

## 4.1 STORMWATER FACILITIES MAINTENANCE



A Tier A Municipality is required to develop, update, implement and enforce a stormwater program to ensure compliance with the Other Control Measures outlined in Part IV.C of the Tier A NJPDES MS4 permit, in addition to the Statewide Basic Requirements (SBRs) covered in the previous chapter. One such Other Control Measure is called Stormwater Facilities Maintenance. The Tier A Municipality must develop such a program to ensure adequate long-term cleaning, operation and maintenance of all municipally

owned or operated stormwater facilities. The Tier A Municipality must also develop, update, implement and enforce a program to ensure adequate long-term cleaning, operation and maintenance of stormwater facilities not owned or operated by the Tier A Municipality and not subject to the conditions of another NJPDES stormwater permit. Below, and continued on the following page, is a summary table of the eight minimum standards, measurable goals and implementation schedule of these minimum standards, for which the permit requires a Tier A municipality demonstrate compliance.

Stormwater Facilities Maintenance Requirements			
Minimum Standard	Measurable Goal	Implementation Schedule	
		Existing Permittees	New Permittees
Develop, update and implement a program to ensure adequate long-term cleaning, operation and maintenance of all stormwater facilities owned or operated by the Tier A Municipality.	Certify annually; SPPP records retention	January 1, 2018	EDPA + 18 Months
Inspect and maintain stormwater facilities pursuant to any maintenance plans, or more frequently as needed, to ensure proper function and operation of each stormwater facility.	Certify annually	January 1, 2018	EDPA + 18 Months
Maintain a log sufficient to demonstrate compliance with this section; including but not limited to a list of inspections and preventative and corrective maintenance performed, and a schedule for repairs to be made.	Certify annually	January 1, 2018	EDPA + 18 Months

**Note: EDPA means effective date of permit authorization.**

<b>Stormwater Facilities Maintenance Requirements (<i>cont'd.</i>)</b>			
<b>Minimum Standard</b>	<b>Measurable Goal</b>	<b>Implementation Schedule</b>	
		<b>Existing Permittees</b>	<b>New Permittees</b>
Certify annually that municipally owned or operated stormwater facilities are properly functioning.	Certify annually	January 1, 2018	EDPA + 18 Months
If stormwater facilities were found not to be functioning properly and repairs not made, then necessary preventative and corrective maintenance shall be documented and prioritized and a schedule for maintenance shall be maintained.	Certify annually	January 1, 2018	EDPA + 18 Months
Develop, update, implement and enforce a program to ensure adequate long-term cleaning, operation and maintenance of stormwater facilities not owned or operated by the Tier A Municipality, not subject to the conditions of another NJPDES stormwater permit and constructed after February 7, 1984.	Certify annually; SPPP records retention	January 1, 2019	EDPA + 18 Months
Ensure that stormwater facility inspection and maintenance is performed pursuant to any maintenance plans, or more frequently as needed to ensure proper function and operation of each stormwater facility.	Certify annually	January 1, 2019	EDPA + 18 Months
Maintain a log sufficient to demonstrate compliance with this section; including but not limited actions taken by the municipality to enforce compliance with the long-term cleaning, operation and maintenance program.	Certify annually	January 1, 2019	EDPA + 18 Months
Maintain copies of all maintenance plans for stormwater facilities approved by the municipality, and make them available to the Department upon request.	Certify annually	January 1, 2019	EDPA + 12 Months

**Note: EDPA means effective date of permit authorization.**

## Introduction

Research and experience have demonstrated that regular and thorough maintenance is necessary for stormwater management measures to perform effectively and reliably. They have also demonstrated that failure to perform such maintenance can lead to diminished performance, deterioration and failure, in addition to a range of health and safety problems including mosquito breeding, vermin and the potential for drowning. The potential for such problems to develop is accentuated by many of the very features and characteristics that allow stormwater management measures to do their job, including standing or slowing moving water, dense vegetation, forebays, trash racks, dams, catch basins and the

need to continually function in all types of weather. Stormwater management measures are also expected to become the repositories for sediment, nutrients, trash, debris and other pollutants. For this reason, stormwater management measures share some maintenance requirements with more mundane items as vacuum cleaner bags, car motor filters and floor mats, all of which require regular inspection and cleaning, sediment and debris removal, along with periodic replacement.

The Tier A MS4 NJPDES permit requires that the municipality maintain all municipally owned and operated stormwater facilities to ensure that they are properly functioning. The permit also requires that municipally-owned catch basins be inspected at least once every five years, and that catch basins be cleaned as frequently as necessary. If, during the inspection of the catch basin, no sediment, trash or debris are observed, then the catch basin does not have to be cleaned at that time. Proper maintenance, including preventative maintenance, of stormwater facilities ensures they operate as designed. Stormwater facilities vary due to the environmental effect desired, from simple conveyance to designed wetland ecosystems that mimic nature. Many stormwater facilities like wet ponds, filter strips and manmade wetlands provide pollutant removal. Additional stormwater facilities like infiltration basins, infiltration trenches and porous paving systems are designed to recharge groundwater. All must be maintained to operate at the designed efficiency.

In addition to the maintenance of municipally owned and operated stormwater facilities, the Tier A MS4 NJPDES permit also requires that a municipality develop, update, implement and enforce a program to ensure adequate long-term cleaning, operation and maintenance of stormwater facilities not owned or operated by the Tier A Municipality and not subject to the conditions of another NJPDES stormwater permit. Under this requirement, the maintenance of privately owned and operated stormwater management facilities, such as a detention basin located in a commercial development or in a residential development, are the responsibility of the private entity owning or managing the development. However, the municipality, as the permittee, must adopt ordinances requiring the private entity maintain the basin, and the municipality must also inspect the basin regularly. If the municipality finds improper maintenance of the basin, the municipality must require the private entity to maintain the basin. The municipality may also adopt ordinances that allow the municipality to perform the maintenance of the stormwater management facilities, when the private entity is delinquent, and then back charge the cost of maintenance on such private entity.

The 1983 Stormwater Management rules require that the “[r]esponsibility for operation and maintenance of storm water management facilities...shall remain with the property owner and shall pass to any successor or owner.” However, it also mandates that “the approving agency [of the development] shall be made to insure continued performance of these obligations.” N.J.A.C. 7:8-3.4(a)5 (1983). The 1983 Stormwater Management rules further imposes on the municipality a duty to incorporate a “schedule of maintenance inspections” into the municipality’s ordinance. When a private entity neglects the maintenance duty, the 1983 Stormwater Management rules authorize the municipality to perform the maintenance work for the private entity and charge the private entity for the cost of such work. Although the Stormwater Management rules were revised effective February 2, 2004, the Stormwater Management rules in effect on February 1, 2004 remain applicable to older major development as specified at N.J.A.C. 7:8-1.6(b). Proposed Part IV.C.1.b establishes the date frame “constructed after February 7, 1984” to accommodate the time needed for municipalities to adopt stormwater ordinances following the February 7, 1983 adoption of first adopted Stormwater Management rules.

## Minimum Standards for Stormwater Facilities Maintenance

Tier A Municipalities shall refer to the Tier A MS4 NJPDES permit for the exact language of the minimum standards. Explanations or examples are provided here to enable the Tier A Municipality to gain a better understanding of the permit requirements.

Tier A Municipalities must develop and implement a Stormwater Facility Maintenance Program that includes all of the minimum standards to ensure adequate long-term cleaning, operation and maintenance of all municipally owned or operated stormwater facilities.

1. The Tier A Municipality must develop, update and implement a program to ensure adequate long-term cleaning, operation and maintenance of all municipally owned or operated stormwater facilities.
  - Stormwater facility maintenance must be performed pursuant to any maintenance plans, or more frequently as needed, to ensure the proper function and operation of the stormwater facility.
  - The Tier A Municipality must maintain a log sufficient to demonstrate compliance with this section; including, but not limited to, a list of all inspections performed, name of inspector, date of inspection, findings and any preventative and corrective maintenance performed. Example Maintenance Logs and Inspection Records forms are available at [http://www.njstormwater.org/maintenance\\_guidance.htm](http://www.njstormwater.org/maintenance_guidance.htm). Tier A Municipalities often conduct maintenance work of stormwater facilities at the same time as other routine tasks performed by the Department of Public Works, but often do not keep logs of stormwater facility maintenance and other routine tasks separately. Under such circumstances, the Tier A Municipality may not have a log sufficient to demonstrate the tasks performed for maintenance of stormwater facilities. Therefore, The Tier A Municipality should maintain separate entries of the tasks for stormwater maintenance when a common work log is used.
  - The Tier A Municipality must certify annually that municipally owned and operated stormwater facilities are properly functioning.
  - If stormwater facilities were found not to be functioning properly and repairs were not made, then necessary preventive and corrective maintenance must be documented and prioritized, and a schedule for such repairs shall be maintained. The Tier A Municipality must prioritize this schedule based upon, but not limited to the following factors:
    - environmental, health and safety concerns;
    - the findings of catch basin and storm drain inlet inspections performed pursuant to Part IV.B.5.b.ii, above;
    - the findings of stream scouring inspections performed pursuant Part IV.B.6.b, above; and
    - to address any specific sources of stormwater related pollutants identified pursuant to Part IV.C.2 (TMDL Information).
2. The Tier A Municipality must develop, update, implement and enforce a program to ensure adequate long-term cleaning, operation and maintenance of the following stormwater facilities:
  - not owned or operated by the Tier A Municipality;

- ☐ not subject to the conditions of another NJPDES stormwater permit; and
    - ☐ constructed after February 7, 1984.
  - The Tier A Municipality shall ensure that stormwater facility maintenance is performed pursuant to any maintenance plans, or more frequently as needed, to ensure the proper function and operation of the stormwater facility.
  - The Tier A Municipality must maintain a log sufficient to demonstrate compliance with this section; including but not limited to the following:
    - ☐ a list of all actions taken by the municipality to enforce compliance with the long-term cleaning, operation and maintenance program;
    - ☐ the stormwater facility that was the subject of the action;
    - ☐ location information of the facility that was the subject of the action (location information must be specific enough to locate and identify the stormwater facility in the field; e.g. geographic coordinates);
    - ☐ the name of person taking the action;
    - ☐ the date of the action; and
    - ☐ the findings of the action.
  - The Tier A Municipality should take proactive actions to ensure the private parties' maintenance of stormwater facilities, rather than passive enforcements of maintenance ordinances only in response to resident's complaints of stormwater facilities that have not been properly maintained.
3. The Tier A Municipality must maintain copies of all maintenance plans for stormwater facilities approved after the effective date of the Tier A municipality's stormwater control ordinance. The Tier A municipality must make copies of these maintenance plans available to the Department upon request.
  4. The Tier A Municipality must meet the minimum standards of the Tier A MS4 NJPDES permit, the measurable goals (including any recordkeeping) and implementation schedules for Stormwater Facilities Maintenance specified in *Attachment A (Measurable Goals and Implementation Schedule) for existing Permittees and Attachment A-1 for new Permittees*.

## Measurable Goals

Tier A Municipality must certify annually as explained in Chapter 7 that it meets each of the requirements listed above. Furthermore, recordkeeping is essential in order to demonstrate compliance, and those records must be kept with the SPPP or their location noted in the SPPP.

## Implementation Schedules

Refer to the table listing the Measurable Goals and Implementation Schedule found on Pages 1 and 2 of this Chapter.

## Additional Information for Stormwater Facilities Maintenance

The Tier A MS4 NJPDES permit is applicable to all stormwater facilities approved by the municipality under its stormwater program that are not otherwise covered by another NJPDES permit. It is important that a municipality performs the maintenance of municipal stormwater facilities and ensures that private stormwater facilities are maintained by their owner or responsible party. The statutes directing the Department to require municipalities to oversee these matters did so in order to protect water quality from the negative impacts of stormwater runoff.

Stormwater facilities may be categorized as those owned or operated by the municipalities and those owned and operated by private entities. Stormwater facilities owned by a private entity can be dedicated to the municipality if the municipal ordinances permit such dedication or a special agreement has been entered between the municipality and the private entity. Once a stormwater facility is dedicated to and accepted by the municipality, the municipality assumes the responsibility to ensure adequate long-term cleaning, operation and maintenance of the stormwater facility in accordance with Part IV.C.3.a of the Tier A MS4 NJPDES permit, even if the basin is still owned by the private entity. Regardless, the stormwater management facilities are subject to Part IV.C.3.a of the Tier A MS4 NJPDES permit (for municipally owned or operated facilities) or Part IV.C.3.b (for privately owned and operated facilities).

Maintenance of stormwater management facilities involves, essentially, five elements:

- establishment of a maintenance plan;
- regular inspection of stormwater management facilities;
- preventive and corrective maintenance work;
- record keeping of maintenance log(s); and
- annual reevaluation of the effectiveness of the maintenance.

### Maintenance Plan

A maintenance plan must identify the following:

- the stormwater management facilities to be maintained;
- the frequency and details of the inspections;
- the frequency and details of the preventive tasks;
- corrective tasks to perform when there is a need to repair or rectify the issues found during inspection and/or preventive maintenance;
- the arrangement of the resources to perform maintenance; and
- the cost estimation of the maintenance.

For all stormwater management facilities, the design engineer must prepare a maintenance plan. Furthermore, if the person identified in the maintenance plan as being responsible for the maintenance is not a public agency, the maintenance plan, and any future revision, must be recorded upon the deed of record for each property on which the maintenance must be undertaken.

## **Responsible Party**

The maintenance plan must contain the name, address, and telephone number of the person or persons responsible for preventative and corrective maintenance (including replacement). If the maintenance plan identifies a person other than the developer (for example, a public agency or homeowners' association) as having the responsibility for maintenance, the plan shall include documentation of such person's agreement to assume this responsibility, or of the developer's obligation to dedicate a stormwater management facility to such person under an applicable ordinance or regulation. Pursuant to N.J.A.C. 7:8-5.8(c), responsibility for maintenance shall not be assigned or transferred to the owner or tenant of an individual property in a residential development or project, unless such owner or tenant owns or leases the entire residential development or project.

The Tier A Municipality must ensure that the responsible parties named on the maintenance plans and/or in the municipal records remain up to date. It is common that a developer transfers the ownership and/or the administrative responsibilities to a homeowner association or other similar organization, but neglects to reflect that transfer of responsibility in an updated maintenance plan. The outdated information of responsible parties may indicate a lack of enforcement of the program to ensure adequate long-term cleaning, operation and maintenance of stormwater facilities by the Tier A Municipality. Therefore, the Tier A Municipality should have a program or procedure in place to update the information of the responsible parties when a transfer of the responsibilities for stormwater facility maintenance occurs.

## **Inspection**

Regular inspection is the key to proper maintenance. In most instances, quarterly inspection of the stormwater management facilities is needed, but more frequent inspections may be required for the stormwater management facilities located in an area prone to high pollutant loading, such as roadside catch basins or grass swales. Additionally, before and/or after large storms, it is prudent to conduct inspection and maintenance of stormwater management facilities in order to prevent clogged inlets or outlet structures, which can cause flooding problems. Each inspection must be recorded, with the log showing the dates, inspector, the weather condition, the inspection points, other issues and any future actions required.

The Tier A Municipality must have a program to ensure adequate long-term cleaning, operation and maintenance of stormwater facilities beyond just a review of maintenance plans submitted by the developers and/or applicants. Periodic inspection of stormwater facilities not owned or operated by the municipality is one way to ensure proper operation and function. However, the Tier A MS4 NJPDES permit does not specifically require the municipality to conduct such inspections or to conduct maintenance on stormwater facilities not owned or operated by the municipality. The municipality is required to have a program in place to ensure that inspections, maintenance, and record keeping is being conducted by the owner or operator of the stormwater facility. Municipalities should adopt stormwater control ordinances to enforce the private stormwater facility owners' and operators' responsibility to conduct long-term operation and maintenance of their stormwater facilities. Stormwater control ordinances could include provisions to enforce citations or fines on private stormwater facility owners if they do not meet their obligations.

## **Preventative and Corrective Maintenance**

Preventive maintenance includes tasks to keep the stormwater management facilities clear of obstacles that prevent the stormwater management facilities to perform its function. The preventive tasks may include, but not limited to:

- removal of sediment, trash and debris;
- mowing, pruning and restoration of vegetation;
- restoration of eroded areas;
- elimination of mosquito breeding habitats;
- control of aquatic vegetation; and
- repair or replacement of damaged or deteriorated components.

A corrective maintenance task is a response to various emergency conditions that cause the stormwater management facilities to fail its function, or even its structural integrity. Corrective maintenance tasks may include those preventive maintenance tasks that should have been performed regularly and the repair or replacement of the damaged components of the stormwater management facilities, such as damaged trash racks, riprap apron, eroded embankment or pipes.

## **Maintenance Log**

A detailed log of all preventative and corrective maintenance for the stormwater management measures incorporated into the design of the development, including a record of all inspections and copies of all maintenance-related work orders, must be maintained by the entity responsible for the maintenance. If the stormwater management measure is privately owned, the municipality has the authority to access the maintenance log, and should request that they be submitted either periodically or during an audit procedure to ensure maintenance is occurring.

## **Collection of Location Information**

Regardless of the ownership of a stormwater management facility, the Tier A MS4 NJPDES permit requires the Tier A municipality to keep a log that includes location information for the stormwater facilities inspected. Since this is included in the maintenance logs, it allows permittees to collect location information over time while performing, or ensuring the responsible parties are performing, the maintenance activities that have been required by MS4 NJPDES permits since 2004. The Tier A MS4 NJPDES permit requires location information to be specific enough to locate and identify stormwater facilities in the field, but does not specify a method of collecting this information. The Department encourages municipalities to use modern data collection techniques and the Department has developed a number of tools including a template for use with handheld GPS data collection devices. These are provided in several formats including Microsoft Excel, ArcGIS Desktop, Trimble Handheld GPS, and ArcGIS Online. ArcGIS Online is an easy tool to learn and is a cell phone or tablet based tool that can be accessed at any time using a mobile data connection or by downloading the tool over a Wi-Fi connection prior to conducting field data collection. See [http://www.nj.gov/dep/dwg/msrp\\_map\\_aid.htm](http://www.nj.gov/dep/dwg/msrp_map_aid.htm) for more information.



Because the Department understands that not all permittees have experience with handheld GPS units or have access to such units, the Department is offering a variety of tools to satisfy the wide range of experience and capability of permittees. The Department will be conducting free regional training sessions centered on how to use the provided mapping and inventory tools. The Department is also willing to conduct one-on-one training sessions with permittees, if requested.

The Tier A Municipality may also be able to obtain stormwater facility locational information already collected by other organizations. For example, the New Jersey Hydrologic Modeling Database (or H&H Database) is posted on line and encompasses several decades of data collection by NJ Soil Conservation Districts and the New Jersey Department of Agriculture. This database contains a wealth of information regarding stormwater management basins and data can be downloaded based on location. See <https://hydro.rutgers.edu/> to view the database map or [https://hydro.rutgers.edu/public\\_data/](https://hydro.rutgers.edu/public_data/) to download data in an Excel format. The information in this database may help municipalities to identify stormwater basins within their municipality. This will help to identify basins that may require maintenance, and can help the municipality to develop a more robust inventory as a result.

## Recommendations for Stormwater Facilities Maintenance

Listed below are practices that are not required by the Tier A MS4 NJPDES permit, but are included here as recommendations to help maintain stormwater facilities.

- Increase the frequency of inspection and cleaning in problem areas (e.g., those areas prone to flooding, those areas that accumulate a lot of trash and debris).
- Perform maintenance inspections after major storm events.
- Include specific measures in the Stormwater Control Ordinance to ensure private entities perform maintenance of existing stormwater facility maintenance, such as required annual submission of maintenance logs, or take over existing private stormwater facilities, for an appropriate fee, and include them in the municipal stormwater facility maintenance program.
- Increase the frequency and area of street sweeping (above the minimum standard) to decrease the amount of materials entering the catch basins and other stormwater facilities.
- Work with local community groups to have them report any stormwater management facilities that are not properly maintained.
- Increase communication and public education to enhance awareness of proper maintenance of stormwater management facilities in order to prevent mosquito breeding, stream pollution and downstream flooding hazards.

## Additional Resources

In addition to general maintenance, such as care of vegetation and soil erosion controls, each type of stormwater management facility has specific maintenance requirements. For example, a sand filter requires periodic replacement of the sand bed, but BMPs without sand beds, such as detention basins, would not. Chapter 9 of NJDEP's *NJ Stormwater Best Management Practices Manual* details the specific maintenance requirements for each stormwater management facility. The BMP Manual is available at [http://www.nj.gov/dep/stormwater/bmp\\_manual2.htm](http://www.nj.gov/dep/stormwater/bmp_manual2.htm).

NJDEP also prepared maintenance guidance that includes template for maintenance plans, inspection checklists, maintenance logs, and technical information for the maintenance of stormwater management facilities facility. The maintenance guidance is available at [http://www.nj.gov/dep/stormwater/maintenance\\_guidance.htm](http://www.nj.gov/dep/stormwater/maintenance_guidance.htm).

NJDEP also prepared a series of online training videos regarding the stormwater management rules, the technical overview of the stormwater management facilities, and maintenance. The videos are available at <http://www.nj.gov/dep/stormwater/training.htm>.