Illicit Discharge Detection and Elimination Program

Prepared for
Old Dominion University
Department of Environmental Health and Safety
4807 Hampton Boulevard
Hughes Hall Room 2061
Norfolk, Virginia 23529-0306

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Introduction

This Illicit Discharge Detection and Elimination (IDDE) Program has been developed as a requirement of the Department of Conservation and Recreation’s (DCR) Virginia Stormwater Management Program (VSMP) permit for Small Municipal Separate Storm Sewer Systems (MS4’s) located in urbanized areas. The purpose of this Program is to implement a campus wide strategy to find, fix and prevent illicit discharges. An overall campus map has been included in Appendix A. The following is a four part definition of what an illicit discharge is:

1. Illicit Discharges are defined as storm drains that have measurable flow during dry weather periods, which contain pollutants or pathogens that could pose a significant threat to the community. A storm drain with measurable flow that does not contain any pollutants is simply considered a discharge.
2. Illicit Discharges typically have a unique frequency, composition and mode of entry into the storm drain system.
3. Illicit Discharges are usually caused when the sewage from a disposal system interacts with the storm drain system. A variety of monitoring techniques can be used to locate and eliminate illegal sewage connections. These techniques trace sewage flows from the outfall back upstream the storm drain system to reach the source of the illicit discharge.
4. Illicit Discharges of other pollutants are produced from specific source areas and operations known as “generating sites”. Depending on the regulatory status of specific “generating sites”, education, enforcement and other pollution prevention techniques can be used to manage this class of illicit discharges.

Implementation of the components of this Program is required as a condition of the General Permit for Stormwater Discharges of Stormwater from Small Municipal Separate Storm Sewer Systems (Appendix B). The DCR has been granted authority to administer the VSMP and is therefore the regulatory authority overseeing the implementation of this Program. The Program is also subject to all requirements of the Virginia Stormwater Management Act and the Virginia Stormwater Management Program (VSMP) Permit Regulations.
Permit Background/Regulatory Considerations

In 1972, Congress passed the Federal Water Pollution Control Act (FWPCA), also known as the Clean Water Act (CWA), to restore and maintain the quality of the nation’s waterways. The ultimate goal was to make sure that the river and streams were fishable, swimmable, and drinkable. In 1987, the Water Quality Act (WQA) added provisions to the CWA that allowed the EPA to govern stormwater discharges from MS4s. In 1990, the EPA promulgated rules establishing Phase I of the National Pollutant Discharge Elimination System (NPDES) stormwater program.

Under the Phase 1 regulations, permits for stormwater discharges from municipal separate storm sewer systems were required for eleven "large" and "medium" municipalities in Virginia. The "large" municipalities (250,000+ populations) are Fairfax County, Virginia Beach and Norfolk. The "medium" municipalities (from 100,000 to 250,000 populations) are Arlington County, Prince William County, Henrico County, Chesterfield County, Hampton, Newport News, Portsmouth, and Chesapeake. The Phase 2 stormwater regulations froze the population thresholds for "large" and "medium" municipal separate storm sewer systems at the 1990 Census level, so no additional municipalities will be designated into these categories.

Phase 1 municipal separate storm sewer systems permit applications required the municipalities to propose a comprehensive Stormwater Management Program (SWMP) of structural and non-structural measures to control the discharge of pollutants from the storm sewer system to the Maximum Extent Practicable (MEP), and to effectively prohibit non-stormwater discharges to the separate storm sewer system. The Phase 1 permits required the implementation of the SWMP, required storm event monitoring to be conducted by the municipality, and required the municipality to regularly assess the effectiveness of the various stormwater controls employed by the municipality.

Phase 2 regulations required permits to be issued to Small Municipal Separate Storm Sewer Systems (MS4s) located in "urbanized areas" (as defined by the U.S. Census Bureau’s 2000 Census). Small MS4s include systems owned by municipalities, federal facilities, State facilities (including VDOT), and public universities. In addition, any Small MS4 located in a Phase 1 "large" or "medium" municipality is required to be permitted under the Phase 2 regulations.

Permits for regulated small municipal separate storm sewer systems require the development, implementation and enforcement of a SWMP that includes the following "six minimum control measures":

1. Public education and outreach on stormwater impacts
2. Public involvement/participation
3. Illicit discharge detection and elimination
4. Construction site stormwater runoff control
5. Post-construction stormwater management in new development and redevelopment
6. Pollution prevention/good housekeeping for municipal operations.

Regulated Small MS4 permit applications require the applicant to identify:

1. Proposed best management practices and measurable goals for each of the "six minimum control measures"
2. The timing of the implementation of each control measure
3. The person or persons responsible for implementing the Stormwater Management Program (SWMP).

The 2004 Virginia legislature unanimously passed House Bill 1177 transferring regulatory authority of the NPDES programs related to MS4s and construction activities from the State Water Control Board to the Soil and Water Conservation Board and transferred oversight of these programs from the Department of Environmental Quality (DEQ) to the Department of Conservation and Recreation (DCR). This transfer became effective JANUARY 29, 2005. As a result, DCR is responsible for the issuance, denial, revocation, termination and enforcement of NPDES permits for the control of stormwater discharges from MS4s and land disturbing activities under the VSMP. The DEQ continues to manage the remaining NPDES programs.
Existing Resource Audit

Campus Stormwater Outfalls

The ODU campus is comprised of approximately 198 acres of land situated on the east and west sides of Hampton Boulevard in the City of Norfolk, Virginia. The campus has three major outfalls - one draining to the Elizabeth River, and two draining to the Lafayette River.

The Elizabeth River outfall drains areas of the campus generally bound by Elkhorn Avenue to the east, 43rd Street to the south, Elizabeth River to the west, and 49th Street to the north. The system is comprised of a storm sewer collection system with trunk lines running east to west down to Powhatan Avenue where it discharges through a 78” CM pipe into a large tidal channel draining to the Elizabeth River. The Health & Physical Education Building, the Oceanography and Physics Building, the Soccer Stadium, Bud Metheny Baseball Stadium, as well as adjacent parking lots drain through this system. The 78” outfall pipe drains approximately 96 acres of the ODU campus and portions of the City of Norfolk right-of-way.

The Central Campus outfall drains campus areas generally bound by Elkhorn Avenue to the west, the northern limits (49th Street and Bolling Avenue) of the campus to the north, Hampton Boulevard to the east, and 43rd Street to the south. The system is comprised of a major trunk line running south to north through the heart of campus. Hampton Boulevard has its own major trunk line that also runs south to north. Major campus sites drain through the campus trunk line including Foreman Field, Kaufman Duckworth Hall, Teletechnet Building, Mills Godwin Building, the Education Building, Batten Arts and Letters Building, Webb Center and the Perry Library. Campus areas fronting Hampton Boulevard drain directly into the Hampton Boulevard trunk line, which was installed in 1992. Both trunk lines cross Hampton Boulevard just north of the Hampton Boulevard/49th Street intersection and connect to a double rectangular box culvert. The double 42” by 60” rectangular box culvert discharges to the Lafayette River just north of Roger’s Hall. Approximately 84 acres of land area, including 73 acres of the ODU campus and portions of the City of Norfolk right-of-way, drain through this outfall.

The third outfall drains an area generally bound by 47th Street to the north, Killam Avenue to the east, 42nd Street to the south, and Hampton Boulevard to the west. The storm sewer collection system runs south to north through a trunk line to two
48” storm drainage pipes at 49th Street east of Roger’s Hall. This outfall drains approximately 84 acres of developed land owned by ODU, the Real Estate Foundation (REF) and the City of Norfolk. This drainage area has recently undergone redevelopment in association with the University Village and Ted Constant Convocation Center. For further information on the outfall locations and drainage areas see Appendix A.

Current Resources and Future Needs

Old Dominion University currently has no self implemented policy in place to find, fix or prevent illicit discharges. Only through a compilation of existing ordinances, codes, regulations and manuals are illicit discharges held to a minimum on campus today. In the next chapter, a policy that establishes responsibility and legal authority of Illicit Discharge Detection and Elimination has been created. This policy will be enforced by the Director of the Department of Environmental Health and Safety (The Department).

The Department will need to examine existing storm sewer and sanitary sewer infrastructure plans to locate potential areas of illicit discharges around campus. The Department must educate and train field staff to walk existing streams, assess stormwater outfalls, collect samples, respond to discharge complaints and handle enforcement of the IDDE Policy. Experienced field staff is a major factor of any successful IDDE Program. The Department must consider whether existing staff could be trained or if hiring outside support staff for these duties will be required. The anticipated field surveys are usually short term and seasonal. The Department should budget approximately 3 months of field time for one person to handle these responsibilities in any given year. Any local staff with experience in water quality sampling or development inspection should be identified. Fire, building, health, safety and erosion control inspectors are all potential field crew draftees.

It is assumed that The Department will most likely utilize “in-house” laboratories for monitoring of illicit samples. The Department will need to address quality control, training needs, safety and hazardous waste disposal. If an existing ODU laboratory is not an option, the Department must either:

- Contract services from a private lab
- Utilize existing facilities at local drinking water or wastewater treatment plants
- Partner with the City of Norfolk or other adjacent water and sewer district for testing
If a hazardous material is found in a sample the **City of Norfolk Fire Department-Hazmat Response Team** should be immediately notified. They can be reached at:

- **Phone:** (757) 664-6600
- **Fax:** (757) 624-6832
- **Address:** 100 Brook Avenue
  Suite 500
  Norfolk, VA 23510
- **Email:** fire@norfolk.gov

A planning level budget estimate for implementing an IDDE Program has been provided below. It should be noted that costs can vary greatly due to the severity of the illicit discharges found and the size of the community and storm sewer system that must be monitored. These costs were assessed in a Center for Watershed Protection (CWP) survey and can be used to budget overall annual costs for an IDDE Program implementation.

<table>
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<tr>
<th>Element of Program</th>
<th>Average Annual Cost</th>
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<tr>
<td>Staffing</td>
<td>100,000</td>
</tr>
<tr>
<td>Office Equipment</td>
<td>2,500</td>
</tr>
<tr>
<td>Field Equipment</td>
<td>5,000</td>
</tr>
<tr>
<td>Lab Equipment/Testing</td>
<td>10,000</td>
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<tr>
<td>Education/Training/Travel/etc.</td>
<td>12,500</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>130,000</strong></td>
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**The Department needs to budget for approximately $2,500 per year additional funding for IDDE Correction Costs.**
Illicit Discharge Detection and Elimination Policy

Section 1  Purpose and Intent

The purpose of this Policy is to provide for the health, safety, and general welfare of the community of Old Dominion University 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 Policy 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 Policy are:

1. To regulate the contribution of pollutants to the MS4 by stormwater discharges by any user.
2. To prohibit Illicit Connections and Discharges to the municipal separate storm sewer system.
3. To establish legal authority to carry out all inspection, surveillance and monitoring procedures necessary to ensure compliance with this Policy.

Section 2  Definitions

For the purposes of this Policy, the following shall mean:

Authorized Enforcement Agency – Defined as the employees or designees of the Director of the Old Dominion University-Environmental Health and Safety Office.

Best Management Practices (BMP’s) - Schedules of activities, prohibitions of practices, general good housekeeping practices, pollution prevention and educational practices, maintenance procedures, and other management practices to prevent or reduce the discharge of pollutants directly or indirectly to stormwater, receiving waters, or stormwater conveyance systems. BMP’s 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.

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

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.

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.
**Illegal Discharge** - Any direct or indirect non-storm water discharge to the storm drain system, except as exempted within this Policy.

**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 drainage system. This includes, but is 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.
- 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.

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

**Municipal Separate Storm Sewer System (MS4)** – The system of conveyances (including sidewalks, roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches man-made channels or storm drains) owned and operated by Old Dominion University and designed or used for collecting or conveying storm water, and that is not used for collecting or conveying sewage.

**National Pollutant Discharge Elimination System (NPDES) Storm Water Discharge Permit** – Defined as a permit issued by the 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.

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

**Person** - Means any individual, association, organization, partnership, firm, facility, corporation or other entity recognized by law and acting as either the owner or as the owner's agent.

**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
- Noxious or offensive matter of any kind

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

Storm Water – Defined as any surface flow, runoff, and drainage consisting entirely of water from any form of natural precipitation, and resulting from such precipitation.

Stormwater Management 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 Stormwater, Stormwater Conveyance Systems, and/or Receiving Waters to the Maximum Extent Practicable.

Wastewater - Any water or other liquid, other than uncontaminated storm water, discharged from a facility.

Section 3 Applicability

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

Section 4 Responsibility for Administration

The authorized enforcement agency shall administer, implement, and enforce the provisions of this Policy. Any powers granted or duties imposed upon the authorized enforcement agency may be delegated in writing by the Office Director of the authorized enforcement agency to persons or entities acting in the beneficial interest of or in the employ of the authorized enforcement agency.

Section 5 Compatibility with other Regulations

This Policy is not intended to modify or repeal any other policy, rule, regulation, ordinance or other provision of law. The requirements of this Policy are in addition to the requirements of any other policy, rule, regulation, ordinance or other provision of law, and where any provision of this Policy imposes restrictions different from those imposed by any other policy, rule, regulation, ordinance or other provision of law, whichever provision is more restrictive or imposes higher protective standards for human health or the environment shall control.
Section 6  Severability

The provisions of this Policy are hereby declared to be severable. If any provision, clause, sentence, or paragraph of this Policy 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 Policy.

Section 7  Ultimate Responsibility

The standards set forth herein and promulgated pursuant to this Policy are minimum standards; therefore this Policy does not intend nor imply that compliance by any person will ensure that there will be no contamination, pollution, nor unauthorized discharge of pollutants.

Section 8  Discharge Prohibitions

Prohibition of Illegal Discharges
No person shall discharge or cause to be discharged into the MS4 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 Policy:
   - 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
   - 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.

*The authorized enforcement agency may evaluate and remove any of the above exemptions if it is determined that they are causing an adverse impact.

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 Policy if the person connects a line conveying sewage to the MS4, or allows such a connection to continue.

4. Improper connections in violation of this Policy must be disconnected and redirected, if necessary, to an approved onsite wastewater management system or the sanitary sewer system upon approval of the authorized enforcement agency.

5. Any drain or conveyance that has not been documented in plans, maps, or equivalent, and which may be connected to the storm sewer system, shall be located by the owner or facility manager upon receipt of written notice of violation from the authorized enforcement agency requiring that such locating be completed. Such notice will specify a reasonable time period within which the location of the drain or conveyance is to be determined, that the drain or conveyance be identified as storm sewer, sanitary sewer or other, and that the outfall location or point of connection to the storm sewer system, sanitary sewer system or other discharge point be identified. Results of these investigations are to be documented and provided to the authorized enforcement agency.

Section 9 Watercourse Protection

Every person owning a facility through which a watercourse passes, or such person's manager/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, manager 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.

Section 10 Industrial or Construction Activity Discharges

Submission of a Notice of Intent (NOI) to the Department of Conservation and Recreation (DCR)
• 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 authorized enforcement agency prior to the allowing of discharges to the MS4.

• The operator of a facility, including construction sites, required to have an NPDES permit to discharge storm water associated with industrial activity shall submit a copy of the NOI to the authorized enforcement agency at the same time the operator submits the original NOI to the DCR as applicable.

• The copy of the NOI may be delivered to the authorized enforcement agency either in person or by mailing to:

  Notice of Intent to Discharge Storm Water  
  ODU – Director of Environmental Health and Safety  
  4807 Hampton Boulevard  
  Hughes Hall Room 2061  
  Norfolk, VA 23529-0306

• A person commits an offense if the person operates a facility that is discharging storm water associated with industrial activity without having submitted a copy of the NOI to do so to the authorized enforcement agency.

Section 11  Monitoring of Discharges

Applicability
This section applies to all facilities that have storm water discharges associated with industrial activity, including construction activity, to the MS4.

Access to Facilities
• The authorized enforcement agency shall be permitted to enter and inspect facilities subject to regulation under this Policy as often as may be necessary to determine compliance with this Policy. 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.

• Facility operators shall allow the authorized enforcement agency 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.

• The authorized enforcement agency 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.

• The authorized enforcement agency has 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 stormwater flow and quality shall be calibrated to ensure their accuracy.

• 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 authorized enforcement agency and shall not be replaced. The costs of clearing such access shall be borne by the operator.
• Unreasonable delays in allowing the *authorized enforcement agency* access to a permitted facility is a violation of a storm water discharge permit and of this Policy. 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 Policy.

• If the *authorized enforcement agency* has been refused access to any part of the premises from which stormwater is discharged, and he/she is able to demonstrate probable cause to believe that there may be a violation of this Policy, 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 Policy 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.

### Section 12 Requirements to Prevent, Control, and Reduce Storm Water Pollutants by the Use of Best Management Practices

The *authorized enforcement agency* will adopt requirements identifying Best Management Practices (BMP’s) 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 MS4 drain system or watercourses through the use of these structural and non-structural BMP’s. 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 BMP’s to prevent the further discharge of pollutants to the MS4. 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 BMP’s shall be part of a Stormwater Pollution Prevention Plan (SWPPP) as necessary for compliance with requirements of the NPDES permit.

### Section 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 *authorized enforcement agency* 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 written record of the discharge and the actions taken to prevent its recurrence. Such records shall be retained for at least three years.

*Failure to provide notification of a release as provided above is a violation of this Policy.*

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**Section 14 Notice of Violation**

**Violations**

It shall be unlawful for any person to violate any provision or fail to comply with any of the requirements of this Policy. Any person who has violated or continues to violate the provisions of this Policy, may be subject to the enforcement actions outlined in this Policy or may be restrained by a Cease and Desist Order or otherwise abated in a manner provided by law.

In the event the violation constitutes an immediate danger to public health or public safety, the **authorized enforcement agency** is authorized to enter upon the subject property, without giving prior notice, to take any and all measures necessary to abate the violation and/or restore the property. The **authorized enforcement agency** is authorized to seek costs of the abatement as outlined in this Policy.

**Warning Notice**

When the **authorized enforcement agency** finds that any person has violated, or continues to violate, any provision of this Policy, or any order issued hereunder, the **authorized enforcement agency** may serve upon that person a written Warning Notice, specifying the particular violation believed to have occurred and requesting the discharger to immediately investigate the matter and to seek a resolution whereby any offending discharge will cease. Investigation and/or resolution of the matter in response to the Warning Notice in no way alleviates the alleged violator of liability for any violations occurring before or after receipt of the Warning Notice. Nothing in this subsection shall limit the authority of the **authorized enforcement agency** to take any action, including emergency action or any other enforcement action, without first issuing a Warning Notice.

**Notice of Violation**

Whenever the **authorized enforcement agency** finds that a person has violated a prohibition or failed to meet a requirement of this Policy, the authorized enforcement agency may order compliance by written notice of violation to the responsible person.

The Notice Shall Contain:

- The name and address of the alleged violator
- The address when available or a description of the building, structure or land upon which the violation is occurring, or has occurred
- A statement specifying the nature of the violation
- A description of the remedial measures necessary to restore the compliance with this Policy and a time schedule for the completion of such remedial action
- A statement of the penalty or penalties that shall or may be assessed against the person to whom the Notice of Violation is directed
A statement that the determination of violation may be appealed to the authorized enforcement agency by filing a written notice of appeal within 7 (seven) days of service of the Notice of Violation.

A statement specifying that, should the violator fail to restore compliance within the established time schedule, the work will be done by a designated governmental agency or contractor and the expense thereof shall be charged to the violator.

The Notice May Require (without limitation):
- The performance of monitoring, analyses, and reporting
- The elimination of illicit connections or discharges
- That violating discharges, practices, or operations shall cease and desist
- The abatement or remediation of storm water pollution or contamination hazards and the restoration of any affected property
- Payment of a fine to cover administrative and remediation costs
- The implementation of source control or treatment BMP’s

**Section 15  Compensatory Action**

In lieu of enforcement proceedings, penalties, and remedies authorized by this Policy, the authorized enforcement agency may impose alternative compensatory actions such as:

- Storm drain stenciling
- Attendance at compliance workshops
- Creek/Tributary cleanup (Adopt-A-Stream, Save the Bay, etc.)
- Any substitute form of environmental protection awareness/action deemed appropriate

**Section 16  Suspension of MS4 Access**

**Emergency Cease and Desist Order**

It shall be unlawful for any person to violate any provision or fail to comply with any of the requirements of this Policy. If a person has violated or continues to violate the provisions of this Policy, the authorized enforcement agency may issue an order to the violator directing it immediately to cease and desist all such violations and directing the violator to:

- Immediately comply with all Policy requirements
- Take such appropriate preventative action as may be needed to properly address a continuing or threatened violation, including immediately halting operations and/or terminating the discharge.

Any person notified of an emergency order directed to it under this subsection shall immediately comply and stop or eliminate its endangering discharge. In the event of a discharger’s failure to immediately comply voluntarily with the emergency order, the authorized enforcement agency may take such steps as deemed necessary to prevent or minimize harm to the MS4 or waters of the United States, and/or endangerment to persons or to the environment, including immediate termination of a facility’s water supply, sewer connection
or other utility service. The *authorized enforcement agency* may allow the person to recommence its discharge when it has demonstrated to the satisfaction of the *authorized enforcement agency* that the period of endangerment has passed, unless further termination proceedings are initiated against the discharger under this Policy. A person that is responsible, in whole or part, for any discharge presenting imminent endangerment shall submit a detailed written statement describing the causes of the harmful discharge and the measures taken to prevent any future occurrence, to the *authorized enforcement agency* within 10 (ten) days of receipt of the prerequisite for, taking any other action against the violator.

### Suspension due to Illicit Discharges in Emergency Situations

The *authorized enforcement agency* 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.

### Suspension due to the Detection of Illicit Discharge

Any person discharging to the MS4 in violation of this Policy 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.

A person commits an offense if the person reinstates MS4 access to premises terminated pursuant to this Section, without the prior approval of the *authorized enforcement agency*.

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### Section 17  Civil Penalties

In the event the alleged violator fails to take the remedial measures set forth in the Notice of Violation or otherwise fails to cure the violations described therein within 30 (thirty) days, or such greater period as the *authorized enforcement agency* shall deem appropriate, after the *authorized enforcement agency* has taken one or more of the actions described above, the *authorized enforcement agency* may impose a penalty not to exceed $500 (five hundred dollars) for each day the violation remains unabated after receipt of the Notice of Violation.

### Section 18  Criminal Prosecution

Any person that has violated or continues to violate this Policy shall be liable to criminal prosecution to the fullest extent of the law, and shall be subject to a criminal penalty of $500 (five hundred dollars) per violation per day and/or imprisonment for a period of time not to exceed 90 (ninety) days. The *authorized enforcement agency* may recover all attorneys’ fees court costs and other expenses associated with enforcement of this Policy, including sampling and monitoring expenses.
Section 19  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 within 7 (seven) 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 30 (thirty) days from the date of receipt of the notice of appeal. The decision of the appropriate authority or their designee shall be final.

Section 20  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 30 (thirty) days of the decision of the appropriate 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.

Section 21  Cost of Abatement of the Violation

Within 30 (thirty) days after abatement of the violation, the owner of the facility will be notified of the cost of abatement, including administrative costs. The facility owner may file a written protest objecting to the amount of the assessment within 15 (fifteen) days. If the amount due is not paid within a timely manner as determined by the decision of the appropriate authority or by the expiration of the time in which to file an appeal, the charges shall become a special assessment against the facility and shall constitute a lien on the facility for the amount of the assessment.

Any person violating any of the provisions of this article shall become liable to the state by reason of such violation. The liability shall be paid in not more than 12 equal payments. Interest at the rate of 5 (five) percent per annum shall be assessed on the balance beginning on the first day following discovery of the violation.

Section 22  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 Policy 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.
Section 23  Remedies Not Exclusive

The remedies listed in this Policy 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. The authorized enforcement agency may recover all attorneys’ fees court costs and other expenses associated with enforcement of this ordinance, including sampling and monitoring expenses.

Section 24  Adoption of Policy

This Policy shall be in full force and effect 30 (thirty) days after its final passage and adoption. All prior Policies and parts of Policies in conflict with this Policy are hereby repealed.

PASSED AND ADOPTED this _________ day of ___________________, 20____.
Illicit Discharge Potential

In this section, the ways to discover potential IDDE problem areas will be addressed and organized so the Department of Environmental Health and Safety can optimize their field time requirement. Listed below is a rating system for the campus areas illicit discharge potential.

- Low Risk – no known illicit discharge problems and mostly new infrastructure and facilities exist in these areas.
- Medium Risk – known problems are confined to a small area or a specific facility on site. Mainly newer infrastructure exists in these areas along with medium risk facilities.
- High Risk – Severe problems are expected in these areas due to known issues or very aged infrastructure along with high risk facilities.

The following is a table to help identify the Illicit Discharge Potential of any area of campus. This table does not indicate or guarantee an illicit discharge; it is only a guideline for detection.

<table>
<thead>
<tr>
<th>Illicit Discharge Potential (IDP) – Screening Factors</th>
<th>Definitions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. Past Discharge Complaints</strong></td>
<td>If there is a high frequency of past discharge complaints and past spill responses, these campus areas should be designated as having a high IDP (High Risk).</td>
</tr>
<tr>
<td><strong>2. Poor Dry Weather Water Quality</strong></td>
<td>High frequency that individual samples of dry weather water quality exceed allowances for bacteria, nutrients or conductivity. Other indicators are water clarity and color, presence of foam, oil sheen, slime, or odor. Also, if excessive vegetative growth or staining of the outfall banks or structures exists, this campus area should be labeled as having a high IDP (High Risk).</td>
</tr>
<tr>
<td><strong>3. Storm Water Outfall Density</strong></td>
<td>If a high frequency of outfalls along a stream exists (i.e. the tidal canal to the south of Powhatan Apartments) then that area should be designated as having a high IDP (High Risk).</td>
</tr>
</tbody>
</table>
### 4. Age of Infrastructure and Facilities

If the average age of the facilities and infrastructure on campus is greater than 30 years, then these areas should be labeled as having a high IDP (High Risk).

### 5. Presence of Industrial Operations

Campus areas with over 5% industrial use that are more than 30 years old should be designated as having a high IDP (High Risk). If the infrastructure in place served an industrial area that is now being used as Institutional or Residential, it is likely the infrastructure was previously contaminated and should be labeled as having a high IDP (High Risk).

### 6. Aging and Failing Sewer Infrastructure

Anywhere on campus that sanitary sewer infrastructure exceeds its expected life (i.e. 30-50 years) then that campus area should be considered to have a high IDP (High Risk). Televising sewer lines and compiling information where existing piping is deteriorated or broken would be a good method for determining Illicit Discharges.

A color coded map of the campus and its storm sewer systems has been included in **Appendix C**. Storm piping colored red will be considered a High Risk system for Illicit Discharges. Yellow piping will indicate Medium Risk and green piping will indicate Low Risk. Likewise, if a campus area is shaded red, it has a higher potential for illicit discharges than a green shaded area does. These maps should help identify the areas of campus to focus on illicit discharge detection.
Program Goals and Implementation Strategies

The goals of this program should provide IDDE to the Maximum Extent Practical (MEP) for a five year permit cycle. These goals, at a minimum, should cover:

1. Overall Program Administration
2. Outfall Assessment
3. Preventing Illicit Discharges
4. Finding and Fixing Illicit Discharges

The NPDES Phase II Small MS4 Permit regulations grant communities considerable flexibility to develop program goals, as long as they are defined in a measurable way to gauge permit effectiveness and compliance. The goals should reflect the specific needs of the University. Ultimately, IDDE program goals should be linked to water quality goals. Some basic water quality goals should include:

- Keep raw or poorly treated sewage out of streams
- Reduce pollutant loads during dry weather to help meet the Total Maximum Daily Load (TMDL) for a specific water body.
- Meet bacteria water quality standards during dry weather flows.
- Reduce toxicant and other harmful pollutants to restore the abundance of aquatic life.

The five year program matrix is attached in Appendix D. These goals are just a guideline for IDDE and will not necessarily guarantee water quality goals will be met. If set goals are not being met, the IDDE program should transform and shift resources to other pollution prevention practices that would benefit the community more.

In order to meet the goals set forth in this program, proper implementation strategies must be developed. The Department of Environmental Health and Safety must develop a cost effective strategy that is tailored to the severity of illicit discharges found within the community. The Illicit Discharge Potential (IDP) table created in the Desktop Assessment Section should be utilized in choosing the implementation strategy. The most important implementation strategy will be targeting, screening, educating and enforcing this Program to the campus areas with the highest IDP. Below there is a table to summarize Community Wide Implementation Strategies based on the IDP risk evaluation.
## Community Wide IDP Implementation Strategies

<table>
<thead>
<tr>
<th>Class</th>
<th>Action</th>
</tr>
</thead>
</table>
| **Low IDP (Minimal Risk)** | ✓ Conduct field screening of outfalls in the context of broader watershed assessment and restoration initiatives  
                                ✓ Integrate IDDE program efforts into more comprehensive watershed assessment and restoration efforts.  
                                ✓ Accomplish inventory and data collection efforts.  
                                ✓ Establish a hotline to report suspicious discharges. |
| **Medium IDP (Some Risk)** | ✓ Conduct limited sampling in the suspect areas. The most cost effective approach will be using campus laboratory services.  
                                ✓ Select a set of indicator parameters from the Desktop Assessment Section.  
                                ✓ Target education programs to the problem areas.  
                                ✓ Establish a hotline to report suspicious discharges. |
| **High IDP (High Risk)**   | ✓ Establish a hotline to report suspicious discharges.  
                                ✓ Conduct and repeatedly screen areas.  
                                ✓ Apply a more rigorous sampling approach and utilize on-campus laboratories more heavily. Expand on the use of indicator parameters from the Desktop Assessment Section.  
                                ✓ Develop community wide educational programs to increase public awareness, target programs to specific problem areas.  
                                ✓ Cross Train ODU employees to expand available effort. |
Finding and Isolating Illicit Discharges

This section includes details on how to find an illicit discharge in the field and the appropriate laboratory strategies to identify particular pollutants. Screening of the campus outfalls will likely be the most effective way to find illicit discharges around campus. The first step would be to walk all of the campus outfalls to document where they are and what condition they are in. The field team should be able to find where continuous and intermittent stream flows exist. Start with the areas of campus that are labeled High Risk, or have a High Illicit Discharge Potential (IDP), then finish screening all campus outfalls within the first permit cycle. Take note of any outfalls with discharges of very high turbidity, strong odors, unnatural colors or an extreme case of pH on a field litmus test strip. When obvious illicit discharges are found, the field crew should take note and start working upstream from manhole to manhole to find where the source is and eliminate it. While traversing the campus, field crews should be looking for other more common illicit discharges like oil spills, un-permitted car washing or other harmful liquid spills. If these are encountered the appropriate abatement agency should be notified. The following table provides a step by step process for conducting field screening.

| Field Screening and Data Analysis Process | \begin{itemize} 
<table>
<thead>
<tr>
<th>Strategies/Considerations</th>
<th>\end{itemize}</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step</strong></td>
<td><strong>1. Acquire necessary mapping, equipment and staff</strong></td>
</tr>
<tr>
<td></td>
<td>• Use available campus mapping and documents included in Appendix C.</td>
</tr>
<tr>
<td></td>
<td>• Obtain spectrophotometer, basic camera, litmus paper, etc.</td>
</tr>
<tr>
<td></td>
<td>• One person field crew with specialized training at a minimum or two person crew with basic field training (ideal for screening)</td>
</tr>
<tr>
<td>2. Determine appropriate screening times</td>
<td>• During dry season</td>
</tr>
<tr>
<td></td>
<td>• During times when trees are not shedding their leaves</td>
</tr>
<tr>
<td></td>
<td>• At a minimum of 48 hours after a rain event</td>
</tr>
<tr>
<td></td>
<td>• Times of low groundwater levels, generally in the middle of summer through fall for the Hampton Roads area</td>
</tr>
<tr>
<td>3. Identify where to begin screening</td>
<td>• High Risk (High IDP) Areas – Screen these outfalls in the beginning of the first permit</td>
</tr>
</tbody>
</table>

Vanasse Hangen Brustlin, Inc.
<table>
<thead>
<tr>
<th>Cycle</th>
<th>Medium Risk (Medium IDP) Areas – Screen drainage areas within first permit cycle.</th>
<th>Low Risk (Low IDP) Areas – integrate field screening with broader watershed assessments.</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.</td>
<td>Conduct field screening</td>
<td>Mark, document and photograph all campus outfalls. Use the appropriate forms located in Appendix E.</td>
</tr>
<tr>
<td></td>
<td>▪ Document outfall characteristics</td>
<td>Document outfall characteristics</td>
</tr>
<tr>
<td></td>
<td>▪ Monitor outfalls that have flows. Place sand bags at outfalls without flows to create a dam for water sampling.</td>
<td>Monitor outfalls that have flows. Place sand bags at outfalls without flows to create a dam for water sampling.</td>
</tr>
<tr>
<td></td>
<td>▪ Sample all outfalls with potential problems on different days and at varying times of day.</td>
<td>Sample all outfalls with potential problems on different days and at varying times of day.</td>
</tr>
<tr>
<td></td>
<td>▪ Track major problems back to the source immediately</td>
<td>Track major problems back to the source immediately</td>
</tr>
<tr>
<td>5.</td>
<td>Compile screening data</td>
<td>Develop database for documented field research</td>
</tr>
<tr>
<td></td>
<td>▪ Develop database for documented field research</td>
<td>Enter data into system as it is gathered</td>
</tr>
<tr>
<td></td>
<td>▪ Enter data into system as it is gathered</td>
<td>Start lab analysis of samples taken</td>
</tr>
<tr>
<td>6.</td>
<td>Designate screened outfalls</td>
<td>Designate outfalls screened as having a “definite, probable, potential or unlikely” illicit discharge potential. Focus efforts on definite and probable outfall areas first.</td>
</tr>
<tr>
<td>7.</td>
<td>Document the extent of discharge problems</td>
<td>Compile data from field screening, laboratory testing and initial assessment of problem areas. Update initial assessment of outfalls as High, Medium or Low Illicit Discharge Potential (IDP).</td>
</tr>
<tr>
<td>8.</td>
<td>Develop a monitoring strategy</td>
<td>Set a goal of monitoring 10% of flowing outfalls per calendar year until the entire campus has been inventoried.</td>
</tr>
<tr>
<td></td>
<td>▪ Repeat this screening each permit cycle.</td>
<td>Repeat this screening each permit cycle.</td>
</tr>
<tr>
<td>Test for:</td>
<td>Use of Test</td>
<td></td>
</tr>
<tr>
<td>-------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>2. Ammonia</td>
<td>▪ Indicates presence of Sanitary Wastewater if high levels are found, measured with common field test kit.</td>
<td></td>
</tr>
<tr>
<td>3. Surfactants</td>
<td>▪ Indicates presence of Detergents or Soaps, measured with a common field test kit.</td>
<td></td>
</tr>
<tr>
<td>4. pH</td>
<td>▪ Indicates Commercial or Industrial Flows (not a good indicator of Sanitary Wastewater), measured with a probe.</td>
<td></td>
</tr>
<tr>
<td>5. Temperature</td>
<td>▪ Indicates Sanitary Wastewater or Industrial Flows, measured during cold weather with a thermometer.</td>
<td></td>
</tr>
<tr>
<td>6. Hardness</td>
<td>▪ Indicates the difference between Natural and Treated waters, measured with a field test kit.</td>
<td></td>
</tr>
<tr>
<td>7. Chlorine</td>
<td>▪ Indicates inflow from Potable Water sources (not a good indicator of Sanitary Wastewater), measured with a field test kit.</td>
<td></td>
</tr>
<tr>
<td>8. Fluoride</td>
<td>▪ Indicates inflow from Potable Water sources (not a good indicator of Sanitary Wastewater), measured with a field test kit.</td>
<td></td>
</tr>
<tr>
<td>9. Potassium</td>
<td>▪ Indicates presence of Sanitary Wastewater in high levels, measured with a field test kit.</td>
<td></td>
</tr>
<tr>
<td>10. Optical Brighteners</td>
<td>▪ Indicates presence of Detergents or Soaps, measured with a common field test kit.</td>
<td></td>
</tr>
<tr>
<td>11. Bacteria (fecal coliform, E. Coli and enterococi)</td>
<td>▪ Indicates presence of Sanitary Wastewater if high levels are found, measured with common field test kit.</td>
<td></td>
</tr>
</tbody>
</table>
Alternative/Supplemental tests for Illicit Discharges

This section includes some methods to use individually, or in conjunction with, screening and sampling of the campus storm sewer system. The methods below will help pinpoint the actual illicit connection once field screening and sampling has narrowed the illicit discharge, to a particular building or a reduced section of campus.

**Dye Testing**

This technique involves flushing non-toxic dye into toilets and sinks inside a building suspected of an illicit discharge. The receiving storm sewer and sanitary sewer manholes from the building will need to be opened for observation of the dyes once flushed down building drains. If the presence of dye is indicated within the storm sewer system, an illicit discharge must exist. Alternating dye colors will help identify where the particular illicit discharge is coming from within the building. Local officials and building personnel should be notified prior to the test. This testing method requires, at a minimum, two people with two-way radios. This method is very definitive in the results and is relatively cheap to perform.

**Smoke Testing**

This technique involves injecting non-toxic smoke into storm sewer lines and checking for the appearance of smoke from sanitary sewer vents in buildings or from cracks in the storm piping. The method can be performed by dropping a smoke bomb and forcing air through the system or by using smoke generating machines. Testing personnel should be stationed at suspected illicit discharge areas within buildings. Smoke could cause minor irritation to occupants of the buildings, so appropriate measures should be taken to inform the public prior to testing. This method will work to test either storm or sanitary sewer and can cover a broad area if needed. This method provides very definitive results and is relatively cheap to perform.

**Video Inspection**

This technique involves guiding mobile video cameras through the storm sewer system to observe potential illicit discharges. Observations can be recorded onto DVD’s and watches at a later time. This technique is very thorough, typically definitive and unobtrusive to the public. However, it is relatively time consuming and expensive.
Fixing Illicit Discharges

The major goal of this program is to find, fix and prevent illicit discharges. In order to fix an illicit discharge problem, you first have to isolate the source of the problem. Using the methods in the previous section, the illicit discharge should be narrowed down to a particular bathroom fixture or sewer vent within the building. Once the source of the problem outfall has been identified the immediate course of action should be to abate the discharge. However, studies have shown that it generally takes 30-90 days to abate an illicit discharge. The questions that need to be answered first are:

- Who is responsible for the illicit discharge
- What methods can be used to abate the discharge
- What timeframe will be required to abate the discharge
- What is the cost of abatement
- How will the abatement be confirmed

Removing the illicit discharge could prove costly for the University. Demolition of portions of the existing building could be required. All methods for removing illicit discharges should have an appropriate mix of education and enforcement involved in the process.
Preventing Illicit Discharges

Community Intermittent Illicit Discharges

In some cases, intermittent illicit discharges can be impossible to detect. In these situations the most productive course of action is to educate the members of the MS4 community about illicit discharges. Effective IDDE Programs provide the public with education and participation in an effort to bestow a sense of environmental and community responsibility. Here are two of the most frequent intermittent illicit discharges:

Vehicle fluid changing
This is a major cause of intermittent illicit discharges. Simply a few gallons of motor oil, antifreeze or gasoline can wipe out the ecosystem of a small stream. Other communities have reached out to prevent this type of illicit discharge by providing educational materials at local stores that sell these chemicals. Some communities have a central oil recycling center or provide directions to a collecting station wherever these products are sold. Some communities even have a telephone hotline to report offenders, which ultimately leads to fines and other enforcement actions.

Hazardous Waste Storage and Improper Disposal
This is another common thread for intermittent illicit discharges. Paint, stain, solvent, pesticide, swimming pool water and cleaning products are very common wastes that are discharged into the storm drain system illegally. It is important to inform the community that this sort of action is prohibited and that collection programs be in place to abate this type of illicit discharge. If a public system is not in place to collect these pollutants, one should be created within the first permit cycle. If a system already exists, then more frequent collections could be provided. Lastly, providing permanent collection stations at solid waste facilities could help reduce this intermittent illicit discharge.

Illicit Discharge Prevention

Outreach and Education to the community is the most efficient way to prevent illicit discharges campus wide. If educational materials are focused on specific facility types that are most likely to have illicit discharges, the process becomes even more valuable. These outreach materials should be designed to educate students, teachers and maintenance personnel about illicit discharge detection and elimination (IDDE)
at these High Risk (High IDP) facilities. Typical materials include brochures, manuals, posters, pollution prevention vendors and signs. Facilities that would be good candidates for placing this material would be buildings with laboratories, at loading docks to buildings that house harmful chemicals, landscaping departments or any centralized location on campus that would be seen by the majority of the community members. One specific community outreach strategy that has proven effective is storm drain stenciling.

Storm Drain Stenciling alerts the public that everything they put in the drain eventually makes it to a receiving body of water that they would probably use for recreational purposes. This deters the community from depositing leaf litter, trash and other pollutants in the drainage systems. Stenciling will also improve watershed awareness and community stewardship and can be utilized everywhere. Simply a few trained volunteers could systematically stencil all the campus storm drains in a short time frame. Volunteers could be community service recipients, Chesapeake Bay Foundation members, fraternity and sorority members and the general student population. Stenciling programs have proven to be inexpensive, especially considering the positive effect they have on the community and the MS4.

A Spill Prevention and Response Plan is another useful method for any potential illicit discharge site. These plans describe the procedures to prevent the illicit discharges at suspect sites but more importantly they ensure that a proper procedure is outlined to abate a spill if it should occur. These plans standardize a procedure and educate facility members on how to implement the procedure. This is a way to reduce potential confusion on how to handle a particular illicit discharge in the “heat of the moment”. The plan should reflect an excellent understanding of how pollutants are handled at the facility and therefore provide a cleanup solution for a particular spill situation. The major components of a spill response plan are:

- A site map and evaluation of past spills
- An inventory of materials at the site
- A list of required spill response equipment
- Employee training

A good Spill Response Plan will identify potential spill sites and the point they would enter the storm drain system (i.e. loading docks). It should also specify how the materials should be handled to ensure no illicit discharge will occur. It should describe the procedures required to abate a spill. Lastly, it should make certain that appropriate clean up equipment is available nearby for use.
Continuously Training Employees is an integral part of preventing illicit discharges in a community, particularly if there is a lot of turnover in staffing. A low budget solution may be to develop free or low cost videos to be watched when the employee is hired and every couple years thereafter. Providing posters, signs and training brochures in multiple languages at staff only areas can prove beneficial for a low cost. Additional training could also be provided during winter, spring and summer break since there are fewer students and a lower demand for staff time. Employee training ideally could be conducted on a bi-annual basis to avoid illicit discharges and respond to spills.
IDDE Program Tracking and Evaluation

This portion of the Illicit Discharge Detection and Elimination (IDDE) Program will annually review the goals established in the Program Goals and Implementation Strategies section and in the matrix attached in Appendix D. Having an adaptive approach to IDDE is critical in the program’s success. This enables the MS4 to abate the worst illicit discharges first in a cost effective manner. The first objective to keep the IDDE program functional throughout its useful life is to develop a tracking and reporting system.

A Tracking and Reporting System should be a user friendly interface to track, report, and provide response to illicit discharge problems. A Geographical Information System (GIS) is a likely candidate for establishing this database. This will allow for program directors to measure the effectiveness of the program and for field crews to store the data they continuously collect. Some important pieces of information when setting up the GIS database are:

- Coordinates of each outfall location
- Addresses of all facilities in the community
- Facility use and occupancy information
- Physical characteristics of the outfall (pipe size, material, condition, etc)
- Outfall Reconnaissance Inventory as data is collected.
- Digital photos taken
- Follow up monitoring, information from following the ID upstream
- Any hotline or website complaints and the local response
- Maintenance and Inspection data
- Any enforcement actions taken

Secondly, Evaluating the Program on an annual basis will guarantee that program directors allocate their resources effectively. The most successful IDDE Programs are adaptable in response to ever changing discharge problems, pollutants and emerging technologies. The tracking system should be designed so that progress toward all the measurable goals can be reported. This way the community can see progress even when it appears that none is being made. The tracking system should include:

- Updated mapping to reflect outfalls found during field screens
- Surveyed streams with locations of dumping, suspect discharges and obvious illicit discharges.
- Litmus indicating results for specific screened outfalls
- Hotline usage and number of confirmed illicit discharges found through the service
- Costs for each of the program components
- Number of discharges abated
- Status of any enforcement options taken

Once the database is set up for tracking these system components and the program is tracked for several years it will be clear to the program director which aspects of the program are improving the water quality of the MS4. For example, if litmus indicating results turn up the greatest number of illicit discharges, maybe the director should allocate a larger percentage of funding for that particular program component, shifting the funds from another component that has proven less successful.
References


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Environmental Protection Agency, *Illicit Discharge Detection and Elimination: Regulatory Text*

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Department of Environmental Quality, *Illicit Discharge Detection and Elimination Plan*: 2005

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