing the discharge. Example investigations may include land use or zoning investigations, permit reviews, as-built reviews, aerial photography analysis, and or other property ownership certifications.

3. Household Sewage Treatment Systems

Low-density residential watersheds may require special investigation methods if they are not served by sanitary sewers and/or storm water is conveyed in ditches or swales. The major illicit discharges found in low-density development are failing HSTSS and illegal dumping. Homeowner surveys, surface inspections, and infrared photography have all been effectively used to find failing septic HSTSS in low-density watersheds.

4. Unfound Discharge

In all cases if the discharge is not visible upon arrival screen the surrounding catch basins, ditches, upstream bridges and junctions, etc. to verify the discharge cannot be found and

has likely ceased. The investigation will be documented as not found for future reference in the City's GIS database.

Depending on each situation the City may use a combination of the investigation options described above to trace the source of an illicit discharge. The procedure used to trace the source will be documented to allow for future decisions on appropriate procedures for specific types of illicit discharges.

5.0 REMOVING THE SOURCE OF THE ILLICIT DISCHARGE

Following the procedures described in the section above related to tracing the source of an illicit discharge, the City will take appropriate actions to notify the responsible party and ensure the illicit discharge is removed. According to the *Discharge Detection and Elimination: A Guidance Manual for Program Development and Technical Assessments* (CWP 2004), there are four questions that should be answered for each illicit discharge to determine appropriate procedure for corrective action, as follows:

1. Who is responsible?
2. What methods will be used to fix it?
3. How long will it take?
4. How will removal be confirmed?

The source of the discharge will be needed to appropriately answer these questions. Typical sources of illicit discharges include internal plumbing connections, service lateral cross-connections, infrastructure failure within the sanitary sewer system or MS4, and indirect discharges resulting from leaks, spills, or overflows.

Once the source is identified, the City will notify the property owner responsible for the illicit connection. The timeframe for eliminating the illegal connection and discharge will depend on the type of connection and the complexity of removing the connection or discharge. Once the illicit discharge is eliminated, the property owner will be required to contact the City to verify the illegal connection (and associated illicit discharge) has been removed. If the City determines the illicit discharge is still present, enforcement actions listed in the City's illicit discharge ordinance may be necessary to eliminate the illicit discharge.

Figure 1 provides an example Flow Chart for Corrective Action from *Illicit Discharge Detection and Elimination: A Guidance Manual for Program Development and Technical Assessments* (CWP 2004) demonstrating a recommended process to achieve a corrective action.

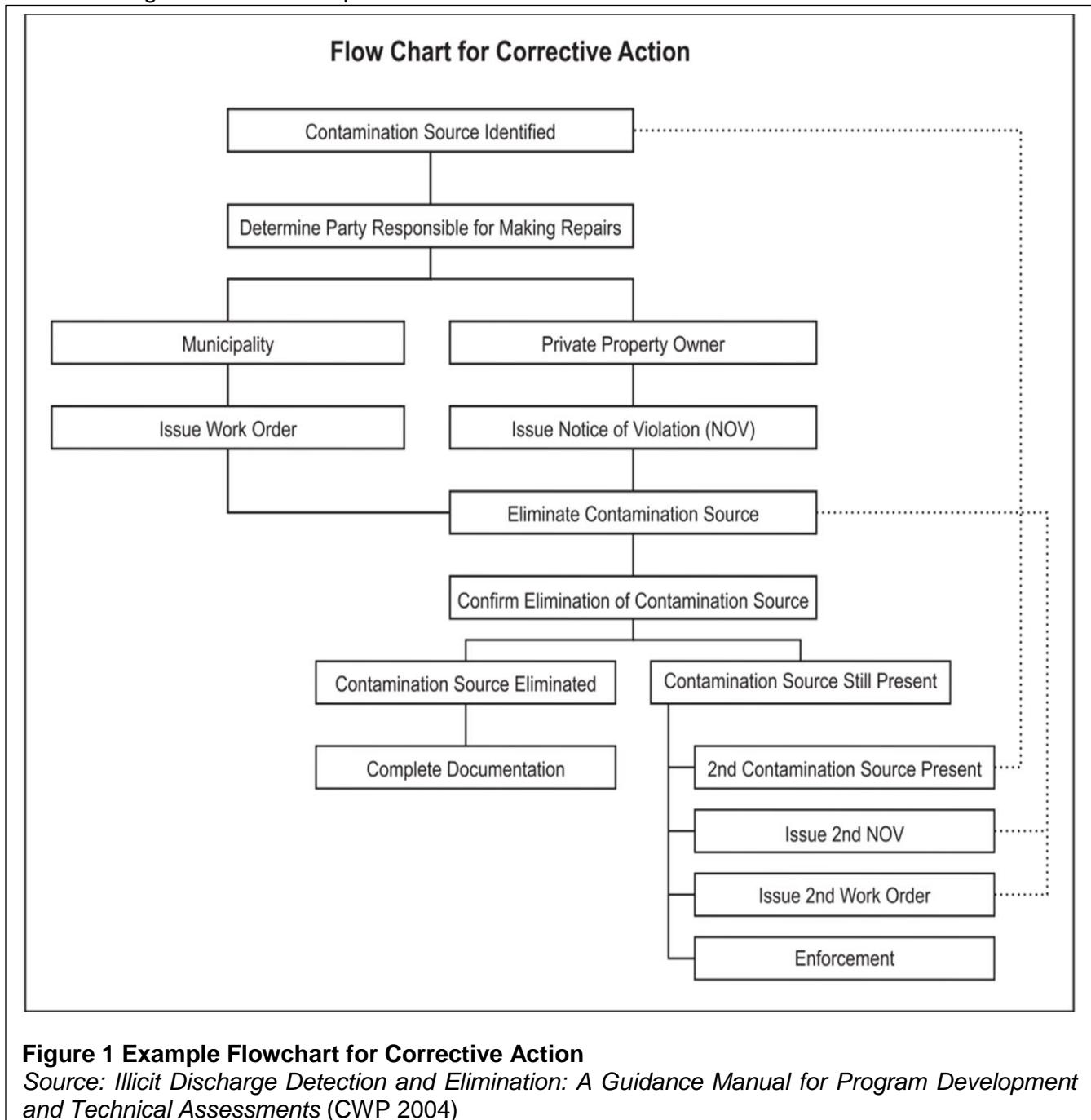


Figure 1 Example Flowchart for Corrective Action

Source: *Illicit Discharge Detection and Elimination: A Guidance Manual for Program Development and Technical Assessments* (CWP 2004)

The *Illicit Discharge Detection and Elimination: A Guidance Manual for Program Development and Technical Assessments* (CWP 2004) also provides a summary of recommendation methods to solve illicit discharge depending on the type of discharge and the source. Figure 2 provides an overview of the information presented.

Table 26: Methods to Fix Illicit Discharge

Type of Discharge	Source	Removal Action(s)
Sewage	Break in right-of-way	Repair by municipality
	Commercial or industrial direct connection	Enforcement
	Residential direct connection	Enforcement; Incentive or aid
	Infrequent discharge (e.g., RV dumping)	Enforcement; Spill response
	Straight pipes/septic	Enforcement; Incentive or aid
Wash water	Commercial or industrial direct connection	Enforcement; Incentive or aid
	Residential direct connection	Enforcement; Incentive or aid
	Power wash/car wash (commercial)	Enforcement
	Commercial wash down	Enforcement
	Residential car wash or household maintenance-related activities	Education
Liquid wastes	Professional oil change/car maintenance	Enforcement; Spill response
	Heating oil/solvent dumping	Enforcement; Spill response
	Homeowner oil change and other liquid waste disposal (e.g., paint)	Warning; Education; Fines
	Spill (trucking)	Spill response
	Other industrial wastes	Enforcement; Spill response

Figure 2 Methods to Fix Illicit Discharge

Source: *Illicit Discharge Detection and Elimination: A Guidance Manual for Program Development and Technical Assessments* (CWP 2004)

6.0 ENFORCEMENT PROCEDURES

If needed, enforcement procedures are as stated in MCO Chapter 945.14:

Whenever the City Manager and/or his/her designee finds that a person has violated a prohibition or failed to meet a requirement of this chapter, the authorized enforcement agency may order compliance by written notice of violation to the responsible person. Such notice may require without limitation:

- (1) *The performance of monitoring, analysis, and reporting;*
- (2) *The elimination of illicit connections or discharges;*
- (3) *That violating discharges, practices or operations shall cease and desist;*
- (4) *The abatement or remediation of storm water pollution or contamination hazards and the restoration of any affected property;*
- (5) *Payment of charges for services in the amount of fifty dollars (\$50.00) and payment of remediation costs; and*
- (6) *The implementation of source control or treatment BMPs.*

If abatement of a violation and/or restoration of affected property is required, the notice shall set forth a deadline within which such remediation or restoration must be completed. Said notice shall further advise that, should the violator fail to remediate or restore within the established deadline, the work will be done by a designated governmental agency or a contractor and the expense thereof shall be charged to the violator.

7.0 SPILL RESPONSE

Spill response procedures are as stated in MCO Chapter 945.13:

Notwithstanding other requirements of law, as soon as any person responsible for a facility or operation, or responsible for emergency response for a facility or operation has information of any known or suspected release of materials which are resulting or may result in illegal discharges or pollutants discharging into storm water, the storm drain system, or water of the U.S. said person shall take all necessary steps to ensure the discovery, containment, and cleanup of such release.

In the event of such a release of hazardous materials said person shall immediately notify emergency response agencies of the occurrence via emergency dispatch services.

In the event of a release of non-hazardous materials, said person shall notify the authorized enforcement agency in person or by phone or facsimile no later than the next business day.

Notifications in person or by phone shall be confirmed by written notice addressed and mailed to the City Manager within three business days of the phone notice. If the discharge of prohibited materials emanates from a commercial or industrial establishment, the owner or operator of such establishment shall also retain an on-site record of the discharge and the actions taken to prevent its recurrence. Such records shall be retained for at least three years.

- The release notification for 24-hour reporting of spill in the State of Ohio is:

Ohio EPA Hotline
1-800-282-9378

- In addition, the persons/facility must call the Ohio Local Emergency Planning Committee for Montgomery County:

Dennis Bristow
Dayton Regional HazMat Coordinator
444 W. 3rd Street (Suite 20-231)
Dayton, OH 45402-1460
(937) 512-5103 (DAY)
(937) 901-5112 (24-HR)

- And;

City of Moraine Fire Department
(937) 535-1166

8.0 PROGRAM EVALUATION AND ASSESSMENT

The City's IDDEP will continue to adapt and evolve over the next 5-year MS4 permit term. As the City evaluates its system and updates their GIS database over the next 5 years, additional information about the physical components of the MS4 system may also result in the identification of priority areas that could be more prone to illicit discharges. Additionally, as the City continues to conduct dry-weather screening on an annual basis, the City's database of information related to the screening and illicit discharges will continue to grow, offering a larger dataset that can be evaluated over time to allow the City to make adjustments moving forward.

The success of the City's IDDEP relies on educating the public and stakeholders and providing opportunity for community participation. The information being communicated to the public will help them understand the IDDE plan, why it is required, its purpose, who is responsible for its implementation, how it will be implemented, and how it affects their community.

Appendix A

Map of the City of Moraine

Appendix B

Storm Water Outfall Dry Weather Screening Inspection Form

City of Moraine
MS4 Outfall Dry Weather Screening
Inspection Form

SECTION 1	Watershed/Stream:		Outfall ID:			
	Date:		Time:			
	Field Crew:					
	Conditions (circle): Sunny Partly Cloudy Overcast Windy Calm			Form Completed By:		
	Camera (model):		Photo Numbers:		GPS Unit (model):	
	Land Use in Drainage Area (Check all that apply - This information may be collected in the office or the field, whichever is most convenient): <input type="checkbox"/> Industrial <input type="checkbox"/> Suburban Residential <input type="checkbox"/> Open Space <input type="checkbox"/> Urban-Residential <input type="checkbox"/> Commercial <input type="checkbox"/> Institutional Other: _____					
		LOCATION	MATERIAL	SHAPE	DIMENSIONS	
SECTION 2	CLOSED PIPE	<input type="checkbox"/> RCP <input type="checkbox"/> CMP <input type="checkbox"/> PVC <input type="checkbox"/> HDPE <input type="checkbox"/> STEEL <input type="checkbox"/> OTHER: _____	<input type="checkbox"/> CIRCULAR <input type="checkbox"/> ELLIPTICAL <input type="checkbox"/> BOX <input type="checkbox"/> OTHER: _____	DIAMETER/DIMENSIONS: _____ _____	In Water: <input type="checkbox"/> NO <input type="checkbox"/> PARTIALLY <input type="checkbox"/> FULLY	
		OPEN DRAINAGE	<input type="checkbox"/> CONCRETE <input type="checkbox"/> EARTHEN <input type="checkbox"/> RIP-RAP <input type="checkbox"/> OTHER: _____	<input type="checkbox"/> TRAPEZOID <input type="checkbox"/> PARABOLIC <input type="checkbox"/> OTHER: _____		DEPTH: _____ TOP WIDTH: _____ BOTTOM WIDTH: _____
	FLOW PRESENT	<input type="checkbox"/> YES <input type="checkbox"/> NO	(If No, skip to section 4)			
	FLOW DESCRIPTION (IF PRESENT)	<input type="checkbox"/> TRICKLE <input type="checkbox"/> MODERATE <input type="checkbox"/> SUBSTANTIAL				
	Are Any Physical Indicators Present in the Flow? <input type="checkbox"/> Yes <input type="checkbox"/> No (If No, skip to section 4)					
	SECTION 3	INDICATOR	CHECK IF PRESENT	DESCRIPTION	RELATIVE SEVERITY INDEX (1-3)	
ODOR		<input type="checkbox"/>	<input type="checkbox"/> SEWAGE <input type="checkbox"/> PETROLEUM/GAS <input type="checkbox"/> RANCID/SOUR <input type="checkbox"/> SULFIDE <input type="checkbox"/> CHLORINE <input type="checkbox"/> OTHER	<input type="checkbox"/> 1-FAINT <input type="checkbox"/> 2-EASILY DETECTED <input type="checkbox"/> 3-NOTICABLE FROM A DISTANCE		
COLOR		<input type="checkbox"/>	<input type="checkbox"/> CLEAR <input type="checkbox"/> GREEN <input type="checkbox"/> BROWN <input type="checkbox"/> GRAY <input type="checkbox"/> YELLOW <input type="checkbox"/> RED <input type="checkbox"/> ORANGE <input type="checkbox"/> OTHER	<input type="checkbox"/> 1-FAINT COLORS IN SAMPLE BOTTLE <input type="checkbox"/> 2-CLEARLY VISIBLE IN SAMPLE BOTTLE <input type="checkbox"/> 3-CLEARLY VISIBLE IN OUTFALL FLOW		
TURBIDITY		<input type="checkbox"/>	SEE SEVERITY	<input type="checkbox"/> 1-SLIGHT CLOUDINESS <input type="checkbox"/> 2-CLOUDY <input type="checkbox"/> 3-OPAQUE		
FLOATABLES		<input type="checkbox"/>	<input type="checkbox"/> SEWAGE (TOILET PAPER, ETC.) <input type="checkbox"/> PETROLEUM (OIL SHEEN) <input type="checkbox"/> SUDS <input type="checkbox"/> OTHER: _____	<input type="checkbox"/> 1-FEW/SLIGHT; ORIGIN NOT OBVIOUS <input type="checkbox"/> 2-SOME; INDICATIONS OF ORIGIN (E.G. POSSIBLE SUDS) <input type="checkbox"/> 3-SOME; ORIGIN CLEAR (E.G. FLOATING SANITARY MATERIAL)		
Are any Physical Indicators that are not related to flow present? <input type="checkbox"/> Yes <input type="checkbox"/> No (If No, skip to section 5)						
INDICATOR		CHECK IF PRESENT	DESCRIPTION	COMMENTS		
SECTION 4	OUTFALL DAMAGE	<input type="checkbox"/>	<input type="checkbox"/> SPALLING, CRACKING, OR CHIPPING <input type="checkbox"/> PEELING PAINT <input type="checkbox"/> CORROSION <input type="checkbox"/> DEFORMATION (INDICATE TYPE AND SEVERITY OF DEFORMATION) _____			
	DEPOSITS / STAINS	<input type="checkbox"/>	<input type="checkbox"/> OILY <input type="checkbox"/> FLOW LINE <input type="checkbox"/> PAINT <input type="checkbox"/> OTHER <input type="checkbox"/> SILTATION OF PIPE OUTFALL % BLOCKAGE _____			
	ABNORMAL VEGETATION	<input type="checkbox"/>	<input type="checkbox"/> EXCESSIVE <input type="checkbox"/> INHIBITED			
	POOR POOL QUALITY	<input type="checkbox"/>	<input type="checkbox"/> ODORS <input type="checkbox"/> SUDS <input type="checkbox"/> EXCESSIVE ALGAE <input type="checkbox"/> COLORS <input type="checkbox"/> FLOATABLES <input type="checkbox"/> OIL SHEEN <input type="checkbox"/> OTHER			
	PIPE BENTHIC GROWTH	<input type="checkbox"/>	<input type="checkbox"/> BROWN <input type="checkbox"/> GREEN <input type="checkbox"/> ORANGE <input type="checkbox"/> OTHER			
	EROSION UNDER OUTFALL	<input type="checkbox"/>	<input type="checkbox"/> MINIMAL <input type="checkbox"/> EXCESSIVE <input type="checkbox"/> MODERATE			
	RECOMMENDED ACTIONS / ACTIONS TAKEN					
SECTION 5	<input type="checkbox"/> DEBRIS REMOVED <input type="checkbox"/> PIPE IN NEED OF REPAIR <input type="checkbox"/> SEDIMENT NEEDS TO BE REMOVED		<input type="checkbox"/> PIPE NEEDS TO BE REPLACED <input type="checkbox"/> OTHER (DESCRIBE) → <input type="checkbox"/> NO ACTION NECESSARY			
	OVERALL OUTFALL CHARACTERIZATION					
SECTION 6	<input type="checkbox"/> NO EVIDENCE <input type="checkbox"/> SUSPECT (ONE OR MORE INDICATORS WITH A SEVERITY OF 3) <input type="checkbox"/> POTENTIAL (PRESENCE OF 2 OR MORE INDICATORS) <input type="checkbox"/> OBVIOUS					

NOTES:

Appendix C

Table 1. Ohio EPA and the City of Moraine's Requirements for MCM 3

Ohio EPA NPDES General Permit Requirements	Moraine's Storm Water Management Plan Requirements
Ordinance or other Regulatory Mechanism	City has in place Moraine City Ordinance (MCO) Chapter 945 - Storm Sewer System Illicit Discharge Detection and Elimination.
Storm Sewer System Map	Build storm system map from record drawings and field investigations (Completed). Add information required by the permit to the map for completion by December 31, 2019.
Home Sewage Treatment System (HSTS) Mapping and List	Compile list and add known HSTS to storm sewer map by December 31, 2020. Evaluate feasibility to sewer HSTS properties by December 31, 2021.
IDDE Plan	Complete IDDE Plan including process for detecting illicit discharges (Completed). Document the number of illicit discharges identified and eliminated (ongoing).
Dry-Weather Screening of Outfalls	All outfalls will be identified and mapped by December 31, 2020. All outfalls will be screened by December 31, 2021.

Appendix D

**City of Moraine's Storm Sewer System Illicit Discharge Detection and
Elimination Ordinance - Chapter 945**

CHAPTER 945

Storm Sewer System Illicit Discharge Detection and Elimination

- 945.01 Purpose and intent.**
- 945.02 Definitions.**
- 945.03 Applicability.**
- 945.04 Responsibility for administration.**
- 945.05 Severability.**
- 945.06 Ultimate responsibility.**
- 945.07 Discharge prohibitions.**
- 945.08 Suspension of MS4 Access.**
- 945.09 Industrial or construction activity discharges.**
- 945.10 Monitoring of discharges.**
- 945.11 Requirements to prevent, control, and reduce storm water pollutants by the use of Best Management Practices.**
- 945.12 Watercourse protection.**
- 945.13 Notification of spills.**
- 945.14 Enforcement.**
- 945.15 Appeal of notice of violation.**
- 945.16 Enforcement measures after appeal.**
- 945.17 Cost of abatement of the violation.**
- 945.18 Injunctive relief.**
- 945.19 Appeal of notice of violation.**
- 945.20 Violations deemed a public nuisance.**
- 945.21 Criminal prosecution.**
- 945.22 Remedies not exclusive.**

945.01 PURPOSE AND INTENT.

The purpose of this ordinance is to provide for the health, safety, and general welfare of the citizens of Moraine through the regulation of non-storm water discharges to the storm drainage system to the maximum extent practicable as required by federal and state law. This ordinance establishes methods for controlling the introduction of pollutants into the municipal separate storm sewer system (MS4) in order to comply with requirements of the National Pollutant Discharge Elimination System (NPDES) permit process. The objectives of this ordinance are:

- (a) To regulate the contribution of pollutants to the municipal separate storm sewer system (MS4) by storm water discharges by any user.
- (b) To prohibit illicit Connections and Discharges to the municipal separate storm sewer system.
- (c) To establish legal authority to carry out all inspection, surveillance and monitoring procedures necessary to ensure compliance with this chapter.

(Ord. 1696-08. Passed 1-24-08.)

945.02 DEFINITIONS.

For purposes of this chapter, the following shall mean:

- (a) **Authorized Enforcement Agency:** Employees or designees of the director of the municipal agency designated to enforce this chapter.

(b) **Best Management Practices (BMPs):** Schedules of activities, prohibitions of practices, general good house keeping practices, pollution prevention and educational practices, maintenance procedures, and other management practices to prevent or reduce the discharge of pollutants directly or indirectly to storm water, receiving waters, or storm water conveyance systems. BMPs also include treatment practices, operating procedures, and practices to control site runoff, spillage or leaks, sludge or water disposal, or drainage from raw materials storage.

(c) **Clean Water Act:** The federal Water Pollution Control Act (33 U.S.C. § 1251 *et seq.*), and any subsequent amendments thereto.

(d) **Construction Activity:** Activities subject to NPDES Construction Permits. Currently these include construction projects resulting in land disturbance of 5 acres or more. Beginning in March 2003, NPDES Storm Water Phase II permits will be required for construction projects resulting in land disturbance of 1 acre or more. Such activities include but are not limited to clearing and grubbing, grading, excavating, and demolition.

(e) **Hazardous Materials:** Any material, including any substance, waste, or combination thereof, which because of its quantity, concentration, or physical, chemical, or infectious characteristics may cause, or significantly contribute to, a substantial present or potential hazard to human health, safety, property, or the environment when improperly treated, stored, transported, disposed of, or otherwise managed.

(f) **Illegal Discharge:** Any direct or indirect non-storm water discharge to the storm drain system, except as exempted in Section [945.07](#).

(g) **Illicit Connections:** An illicit connection is defined as either of the following: Any drain or conveyance, whether on the surface or subsurface, which allows an illegal discharge to enter the storm drain system including but not limited to any conveyances which allow any non-storm water discharge including sewage, process wastewater, and wash water to enter the storm drain system and any connections to the storm drain system from indoor drains and sinks, regardless of whether said drain or connection had been previously allowed, permitted or approved by an authorized enforcement agency or, any drain or conveyance connected from a commercial or industrial land use to the storm drain system which has not been documented in plans, maps, or equivalent records and approved by an authorized enforcement agency.

(h) **Industrial Activity:** Activities subject to NPDES Industrial Permits as defined in 40 CFR, Section 122.26 (b)(14).

(i) **National Pollutant Discharge Elimination System (NPDES) Storm Water Discharge Permit:** Means a permit issued by EPA (or by a State under authority delegated pursuant to 33 USC § 1342(b)) that authorizes the discharge of pollutants to waters of the United States, whether the permit is applicable on an individual, group, or general area-wide basis.

(j) **Non-Storm Water Discharge:** Any discharge to the storm drain system that is not composed entirely of storm water.

(k) **Person:** Means an individual, association, organization, partnership, firm, corporation or other entity recognized by law and acting as either the owner or as the owner's agent.

(l) **Pollutant:** Anything which causes or contributes to pollution. Pollutants may include, but are not limited to: paints, varnishes, and solvents; oil and other automotive fluids; non-hazardous liquid and solid wastes and yard wastes; refuse, rubbish, garbage, litter, or other discarded or abandoned objects, ordinances, and accumulations, so that same may cause or contribute to pollution; floatables; pesticides, herbicides, and fertilizers; hazardous substances and wastes; sewage, fecal coliform and pathogens; dissolved and particulate metals; animal wastes; wastes

and residues that result from constructing a building or structure; and noxious or offensive matter of any kind.

(m) **Premises:** Any building, lot, parcel of land, or portion of land whether improved or unimproved including adjacent sidewalks and parking strips.

(n) **Storm Drainage System:** Publicly-owned facilities by which storm water is collected and/or conveyed including but not limited to any roads with drainage systems, municipal streets, gutters, curbs, inlets, piped storm drains, pumping facilities, retention and detention basins, natural and human-made or altered drainage channels, reservoirs, and other drainage structures.

(o) **Storm Water:** Any surface flow, runoff, and drainage consisting entirely of water from any form of natural precipitation and resulting from such precipitation.

(p) **Storm Water Pollution Prevention Plan:** A document which describes the Best Management Practices and activities to be implemented by a person or business to identify sources of pollution or contamination at a site and the actions to eliminate or reduce pollutant discharges to Storm water, Conveyance Systems, and/or Receiving Waters to the Maximum Extent Practicable.

(q) **Wastewater:** Any water or other liquid, other than uncontaminated storm water, discharged from a facility. (Ord. 1696-08. Passed 1-24-08.)

945.03 APPLICABILITY.

This chapter shall apply to all water entering the storm drain system generated on any developed and undeveloped lands unless explicitly exempted by an authorized enforcement agency.

(Ord. 1696-08. Passed 1-24-08.)

945.04 RESPONSIBILITY FOR ADMINISTRATION.

The City Manager and/or his/her designee, shall administer, implement, and enforce the provisions of this chapter. Any powers granted or duties imposed upon the authorized enforcement agency may be delegated in writing by the Director of the authorized enforcement agency to persons or entities acting in the beneficial interest of or in the employ of the agency. (Ord. 1696-08. Passed 1-24-08.)

945.05 SEVERABILITY.

The provisions of this chapter are hereby declared to be severable. If any provision, clause, sentence, or paragraph of this chapter or the application thereof to any person, establishment, or circumstances shall be held invalid, such invalidity shall not affect the other provisions or application of this chapter.

(Ord. 1696-08. Passed 1-24-08.)

945.06 ULTIMATE RESPONSIBILITY.

The standards set forth herein and promulgated pursuant to this chapter are minimum standards; therefore this chapter does not intend nor imply that compliance by any person will ensure that there will be no contamination, pollution, nor unauthorized discharge of pollutants. (Ord. 1696-08. Passed 1-24-08.)

945.07 DISCHARGE PROHIBITIONS.

(a) Prohibition of Illegal Discharges. No person shall discharge or cause to be discharged into the municipal storm drain system or watercourses any materials, including but not limited to

pollutants or waters containing any pollutants that cause or contribute to a violation of applicable water quality standards, other than storm water.

The commencement conduct or continuance of any illegal discharge to the storm drain system is prohibited except as described as follows:

(1) The following discharges are exempt from discharge prohibitions established by this ordinance: water line flushing or other potable water sources, landscape irrigation or lawn watering, diverted stream flows, rising ground water, ground water infiltration to storm drains, uncontaminated pumped ground water, foundation or footing drains (not including active groundwater dewatering systems), crawl space pumps, air conditioning condensation, springs, non-commercial washing of vehicles, natural riparian habitat or wet-land flows, swimming pools (if dechlorinated-typically less than one PPM chlorine), fire fighting activities, and any other water source not containing Pollutants.

(2) Discharges specified in writing by the authorized enforcement agency as being necessary to protect public health and safety.

(3) Dye testing is an allowable discharge, but requires a verbal notification to the authorized enforcement agency prior to the time of the test.

(4) The prohibition shall not apply to any non-storm water discharge permitted under an NPDES permit, waiver, or waste discharge order issued to the discharger and administered under the authority of the Federal Environmental Protection Agency, provided that the discharger is in full compliance with all requirements of the permit, waiver, or order and other applicable laws and regulations, and provided that written approval has been granted for any discharge to the storm drain system.

(b) Prohibition of Illicit Connections.

(1) The construction, use, maintenance or continued existence of illicit connections to the storm drain system is prohibited.

(2) This prohibition expressly includes, without limitation, illicit connections made in the past, regardless of whether the connection was permissible under law or practices applicable or prevailing at the time of connection.

(3) A person is considered to be in violation of this chapter if the person connects a line conveying sewage to the MS4, or allows such a connection to continue. (Ord. 1696-08. Passed 1-24-08.)

945.08 SUSPENSION OF MS4 ACCESS.

(a) Suspension Due to Illicit Discharge in Emergency Situations. The City Manager and/or his/her designee, may, without prior notice, suspend MS4 discharge access to a person when such suspension is necessary to stop an actual or threatened discharge which presents or may present imminent and substantial danger to the environment, or to the health or welfare of persons, or to the MS4 or Waters of the United States. If the violator fails to comply with a suspension order issued in an emergency, the authorized enforcement agency may take such steps as deemed necessary to prevent or minimize damage to the MS4 or Waters of the United States, or to minimize danger to persons.

(b) Suspension Due to the Detection of Illicit Discharge. Any person discharging to the MS4 in violation of this ordinance may have their MS4 access terminated if such termination would abate or reduce an illicit discharge. The authorized enforcement agency will notify a violator of the proposed termination of its MS4 access. The violator may petition the authorized enforcement agency for a reconsideration and hearing.

(Ord. 1696-08. Passed 1-24-08.)

945.09 INDUSTRIAL OR CONSTRUCTION ACTIVITY DISCHARGES.

Any person subject to an industrial or construction activity NPDES storm water discharge permit shall comply with all provisions of such permit. Proof of compliance with said permit may be required in a form acceptable to the City Manager and/or his/her designee prior to the allowing of discharges to the MS4.

(Ord. 1696-08. Passed 1-24-08.)

945.10 MONITORING OF DISCHARGES.

(a) Applicability. This section applies to all facilities that have storm water discharges associated with industrial activity, including construction activity.

(b) Access to Facilities.

(1) The City Manager and/or his/her designee shall be permitted to enter and inspect facilities subject to regulation under this ordinance as often as may be necessary to determine compliance with this ordinance. If a discharger has security measures in force which require proper identification and clearance before entry into its premises, the discharger shall make the necessary arrangements to allow access to representatives of the authorized enforcement agency.

(2) Facility operators shall allow the City Manager and/or his/her designee ready access to all parts of the premises for the purposes of inspection, sampling, examination and copying of records that must be kept under the conditions of an NPDES permit to discharge storm water, and the performance of any additional duties as defined by state and federal law.

(3) The City Manager and/or his/her designee shall have the right to set up on any permitted facility such devices as are necessary in the opinion of the authorized enforcement agency to conduct monitoring and/or sampling of the facility's storm water discharge.

(4) The City Manager and/or his/her designee have the right to require the discharger to install monitoring equipment as necessary. The facility's sampling and monitoring equipment shall be maintained at all times in a safe and proper operating condition by the discharger at its own expense. All devices used to measure storm water flow and quality shall be calibrated to ensure their accuracy.

(5) Any temporary or permanent obstruction to safe and easy access to the facility to be inspected and/or sampled shall be promptly removed by the operator at the written or oral request of the City Manager and/or his/her designee and shall not be replaced. The costs of clearing such access shall be borne by the operator.

(6) Unreasonable delays in allowing the City Manager and/or his/her designee access to a permitted facility are a violation of a storm water discharge permit and of this ordinance. A person who is the operator of a facility with a NPDES permit to discharge storm water associated with industrial activity commits an offense if the person denies the authorized enforcement agency reasonable access to the permitted facility for the purpose of conducting any activity authorized or required by this chapter.

(7) If the City Manager and/or his/her designee has been refused access to any part of the premises from which storm water is discharged and he/she is able to demonstrate probable cause to believe that there may be a violation of this chapter, or that there is a need to inspect and/or sample as part of a routine inspection and sampling program designed to verify compliance with this ordinance or any order issued hereunder, or to protect the overall public health, safety, and

welfare of the community, then the authorized enforcement agency may seek issuance of a search warrant from any court of competent jurisdiction. (See Exhibits A-C appended hereto).

(Ord. 1696-08. Passed 1-24-08.)

945.11 REQUIREMENTS TO PREVENT, CONTROL, AND REDUCE STORM WATER POLLUTANTS BY THE USE OF BEST MANAGEMENT PRACTICES.

The City Manager and/or his/her designee will adopt requirements identifying Best Management Practices for any activity, operation, or facility which may cause or contribute to pollution or contamination of storm water, the storm drain system, or waters of the U.S. The owner or operator of a commercial or industrial establishment shall provide, at their own expense, reasonable protection from accidental discharge of prohibited materials or other wastes into the municipal storm drain system or watercourses through the use of these structural and non-structural BMPs. Further, any person responsible for a property or premise, which is, or may be, the source of an illicit discharge, may be required to implement, at said person's expense, additional structural and non-structural BMPs to prevent the further discharge of pollutants to the municipal separate storm sewer system. Compliance with all terms and conditions of a valid NPDES permit authorizing the discharge of storm water associated with industrial activity, to the extent practicable, shall be deemed compliance with the provisions of this section. These BMPs shall be part of a storm water pollution prevention plan as necessary for compliance with requirements of the NPDES permit. (Ord. 1696-08. Passed 1-24-08.)

945.12 WATERCOURSE PROTECTION.

Every person owning property through which a watercourse passes, or such person's lessee, shall keep and maintain that part of the watercourse within the property free of trash, debris, excessive vegetation, and other obstacles that would pollute, contaminate or significantly retard the flow of water through the watercourse. In addition, the owner or lessee shall maintain existing privately owned structures within or adjacent to a watercourse, so that such structures will not become a hazard to the use, function or physical integrity of the watercourse.

(Ord. 1696-08. Passed 1-24-08.)

945.13 NOTIFICATION OF SPILLS.

Notwithstanding other requirements of law, as soon as any person responsible for a facility or operation, or responsible for emergency response for a facility or operation has information of any known or suspected release of materials which are resulting or may result in illegal discharges or pollutants discharging into storm water, the storm drain system, or water of the U.S. said person shall take all necessary steps to ensure the discovery, containment, and cleanup of such release. In the event of such a release of hazardous materials said person shall immediately notify emergency response agencies of the occurrence via emergency dispatch services. In the event of a release of non-hazardous materials, said person shall notify the authorized enforcement agency in person or by phone or facsimile no later than the next business day. Notifications in person or by phone shall be confirmed by written notice addressed and mailed to the City Manager within three business days of the phone notice. If the discharge of prohibited materials emanates from a commercial or industrial establishment, the owner or operator of such establishment shall also retain an on-site record of the discharge and the actions taken to prevent its recurrence. Such records shall be retained for at least three years.

(Ord. 1696-08. Passed 1-24-08.)

945.14 ENFORCEMENT.

Whenever the City Manager and/or his/her designee finds that a person has violated a prohibition or failed to meet a requirement of this chapter, the authorized enforcement agency may order compliance by written notice of violation to the responsible person. Such notice may require without limitation:

- (1) The performance of monitoring, analysis, and reporting;
- (2) The elimination of illicit connections or discharges;
- (3) That violating discharges, practices or operations shall cease and desist;
- (4) The abatement or remediation of storm water pollution or contamination hazards and the restoration of any affected property;
- (5) Payment of charges for services in the amount of fifty dollars (\$50.00) and payment of remediation costs; and
- (6) The implementation of source control or treatment BMPs.

If abatement of a violation and/or restoration of affected property is required, the notice shall set forth a deadline within which such remediation or restoration must be completed. Said notice shall further advise that, should the violator fail to remediate or restore within the established deadline, the work will be done by a designated governmental agency or a contractor and the expense thereof shall be charged to the violator.

(Ord. 1696-08. Passed 1-24-08.)

945.15 APPEAL OF NOTICE OF VIOLATION.

Any person receiving a Notice of Violation may appeal the determination of the authorized enforcement agency. The notice of appeal must be received by the City Manager within ten (10) days from the date of the Notice of Violation. Hearing on the appeal before the appropriate authority or his/her designee shall take place within fifteen (15) days from the date of receipt of the notice of appeal. The decision of the municipal authority or their designee shall be final.

(Ord. 1696-08. Passed 1-24-08.)

945.16 ENFORCEMENT MEASURES AFTER APPEAL.

If the violation has not been corrected pursuant to the requirements set forth in the Notice of Violation, or, in the event of an appeal, within thirty (30) days of the decision of the municipal authority upholding the decision of the authorized enforcement agency, then representatives of the authorized enforcement agency shall enter upon the subject private property and are authorized to take any and all measures necessary to abate the violation and/or restore the property. It shall be unlawful for any person, owner, agent or person in possession of any premises to refuse to allow the government agency or designated contractor to enter upon the premises for the purposes set forth above. (Ord. 1696-08. Passed 1-24-08.)

945.17 COST OF ABATEMENT OF THE VIOLATION.

Within forty-five (45) days after abatement of the violation, the owner of the property will be notified of the cost of abatement, including administrative costs. The property owner may file a written protest with the City Manager objecting to the amount of the assessment within ten (10) days. If the amount due is not paid within a timely manner as determined by the decision of the municipal authority or by the expiration of the time in which to file an appeal, the charges shall become a special assessment against the property and shall constitute a lien on the property for

the amount of the assessment. Any person violating any of the provisions of this section shall become liable to the City by reason of such violation.

(Ord. 1696-08. Passed 1-24-08.)

945.18 INJUNCTIVE RELIEF.

It shall be unlawful for any person to violate any provision or fail to comply with any of the requirements of this chapter. If a person has violated or continues to violate the provisions of this chapter, the authorized enforcement agency may petition for a preliminary or permanent injunction restraining the person from activities which would create further violations or compelling the person to perform abatement or remediation of the violation.

(Ord. 1696-08. Passed 1-24-08.)

945.19 APPEAL OF NOTICE OF VIOLATION.

In lieu of enforcement proceedings, penalties, and remedies authorized by this chapter, the authorized enforcement agency may impose upon a violator alternative compensatory actions, such as storm drain stenciling, attendance at compliance workshops, creek cleanup, etc.

(Ord. 1696-08. Passed 1-24-08.)

945.20 VIOLATIONS DEEMED A PUBLIC NUISANCE

In addition to the enforcement processes and penalties provided, any condition caused or permitted to exist in violation of any of the provisions of this ordinance is a threat to public health, safety, and welfare, and is declared and deemed a nuisance, and may be summarily abated or restored at the violator's expense, and/or a civil action to abate, enjoin, or otherwise compel the cessation of such nuisance may be taken.

(Ord. 1696-08. Passed 1-24-08.)

945.21 CRIMINAL PROSECUTION.

(a) Any person that has violated or continues to violate this ordinance shall be liable to criminal prosecution for a misdemeanor of the fourth degree, to the fullest extent of the law, and shall be subject to a criminal penalty of not more than \$100.00 per violation per day and/or imprisonment for a period of time not to exceed 30 days.

(b) The authorized enforcement agency may recover all attorneys' fees, court costs and other expenses associated with enforcement of this chapter, including sampling and monitoring expenses. (Ord. 1696-08. Passed 1-24-08.)

945.22 REMEDIES NOT EXCLUSIVE.

The remedies listed in this chapter are not exclusive of any other remedies available under any applicable federal, state or local law and it is within the discretion of the authorized enforcement agency to seek cumulative remedies.

(Ord. 1696-08. Passed 1-24-08.)

CODIFIED ORDINANCES OF MORAINE