

# **City of Sandy Springs, Georgia**

## **MS4 Operation and Maintenance Procedure**

**(Applies to Publicly-Owned Maintained Facilities Except BMPs)**

### **1.0 Introduction**

The City's Municipal Separate Storm Sewer System (MS4) is made up of structures, facilities and natural drainage-ways used for collecting, conveying, storing and/or treating stormwater. In order to ensure that the stormwater system continues to operate as designed to safely convey stormwater volume, velocity, and quality, it is the City's responsibility to maintain the MS4. An adequate Operation and Maintenance (O&M) program is essential to maintain the functionality of the system and should be a high priority for the City's comprehensive Stormwater Management Plan. In addition, it is a requirement of the City's Phase II NPDES Stormwater Permit that the City proactively maintain the MS4 in accordance with the procedures set forth in the accepted Notice of Intent (NOI). This document outlines the City's procedures for system inspection, maintenance, and documentation.

The City must develop and implement a drainage system O&M program that is customized to the policies, priorities, and issues that are predominant in the City. Failure to perform effective O&M activities can potentially reduce both the conveyance capacity and pollutant removal efficiency of stormwater drainage system infrastructure. Ideally, the O&M program should address maintenance issues proactively instead of addressing issues (i.e. flooding, infrastructure failure, etc.) on a reactive basis. The goal of the City is to maintain a proactive O&M program, which incorporates schedules/planned activities and tasks into its day to day efforts.

The City currently has a program to ensure regular inspections are conducted of publicly maintained facilities to assure that all stormwater systems receive periodic routine inspection and maintenance. This program ensures that these systems function as they were designed, to prevent flooding, erosion, and degradation of existing water resources. This program was created to outline the inspection process, organize the administrative workload, and develop a systematic method for maintenance and repair functions.

## 2.0 Program Description

The existing publicly-owned Municipal Separate Storm Sewer System (MS4) components will be inspected by the City of Sandy Springs. The City maintains the stormwater system within the right-of-way and stormwater components and controls on property owned by the City or within an easement with an express acceptance by the City. It is estimated that the City has 4,725 catch basins, 4992 enclosed gravity pipes, and 44 ditches. It is the City's intention to inspect each of these components at least once every five years.

Within the right-of-way and for publicly owned stormwater components, the City will inspect and provide periodic, remedial and condition driven inspections and maintenance.

## 3.0 Procedure

It is essential to establish an Extent of Service (EOS) and Level of Service (LOS) for the various components of the MS4 and to develop a proactive plan for O&M of the system. The extent of service policy spells out the "responsibility status" of the various drainage infrastructure components based upon system component location and ownership factors. The City maintains the stormwater system within the right-of-way and stormwater components and controls on property owned by the City or within an easement with an express acceptance by the City.

The LOS for each major component of the system must be defined. The LOS is defined as the types and frequencies of O&M activities that a community will provide to different components of the MS4. Within the right-of-way and for publicly owned stormwater components, the City will inspect and provide periodic, remedial and condition driven inspections and maintenance, unless service is provided by a private third party.

A comprehensive O&M program will incorporate three types of maintenance and inspection:

1. Remedial inspections and maintenance
2. Periodic inspections
3. Condition driven maintenance

Remedial inspection and maintenance is performed on an as-needed basis established on evidence of system failure during regular inspections or citizen complaints.

Periodic inspection involves performing inspection on a routine or set schedule.

Condition driven maintenance involves performing maintenance activities when certain criteria are met.

In order for the City to implement a proactive O&M program with limited resources, it is recommended and necessary for the City to prioritize areas and system components within the MS4 to inspect. By identifying and prioritizing inspections based on a history of flooding, the City's responsibilities, and the systems condition, the City can cost effectively focus its resources on those systems with priority needs.

Priority drainage systems can be identified as those structures where significant harm or damage could occur if the system were to fail. The highest priority would be assigned to those systems that cannot be allowed to fail due to the potential for serious threat of citizen safety, significant damage to habitable structures, or damage to public infrastructure. This priority could also be assigned to systems where the loss of other public infrastructure (i.e. roads, culverts, etc.) would result in a public safety issue or major inconvenience to citizens or business owners. Loss of access to a residential structure or business can severely limit access of emergency services such as fire and medical vehicles in these cases. Other high priority drainage systems would include systems that cause flooding of livable structures but do not cause damage to the livable spaces. For example, flooding would include unfinished basements, crawl spaces, debris against the structure and damage to mechanical systems (air conditioning units, furnaces, etc.).

Secondary drainage systems could include all other drainage systems not classified as a primary system within the City's EOS. A high priority secondary system would include systems that could cause road closures but not necessarily result in loss of access to an area. Other secondary systems should include those that result in flooding of non-livable structures (i.e. sheds, storage buildings, etc.) and those that cause nuisance flooding. These criteria could be tied into the city's performance LOS criteria as it relates to flooding. .

### **3.1 Inventory**

The database will be periodically updated as new information is obtained. The MS4 components includes such features as catch basins, culverts, ditches, and structural stormwater control facilities. The components may be located on publicly-owned property or on privately-owned property within an easement expressly accepted by the City for maintenance.

<b>Conduits</b>	<b>Number</b>
Enclosed Gravity Pipe	4,992
Dry Open Channel	44
<b>Structures</b>	
1013 Catchbasin w Casting	918
1019A DI Type B w Weir	1
1019A DI Type C w Weir	2
1019A DI Type E w Hood	161
1019A Drop Inlet Type A	81
1019A Drop Inlet Type C	10
1019A Drop Inlet Type D	5
1033D CB Left Wing	856
1033D CB Right Wing	861
1034 CB Double Wing	1,507
Trench Drain Inlet	6
Unclassified Catch Basin	197
Unclassified Drop Inlet	78
Yard/Area Inlet(Ped Top)	42
<b>Structures Subtotal</b>	<b>4,725</b>
<b>Grand Total Conduits &amp; Structures</b>	<b>9,761</b>

### 3.2 Remedial Inspection and Maintenance Procedures

Remedial maintenance is performed based on evidence of system impairment or failure identified through citizen complaints or City staff inspection. Inspection and maintenance is performed on an as needed basis and is logged in as work performed through a work order system. This type of maintenance can include sediment/litter removal, vegetation clearing, channel stabilization, and outlet structure repairs.

Upon receipt of a request, a City staff member will respond to that request within three (3) business days, with an inspection following as soon as possible. The City staff person will assess the system for condition, material, water quality issues, structural issues, etc. If the system inspected is determined to be the maintenance responsibility of the City, maintenance will be recommended and performed based on the condition driven maintenance standards established below. If recommended remedial maintenance calls for more specialized expertise and equipment then the work order

may be transferred to another department or an outside entity specializing in that activity.

### 3.3 Periodic Inspections

Periodic inspection is performed on a scheduled basis. The City will perform periodic inspections on our MS4 system once every five years.

### 3.4 Condition Driven Maintenance

Condition driven maintenance is performed based on the results of City staff inspections conducted as part of a periodic or remedial inspection program. If certain standards are not met during inspection, City staff will perform applicable maintenance procedures including removal of litter, debris, or sediment; re-grading; minor repair; replacement; etc.

Standards for System Components:

- J Catch Basins: Catch basins with sumps should be cleaned if accumulated sediment, debris or other deposits are equal to or greater than one-third the depth from the invert of the basin sump to the invert of the lowest pipe into or out of the basin. If catch basins are found to significantly exceed this standard, they should be inspected and cleaned more often. If deposits of concern are rarely found during regular inspections, inspection may be moved to a more infrequent schedule.
- J Storm Pipes: Storm pipes should be inspected as the catch basins are inspected. Storm pipes shall be cleaned if accumulated sediment, debris or other deposits are blocking more than 35% of the pipe diameter.
- J Culverts: Woody debris and other blockages should be immediately removed from culverts and other critical conveyance components.
- J Open Drainage: Open drainage refers to ditches, canals, swales, etc. Drainage ditches should be inspected and cleaned if accumulated sediment, debris or other deposits exceed 35% of the functional depth. Excess vegetation shall be removed manually if it is restricting flow.
- J Municipally-Owned Detention Ponds and other Regional Controls: Inspections of inflow and outflow structures are required. Sediment should be removed before 50% of the capacity has been lost (typically every 10 to 20 years). Stormwater structural control facilities shall be maintained according to criteria or procedures present in the *Georgia Stormwater Management Manual*. Maintenance requirements are detailed at the end of each structural control design criteria section.

- J) Outfalls: Dry weather flows in the stormwater system observed during inspection and that indicate a potential pollution problem should be investigated for potential illegal dumping and /or illicit connections. If flow of water from outfall is causing significant erosion, energy dissipaters should be installed as part of a programmed system improvement plan.

### **3.5 Emergency Maintenance**

The City may conduct emergency maintenance operations within drainage easements in order to protect the common good. Emergency maintenance includes maintenance necessary to remedy a condition which is potentially damaging to life, property, or public roads. Such emergency maintenance, conducted for the common good, shall not be construed as constituting accepting a continuing maintenance obligation by the City, nor prevent the City from seeking reimbursement for expenses from the property owner(s) of the land that generated the condition.

### **3.6 Categorizing Project Requests**

There are currently more projects than the City can address at one time. The order of response to these projects will be determined by the category of the request. Requests for projects will be categorized as:

- Category I: Posing an immediate danger or threat to public safety,
- Category II: Rapidly degrading to a dangerous condition, or
- Category III: Maintenance or cosmetic repair.

Projects in Category I will receive priority.

City Public Works staff will review project requests and will perform the initial project categorization. Public Works staff will periodically monitor the conditions at the project location, prior to repair/maintenance, and will modify the categorization when needed.

### **3.7 Funding Issues (Set Funding Allocated in Budget)**

The Mayor and City Council may allocate funding for stormwater projects during each budget cycle. Projects will be recommended for implementation based on the determination of City responsibility, by Category, and by approved funding level.

### **3.8 Record Keeping**

The City staff will keep records of all inspection and maintenance activities performed as part of the MS4 inspection program. Service Requests will be generated based on citizen requests or other unforeseen maintenance activities not usually performed as part of scheduled maintenance. Service Requests will detail the source of the request, nature of the stormwater issues, inspection results, and all maintenance and/or enforcement activities. The service request will detail the project from start to finish including dates, activities and staff. City Crews will also keep daily activity logs detailing all of their inspection and maintenance activities as they relate to system inspection and maintenance. These logs will include structures inspected, activities performed, dates, etc.