UNIVERSITY OF SOUTH FLORIDA

Tampa Campus
MS4 Stormwater Procedures

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Introduction

The Florida Department of Environmental Protection regulates known discharges of contaminants to surface waters in the state of Florida. In an effort to address this type of pollution, stormwater management regulations (F.A.C. 62-624) were established to reduce the impact of contaminated stormwater runoff from certain MS4s. The University of South Florida's Tampa campus is required to comply with these requirements. As a condition of the stormwater regulations, regulated MS4s are required to prohibit illicit discharges. An illicit discharge is any discharge to the USF Tampa campus storm sewer system that is not composed entirely of stormwater with the exceptions of State recognized exclusions or activities covered by a specific discharge permit. As part of USF's commitment to environmental stewardship, USF Policy 6-023 specifically prohibits illicit discharges to the USF Tampa campus stormwater. These procedures assist in implementing that policy. USF Environmental Health and Safety (EH&S) maintains the USF Phase II MS4 Generic Permit (NOI) and is the point of contact for state and federal regulatory agencies related to compliance with the permit.

Purpose

In accordance with USF Policies 6-006 and 6-016, the purpose of these MS4 Stormwater Procedures is to establish the responsibilities and general requirements associated with ensuring the USF Phase II MS4 operates properly, as designed, and in compliance with regulatory and permit requirements. These procedures also establish a regulatory mechanism to initiate sanctions against construction contractors for non-compliance with construction site stormwater control requirements.

Definitions

- **NPDES** is the National Pollutant Discharge Elimination System, which prohibits discharging "pollutants" through a "point source" into a "water of the United States" without an NPDES permit.
- **MS4** is a Municipal Separate Storm Sewer System, which is a publicly-owned conveyance or system of conveyances (i.e., ditches, curbs, catch basins, underground pipes, etc.) designed or used for collecting or conveying stormwater and that discharges to surface waters of the state.
- **NOI** is a Notice of Intent to operate a Phase II MS4 under an NPDES Generic Permit
- **Illicit Discharge** is any discharge into a storm drain system that is not comprised entirely of stormwater.
- **Inspections** are observations of MS4 components to insure the components are operating as designed, free of obstructions, not in need of maintenance or repair, and illicit discharges are not occurring.
- **Maintenance** includes activities such as mowing, debris removal, and adjustment or repair of MS4 structures.
- **Construction Generic Permit (CGP)** is required for discharges from construction activities that disturb at least one or more acres of land or disturb less than one acre of land but are part of a common plan of development; and discharge stormwater to surface waters of the state or to surface waters of the state through a municipal separate storm sewer system (MS4).
- **CGP Notice of Intent (NOI)** must be submitted online or by paper copy to the NPDES Stormwater Notices Center to obtain permit coverage.
- **Stormwater Pollution Prevention Plan (SWPPP)** must be developed and implemented to be in compliance with the permit.

- **Notice of Termination (NOT)** must be submitted online or by paper copy to the NPDES Stormwater Notices Center to discontinue permit coverage.

Inspections and Maintenance

RESPONSIBILITY	**ACTION**
Utilities	♦ Conduct routine MS4 inspection and maintenance according to the USF MS4 Inspection and Maintenance Schedule (Appendix 1). ♦ In coordination with EH&S, perform non-routine inspection and maintenance when a report of a possible or confirmed illicit discharge has been received. ♦ Perform illicit discharge detection during any inspection or maintenance activities other than responses to a confirmed illicit discharge (see also, Illicit Discharge Reporting and Elimination). ♦ Document all inspection and maintenance activities, including illicit discharge detection and elimination activities on the USF Stormwater Structure Inspection and Maintenance Worksheet (Appendix 2). o Inspect all outfalls and inlets in the scheduled sector and their associated basin and piping. o Record the scheduled quadrant on the Worksheet. o Record the Structure type inspected. o Record the number of pipes and basins inspected associated with the structure. o Record any Maintenance activities performed. o Record the quantity of any debris removed. o Perform an illicit discharge inspection and record the findings (Y/N). o Report any illicit discharges to EH&S immediately. o Initial and date the record.
Grounds	♦ Perform grounds maintenance such as mowing, edging, and weed/invasive species control for all applicable aboveground MS4 components (ditches, swales, ponds, weirs, etc.). ♦ Report any illicit discharges discovered to EH&S immediately.
Design and Construction (Civil Engineer)	♦ Ensures any modifications to the MS4 comply with Environmental Resource Permitting requirements.

Illicit Discharge Reporting and Elimination

An illicit discharge is any discharge into a storm drain that is not composed entirely of stormwater. This means that anything other than rain that falls from the sky and enters a storm drain is an illicit discharge. Polluted stormwater runoff can enter the storm sewer system through curb inlet drains and grated inlets. Examples of illicit discharges include wastewater from car washing and runoff from pressure washing using chemicals.

RESPONSIBILITY	**ACTION**

Facilities Management Departments	♦ Ensure all applicable personnel complete Stormwater/Illicit Discharge Training. ♦ FM personnel report any illicit discharges discovered to EH&S immediately. ○ Contact EH&S at 813-974-4036 or use the Illicit Discharge Report Form. ○ After normal business hours, contact the University Police Department at 813-974-2628.
Environmental Health and Safety	♦ Provide Stormwater/Illicit Discharge Training for all applicable personnel. ♦ Report illicit discharges to federal, state, and local authorities as required.
Utilities/EH&S	♦ Coordinate efforts to investigate and ensure any discovered/confirmed illicit discharges are abated as soon as possible.

Construction Activities

In order to reduce pollutants in stormwater runoff to the USF Phase II MS4 from construction activities disturbing greater than or equal to one acre, or less than one acre of land that is part of a larger common plan of development that will ultimately disturb more than one acre, USF requires construction contractors to comply with National Pollutant Discharge Elimination System stormwater requirements in accordance with Section 403.0885, Florida Statutes (F.S).

USF personnel will provide monthly oversight of construction contractors to review and confirm conditions noted on erosion and sediment/stormwater pollution prevention inspections are representative of the conditions actually observed on construction sites. This oversight will include documenting SWPP inspections are being conducted as required, inspection records are readily available on site, observations of the site agree with the latest inspection record, and deficiencies are being addressed in a timely fashion. Oversight will be documented using the USF Stormwater Inspection Oversight Record (Appendix 4).

Enforcement Mechanism

Per USF Policy 6-016 (*Environmental Health & Safety Compliance*), USF reserves the right to restrict or suspend any activity, equipment or area that is determined to pose a danger/negative impact to the environment, life, health, or safety. In order to establish a regulatory mechanism providing for sanctions against construction contractors who do not appropriately address non-compliance with NPDES construction site stormwater control requirements, USF has implemented the following procedures.

RESPONSIBILITY	**ACTION**
Design and Construction	♦ Shall provide a copy of this procedure to construction contractors at the time of their selections. ♦ Ensure that prior to issuing a notice to proceed with the construction project, the construction contractor has received a building permit and thus has complied with CGP requirements.

- Project Managers will conduct frequent site visits, and as part of the site visits, will confirm construction site stormwater control requirements are in place and in proper condition as per the construction contractor's SWPPP. Site visits will be documented on the USF Stormwater Inspection Oversight Record (Appendix 4).
- Project Managers will ensure that a copy of the SWPPP is on site and SWPPP inspections occur at least once a week and within 24 hours of the end of a storm event that is 0.50 inches or greater.
- Project Managers will ensure deficiencies noted in inspection reports are being adequately addressed in a timely manner, but in no case later than 7 calendar days following the inspection or identification of the issue.
- In coordination with EH&S/Building Code Administration, Project Managers shall issue "Stop Work Orders" when construction contractors have demonstrated repeated failures to comply with construction site stormwater control requirements, or immediately in the event of egregious violations capable of causing harm, or having caused harm, to the USF Phase II MS4.
- Project Managers shall notify the Building Code Administrator in the event a construction contractor does not resolve a stormwater related "Stop Work Order" within 48 hours.

EH&S/Building Code Administration

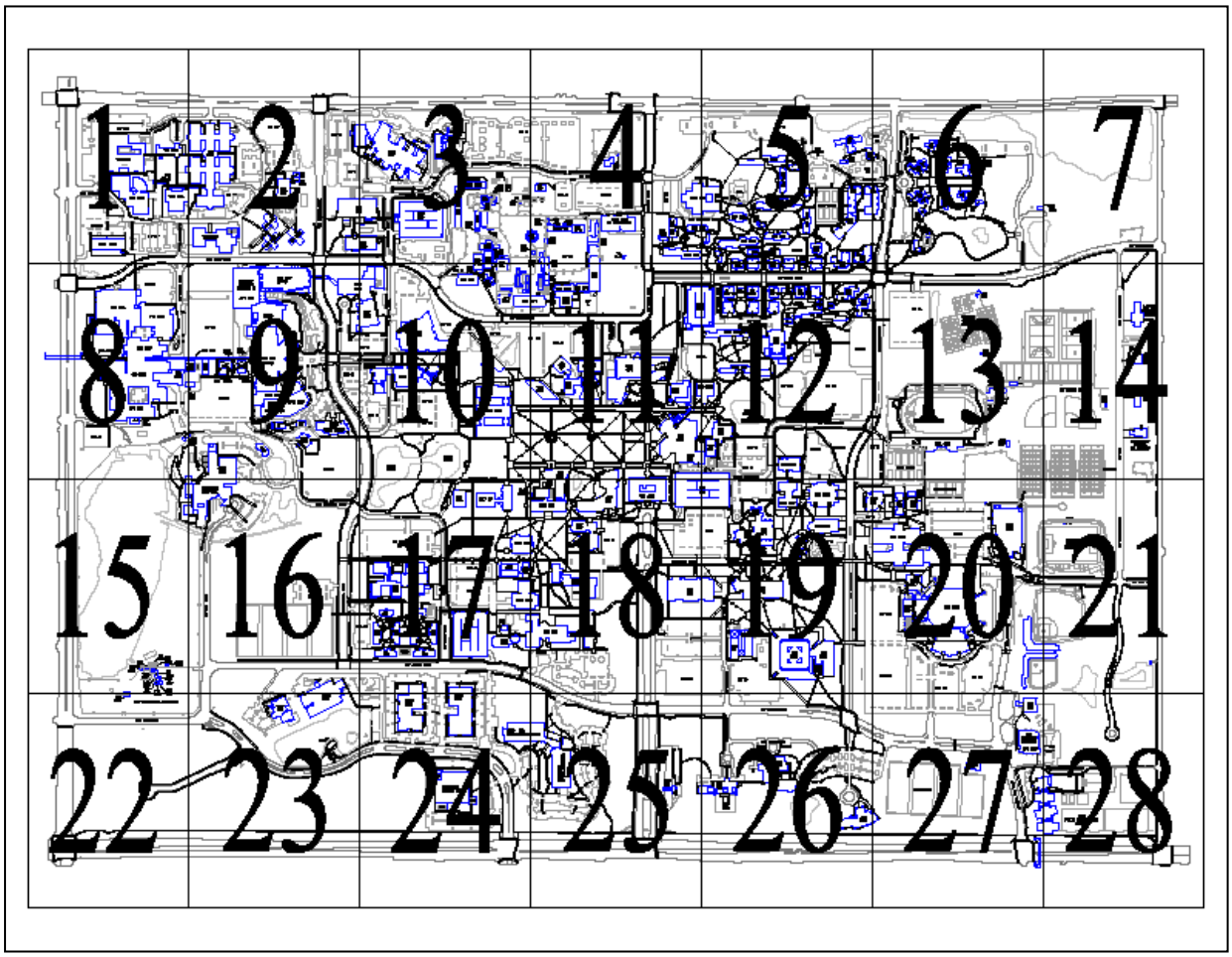
- Ensure construction contractors have obtained a Construction Generic Permit (CGP), provided it to USF along with the NOI, and the SWPPP prior to issuing a building permit.
- Issue a USF Notice of Stormwater Violation (Appendix 3) to construction contractors who fail to resolve a stormwater related "Stop Work Order" within 48 hours.
- If a construction contractor does not resolve the stormwater non-compliance within 48 hours of issuance of a USF Notice of Stormwater Violation, the Building Code Administrator reserves the right to revoke the Building Permit, and provide the construction contractor with the reason for revocation in accordance with Florida Statutes 553.79.
- Shall not reinstate construction activities, including the restoration of a Building permit, if applicable, until all stormwater violations have been corrected to the University's satisfaction.

References

♦ 553.79, Florida Statutes	♦ USF Phase II Generic Permit (NOI)
♦ 403.0885, Florida Statutes	♦ USF Policy 6-023, Prohibit Illicit Stormwater Discharge
♦ Construction Generic Permit (CGP)	♦ USF PMG-19 Weather Protection and Stormwater Management Plan
♦ CGP Notice of Intent (NOI)	♦ USF Cost Containment Guide
♦ SWPPP Guidance	♦ USF Stormwater/Illicit Discharge Training
♦ Notice of Termination (NOT)	♦ USF Illicit Discharge Report Form
♦ FDEP NPDES Stormwater Construction Activity	

Appendix 1: USF MS4 Inspection and Maintenance Schedule

MS4 Inspection Schedule					
Cycle	**Fiscal Year July**	**1st Quarter**	**2nd Quarter**	**3rd Quarter**	**4th Quarter**
1	2012-2013	5, 6	7	12	13, 14
1	2013-2014			1, 2	3, 4
1	2014-2015	8	9	10	11
1	2015-2016	15, 16	17	18	19
1	2016-2017	20, 21	22, 23, 24	25, 26	27,28
2	2017-2018	1	2	3, 4	5
2	2018-2019	5	6	8	9
2	2019-2020	10	11	11	12
2	2020-2021	12	17	17	18
2	2021-2022	19	20	7, 13, 14, 21, 27, 28	15, 16, 22, 23, 24, 25 , 26
3	2022-2023	1	2	3, 4	5
3	2023-2024	5	6	8	9
3	2024-2025	10	11	11	12
3	2025-2026	12	17	17	18
3	2026-2027	19	20	7, 13, 14, 21, 27, 28	15, 16, 22, 23, 24, 25 , 26



Appendix 2: Stormwater Structure Inspection and Maintenance Worksheet

Stormwater Structure Inspection and Maintenance Worksheet

Quadrant:

Types of Storm Structure		
Inlets	Outfalls	Pollution Box

Storm Structure	Location/Grate #	Pipes inspected	Basins Inspected	Maintenance Performed	Debris Removed	Illicit discharge	Technician	Date

Appendix 3: USF Notice of Stormwater Violation

_____

Construction Project Name:

The construction project named above has failed to resolve a stormwater related "Stop Work Order" issued by the USF Project Manager. The project is in violation of the NPDES Stormwater Pollution Plan requirement(s) indicated below. If the violations are not corrected within 48 hours of the date and time shown below, the USF Building Permit may be revoked.

____ Silt Fence	____ Permanent seed / sod
____ Storm drain inlet protection	____ Dam
____ Reinforced soil retaining system	____ Check dam
____ Tree protection	____ Perimeter ditch
____ Earth dikes	____ Mulch
____ Vegetative buffer strip	____ Sand Bag
____ Detention pond	____ Subsurface drain
____ Structural diversion	____ Curb and gutter
____ Vegetative preservation area	____ Hay Bales
____ Sediment Basin	____ Pipe slope drain
____ Retention pond Swale	____ Paved road surface
____ Retention Pond	____ Geotextile
____ Temporary seed / sod	____ Level spreaders
____ Waste disposal /housekeeping	____ Rock outlet protection
____ Sediment Trap	____ Rip-rap
____ Construction entrance stabilization	____ Other _____ Specify

_____ _____

Building Code Administrator Name Building Code Administrator Signature

_____ _____ am / pm

Date Issued: Time Issued:

My signature below acknowledges receipt of this USF Notice of Stormwater Violation.

_____ _____

Contractor's Representative Name Contractor's Representative Signature

Appendix 4: USF Stormwater Inspection Oversight Record

_____

Construction Project Name:

	(Circle one*)	
SWPP inspections are being conducted as required.	Yes	No
Inspection records are readily available on site.	Yes	No
Observations of the site agree with the latest inspection record.	Yes	No
Deficiencies are being addressed in a timely fashion.	Yes	No

**** Any "No" answer requires initiation of corrective actions.***

My signature below certifies the information submitted is, to the best of my knowledge and belief, true, accurate, and complete.

_____ _____

USF Representative's Name USF Representative's Signature

_____

Date

Appendix 5: Operation And Maintenance Guidelines

Stormwater management systems are to be inspected on a routine basis to ensure that they are functioning properly. Inspections are to be performed on a monthly and semi-annual basis following major storms. Systems that incorporate percolation are most critical since poor maintenance practices can soon render them ineffective. Records are to be kept on all maintenance operations to help plan future work and identify facilities requiring attention.

Considerable damage, as well as loss of structures and effective use of the stormwater facilities can result from a failure to protect and maintain the drainage systems. Providing maintenance in a timely manner often saves costly repair jobs when the unusual storms occur.

GENERAL

Normal maintenance requirements are as follows:

a. Retention areas and swales should be mowed at regular intervals. All clippings should be picked up and any accumulated debris should be removed.

b. Sod should be routinely thatched.

c. The bottom area of dry basins should be periodically broken with a disk to maintain design percolation rate.

d. Sod cover on slopes and embankments should be inspected and repaired or replaced as necessary.

e. Periodically, following a storm event, the outfall structure should be inspected to check that the orifice or weir is not clogged and is flowing at a substantial rate.

f. The discharge pipe(s) should be visually inspected to determine if the pipe(s) require cleaning. All debris found in the pipe should be removed.

g. Inlet structures should be inspected after each storm. All debris accumulated in the sump or on the grate should be removed.

h. Outlets should be inspected for clogging and erosion.

i. Berms and other structures should be inspected for breaks. Repairs, if necessary, should be performed immediately.

CATCH BASINS

Catch basins should be inspected after major storms and should be cleaned as often as needed. Various techniques and equipment are available for maintenance of catch basins. Filter bags can be used in catch basins at street grade to reduce the frequency of cleaning catch basins and outfall pipes.

LITTORAL ZONES (For Wet Detention Systems)

The littoral shelf shall be maintained as follows:

1. Wetland topsoil, containing a suitable seed source, shall be spread over the littoral zone from the control elevation out to the waterward extent of the shelf, with a minimum thickness of four inches.

2. Littoral vegetation will become established via natural recruitment.

3. All desirable vegetation that becomes established in the littoral area must be maintained.

4. Nuisance/invasive exotic species (e.g., cattails) should be removed periodically.
   The owner should consult the water management district prior to undertaking this activity.

UNDERDRAINS AND EFFLUENT FILTERS

Underdrains and effluent filtration systems should be periodically inspected to assure that they are functioning as designed. Failure to effectively maintain these systems will result in insufficient drawdown of detained stormwater runoff after rainfall events. The filter media should be routinely inspected for accumulation of excess debris and silt. Debris should be removed immediately following storm events.

Effluent filters are designed such that all detained runoff should discharge from the basin within a 36-hour period. Observations should be made periodically to verify that the filter is passing the runoff within the design time frame. Runoff remaining in the basin longer than 72 hours is indicative of a clogged or silt laden filter. Should this event occur, the filter should be thoroughly backwashed with clean water to remove silt and other fines from the media. If backwashing does not remedy the situation, the media may need to be replaced. The owner should retain a qualifiedcontractor and should consult with the engineer prior to replacing filter media.

DRY BOTTOM RETENTION SYSTEM

The retention area must become dry within 72 hours after a rainfall event. If the retention area is regularly wet, it is out of compliance with the permitted design, and the pond bottom must be scarified, or the bottom foot or so replaced with clean sands, to ensure that the permitted percolation rate is maintained.

METHODS AND EQUIPMENT FOR SYSTEM MAINTENANCE

Various types of equipment are commercially available for maintenance of stormwater management systems. The most frequently used equipment and techniques are listed below:

1. Vacuum Pump

   This device is normally used to remove sediment from sumps and pipes. The equipment for this system is generally mounted on a vehicle. It requires a 200 to 300 gallon (0.757 to 1.136 m ^3) holding tank and a vacuum pump that has a 10-inch (254 mm) diameter flexible hose with a serrated metal end for breaking up cake sediment. A two-man crew can clean a catch basin in 5 to 10 minutes. This system can remove stones, bricks, leaves, litter, and sediment deposits. Normal working depth is 0 to 20 feet (0 to 6 m).

2. Water Jet Spray

   This equipment is generally mounted on a vehicle equipped with a high pressure pump and a 200 to 300 gallon (0.760 to 1.140 m^3) water supply. A 3-inch (76 mm) flexible hose line with a metal nozzle directs jets of water to loosen debris in pipes or trenches.
   Normal length of hose is approximately 200 feet (61 m). This system should not be used to clean erodible trench walls.

3. Fire Hose Flushing

   This equipment consists of various fittings that can be placed on the end of a fire hose such as rotating nozzles, rotating cutter, etc. When this equipment is dragged through a pipe, it can be effective in removing light material from walls.

4. Sewer Jet Flusher

Sewer jet flushers are usually truck-mounted and consists of a large water tank of at least 1000 gallons (3.785 m^3), a triple action water pump capable of producing 1000 psi (6900 kN/m^2) or more pressure, a gasoline motor to run the pump, a hose reel large enough for 500 feet (153 m) of 1-inch (25 mm) inside diameter high pressure hose, and a hydraulic pump to operate the hose reel. In order to clean pipes properly, a minimum nozzle pressure of 600 psi (4140 kN/m^2) is required. All material is flushed ahead of the nozzle by spray action. This extremely mobile machine can be used for cleaning areas with light grease problems, sand and gravel infiltration, and for general cleaning.

References

1. Sewer Maintenance Manual Prepared by Municipal Engineers Association of Ontario for Ministry of the Environment, Ontario, Canada, March 1974.

2. Smith, T.W., Peter, R.R., Smith, R.E., Shirley, E.C., "Infiltration Drainage of Highway Surface Water", Transportation Laboratory, California Department of Transportation, Research Report
M & R 632820-1, August, 1969.