

Pollution Prevention/ Good Housekeeping for Municipal Operations and Facilities

Municipal Separate Storm
Sewer Systems of New York City
SPDES Number: NY-0287890
August 1, 2018



DEP Catch Basin Cleaning



DOT Staten Island Ferry

Pursuant to Part IV.G of the MS4 Permit, the City must develop a Pollution Prevention/Good Housekeeping (PP/GH) Program to manage municipal facilities and operations in ways that reduce or control stormwater pollution. The MS4 Permit requires that the City:

- Address municipal operations and facilities that contribute or potentially contribute pollutants of concern (POCs) to Surface Waters of the State from the MS4 area;
- Include a program to control and reduce pollutants in stormwater runoff from the MS4 area associated with the application of pesticides, herbicides, and fertilizers from municipal facilities and operations;
- Prepare an inventory of municipal operations and facilities with initial prioritization of operations and facilities into high, medium, and low categories;
- Prepare a procedure for self-assessment of municipal operations and facilities;
- Identify management practices, policies, and procedures that will be implemented to reduce or prevent the discharge of POCs;
- Prioritize PP/GH efforts based on receiving waters, facilities, or operations;
- Include an employee training program;

- Require third-party entities performing municipal operations as contracted services to meet the MS4 Permit requirements;
- Indicate if municipal facilities otherwise subject to a NYSDEC Multi-Sector General Permit (MSGP) will instead be covered under the MS4 Permit; and
- Consider and, if feasible and cost effective, incorporate runoff reduction techniques and green infrastructure (GI) during planned municipal upgrades.

This chapter details the City's PP/GH Program for municipal facilities and operations to address the MS4 Permit requirements above. This program includes an inventory of municipal operations and facilities, a priority rating of these facilities and on-site or off-site operations, and a standardized protocol for agency self-assessments. In addition, the City will implement training to educate staff on stormwater pollution prevention. The City developed guidance for stormwater control measures (SCMs) that agencies can implement to reduce their potential to contribute pollution to the MS4. City agencies will also consider the feasibility and costs of green infrastructure for planned municipal upgrades in order to identify additional opportunities to help improve water quality. Lastly, this chapter describes the status of municipal facilities in the MS4 area subject to the MSGP that may opt for coverage under either the MS4 Permit or the MSGP.

7.1 Existing Practices

Most City agencies with municipal facilities and operations have existing practices that help prevent stormwater pollution.

Existing Operations and Facilities

Existing operations relevant to the PP/GH Program include, but are not limited to, the following:

- Street and bridge maintenance;
- Winter road maintenance including de-icing activities and road salt storage facilities;
- Catch basin inspection, hooding, and maintenance;
- Vehicle and fleet maintenance;
- Park and open space maintenance;
- Municipal building maintenance;
- Solid waste management (i.e., operating or closed municipal landfills or other exposed treatment, transfer, storage, or disposal facilities for municipal waste);
- Erosion and sediment control associated with new construction and land disturbances not subject to Part IV.E of the MS4 Permit;
- Right-of-way maintenance;
- Marine operations; and
- Hydrologic habitat modification.

The City will assess and enhance these existing practices, if necessary, through the implementation of the PP/GH Program. This program is standardized for consistency across facilities, equips City staff with the necessary information and tools for each agency to implement the program, and prioritizes PP/GH efforts based on receiving waters and facilities or operations most in need of modification or improvement.

Existing Controls for Pesticide, Herbicide, and Fertilizer Application

City agencies conduct operations in accordance with all existing regulations related to fertilizer, pesticide, and herbicide use. DPR, the largest fertilizer applicator among City agencies, conducts operations in accordance with the NYS Dishwasher Detergent and Nutrient Runoff Law, NYS Environmental Conservation Law, and NYS Agriculture and Markets Law. The NYS Dishwasher Detergent and Nutrient Runoff Law addresses fertilizer application to reduce the quantity of nutrients entering the surface waters of the State; it specifies the legal limits of phosphates allowed in lawn fertilizers, the time of year when application of certain fertilizers is prohibited, and under what conditions fertilizer applications are restricted. Reduction and control of fertilizers entering the environment are also achieved through compliance with §18-44 of Title 15 of the Rules of the City of New York and Local Law 37 of 2005.

Local Law 37 of 2005 addresses the use of pesticides and herbicides by requiring the reduction, management, notification, recordkeeping, and reporting of pesticide use. In conjunction with Local Law 37 of 2005, the City implements Integrated Pest Management (IPM) at its facilities and operations. IPM is an approach that gives preference to physical, mechanical, cultural, biological, and educational methods to control pests by restricting or eliminating resources to pests; and if necessary, prudent use of the least hazardous pesticides. Existing pesticide regulations and IPM educational programs provided by the City promote awareness of safer pest control methods to municipal staff, pest management professionals, and the public.

Under Local Law 37 of 2005, annual reporting of City agencies' pesticide usage allows the City Council and the Interagency Pest Management Committee to identify areas of concern, and to provide guidance on proper management to curtail hazardous pesticide use. In following the requirements under local laws and IPM, the City has controlled the use of pesticides, herbicides, and fertilizers on municipal-use grounds, thereby reducing the amount of those substances entering MS4 waterbodies and directly discharging into the environment. As a whole, the regulatory requirements in place will help the ongoing efforts to reduce the use of pesticides and fertilizers, which satisfies Part IV.G.1.b of the MS4 Permit.

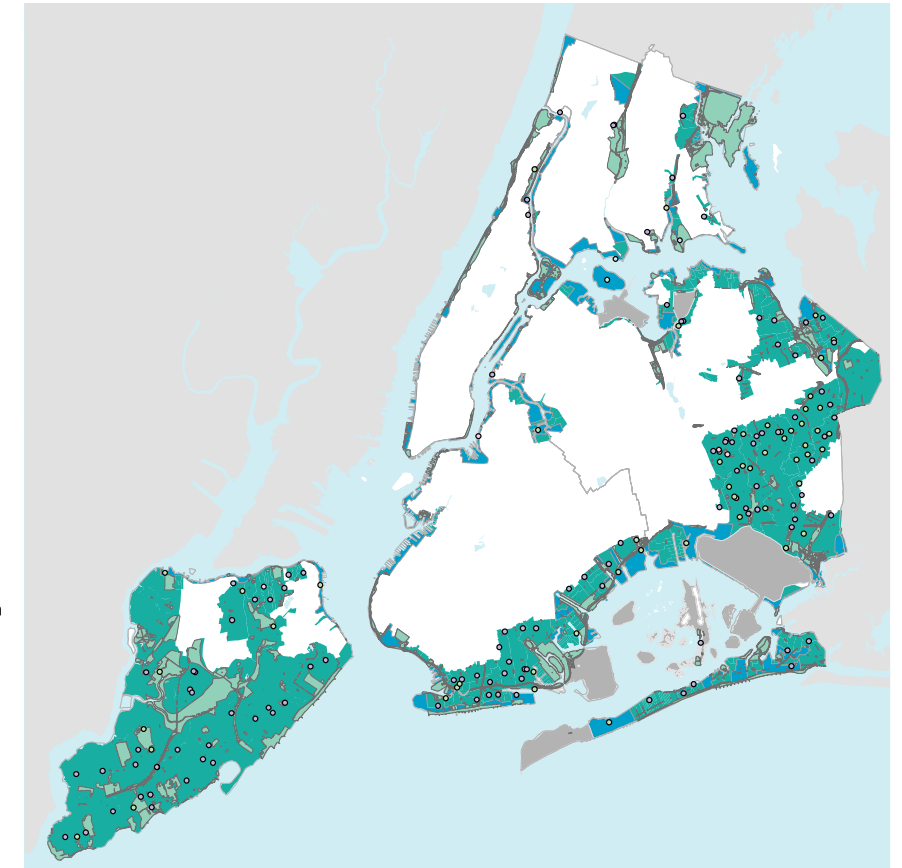
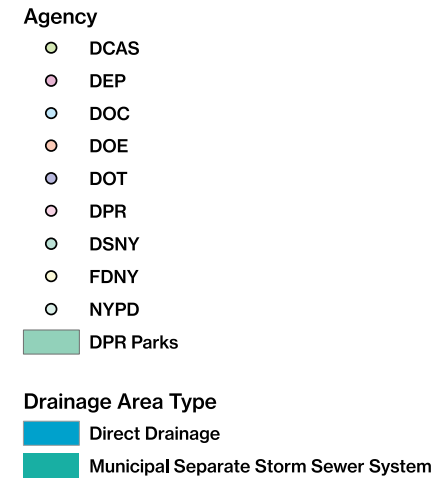
7.2 Inventory and Prioritization of Municipal Facilities and Operations

The City prepared an initial inventory of municipal facilities and operations located in the MS4 area based on the Historical MS4 Map. This inventory will change over time as described in Section 7.2.2. The City categorized these facilities and operations as high, medium, or low priority using a standardized prioritization protocol based on their potential to contribute to stormwater pollution, referred to as pollution potential. The priority rating of a facility or operation determines the frequency of on-site self-assessments and may be revised based on these assessment findings. Table 7.1 summarizes the number of facilities to date included in the inventory by agency and pre-assessment priority rating. Figure 7.1 shows a map of the municipal facilities in the inventory to date.

The City of New York has an extensive network of municipal facilities and operations that serve New Yorkers and keep vital infrastructure functioning properly. The MS4 Permit addresses the City's facilities and operations that drain to the MS4 or contribute overland flow in direct drainage areas. A number of these facilities and operations, such as those related to vehicle and equipment cleaning, may have the potential to be sources of stormwater pollution (pollution potential). Through this PP/GH Program, agencies will assess their facilities and operations to understand their pollution potential and implement appropriate SCMs to help reduce pollution to the MS4 and Surface Waters of the State.

Map of Municipal Facilities in the PP/GH inventory to date

Figure 7.1



Initial Inventory and Pre-Assessment Priority Rating of Municipal Facilities to date

Table 7.1

Agency	Number of Facilities			Number of Sites
	Low Priority	Medium Priority	High Priority	
DCAS	2	3	-	5
DEP	2	53	-	55
DOC	-	-	2	2
DOE	14	146	-	160
DOT	50	23	3	76
DPR	172	92	-	264
DSNY	12	30	3	45
FDNY	35	40	1	76
NYPD	18	33	2	53
Total	305	423	11	736

The difference in the number of facilities reported in the draft Plan published in April and in the final Plan reflects updated information concerning whether certain facilities are managed jointly or independently or new facility data revealed they are covered under other SPDES permits.

7.2.1 Initial Inventory and Pre-Assessment Prioritization

The City developed an initial inventory of 736 municipal facilities in the MS4 area. This inventory is expected to expand and/or contract; any changes to the inventory will be addressed as described in Section 7.2.2. The City determined the pre-assessment priority rating for these facilities using the standardized prioritization protocol. This protocol included identifying relevant operations known or expected to occur at each facility by gathering site specific information from agencies (Table 7.2); using readily available tools such as Esri ArcGIS® (Geographic Information System), aerial photos, and Google Street View®; using an Excel-based prioritization tool; and applying best professional judgment. The City used this information to evaluate the pollution potential for a facility and assigned each a pre-assessment priority rating of high, medium, or low. The pre-assessment priority rating considered factors such as the existence and quantities of POCs, material exposure, frequency of activity, and proximity to impaired waterbodies listed in Appendix 2 of the MS4 Permit. A facility with a high priority rating does not necessarily mean the facility is a contributor of pollutants, but rather that the facility has an inherent risk of contributing pollutants given the location, types and quantities of materials, and frequency of activities taking place.

The City also evaluated the pollution potential of common off-site operations relevant to the PP/GH Program using the standardized prioritization protocol. Relevant off-site operations evaluated include sidewalk repair; storm sewer system maintenance; winter pavement maintenance; pavement cleaning (sweeping); herbicide, pesticide, and fertilizer application; roadway resurfacing; and curbside garbage removal. Some of these off-site operations provide stormwater quality benefits by removing or controlling potential pollution sources, which reduces their inherent risk of contributing pollutants. Additionally, few of these off-site operations include large volume material storage or occur frequently at any specific site, which also reduces their inherent risk of contributing pollutants. Therefore, the City determined these off-site operations have a low pre-assessment priority rating. The City will update off-site operations' priority rating, as appropriate, based on results of the on-going self-assessments. Table 7.3 lists typical off-site operations conducted by the City that may occur away from agency facilities in the MS4 area.

7.2.2 Inventory Updates and Post-Assessment Prioritization

The inventory is dynamic in nature and agencies are responsible for including inventory updates as part of the Annual Report. Agencies may add or remove facilities from the inventory due to property acquisitions or relocations. Facilities may also be added or removed from the inventory as the MS4 area is confirmed and the MS4 Map is updated, as detailed in Chapter 4: Mapping. The City will refine priority ratings for facilities and a representative sample of off-site operations using the prioritization tool based on site-specific data from the ongoing self-assessments as the PP/GH Program continues, as described in Section 7.3.



DOT trucks under cover and within secondary containment

Typical On-Site Operations at City-owned Facilities

Table 7.2

Vehicle/Equipment Operations
<ul style="list-style-type: none"> • Vehicle/Equipment Maintenance and Repair • Vehicle/Equipment Cleaning • Vehicle/Equipment Fueling • Truck Bed Management • Vehicle/Equipment Storage
Material Storage Facilities
<ul style="list-style-type: none"> • General Outdoor Storage • Above-Ground Storage Tanks • Underground Storage Tanks • Drum Storage and Management • Material Stockpiles
Waste Management Facilities
<ul style="list-style-type: none"> • Waste Transfer Stations • Landfills • Shooting Ranges
Building Maintenance and Repair
<ul style="list-style-type: none"> • Building Repair and Remodeling • Painting
Other Types of Facilities
<ul style="list-style-type: none"> • Golf Courses • Animal Recreational Facilities/Stables • Swimming Pools • Marine Operations

Typical Off-Site City Operations

Table 7.3

Stormwater Collection System Maintenance
<ul style="list-style-type: none"> • Catch basin/inlet cleaning and repair • Storm sewer/underground facility cleaning/repair • Ditch/open channel cleaning and repair • Green infrastructure/open facility maintenance • Hydrologic habitat maintenance
Paved Surface Maintenance
<ul style="list-style-type: none"> • Pavement Cleaning • Winter Pavement maintenance • Pavement/Sidewalk resurfacing and repair • Spill prevention and response • Bridge/elevated structure maintenance
Landscaping and Open Space Maintenance
<ul style="list-style-type: none"> • Herbicide/pesticide/fertilizer application • Landscape/ground care • Turf management
Other Types of Operations
<ul style="list-style-type: none"> • Solid Waste Collection

7.3 Self-Assessments of Municipal Facilities and Operations

The priority rating of high, medium, or low, based on pollution potential for a facility or operation, determines the frequency of self-assessments. Facilities and operations with a higher pollution potential are rated as a higher priority. The City is assessing facilities in the inventory and operations according to their pre-assessment priority ranking utilizing a standardized checklist based on a portfolio of stormwater control measures (SCMs). Following the initial assessment, each agency will conduct self-assessments of their own facilities and operations as required by the MS4 Permit. High priority self-assessments will occur every two years, medium every five years, and low every seven years. A facility or operation may increase or decrease in priority with each assessment, based on the pollution potential evaluated at that time, and will then be subject to the timeline for the next assessment based on its revised priority.

The City developed a standardized self-assessment protocol to ensure consistency across all types of municipal facilities and operations, both on-site and off-site. This protocol allows agencies to determine sources of POCs potentially generated by their facilities and operations, and evaluate the adequacy of their current PP/GH practices. The City also developed guidance on additional PP/GH practices consistent with the NYS Pollution Prevention and Good Housekeeping Assistance Document and EPA MS4 guidance manuals. Agencies can select appropriate practices from this suite of SCMs for implementation at their facilities and operations. The list of the SCMs, which incorporated interagency and public feedback, will be available at www.nyc.gov/dep. After each self-assessment, agencies will complete an assessment report with findings, select options from applicable SCMs, and determine timelines for implementation.

Agency staff who conduct the self-assessments will determine the appropriate timelines to follow up with the facility or operation and re-assess the effectiveness of recommendations and selected SCMs.

The MS4 Permit requires that the City evaluate the feasibility and cost-effectiveness of retrofitting structural flood control devices owned or operated by the City in the MS4 area to provide additional pollutant removal from stormwater. However, the City has determined that the City does not currently own or operate any structural flood control devices as defined in the MS4 Permit. As such, the City has not included this evaluation in the self-assessment protocol, but will in the future if any City-owned structural flood control devices are constructed. Refer to Chapter 6: Construction and Post-Construction, Section 6.1.4 for details on structural flood control devices.

As required by the MS4 Permit, the City completed initial assessments of the facilities and operations with a high priority pre-assessment rating prior to August 1, 2018. The majority of these on-site operations included material stockpile management, waste management, and vehicle management activities. Of the 11 sites with a pre-assessment high priority rating, 3 were re-classified as medium priority as a result of the assessments. The assessments revealed that these facilities had lesser quantities of materials, less exposure of materials, or lower frequency of use, and as a result, have a lower pollution potential than originally estimated with the prioritization protocol. Based on these completed assessments, the City is refining the prioritization tool and self-assessment protocol for future use, and conducting a high-level cost estimate for implementing preferred actions listed in the SCMs.

DSNY salt shed



The Stormwater Control Measures (SCMs) developed by the City include options with a range of solutions and effectiveness, which may involve both structural and non-structural controls. Structural controls include oil and water separators, grit chambers, or other devices that remove pollutants. Non-structural controls include operational practices, signage, staff education, and other procedures. The appropriate controls are subject to agency decision-making, which will consider potential effects on agency operations and individual circumstances at each facility.

7.4 City Staff Training

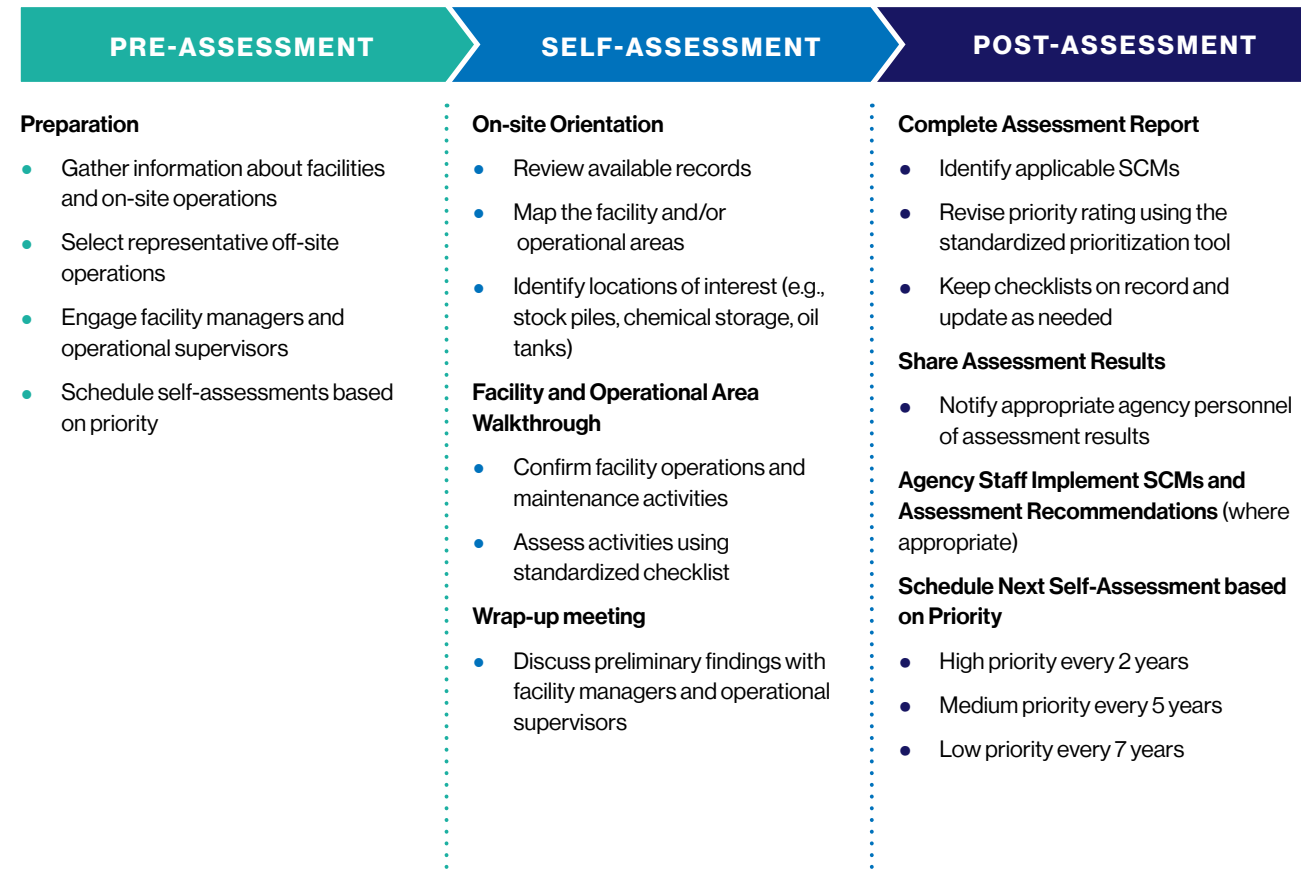
The City developed PP/GH training for agency staff that addresses ways to reduce the discharge of pollutants from municipal facilities and operations. The MS4 Permit requirement for employee training will be met by taking any of the trainings listed below. Each agency will track its own staff trainings and summarize this data for each Annual Report. The City will deliver training to the following personnel through a combination of computer-based and in-person trainings:

- **Agency Staff.** Agencies will identify staff who are responsible for the implementation of SCMs in day-to-day municipal operations, both at municipal facilities and off-site. The City will provide computer-based training for these agency-identified staff on stormwater pollution prevention. The computer-based training will remain accessible online to enable agencies to train or retrain staff, as needed. The computer-based training includes a quiz to gauge comprehension and provides certificates to employees upon completion. In addition to computer-based training, agencies may offer in-person trainings provided by agency trainers, described below.

- **Agency Trainers.** Agencies will identify staff who will provide in-person trainings for employees who do not have computer access or prefer in-person training. DEP will provide initial train-the-trainer sessions for agency trainers on stormwater pollution prevention, the implementation of SCMs, options for training field personnel, and recordkeeping requirements. These trainers are also responsible for training future staff who will conduct in-person trainings.
- **Agency Site Assessors.** Agencies will identify site assessors who will be responsible for conducting the self-assessments, reprioritizing agency facilities and operations, evaluating SCMs and recommendations, and as necessary, re-assessing the effectiveness of recommendations and selected SCMs. DEP will provide initial in-person classroom trainings for the designated site assessors for each agency. In the future, agency site assessors will train newly-designated site assessors on the self-assessment protocol.

Self-Assessment Protocol

Figure 7.2



7.5 NYSDEC Multi-Sector General Permit for Municipal Facilities

Municipal facilities in the MS4 area that conduct industrial activities subject to the MSGP may opt for coverage under the MS4 Permit or the MSGP. Currently, the municipal facilities in the MS4 area with existing coverage under the MSGP for stormwater discharges from industrial activities will maintain such coverage. Refer to Chapter 8: Industrial and Commercial Stormwater Sources for details on the NYSDEC MSGP program.

During assessments, the City may identify additional municipal facilities that conduct industrial activities subject to the MSGP. Agencies that own or operate these facilities may seek coverage under the MSGP or continue coverage under the MS4 Permit. Those agencies will notify NYSDEC of their preference for coverage. The City will indicate any changes in permit status in each Annual Report and will update the inventory. In the event that municipal facilities opt for coverage under the MS4 Permit, but would otherwise be subject to MSGP, these facilities will comply with certain requirements of the MSGP and attach their MSGP annual certification and discharge monitoring reports to the Annual Report.

The City engaged targeted stakeholders to discuss the development of the Pollution Prevention and Good Housekeeping Program. These stakeholders included:

- General Public
- Stormwater Advisory Group
- Environmental organizations

Stakeholders suggested that the City summarize the factors used for facility prioritization in the Plan and consider flood zones as a factor, and publish the stormwater control measures (SCMs) online. As a result, the City:

- Held public meetings on the PP/GH Program and the prioritization protocol
- Provided a summary of the prioritization process of facilities and off-site operations in Section 7.2
- Revised the prioritization tool to consider flood zones
- Will publish the SCMs on the DEP website

DSNY fully-enclosed marine transfer station



7.6 Green Infrastructure Feasibility for Planned Municipal Upgrades

Each individual agency will, as required by Part IV.G.2 of the MS4 Permit, consider and, if feasible and cost-effective, incorporate runoff reduction techniques and green infrastructure (GI) during planned municipal upgrades, including within municipal rights-of-way. Examples of GI include bioswales, green streets, grass swales, rain gardens, curb cuts to reroute flow to below-grade infiltration areas, or other low-cost improvements that provide runoff treatment or reduction. Consideration of feasibility includes physical site conditions, hydrogeological and environmental analyses, costs, and expected life cycles of available technologies.

The City has developed criteria for agencies to use during municipal upgrade planning as a consistent method for assessing feasibility of GI implementation. Agencies will incorporate GI if all of the following assessments indicate it may be appropriate and feasible.

- **Evaluation of planned municipal upgrade.** For the PP/GH Program, municipal upgrades are capital projects as defined by the NYC Charter and that meet the cost threshold of \$2,000,000—for both building construction and work in the right of way. If a municipal upgrade will generate stormwater runoff and POCs after construction is completed, the agency will evaluate the feasibility of GI.
- **Evaluation of project site.** A preliminary assessment of physical site conditions, hydrogeological analysis, and an environmental analysis will determine feasibility of GI implementation for planned municipal upgrade projects. Physical site conditions will determine specific siting and space constraints, such as the presence of utility lines or adjacent structures that would make the location unsuitable for GI. Hydrogeological analysis determines site suitability, including soil conditions, for GI pursuant to the NYS Stormwater Management Design Manual. Environmental analysis will determine whether potential implementation of GI could exacerbate existing environmental contamination conditions and if there are existing institutional or engineering controls.
- **Evaluation of cost-effectiveness.** Agencies will evaluate construction, operation, and maintenance costs to determine whether it is cost-effective.

This approach to determine the feasibility of GI implementation will complement current municipal GI programs by developing more consistent and integrated methodologies to citywide planning and implementation. Incorporating GI into City projects can additionally help meet the post-construction Stormwater Pollution Prevention Plan (SWPPP) requirements of the Stormwater Maintenance Permit. Chapter 6: Construction and Post-Construction describes the permit requirements for post-construction stormwater management, which will be required for private and public development and re-development projects that meet the applicable soil disturbance thresholds. If the GI feasibility analysis described above shows that GI is not feasible or cost-effective, then the agency will use other approaches described in the City's Stormwater Management Design Manual to meet the Stormwater Maintenance Permit requirements for those projects.

Green Roof at Parks Department's Five Borough Administrative Building



7.7 Requirements for Third-Party Contractors

The City requires contractors working at City facilities and conducting operations to meet PP/GH Program requirements. Refer to Chapter 1: Legal Authority and Program Administration for information on reliance on third parties.

7.8 Measurable Goals and Program Assessment

Table 7.4 lists measurable goals and measures for identified PP/GH best management practices (BMPs). Annual Reports will use these measures to detail the status of each measurable goal and BMP. Part IV.M.4.j.i of the MS4 Permit requires an Annual Effectiveness Assessment in each Annual Report, as described in Chapter 12: Recordkeeping and Reporting. The City will base the Annual Effectiveness Assessment on its achievement of the stated measurable goals for each chapter of this Plan, including this program. The City will also refine these measurable goals with information gained from program planning and implementation, interagency working groups, and public input. Continuing to refine and update the measurable goals will allow the City to better quantify and accurately represent the effectiveness of each one.

Summary BMPs, Measurable Goals, and Measures for the PP/GH Program

Table 7.4

BMPs	Measurable Goals	Measures
Provide program for pollution prevention and good housekeeping for municipal operations and facilities	Maintain an inventory of municipal operations and facilities	Number of facilities
		Number of off-site operations
	Implement the PP/GH Program	Acres of parking lots swept
		Miles of street swept
		Number of catch basins inspected, cleaned, and/or maintained
		Miles of storm sewers inspected
		Miles of storm sewers cleaned
		Number of self-assessments completed, by priority ranking
		Percent of self-assessments completed of the total number of sites in the inventory, by priority
		Number of facilities electing MS4 coverage that would otherwise be subject to MSGP
Provide for staff training	Implement a PP/GH training program	Number of staff trained in-person
		Number of staff trained computer based
Consider runoff reduction and green infrastructure	Consider runoff reduction techniques and green infrastructure	Number of runoff reduction/green infrastructure opportunities evaluated
		Number of runoff reduction/ green infrastructure opportunities implemented