

Construction and Post- Construction

Municipal Separate Storm
Sewer Systems of New York City

SPDES Number: NY-0287890
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NYSDEC requires construction projects disturbing an acre or more of soil to obtain coverage for stormwater discharges under the State Pollution Discharge Elimination System (SPDES) General Permit for Stormwater Discharges from Construction Activity (GP-0-15-002)(NYSDEC CGP). The City will complement the NYSDEC CGP program in the MS4 area by reviewing and approving stormwater pollution prevention plans (SWPPPs), and inspecting construction activities for stormwater impacts and post-construction stormwater management practices (SMPs).

Parts IV.E and F of the MS4 Permit require the City to:

- Review and approve Stormwater Pollution Prevention Plans (SWPPPs);
- Maintain an inventory of active construction sites;
- Conduct site inspections during construction and enforce proper erosion and sediment control measures as well as proper SMP installation;
- Maintain an inventory of post-construction SMPs;
- Conduct SMP inspections and enforce long-term maintenance of SMPs;

- Train DEP staff who will perform SWPPP reviews and site inspections during and after construction;
- Verify that construction managers and site operators have received erosion and sediment control training from NYSDEC or other qualified entities;
- Educate relevant stakeholders about the Construction and Post-Construction (C/PC) Program; and
- Conduct a study to determine an appropriate reduction in the lot size soil disturbance threshold for triggering the regulatory requirements of the C/PC Program.

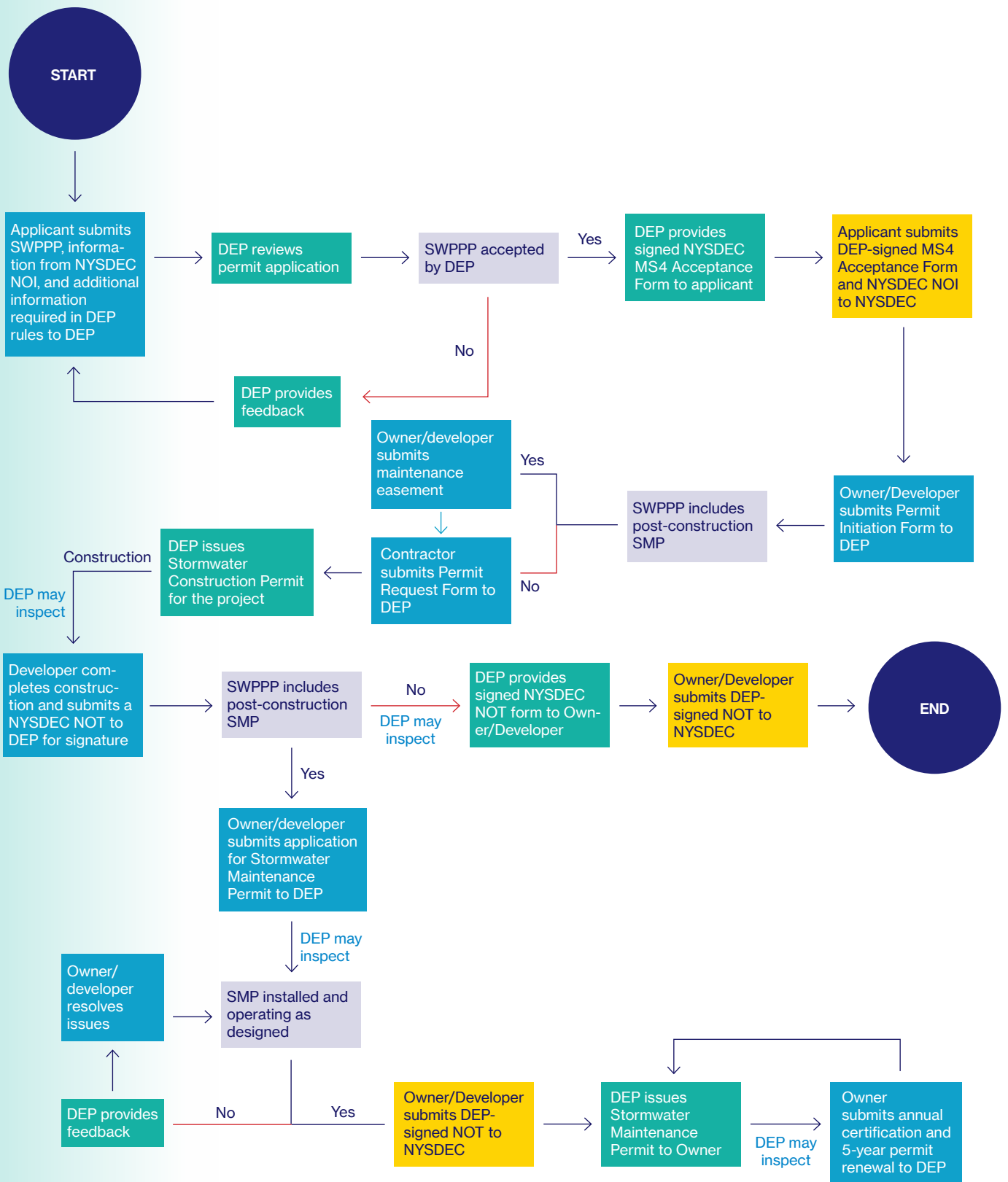
Chapter 1: Legal Authority and Program Administration discusses the City's rulemaking process and legal authority for the C/PC Program. DEP will administer the C/PC Program by reviewing SWPPPs; issuing stormwater construction and maintenance permits; inspecting and enforcing during and after construction; and responding to public complaints. The C/PC Program includes measures to ensure no net increase of the pollutants of concern (POCs) for which a waterbody is impaired, as required by Part II.B.1 of the MS4 Permit. The C/PC Program applies only to certain new and redevelopment projects, referred to as *covered development projects*. Figure 6.1 provides an overview of the program.

Overview of C/PC Permitting Process

Figure 6.1

The C/PC Program requires two types of stormwater permits for covered development projects: Stormwater Construction Permits for all covered development projects, and Stormwater Maintenance Permits for projects requiring post-construction SMPs. The first step in applying for these stormwater permits is submittal of a permit application to DEP. The permit application consists of the information required in NYSDEC's Notice of Intent (NOI) form, additional information required in DEP's rules, and the plans and reports that together make up the Stormwater Pollution Prevention Plan (SWPPP). DEP will review and approve SWPPPs; refer to Section 6.1 for details. If DEP approves the SWPPP, the developer then submits the Permit Initiation Form and a copy of the maintenance easement to DEP, and the contractor with primary responsibility for the project site submits the Permit Request Form to DEP for a Stormwater Construction Permit; refer to Section 6.2.1 for details. DEP may inspect a site during construction.

After construction, the developer or owner submits a completed NYSDEC Notice of Termination (NOT) form to DEP for review and signature. If post-construction SMPs are required for the covered development project, then the developer or owner must also submit a Stormwater Maintenance Permit application with the completed NYSDEC NOT to DEP; refer to Section 6.2.2 for details. DEP may inspect post-construction SMPs. If DEP issues a Stormwater Maintenance Permit, then the owner must submit an annual certification and renew the permit every five years.



Applicant/Owner/ Developer Action

Applicant/Owner/ Developer goes to DEC

DEP Action

Decision Point

6.1 SWPPP Review and Approval

For a covered development project, an applicant must submit a permit application to DEP that includes all of the elements required in the NYSDEC notice of intent (NOI) for coverage under the NYSDEC CGP; a complete SWPPP; and the additional information required by the City's rules. A SWPPP is a plan prepared by a developer to manage stormwater runoff from a construction site. SWPPPs include elements that prevent pollution both during construction and after a project is completed.

DEP will host the Stormwater Permitting and Tracking System (SWPTS), an online application system, for developers to input their applications and follow the status of DEP's review. DEP will ensure each permit application meets the conditions of the NYSDEC CGP and the additional requirements under the City's rules.

Upon approval of an application, DEP will provide the developer with a downloadable MS4 SWPPP Acceptance Form. Developers will then submit this form along with the NOI to the NYSDEC main office in Albany to

obtain coverage under the NYSDEC CGP. If DEP does not approve the application, it will provide notice to the applicant that delineates the deficiencies of the SWPPP. The applicant may re-submit the SWPPP for DEP approval.

Contents of SWPPPs will depend on the individual covered development project. All SWPPPs require an erosion and sediment control component for construction activities detailed in Section 6.1.1. Some SWPPPs will also require post-construction SMPs that the property owner must implement and maintain following construction, as detailed in Section 6.1.2. SWPPPs for covered development projects draining to impaired waterbodies must meet the no net increase requirement detailed in Section 6.1.3. Finally, SWPPPs for covered development projects that are flood management projects must meet the requirements in Section 6.1.4. The City is developing a NYC Stormwater Design Manual to provide technical guidance for creating SWPPPs that meet the C/PC Program requirements. This manual will be available on the DEP website.

Construction at Avenue V pump station



Covered development project means development activity, private or public, that involves or results in a soil disturbance within the MS4 area in an amount greater than or equal to one acre, including disturbances of less than one acre that are part of a larger common plan of development or sale that will ultimately disturb one or more acres of soil. The one acre threshold that triggers construction and post construction stormwater management requirements will be reduced in the future, as described in Section 6.4.

6.1.1 SWPPP Construction Erosion and Sediment Control Component

All SWPPPs must include an erosion and sediment control component. The erosion and sediment control component must meet the requirements in the NYS Standards and Specifications for Erosion and Sediment Control.¹ The SWPPP must include practices to avoid erosion and control sedimentation for each step in the construction process. The SWPPP should also include site plans that show the location of each process; the practices associated with that process; and the details specifying size, materials, and endurance of each practice.

6.1.2 SWPPP Post-Construction Stormwater Management Component

Depending on the covered development project, a SWPPP must also include post-construction SMPs that the property owner must implement and maintain to manage stormwater runoff from the developed site after construction is completed. The NYSDEC CGP establishes which covered development projects require only an erosion and sediment control component and which also require post-construction SMPs.

The stormwater management component must describe post-construction SMPs that prevent or reduce pollution from stormwater runoff to waterbodies. SMPs must meet the performance standards in the NYS Stormwater Management Design Manual², including an Operation and Maintenance manual that addresses each SMP. DEP is also developing a NYC Stormwater Design Manual to address City-specific requirements and preferred practices for covered development projects. This NYC manual will be available on the DEP website.

SWPPPs with stormwater management components should include site plans showing both the pre-construction and the proposed post-construction condition of the site. The developer must show the locations, materials, sizes, and inlet and outlet conditions of all SMPs. In supporting documentation, the developer must include calculations demonstrating that the size and operation of the SMP are adequate, and results of any field-testing performed to locate and size the SMP. An operation and maintenance manual must also be included to address the requirements for the long term maintenance of the SMPs.

6.1.3 No Net Increase Requirement

Covered development projects involving a non-negligible change in land use (i.e., land disturbances greater than or equal to one acre where there is an increase in impervious cover) draining to impaired waters are required to include a pollutant load analysis in the SWPPP. This analysis should demonstrate that there will be no net increase of the POC(s) for which a waterbody is impaired. NYSDEC provided the list of impaired waters in Appendix 2 of the MS4 Permit and specified the particular pollutant(s) causing the impairment for each listed waterbody segment. The City's Draft Procedures for No Net Increase (NNI) Pollutant Load Analysis is available on the DEP website.³ The City will provide status updates on the NNI requirement in Annual Reports.

The POCs listed in Appendix 2 of the MS4 Permit are floatables, nitrogen, phosphorus, and pathogens. Refer to Chapter 11: Special Conditions for Impaired Waters for more information on NYC impaired waters and POCs.

The SWPPP pollutant load analysis must consist of a narrative that identifies each POC causing impairment in the waterbody and the potential sources of those pollutants; and the management practices that will be used to ensure no net increase of those pollutants to impaired waters. Projects in areas draining to an impaired waterbody must demonstrate compliance for the individual pollutant(s) for which the waterbody is impaired as follows:

- **Floatables:** Design and implement SMPs in accordance with the NYS Stormwater Management Design Manual.
- **Nitrogen:** Design and implement practices to show no net increase in total nitrogen load. Provide pollutant calculations using the loading and removal data provided in the NYC Stormwater Design Manual.
- **Phosphorus:** Design and implement SMPs in accordance with Chapter 10 of the NYS Stormwater Management Design Manual.
- **Pathogens:** Design and implement SMPs in accordance with the NYS Stormwater Management Design Manual, with added enhancements and site management practices to reduce the potential for pathogens to enter the MS4, as detailed in the NYC Stormwater Design Manual.

The NYC Stormwater Design Manual will detail how to determine whether a site drains to an impaired waterbody and how to demonstrate no net increase for the POC(s) causing the impairment.

1 http://www.dec.ny.gov/docs/water_pdf/2016nysstanec.pdf

2 <http://www.dec.ny.gov/chemical/29072.html>

3 http://www.nyc.gov/html/dep/pdf/water_sewer/deliverable_ms4-permit-11-b-1-d.pdf

6.1.4 SWPPP Requirements for Flood Management Projects

Covered development projects that meet the MS4 Permit definition of a flood management project are required to assess in the SWPPP the impacts on the water quality of the receiving water.

Flood management projects refer exclusively to projects designed and functioning to capture, detain, or convey overland flow from a large drainage area to prevent downstream flooding associated with a 100-year or greater storm event. The MS4 Permit excludes projects such as installation and maintenance of storm sewers, high-level storm sewers, Bluebelt storm sewers, drainage inlets, and other projects to improve drainage, alleviate localized flooding, or reduce coastal flooding.

Additionally, SWPPPs prepared for major maintenance or rehabilitation of City-owned structural flood control devices in flood management projects shall, if feasible and cost effective, incorporate the recommended controls resulting from the facility assessments conducted under the Pollution Prevention/Good Housekeeping provisions of the MS4 Permit. Refer to Chapter 7: Pollution Prevention/Good Housekeeping for more details on facility assessments. The City has not identified any existing flood management devices within the MS4 area that meet the MS4 Permit definition.



Green Roof at Zerega EMS Station

The City engaged targeted stakeholders to discuss the development of the Construction/Post-Construction Program. These stakeholders included:

- General Public
- Stormwater Advisory Group
- Design, construction, and development community
- Environmental organizations

In addition, the City entered into a partnership with the Urban Green Council (UGC) and the Real Estate Board of New York (REBNY) to bring together a broader audience of professionals who will be impacted by the Construction/Post-Construction provisions.

In response to comments received on this program, the City has:

- Included Owner as the defined person to submit annual certifications for Stormwater Maintenance Permits instead of a Qualified Professional.
- Altered the threshold analysis by:
 - » changing the life cycle analysis from a 20-year to 30-year life cycle.
 - » adding 7,500 and 12,500 square foot lot size thresholds into the analysis (the initial analysis included lot sizes in 5,000 square foot increments up to and including 1 acre).
- Revised cost estimates per input from developer workshops held in conjunction with REBNY and UGC.

6.2 DEP Issued Stormwater Permits

After the rulemaking process is complete and DEP's rules go into effect, DEP will begin accepting applications for two types of stormwater permits for covered development projects: Stormwater Construction Permit and Stormwater Maintenance Permit. Covered development projects that have a NYSDEC SPDES acknowledgement letter indicating that the project has coverage under the construction general permit before the effective date of the rules will not be required to apply for either of DEP's permits.

DEP may periodically inspect permitted sites. Appendix 1.1: Enforcement Response Plan includes DEP's protocol for investigating, documenting and, where appropriate, enforcing against unauthorized discharges from construction and post-construction pollution sources into the MS4.

6.2.1 Stormwater Construction Permit

Stormwater Construction Permits are required for all covered development projects in addition to obtaining coverage under the NYSDEC CGP. A developer must obtain a Stormwater Construction Permit prior to construction. Before issuing the permit, DEP must receive two forms through the SWPTS:

1. The Permit Initiation Form that requires the developer to submit the names of the Qualified Inspector, the Contractor, and where required, a fully executed and recorded maintenance easement, as described below; and
2. The Permit Request Form that requires the Contractor to complete a Contractor's Certification, and provide the Trained Contractor information and the NYSDEC SPDES number received with the NYSDEC Acknowledgement after filing an NOI.

The purpose of these forms is to identify the individuals responsible for SWPPP implementation. These roles and responsibilities include:

- The Qualified Inspector, who is responsible for weekly inspections of the construction site.
- The Contractor, who is the construction manager or the primary contractor responsible for the development activity. The Contractor must also provide the information for at least one Trained Contractor.
- The Trained Contractor, who is responsible for the daily erosion and sediment control inspection. This individual must have taken the NYSDEC erosion and sediment control 4-hour class within the last three years and be employed by the contractor responsible for the job.

Except as noted below, covered development projects that require a post-construction SMP(s) are required to execute and record a maintenance easement and submit a copy to DEP to receive a Stormwater Construction Permit from DEP. The purpose of the maintenance easement is to ensure that future owners of the property are aware of the post-construction SMPs and their ongoing obligation to operate and maintain them in accordance with the operation and maintenance manual in the approved SWPPP. The easement also puts the property owner on notice that DEP may inspect post-construction SMPs to confirm that the operation and maintenance meets applicable standards. Public properties with SMPs, public projects, and projects that only require erosion and sediment controls during construction do not require a maintenance easement. However, if a public entity later transfers a public property with an SMP to a private entity, the NYC Corporation Counsel may require a maintenance easement at that time. The maintenance easement must be recorded with the Office of the City Register or, if applicable, the County Clerk, after approval by the NYC Corporation Counsel.

In addition, DEP requires a Contractor's Certification that ensures that the Contractor has reviewed and agrees to implement the approved SWPPP. Subcontractors that are responsible for specific parts of a development activity will need to sign certifications and provide Trained Contractor information as well. Subcontractor certifications and Trained Contractor credentials must be kept with the SWPPP on the site. In order to receive a permit, a developer must also have a DEP-approved SWPPP, and an NYSDEC-acknowledged notice of intent (NOI) for coverage under the NYSDEC CGP.

Permit Issuance

DEP will issue a Stormwater Construction Permit once all of the required submittals have been entered in the SWPTS, and DEP's review is completed. Stormwater Construction Permits will be valid for 2 years from the date of issuance. A renewal of the Stormwater Construction Permit may be submitted through SWPTS. Once DEP issues the permit and receives a 7-day notification of the construction start date from the contractor or developer, DEP will add the project to DEP's inventory of active construction sites in the MS4 area.

Permit Conditions

The applicant and all contractors and subcontractors are responsible for implementing the approved SWPPP, complying with DEP rules, and complying with the terms and conditions of the Stormwater Construction Permit. A Stormwater Construction Permit must be renewed every two years from date of issuance.

During construction, unforeseen issues may make it necessary for the developer to amend the SWPPP. Major amendments that require changes to structural components (such as a sediment basin or dam for an impoundment), changes that require new stormwater modeling, or changes to modeling methodology will require review and approval by DEP.

If construction begins, but is not completed, the developer must submit a closure plan to DEP as an amendment to the SWPPP. The closure plan must demonstrate that the site will remain stable and that all completed SMPs are operating as designed and in compliance with DEP rules. The developer is also responsible for submitting a Notice of Termination (NOT) to NYSDEC.

If construction is temporarily halted and the site is closed down, the developer must continue to maintain the site and the SMPs. The developer must also notify DEP at least 7-days before an anticipated temporary shutdown through the SWPTS. Inspections must be performed by a Qualified Inspector at least once every 30 days to assure that the site is stable and that installed erosion and sediment control practices or completed SMPs are maintained during the shutdown. The developer must immediately fix any issues identified by the Qualified Inspector.

Construction Inspections

During construction, DEP staff will perform inspections to evaluate compliance with the approved SWPPP. DEP will prioritize active construction sites for inspection considering factors such as the extent of soil disturbance, distance to the receiving waterbody, impairments to the receiving waterbody, land slope, soil erodibility, and past performance of the contractor and developer. DEP will conduct construction site inspections as part of a routine program and in response to public complaints.

The City currently responds to a variety of public complaints related to construction activities such as excessive debris, noise or dust; work without a permit or outside approved plans; and illegal dumping of construction materials in catch basins. Refer to Chapter 2: Public Education and Outreach, Section 2.5, for details on how to report illicit discharges and other potentially harmful water quality impacts through 311.

Enforcement

When a DEP inspector identifies non-compliance with the SWPPP or the New York City Administrative Code Chapter 5-A of Title 24, the inspector may utilize a number of measures to require correction of the condition. The measure taken will depend upon the severity of the condition and the impact or potential impact on water quality. DEP will follow the Enforcement Response Plan (Appendix 1.1) that identifies each potential enforcement measure. The penalty associated with each enforcement action will be determined based on the identified noncompliance, the number of times a similar issue has been identified on the site, and the ability of those responsible for the covered development project to correct the problem.

Permit Termination

A Stormwater Construction Permit expires if the permitted work is not substantially underway within one year or is not completed by a date specified in the permit. This permit also expires if work is suspended or abandoned for a continuous period of 12 months unless the permit expires earlier.

Once the project is constructed, the Qualified Inspector for erosion and sediment control and the developer must sign a NYSDEC NOT stating that the project is complete and the site is stable. Projects that include post-construction SMPs also require the signature of a Qualified Professional who has inspected the SMP for conformance to the approved SWPPP.

A developer working on a project that does not include post-construction SMPs will submit a completed NYSDEC NOT to DEP for signature through the SWPTS. If the project includes post-construction SMPs, the developer will submit the NOT with the application for the Stormwater Maintenance Permit. See Section 6.2.2 for details on Stormwater Maintenance Permit application. DEP will review the NYSDEC NOT and may choose to inspect a site prior to DEP signing the NYSDEC NOT. DEP will provide the developer with a downloadable copy of the DEP-signed NYSDEC NOT and will remove the project from DEP's inventory of active construction sites.

This ends the process for projects without post-construction SMPs with DEP; however, the developer must submit the DEP-signed NYSDEC NOT to the NYSDEC State Office in Albany to terminate coverage under the NYSDEC CGP.

Owners of covered development projects with post-construction SMPs are required to submit an application for a Stormwater Maintenance Permit at the time of submitting the completed NYSDEC NOT to DEP for signature. See Section 6.2.2 for details and Figure 6.1 for a summary of the permitting process.

6.2.2 Stormwater Maintenance Permit

Projects that require post-construction SMPs require an application for the Stormwater Maintenance Permit, which may be submitted through SWPTS. The NYSDEC CGP establishes which covered development projects require only an erosion and sediment control component and which also require post-construction SMPs.

Permit Issuance

The application for the Stormwater Maintenance Permit will be submitted through SWPTS and must include the completed NYSDEC NOT; as-built plans showing constructed SMPs with the invert elevations identified; and up-to-date operation and maintenance manual for each SMP on the site. Additionally, the owner must include the DEP sewer certification with the permit application. Stormwater Maintenance Permits will be valid for five years from the date of issuance and will require renewals every five years and an annual certification from the property owner that the practices are operating as designed. Once a Stormwater Maintenance Permit is issued, DEP will add the practice to its inventory of post-construction SMPs.⁴ DEP will issue the Stormwater Maintenance Permit to the developer/owner, along with a signed copy of the NYSDEC NOT for the developer/owner to submit to NYSDEC.

SMP Modifications

In order to modify an SMP after DEP issues a Stormwater Maintenance Permit, the owner must submit through the SWPTS an application for the modification of the SMP. The application to modify the SMP must include design calculations and supporting documentation to demonstrate that the proposed practice is at least as protective of water quality as the existing practice and that it controls stormwater flows as required by the stormwater maintenance component of the SWPPP.

Maintenance Inspections

Projects that require a Stormwater Maintenance Permit will be subject to inspection by DEP staff. DEP will perform inspections as necessary to ensure compliance with the Stormwater Maintenance Permit and to make sure that

the SMP is operated and maintained as designed. DEP may prioritize sites for inspection based on the soils, land use, and the location of the site relative to waterbodies. DEP will also perform inspections in response to public complaints.

Enforcement

If an inspection reveals non-compliance with the Stormwater Maintenance Permit, such as failure to properly maintain SMPs, the property owner may be subject to penalties and sanctions, as authorized in New York City Administrative Code Chapter 5-A of Title 24. The response will depend upon the severity of the condition and the impact or potential impact on water quality, and will follow the Enforcement Response Plan (Appendix 1.1). The penalty associated with each enforcement action will be determined based on the identified non-compliance, the number of times a similar issue has been identified on the site, and the ability of those responsible for the operation and maintenance of the SMP to correct the problem.

Annual Certification and Permit Renewal

Every year on the anniversary date of the Stormwater Maintenance Permit, the owner must submit to DEP, through the SWPTS, a signed certification that the SMPs are operating as designed. Every five years, the owner of the site must renew the Stormwater Maintenance Permit by submitting an application for renewal with a report certified by a Qualified Professional that the SMPs are operating as designed. If any post-construction SMPs include structural components, such as a dam for an impoundment, a Professional Engineer licensed in New York must perform the inspections and certification.

6.3 Education, Certification, and Training

DEP SWPPP reviewers and site inspectors will be Qualified Professionals or work directly under the supervision of a Qualified Professional. DEP staff who review SWPPPs and perform inspections will receive annual training in review and inspection and may attend the NYSDEC-endorsed 4-hour training at least once every three years. Additionally, DEP will offer its staff opportunities to take professional development classes in designing, reviewing, and inspecting construction practices for stormwater management.

DEP will develop a training program for municipal staff, industry professionals, and other stakeholders on the implementation of the regulations and the use of the SWPTS. Opportunities for the NYSDEC-endorsed 4-Hour Erosion and Sediment Control (E&SC) Training can be found on NYSDEC,⁵ the NYC Soil and Water Conservation District,⁶ and the Nassau Soil and Water Conservation District⁷ websites.

⁵ <http://www.dec.ny.gov/chemical/8699.html>

⁶ <http://www.soilandwater.nyc/4-hr-esc-training.html>

⁷ <http://www.nassauswcd.org/4-hour-esc-training.html>

⁴ This inventory also includes City-owned SMPs and SMPs approved by NYSDEC since 2003.

6.4 Results of the Threshold Study

The City has conducted an analysis to shape the C/PC Program for typical development projects in NYC. The purpose of the Lot Size Soil Disturbance Threshold Study for Construction and Post-Construction Stormwater Management (Threshold Study) was to determine an appropriate reduction, in the MS4 area, of the one-acre soil disturbance threshold that currently triggers the applicability of construction and post-construction stormwater management requirements at new development and redevelopment sites. By reducing the threshold in the MS4 area to include more development and redevelopment projects, the C/PC Program will help further reduce pollution in local waterbodies.

In accordance with Part IV.F.4 of the MS4 Permit, the Threshold Study took into consideration a number of metrics including:

- the number of potentially affected public and private properties
- types of development/zoning
- DEP’s administrative resource needs for permitting and inspections
- total lot area managed
- impervious surface coverage
- site and soil conditions and constraints
- compliance costs
- expected water quality improvements

The Threshold Study evaluated different threshold sizes, ranging from 5,000 square feet to 1 acre, to assess potential costs to the City and developers and the anticipated water quality benefits associated with each threshold size. The Threshold Study can be found in Appendix 6.1.

The study recommends future adoption of a 20,000 square foot soil disturbance threshold for both construction and post-construction requirements for public and private development and redevelopment projects on tax lots within the MS4 area. This recommendation is supported by a majority of the metrics analyzed (i.e., number of permits, number of managed acres, cost/benefit) and takes into account costs to individuals and borough-specific impacts; considers staffing resources needed to accommodate permit review and inspections; and provides flexibility with respect to site constraints (e.g., soil suitability, site availability) through a hierarchy of SMPs. DEP will implement this hierarchy (Figure 6.2), by incorporating it into the NYC Stormwater Design Manual, as the basis for developers’ selecting post-construction SMPs.

The City anticipates the implementation of the program at the reduced threshold once NYSDEC has approved the proposal and DEP has gained at least a full year of experience running the program at the 1-acre threshold. The City anticipates rulemaking for the reduced threshold to take place between 2020 and 2025. Through the rulemaking process, DEP will update the definition of a covered development project to reflect the approved reduced threshold. During the remainder of the current permit term, and as the program is implemented at the 1-acre threshold, DEP will seek feedback from the community and fine-tune the program based on that feedback.

Preliminary SMP⁸ Hierarchy

6.2 Figure

High Priority		Low Priority	
On-Site Vegetated Infiltration	Sub-Surface Infiltration and Green Roof	Vegetated Detention with Treatment	Physical Treatment and Green Roof
Rain Gardens and Bioretention	Permeable Pavement, Infiltration Trenches, Turf Fields, Green Roof	Vegetated Open Swales, Constructed Wetlands, Bioretention with Underdrains, Ponds, Sheet Flow to Riparian Area	Sand Filters, Green Roof, Other Approved Filtration Technologies
Soil Suitability			
High	High	Low	Low
Space Availability			
High	Low	High	Low

6.5 Measurable Goals and Program Assessment

Table 6.1 lists measurable goals and measures for identified Construction and Post-Construction 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, which is 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 of BMPs, Measurable Goals, and Measures for the C/PC Program

Table 6.1

BMPs	Measurable Goals	Measures	
Construction Site Stormwater Runoff Control	Review and Approve SWPPPs	Number of SWPPPs reviewed	
		Number of SWPPPs approved with and without post-construction stormwater management facilities	
		Number of Stormwater Construction Permits issued	
	Inspect construction sites and enforce Stormwater Construction Permits	Number of active construction sites	
		The percent of active Stormwater Construction Permit sites inspected once	
		The percent of active Stormwater Construction Permit sites inspected more than once	
		Number and type of enforcement actions and penalties issued	
		Number of construction site stormwater control trainings planned or completed	
	Post-Construction Stormwater Management	Inspect post-construction sites and enforce Stormwater Maintenance Permits	Number of Stormwater Maintenance Permits issued
			Number of Flood Management Projects and existing structural flood control devices evaluated
Number and type of enforcement actions and penalties issued			
Number of post-construction SMPs, including type of practice and contributing impervious area			
Number and type of SMPs inspected			
Number and type of SMPs properly maintained as determined by inspections			
Number of individuals trained in inspection of long-term operation and maintenance of post-construction SMPs			