

Appendix J – Stormwater Facilities Operation and Maintenance Manual

**STORMWATER MANAGEMENT FACILITY POST
CONSTRUCTION OPERATION AND MAINTENANCE
MANUAL (O & M Manual)**

**FOR COMPLIANCE WITH THE
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL
CONSERVATION
SPDES GENERAL PERMIT GP-0-15-002
FOR
STORMWATER DISCHARGES FROM CONSTRUCTION ACTIVITIES**

Project Location: NYPA's Marcy South Series
Compensation Project
Town of Delhi
County of Delaware
State of New York

Owner: New York Power Authority (NYPA)
123 Main Street
White Plains, NY 10601

Operator: New York State Electric and Gas
Corporation (NYSEG)
18 Link Drive
Binghamton, NY 13904

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Stormwater Management Facility Operation and Maintenance Manual for
NYPA's Marcy South Series Compensation Project
Town of Delhi, County of Delaware, State of New York

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1.0 Introduction

New York Power Authority (NYPA), has constructed a permanent stormwater management facility as designed and detailed in a Stormwater Pollution Prevention Plan (SWPPP) prepared by this office in March, 2015 for construction activities associated with NYPA's Marcy South Series Compensation (MSSC) Project.

The proposed project is located on land owned and currently operated by New York State Electric and Gas Corporation at 1068 Hamden Hill Road Spur in the Town of Delhi, Delaware County as an existing electrical substation.

As part of NYPA's Marcy South Series Compensation Project new porous stone access roads and structure work pads were constructed for the access to a new impervious surface stone pad for the proposed electrical series compensation project installation. The impervious cover associated with the new stone pad for the electrical equipment requires post-construction stormwater management practices to mitigate water quality and water quantity impacts to stormwater runoff.

1.1 SPDES Coverage

Due to disturbance of the slope phase E soils prevalent at the site, this project requires an individual SPDES permit under the New York State Department of Environmental Conservation (NYSDEC) State Pollutant Discharge Elimination System (SPDES), and does not qualify for coverage under the NYS SPDES General Permit for Stormwater Discharges from Construction Activity (GP-0-15-002).

2.0 Stormwater Management Facilities

The stormwater management facilities that will be constructed as part of NYPA's Marcy South Series Compensation Project include diversion swales, vegetated swales and an infiltration basin. Vegetated swales will be constructed along the southerly and easterly side of the project stone pad and access roads and will then discharge into an infiltration basin located below (south of) all of the permanent facilities being constructed. Refer to the design plans provided in **Appendix C** for specifics on the proposed facilities.

The vegetated swales will provide runoff reduction and pretreatment of the stormwater runoff from the proposed impervious surfaces. The vegetated swales will convey the stormwater runoff to the infiltration basins at a reduced velocity, promoting infiltration, pretreatment and groundwater recharge. Temporary check dams will be installed in the vegetated swales during construction to reduce stormwater velocities and to capture sediment before it enters the infiltration basin.

The infiltration basin will provide additional water quality volume treatment as well as providing water quantity detention for the one year, ten year and 100 year design storm events. During construction the infiltration basin will be rough excavated to within six (6) inches of the proposed final grade, and will be left at this elevation until all construction has been completed and temporary seeding and stabilization has taken place. Once construction has been completed and the temporary seeding and mulch have been established, then the final grading of the infiltration basin and establishment of permanent vegetative cover can be completed. The infiltration basin has a primary outlet structure to allow for routine maintenance and emergency draining of the basin if maintenance is required, and will also have a separate emergency spillway outlet to convey extreme storm events. The emergency spillway and primary outlet from the control structure will discharge to a level spreader on the slope below (south of) the infiltration basin.

Also included with this project are several culverts used to convey stormwater across roadways or through embankments. These culverts will also need to be inspected for proper operation to maintain uninterrupted flow from one side of the roadways or embankments to the other or from one swale to another.

Refer to **Appendix B** for annotated photographs of the completed stormwater management facilities.

3.0 **Operation and Maintenance Requirements**

The purpose of this Operation and Maintenance Manual is to provide NYPA and NYSEG with the information necessary to ensure that the stormwater management facilities function as originally designed and constructed. To that end, routine periodic inspections should be performed as described in the Maintenance Inspection Forms contained within **Appendix A**. Inspections of the stormwater management facilities for the this project will take place on an annual basis.

At each inspection a Maintenance Inspection Form should be completed to document the inspection and maintenance performed/required on the project. The form provides a summary of inspection requirements for each stormwater facility, the frequency of inspections, and a description of the anticipated maintenance that is required. A new inspection form should be filled out during each inspection. The inspector shall note any inspection observations in the "Inspection Comments" field and if any maintenance is required this should be noted under the "Maintenance Comments" field.

The following sections outline the procedures to be followed to perform routine inspections and maintenance activities. Specific items to be reviewed or inspected are detailed in the Maintenance Inspection Form contained within **Appendix A**.

3.1 Vegetated Swales

Vegetated swales should be maintained in a mowed grass vegetative state in all areas, and should generally be mowed at least two (2) times each growing season or as needed. The swales shall be free of any obstructions, debris, or sediment. Evidence of restricted flow or heavy woody growth within the swale shall be noted and reported for follow up maintenance. If excessive sediment deposition is observed (depth of sediment > 25% of the original depth), then maintenance to remove the accumulated sediment should be performed.

3.2 Infiltration Basin

The infiltration basin should be maintained in a mowed grass vegetative state in all areas (except for the rip-rap stone emergency spillways), and should generally be mowed at least two (2) times each growing season or as needed. The embankments around the facility shall be routinely mowed to prevent woody plants from becoming established, which could cause issues with bank stability and blockage of the emergency spillway. All infiltration basins should be free of debris, obstructions, and sediment. If sediment depth is excessive it will need to be removed. The emergency spillway shall be inspected for debris, scouring, and downstream discharge degradation issues.

3.3 Diversion Swales

All diversion swales should be inspected annually for proper operation. Diversion swales should be free of obstructions, debris, and sediment. All diversion swales should be flowing freely with no restrictions, and should not have signs of rilling, scouring or erosion.

3.4 Culverts

All culverts should be inspected annually for proper operation. Culverts should be free of obstructions, debris, and sediment. All culverts should be flowing freely with no restrictions.

Culvert inlets and outlets should be stable with no evidence of erosion or scouring.

3.5 NYPA and NYSEG Responsibilities

NYPA and/or NYSEG Personnel shall comply with the New York State SPDES permit requirements for Operation and Maintenance of the stormwater management facilities as described herein. The stormwater management facilities that have been constructed as part of this project requires a long-term maintenance and operation plan. NYPA and NYSEG, therefore are required to monitor the facilities on a continual basis to ensure that the facilities are functioning properly. At a minimum and in accordance with recommendations in the current NYSDEC Stormwater Management Design Manual -

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stormwater management facility inspections by a *NYPA designated inspector* shall perform periodic inspections at intervals documented in the Maintenance Inspection Form included in **Appendix A**.

3.6 Stormwater Management Facility Design Plans

The design plans for the stormwater management facilities that were constructed at NYPA's MSSC Project Site are included in **Appendix C**.

4.0 Contact Information

Questions about the stormwater management facilities described above should be directed to Carol Holland, NYSEG Manager-Programs/Projects at (607) 762-8881.

Appendix A – Maintenance Inspection Form

Appendix B - As-built Photographs of the Constructed Stormwater Management Facilities

To be included upon completion of construction.

Appendix C –Stormwater Management Facility Design Plans

Refer to SWPPP Appendix F for design plans.

Appendix C of this Operation and Maintenance manual will be updated with design plans upon approval of NYSDEC and issuance of the Individual SPDES Permit.