

81-83 HUTTON STREET
CITY OF JERSEY CITY, NJ
STORM WATER MANAGEMENT FACILITY
OPERATION & MAINTENANCE MANUAL

I. RESPONSIBLE PARTIES

The following person or persons shall be responsible for the preventative and corrective maintenance of the stormwater management measures and systems:

A. 81-83 Hutton Street JC, LLC
C/O M2M Development
221 River Street, 9th Floor
Hoboken, NJ 07030

Contact person responsible for the maintenance of the Stormwater Management facilities on the site:
Joseph Damanti
Cell No. (917) 470-0007
joseph@m2mjc.com]

II. INTRODUCTION

This document has been prepared to provide direction in the maintenance of the Storm Water Management Facilities (SWMF) at 81-83 Hutton Street, located in the City of Jersey City, Hudson County, New Jersey. This manual addresses the maintenance issues for the specific components of the stormwater management facility to include the underground detention systems, green roof, blue roof and landscaping areas.

The primary emphasis of this maintenance program is on preventative rather than corrective maintenance. Aesthetic maintenance will also play a key role in this SWMF maintenance program. When performed regularly, aesthetic maintenance will help reduce the required amount of both preventative and corrective maintenance required.

A. Functional Maintenance

Functional Maintenance is the maintenance required to keep a SWMF functional or operational at all times. Functional Maintenance includes both preventative (routine) maintenance and corrective (emergency) maintenance.

1. Preventive Maintenance

Preventative maintenance includes functional maintenance procedures that are required to maintain a SWMF's intended operation and safe condition by preventing the occurrence of problems and malfunctions. Preventative maintenance will be performed in accordance with the direction as presented in this manual. Typical routine procedures include silt and debris removal and vegetation maintenance around SWMF's. Since it is performed on a regular basis, preventative maintenance is simpler to schedule and budget for and, ultimately, is easier and less expensive to perform than corrective maintenance.

2. Corrective Maintenance

Corrective maintenance includes the functional maintenance procedures that are required to correct a problem or malfunction at a SWMF and to restore the facility's intended operation and safe condition. Based upon the severity of the problem, corrective maintenance must be performed on an as-needed or emergency basis and includes such procedures as structural repairs, and mosquito control. By its nature, corrective maintenance is much more difficult to schedule and budget for and, ultimately, is generally more difficult and expensive to perform than preventative maintenance.

B. Aesthetic Maintenance

Aesthetic maintenance is the maintenance required to enhance or maintain the visual appeal of a facility. The storm water facility has been designed to be an integral component of the development. As such, the facility should not have an impact on the aesthetic quality of the development as a whole.

III. FUNCTIONAL – PREVENTATIVE MAINTENANCE PROCEDURES

SUB-SURFACE TANKS and RAIN GARDEN

Sub-Surface Tanks are similar to manhole type structures. While not the intended use, Sub-Surface Tanks trap sediment and some of the oily pollutants in runoff. Sub-Surface Tanks are more likely to fill with oily sediment in areas that lack swales or other treatment facilities. Fine oil sediment can clog Sub-Surface Tanks and lead to localized street flooding. Also, pollutants discharged into Sub-Surface Tanks can migrate into groundwater. Because Sub-Surface Tanks can be easily clogged and tend to concentrate pollutants in one place; pollution and sediment control practices should be used to protect them.

Outcomes/Goals/Benefits

A. Primary Outcomes

Flood Control - To prevent or reduce flooding and protect infrastructure

Infrastructure - To Maintain or restore the intended infrastructure function

B. Secondary Outcomes

Water Quality -To avoid or minimize sediment and pollutant discharge from the site area and to prevent parking areas, roadways, drainage systems, facilities and property from becoming pollutant sources.

Operation & Maintenance Practices:

A. Inspection

Sub-Surface Tanks should be inspected at least once a year and no less than once every five years. Periodically inspect the Sub-Surface Tank and surrounding areas for pollutants such as leaks from dumpsters, minor spills, and oil dumping. Take action to have the pollutant source removed. If a problem with flooding or slow drainage occurs, observe or inspect the Sub-Surface Tanks for infiltration rate and observe water level depths if monitoring wells are installed.

B. Removal and Disposal of Trash and Debris

Clean out Sub-Surface Tanks when sediment depth is greater than 1/3 of the distance between the base and inlet pipe. Sub-Surface Tanks cleaning should be performed in a way that makes certain removed sediment and water is not discharging back into the storm sewer.

C. Safety

Work inside underground structures requires special OSHA-required confined space equipment and procedures. The most practical option may be to contact with a sewer-cleaning contractor.

D. Material Handling

Disposal of waste from maintenance and dredging shall be conducted in accordance with federal, state, and local regulations. Removed sediment must be disposed of as solid waste. Water should be disposed of in a sanitary sewer after oils are removed using oil absorbent material or other mechanical means. Used oil absorbent should be recycled or disposed according to the manufacturer's instructions.

E. Repairs

Work in Sub-Surface Tanks require special OSHA-required confined space equipment and procedures. The most practical method for cleaning Sub-Surface Tanks may be to contract with a sewer-cleaning contractor. If the Sub-Surface Tanks does not dissipate stormwater, it should be replaced or repaired. It is possible to restore some Sub-Surface Tanks capacity by jetting clogged openings.

IV. FUNCTIONAL – CORRECTIVE MAINTENANCE PROCEDURES

Corrective maintenance is required on an emergency or non-routine basis to correct problems or malfunctions and to restore the intended operation and safe condition of a SWMF.

A. Structural Repair Outlet Structure

Structural damage to outlet and inlet structures, flood events, or other causes must be repaired promptly. Equipment, materials and personnel must be available to perform these repairs on short notice. The immediacy of the repairs will depend upon the nature of the damage and its effects on the safety and operation of the facility. The analysis of structural damage and the design and performance of structural repairs should only be undertaken by qualified personnel. A list of qualified consultants and contractors shall be maintained in order to undertake the damage analysis and repairs in a timely fashion.

B. Removal of Debris & Sediment

Sediment, debris and trash which threaten the discharge capacity of a SWMF should be removed immediately and properly disposed of in a timely manner. Inlets and manholes should be annually vacuum cleaned, a distance of 25' upstream and 25' downstream of the structure. Equipment and personnel must be available to perform the removal work on short notice. The lack of an available disposal site should not delay the removal of trash, debris, and sediment. Temporary disposal sites should be identified and available for immediate use. A list of qualified contractors shall be maintained in order to respond to this situation.

V. MAINTENANCE & INSPECTION RECORDS

The recording of all maintenance work and inspections provide valuable data on the facility condition. Review of this information will also help to establish more efficient and beneficial maintenance procedures and practices. Along with the written reports, a chain of command for reporting and solving maintenance problems and addressing maintenance needs should be established. From field personnel to the maintenance director, everyone is encouraged to report any problems or suggest any changes to the maintenance director. The maintenance director shall maintain all inspection, maintenance and work order reports/logs at a readily available location. A sample Maintenance Log has been included with this document.

- A. Maintenance records must be kept on-site for a period of three years by the owner of the stormwater management system. These records shall be made available to the Authority within 72 hours upon the Authority's request to review these records.
- B. The Authority reserves the right to inspect all stormwater management systems. The owner of the stormwater management system shall provide access for inspection to the Authority within 72 hours of the Authority's request to inspect the stormwater management systems.
- C. Failure to maintain adequate maintenance records, perform maintenance, and/or deny the Authority access to maintenance records or inspection without cause is subject to fines by the Authority as detailed in the *Sewer Connection: Application Procedures and Fee Schedule* document.
- D. The Authority reserves the right to place a deed restriction(s) on the site. Any number of the following restrictions may be applied:

- i. A deed restriction that requires the owner to reassess its stormwater management requirements and potentially upgrade its stormwater management systems when pervious area is converted to impervious area on the owner's property, or the property size is increased with any amount of impervious area.
- ii. A deed restriction (and/or contractual agreement) that requires the stormwater management system to be properly maintained – should it be determined that the system has not been properly maintained, the Authority reserves the right to perform the required maintenance and charge the Owner for such services.
- iii. If an owner wishes at any time to abandon a constructed rain garden or green roof, the owner is compelled to install a new stormwater management system.

Schedule of Regular Inspections and Tasks (Structures)		
	Task	Inspection Schedule
Sub-Surface Tanks	Check the general condition of the system	Every 12 months and after major storm events
	Using a vacuum pump truck evacuate debris and flush the system with clean water	As needed, depending on sediment loading and accumulation

Estimate of Maintenance Costs		
	Task	Inspection Schedule
Sub-Surface Tanks	Check the general condition of the system	\$1,000
	Using a vacuum pump truck evacuate debris and flush the system with clean water	\$1200

Inspection & Maintenance Log for Stormwater Management Facilities and Landscaping Areas

Name of Facility: Blue Roof,
Green Roof and Landscaping
Areas

Location: Green Roof and Blue
Roof at the roof level.
Landscaping at the front side of
the property.

A. Preventative Maintenance

Date

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Work Item

1. Grass Cutting

A. Bottoms							
B. Embankments and side slopes							
C. Perimeter Areas							
D. Other							

2. Grass Maintenance

A. Fertilizing							
B. Re-Seeding							
C. De-Thatching							
D. Pest Control							
F. Other							

3. Vegetative Cover

A. Fertilizing							
B. Pruning							
D. Replanting to maintain more than 85%cover							
E. Remove unwanted growth							
F. Pest Control							
G. Others							

4. Trash and Debris Removal

A. Bottoms							
B. Roof Drains							

5. Sediment Removal

A. Bottoms							
B. Roof Drains							
C. Outlets							
D. Other							

6. Elimination of Potential Mosquito Breeding Habitats

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7. Other Preventative Maintenance

A.							
B.							
C.							

B. Corrective Maintenance

Date

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Work Item

1. Removal of Debris & Sediment							
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2. Structural Repairs (Including Roof Drains)							
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3. Control of Mosquitoes							
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4. Erosion Repair							
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5. Other (Replace dead plants)							

C. Aesthetic Maintenance

Date

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Work Item

1. Grass and Vegetation Trimming							
2. Weeding							
3. Other							