

# STORMWATER MANAGEMENT PROGRAM (SWMP)

Reconstruction of the Main  
Academic Quadrangle

Hudson Valley Community College  
City of Troy  
New York

March 30, 2011

Prepared for:

Hudson Valley Community College  
80 Vandenberg Avenue  
Troy, NY 12180

Prepared by:

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Saratoga Springs, NY 12866

Project No. 10043.18U

**OWNER/OPERATOR CERTIFICATION STATEMENT**

"I hereby certify that I understand and agree to comply with the terms and conditions of the SWMP and agree to implement any corrective actions identified by the qualified inspector during a site inspection. I also understand that the *owner or operator* must comply with the terms and conditions of the New York State Pollutant Discharge Elimination System ("SPDES") general permit for stormwater discharges from construction activities and that it is unlawful for any person to cause or contribute to a violation of water quality standards. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of the referenced permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings. "

Mr. Stephen Cowan

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Name of Owner or Duly Authorized Representative (Printed)

College Representative

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Title of Above Signee

Hudson Valley Community College  
80 Vandenberg Avenue  
Troy, NY 12180

---

Company Name and Address

(518) 629-7356

---

Telephone Number

---

Signature

---

Date

**CONTRACTOR CERTIFICATION STATEMENT**

"I hereby certify that I understand and agree to comply with the terms and conditions of the SWPPP and agree to implement any corrective actions identified by the qualified inspector during a site inspection. I also understand that the *owner or operator* must comply with the terms and conditions of the New York State Pollutant Discharge Elimination System ("SPDES") general permit for stormwater discharges from construction activities and that it is unlawful for any person to cause or contribute to a violation of water quality standards. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of the referenced permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings. "

<hr/> Name and Title of Duly Authorized Representative	<hr/> Name and Title of Duly Authorized Representative
<hr/> Company Name, Address and Phone Number	<hr/> Company Name, Address and Phone Number
<hr/> Continue from Above (If Needed)	<hr/> Continue from Above (If Needed)
<hr/> Address of the Project Site	<hr/> Address of the Project Site
<hr/> Signature of Authorized Representative and Date	<hr/> Signature of Authorized Representative and Date
The Contractor identified above is responsible for the following elements of the SWPPP:	The Contractor identified above is responsible for the following elements of the SWPPP:
<hr/> Name and Title of Trained Individual Responsible for SWPPP Implementation	<hr/> Name and Title of Trained Individual Responsible for SWPPP Implementation

<p>_____ Name and Title of Duly Authorized Representative</p>	<p>_____ Name and Title of Duly Authorized Representative</p>
<p>_____ Company Name, Address and Phone Number</p>	<p>_____ Company Name, Address and Phone Number</p>
<p>_____ Continue from Above (If Needed)</p>	<p>_____ Continue from Above (If Needed)</p>
<p>_____ Address of the Project Site</p>	<p>_____ Address of the Project Site</p>
<p>_____ Signature of Authorized Representative and Date</p>	<p>_____ Signature of Authorized Representative and Date</p>
<p>The Contractor identified above is responsible for the following elements of the SWPPP:</p>	<p>The Contractor identified above is responsible for the following elements of the SWPPP:</p>
<p>_____ Name and Title of Trained Individual Responsible for SWPPP Implementation</p>	<p>_____ Name and Title of Trained Individual Responsible for SWPPP Implementation</p>

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## **Section 1.0 - Introduction**

The following is a Stormwater Management Program (SWMP) developed for the Owner, Hudson Valley Community College, located both in the City of Troy and the Town of North Greenbush, New York. It is prepared in accordance with the NYS Department of Environmental Conservation (NYSDEC) General Permit for Stormwater Discharges from Construction Activity, General Permit No. GP-0-10-002. The City of Troy and the Town of North Greenbush are designated Municipal Separate Storm Sewer System (MS4). An MS4 Map is provided in Appendix M. A phone call to The Town of North Greenbush Engineer, Tom Murley (283-2714), revealed he defers the review to the City of Troy.

Redevelopment of previously developed sites are encouraged from a watershed protection standpoint. The existing Main Academic Quadrangle is a previously constructed area with impervious surfaces. It consists of old concrete and brick pavements and plaza's, walls and planters and currently drains to a campus storm sewer system which flows to an unnamed stream located at the southwest corner of the campus. See Stormwater Discharge Map provided in Appendix P. As such, this project will be designed in accordance with Chapter 9: Redevelopment Projects, of the NYSDEC Stormwater Design Manual dated August 2010.

The proposed stormwater management facilities are designed to mitigate for the water quality of stormwater runoff from the developed Project site. The developed Project site results in no increase in impervious area or changes to hydrology that increases the discharge rate at Discharge Point 3. In accordance with Chapter 9, page 9-5 of the NYSDEC Design Manual, if redevelopment results in no increase in impervious area or changes to hydrology that increases the discharge rate from the site, the channel protection volume (one-year), ten-year and one hundred-year water quantity controls criteria do not apply.

Additionally, erosion and sediment control measures (during and after construction) have been designed in accordance with NYSDEC requirements. All calculations are based on the TR-55 methodology and the HydroCAD computer program (Ref. 5).

### **1.1 Notice of Intent**

To obtain coverage under the General Permit and thus be authorized to discharge stormwater from construction activities, the Owner must submit a completed Notice of Intent (NOI) form that references this SWMP and conformance with the General Permit. Permit coverage begins as defined in Part II of the General Permit (see Appendix G). As previously mentioned, the City of Troy is a designated Municipal Separate Storm Sewer System (MS4) operator with jurisdiction over the project. Thus, a signed copy of the NOI and the SWMP must be submitted to the City of Troy for review and approval. The city must then execute the MS4 Acceptance form (see Appendix J).

A copy of the completed NOI, SWMP, MS4 Acceptance form, NOI Acknowledgement Letter from NYSDEC and completed inspection reports must be maintained at the site in accordance with Part II.C of the General Permit. A sample NOI form is provided in Appendix H.

### **1.2 Signatures, Certifications and Review**

The SWMP must be signed by the Owner, or by the Owner's duly authorized representative, on the page after the cover sheet at the beginning of the SWMP. Signatory requirements are provided in Part VII.H of the General Permit.

All contractors and subcontractors involved with the Project must sign a certification statement before undertaking any construction activity on the Project site. This certification must include: The authorized representative's name and title; the name, address and telephone number of the contracting firm; the address of the Project site; the date the certification is made; the components of the SWPPP for which the Contractor is responsible; and the name and title of the Trained Individual responsible for implementation of the applicable components of the SWMP. The Contractor Certification Statement follows the Owner's Signature Page at the beginning of the SWMP.

### **1.3 Notice of Termination**

When the construction site has been finally stabilized, the Owner must submit a signed Notice of Termination (NOT) form to NYSDEC at the address identified in Part V of the General Permit. This form is used to confirm that the permanent stormwater facilities are in place and have been constructed in accordance with the SWMP. The Owner must also certify that the appropriate operation and maintenance practices will be instituted for the facilities to function as designed after the site has been stabilized. A sample NOT form is provided in Appendix I.

## **Section 2.0 – Project Description**

### **2.1 Site Location**

The project site is located at the Main Academic Quadrangle at Hudson Valley Community College in the City of Troy, New York. Reference Appendix A, Site Location Map, for further geographic reference to the project site.

### **2.2 Project Description**

The proposed project development consists of the reconstruction of the Main Academic Quadrangle at Hudson Valley Community College. New work includes reconstruction of the quadrangle to include new concrete and brick walks, plaza, seat walls, curbs, site furnishings, site lighting, stormwater management, erosion control, planting and lawn establishment. The project site is approximately 2.60 acres. Since this is a redevelopment project, the SWMP requirements to be satisfied will fall under the Chapter 9 Redevelopment regulation of the NYSDEC Stormwater Design Manual dated August 2010.



### 2.3 Existing Site Description

The existing project site is generally made up of concrete walks, pedestrian plaza's, concrete planters, brick pavers, walls, trees and lawn areas. The existing project site is divided into two watersheds. Watershed #1 covers the majority of the site and discharges off site through a 30" RCP storm line located at the northwest corner of Lang Hall. This point has been identified as Discharge Point #1. Watershed #2 covers a smaller area located south of Higbee Hall, which sheet flows to a catch basin located in the existing parking lot. This catch basin has been identified as Discharge Point #2. Reference Appendix B, Existing Conditions Watershed Map, for more detailed information.

Table 2-1 below provides a summary of the land coverage, before development of the project site.

<b>Table 2-1 Land Coverage, Existing Conditions</b>		
<b>Characteristics</b>	<b>Watershed #1 (acres)</b>	<b>Watershed #2 (acres)</b>
Impervious	1.180	0.061
Landscape	1.076	0.204
<b>TOTAL</b>	<b>2.256</b>	<b>0.265</b>

**Soils:** The predominant site soil type is HuB, a Hudson silt loam complex. This soil series has an SCS Hydrologic Soil Group C classification. Group C soils have low infiltration rates when thoroughly wetted and consist chiefly of soils with a layer that impedes downward movement of water and have a low rate of water transmission. Refer to Appendix D – Soils Boundary Map for soils data.

### 2.4 Proposed Site Description

The proposed project site is generally made up of new concrete and brick walks, pedestrian plaza, seat walls, curbs, site furnishings, stormwater management, erosion control, landscape plantings and lawn areas. The proposed project site is comprised of five sub-watersheds.

Watershed #1.1 encompasses a portion of the main plaza and a lawn area which sheet flows to Rain Garden #1 for water quality treatment.

Watershed #1.2 encompasses a portion of the main plaza and a lawn area which sheet flows to Rain Garden #2 for water quality treatment.

Watershed #1.3 is the larger watershed which includes the remaining watershed area for discharge point #1. This area is conveyed by storm piping to the underground sand filter for water quality treatment. The discharge point for this watershed is DP-1.

Watershed #2.1 covers a smaller area located south of Higbee Hall, which sheet flows to the Bioretention area for water quality treatment. The discharge point for this watershed is DP-2.

Reference Appendix C, Proposed Conditions Watershed Map, for more detailed information.

Table 2-2 below, provides a summary of the land coverage, after development of the project site.

<b>Table 2-2 Land Coverage, Proposed Conditions</b>				
<b>Characteristics</b>	<b>Watershed 1.1 (acres)</b>	<b>Watershed 1.2 (acres)</b>	<b>Watershed 1.3 (acres)</b>	<b>Watershed 2.1 (acres)</b>
Impervious	0.050	0.088	0.712	0.112
Landscape	0.121	0.158	0.783	0.182
<b>Totals</b>	<b>0.171</b>	<b>0.246</b>	<b>1.495</b>	<b>0.294</b>

## 2.5 General Construction Schedule

It is anticipated that construction will begin in late spring 2011 and be completed late summer 2011.

## Section 3.0 – Stormwater Management Practices

### 3.1 Overview

This Stormwater Management Program has been designed to assure that water quality criteria are met and that post-development peak runoff rates will be equal to or less than pre-development peak runoff rates for the full range of design storms. As previously mentioned, the developed Project site results in no increase in impervious area or changes to hydrology that increases the discharge rate from the site. Total pre-developed impervious area is 1.241 acres (see table 2-1) and total post-developed impervious area is 0.962 (see table 2-2). In accordance with Chapter 9, page 9-5 of the NYSDEC Design Manual, if redevelopment results in no increase in impervious area or changes to hydrology that increases the discharge rate from the site, the channel protection volume (one-year), ten-year and one hundred-year water quantity controls criteria do not apply. As such, post-development peak runoff rates will be equal to or less than pre-development peak runoff rates for the full range of design storms.

The pre- and post-development runoff rates provided in this report were calculated using the computer software program entitled *HydroCAD 8.50*, by HydroCAD Software Solutions, LLC. This program

incorporates the methodology used in SCS TR-20 and TR-55 to compute and route flood hydrographs. A Type II rainfall distribution was used for the 1, 10, and 100-year, 24-hour design storms.

Runoff from disturbed areas will be collected by a combination of sheet flows and drainage piping, which will convey stormwater runoff to the stormwater management practice (SMP) selected for water quality treatment.

The quality and quantity mitigation criteria that will be incorporated into the design are as follows:

1. Provide for treatment of the Water Quality Volume,  $WQ_v$ , defined as 90% of the average annual stormwater runoff. This requirement is met through the installation of the underground sand filter, dry swales and rain gardens.
2. Stream Channel Protection Volume ( $C_{pv}$ ) for a redevelopment project is not required if there is no increase in impervious area or changes to hydrology that increases the discharge rate.
3. Overbank Flood control ( $Q_b$ ) for a redevelopment project is not required if there is no increase in impervious area or changes to hydrology that increases the discharge rate.
4. Extreme Storm control ( $Q_r$ ) for a redevelopment project is not required if there is no increase in impervious area or changes to hydrology that increases the discharge rate.

The Water Quality (WQ) management measures and designs described herein are in accordance with the pertinent portions of Chapters 4 through 9 of the NYSDEC Design Manual. The objective of the WQ management system is to meet the pollutant removal goals by capturing and treating 90% of the average annual stormwater runoff volume, otherwise known as the Water Quality Volume ( $WQ_v$ ). Chapter 4 of the NYSDEC Design Manual provides the following equation to determine the  $WQ_v$  (in acre-feet of storage):

$$WQ_v = \frac{(P)(R_v)(A)}{12}$$

Where:

$WQ_v$  = water quality volume (acre-feet)

P = 90% Rainfall Event Number (see Figure 4.1, DEC Design Manual)

$R_v$  =  $0.05 + 0.009(I)$ , where I is the percent of impervious cover

A = site area (acres)

It is assumed that by meeting the  $WQ_v$  requirements through employment of acceptable Stormwater Management Practices (SMP) listed in Table 5.1 of the DEC Design Manual, the Project will meet water quality objectives. Acceptable SMP for water quality treatment meet the following criteria:

- > Capture and treat the full water quality volume ( $WQ_v$ ).
- > 80% Total Suspended Solids (TSS) removal and 40% Total Phosphorous (TP) removal.
- > Acceptable longevity in the field.

- > Incorporate a pretreatment mechanism.

**3.2 WATERSHED DATA – EXISTING CONDITIONS**

The existing site is divided into two (2) primary watersheds. Each watershed area has its own discharge point, referred to as Discharge Points DP-1 and DP-2. Each of these Discharge Points will serve as common locations for all existing and proposed runoff calculations to be based upon. Both of these watershed areas and discharge points are shown on the *Existing Conditions Watershed Map* contained in Appendix B. Existing runoff calculations were performed by utilizing Soil Conservation Service TR-55 methodology and the HydroCAD 8.5 computer program. Detailed calculations for the existing drainage conditions are contained in Appendix B.

Table 3-1 below provides a summary of the existing peak discharge rates and runoff volumes for each watershed area.

<b>Table 3-1 Existing Peak Discharge Rates and Runoff Volumes</b>						
<b>Watershed</b>	<b>Existing 1-yr Storm</b>		<b>Existing 10-yr Storm</b>		<b>Existing 100-yr Storm</b>	
	<b>Rate (cfs)</b>	<b>Volume (ac-ft)</b>	<b>Rate (cfs)</b>	<b>Volume (ac-ft)</b>	<b>Rate (cfs)</b>	<b>Volume (ac-ft)</b>
Watershed #1	4.38	0.198	9.16	0.430	13.05	0.627
Watershed #2	0.24	0.015	0.63	0.038	0.97	0.059
<b>Totals</b>	<b>4.62</b>	<b>0.213</b>	<b>9.79</b>	<b>0.468</b>	<b>14.02</b>	<b>0.686</b>

**3.3 WATERSHED DATA – PROPOSED CONDITIONS**

After completion of the Project improvements, a decrease in storm runoff will result. Storm runoff will be collected and conveyed to the stormwater management facilities for water quality treatment. The location of the stormwater management facilities is shown on the *Proposed Conditions Watershed Map* contained in Appendix C.

Table 3-2 on the following page provides a summary of the proposed peak discharge rates and runoff volumes for each watershed area.

<b>Table 3-2 Proposed Peak Discharge Rates and Runoff Volumes</b>						
<b>Watershed</b>	<b>Proposed 1-yr Storm</b>		<b>Proposed 10-yr Storm</b>		<b>Proposed 100-yr Storm</b>	
	<b>Rate (cfs)</b>	<b>Volume (ac-ft)</b>	<b>Rate (cfs)</b>	<b>Volume (ac-ft)</b>	<b>Rate (cfs)</b>	<b>Volume (ac-ft)</b>
Watershed # 1.1	0.240	0.010	0.570	0.026	0.870	0.039
Watershed #1.2	0.370	0.017	0.860	0.040	1.270	0.061
Watershed #1.3	2.630	0.117	5.790	0.264	8.410	0.392
Watershed #2.1	0.450	0.020	1.050	0.048	1.550	0.072
<b>Totals</b>	<b>3.690</b>	<b>0.164</b>	<b>8.270</b>	<b>0.378</b>	<b>12.100</b>	<b>0.564</b>

Detailed calculations for the proposed drainage conditions are contained in Appendix C.

A comparison of Pre- and Post-development peak runoff rates is provided in Table 3-3 below.

<b>Table 3-3 Existing vs. Proposed Peak Discharge Rates</b>						
<b>Discharge Point</b>	<b>1-yr Storm</b>		<b>10-yr Storm</b>		<b>100-yr Storm</b>	
	<b>Pre-Dev. Rate (cfs)</b>	<b>Post-Dev. Rate (cfs)</b>	<b>Pre-Dev. Rate (cfs)</b>	<b>Post-Dev. Rate (cfs)</b>	<b>Pre-Dev. Rate (cfs)</b>	<b>Post-Dev. Rate (cfs)</b>
DP-1	4.38	3.24	9.16	7.22	13.05	10.54
DP-2	0.24	0.45	0.63	1.05	0.97	1.55
<b>Totals</b>	<b>4.62</b>	<b>3.69</b>	<b>9.79</b>	<b>8.27</b>	<b>14.02</b>	<b>12.09</b>

The proposed peak runoff rates for discharge point 1 are less than the existing peak runoff rates for all design storms.

The proposed peak runoff rates for discharge point 2 are slightly higher than the existing peak runoff rates. However, when analyzed at discharge point # 3, the overall impervious area for the project site is reduced by 0.28 acres. The developed Project site as a whole results in no increase in impervious area or changes to hydrology that increases the discharge rate at Discharge Point 3. See Stormwater Discharge Map provided in Appendix P.

### 3.4 Stormwater Management Practices (SMP) Design

*Green Infrastructure Practices:* In accordance with Chapter 5, the following Green Infrastructure Practice is included in watershed 1.1 and 1.2.

**Watershed #1.1 Water Quality:** In watershed #1.1, water quality volume will be captured and treated by the implementation of a Rain Garden. Below is the sizing criteria for Rain Garden #1. The Rain Garden shall hold 100% of the Water Quality Volume. Sheet flows convey surface runoff to the Rain Garden.

$$WQv \text{ required} = 183 \text{ CF}$$

$$WQv < Vsm + Vdl + (Dp \times Arg)$$

$$Vsm = Arg \times Dsm \times nsm = 250 \times 2 \times .20 = 100 \text{ CF}$$

$$Vdl = Arg \times Ddl \times ndl = 250 \times 1 \times .40 = 100 \text{ CF}$$

$$WQv < Vsm + Vdl + (Dp \times Arg) = 100\text{CF} + 100 \text{ CF} + (.5 \times 250\text{SF}) = 200 + 125 = 325 \text{ CF}$$

$WQv = 183 \text{ CF}$  which is less than 325 CF, good

**Watershed #1.1 Water Quantity:** In accordance with Chapter 9, page 9-5 of the NYSDEC Design Manual, if redevelopment results in no increase in impervious area or changes to hydrology that increases the discharge rate from the site, the one-year, ten-year and one hundred year water quantity criteria do not apply.

**Watershed #1.2 Water Quality:** In watershed #1.2, water quality volume will be captured and treated by the implementation of a Rain Garden. Below is the sizing criteria for Rain Garden #2. Sheet flows convey surface runoff to the Rain Garden.

$$WQv \text{ required} = 317 \text{ CF}$$

$$WQv < Vsm + Vdl + (Dp \times Arg)$$

$$Vsm = Arg \times Dsm \times nsm = 250 \times 2 \times .20 = 100 \text{ CF}$$

$$Vdl = Arg \times Ddl \times ndl = 250 \times 1 \times .40 = 100 \text{ CF}$$

$$WQv < Vsm + Vdl + (Dp \times Arg) = 100\text{CF} + 100 \text{ CF} + (.5 \times 250\text{SF}) = 200 + 125 = 325 \text{ CF}$$

$WQv = 317 \text{ CF}$  which is less than 325 CF, good

**Watershed #1.2 Water Quantity:** In accordance with Chapter 9, page 9-5 of the NYSDEC Design Manual, if redevelopment results in no increase in impervious area or changes to hydrology that increases the discharge rate from the site, the one-year, ten-year and one hundred year water quantity criteria do not apply.

**Watershed #1.3 Water Quality:** In watershed #1.3, water quality volume will be captured and treated by the implementation of a standard practice. Below is the sizing criteria for the SMP Underground Sand Filter (F-2).

*Sizing criteria – SMP Underground Sand Filter (F-2):* The required filter bed area is computed using the following equation, in accordance with Chapter 6, page 6-52 of the NYSDEC Design Manual.

$$\text{Surface area of filter bed (Af)} = (\text{WQv}) (\text{df}) / (\text{k}) (\text{hf} + \text{df}) (\text{tf})$$

$$\text{Af} = 2485 \times 2 / 3.5 (3) \times 1.67$$

$$\text{Af} = 4970 / 17.53$$

$$\text{Af} = 283 \text{ SF (approximately 10' wide x 28' long)}$$

Pretreatment is provided for in the wet pool chamber.

**Watershed #1.3 Water Quantity:** In accordance with Chapter 9, page 9-5 of the NYSDEC Design Manual, if redevelopment results in no increase in impervious area or changes to hydrology that increases the discharge rate from the site, the one-year, ten-year and one hundred year water quantity criteria do not apply.

**Watershed #2.1 Water Quality:** In watershed #2.1, water quality volume will be captured and treated by the implementation of a standard practice. Below is the sizing criteria for the Bioretention (F-5) area. Sheet flow over a grass filter strip and a grass swale convey surface runoff to the Bioretention area.

$$\text{WQv required} = 397 \text{ CF}$$

*Sizing criteria – SMP Bioretention (F-5):* The required filter bed area is computed using the following equation, in accordance with Chapter 6, page 6-52 of the NYSDEC Design Manual.

$$\text{Surface area of filter bed (Af)} = (\text{WQv}) (\text{df}) / (\text{k}) (\text{hf} + \text{df}) (\text{tf})$$

$$\text{Af} = 397 \times 2.5 / 0.5 (.5+2.5) \times 2$$

$$\text{Af} = 992.5 / 3$$

$$\text{Af} = 331 \text{ SF}$$

**Watershed #2.1 Water Quantity:** The proposed peak runoff rates for discharge point 2 are slightly higher than the existing peak runoff rates. However, when analyzed at discharge point # 3, the overall impervious area for the project site is reduced by 0.28 acres. The developed Project site as a whole results in no increase in impervious area or changes to hydrology that increases the discharge rate at Discharge Point 3. See Stormwater Discharge Map provided in Appendix P. In accordance with Chapter 9, page 9-5 of the NYSDEC Design Manual, if redevelopment results in no increase in

impervious area or changes to hydrology that increases the discharge rate from the site, the one-year, ten-year and one hundred year water quantity criteria do not apply. The overall project site impervious area is reduced by 0.28 acres.

### **3.5 Impact on Historic Places**

To obtain coverage under the General Permit, the SWMP must include documentation supporting the Permit eligibility with regard to part I.D.10. (Historic Places). The SWMP is required to provide a description of measures necessary to avoid or minimize impacts on places listed, or eligible for listing, on the State or National Register of Historic Places.

The closest area of Archeological Significance according to information obtained from the NYS Historic Preservation Office (SHPO) GIS database is Emma Willard School, which is approximately 1.32 miles from the project site. This data indicates that the project site is outside of the 1 mile radius of sites currently on the State or National Historic Register. Reference Appendix N, SHPO Map, for more detailed information.

## **Section 4.0 – Erosion and Sediment Controls**

### **4.1 Temporary Measures During Construction**

Stormwater runoff from developing areas can result in off-site problems including erosion and water quality degradation due to sedimentation and other non-point source pollutants. These impacts are greatest during construction periods when soils are without any cover. The General Permit GP-0-10-002 references the NYSDEC's New York Standards and Specifications for Erosion and Sediment Control (NYSSESC) as the required guidelines for design.

Temporary erosion and sediment control measures to be employed during construction shall comply with the NYSSESC and include sediment control fencing, dust control, stabilized construction entrance, storm sewer inlet protection and construction sequencing. These measures shall be implemented per the criteria presented in the NYSSESC. By reference, these guidelines are made an integral part of this SWP and the construction project.

Erosion control measures will be implemented as indicated below to minimize the amount of sediment leaving the Site in stormwater discharges. The specific timing for installation of the temporary erosion and sediment control measures will be dependent on the actual staging that may need to be adjusted during construction, however, the general requirements are as follows:

1. Construction shall be sequenced in accordance with the construction sequence notes below.
2. Any disturbed areas that are left exposed more than 14 days, and are not subject to construction traffic, shall immediately receive a temporary mulching and/or seeding. If the season prevents the



establishment of a permanent cover, the disturbed areas will be temporarily mulched with straw, or equivalent material.

3. Paved roadways shall be kept clean at all times.
4. The site shall at all times be graded and maintained such that all sediment laden stormwater runoff is diverted to soil erosion and sediment control facilities.
5. All storm drainage outlets shall be stabilized, as required, before the discharge points become operational.
6. Dust control - water shall be applied by sprinkler or water truck during grading operations to minimize sediment transport and maintain acceptable air quality conditions. Repetitive treatments shall be done as needed until grades are stabilized.
7. The contractor shall inspect the effectiveness and condition of erosion control devices during storm events, after each rainfall of 0.5 inch magnitude or greater, prior to weekends and prior to forecasted storm events.
8. The contractor shall repair or replace damaged erosion control devices immediately or as soon as practical.
9. The contractor shall be prepared to implement interim drainage controls and erosion control measures as may be necessary during the course of construction to prevent sediment laden runoff from leaving the construction site.
10. The contractor shall make available onsite all equipment, materials and labor necessary to effect emergency erosion control and drainage improvements as soon as practical.
12. All soil erosion and sedimentation control measures shall be maintained by the contractor in accordance with the stormwater pollution prevention plan until final acceptance of the site work by the owner. Upon certification of final acceptance, the owner will assume responsibility for continued maintenance of permanent soil erosion and sedimentation control measures after stabilization is achieved.

Construction sequencing notes:

1. Contractor to stake out all new work in the field. Identify the limits of clearing with marking tape.
2. Install sediment control fence at locations shown on the plans.
3. Perform the required tree clearing and grubbing.
4. Grade the site and stabilize the exposed soil with seed and mulch as appropriate.
5. Construct the storm sewer system and other utility work as soon as possible.
6. Construct inlet protection at each of the newly installed storm drain inlets.

7. As work progresses, disturbed areas shall be stabilized as soon as possible after construction has been completed in the area, but in no case more than 14 days after the construction in that portion of the site has temporarily or permanently ceased. Stabilize areas with seed and mulch.
8. After all disturbed areas have been stabilized, and the final inspection has been performed by the owner's representative, remove all remaining temporary erosion and sediment control devices.

It is anticipated that the prevention of litter and/or general construction debris from becoming a pollutant source in stormwater discharges will not be a problem. The Owner will make a specific point to the contractors involved that the Site is to be kept as clean and orderly as possible during construction. Trash and debris receptacles will be used and cleaned out as necessary.

Precautions shall be taken for on-site storage of construction and waste materials to reduce pollutants from entering stormwater discharges. If necessary, the locations can be fenced off with sediment control fence. It is anticipated that no unusual materials will be stored at the site.

#### **4.2 Permanent Measures**

Permanent erosion and sediment control measures to be implemented for the Project include establishment of landscaping beds, lawn areas and new pavements. Permanent Stormwater Management Practices include installation of an underground sand filter, dry swales and rain gardens. Construction details of these practices are provided in Appendix F. Locations are shown on the Proposed Conditions Watershed Map in Appendix C.

#### **4.3 Stormwater Management Practices Maintenance**

Maintenance of the stormwater water quality practices is necessary to ensure that systems function as designed. See Appendix L for operations and maintenance checklists of the proposed Stormwater Management Practices.

1. The Underground Sand Filter should be inspected every 3 months for any debris that may restrict flow rates. Maintenance or cleaning of the unit should occur semiannually or as needed depending on suspended solid accumulation.
2. The rain garden and bioretention area should also be inspected every 3 months for any debris that may restrict flow rates. Maintenance or cleaning of these units should occur semiannually or as needed depending on suspended solid accumulation.

### **Section 5.0 – Site Assessment and Inspections**

Site assessment and inspections shall comply with the requirements of Parts III.D.3, III.D.4 and III.D.5 of the General Permit. A sample Site Assessment and Inspection log is contained in Appendix K.

### **5.1 Before Construction**

A qualified professional, defined in the General Permits as a person knowledgeable in the principles and practice of erosion and sediment controls, such as a Licensed Professional Engineer, Landscape Architect, Certified Professional in Erosion and Sediment Control (CPESC), or soil scientist shall conduct an assessment of the Site prior to the commencement of construction and certify in an inspection report that the appropriate erosion and sediment controls described herein have been adequately installed or implemented to ensure overall preparedness of the Site for the commencement of construction.

### **5.2 During Construction**

Following the commencement of construction, Site inspections shall be conducted by a qualified professional at least every seven (7) calendar days. During each inspection, the qualified professional shall record the following information:

1. On a site map, the extent of all disturbed site areas and drainage pathways along with the areas expected to undergo initial disturbance or significant Site work with the next 14-day period.
2. On a Site map, the areas of the Site that have undergone temporary or permanent stabilization.
3. The site areas that have not undergone active Site work during the previous 14-day period.
4. The approximate degree of sediment accumulation in all sediment control practices as a percentage of the sediment storage volume, as well as the depth of sediment within containment structures.
5. The maintenance requirements of all erosion and sediment control practices.
6. All deficiencies that are identified with the implementation of the SWPPP.

A Site logbook of the inspection reports shall be kept at the Site. A sample report form is included in Appendix K. The Owner shall post at the Site, in a publicly accessible location, a summary of the Site inspection activities on a monthly basis.

Soil stabilization measures shall be initiated as soon as practicable in portions of the Site where construction activities have temporarily or permanently ceased, but in no case more than 14-days after the construction activity in that portion of the site has temporarily or permanently ceased. Note that this requirement does not apply when either: 1) The initiation of stabilization measures by the 14<sup>th</sup> day after construction activity temporarily or permanently ceased is precluded by snow cover or frozen ground conditions; or 2) The construction activity on a portion of the Site is temporarily ceased, and earth-disturbing activities will be resumed within twenty-one (21) days.

### **5.3 End of Construction**

A qualified professional shall perform a final Site inspection and certify that the Site has undergone final stabilization and that all temporary erosion and sediment controls not needed for long-term erosion control have been removed. Reference SWMP Section 1.3 for the requirements for filing the Notice of Termination.

### **5.4 After Construction**

Once construction has been completed and all disturbed areas have been stabilized, it will be the sole responsibility of the Owner to perform routine inspections to ensure that the permanent erosion and sediment control measures remain in satisfactory condition. The Site should be inspected on a routine basis (weekly) and after major storm events (greater than 0.5" rainfall) to identify areas where maintenance may be required.

Storm sewer systems should be inspected on a routine basis to monitor sediment levels in catch basin structures. The hydrodynamic separator and dry well water quality units should be inspected and cleaned in accordance with manufacturers recommendations.

## **Section 6.0 – Monitoring, Reporting and Retention of Records**

Monitoring, reporting and retention of records shall comply with the requirements of Part IV of the General Permit.

### **6.1 Monitoring and Reporting**

The NYSDEC may, at its sole discretion, require monitoring of discharge(s) from the permitted construction activity after notifying the permittee in writing of the basis for such monitoring, the parameters and frequency at which monitoring shall occur and the associated reporting requirements, if any.

### **6.2 Retention of Records**

The Owner shall retain copies of the SWMP and any reports submitted in conjunction with the General Permit, and records of all data used to complete the NOI to be covered by the permit, for a period of at least three (3) years from the date that the Site is finally stabilized. A copy of the SWMP shall be kept at the construction Site from the date of initiation of construction activities to the date of final stabilization.

A written summary of the status of the SWMP with respect to the General Permit shall be prepared at a minimum frequency of every three (3) months during which coverage under this permit exists. This

summary should address the status of achieving each component of the SWMP and shall be signed and made available for review in the same manner as the original SWMP.

## **Section 7.0 – Standard Permit Conditions**

An overview of the standard permit conditions that are most likely to be encountered is provided below and the complete, detailed conditions can be referenced in Part V of the General Permit.

### **7.1 Duty to Comply**

The Owner must comply with all conditions of the General Permit. The Contractor and all subcontractors must comply with the terms of the SWMP.

### **7.2 Duty to Mitigate**

The Owner and all contractors shall take all reasonable steps to minimize or prevent any discharge in violation of the General Permit, which has a reasonable likelihood of adversely affecting human health or the environment.

### **7.3 Duty to Provide Information**

The Owner shall furnish any information requested by any agency with regulatory or review authority over the Project for the purpose of determining compliance with the General Permit or compliance with any other regulatory requirements placed on the Project in conjunction with the permit. Failure to provide requested information shall be a violation of the General Permit.

The SWMP and the inspection reports are public documents that the Owner must make available for inspection, review and copying by any person within five (5) business days of the Owner receiving a written request by any such person. Copying of such documents will be done at the requester's expense.

If the Owner becomes aware of any relevant facts that have not been submitted, or that information submitted is incorrect, he/she shall promptly submit such facts or correct information.

### **7.4 Signatory Requirements**

Signatory requirements for the SWMP, NOI, NOT, reports, certifications or information required by the General Permit, or submitted pursuant to the General Permit are described in detail in Section V.H of the General Permit.

### **7.5 Inspection and Entry**

The Owner shall allow the NYSDEC, upon the presentation of credentials and other documents as may be required by law, to:

1. Enter the Owner's premises where a regulated facility or activity is located or conducted or where records must be kept under the conditions of the General Permit.
2. Have access to and copy at reasonable times, any records that must be kept under the conditions of the General Permit.
3. Inspect at reasonable times and facilities or equipment (including monitoring and control equipment).

## **7.6 Permit Actions**

At the Department's sole discretion, the General Permit may, at any time, be modified, revoked or renewed. The filing of a request by the Owner for a permit modification, revocation and reissuance, termination, a notification of planned changes or anticipated noncompliance does not stay compliance with any terms of the General Permit.

## **Section 8.0 – Summary and Conclusions**

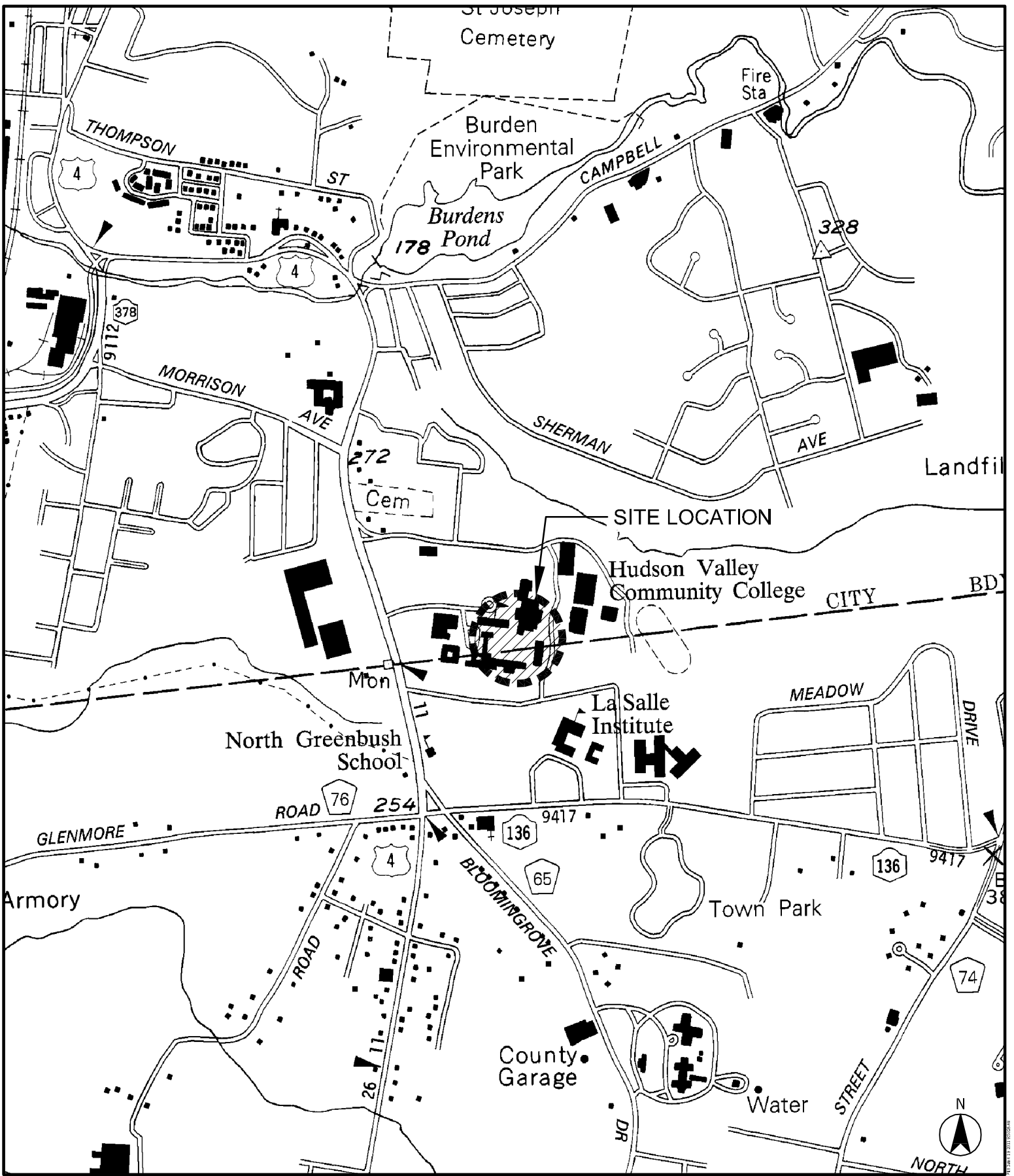
Based on the information presented in this report, the implementation of the proposed Stormwater Management Program for the Project will meet the design objectives stated in this Report.

## **Section 9.0 – References**

1. New York State Department of Environmental Conservation General Permit No. GP-0-10-002, SPDES General Permit for Stormwater Discharges from Construction Activity.
2. New York State Standards and Specifications for Erosion and Sediment Control, August 2005.
3. New York State Stormwater Management Design Manual, prepared by the New York State Department of Environmental Conservation, August 2010.
4. TR-55 Urban Hydrology for Small Watersheds. June 1986, Published by the U.S. Soil Conservation Service, Washington, D.C.
5. HydroCAD 8.5 Computer Program, by HydroCAD Software Solutions, LLC.
6. Soil Survey for Rensselaer County, prepared cooperatively by the Soil Conservation Service and the Cornell University Agricultural Experiment Station, 1993.

**APPENDIX A**

Site Location Map



**SARATOGA ASSOCIATES**

HUDSON VALLEY COMMUNITY COLLEGE

SITE LOCATION MAP

SARATOGA ASSOCIATES PROJECT # 2010-043.18U

DATE: 03-04-11

DRAWN BY: SRD

CHECKED BY: RJM

Landscape Architects, Architects,  
Engineers, and Planners, P.C.

RECONSTRUCTION OF THE  
MAIN ACADEMIC QUADRANGLE

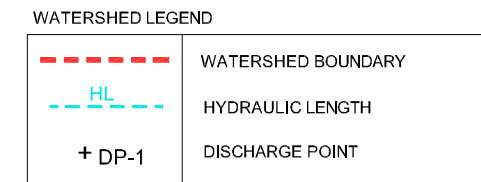
NEW YORK CITY > SARATOGA SPRINGS > SYRACUSE

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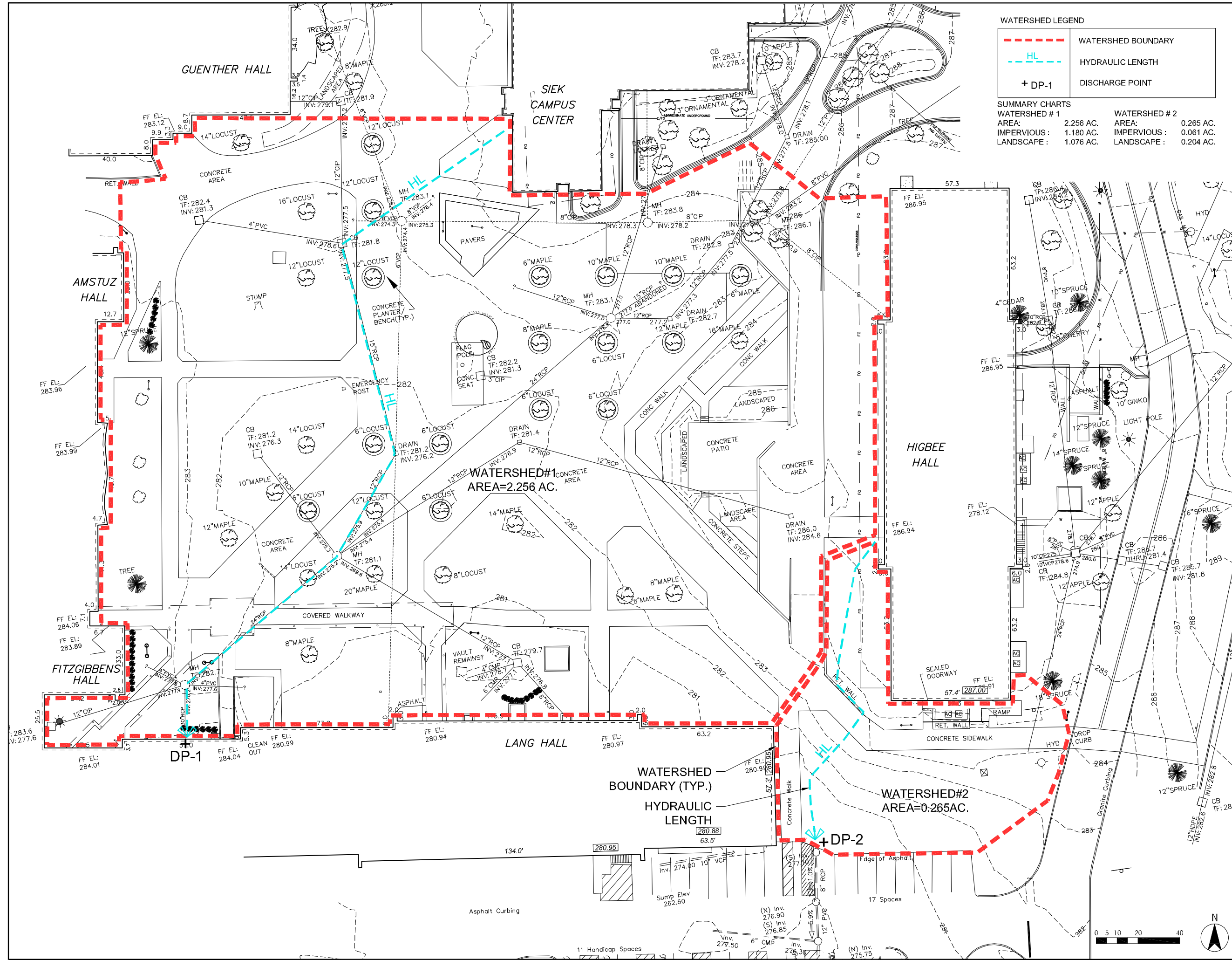
## **APPENDIX B**

Existing Conditions Watershed Map and Hydrocad Calculations



**SUMMARY CHARTS**

WATERSHED # 1		WATERSHED # 2	
AREA:	2.256 AC.	AREA:	0.265 AC.
IMPERVIOUS:	1.180 AC.	IMPERVIOUS:	0.061 AC.
LANDSCAPE:	1.076 AC.	LANDSCAPE:	0.204 AC.



## HUDSON VALLEY COMMUNITY COLLEGE



### RECONSTRUCTION OF THE MAIN ACADEMIC QUADRANGLE TROY, NEW YORK

**REVISIONS**

NO.	DATE	DESCRIPTION	DRAWN	CHK

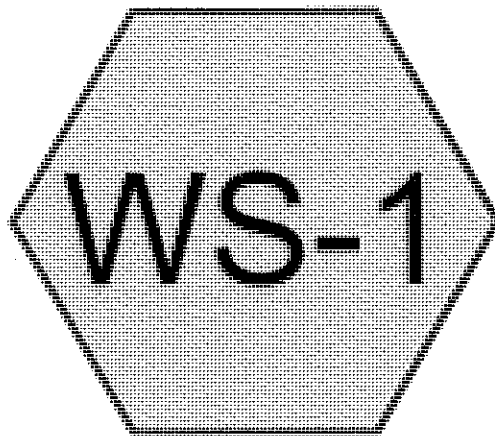
SARATOGA ASSOCIATES PROJECT # 10043.18U  
(UNLESS OTHERWISE NOTED OR OTHERWISE TO THIS DOCUMENT IS IN ACCORDANCE WITH SECTION 2209 OF THE NEW YORK STATE EDUCATION LAW.)

DATE: 03-04-11  
 DRAWN BY: SRD  
 CHECKED BY: RJM  
 REVISIONS: 0

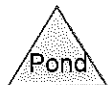
EXISTING CONDITIONS  
 WATERSHED  
 MAP

# WS-1





# Watershed # 1



**Area Listing (all nodes)**

<u>Area (acres)</u>	<u>CN</u>	<u>Description (subcats)</u>
1.076	74	>75% Grass cover, Good, HSG C (WS-1)
1.180	98	Paved walks and plaza's (WS-1)
<hr/>		
2.256		

**HVCC\_WS-1\_Existing**

Type II 24-hr 1 Year Rainfall=2.30"

Prepared by Saratoga Associates

Page 3

HydroCAD® 8.00 s/n 003576 © 2006 HydroCAD Software Solutions LLC

3/29/2011

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points

Runoff by SCS TR-20 method, UH=SCS

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment WS-1: Watershed # 1**

Runoff Area=2.256 ac Runoff Depth>1.05"

Flow Length=372' Tc=6.9 min CN=87 Runoff=4.38 cfs 0.198 af

**Total Runoff Area = 2.256 ac Runoff Volume = 0.198 af Average Runoff Depth = 1.05"**

**47.70% Pervious Area = 1.076 ac 52.30% Impervious Area = 1.180 ac**

**HVCC\_WS-1\_Existing**

Type II 24-hr 1 Year Rainfall=2.30"

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**Subcatchment WS-1: Watershed # 1**

Runoff = 4.38 cfs @ 11.98 hrs, Volume= 0.198 af, Depth> 1.05"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 1 Year Rainfall=2.30"

Area (ac)	CN	Description
1.076	74	>75% Grass cover, Good, HSG C
1.180	98	Paved walks and plaza's
2.256	87	Weighted Average
1.076		Pervious Area
1.180		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	40	0.0170	0.12		<b>Sheet Flow, sheet flow - lawn</b> Grass: Short n= 0.150 P2= 2.70"
0.8	50	0.0170	1.03		<b>Sheet Flow, sheet flow - pavement</b> Smooth surfaces n= 0.011 P2= 2.70"
0.6	282	0.0120	7.70	13.60	<b>Circular Channel (pipe), RCP Storm Pipe</b> Diam= 18.0" Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.011 Concrete pipe, straight & clean
6.9	372	Total			

**HVCC\_WS-1\_Existing**

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Type II 24-hr 10 Year Rainfall=3.80"

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Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points

Runoff by SCS TR-20 method, UH=SCS

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment WS-1: Watershed # 1**

Runoff Area=2.256 ac Runoff Depth>2.28"

Flow Length=372' Tc=6.9 min CN=87 Runoff=9.16 cfs 0.430 af

**Total Runoff Area = 2.256 ac Runoff Volume = 0.430 af Average Runoff Depth = 2.28"**

**47.70% Pervious Area = 1.076 ac 52.30% Impervious Area = 1.180 ac**

**Subcatchment WS-1: Watershed # 1**

Runoff = 9.16 cfs @ 11.98 hrs, Volume= 0.430 af, Depth> 2.28"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 10 Year Rainfall=3.80"

Area (ac)	CN	Description
1.076	74	>75% Grass cover, Good, HSG C
1.180	98	Paved walks and plaza's
2.256	87	Weighted Average
1.076		Pervious Area
1.180		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	40	0.0170	0.12		<b>Sheet Flow, sheet flow - lawn</b> Grass: Short n= 0.150 P2= 2.70"
0.8	50	0.0170	1.03		<b>Sheet Flow, sheet flow - pavement</b> Smooth surfaces n= 0.011 P2= 2.70"
0.6	282	0.0120	7.70	13.60	<b>Circular Channel (pipe), RCP Storm Pipe</b> Diam= 18.0" Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.011 Concrete pipe, straight & clean
6.9	372	Total			



**HVCC\_WS-1\_Existing**

Type II 24-hr 100 Year Rainfall=5.00"

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Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points

Runoff by SCS TR-20 method, UH=SCS

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment WS-1: Watershed # 1**

Runoff Area=2.256 ac Runoff Depth>3.34"

Flow Length=372' Tc=6.9 min CN=87 Runoff=13.05 cfs 0.627 af

**Total Runoff Area = 2.256 ac Runoff Volume = 0.627 af Average Runoff Depth = 3.34"**

**47.70% Pervious Area = 1.076 ac 52.30% Impervious Area = 1.180 ac**

**Subcatchment WS-1: Watershed # 1**

Runoff = 13.05 cfs @ 11.98 hrs, Volume= 0.627 af, Depth> 3.34"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 100 Year Rainfall=5.00"

Area (ac)	CN	Description
1.076	74	>75% Grass cover, Good, HSG C
1.180	98	Paved walks and plaza's
2.256	87	Weighted Average
1.076		Pervious Area
1.180		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	40	0.0170	0.12		<b>Sheet Flow, sheet flow - lawn</b> Grass: Short n= 0.150 P2= 2.70"
0.8	50	0.0170	1.03		<b>Sheet Flow, sheet flow - pavement</b> Smooth surfaces n= 0.011 P2= 2.70"
0.6	282	0.0120	7.70	13.60	<b>Circular Channel (pipe), RCP Storm Pipe</b> Diam= 18.0" Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.011 Concrete pipe, straight & clean
6.9	372	Total			



# Watershed # 2



**HVCC\_WS-2\_Existing**

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**Area Listing (all nodes)**

<u>Area (acres)</u>	<u>CN</u>	<u>Description (subcats)</u>
0.204	74	>75% Grass cover, Good, HSG C (WS-2)
0.061	98	Paved walks and plaza's (WS-2)
<hr/>		
0.265		

**HVCC\_WS-2\_Existing**

Type II 24-hr 1 Year Rainfall=2.30"

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Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points

Runoff by SCS TR-20 method, UH=SCS

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment WS-2: Watershed # 2**

Runoff Area=0.265 ac Runoff Depth>0.68"

Flow Length=165' Tc=15.4 min CN=80 Runoff=0.24 cfs 0.015 af

**Total Runoff Area = 0.265 ac Runoff Volume = 0.015 af Average Runoff Depth = 0.68"**

**76.98% Pervious Area = 0.204 ac 23.02% Impervious Area = 0.061 ac**

**HVCC\_WS-2\_Existing**

Type II 24-hr 1 Year Rainfall=2.30"

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**Subcatchment WS-2: Watershed # 2**

Runoff = 0.24 cfs @ 12.09 hrs, Volume= 0.015 af, Depth> 0.68"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
Type II 24-hr 1 Year Rainfall=2.30"

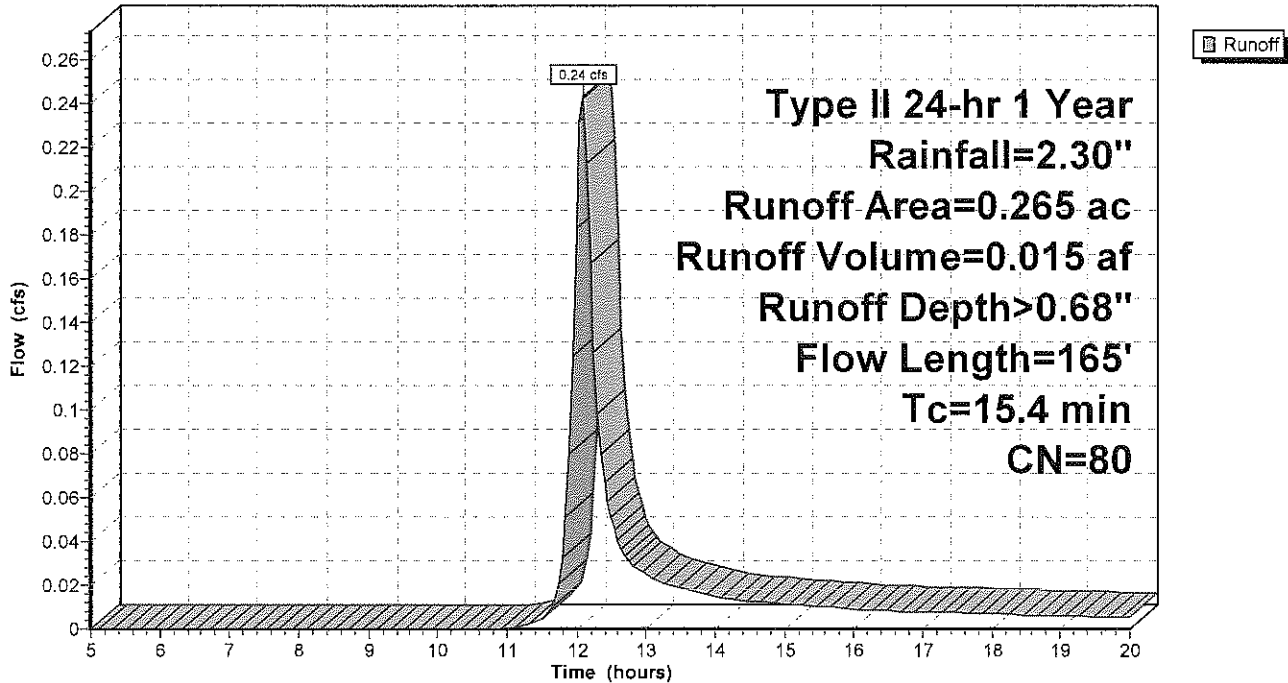
Area (ac)	CN	Description
0.204	74	>75% Grass cover, Good, HSG C
0.061	98	Paved walks and plaza's
0.265	80	Weighted Average
0.204		Pervious Area
0.061		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0	92	0.0200	0.15		Sheet Flow, sheet flow - lawn Grass: Short n= 0.150 P2= 2.70"
0.3	13	0.0200	0.84		Sheet Flow, sheet flow - pavement Smooth surfaces n= 0.011 P2= 2.70"
5.1	60	0.0460	0.20		Sheet Flow, sheet flow - lawn Grass: Short n= 0.150 P2= 2.70"
15.4	165	Total			

**Subcatchment WS-2: Watershed # 2**

Hydrograph



**HVCC\_WS-2\_Existing**

*Type II 24-hr 10 Year Rainfall=3.80"*

Prepared by Saratoga Associates

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Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points

Runoff by SCS TR-20 method, UH=SCS

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment WS-2: Watershed # 2**

Runoff Area=0.265 ac Runoff Depth>1.72"

Flow Length=165' Tc=15.4 min CN=80 Runoff=0.63 cfs 0.038 af

**Total Runoff Area = 0.265 ac Runoff Volume = 0.038 af Average Runoff Depth = 1.72"**

**76.98% Pervious Area = 0.204 ac 23.02% Impervious Area = 0.061 ac**

**Subcatchment WS-2: Watershed # 2**

Runoff = 0.63 cfs @ 12.08 hrs, Volume= 0.038 af, Depth> 1.72"

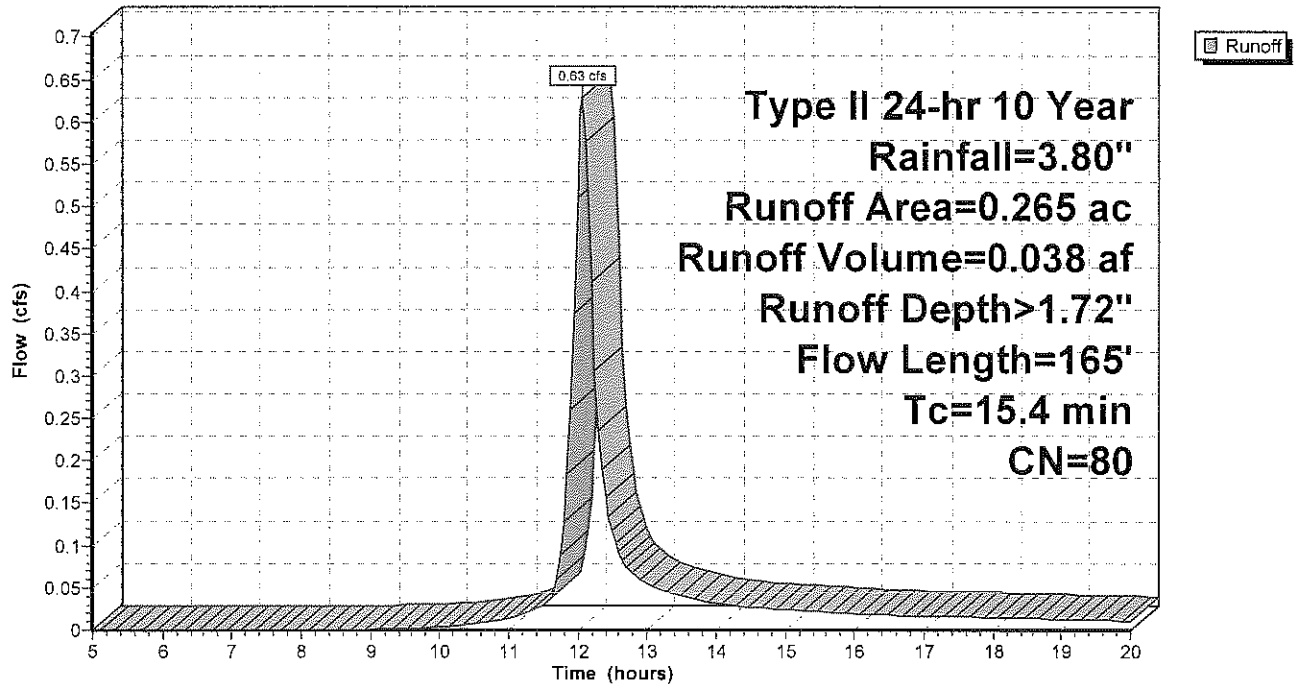
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
Type II 24-hr 10 Year Rainfall=3.80"

Area (ac)	CN	Description
0.204	74	>75% Grass cover, Good, HSG C
0.061	98	Paved walks and plaza's
0.265	80	Weighted Average
0.204		Pervious Area
0.061		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0	92	0.0200	0.15		Sheet Flow, sheet flow - lawn Grass: Short n= 0.150 P2= 2.70"
0.3	13	0.0200	0.84		Sheet Flow, sheet flow - pavement Smooth surfaces n= 0.011 P2= 2.70"
5.1	60	0.0460	0.20		Sheet Flow, sheet flow - lawn Grass: Short n= 0.150 P2= 2.70"
15.4	165	Total			

**Subcatchment WS-2: Watershed # 2**

Hydrograph





**HVCC\_WS-2\_Existing**

Type II 24-hr 100 Year Rainfall=5.00"

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Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points

Runoff by SCS TR-20 method, UH=SCS

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment WS-2: Watershed # 2**

Runoff Area=0.265 ac Runoff Depth>2.67"

Flow Length=165' Tc=15.4 min CN=80 Runoff=0.97 cfs 0.059 af

**Total Runoff Area = 0.265 ac Runoff Volume = 0.059 af Average Runoff Depth = 2.67"**

**76.98% Pervious Area = 0.204 ac 23.02% Impervious Area = 0.061 ac**

# HVCC\_WS-2\_Existing

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Type II 24-hr 100 Year Rainfall=5.00"

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## Subcatchment WS-2: Watershed # 2

Runoff = 0.97 cfs @ 12.07 hrs, Volume= 0.059 af, Depth> 2.67"

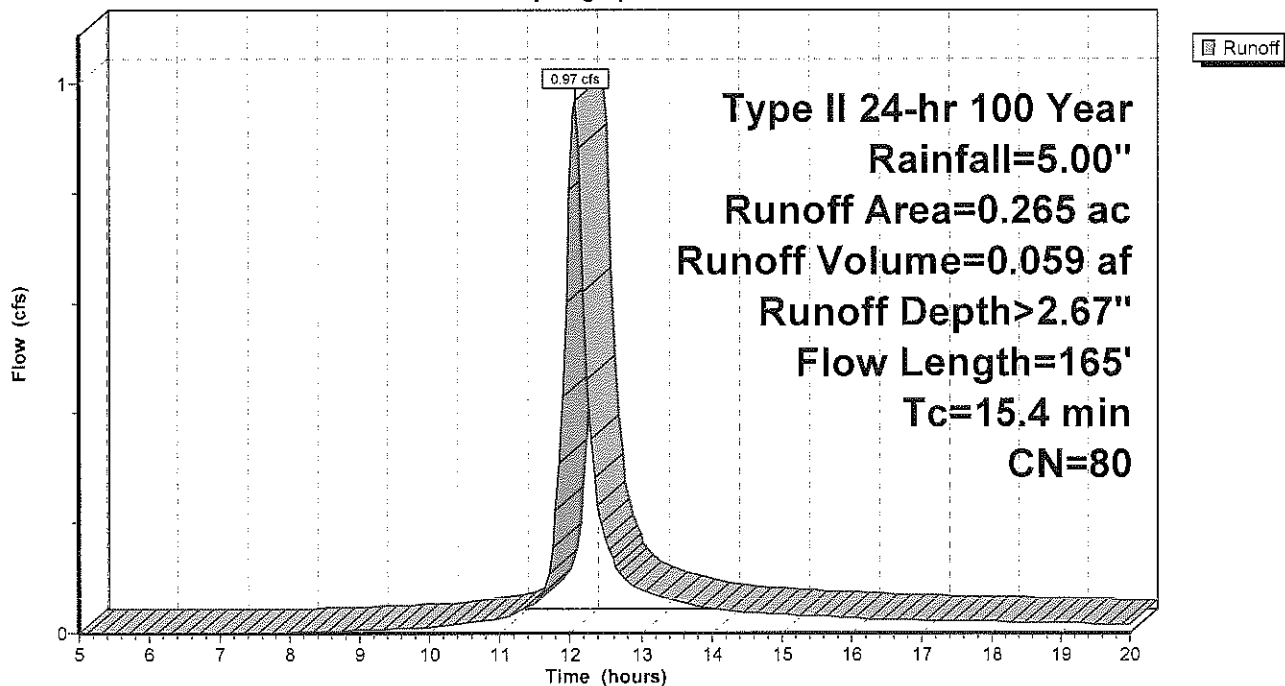
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
Type II 24-hr 100 Year Rainfall=5.00"

Area (ac)	CN	Description
0.204	74	>75% Grass cover, Good, HSG C
0.061	98	Paved walks and plaza's
0.265	80	Weighted Average
0.204		Pervious Area
0.061		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0	92	0.0200	0.15		Sheet Flow, sheet flow - lawn Grass: Short n= 0.150 P2= 2.70"
0.3	13	0.0200	0.84		Sheet Flow, sheet flow - pavement Smooth surfaces n= 0.011 P2= 2.70"
5.1	60	0.0460	0.20		Sheet Flow, sheet flow - lawn Grass: Short n= 0.150 P2= 2.70"
15.4	165	Total			

## Subcatchment WS-2: Watershed # 2

Hydrograph



## **APPENDIX C**

Proposed Conditions Watershed Map and HydroCadd Calculations

## HUDSON VALLEY COMMUNITY COLLEGE



### RECONSTRUCTION OF THE MAIN ACADEMIC QUADRANGLE TROY, NEW YORK

REVISIONS

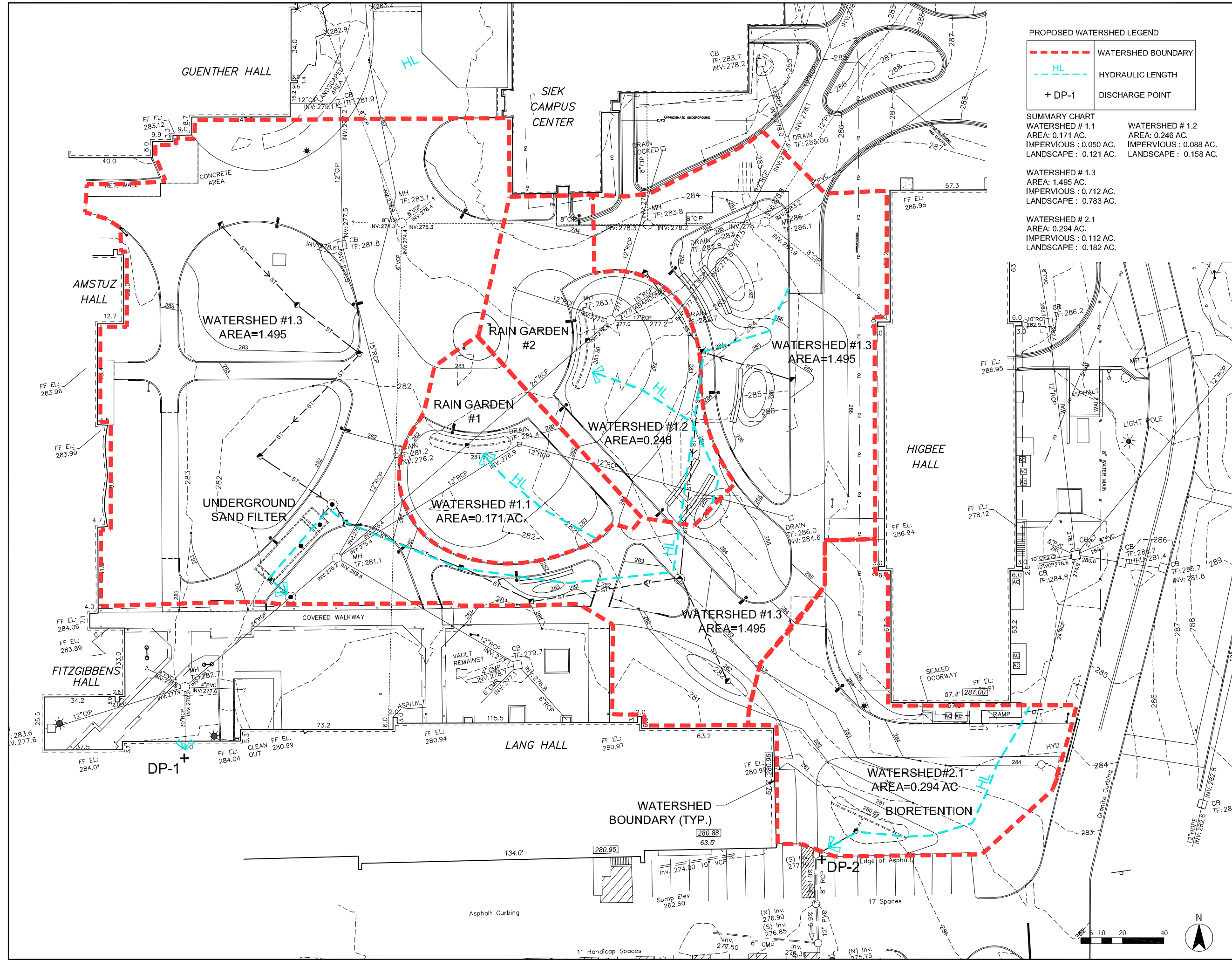
NO.	DATE	DESCRIPTION	DRAWN	CHK

SARATOGA ASSOCIATES PROJECT # 10043.18U

DATE: 03-04-11  
DRAWN BY: SRD  
CHECKED BY: RUM  
REVISIONS: 0

PROPOSED CONDITIONS  
WATERSHED  
MAP

# WS-2



**PROPOSED WATERSHED LEGEND**

- - - WATERSHED BOUNDARY
- - - HL HYDRAULIC LENGTH
- + DP-1 DISCHARGE POINT

**SUMMARY CHART**

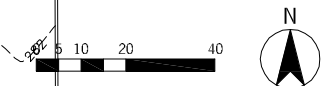
WATERSHED # 1.1	WATERSHED # 1.2
AREA: 0.171 AC.	AREA: 0.246 AC.
IMPERVIOUS: 0.050 AC.	IMPERVIOUS: 0.088 AC.
LANDSCAPE: 0.121 AC.	LANDSCAPE: 0.158 AC.

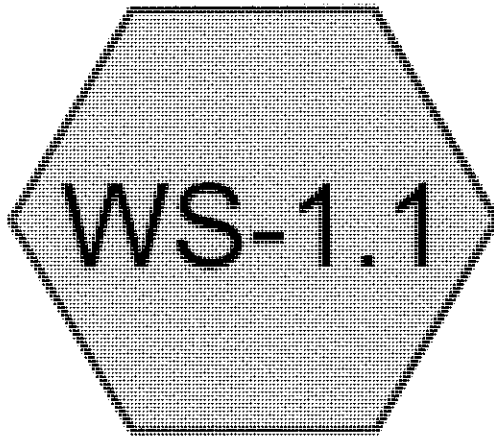
**WATERSHED # 1.3**

AREA: 1.495 AC.
IMPERVIOUS: 0.712 AC.
LANDSCAPE: 0.783 AC.

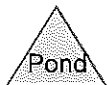
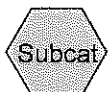
**WATERSHED # 2.1**

AREA: 0.294 AC.
IMPERVIOUS: 0.112 AC.
LANDSCAPE: 0.182 AC.





# Watershed # 1.1



**Area Listing (all nodes)**

<u>Area (acres)</u>	<u>CN</u>	<u>Description (subcats)</u>
0.121	74	>75% Grass cover, Good, HSG C (WS-1.1)
0.050	98	Paved walks and plaza's (WS-1.1)
<hr/>		
0.171		

**HVCC\_WS-1.1\_Proposed**

Type II 24-hr 1 Year Rainfall=2.30"

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Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points

Runoff by SCS TR-20 method, UH=SCS

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment WS-1.1: Watershed # 1.1**

Runoff Area=0.171 ac Runoff Depth>0.73"

Tc=6.0 min CN=81 Runoff=0.24 cfs 0.010 af

**Total Runoff Area = 0.171 ac Runoff Volume = 0.010 af Average Runoff Depth = 0.73"**  
**70.76% Pervious Area = 0.121 ac 29.24% Impervious Area = 0.050 ac**

**Subcatchment WS-1.1: Watershed # 1.1**

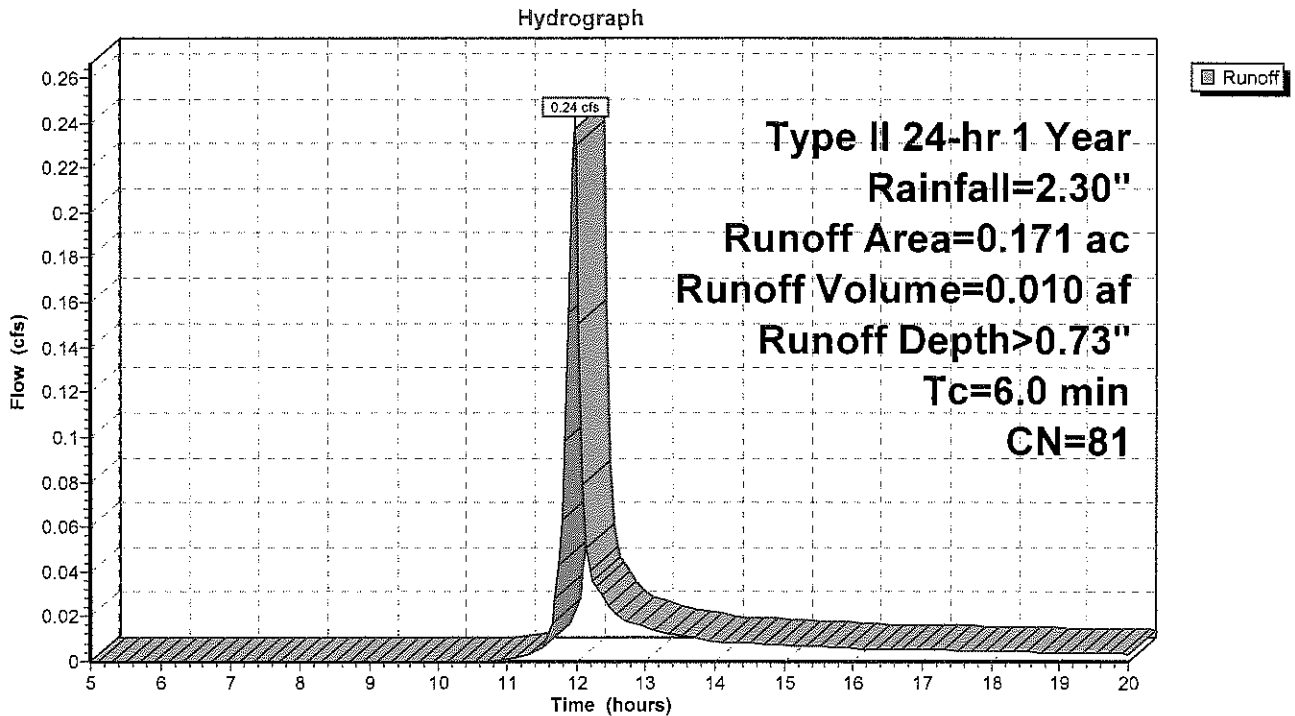
Runoff = 0.24 cfs @ 11.98 hrs, Volume= 0.010 af, Depth> 0.73"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 1 Year Rainfall=2.30"

Area (ac)	CN	Description
0.121	74	>75% Grass cover, Good, HSG C
0.050	98	Paved walks and plaza's
0.171	81	Weighted Average
0.121		Pervious Area
0.050		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, TR55 minimum

**Subcatchment WS-1.1: Watershed # 1.1**





**HVCC\_WS-1.1\_Proposed**

Type II 24-hr 10 Year Rainfall=3.80"

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Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points

Runoff by SCS TR-20 method, UH=SCS

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment WS-1.1: Watershed # 1.1**

Runoff Area=0.171 ac Runoff Depth>1.80"

Tc=6.0 min CN=81 Runoff=0.57 cfs 0.026 af

**Total Runoff Area = 0.171 ac Runoff Volume = 0.026 af Average Runoff Depth = 1.80"**

**70.76% Pervious Area = 0.121 ac 29.24% Impervious Area = 0.050 ac**

**Subcatchment WS-1.1: Watershed # 1.1**

Runoff = 0.57 cfs @ 11.97 hrs, Volume= 0.026 af, Depth> 1.80"

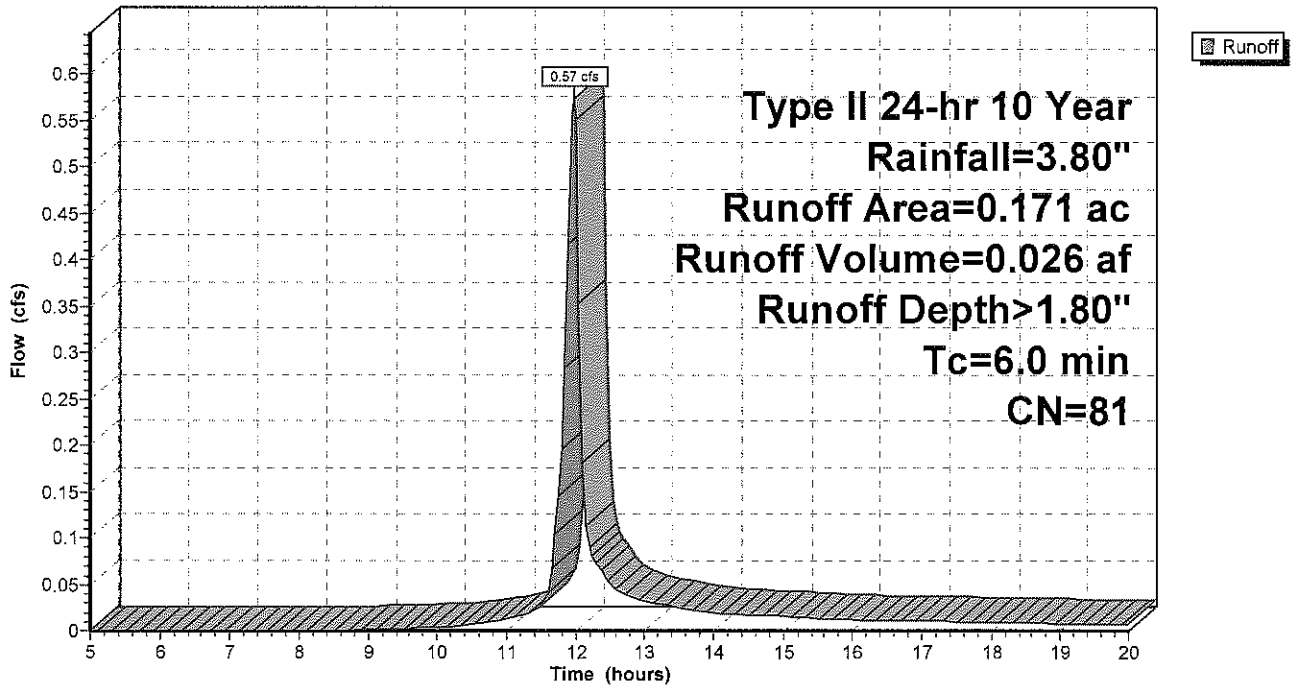
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 10 Year Rainfall=3.80"

Area (ac)	CN	Description
0.121	74	>75% Grass cover, Good, HSG C
0.050	98	Paved walks and plaza's
0.171	81	Weighted Average
0.121		Pervious Area
0.050		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, TR55 minimum

**Subcatchment WS-1.1: Watershed # 1.1**

Hydrograph



**HVCC\_WS-1.1\_Proposed**

Type II 24-hr 100 Year Rainfall=5.00"

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Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points

Runoff by SCS TR-20 method, UH=SCS

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment WS-1.1: Watershed # 1.1**

Runoff Area=0.171 ac Runoff Depth>2.77"

Tc=6.0 min CN=81 Runoff=0.87 cfs 0.039 af

**Total Runoff Area = 0.171 ac Runoff Volume = 0.039 af Average Runoff Depth = 2.77"**

**70.76% Pervious Area = 0.121 ac 29.24% Impervious Area = 0.050 ac**

**HVCC\_WS-1.1\_Proposed**

Type II 24-hr 100 Year Rainfall=5.00"

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**Subcatchment WS-1.1: Watershed # 1.1**

Runoff = 0.87 cfs @ 11.97 hrs, Volume= 0.039 af, Depth> 2.77"

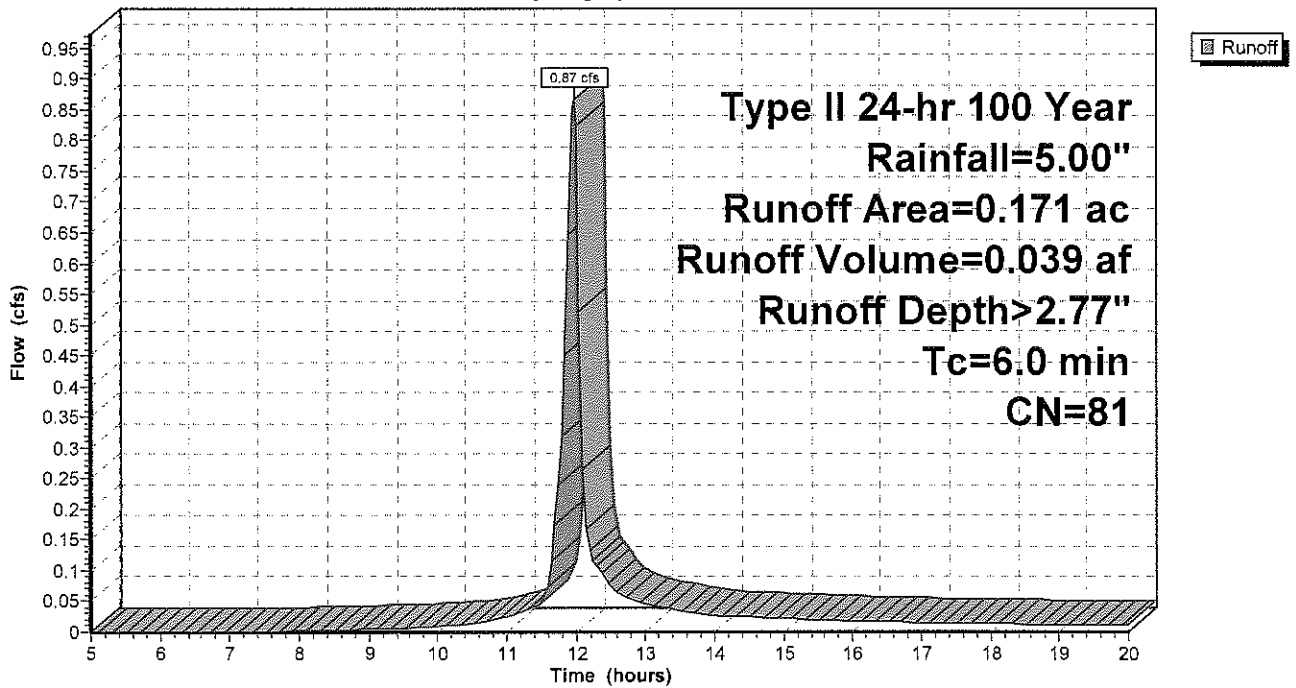
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
Type II 24-hr 100 Year Rainfall=5.00"

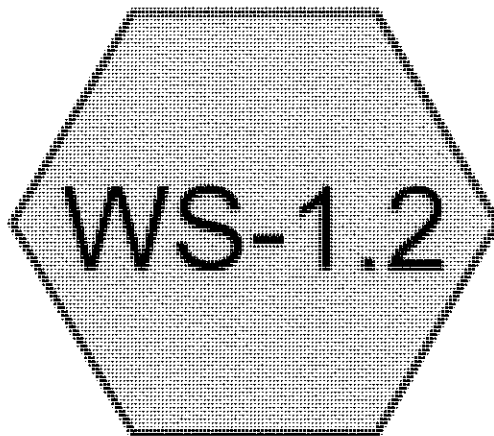
Area (ac)	CN	Description
0.121	74	>75% Grass cover, Good, HSG C
0.050	98	Paved walks and plaza's
0.171	81	Weighted Average
0.121		Pervious Area
0.050		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, TR55 minimum

**Subcatchment WS-1.1: Watershed # 1.1**

Hydrograph





# Watershed # 1.2



Drainage Diagram for HVCC\_WS-1.2\_Proposed  
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**Area Listing (all nodes)**

<u>Area (acres)</u>	<u>CN</u>	<u>Description (subcats)</u>
0.158	74	>75% Grass cover, Good, HSG C (WS-1.2)
0.088	98	Paved walks and plaza's (WS-1.2)
<hr/>		
0.246		

**HVCC\_WS-1.2\_Proposed**

Prepared by Saratoga Associates

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Type II 24-hr 1 Year Rainfall=2.30"

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Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points

Runoff by SCS TR-20 method, UH=SCS

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment WS-1.2: Watershed # 1.2**

Runoff Area=0.246 ac Runoff Depth>0.83"

Flow Length=93' Slope=0.0400 '/ Tc=7.6 min CN=83 Runoff=0.37 cfs 0.017 af

**Total Runoff Area = 0.246 ac Runoff Volume = 0.017 af Average Runoff Depth = 0.83"**

**64.23% Pervious Area = 0.158 ac 35.77% Impervious Area = 0.088 ac**

**HVCC\_WS-1.2\_Proposed**

Prepared by Saratoga Associates

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Type II 24-hr 1 Year Rainfall=2.30"

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**Subcatchment WS-1.2: Watershed # 1.2**

Runoff = 0.37 cfs @ 11.99 hrs, Volume= 0.017 af, Depth> 0.83"

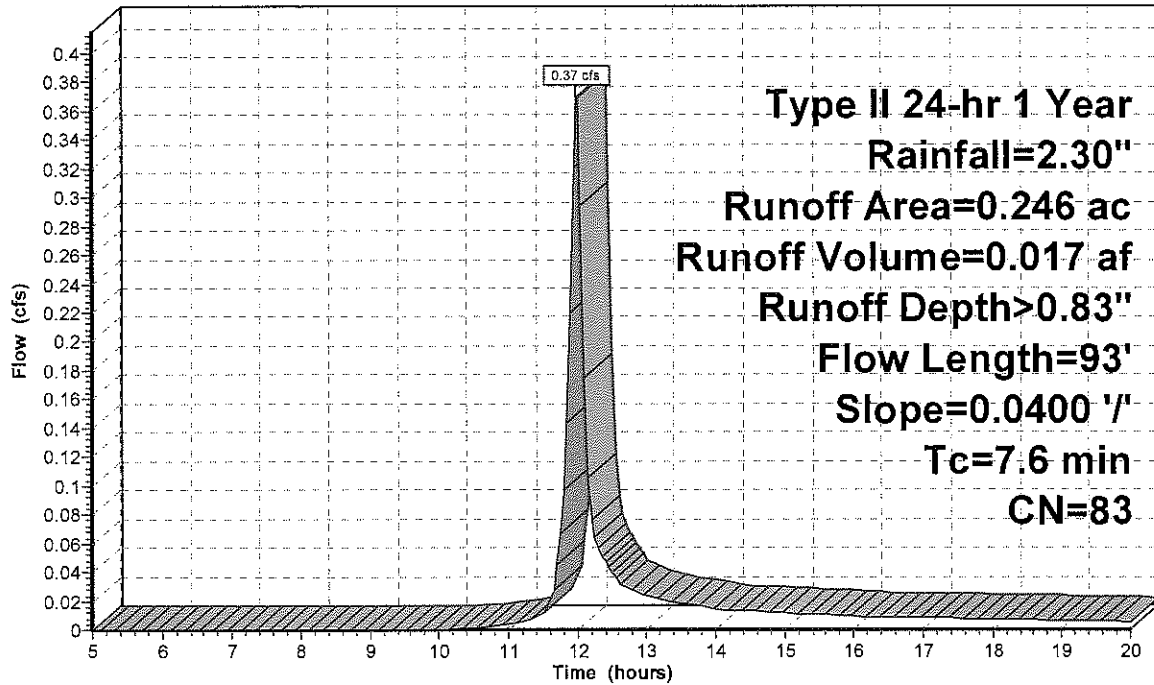
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
Type II 24-hr 1 Year Rainfall=2.30"

Area (ac)	CN	Description
0.158	74	>75% Grass cover, Good, HSG C
0.088	98	Paved walks and plaza's
0.246	83	Weighted Average
0.158		Pervious Area
0.088		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.6	93	0.0400	0.20		Sheet Flow, Sheet Flow - Lawn Grass: Short n= 0.150 P2= 2.70"

**Subcatchment WS-1.2: Watershed # 1.2**

Hydrograph





**HVCC\_WS-1.2\_Proposed**

Type II 24-hr 10 Year Rainfall=3.80"

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Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points

Runoff by SCS TR-20 method, UH=SCS

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment WS-1.2: Watershed # 1.2**

Runoff Area=0.246 ac Runoff Depth>1.95"

Flow Length=93' Slope=0.0400 '/' Tc=7.6 min CN=83 Runoff=0.86 cfs 0.040 af

**Total Runoff Area = 0.246 ac Runoff Volume = 0.040 af Average Runoff Depth = 1.95"**

**64.23% Pervious Area = 0.158 ac 35.77% Impervious Area = 0.088 ac**

**HVCC\_WS-1.2\_Proposed**

Type II 24-hr 10 Year Rainfall=3.80"

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**Subcatchment WS-1.2: Watershed # 1.2**

Runoff = 0.86 cfs @ 11.99 hrs, Volume= 0.040 af, Depth> 1.95"

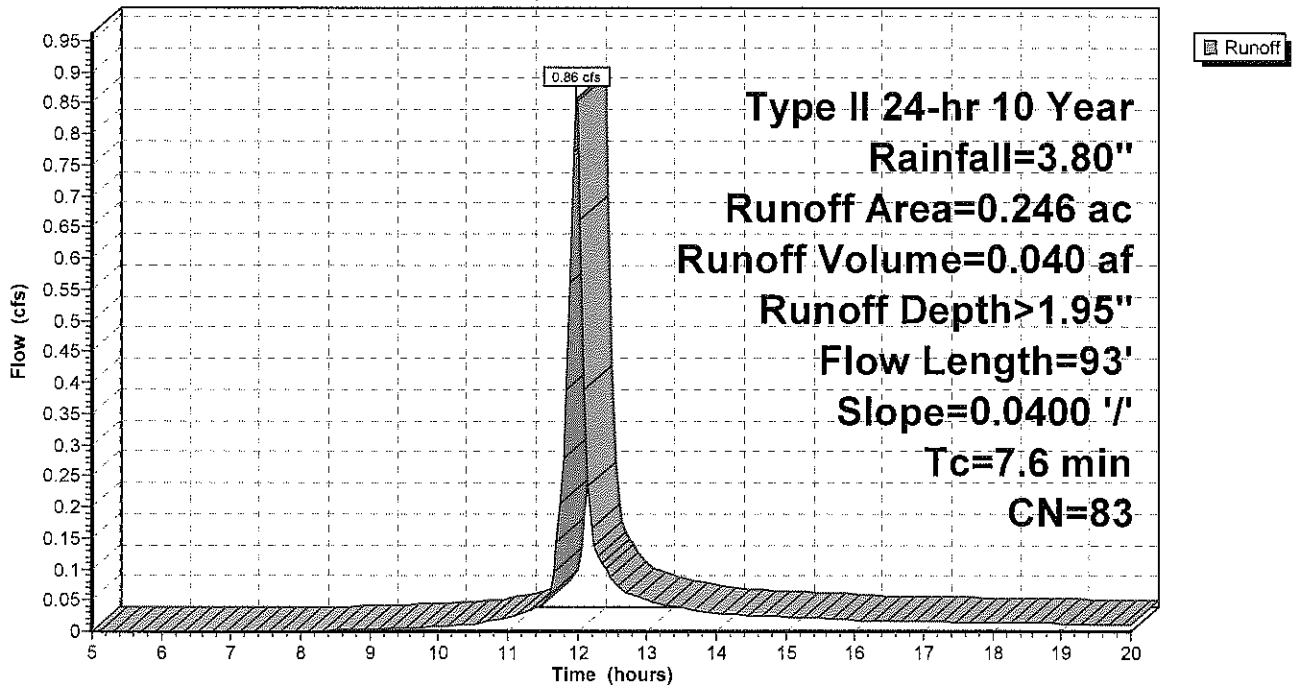
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
Type II 24-hr 10 Year Rainfall=3.80"

Area (ac)	CN	Description
0.158	74	>75% Grass cover, Good, HSG C
0.088	98	Paved walks and plaza's
0.246	83	Weighted Average
0.158		Pervious Area
0.088		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.6	93	0.0400	0.20		Sheet Flow, Sheet Flow - Lawn Grass: Short n= 0.150 P2= 2.70"

**Subcatchment WS-1.2: Watershed # 1.2**

Hydrograph



**HVCC\_WS-1.2\_Proposed**

Type II 24-hr 100 Year Rainfall=5.00"

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Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points

Runoff by SCS TR-20 method, UH=SCS

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment WS-1.2: Watershed # 1.2**

Runoff Area=0.246 ac Runoff Depth>2.95"

Flow Length=93' Slope=0.0400 '/' Tc=7.6 min CN=83 Runoff=1.27 cfs 0.061 af

**Total Runoff Area = 0.246 ac Runoff Volume = 0.061 af Average Runoff Depth = 2.95"**

**64.23% Pervious Area = 0.158 ac 35.77% Impervious Area = 0.088 ac**

**Subcatchment WS-1.2: Watershed # 1.2**

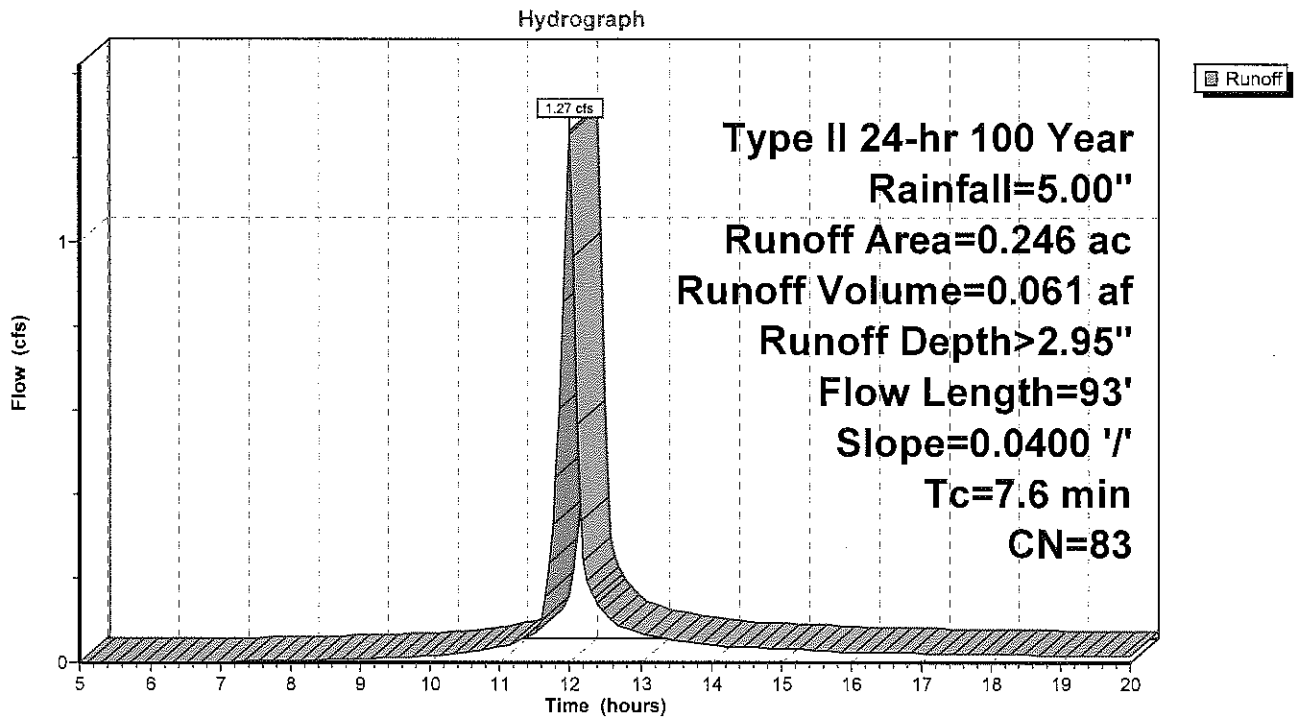
Runoff = 1.27 cfs @ 11.99 hrs, Volume= 0.061 af, Depth> 2.95"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
Type II 24-hr 100 Year Rainfall=5.00"

Area (ac)	CN	Description
0.158	74	>75% Grass cover, Good, HSG C
0.088	98	Paved walks and plaza's
0.246	83	Weighted Average
0.158		Pervious Area
0.088		Impervious Area

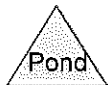
Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.6	93	0.0400	0.20		Sheet Flow, Sheet Flow - Lawn Grass: Short n= 0.150 P2= 2.70"

**Subcatchment WS-1.2: Watershed # 1.2**





# Watershed # 1.3



**HVCC\_WS-1.3\_Proposed**

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**Area Listing (all nodes)**

<u>Area (acres)</u>	<u>CN</u>	<u>Description (subcats)</u>
0.783	74	>75% Grass cover, Good, HSG C (WS-1.3)
0.712	98	Paved walks and plaza's (WS-1.3)
<hr/>		
1.495		

**HVCC\_WS-1.3\_Proposed**

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Type II 24-hr 1 Year Rainfall=2.30"

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Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points

Runoff by SCS TR-20 method, UH=SCS

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment WS-1.3: Watershed # 1.3**

Runoff Area=1.495 ac Runoff Depth>0.94"

Tc=6.0 min CN=85 Runoff=2.63 cfs 0.117 af

**Total Runoff Area = 1.495 ac Runoff Volume = 0.117 af Average Runoff Depth = 0.94"**

**52.37% Pervious Area = 0.783 ac 47.63% Impervious Area = 0.712 ac**

**Subcatchment WS-1.3: Watershed # 1.3**

Runoff = 2.63 cfs @ 11.97 hrs, Volume= 0.117 af, Depth> 0.94"

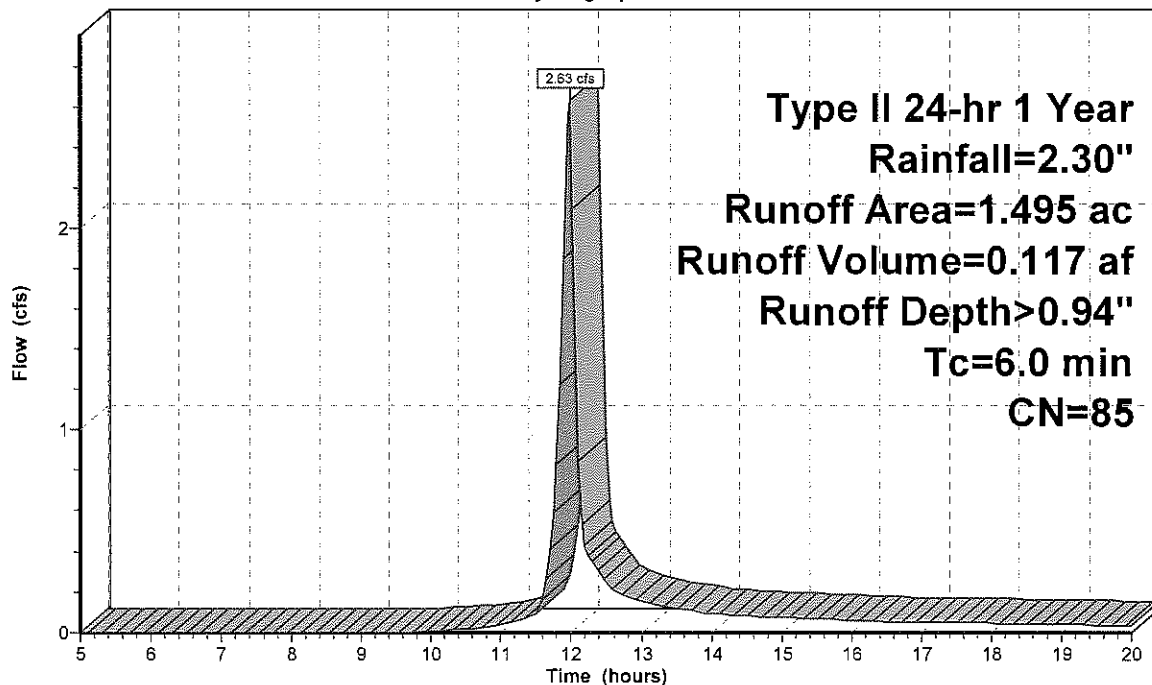
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 1 Year Rainfall=2.30"

Area (ac)	CN	Description
0.783	74	>75% Grass cover, Good, HSG C
0.712	98	Paved walks and plaza's
1.495	85	Weighted Average
0.783		Pervious Area
0.712		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, TR55 minimum

**Subcatchment WS-1.3: Watershed # 1.3**

Hydrograph



Runoff

Type II 24-hr 1 Year  
 Rainfall=2.30"  
 Runoff Area=1.495 ac  
 Runoff Volume=0.117 af  
 Runoff Depth>0.94"  
 Tc=6.0 min  
 CN=85



**HVCC\_WS-1.3\_Proposed**

Prepared by Saratoga Associates

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Type II 24-hr 10 Year Rainfall=3.80"

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Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points

Runoff by SCS TR-20 method, UH=SCS

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment WS-1.3: Watershed # 1.3**

Runoff Area=1.495 ac Runoff Depth>2.12"

Tc=6.0 min CN=85 Runoff=5.79 cfs 0.264 af

**Total Runoff Area = 1.495 ac Runoff Volume = 0.264 af Average Runoff Depth = 2.12"**

**52.37% Pervious Area = 0.783 ac 47.63% Impervious Area = 0.712 ac**

**HVCC\_WS-1.3\_Proposed**

Type II 24-hr 10 Year Rainfall=3.80"

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**Subcatchment WS-1.3: Watershed # 1.3**

Runoff = 5.79 cfs @ 11.97 hrs, Volume= 0.264 af, Depth> 2.12"

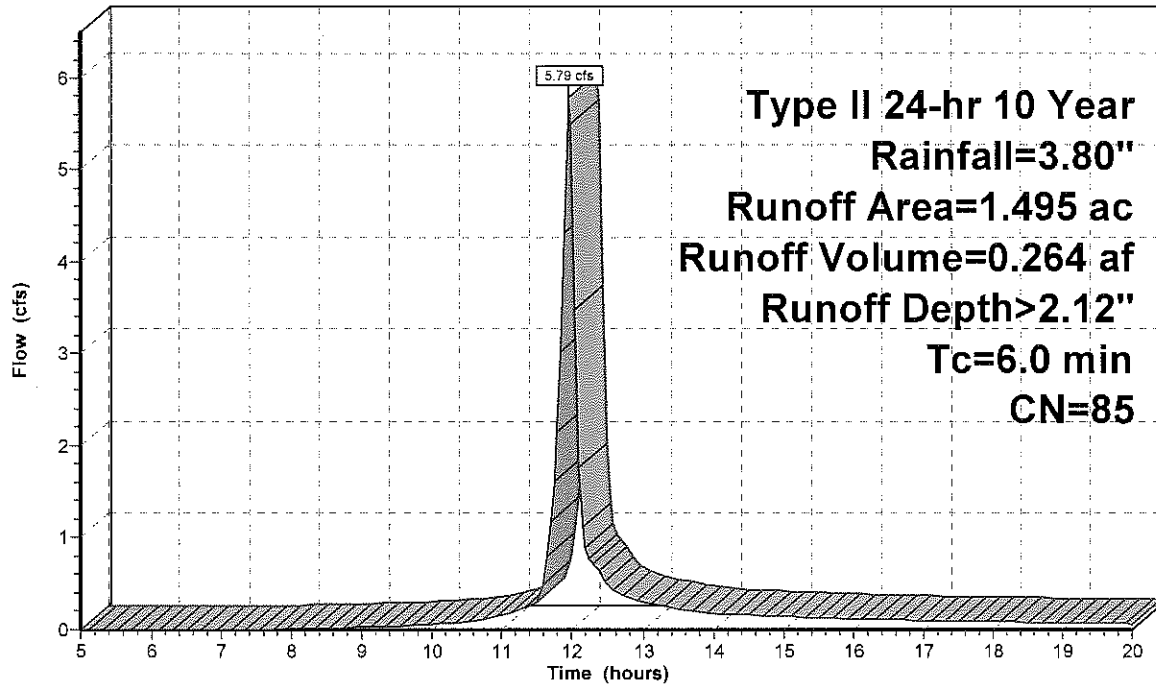
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
Type II 24-hr 10 Year Rainfall=3.80"

Area (ac)	CN	Description
0.783	74	>75% Grass cover, Good, HSG C
0.712	98	Paved walks and plaza's
1.495	85	Weighted Average
0.783		Pervious Area
0.712		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, TR55 minimum

**Subcatchment WS-1.3: Watershed # 1.3**

Hydrograph



Runoff

Type II 24-hr 10 Year  
Rainfall=3.80"  
Runoff Area=1.495 ac  
Runoff Volume=0.264 af  
Runoff Depth>2.12"  
Tc=6.0 min  
CN=85

**HVCC\_WS-1.3\_Proposed**

Type II 24-hr 100 Year Rainfall=5.00"

Prepared by Saratoga Associates

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Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points

Runoff by SCS TR-20 method, UH=SCS

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment WS-1.3: Watershed # 1.3**

Runoff Area=1.495 ac Runoff Depth>3.14"

Tc=6.0 min CN=85 Runoff=8.41 cfs 0.392 af

**Total Runoff Area = 1.495 ac Runoff Volume = 0.392 af Average Runoff Depth = 3.14"**

**52.37% Pervious Area = 0.783 ac 47.63% Impervious Area = 0.712 ac**

**HVCC\_WS-1.3\_Proposed**

Type II 24-hr 100 Year Rainfall=5.00"

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**Subcatchment WS-1.3: Watershed # 1.3**

Runoff = 8.41 cfs @ 11.97 hrs, Volume= 0.392 af, Depth> 3.14"

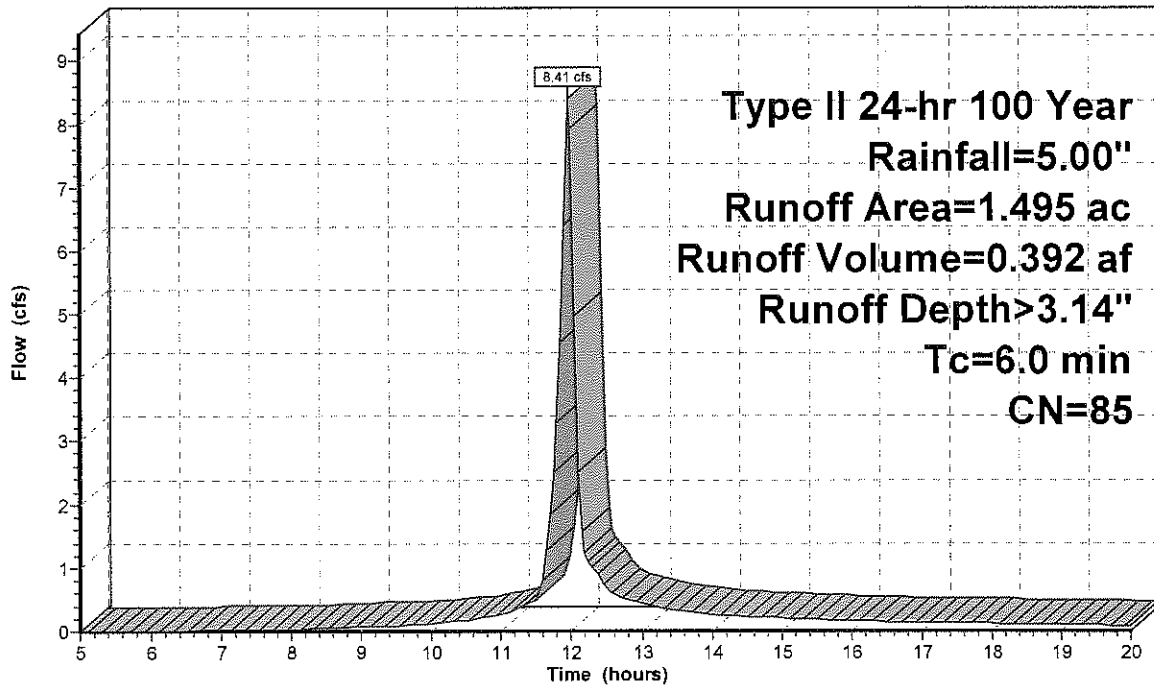
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
Type II 24-hr 100 Year Rainfall=5.00"

Area (ac)	CN	Description
0.783	74	>75% Grass cover, Good, HSG C
0.712	98	Paved walks and plaza's
1.495	85	Weighted Average
0.783		Pervious Area
0.712		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, TR55 minimum

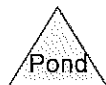
**Subcatchment WS-1.3: Watershed # 1.3**

Hydrograph





# Watershed # 2.1



**Area Listing (all nodes)**

<u>Area (acres)</u>	<u>CN</u>	<u>Description (subcats)</u>
0.182	74	>75% Grass cover, Good, HSG C (WS-2.1)
0.112	98	Paved walks and plaza's (WS-2.1)
<hr/>		
0.294		

**HVCC\_WS-2.1\_Proposed**

Type II 24-hr 1 Year Rainfall=2.30"

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Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points

Runoff by SCS TR-20 method, UH=SCS

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment WS-2.1: Watershed # 2.1**

Runoff Area=0.294 ac Runoff Depth>0.83"

Flow Length=138' Tc=6.9 min CN=83 Runoff=0.45 cfs 0.020 af

**Total Runoff Area = 0.294 ac Runoff Volume = 0.020 af Average Runoff Depth = 0.83"**

**61.90% Pervious Area = 0.182 ac 38.10% Impervious Area = 0.112 ac**

**Subcatchment WS-2.1: Watershed # 2.1**

Runoff = 0.45 cfs @ 11.99 hrs, Volume= 0.020 af, Depth> 0.83"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
Type II 24-hr 1 Year Rainfall=2.30"

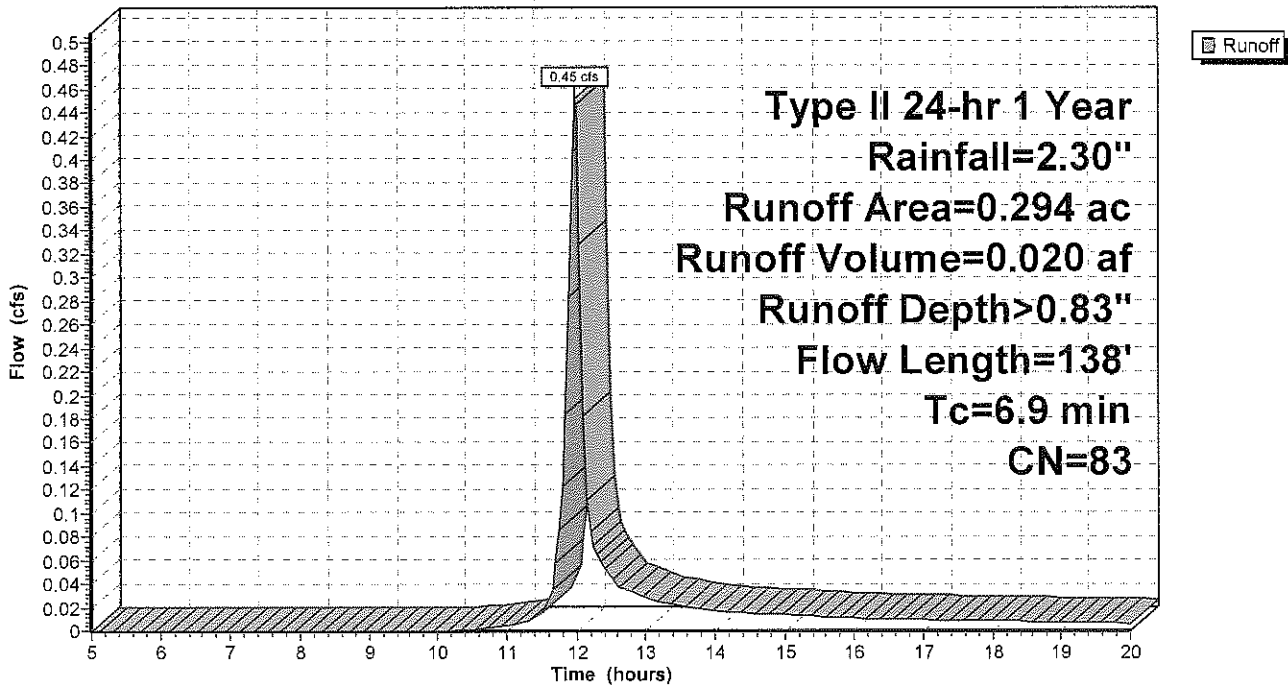
Area (ac)	CN	Description
0.182	74	>75% Grass cover, Good, HSG C
0.112	98	Paved walks and plaza's
0.294	83	Weighted Average
0.182		Pervious Area
0.112		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.4	91	0.0600	0.24		Sheet Flow, lawn - sheet flow Grass: Short n= 0.150 P2= 2.70"
0.4	28	0.0250	1.07		Sheet Flow, pavement - sheet flow Smooth surfaces n= 0.011 P2= 2.70"
0.1	19	0.0063	2.98	1.04	Circular Channel (pipe), pipe flow Diam= 8.0" Area= 0.3 sf Perim= 2.1' r= 0.17' n= 0.012
6.9	138	Total			

**Subcatchment WS-2.1: Watershed # 2.1**

Hydrograph





**HVCC\_WS-2.1\_Proposed**

Type II 24-hr 10 Year Rainfall=3.80"

Prepared by Saratoga Associates

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3/9/2011

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points

Runoff by SCS TR-20 method, UH=SCS

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment WS-2.1: Watershed # 2.1**

Runoff Area=0.294 ac Runoff Depth>1.95"

Flow Length=138' Tc=6.9 min CN=83 Runoff=1.05 cfs 0.048 af

**Total Runoff Area = 0.294 ac Runoff Volume = 0.048 af Average Runoff Depth = 1.95"**

**61.90% Pervious Area = 0.182 ac 38.10% Impervious Area = 0.112 ac**

**Subcatchment WS-2.1: Watershed # 2.1**

Runoff = 1.05 cfs @ 11.98 hrs, Volume= 0.048 af, Depth> 1.95"

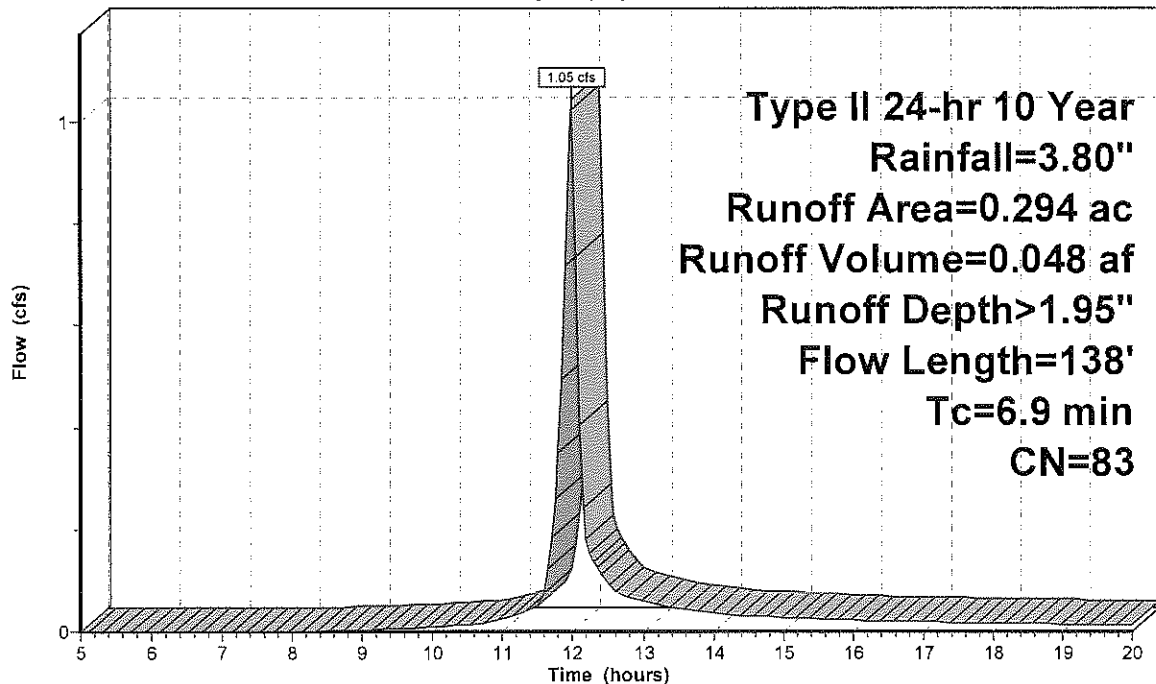
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
Type II 24-hr 10 Year Rainfall=3.80"

Area (ac)	CN	Description
0.182	74	>75% Grass cover, Good, HSG C
0.112	98	Paved walks and plaza's
0.294	83	Weighted Average
0.182		Pervious Area
0.112		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.4	91	0.0600	0.24		Sheet Flow, lawn - sheet flow Grass: Short n= 0.150 P2= 2.70"
0.4	28	0.0250	1.07		Sheet Flow, pavement - sheet flow Smooth surfaces n= 0.011 P2= 2.70"
0.1	19	0.0063	2.98	1.04	Circular Channel (pipe), pipe flow Diam= 8.0" Area= 0.3 sf Perim= 2.1' r= 0.17' n= 0.012
6.9	138	Total			

**Subcatchment WS-2.1: Watershed # 2.1**

Hydrograph



Runoff

**HVCC\_WS-2.1\_Proposed**

*Type II 24-hr 100 Year Rainfall=5.00"*

Prepared by Saratoga Associates

Page 7

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3/9/2011

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points  
Runoff by SCS TR-20 method, UH=SCS  
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment WS-2.1: Watershed # 2.1**

Runoff Area=0.294 ac Runoff Depth>2.95"

Flow Length=138' Tc=6.9 min CN=83 Runoff=1.55 cfs 0.072 af

**Total Runoff Area = 0.294 ac Runoff Volume = 0.072 af Average Runoff Depth = 2.95"**  
**61.90% Pervious Area = 0.182 ac 38.10% Impervious Area = 0.112 ac**

**Subcatchment WS-2.1: Watershed # 2.1**

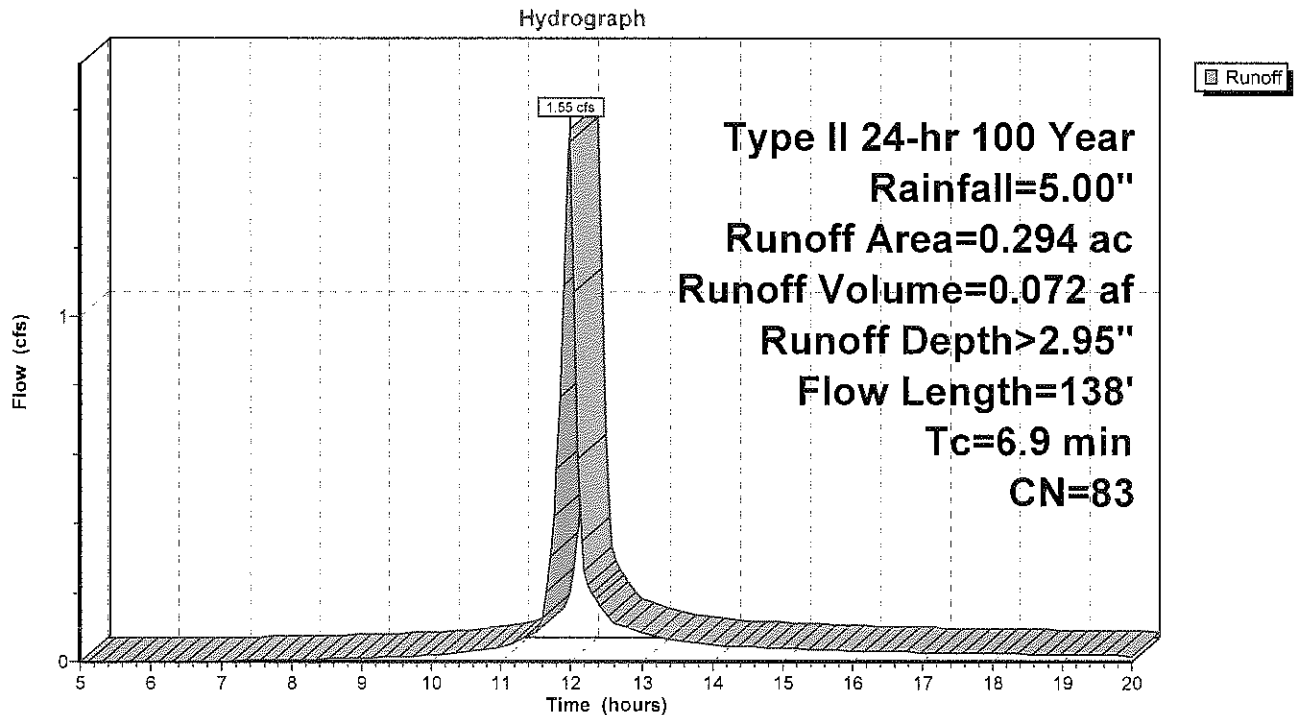
Runoff = 1.55 cfs @ 11.98 hrs, Volume= 0.072 af, Depth> 2.95"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
Type II 24-hr 100 Year Rainfall=5.00"

Area (ac)	CN	Description
0.182	74	>75% Grass cover, Good, HSG C
0.112	98	Paved walks and plaza's
0.294	83	Weighted Average
0.182		Pervious Area
0.112		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.4	91	0.0600	0.24		Sheet Flow, lawn - sheet flow Grass: Short n= 0.150 P2= 2.70"
0.4	28	0.0250	1.07		Sheet Flow, pavement - sheet flow Smooth surfaces n= 0.011 P2= 2.70"
0.1	19	0.0063	2.98	1.04	Circular Channel (pipe), pipe flow Diam= 8.0" Area= 0.3 sf Perim= 2.1' r= 0.17' n= 0.012
6.9	138	Total			

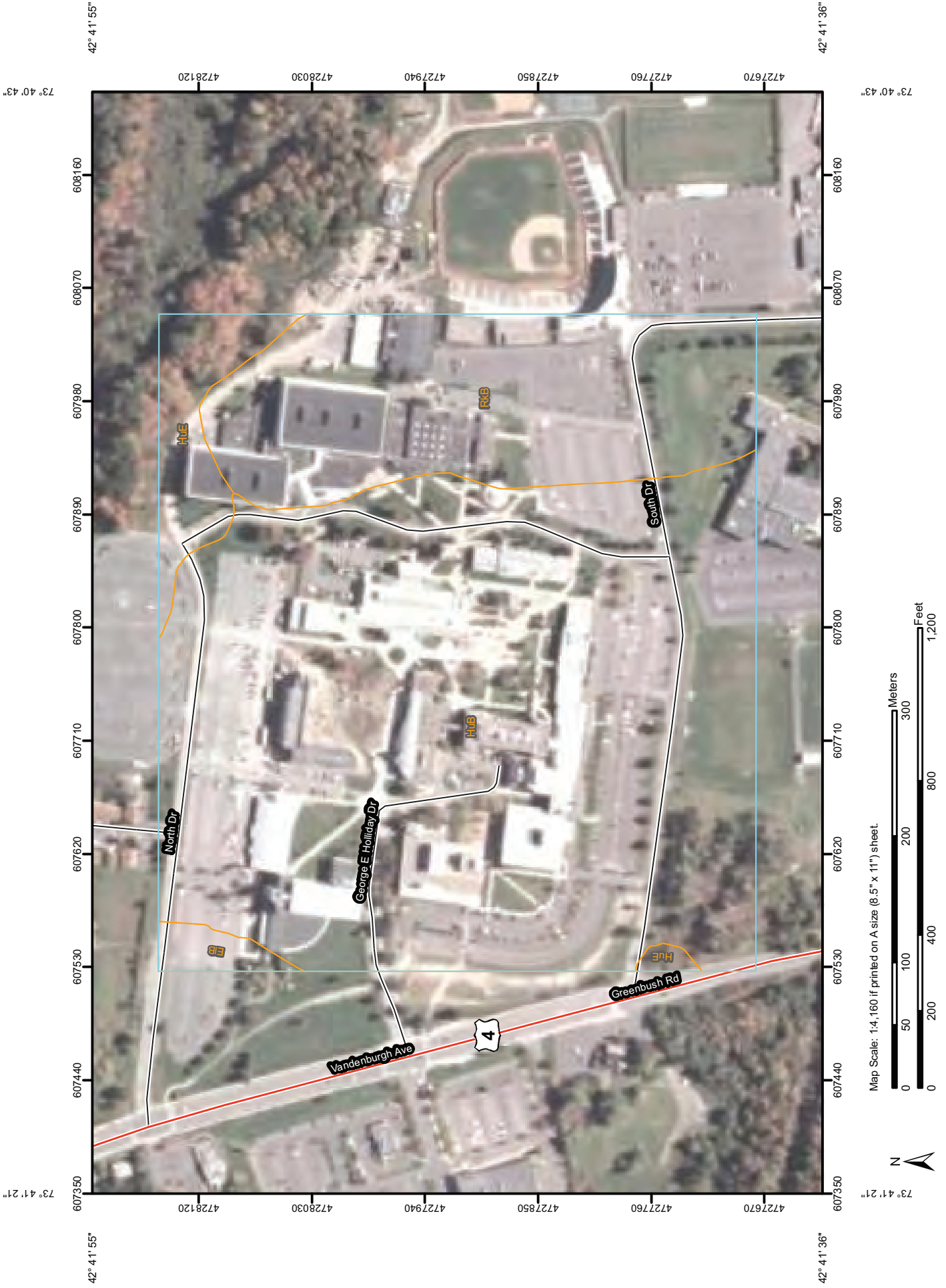
**Subcatchment WS-2.1: Watershed # 2.1**



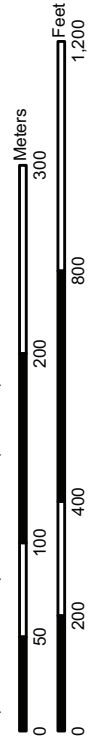
**APPENDIX D**

Soils Boundary Map








































Soil Map—Rensselaer County, New York



Map Scale: 1:4,160 if printed on A size (8.5" x 11") sheet.



## MAP LEGEND

 Area of Interest (AOI)	 Very Stony Spot
 Soils	 Wet Spot
 Area of Interest (AOI)	 Other
 Soil Map Units	
<b>Special Point Features</b>	<b>Special Line Features</b>
 Blowout	 Gully
 Borrow Pit	 Short Steep Slope
 Clay Spot	 Other
 Closed Depression	<b>Political Features</b>
 Gravel Pit	 Cities
 Gravelly Spot	<b>Water Features</b>
 Landfill	 Oceans
 Lava Flow	 Streams and Canals
 Marsh or swamp	<b>Transportation</b>
 Mine or Quarry	 Rails
 Miscellaneous Water	 Interstate Highways
 Perennial Water	 US Routes
 Rock Outcrop	 Major Roads
 Saline Spot	 Local Roads
 Sandy Spot	
 Severely Eroded Spot	
 Sinkhole	
 Slide or Slip	
 Sodic Spot	
 Spoil Area	
 Stony Spot	

## MAP INFORMATION

Map Scale: 1:4,160 if printed on A size (8.5" x 11") sheet.  
 The soil surveys that comprise your AOI were mapped at 1:15,840.  
 Please rely on the bar scale on each map sheet for accurate map measurements.

Source of Map: Natural Resources Conservation Service  
 Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>  
 Coordinate System: UTM Zone 18N NAD83

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Rensselaer County, New York  
 Survey Area Data: Version 7, Feb 5, 2010  
 Date(s) aerial images were photographed: 9/10/2006

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

## Map Unit Legend

Rensselaer County, New York (NY083)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
EIB	Elmridge very fine sandy loam, 3 to 8 percent slopes	0.8	1.2%
HuB	Hudson silt loam, 3 to 8 percent slopes	43.6	71.0%
HuE	Hudson silt loam, steep	3.0	4.9%
RkB	Riverhead fine sandy loam, 3 to 8 percent slopes	14.0	22.9%
<b>Totals for Area of Interest</b>		<b>61.3</b>	<b>100.0%</b>



## **APPENDIX E**

### **Water Quality Calculations**

## WATER QUALITY VOLUME CALCULATION

Name: HVCC Main Academic Quadrangle  
Watershed #1.1

DATA:

Drainage Area, A = 0.171 ac  
Rainfall, P= 0.95 in  
Impervious %, I = 29 %

$$WQv = ((P) * (Rv) * (A)) / 12$$

WQv = water quality volume (acre-feet)

P = 90% rainfall event number  
(See Fig 4.1 in NYS Stormwater Management Design Manual)

Rv = runoff volume =  $0.05 + .009 (I)$  , where I is the percent impervious cover

$$Rv = 0.05 + 0.009 ( 52 )$$

$$Rv = 0.31$$

A = site area (acres)

$$WQv = P * Rv * A / 12$$

$$WQv = 0.004 \text{ acre-feet}$$

$$WQv = \underline{183} \text{ CF}$$

$$10\% WQv = \underline{18} \text{ CF}$$

$$25\% WQv = \underline{46} \text{ CF}$$

$$50\% WQv = \underline{92} \text{ CF}$$

$$75\% WQv = \underline{138} \text{ CF}$$

## WATER QUALITY VOLUME - PEAK FLOW CALCULATION

Name: HVCC Main Academic Quadrangle  
Watershed #1.1

$$Q_p = q_u * A * WQv$$

$q_u$  = unit peak discharge (cfs/sq mi/inch)

$A$  = drainage area (sq mi)

$WQv$  = water quality volume (watershed inches)

$$CN = 1000 / (10 + 5P + 10Q - 10(Q^2 + 1.25QP)^{0.5})$$

$CN$  = adjusted curve number

$P$  = 90% rainfall event (inches) = 0.95 in

$Q$  = runoff volume (inches) =  $WQv$  (af) /  $A$  (ac) \* 12  
= 0.004 \* 0.17 \* 12  
= 0.30 inches

$$CN = 88$$

$t_c$  = 6 min = 0.10 hrs

$(I_a)$  = 0.062 (from Table 4.1 TR 55)

$I_a/P$  = 0.07

$q_u$  = 850 From Exhibit 4-II TR 55)

$$Q_p = q_u * A_c * Q$$

$$Q_p = 1000 * 0.000 * 0.30$$

$$Q_p = 0.08 \text{ cfs}$$

## WATER QUALITY VOLUME CALCULATION

Name: HVCC Main Academic Quadrangle  
Watershed #1.2

DATA:

Drainage Area, A = 0.246 ac  
Rainfall, P= 0.95 in  
Impervious %, I = 36 %

$$WQv = ((P) * (Rv) * (A)) / 12$$

WQv = water quality volume (acre-feet)

P = 90% rainfall event number  
(See Fig 4.1 in NYS Stormwater Management Design Manual)

Rv = runoff volume =  $0.05 + .009 (I)$  , where I is the percent impervious cover

$$Rv = 0.05 + 0.009 ( 1.4 )$$

$$Rv = 0.37$$

A = site area (acres)

$$WQv = P * Rv * A / 12$$

$$WQv = 0.007 \text{ acre-feet}$$

$$WQv = \underline{317} \text{ CF}$$

$$10\% WQv = \underline{32} \text{ CF}$$

$$25\% WQv = \underline{79} \text{ CF}$$

$$50\% WQv = \underline{159} \text{ CF}$$

$$75\% WQv = \underline{238} \text{ CF}$$

## WATER QUALITY VOLUME - PEAK FLOW CALCULATION

Name: HVCC Main Academic Quadrangle  
Watershed #1.2

$$Q_p = q_u * A * WQ_v$$

$q_u$  = unit peak discharge (cfs/sq mi/inch)

$A$  = drainage area (sq mi)

$WQ_v$  = water quality volume (watershed inches)

$$CN = 1000 / (10 + 5P + 10Q - 10(Q^2 + 1.25QP)^{0.5})$$

CN = adjusted curve number

$P$  = 90% rainfall event (inches) = 0.95 in

$Q$  = runoff volume (inches) =  $WQ_v$  (af) /  $A$  (ac) \* 12  
= 0.007 \* 0.25 \* 12  
= 0.36 inches

$$CN = 88$$

$t_c$  = 6 min = 0.10 hrs

$(I_a)$  = 0.062 (from Table 4.1 TR 55)

$I_a/P$  = 0.07

$q_u$  = 850 From Exhibit 4-II TR 55)

$$Q_p = q_u * A_c * Q$$

$$Q_p = 1000 * 0.000 * 0.36$$

$$Q_p = 0.14 \text{ cfs}$$

## WATER QUALITY VOLUME CALCULATION

Name: HVCC Main Academic Quadrangle  
Watershed #1.3

DATA:

Drainage Area, A = 1.495 ac  
Rainfall, P= 0.95 in  
Impervious %, I = 48 %

$$WQv = ((P) * (Rv) * (A)) / 12$$

WQv = water quality volume (acre-feet)

P = 90% rainfall event number  
(See Fig 4.1 in NYS Stormwater Management Design Manual)

Rv = runoff volume = 0.05 + .009 (I) , where I is the percent impervious cover

$$Rv = 0.05 + 0.009 ( 40 )$$

$$Rv = 0.48$$

A = site area (acres)

$$WQv = P * Rv * A / 12$$

$$WQv = 0.057 \text{ acre-feet}$$

$$WQv = \underline{2485} \text{ CF}$$

$$10\% WQv = \underline{248} \text{ CF}$$

$$25\% WQv = \underline{621} \text{ CF}$$

$$50\% WQv = \underline{1242} \text{ CF}$$

$$75\% WQv = \underline{1864} \text{ CF}$$

## WATER QUALITY VOLUME - PEAK FLOW CALCULATION

Name: HVCC Main Academic Quadrangle  
Watershed #1.3

$$Q_p = q_u * A * WQv$$

$q_u$  = unit peak discharge (cfs/sq mi/inch)

$A$  = drainage area (sq mi)

$WQv$  = water quality volume (watershed inches)

$$CN = 1000 / (10 + 5P + 10Q - 10(Q^2 + 1.25QP)^{0.5})$$

$CN$  = adjusted curve number

$P$  = 90% rainfall event (inches) = 0.95 in

$Q$  = runoff volume (inches) =  $WQv \text{ (af)} / A \text{ (ac)} * 12$   
= 0.057 \* 1.50 \* 12  
= 0.46 inches

$$CN = 88$$

$t_c$  = 6 min = 0.10 hrs

$(I_a)$  = 0.062 (from Table 4.1 TR 55)

$I_a/P$  = 0.07

$q_u$  = 850 From Exhibit 4-II TR 55)

$$Q_p = q_u * A_c * Q$$

$$Q_p = 1000 * 0.002 * 0.46$$

$$Q_p = 1.07 \text{ cfs}$$

## WATER QUALITY VOLUME CALCULATION

Name: HVCC Main Academic Quadrangle  
Watershed #2.1

DATA:

Drainage Area, A = 0.294 ac  
Rainfall, P= 0.95 in  
Impervious %, I = 38 %

$$WQv = ((P) * (Rv) * (A)) / 12$$

WQv = water quality volume (acre-feet)

P = 90% rainfall event number  
(See Fig 4.1 in NYS Stormwater Management Design Manual)

Rv = runoff volume =  $0.05 + .009 (I)$  , where I is the percent impervious cover

$$Rv = 0.05 + 0.009 (38)$$

$$Rv = 0.39$$

A = site area (acres)

$$WQv = P * Rv * A / 12$$

$$WQv = 0.009 \text{ acre-feet}$$

$$WQv = \underline{397} \text{ CF}$$

$$10\% WQv = \underline{40} \text{ CF}$$

$$25\% WQv = \underline{99} \text{ CF}$$

$$50\% WQv = \underline{199} \text{ CF}$$

$$75\% WQv = \underline{298} \text{ CF}$$



## WATER QUALITY VOLUME - PEAK FLOW CALCULATION

Name: HVCC Main Academic Quadrangle  
Watershed #2.1

$$Q_p = q_u * A * WQv$$

$q_u$  = unit peak discharge (cfs/sq mi/inch)

$A$  = drainage area (sq mi)

$WQv$  = water quality volume (watershed inches)

$$CN = 1000 / (10 + 5P + 10Q - 10(Q^2 + 1.25QP)^{0.5})$$

$CN$  = adjusted curve number

$P$  = 90% rainfall event (inches) = 0.95 in

$Q$  = runoff volume (inches) =  $WQv \text{ (af)} / A \text{ (ac)} * 12$   
= 0.009 0.29 \* 12  
= 0.37 inches

$$CN = 88$$

$t_c$  = 6 min = 0.10 hrs

$(I_a)$  = 0.062 (from Table 4.1 TR 55)

$I_a/P$  = 0.07

$q_u$  = 850 From Exhibit 4-II TR 55)

$$Q_p = q_u * A_c * Q$$

$$Q_p = 1000 * 0.000 * 0.37$$

$$Q_p = 0.17 \text{ cfs}$$

## **APPENDIX F**

### Stormwater Management Facilities

**NOT FOR  
CONSTRUCTION**

**HUDSON VALLEY  
COMMUNITY COLLEGE**



RECONSTRUCTION OF THE MAIN  
ACADEMIC QUADRANGLE  
TROY, NEW YORK

**REVISIONS**

NO.	DATE	DESCRIPTION	DRAWN	CHK
0	03-11-2011	BID DOCUMENTS	SRD	RJS

**SARATOGA ASSOCIATES PROJECT #**

UNNOTICED ALTERATION OR ADDITION TO  
THIS DOCUMENT IS A VIOLATION OF SECTION 7209 OF  
THE NEW YORK STATE EDUCATION LAW.

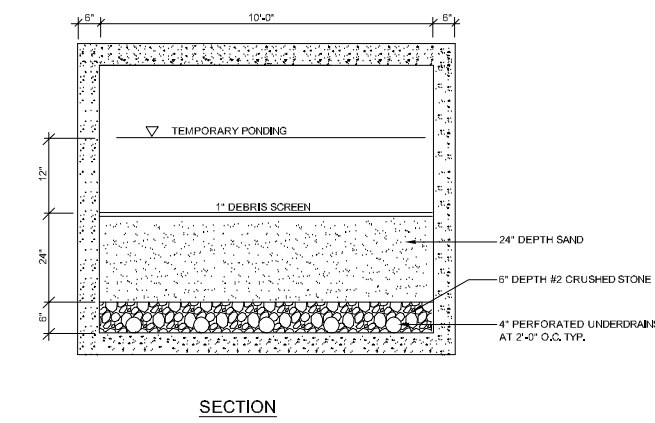
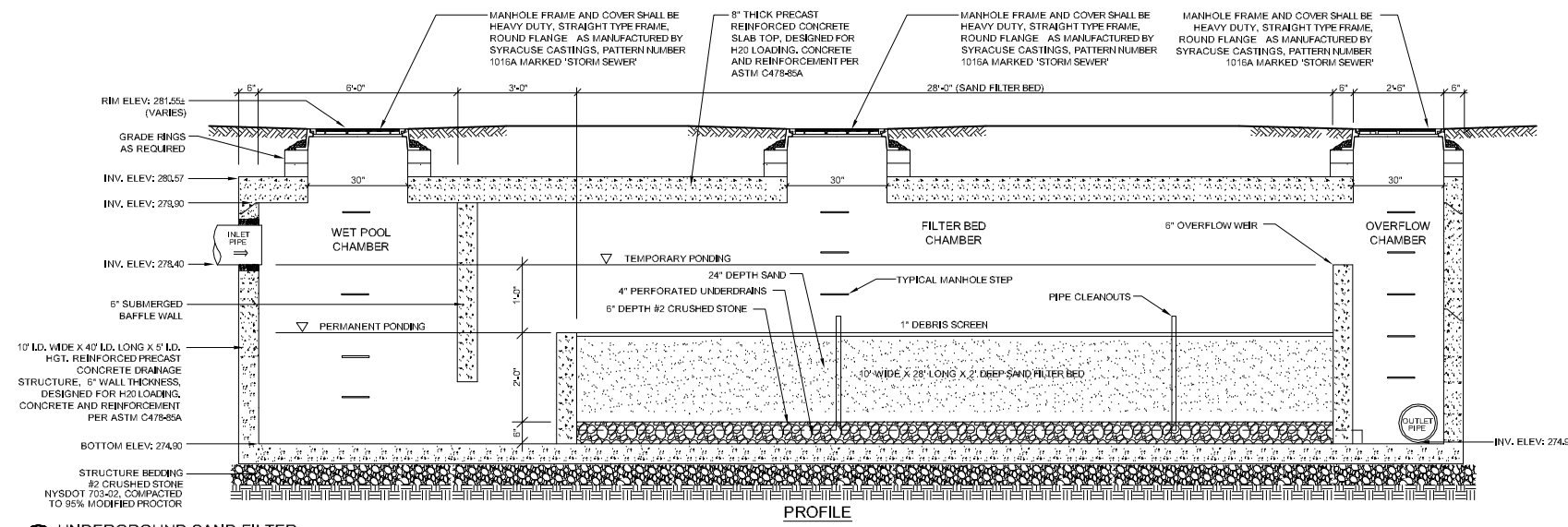
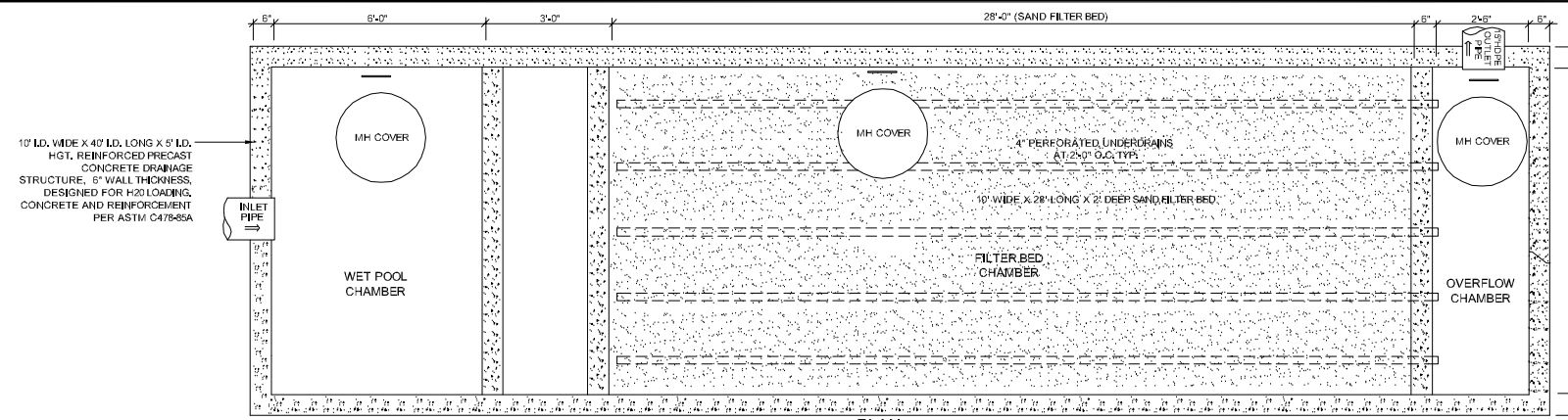
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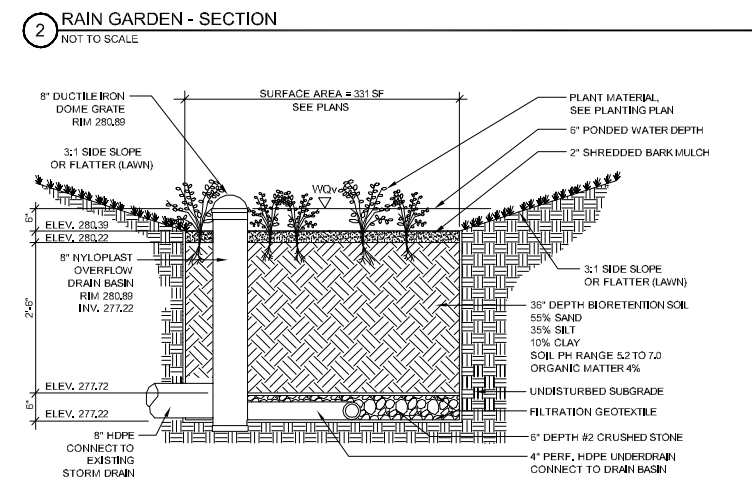
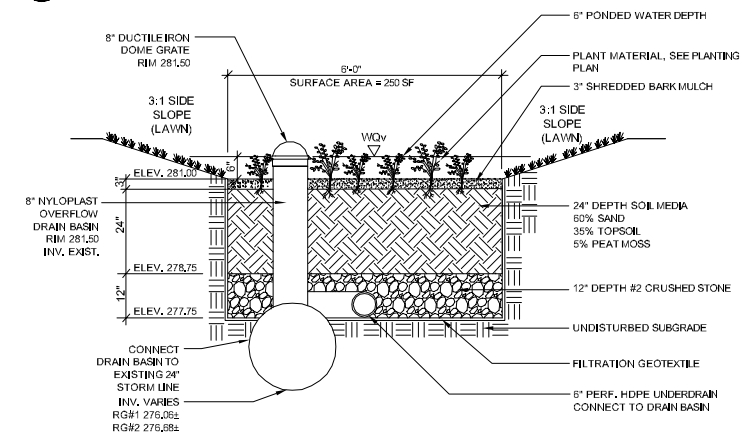
CHECKED BY: RJM

**STORMWATER  
MANAGEMENT  
FACILITIES**

**APPENDIX F**



**1 UNDERGROUND SAND FILTER**  
NOT TO SCALE



**APPENDIX G**

NYSDEC SPDES General Permit GP-0-10-002

NEW YORK STATE  
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SPDES GENERAL PERMIT  
FOR STORMWATER DISCHARGES

from

**MUNICIPAL SEPARATE STORM SEWER SYSTEMS  
(MS4s)**

Permit No. GP-0-10-002

Issued Pursuant to Article 17, Titles 7, 8 and Article 70  
of the Environmental Conservation Law

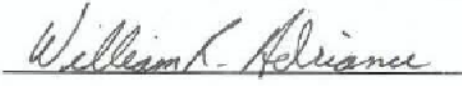
Effective Date: May 1, 2010

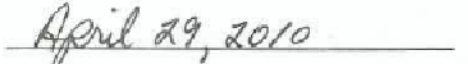
Expiration Date: April 30, 2015

William R. Adriance  
Chief Permit Administrator

Address:

NYS DEC  
Div. Environmental Permits  
625 Broadway  
Albany, N.Y. 12233-1750

  
Authorized Signature

  
Date

## PREFACE

Pursuant to Section 402 of the Clean Water Act (“CWA”), operators of *small municipal separate storm sewer systems* (“small MS4s”), located in *urbanized areas* (“UA”) and those *additionally designated* by New York State are unlawful unless they are authorized by a *National Pollutant Discharge Elimination System* (“NPDES”) permit or by a state permit program. New York’s *State Pollutant Discharge Elimination System* (“SPDES”) is an NPDES-approved program with permits issued in accordance with the *Environmental Conservation Law* (“ECL”).

Only those *small MS4 operators* who *develop* and *implement* a *stormwater management program* (SWMP) and obtain permit coverage in accordance with Part II of this *SPDES general permit* are authorized to *discharge stormwater* from their *small MS4* under this *SPDES general permit*.

A *covered entity* authorized under GP-0-08-002 as of the effective date of GP-0-10-002, shall be permitted to discharge in accordance with the renewed permit, GP-0-10-002, upon the submission of their Annual Report, unless otherwise notified by the *Department*.

An *operator* not authorized under GP-0-10-002 may<sup>1</sup> obtain coverage under this *SPDES general permit* by submitting a Notice of Intent (NOI) to the address provided on the NOI form. For newly regulated MS4s, authorization under this *SPDES general permit* is effective upon written notification from the *Department* of the receipt of a complete NOI. Copies of this *SPDES general permit* and the NOI for New York are available by calling (518) 402 - 8109 or at any *Department* of Environmental Conservation (*Department*) regional office (Appendix A). They are also available on the *Department’s* website:

<http://www.dec.ny.gov/permits/6045.html>

Submitting an NOI is an affirmation that an initial *SWMP* has been *developed* and will be *implemented* in accordance with the terms of this *SPDES general permit*.

**\* Note: all italicized words within this *SPDES general permit* are defined in Part X. Acronyms and Definitions.**

---

<sup>1</sup> The term “may” is used to recognize that there are circumstances under which the *operator* is ineligible for coverage under this *SPDES general permit* because of exclusionary provisions of this permit. *Operators* that are excluded from coverage under this *SPDES general permit* as provided for in Part I, for example, are not authorized to *discharge* under this permit. This clarification also applies to situations in which an NOI has been submitted; submission of an NOI by an entity excluded from *SPDES general permit* coverage does not authorize the *small MS4* to *discharge stormwater* runoff under the authority of this *SPDES general permit*.

**NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION  
 SPDES GENERAL PERMIT FOR DISCHARGES FROM  
SMALL MUNICIPAL SEPARATE STORM SEWER SYSTEMS (MS4s)**

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## Part I. PERMIT COVERAGE AND LIMITATIONS

### A. Permit Application

1. This *SPDES general permit* authorizes *discharges* of stormwater from *small municipal separate storm sewer systems* ("MS4"s) as defined in 40 CFR 122.26(b)(16), provided all of the eligibility provisions of this *SPDES general permit* are met.
  
2. Exempt Non-Stormwater Discharges. The following non-stormwater *discharges* are exempt from the need for *SPDES general permit* coverage unless the *Department* has determined them to be substantial contributors of pollutants to a particular *small MS4* applying for coverage under this *SPDES general permit*. If the *Department* determines that one or more of the *discharges* listed below is a substantial contributor of pollutants to a *small MS4*, the identified *discharges* will be considered *illicit*. In that event, the *covered entity* must eliminate such discharges by following the *illicit discharge* minimum control measure ("MCM") requirements (See Part VII.A.3 or VIII.A.3, and Part IX.A.3, B.3, C.3, and D.3 where applicable).
  - a. water line flushing
  - b. landscape irrigation
  - c. diverted stream flows
  - d. rising ground waters
  - e. uncontaminated ground water infiltration (as defined at 40 CFR 35.2005(20))
  - f. uncontaminated ground water
  - g. discharges from potable water sources
  - h. foundation drains
  - i. air conditioning condensate
  - j. irrigation water
  - k. springs
  - l. water from crawl space and basement sump pumps
  - m. footing drains
  - n. lawn and landscape watering runoff provided that all pesticides and fertilizers have been applied in accordance with the manufacturer's product label;
  - o. water from individual residential car washing
  - p. flows from riparian habitats and wetlands
  - q. dechlorinated swimming pool discharges
  - r. residual street wash water
  - s. discharges or flows from fire fighting activities

**(Part I.A.2.)**

- t. dechlorinated water reservoir discharges
- u. any SPDES permitted discharge.

Even if the non-stormwater discharges are determined not to be substantial contributors of pollutants, the *Department* recommends that the *covered entity's stormwater management program* ("SWMP") include public education and outreach activities directed at reducing pollution from these discharges.

**B. Limitations on Coverage**

The following are not authorized by this *SPDES general permit*:

1. *Stormwater discharges* whose unmitigated, direct, indirect, interrelated, interconnected, or interdependent impacts would jeopardize a listed endangered or threatened species or adversely modify designated critical habitat;
2. *Stormwater discharges* or *implementation* of a *covered entity's SWMP*, which adversely affect properties listed or eligible for listing in the National Register of Historic Places, unless the covered entity is in compliance with requirements of the National Historic Preservation Act and has coordinated with the appropriate State Historic Preservation Office any activities necessary to avoid or minimize impacts;
3. *Stormwater discharges* to territorial seas not of the State of New York, the contiguous zone, and the oceans unless such *discharges* are in compliance with the ocean *discharge* criteria of 40 CFR 125 subpart M;
4. *Stormwater discharges*, the permitting of which is prohibited under 40 CFR 122.4 and/ or the *ECL*;

**C. Exemption Criteria**

For *stormwater discharges* from a designated *small MS4* that are mixed with non-*stormwater* or *stormwater* associated with *industrial activity*, the *Department* may determine them to be exempt from the requirements of this *SPDES general permit* if the *discharges* are:

1. Effectively addressed by and in compliance with a different *SPDES general permit* or an *individual SPDES permit*; or
2. Identified by and in compliance with Part I.A.2 of this *SPDES general permit*.

## **Part II. OBTAINING PERMIT COVERAGE**

### **A. Permit coverage is obtained by submission of a complete and accurate Notice Of Intent.**

### **B. Permit coverage is public noticed by the Department.**

NOIs will be public noticed and an opportunity for public comment provided on the contents of submitted NOIs.

- a. NOIs and the location of the SWMPs and Annual Reports for existing MS4s will be posted in the Environmental Notice Bulletin (ENB).
- b. A deadline of 28 calendar days from the posting in the ENB will be provided for receiving comments.
- c. After the public comment period has expired, the *Department* may extend the public comment period, require submission of an application for an individual SPDES permit or alternative *SPDES general permit*, or accept the NOI or SWMP as complete.

### **C. Continuance of Permit Coverage for Covered Entities Authorized by GP-0-08-002 (Continuing Covered Entities)**

As of May 1, 2010, entities with coverage under GP-0-08-002 will continue to have authorization to discharge on an interim basis for up to 180 days from the effective date of this *SPDES general permit*. Covered entities may gain coverage under this *SPDES general permit* by submission of their 2009 Annual Report due in June 2010. For public participation purposes, the updated Annual Report will be considered equivalent to submission of an NOI.

When the operator changes, a new operator is added, or the individual responsible for the SWMP changes, these changes must be indicated on the MCC form submitted in accordance with Part V.D. It is not necessary to submit a revised Notice of Intent (NOI).

### **D. Permit Coverage for Covered Entities Newly Designated Under GP-0-10-002 (Small MS4s not Previously Authorized by GP-0-08-002)**

Certain *small MS4s* designated by 40CFR Section 122.32(a)(1) were not authorized by GP-0-08-002, but are now required to gain coverage under this *SPDES general permit*. The *small MS4s* were not previously authorized because they were either:

- required to gain coverage under GP-0-08-002, but were granted a waiver from that requirement;
- were not required to gain coverage under GP-0-08-002 based on the designation criteria, but they are now within an *Additionally Designated Area*; or

**(Part II.D.)**

- were otherwise not permitted under GP-0-08-002.
- 1. In order for *stormwater discharges* from *small MS4s* to be newly authorized under this *SPDES general permit*, an operator must:
  - a. within 180 days of receiving written notification from the *Department* that a permit for discharges from MS4s is required, prepare an NOI using the form provided by the *Department* (or a photocopy thereof); and
  - b. submit the NOI, signed in accordance with Part VI.J of this *SPDES general permit*, to:

**NOTICE OF INTENT  
NYS DEC, Bureau of Water Permits  
625 Broadway, 4<sup>th</sup> Floor  
Albany, NY 12233-3505**

- 2. *Operators* who submit a complete NOI in accordance with the requirements of this *SPDES general permit* are authorized to *discharge stormwater* from *small MS4s*, under the terms and conditions of this *SPDES general permit*, upon written notification from the Department that a complete NOI has been received.

**E Small MS4s Not Required to Gain Coverage**

*Operators* of unregulated *small MS4s* may apply for coverage under this *SPDES general permit* at any time, per Part II.B.

**F. Extension of Permit Coverage to Covered Entity's Full Jurisdiction**

*Operators* of traditional land use control MS4s must extend the implementation of minimum control measures (MCMs) 4 and 5 in accordance with *Criterion 3* of the Designation Criteria or apply for a waiver, if eligible.

*Operators* of all regulated *small MS4s* may also extend the implementation of any of the six MCMs to areas under their control, but outside of the existing area covered by this *SPDES general permit*. This may be done by describing the program components (MCMs) being extended and the geographic extent to which they are being extended in the annual report (Part V.C.) and indicating in the Municipal Compliance Certification (MCC) form (Part V.D.) that the program was extended to the *covered entity's* full jurisdiction.

**(Part II.)**

**G. Single Entity to Cover the MS4**

A single entity may gain coverage for, and on behalf of, one or more regulated MS4s to implement a part of an MCM, one, or all the MCMs. A single entity shall be defined by watershed, municipal boundaries, special district boundaries, or other specifically defined boundaries. The single entity must demonstrate to the *Department* that it was formed in accordance with applicable state and/or local legislation, and that it has the legal authority and capacity (financial, resources, etc.) to meet the requirements of this *SPDES general permit*. Depending on the MCM(s) implemented, the single entity shall demonstrate that it has the following capacities, as applicable for each MCM that the single entity is seeking coverage under this *SPDES general permit*:

1. Initiate and administer appropriate enforcement procedures,
2. Collect, finance, bond or otherwise borrow money for capital projects,
3. Control the management and operation of the storm sewer system,
4. Implement best management practices at all municipal facilities discharging to the MS4, and
5. Obtain access to property that may be necessary for siting stormwater management facilities and/or practices.

The single entity must submit a complete NOI form to the *Department*, detailing which of the regulated MS4s it will gain coverage for and which of the MCMs, or parts of MCMs, it will implement for each particular regulated MS4. A copy of the document forming the single entity, and detailing the legal authority and capacity of the single entity, must be attached to the NOI. Prior to the single entity gaining coverage under this *SPDES general permit*, each regulated MS4, for which the single entity will implement one or more MCM must submit a complete notice of termination (NOT). This notice shall specify which of the minimum control measures the single entity will implement for the MS4 and which of the minimum control measures the MS4 will implement.

**Part III. SPECIAL CONDITIONS**

**A. Discharge Compliance with Water Quality Standards**

Where a *discharge* is already authorized under this *SPDES general permit* and is later determined to directly or indirectly cause or have the reasonable potential to cause or contribute to the violation of an applicable *water quality standard*, the *Department* will notify the *covered entity* of such violation(s) and may take enforcement actions for such violations. The *covered entity* must take all necessary actions to ensure future *discharges* do not directly or indirectly cause or contribute to the violation of a *water quality standard*, and the *covered entity* must document these actions in the *SWMP*.

**(Part III.A.)**

Compliance with this requirement does not preclude, limit, or eliminate any enforcement activity as provided by the Federal and / or State law for the underlying violation. Additionally, if violations of applicable water quality standards occur, then coverage under this *SPDES general permit* may be terminated by the *Department* in accordance with 750-1.21(e), and the *Department* may require an application for an alternative *SPDES general permit* or *individual SPDES permit* may be issued.

**B. Impaired Waters**

**1. Impaired Waters Without Watershed Improvement Strategies or Future TMDLs**

If a *small MS4 discharges* a stormwater pollutant of concern (POC) to an *impaired* water listed in Appendix 2, the covered entity must ensure no net increase in its *discharge* of the listed *POC* to that water.

By January 8, 2013, *covered entities* must assess potential sources of discharge of stormwater *POC(s)*, identify potential stormwater pollutant reduction measures, and evaluate their progress in addressing the *POC(S)*. Newly authorized covered entities must perform the above tasks within 5 years after gaining coverage under this *SPDES general permit*. Covered entities must evaluate their *SWMP* with respect to the *MS4's* effectiveness in ensuring there is no net increase discharge of stormwater *POC(s)* to the impaired waters for *storm sewersheds* that have undergone non-negligible changes such as changes to land use and impervious cover greater than one acre, or stormwater management practices during the time the *MS4* has been covered by this *SPDES general permit*. This assessment shall be conducted for the portions of the *small MS4 storm sewershed* that *discharge* to the listed waters (see Appendix 2). The assessment shall be done using *Department* supported modeling of pollutant loading.

If the modeling shows increases in loading of the *POC*, the *SWMP* must be modified to reduce the loading to meet the no net increase requirement. The subsequent annual reports must contain an assessment of priority stormwater problems, potential management practices that are effective for reduction of stormwater *POC(s)*, and document a gross estimate of the extent and cost of the potential improvements.

**2. Watershed Improvement Strategies**

The *SWMPs* for *covered entities* in the watersheds listed below must be modified to comply with the following requirements and the watershed improvement strategies. *Covered entities* implementing the pollutant-specific *BMPs* in addition to the *BMPs* required of all *covered entities* will be taking satisfactory steps towards achieving compliance with *TMDL* requirements. *Covered entities* under the *MS4 SPDES general*

**(Part III.B.2.)**

*permit* are required to make best efforts to participate in locally based watershed planning efforts that involve the NYSDEC, other covered entities, stakeholders and other interested parties for implementation of load reduction BMPs. Covered entities may form a Regional Stormwater Entity (RSE) to implement stormwater retrofits collectively. The *covered entities* must ensure that discharges of the *POC* to the *TMDL* waterbody are reduced through these or additional changes to the *SWMP* so that the waste load allocation is met.

MS4s are required to meet the reduction of the POC defined by the TMDL program defined in Part IX of this *SPDES general permit*. By the deadlines defined in Part IX of the general permit, *covered entities* must assess their progress and evaluate their *SWMP* to determine the *MS4's* effectiveness in reducing their discharges of *TMDL POC(s)* to *TMDL* water bodies. Newly designated watershed improvement strategy areas must perform the assessment within 5 years from authorization under this *SPDES* general permit. This assessment shall be conducted for the portions of the *small MS4 storm sewershed* that are within the *TMDL* watershed. The assessment shall be done using *Department* supported modeling of pollutant loading from the *storm sewershed*. The *covered entities* or an RSE must prepare and implement, participate in or utilize the results of existing or ongoing ambient water quality monitoring programs to validate the accuracy of models and evaluate the effectiveness of the additional *BMPs* for watershed improvement strategies.

If the modeling shows that loading of the POC is not being reduced to meet the waste load allocation, the *SWMP* must be modified to reduce the pollutant loading to meet the waste load allocation.

Each regulated MS4 is responsible for an individual load reduction, which is a fraction of the total required load reduction in the TMDL. If MS4s form an RSE and stormwater retrofits are approached collectively, the *Department* would allow compliance with this condition of the *SPDES* general permit to be achieved on a regional basis.

In this case the load reduction requirement for each participating MS4 will be aggregated, to create an RSE load reduction, to allow design and installation of retrofits where they are most feasible, without restricting MS4s to site retrofit projects within their municipal boundaries.

Each member of an RSE is in compliance if the aggregate reduction number associated with the retrofit plans is met. If the aggregate number is not met, each of the participating MS4s would be deemed non-compliant until such time as they had met their individual load reduction requirements.



**(Part III.B.2.)**

**a. New York City Watershed East of the Hudson River**

*Covered entities* shall modify their *SWMP* to meet the additional requirements as set forth in Part IX.A to address phosphorus as the *POC* for the portion of their *storm sewershed* in the watershed. A map of the watershed is shown in Appendix 3.

**b. Other Phosphorus Watersheds**

*Covered entities* shall modify their *SWMP* to meet the additional requirements as set forth in Part IX.B to address phosphorus as the *POC* for the portion of their *storm sewershed* in the watershed. Maps of the watersheds are shown in Appendices 4, 5, and 10.

**c. Pathogen Watersheds**

*Covered entities* shall modify their *SWMP* to meet the additional requirements as set forth in Part IX.C to address pathogens as the *POC* for the portion of their *storm sewershed* in any of the watersheds. Maps of the watersheds are shown in Appendices 6, 7, and 9.

**d. Nitrogen Watersheds**

*Covered entities* shall modify their *SWMP* to meet the additional requirements as set forth in Part IX.D to address nitrogen as the *POC* for the portion of their *storm sewershed* in the watershed. Maps of the watersheds are shown in Appendix 8.

**3. Future TMDL Areas**

If a *TMDL* is approved in the future by EPA for any waterbody or watershed into which a *small MS4 discharges*, the *covered entity* must review the applicable *TMDL* to see if it includes requirements for control of *stormwater discharges*. If a *covered entity* is not meeting the *TMDL* wasteload allocations, it must, within 180 days of written notification from the *Department*, modify its *SWMP* to ensure that the reduction of the *POC* specified in the *TMDL* is achieved. It will be the *MS4's* obligation to meet the waste load allocations specified in the *TMDL* through modification of its *SWMP plan* according to the schedule of Part IX of this *SPDES general permit*.

Modifications must be considered for each of the six MCMs. Refer to assistance documents or enhanced requirements for specific pollutants in documents on the *Department's* website for modifications specific to the *TMDL*. Revised *SWMPs* must include updated schedules for implementation.

**(Part III.B.3.)**

Within three years of having modified its SWMP to ensure that reduction of the POC specified in the TMDL is achieved, covered entities in future TMDL areas must assess their progress and evaluate their SWMP to determine the MS4's effectiveness in reducing their discharges of TMDL POC(s) to TMDL water bodies. This assessment shall be conducted for the portions of the *small MS4 storm sewershed* that are within the TMDL watershed. The assessment shall be done using *Department* supported modeling of pollutant loading from the *storm sewershed*.

**Part IV. Stormwater Management Program (SWMP) Requirements**

**A. SWMP Background**

*Covered entities* must develop (for newly authorized MS4s , implement), and enforce a SWMP designed to reduce the discharge of pollutants from *small MS4s* to the *maximum extent practicable* ("MEP") in order to protect water quality and to satisfy the appropriate water quality requirements of the ECL and the CWA. The objective of the permit is for MS4s to assure achievement of the applicable water quality standards. *Covered entities* under GP-0-08-002 must have prepared a SWMP plan documenting modifications to their SWMP. See Part X.B. (Definitions) for more information about the SWMP and SWMP plan.

The SWMP and SWMP plan may be created by an individual *covered entity*, by a shared effort through a group or coalition of individual *covered entities*, or by a third party entity. The SWMP plan shall be made readily available to covered entity's staff, to the public and to *Department* and EPA staff.

**B. Cooperation Between Covered entities Encouraged**

The *Department* encourages *covered entities* to cooperate when *developing* and *implementing* their SWMP<sup>2</sup>. However, each *covered entity* is responsible for obtaining its own permit coverage and for filing its own NOI. Irrespective of any agreements between *covered entities*, each individual *covered entity* remains legally responsible for satisfying all GP-0-10-002 requirements and for its own *discharges*. If one *covered entity* is relying on another *covered entity* to satisfy one or more of its permit obligations, that fact must be noted on the *covered entity's* MCC form. The other entity must, in fact, *implement* the MCM(s) and must agree to *implement* the MCM(s) on the first *covered entity's* behalf. This agreement between the two or more parties must be documented

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<sup>2</sup> For example, villages are encouraged to cooperate with towns, towns with counties, and adjacent counties with each other. In addition, municipal governments are encouraged to coordinate and cooperate with *non-traditional MS4s* such as DOT, school and fire districts, Federal and State facilities located within and adjacent to their jurisdictions. Sewer boards, water boards, or other non-traditional entities are encouraged to partner with the municipality (municipalities) that they serve.

in writing and signed by both (all) parties. Part IV.G. below may apply if such an agreement

**(Part IV.B.)**

is not already in place. The agreement must be included in the *SWMP plan*, and be retained by the *covered entity* for the duration of this *SPDES general permit*, including any administrative extensions of the permit term.

*Covered entities* that are working together to *develop (for newly authorized MS4s)* or *implement* their *SWMPs* are encouraged to complete shared annual reports. *Covered entities* may also hold a group meeting to present their annual reports to the public and to receive comments on their annual reports. These options are discussed in more detail in Part V.C.2.

**C. SWMP Coverage Area**

At a minimum, *covered entities* are required to *develop (for newly authorized MS4s)* and *implement SWMPs* in the automatically designated *urbanized areas* (“UA”) and *additionally designated* areas (40CFR Section 122.32(a)(1) or 122.32(a)(2)) under their jurisdiction<sup>3</sup>.

*SWMP* coverage shall include all UA or additionally designated areas within the *covered entity's* jurisdiction that drain into their *small MS4* and subsequently *discharge* to *surface waters of the State* directly or through other *small MS4s*.

Operators of *small MS4s* whose jurisdiction includes regulated and unregulated areas are encouraged to include their entire jurisdiction in their *SWMP* (refer to Part II.D).

**D. SWMP Development and Implementation for Covered entities Authorized by GP-0-08-002(Continuing Covered entities)**

*Covered entities* authorized under GP-0-08-002 shall continue to fully *implement* their *SWMP*, unless otherwise stated in this *SPDES general permit*. A *covered entity* may modify its *SWMP* if it determines changes are needed to improve *implementation* of its *SWMP*. Any changes to a *SWMP* shall be reported to the *Department* in the *MS4's*

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<sup>3</sup> The purpose of this section is to minimize conflicts between adjacent *small MS4s*. For the purposes of this *SPDES general permit*, areas under the *covered entity's* jurisdiction shall mean areas where the legal authority exists for the subject *covered entity* to *develop* and *implement* an *SWMP* including the six MCMs. It is not a permit requirement for *covered entities* to *implement* and enforce any portion of their *SWMP* in any area that is under the jurisdiction of another *covered entity*. For example, if a portion of a town drains directly into a stormwater system owned and operated by the State DOT, and this area of the town is regulated, the DOT will not be required to implement and enforce any portion of a *SWMP* in the area lying outside of its right of way. In this case, the town would be required to implement the program in the subject area in accordance with this *SPDES general permit*, this despite the fact that the subject drainage does not directly enter the town's system.

annual report and Municipal Compliance Certification (MCC) form (See Part V.C and V.D).

**(Part IV.)**

**E. SWMP Development and Implementation for Newly Regulated Covered entities (Small MS4s not Previously Authorized by GP-0-08-002)**

Certain *small MS4s* designated by 40CFR Section 122.32(a)(1) were not authorized by GP-0-08-002, but are now required to gain coverage under this *SPDES general permit*. The *small MS4s* were not previously authorized because they were either:

- required to gain coverage under GP-0-08-002, but were granted a waiver from that requirement;
- were not required to gain coverage under GP-0-08-002 based on the designation criteria, but they now meet the additional designation criteria in NYS DEC “Designation Criteria for Identifying Regulated Municipal Separate Storm Sewer Systems” ; or
- were otherwise not permitted under GP-0-08-002.

*Operators of small MS4s* newly regulated under this *SPDES general permit* must *develop* an initial *SWMP* and provide adequate resources to fully *implement* the *SWMP* no later than three years from the date of the individual MS4's authorization.

A newly regulated *covered entity* may modify its *SWMP* to comply with the terms and conditions of this *SPDES general permit* if it determines changes are needed to improve *implementation* of its *SWMP*. Any changes to a *SWMP* shall be documented in the *SWMP plan* and reported to the *Department* in the annual report (See Part V.C).

*Covered entities* are required to make steady progress toward full *implementation* in the first three years after the date of authorization. Full *implementation* of *SWMPs* for newly regulated *small MS4s* is expected no later than three years from the date of coverage under this *SPDES general permit*.

**F. Minimum Control Measures**

Each *covered entity* is required to develop (*for newly authorized MS4s*) and implement a *SWMP* that satisfies the requirements for each of six required program components, known as minimum control measures (MCMs).

The MCMs for *traditional land use control MS4s* are listed in Part VII. The MCMs for *traditional non-land use control MS4s* and *non-traditional MS4s* are listed in Part VIII. Additional MCMs that *covered entities* in watersheds with improvement strategies must address, referred to in Part III.B.2, are described in Part IX.

**(Part IV.)**

**G. Reliance Upon Third Parties**

This section applies when a *covered entity* relies upon any third party entity to *develop* or *implement* any portion of its *SWMP*. Examples of such entities include, but are not

limited to a non-government, commercial entity that receives payment from the *covered entity* for services provided (for example businesses that create policies or procedures for *covered entities*, perform illicit discharge identification and track down, maintain roads, remove snow, clean storm sewer system, sweep streets, etc as contracted by the covered entity).

The covered entity must, through a signed certification statement, contract or agreement provide adequate assurance that the third parties will comply with permit requirements applicable to the work performed by the third party. The certification statement, contract or other agreement must:

- provide adequate assurance that the third party will comply with permit requirements;
- identify the activities that the third party entity will be responsible for and include the name and title of the person providing the signature;
- the name, address and telephone number of the third party entity;
- an identifying description of the location of the work performed; and
- the date the certification statement, contract or other agreement is signed.

Example certification language is provided below:

**Contracted Entity Certification Statement:**

“I certify under penalty of law that I understand and agree to comply with the terms and conditions of the (covered entity’s name) stormwater management program and agree to implement any corrective actions identified by the (covered entity’s name) or a representative. I also understand that the (covered entity’s name) must comply with the terms and conditions of the New York State Pollutant Discharge Elimination System (“SPDES”) general permit for stormwater discharges from the Municipal Separate Storm Sewer Systems (“MS4s”) and that it is unlawful for any person to directly or indirectly cause or contribute to a violation of water quality standards. Further, I understand that any non-compliance by (covered entity’s name) will not diminish, eliminate, or lessen my own liability.”

## **Part V. PROGRAM ASSESSMENT, RECORD KEEPING, REPORTING AND CERTIFICATION REQUIREMENTS**

### **A. Assessment**

*Covered entities* are required to collect and report information about the *development* and *implementation* of their SWMPs. Specific information the *small MS4s* are required to collect is identified in Parts VII or VIII, depending on the type of *small MS4*. The *small MS4s* are encouraged to collect additional information that will help them evaluate their SWMP. Collection of information over time will facilitate the evaluation of the *covered entity's SWMP* by allowing the examination of trends in the information collected.

The *covered entity* must conduct an annual evaluation of its program compliance, the appropriateness of its identified *BMPs*, meeting new permit requirements, and progress towards achieving its identified *measurable goals*, which must include reducing the *discharge* of pollutants to the *MEP*.

Where the evaluation shows that the SWMP is not reducing discharges to the *MEP*, the SWMP shall be revised to reduce discharges to the *MEP*. Update to the SWMP and the SWMP plan must be completed within a year from the annual evaluation of their SWMP with an implementation schedule no later than 3 years from the annual evaluation.

### **B. Recordkeeping**

The *covered entity* must keep records required by this *SPDES general permit* (records that document *SWMP*, records included in *SWMP plan*, other records that verify reporting required by the permit, NOI, past annual reports, and comments from the public and the *Department*, etc.) for at least five (5) years after they are generated. Records must be submitted to the *Department* within 5 business days of receipt of a *Department* request for such information. The *covered entity* shall keep duplicate records (either hard copy or electronic), to have one copy for public observation and a separate working copy where the *covered entity's* staff, other individuals responsible for the *SWMP* and regulators, such as *Department* and EPA staff can access them. Records, including the NOI and the *SWMP plan*, must be available to the public at reasonable times during regular business hours.

### **C. Annual Reporting**

#### **1. Annual Report Submittal**

The annual reporting period ends March 9 of each year. The annual report must be received in the *Department's* Central Office, electronic or hard copy, no later than June 1 of each reporting year. If electronic, submit in accordance with procedures set forth by the *Department*. If mailed, send to the address below:

**(Part V.C.1.)**

**NYS DEC “MS4 Coordinator”  
Bureau of Water Permits  
625 Broadway, 4<sup>th</sup> Floor  
Albany, NY 12233-3505**

Failure to submit a complete annual report and a complete MCC form (Part V.D) shall constitute a permit violation.

**a. Annual Report Submittal for Newly Regulated Covered entities (Small MS4s not Previously Authorized by GP-0-08-002)**

Newly regulated covered entities *developing* their *SWMP* are to submit their Annual Report in a format provided by the *Department*. They will provide, at a minimum, the information on the annual report form and the information required by Parts VII or VIII.

Newly regulated *covered entities* are required to submit their first annual report the year that authorization is granted if authorization is granted on or before December 31 of that reporting year.

**b. Annual Report Submittal for Covered entities Authorized by GP-0-08-002 (Continuing Covered entities)**

Beginning with annual reports due in 2010 *covered entities* implementing their *SWMP* shall submit, at a minimum, information specified by the *Department* in Part VII or VIII in a format provided by the *Department*.

**2. Shared Annual Reporting and Submittal**

*Covered entities* working together to *develop* (for newly authorized *MS4s*) and /or *implement* their *SWMPs* may complete a shared annual report. The shared annual report is an annual report that outlines and explains group activities, but also includes the tasks performed by individual *covered entities* (*BMPs*, *measurable goals*, schedules of planned activities, etc.). To facilitate the submission of one annual report for the entire group of *covered entities*, individual *covered entity*'s activities may be incorporated into the report by either:

- providing the details specific to their *small MS4(s)* to a person(s) who incorporates that information into the group report. That one group report is submitted to the *Department* for all participating *small MS4s*; or
- providing the details specific to their *small MS4(s)* on a separate sheet(s) that will be attached with the one group report.

**(Part V.C.2.)**

**Regardless of the method chosen, each *covered entity* must, by June 1 of the annual reporting year:**

- a. Provide their individual MCC form (see Part V.D) to be submitted with the shared annual report. Each *covered entity* must sign and submit an MCC form to take responsibility for all of the information in the annual report, which includes specific endorsement or acceptance of the shared annual report on behalf of the individual *covered entity*;
- b. Present their draft annual report at a meeting (see Part VII.A.2.d or Part VIII.A.2.d for more information). For completed shared annual reports, the report may be presented by each participating individual *covered entity* at an existing *municipal* meeting or may be made available for comments on the internet. Additionally, *covered entities* participating in shared annual reporting may combine meetings to have a group or regional meeting. While the group meeting is allowable, each *covered entity* shall ensure that local public officials and members of the public are informed about the program, activities and progress made; and
- c. Submit a summary of any comments received and (intended) responses on the individual *covered entity's* information or the shared annual report information, as applicable. This information should be included with the annual report submission. Changes made to the *SWMP* in response to comments should be described in the annual report.

**3. Annual Report Content**

The annual report shall summarize the activities performed throughout the reporting period (March 10 to March 9) and must include at a minimum:

- a. The status of compliance with permit conditions, including Watershed Improvement Strategy conditions;
- b. An assessment/evaluation of:
  - i. the appropriateness of the identified *BMPs*;
  - ii. progress towards achieving the statutory goal of reducing the *discharge* of pollutants to the *MEP*; and
  - iii. the identified *measurable goals* for each of the *MCMs*.
- c. Results of information collected and analyzed, monitoring data, and an assessment of the *small MS4's SWMP* progress toward the statutory goal of reducing the *discharge of pollutants* to the *MEP* during the reporting period. This could include results from required *SWMP* reporting, estimates of pollutant loading (from parameters such as identified illicit discharges, physically interconnected *small MS4s* that may contribute substantially to pollutant



**(Part V.C.3.c.)**

- loadings from the *small MS4*) and pollutant load reductions (such as illicit discharges removed). This assessment may be submitted as an attachment;
- d. When required to be completed, results of assessments of effectiveness in meeting no net increase requirements or TMDL loadings as required by III. B.1 and 2. These results must be submitted in evaluation forms and as an attachment;
  - e. A summary of the stormwater activities planned to be undertaken during the next reporting cycle (including an implementation schedule);
  - f. Any change in identified *BMPs* or *measurable goals* and justification for those changes;
  - g. Notice that a *small MS4* is relying on another entity to satisfy some or all of its permit obligations (if applicable);
  - h. A summary of the public comments received on this annual report at the public presentation required in Part VII.A.2. or VIII.A.2. And, as appropriate, how the *small MS4* will respond to comments and modify the program in response to the comments;
  - i. A statement that the final report and, beginning in 2009, the SWMP plan are available for public review and the location where they are available; and
  - j. The information specified under the reporting requirements for each MCM (Part VII or VIII).

**D. Annual Report Certification**

A signed original hard copy and a photocopy of the MCC form must be submitted to the *Department* no later than June 1 of each reporting year. If the annual report is mailed (Part V.C. above), the MCC form must be submitted with the annual report.

The MCC form, provided by the *Department*, certifies that all applicable conditions of Parts IV, VII, VIII and IX of this *SPDES general permit* are being *developed, implemented* and complied with. It must be signed by an individual as described in Part VI.J.2. The certification provided by the MCC form does not affect, replace or negate the certification required under Part VI.J(2)(d). If compliance with any requirement cannot be certified to on the MCC form, a complete explanation with a description of corrective measures must be included as requested on the MCC form.

Failure to submit a complete annual report (Part V.C.) and a complete MCC form shall constitute a permit violation.

## Part VI. STANDARD PERMIT CONDITIONS

### A. General Authority to Enforce

Three of the MCMs (illicit discharge detection and elimination, construction site *stormwater* runoff control and post-construction *stormwater* management) require local laws, ordinances or other regulatory mechanisms to ensure successful implementation of the MCMs. Some *covered entities*, however, are not enabled by state law to adopt local laws or ordinances. Those *covered entities* (typically non-traditional MS4s and traditional, non-land use control MS4s) are expected to utilize the authority they do possess to create or modify existing regulatory mechanisms, including but not limited to contracts, bid specifications, requests for proposals, etc. to ensure successful implementation.

### B. Duty To Comply

A *covered entity* must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the CWA and the *ECL* and is grounds for enforcement action.

### C. Enforcement

Failure of the *covered entity*, its contractors, subcontractors, agents and/or assigns to strictly adhere to any of the *SPDES general permit* requirements contained herein shall constitute a permit violation. There are substantial criminal, civil, and administrative penalties associated with violating the provisions of this permit. Fines of up to \$37,500 per day for each violation and imprisonment for up to fifteen (15) years may be assessed depending upon the nature and degree of the offense.

### D. Continuation of the Expired SPDES General Permit

This *SPDES general permit* expires five years from the effective date of this permit. However, an administratively extended *SPDES general permit* continues in force and effect until the *Department* issues a new permit, unless a *covered entity* receives written notice from the *Department* to the contrary. *Operators* of the *MS4s* authorized under the administratively extended expiring *SPDES general permit* seeking coverage under the new *SPDES general permit* must refer to the terms within the new *SPDES general permit* to continue coverage.

### E. Technology Standards

*Covered entities*, in accordance with written notification by the *Department*, must comply with all applicable technology-based effluent standards or limitations promulgated by EPA pursuant to Sections 301 and 304 of the CWA. If an effluent standard or limitation more stringent than any effluent limitation in the *SPDES general permit* or controlling a pollutant not limited in the permit is promulgated or approved

**(Part VI.E.)**

after the permit is issued, the *SWMP plan* shall be promptly modified to include that effluent standard or limitation.

**F. Need To Halt or Reduce Activity Not a Defense**

It shall not be a defense for a *covered entity* in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this *SPDES general permit*.

**G. Duty to Mitigate**

The *covered entity* shall take all reasonable steps to minimize or prevent any *discharge* in violation of this *SPDES general permit* which has a reasonable likelihood of adversely affecting human health or the environment.

**H. Duty to Provide Information**

The *covered entity* shall, within five (5) business days, make available for inspection and copying or furnish to the *Department* or an authorized representative of the *Department* any information that is requested to determine compliance with this *SPDES general permit*. Failure to provide information requested shall be a violation of the terms of this *SPDES general permit* and applicable regulation.

**I. Other Information**

*Covered entities* who become aware of a failure to submit any relevant facts or have submitted incorrect information in the NOI or in any other report to the *Department* must promptly submit such facts or information.

**J. Signatory Requirements**

All NOIs, reports, certifications or information submitted to the *Department*, or that this *SPDES general permit* requires be maintained by the *covered entity*, shall be signed as follows:

**1. Notices of Intent**

All NOIs shall be signed by either a principal executive officer or ranking elected official. Principal executive officer includes (1) the chief executive officer of the municipal entity agency, or (2) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency.

**2. Reports Required and Other Information Requested**

All reports required by this *SPDES general permit* and other information requested by the *Department*, including MCC forms (part V.D.), shall be signed by a person

**(Part VI.J.2.)**

described above or by a duly authorized representative of that person<sup>4</sup>. A person is a duly authorized representative only if:

- a. The authorization is made in writing by a person described in VI.J.1 above and submitted to the *Department*; and
- b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, operator of a well or well field, superintendent, or position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the *covered entity* (a duly authorized representative may thus be either a named individual or any individual occupying a named position); and
- c. The written authorization shall include the name, title and signature of the authorized representative and be attached to the MCC form; and
- d. **Changes to authorization.** If an authorization to discharge is no longer accurate because a different *covered entity* has responsibility for the overall operation of another *covered entity's* program, these changes must be indicated on the MCC form submitted to the *Department* per Part V.D.
- e. **Initial signatory authorization or changes to signatory authorization.** The initial signatory authorization must be submitted to the *Department* with any reports to be signed by a signatory representative. If a signatory authorization under VI.J.2 is no longer accurate because a different individual, or position, has responsibility for the overall operation of the facility, a new signatory authorization satisfying the requirements of VI.J.2 must be submitted to the *Department* with any reports to be signed by an authorized representative.
- f. **Certification.** Any person signing documents under paragraph VI.H shall make the following certification:

*"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the*

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<sup>4</sup> Positions that must be duly authorized include, but are not limited to, Environmental Directors, Deputy Supervisors, Safety and Environmental Managers, Assistant Directors, and Chief Health and Safety Officers.

**(Part VI.J.2.f.)**

*information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information."*

Under Part VI.J. (Signatory Requirements), it shall constitute a permit violation if an incorrect and/or improper signatory authorizes any required forms, and/or reports.

**K. Penalties for Falsification of Reports**

Article 17 of the *ECL* provides a civil penalty of \$37,500 per day per violation of this permit. Articles 175 and 210 of the New York State Penal Law provide for a criminal penalty of a fine and / or imprisonment for falsifying reports required under this permit..

**L. Oil and Hazardous Substance Liability**

Nothing in this *SPDES general permit* shall be construed to preclude the institution of any legal action or relieve the *covered entity* from any responsibilities, liabilities, or penalties to which it is or may be subject under section 311 of the CWA or section 106 of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA).

**M. Property Rights**

The issuance of this *SPDES general permit* does not convey any property rights of any sort, nor any exclusive privileges, nor does it authorize any injury to private property nor any invasion of personal rights, nor any infringement of Federal, State or local laws or regulations, nor does it limit, diminish and / or stay compliance with any terms of this permit.

**N. Severability**

The provisions of this *SPDES general permit* are severable, and if any provision of this *SPDES general permit*, or the application of any provision of this *SPDES general permit* to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit shall not be affected thereby.

**O. Requiring an Individual Permit or an Alternative General Permit**

1. In its sole discretion, the *Department* may require any person authorized by this *SPDES general permit* to apply for and/or obtain either an *individual SPDES permit* or an alternative *SPDES general permit*. Where the *Department* requires a *covered entity* to apply for an *individual SPDES permit*, the *Department* will notify such

**(Part VI.O.1.)**

person in writing that a permit application is required. This notification shall include a brief statement of the reasons for this decision, an application form, a statement setting a deadline for filing the application, and a deadline not sooner than 180 days from covered entity's receipt of the notification letter, whereby the authorization to discharge under this general permit shall be terminated. Applications must be submitted to the appropriate Regional Office. The *Department* may grant additional time to submit the application upon request of the applicant.

2. Any *covered entity* authorized by this *SPDES general permit* may request to be excluded from the coverage of this *SPDES general permit* by applying for an *individual SPDES permit* or an *alternative SPDES general permit*. In such cases, a *covered entity* must submit an individual application or an application for an alternative *SPDES general permit* in accordance with the requirements of 40 CFR 122.26(c)(1)(ii), with reasons supporting the request, to the *Department* at the address for the appropriate Regional Office. The request may be granted by issuance of any *individual SPDES permit* or an *alternative SPDES general permit* if the reasons cited by the *covered entity* are adequate to support the request.
3. When an individual *SPDES permit* is issued to a discharger authorized to discharge under a *SPDES general permit* for the same discharge(s), the general permit authorization for outfalls authorized under the individual permit is automatically terminated on the effective date of the individual permit unless termination is earlier in accordance with 6 NYCRR Part 750.

**P. Other State Environmental Laws**

1. Nothing in this *SPDES general permit* shall be construed to preclude the institution of any legal action or relieve a *covered entity* from any responsibilities, liabilities, or penalties established pursuant to any applicable *State* law or regulation under authority preserved by section 510 of the CWA.
2. No condition of this *SPDES general permit* releases the *covered entity* from any responsibility or requirements under other environmental statutes or regulations.

**Q. Proper Operation and Maintenance**

A *covered entity* must at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the *covered entity* to achieve compliance with the conditions of this *SPDES general permit*. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. Proper operation and maintenance requires the operation of backup or auxiliary facilities or similar systems,

**(Part VI.Q.)**

installed by a *covered entity* only when necessary to achieve compliance with the conditions of the *SPDES general permit*.

**R. Inspection and Entry**

The *covered entity* shall allow the Commissioner of NYSDEC, the Regional Administrator of the USEPA, the applicable county health department, or their authorized representatives, upon the presentation of credentials and other documents as may be required by law, to:

1. Enter upon the *covered entity's* premises where a regulated facility or activity is located or conducted or where records must be kept under the conditions of this *SPDES general permit*;
2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit, including records required to be maintained for purposes of operation and maintenance; and
3. Inspect at reasonable times any facilities or equipment (including monitoring and control equipment), practices, or operations regulated or required under the permit.

**S. Permit Actions**

At the *Department's* sole discretion, this *SPDES general permit* may be modified, revoked, suspended, or renewed for cause at any time.

**T. Anticipated noncompliance**

The *covered entity* shall give advance notice to the *Department* of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements. Notification of planned changes or anticipated noncompliance does not limit, diminish and / or stay compliance with any terms of this permit.

**U. Permit Transfers**

Coverage under this *SPDES general permit* is not transferable to any person except after notice to the *Department*. The *Department* may require modification or revocation and reissuance of this *SPDES general permit* to change the responsible party and incorporate such other requirements as may be necessary.

## Part VII. MINIMUM CONTROL MEASURES - TRADITIONAL LAND USE CONTROL

### A. Traditional Land-Use Control MS4 Minimum Control Measures (MCMs)

These MCMs apply to *traditional land use control MS4s* (cities, towns, villages). The SWMP for these *small MS4s* must be comprised of the 6 MCMs below. It is recommended that covered entities refer to assistance and guidance documents available from the *State* and EPA.

Continuing covered entities were required to develop a SWMP with the MCM requirements below by January 8, 2008 (if authorized by GP-02-02) and within three years of gaining coverage (if authorized by GP-0-08-002). Under this *SPDES general permit*, the continuing *covered entities* are required to implement their SWMP, including the MCM requirements below. Notwithstanding any sooner deadlines contained elsewhere within this permit, newly regulated *covered entities* are required to develop their SWMP, containing the MCM requirements below, within the first 3 years of coverage and then commence implementation.

For each of the elements of the SWMP plan, the *covered entity* must identify (i) the agencies and/or offices that would be responsible for implementing the SWMP plan element and (ii) any protocols for coordination among such agencies and/or offices necessary for the implementation of the plan element.

The *covered entity* may *develop* (for newly authorized MS4s) and /or *implement* their SWMP within their jurisdiction on their own. The *covered entity* may also *develop* (for newly authorized MS4s) and / or *implement* part or all of their SWMP through an intermunicipal program with another *covered entity(s)* or through other cooperative or contractual agreements with third parties that provide services to the *covered entities*.

#### 1. Public Education and Outreach - SWMP Development / Implementation

At a minimum, all *covered entities* must:

- a. Identify *POCs*, waterbodies of concern, geographic areas of concern, target audiences;
- b. *Develop* (for newly authorized MS4s) and *implement* an ongoing public education and outreach program designed to describe to the general public and target audiences:
  - i. the impacts of *stormwater discharges* on waterbodies;
  - ii. *POCs* and their sources;
  - iii. steps that contributors of these pollutants can take to reduce pollutants in *stormwater runoff*; and



**(Part VII.A.1.b.)**

- iv. steps that contributors of non-*stormwater discharges* can take to reduce pollutants (non-*stormwater discharges* are listed in Part I.A.2);
- c. *Develop (for newly authorized MS4s), record, periodically assess, and modify as needed, measurable goals; and*
- d. Select and implement appropriate education and outreach *activities* and *measurable goals* to ensure the reduction of all *POCs* in *stormwater discharges* to the *MEP*.

**Required SWMP Reporting**

- e. **Program *implementation* reporting for continuing covered entities** (MS4s covered for 3 or more years on the *reporting date*). At a minimum, the *covered entity* shall report on the items below:
  - i. list education / outreach *activities* performed for the general public and target audiences and provide any results (for example, number of people attended, amount of materials distributed, etc.);
  - ii. *covered entities* performing the education and outreach activities required by other MCMs (listed below), may report on those activities in MCM 1 and provide the following information applicable to their program:
    - IDDE education *activities* planned or completed for public employees, businesses, and the general public, as required by Part VII.A.3;
    - construction site *stormwater* control training planned or completed, as required by Part VII.A.4; and
    - employee pollution prevention / good housekeeping training planned or completed, as required by Part VII.A.6; andTo facilitate shared annual reporting, if the education and outreach activities above are implemented by a third party, and the third party is completing the associated portions of the annual report, that third party may report on the education and outreach activities within MCM 1 of the annual report and not within the MCMs that the education and outreach activities are required by,
  - iii. report on effectiveness of program, *BMP* and *measurable goal* assessment; and
  - iv. maintain records of all training activities.
- f. Reporting for **newly regulated covered entities** (MS4s covered for less than 3 years on the *reporting date*). At a minimum, the *covered entity* shall report on the items below:
  - i. **program *development* deadlines and reporting:**

**(Part VII.A.1.f.i.)**

Complete in Year 1 (report changes in Year 2 and 3 as needed):

- list (and describe if necessary) *POCs*;
- *development* of education and outreach program and *activities* for the general public and target or priority audiences that address *POCs*, geographic areas of concern, and / or *discharges to 303(d) / TMDL* waterbodies;
- *covered entities* developing education and outreach programs required by other MCMs (listed below), may report on development (and implementation of those activities, if occurring during the three year development period) in MCM 1 and provide the following information applicable to their program:
  - IDDE education *activities* planned or completed for public employees, businesses, and the general public for IDDE, as required by Part VII.A.3;
  - Construction site stormwater control training planned or completed, as required by Part VII.A.4; and
  - employee pollution prevention / good housekeeping training planned or completed, as required by Part VII.A.6;

To facilitate shared annual reporting, if the education and outreach activities above are developed by a third party, and the third party is completing the associated portions of the annual report, that third party may report on the education and outreach activities within MCM 1 of the annual report and not within the MCMs that the education and outreach activities are required by.

ii. **program implementation reporting** as set forth in Part VII.A.1(e) above. Commence *implementation* reporting after three year *development* period. *Implementation* reporting may begin earlier if *implementation* begins during *development* period.

**2. Public Involvement / Participation - SWMP Development / Implementation**

At a minimum, all *covered entities* must:

- a. Comply with the *State Open Meetings Law* and local public notice requirements, such as *Open Meetings Law*, when implementing a public involvement / participation program;
- b. *Develop (for newly authorized MS4s)* and *implement* a public involvement/participation program that:
  - i. identifies key individuals and groups, public and private, who are interested in or affected by the *SWMP* ;

**(Part VII.A.2.b.)**

- ii. identifies types of input the *covered entity* will seek from the key individuals and groups, public and private, to support *development* and *implementation* of the SWMP program and how the input will be used; and
  - iii. describes the public involvement / participation activities the *covered entity* will undertake to provide program access to those who want it and to gather the needed input. The activities included, but are not limited to a water quality hotline (report spills, dumping, construction sites of concern, etc.), stewardship activities like stream cleanups, storm drain marking, and volunteer water quality monitoring;
  - iv. provide the opportunity for the public to participate in the *development, implementation, review, and revision* of the *SWMP*.
- c. **Local stormwater public contact.**  
Identify a local point of contact for public concerns regarding *stormwater* management and compliance with this *SPDES general permit*. The name or title of this contact and the telephone number must be published in public outreach and public participation materials and kept updated with the *Department* on the MCC form;
- d. **Annual report presentation.**  
Below are the requirements for the annual report presentation:
- i. prior to submitting the final annual report to the *Department*, by June 1 of each reporting year (see Part V.C.), present the draft annual report in a format that is open to the public, where the public can ask questions about and make comments on the report. This can be done:
    - at a meeting that is open to the public, where the public attendees are able to ask questions about and make comments on the report. This may be a regular meeting of an existing board, such as planning, zoning or the town board. It may also be a separate meeting, specifically for *stormwater*. If multiple *covered entities* are working together, they may have a group meeting (refer to Part V.C.2); or
    - on the internet by:
      - making the annual report available to the public on a website;
      - providing the public the opportunity to provide comments on the internet or otherwise; and

**(Part VII.A.2.d.i.)**

- making available the opportunity for the public to request an open meeting to ask questions about and make comments on the report. If a public meeting is requested by 2 or more persons, the covered entity must hold such a meeting. However, the covered entity need only hold a public meeting once to satisfy this requirement.
- ii. provide public notice about the presentation, making public the following information when noticing the presentation in accordance with the local public notice requirements:
  - the placement of the annual report on the agenda of this meeting or location on the internet;
  - the opportunity for public comment. This *SPDES general permit* does not require a specified time frame for public comments, although it is recommended that *covered entities* do provide the public an opportunity to comment for a period after the meeting. Comments received after the final annual report is submitted shall be reported with the following year's annual report. *Covered entities* must take into account those comments in the following year;
  - the date and time of the meeting or the date the annual report becomes available on the internet; and
  - the availability of the draft report for prior review prior to the public meeting or duration of availability of annual report on the internet;
- iii. the *Department* recommends that announcements be sent directly to individuals (public and private) known to have a specific interest in the *covered entity's SWMP*;
- iv. include a summary of comments and (intended) responses with the final annual report. Changes made to the *SWMP* in response to comments should be described in the annual report; and
- v. ensure that a copy of the final report and, beginning in 2009, the *SWMP* plan are available for public inspection;
- e. *Develop (for newly authorized MS4s), record, periodically assess and modify as needed measurable goals; and*

**(Part VII.A.2.)**

- f. Select and implement appropriate public involvement / participation *activities* and *measurable goals* to ensure the reduction of *POCs* in *stormwater discharges* to the *MEP*.

**Required SWMP Reporting**

- g. **Program *implementation* reporting for continuing covered entities** (MS4s covered for 3 or more years on the *reporting date*). At a minimum, the *covered entity* shall report on the items below:
  - i. annual report presentation information (date, time, attendees) or information about how the annual report was made available for comment;
  - ii. comments received and intended responses (as an attachment);
  - iii. public involvement / participation *activities* (for example stream cleanups including the number of people participating, the number of calls to a water quality hotline, the number and extent of storm drain stenciling); and
  - iv. report on effectiveness of program, *BMP* and *measurable goal* assessment.
  
- h. Reporting for **newly regulated covered entities** (MS4s covered for less than 3 years on the *reporting date*). At a minimum, the *covered entity* shall report on the items below:
  - i. **program *development* deadlines and reporting:**
    - Complete for Year 1, 2 and 3:
      - annual report presentation information (date, time, attendees);
      - comments received and intended responses (as an attachment);
    - Complete by end of Year 2 (report changes by end of Year 3 as needed):
      - key stake holders identified;
      - *development* of public involvement / participation plan based on the *covered entity's* needs, *POCs*, target audiences, geographic areas of concern, *discharges* to *303(d)* / *TMDL* waterbodies; and
      - *development* of public involvement / participation *activities* (for example stream cleanups including the number of people participating, the number of calls to a dumping / water quality hotline, the number or percent of storm drains stenciled);
  
  - ii. **program *implementation* reporting**, as set forth in Part VII.A.2(g) above. Commence *implementation* reporting after three year *development* period. *Implementation* reporting may begin earlier if *implementation* begins during development period.

**(Part VII.A.)**

**3. Illicit Discharge Detection and Elimination (IDDE) - SWMP Development / Implementation**

At a minimum, all *covered entities* must:

- a. *Develop (for newly authorized MS4s), implement and enforce a program to detect and eliminate illicit discharges (as defined at 40CFR 122.26(b)(2)) into the small MS4;*
- b. *Develop (for newly authorized MS4s) and maintain a map, at a minimum within the covered entity's jurisdiction in the urbanized area and additionally designated area, showing:*
  - i. *the location of all outfalls and the names and location of all surface waters of the State that receive discharges from those outfalls;*
  - ii. *by March 9, 2010, the preliminary boundaries of the covered entity's storm sewersheds have been determined using GIS or other tools, even if they extend outside of the urbanized area (to facilitate track down), and additionally designated area within the covered entity's jurisdiction; and*
  - iii. *when grant funds are made available or for sewer lines surveyed during an illicit discharge track down, the covered entity's storm sewer system in accordance with available State and EPA guidance;*
- c. *Field verify outfall locations;*
- d. *Conduct an outfall reconnaissance inventory, as described in the EPA publication entitled Illicit Discharge Detection and Elimination: A Guidance Manual for Program Development and Technical Assessment, addressing every outfall within the urbanized area and additionally designated area within the covered entity's jurisdiction at least once every five years, with reasonable progress each year;*
- e. *Map new outfalls as they are constructed or newly discovered within the urbanized area and additionally designated area;*
- f. *Prohibit, through a law, ordinance, or other regulatory mechanism, illicit discharges into the small MS4 and implement appropriate enforcement procedures and actions. This mechanism must be equivalent to the State's model IDDE local law "NYSDEC Model Local Law to Prohibit Illicit Discharges, Activities and Connections to Separate Storm Sewer Systems". The mechanism must be certified by the attorney representing the small MS4 as being equivalent to the State's model illicit discharge local law. Laws adopted during the GP-02-02 permit cycle must also be attorney-certified as effectively assuring implementation of the State's model IDDE law;*

**(Part VII.A.3.)**

- g. *Develop (for newly authorized MS4s) and implement* a program to detect and address non-stormwater *discharges*, including illegal dumping, to the *small MS4* in accordance with current assistance and guidance documents from the State and EPA. The program must include: procedures for identifying priority areas of concern (geographic, audiences, or otherwise) for the IDDE program; description of priority areas of concern, available equipment, staff, funding, etc.; procedures for identifying and locating *illicit discharges* (trackdown); procedures for eliminating *illicit discharges*; and procedures for documenting actions;
- h. Inform public employees, businesses, and the general public of the hazards associated with illegal *discharges* and improper disposal of waste, and maintain records of notifications;
- i. Address the categories of non-stormwater *discharges* or flows listed in Part I.A.2 as necessary;
- j. *Develop (for newly authorized MS4s)*, record, periodically assess, and modify as needed, *measurable goals*; and
- k. Select and implement appropriate IDDE *BMPs* and *measurable goals* to ensure the reduction of all *POCs* in *stormwater discharges* to the *MEP*.

**Required SWMP Reporting**

- l. **Program *implementation* reporting for continuing covered entities** (MS4s covered for 3 or more years on the *reporting date*). At a minimum, the *covered entity* shall report on the items below:
  - i. number and percent of *outfalls* mapped;
  - ii. number of *illicit discharges* detected and eliminated;
  - iii. percent of outfalls for which an outfall reconnaissance inventory has been performed. ;
  - iv. status of system mapping;
  - v. activities in and results from informing public employees, businesses, and the general public of hazards associated with illegal *discharges* and improper disposal of waste;
  - vi. regulatory mechanism status - certification that law is equivalent to the *State's* model IDDE law (if not already completed and submitted with an earlier annual report); and
  - vii. report on effectiveness of program, *BMP* and *measurable goal* assessment.

**(Part VII.A.3.)**

m. Reporting for **newly regulated covered entities** (MS4s covered for less than 3 years on the *reporting date*). At a minimum, the *covered entity* shall report on the items below:

i. **program development deadlines and reporting:**

Complete in Year 1 (revise in Year 2 and 3 if changes are made):

- describe procedures for identifying priority areas of concern (geographic, audiences, or otherwise) for IDDE program;
  - describe priority areas of concern, available equipment, staff, funding, etc.;
- Initiate by end of Year 1; complete by end of Year 2 (revise in Year 3 if changes are made):

- describe procedures for identifying and locating *illicit discharges* (trackdown);
- describe procedures for eliminating *illicit discharges*;
- describe procedures for enforcing against illicit dischargers;
- describe procedures for documenting actions;
- describe the program being developed for informing public employees, businesses, and the general public of hazards associated with illegal *discharges* and improper disposal of waste;

Initiate by end of Year 1; complete by end of Year 3:

- regulatory mechanism status development and adoption - by end of Year 3 certify that regulatory mechanism is equivalent to the *State's* model IDDE law (if not already completed and submitted with an earlier report);

Initiate by end of Year 2; complete by end of Year 3:

- number and percent of *outfalls* mapped; and

Complete by Year 3:

- *outfall* map.

ii. **program implementation reporting** as set forth in Part VIII.A.3(l) above.

Commence *implementation* reporting after three year *development* period.

*Implementation* reporting may begin earlier if *implementation* begins during development period.

**4. Construction Site Stormwater Runoff Control - SWMP Development / Implementation**

At a minimum, all *covered entities* must:

- a. *Develop* (for newly authorized MS4s), *implement*, and enforce a program that:



**(Part VII.A.4.a.)**

- i. provides equivalent protection to the NYS SPDES General Permit for Stormwater Discharges from Construction Activities (either GP-02-01, GP-0-08-001 or GP-0-10-001), unless more stringent requirements are contained within this *SPDES general permit*;
- ii. addresses *stormwater* runoff to the *small MS4* from *construction activities* that result in a land disturbance of greater than or equal to one acre. Control of *stormwater discharges* from *construction activity* disturbing less than one acre must be included in the program if:
  - that *construction activity* is part of a *larger common plan of development or sale* that would disturb one acre or more; or
  - if controlling such activities in a particular watershed is required by the *Department*;
- iii. includes a law, ordinance or other regulatory mechanism to require a *SWPPP* for each applicable land disturbing activity that includes erosion and sediment controls that meet the *State* 's most current technical standards:
  - this mechanism must be equivalent to one of the versions of the "NYSDEC Sample Local Laws for Stormwater Management and Erosion and Sediment Control"; and
  - equivalence must be documented
    - by adoption of one of the sample local laws without changes;
    - by using the NYSDEC Gap Analysis Workbook; or
    - by adoption of a modified version of the sample law, or an alternative law, and, in either scenario, certification by the attorney representing the small MS4 that the adopted law is equivalent to one of the sample local laws.
- iv. contains requirements for construction site operators to implement erosion and sediment control management practices;
- v. allows for sanctions to ensure compliance to the extent allowable by State law;
- vi. contains requirements for construction site operators to control waste such as discarded building materials, concrete truck washout, chemicals, litter, and sanitary waste at the construction site that may cause adverse impacts to water quality, pursuant to the requirement of construction permit;
- vii. describes procedures for *SWPPP* review with consideration of potential water quality impacts and review of individual *SWPPPs* to ensure consistency with *State* and local sediment and erosion control requirements;

**(Part VII.A.4.a.vii.)**

- ensure that the individuals performing the reviews are adequately trained and understand the *State* and local sediment and erosion control requirements;
  - all *SWPPPs* must be reviewed for sites where the disturbance is one acre or greater; and
  - after review of *SWPPPs*, the *covered entity* must utilize the “MS4 *SWPPP* Acceptance Form” created by the *Department* and required by the SPDES General Permit for Stormwater Discharges from Construction Activity when notifying construction site owner / operators that their plans have been accepted by the *covered entity*;
- viii. describes procedures for receipt and follow up on complaints or other information submitted by the public regarding construction site storm water runoff;
- ix. describes procedures for site inspections and enforcement of erosion and sediment control measures including steps to identify priority sites for inspection and enforcement based on the nature of the construction activity, topography, and the characteristics of soils and receiving water;
- the *covered entity* must ensure that the individual(s) performing the inspections are adequately trained and understand the *State* and local sediment and erosion control requirements. Adequately trained means receiving inspector training by a *Department* sponsored or approved training;
  - all sites must be inspected where the disturbance is one acre or greater;
  - *covered entities* must determine that it is acceptable for the owner or operator of a construction project to submit the Notice of Termination (NOT) to the *Department* by performing a final site inspection themselves or by accepting the Qualified Inspector's final inspection certification(s) required by the SPDES General Permit for Stormwater Discharges from Construction Activity. The principal executive officer, ranking elected official, or duly authorized representative (see Part VI.J.) shall document their determination by signing the “MS4 Acceptance” statement on the NOT.
- x. educates construction site owner / operators, design engineers, *municipal* staff and other individuals to whom these regulations apply about the *municipality's* construction *stormwater* requirements, when construction *stormwater* requirements apply, to whom they apply, the procedures for submission of *SWPPPs*, construction site inspections, and other procedures associated with control of construction stormwater;

**(Part VII.A.4.a.)**

- xi. ensures that construction site operators have received erosion and sediment control training before they do work within the *covered entity's* jurisdiction and maintain records of that training. Small home site construction (construction where the Erosion and Sediment Control Plan is developed in accordance with Appendix E of the "New York Standards and Specifications for Erosion and Sediment Control") is exempt from the requirements below:
  - training may be provided by the *Department* or other qualified entities (such as Soil and Water Conservation Districts);
  - the *covered entity* is not expected to perform such training, but they may co-sponsor training for construction site operators in their area;
  - the *covered entity* may ask for a certificate of completion or other such proof of training; and
  - the *covered entity* may provide notice of upcoming sediment and erosion control training by posting in the building department or distribute with building permit application;
- xii. establishes and maintains an inventory of active construction sites, including the location of the site, owner / operator contact information;
- xiii. *develop (for newly authorized MS4s), record, periodically assess and modify as needed measurable goals; and*
- xiv. select and appropriate construction *stormwater BMPs* and *measurable goals* to ensure the reduction of all *POCs* in *stormwater discharges* to the *MEP*.

**Required SWMP Reporting**

- b. **Program implementation reporting for continuing covered entities** (MS4s covered for 3 or more years on the *reporting date*). At a minimum, the *covered entity* shall report on the items below:
  - i. number of *SWPPPs* reviewed;
  - ii. number and type of enforcement actions;
  - iii. percent of active construction sites inspected once;
  - iv. percent of active construction sites inspected more than once;
  - v. number of construction sites authorized for disturbances of one acre or more; and
  - vi. report on effectiveness of program, *BMP* and *measurable goal* assessment.
- c. Reporting for **newly regulated covered entities** (MS4s covered for less than 3 years on the *reporting date*). At a minimum, the *covered entity* shall report on the items below:

**(Part VII.A.4.c.)**

**i. program *development* deadlines and reporting:**

Initiate by end of Year 1:

- procedures, activities and identify personnel to educate and train construction site operators about requirements to develop and implement a SWPPP and any other requirements that must be met within the MS4's jurisdiction;

Complete in Year 1 (revise in Year 2 and 3 if changes are made):

- describe procedures for the receipt and consideration of information submitted by the public. Identify the responsible personnel;

Initiate by end of Year 1; complete by end of Year 3:

- regulatory mechanism development and adoption status - by end of Year 3 certify that regulatory mechanism is equivalent to one of the NYSDEC Sample Local Laws for Stormwater Management and Erosion and Sediment Control (if not already completed and submitted with an earlier report);

Initiate by end of Year 2; complete by end of Year 3:

- describe procedures for SWPPP review that incorporate consideration of potential water quality impacts and ensure consistency with local sediment and erosion control requirements;
- describe procedures for construction site inspections; and
- describe procedures for enforcement of control measures and sanctions to ensure compliance.

**ii. program *implementation* reporting** as set forth in Part VII.A.4(b) above.

Commence *implementation* reporting after three year *development* period.

*Implementation* reporting may begin earlier if *implementation* begins during development period..

**5. Post-Construction Stormwater Management - SWMP Development/Implementation**

At a minimum, all *covered entities* must:

a. *Develop*(for newly authorized MS4s), *implement*, and enforce a program that:

- provides equivalent protection to the NYS SPDES General Permit for Stormwater Discharges from Construction Activities (either GP-02-01, GP-0-08-001, or GP-0-10-001), unless more stringent requirements are contained within this *SPDES general permit*;
- addresses *stormwater* runoff from new development and redevelopment projects to the *small MS4* from projects that result in a land disturbance of greater than or

**(Part VII.A.5.a.ii.)**

equal to one acre. Control of *stormwater discharges* from projects of less than one acre must be included in the program if:

- that project is part of a *larger common plan of development or sale*; or
- if controlling such activities in a particular watershed is required by the *Department*;

iii. includes a law, ordinance or other regulatory mechanism to require post construction runoff controls from new development and re-development projects to the extent allowable under *State* law that meet the *State's* most current technical standards:

- the mechanism must be equivalent to one of the versions of the "NYSDEC Sample Local Laws for Stormwater Management and Erosion and Sediment Control"; and
- equivalence must be documented
  - by adoption of one of the sample local laws without changes;
  - by using the NYSDEC Gap Analysis Workbook; or
  - by adoption of a modified version of the sample law, or an alternative law, and, in either scenario and certification by the attorney representing the small MS4 that the adopted law is equivalent to one of the sample local laws;

iv. includes a combination of structural or non-structural management practices (according to standards defined in the most current version of the NYS Stormwater management Design Manual) that will reduce the *discharge* of pollutants to the MEP. In the development of the watershed plans, municipal comprehensive plans, open space preservation programs, local law, ordinances and land use regulations, covered entities must consider principles of *Low Impact Development* (LID), *Better Site Design* (BSD), and other *Green Infrastructure* practices to the MEP. In the development of the watershed plans, municipal comprehensive plans, open space preservation programs, local law, ordinances and land use regulations, covered entities must consider smart growth principles, natural resource protection, impervious area reduction, maintaining natural hydrologic conditions in developments, riparian buffers or set back distances for protection of environmentally sensitive areas such as streams, wetlands, and erodible soils.

- *covered entities* are required to review according to the *Green Infrastructure* practices defined in the Design Manual at a site level, and are encouraged to review, and revise where appropriate, local codes and laws that include provisions that preclude green infrastructure or construction techniques that minimize or reduce pollutant loadings.

**(Part VII.A.5.a.iv.)**

- if a *stormwater* management practice is designed and installed in accordance with the New York State Stormwater Management Design Manual or has been demonstrated to be equivalent and is properly operated and maintained, then *MEP* will be assumed to be met for post-construction *stormwater* discharged by the practice;
- v. describes procedures for *SWPPP* review with consideration of potential water quality impacts and review of individual *SWPPPs* to ensure consistency with state and local post-construction *stormwater* requirements;
  - ensure that the individuals performing the reviews are adequately trained and understand the *State* and local post construction *stormwater* requirements;
  - ensure that the individuals performing the reviews for *SWPPPs* that include post-construction stormwater management practices are *qualified professionals* or under the supervision of a *qualified professional*;
  - all *SWPPPs* must be reviewed for sites where the disturbance is one acre or greater;
  - after review of *SWPPPs*, the *covered entity* must utilize the “MS4 *SWPPP* Acceptance Form” created by the *Department* and required by the SPDES General Permit for Stormwater Discharges from Construction Activity (GP-0-10-001) when notifying construction site owner / operators that their plans have been accepted by the *covered entity*;
  - utilize available training from sources such as Soil and Water Conservation Districts, Planning Councils, The New York State Department of State, USEPA, and/or the *Department* to educate municipal boards and Planning and Zoning Boards on low impact development principles, better site design approach, and green infrastructure applications.
- vi. maintain an inventory of post-construction stormwater management practices within the *covered entities* jurisdiction. At a minimum, include practices discharging to the *small MS4* that have been installed since March 10, 2003, all practices owned by the *small MS4*, and those practices found to cause or contribute to water quality standard violations.
  - the inventory shall include at a minimum: location of practice (street address or coordinates); type of practice; maintenance needed per the NYS Stormwater Management Design Manual, *SWPPP*, or other provided documentation; and dates and type of maintenance performed; and

**(Part VII.A.5.a.)**

- vii. ensures adequate long-term operation and maintenance of management practices identified in Part VII.5.a.vi by trained staff, including inspection to ensure that practices are performing properly.
  - The inspection shall include inspection items identified in the maintenance requirements (NYS Stormwater Management Design Manual, *SWPPP*, or other maintenance information) for the practice. *Covered entities* are not required to collect *stormwater* samples and perform specific chemical analysis;
- viii. Covered entities may include in the SWMP Plan provisions for development of a banking and credit system. MS4s must have an existing watershed plan based on which offsite alternative stormwater management in lieu of or in addition to on-site stormwater management practices are evaluated. Redevelopment projects must be evaluated for pollutant reduction greater than required treatment by the state standards. The individual project must be reviewed and approved by the *Department*. Use of a banking and credit system for new development is only acceptable in the impaired watersheds to achieve the no net increase requirement and watershed improvement strategy areas to achieve pollutant reductions in accordance with watershed plan load reduction goals. A banking and credit system must at minimum include:
  - Ensure that offset exceeds a standard reduction by factor of at least 2
  - Offset is implemented within the same watershed
  - Proposed offset addresses the POC of the watershed
  - Tracking system is established for the watershed
  - Mitigation is applied for retrofit or redevelopment
  - Offset project is completed prior to beginning of the proposed construction
  - A legal mechanism is established to implement the banking and credit system
- b. *Develop (for newly authorized MS4s), implement, and provide adequate resources for a program to inspect development and re-development sites by trained staff and to enforce and penalize violators;*
- c. *Develop (for newly authorized MS4s), record, annually assess and modify as needed measurable goals; and*
- d. Select and implement appropriate post-construction *stormwater BMPs* and *measurable goals* to ensure the reduction of all *POCs* in *stormwater discharges* to the *MEP*.

**(Part VII.A.5.)**

**Required SWMP Reporting**

- e. **Program *implementation* reporting for continuing covered entities** (MS4s covered for 3 or more years on the *reporting date*). At a minimum, the *covered entity* shall report on the items below:
  - i. number of *SWPPPs* reviewed;
  - ii. number and type of enforcement actions;
  - iii. number and type of post-construction stormwater management practices inventoried;
  - iv. number and type of post-construction stormwater management practices inspected;
  - v. number and type of post-construction stormwater management practices maintained;
  - vi. regulatory mechanism status - certification that regulatory mechanism is equivalent to one of the “NYSDEC Sample Local Laws for Stormwater Management and Erosion and Sediment Control” (if not already done); and
  - vii. report on effectiveness of program, BMP and measurable goal assessment, and implementation of a banking and credit system, if applicable;
  
- f. Reporting for **newly regulated covered entities** (MS4s covered for less than 3 years on the *reporting date*). At a minimum, the *covered entity* shall report on the items below:
  - i. **program *development* deadlines and reporting:**
    - Initiate by end of Year 1; complete by end of Year 3:
      - regulatory mechanism development and adoption status - by end of Year 3 certify that regulatory mechanism is equivalent to one of the NYSDEC Sample Local Laws for Stormwater Management and Erosion and Sediment Control (if not already completed and submitted with an earlier report);
  
    - Initiate by end of Year 2; complete by end of Year 3:
      - procedures for *SWPPP* review to ensure that post-construction stormwater management practices meet the most current version of the state technical standards;
      - procedures for inspection and maintenance of post-construction management practices;
      - procedures for enforcement and penalization of violators; and
  
    - Complete by the end of year 3:



**(Part VII.A.5.f.i.)**

- provide resources for the program to inspect new and re-development sites and for the enforcement and penalization of violators.
- ii. **program *implementation* reporting** as set forth in Part VII.A.5(e) above. Commence *implementation* reporting after three year *development* period. *Implementation* reporting may begin earlier if *implementation* begins during *development* period.

**6. Pollution Prevention/Good Housekeeping For Municipal Operations - SWMP Development / Implementation**

At a minimum, all *covered entities* must:

- a. *Develop (for newly authorized MS4s) and implement* a pollution prevention / good housekeeping program for *municipal* operations and facilities that:
  - i. addresses *municipal* operations and facilities that contribute or potentially contribute *POCs* to the *small MS4* system. The operations and facilities may include, but are not limited to: street and bridge maintenance; winter road maintenance; stormwater system maintenance; vehicle and fleet maintenance; park and open space maintenance; municipal building maintenance; solid waste management; new construction and land disturbances; right-of-way maintenance; marine operations; hydrologic habitat modification; or other;
  - ii. at a minimum frequency of once every three years, perform and document a self assessment of all municipal operations addressed by the SWMP to:
    - determine the sources of pollutants potentially generated by the *covered entity's* operations and facilities; and
    - identify the *municipal* operations and facilities that will be addressed by the pollution prevention and good housekeeping program, if it is not done already;
  - iii. determines *management practices*, policies, procedures, etc. that will be *developed* and *implemented* to reduce or prevent the discharge of (potential) pollutants. Refer to management practices identified in the “NYS Pollution Prevention and Good Housekeeping Assistance Document” and other guidance materials available from the EPA, *State*, or other organizations;
  - iv. prioritizes pollution prevention and good housekeeping efforts based on geographic area, potential to improve water quality, facilities or operations most in need of modification or improvement, and *covered entity's* capabilities;

**(Part VII.A.6.a.)**

- v. addresses pollution prevention and good housekeeping priorities;
  - vi. includes an employee pollution prevention and good housekeeping training program and ensures that staff receive and utilize training;
  - vii. requires third party entities performing contracted services, including but not limited to street sweeping, snow removal, lawn / grounds care, etc., to meet permit requirements as the requirements apply to the activity performed ; and
  - viii. requires *municipal* operations and facilities that would otherwise be subject to the NYS Multi-sector General Permit (MSGP, GP-0-06-002) for industrial stormwater discharges to prepare and *implement* provisions in the SWMP that comply with Parts III. A, C, D, J, K and L of the MSGP. The covered entity must also perform monitoring and record keeping in accordance with Part IV. of the MSGP. Discharge monitoring reports must be attached to the MS4 annual report. Those operations or facilities are not required to gain coverage under the MSGP. *Implementation* of the above noted provisions of the SWMP will ensure that MEP is met for discharges from those facilities;
- b. Consider and incorporate cost effective runoff reduction techniques and green infrastructure in the routine upgrade of the existing stormwater conveyance systems and municipal properties to the MEP. Some examples include replacement of closed drainage with grass swales, replacement of existing islands in parking lots with rain gardens, or curb cuts to route the flow through below grade infiltration areas or other low cost improvements that provide runoff treatment or reduction.
  - c. *Develop (for newly authorized MS4s), record, periodically assess and modify as needed measurable goals; and*
  - d. Select and implement appropriate pollution prevention and good housekeeping *BMPs and measurable goals* to ensure the reduction of all *POCs in stormwater discharges* to the *MEP*.
  - e. Adopt techniques to reduce the use of fertilizers, pesticides, and herbicides, as well as potential impact to surface water.

**Required SWMP Reporting**

- f. **Program *implementation* reporting for continuing covered entities** (MS4s covered for 3 or more years on the *reporting date*). *Covered entities* are required to report on

**(Part VII.A.6.f.)**

all *municipal* operations and facilities within their jurisdiction (*urbanized area* and *additionally designated area*) that their program is addressing. The *covered entity* shall report at a minimum on the items below:

- i. indicate the *municipal* operations and facilities that the pollution prevention and good housekeeping program assessed;
  - ii. describe, if not done so already, the management practices, policies and procedures that have been developed, modified, and / or implemented and report, at a minimum, on the items below that the *covered entity's* pollution prevention and good housekeeping program addressed during the reporting year:
    - acres of parking lot swept;
    - miles of street swept;
    - number of catch basins inspected and, where necessary, cleaned;
    - post-construction control stormwater management practices inspected and, where necessary, cleaned;
    - pounds of phosphorus applied in chemical fertilizer
    - pounds of nitrogen applied in chemical fertilizer; and
    - acres of pesticides / herbicides applied.
  - iii. staff training events and number of staff trained; and
  - iv. report on effectiveness of program, *BMP* and *measurable goal* assessment. If the pollution prevention and good housekeeping program addresses other operations than what is listed above in Part VII.A.6.a(ii), the *covered entity* shall report on items that will demonstrate program effectiveness.
- g. Reporting for **newly regulated covered entities** (MS4s covered for less than 3 years on the *reporting date*). *Covered entities* are required to report on all *municipal* operations and facilities within their jurisdiction (*urbanized area* and *additionally designated area*) that their program is addressing. The *covered entity* shall report at a minimum on the items below:
- i. **program development deadlines and reporting** (first three years after authorization is granted):  
Complete by end of Year 1:
    - identify the municipal operations and facilities that will be considered for inclusion in the pollution prevention and good housekeeping program;
    - describe the pollution prevention and good housekeeping program priorities (geographic area, potential to improve water quality; facilities or operations most in need of modification or improvement);

**(Part VII.A.6.g.i.)**

- describe management practices, policies, procedures, etc. that will be developed or modified;
- identify the staff and equipment available;

Initiate by end of Year 2; complete by end of Year 3:

- describe employee pollution prevention and good housekeeping program training program and begin training, report on number of staff trained; and

Complete by end of Year 3:

- description of developed management practices.

- ii. **program *implementation* reporting** as set forth in Part VII.A.6.(d) above. Commence reporting after three year *development* permit. *Implementation* reporting may begin earlier if *implementation* begins during development period.

## **PART VIII. MINIMUM CONTROL MEASURES - TRADITIONAL NON-LAND USE CONTROL AND NON-TRADITIONAL MS4s**

### **A. Traditional Non-Land Use Control and Non-traditional MS4 Minimum Control Measures (MCMs)**

These MCMs apply to *traditional non-land use control MS4s* and *non-traditional MS4s*. The SWMP for these *small MS4s* must be comprised of the 6 MCMs below. It is recommended that covered entities refer to assistance and guidance documents available from the *State* and EPA.

Under this *SPDES general permit*, the continuing *covered entities* are required to implement their SWMP, including the MCM requirements below. Newly regulated covered entities are required to develop their SWMP, containing the MCM requirements below, within the first 3 years of coverage and then commence implementation.

The *covered entity* may *develop (for newly authorized MS4s)* and / or *implement* their SWMP within their jurisdiction on their own. The *covered entity* may also *develop (for newly authorized MS4s)* and / or *implement* part or all of their SWMP through an intermunicipal program with another *covered entity(s)* or through other cooperative or contractual agreements with third parties that provide services to the *covered entity(s)*.

For each of the elements of the SWMP plan, the *covered entity* must identify (i) the agencies and/or offices that would be responsible for implementing the SWMP plan element and (ii) any protocols for coordination among such agencies and/or offices necessary for the implementation of the plan element.

To comply with the requirements of this *SPDES general permit*, the *traditional non-land use control MS4s* and *non-traditional MS4s* should consider their public to be the employee / user population, visitors, or contractors / developers. Examples of the public include, but are not limited to:

- transportation *covered entities* - general public using or living along transportation systems, staff, contractors;
- educational *covered entities* - faculty, other staff, students, visitors;
- other government *covered entities* - staff, contractors, visitors.

#### **1. Public Education and Outreach on Stormwater Impacts SWMP Development / Implementation**

At a minimum, all *covered entities* must:

- a. Identify *POCs*, waterbodies of concern, geographic areas of concern, target audiences;

**(Part VIII.A.1.)**

- b. *Develop (for newly authorized MS4s) and implement* an ongoing public education and outreach program designed to describe:
  - i. the impacts of *stormwater discharges* on waterbodies;
  - ii. *POCs* and their sources;
  - iii. steps that contributors of these pollutants can take to reduce pollutants in *stormwater* runoff; and
  - iv. steps that contributors of non-*stormwater discharges* can take to reduce pollutants (non-*stormwater discharges* are listed in Part I.A.2);
- c. Educational materials may be made available at, locations including, but not limited to:
  - i. at service areas, lobbies, or other locations where information is made available;
  - ii. at staff training;
  - iii. on *covered entity's* website;
  - iv. with pay checks; and
  - v. in employee break rooms;
- d. *Develop (for newly authorized MS4s), record, periodically assess and modify as needed measurable goals; and*
- e. Select and implement appropriate education and outreach *activities* and *measurable goals* to ensure the reduction of all *POCs* in *stormwater discharges* to the *MEP*.

**Required SWMP Reporting**

- f. At a minimum, the *covered entity* shall report on the items below:
  - i. list education / outreach *activities* performed and provide any results (number of people attended, amount of materials distributed, etc.);
  - ii. education of the public about the hazards associated with illegal *discharges* and improper disposal of waste as required by Part VIII.A.3, may be reported in this section;
  - iii. *covered entity's* performing the education and outreach activities required by other MCMs (listed below), may report on those activities in MCM 1 and provide the following information applicable to their program:
    - IDDE education *activities* planned or completed for the public, as required by Part VIII.A.3;
    - construction site *stormwater* control training planned or completed, as required by Part VIII.A.4; and
    - employee pollution prevention / good housekeeping training planned or completed, as required by Part VIII.A.6;

To facilitate shared annual reporting, if the education and outreach activities above are implemented by a third party, and the third party is completing the

**(Part VIII.A.1.f.iii.)**

- associated portions of the annual report, that third party may report on the education and outreach activities within MCM 1 of the annual report and not within the MCMs that the education and outreach activities are required by;
- iv. report on effectiveness of program, *BMP* and *measurable goal* assessment; and
  - v. maintain records of all training activities
- g. Reporting for **newly regulated covered entities** (MS4s covered for less than 3 years on the *reporting date*). At a minimum, the *covered entity* shall report on the items below:
- i. **program development deadlines and reporting:**  
Complete in Year 1 (report changes in Year 2 and 3 as needed):
    - list (and describe if necessary) POCs;
    - *development* of education and outreach program and activities for the public that address *POCs*, geographic areas of concern, and / or *discharges to 303(d) / TMDL* waterbodies;
    - *covered entities* developing education and outreach programs required by other MCMs (listed below), may report on development (and implementation of those activities, if occurring during the three year development period) in MCM 1 and provide the following information applicable to their program:
      - IDDE education *activities* planned or completed for the public, as required by Part VIII.A.3;
      - construction site *stormwater* control training planned or completed, as required by Part VIII.A.4; and
      - employee pollution prevention / good housekeeping training planned or completed, as required by Part VIII.A.6.

To facilitate shared annual reporting, if the education and outreach activities above are implemented by a third party, and the third party is completing the associated portions of the annual report, that third party may report on the education and outreach activities within MCM 1 of the annual report and not within the MCMs that the education and outreach activities are required by.
  - ii. **Program implementation reporting** as set forth in Part VIII.A.1(f) above.  
Commence *implementation* reporting after three year *development* period. *Implementation* reporting may begin earlier if *implementation* begins during *development* period.

**2. Public Involvement/Participation - SWMP Development / Implementation**

At a minimum, all *covered entities* must:

**(Part VIII.A.2.)**

- a. Comply with *State* and local public notice requirements identified below when implementing a public involvement / participation program:
  - i. *traditional non-land use control MS4s* shall comply with the *State Open Meetings Law* and local public notice requirements, such as *Open Meetings Law*; and
  - ii. *traditional non-land use control MS4s* and *non-traditional MS4s* may comply with this requirement by determining who their public is (staff, visitors, contractors, etc.) and posting notifications (as needed) in areas viewable by the public. Such areas include common areas, bulletin boards, agency/office web pages, etc. For *small MS4s* whose public are in multiple locations, notifications shall be made available to the public in all locations within the urbanized or additionally designated areas;
- b. Provide the opportunity for the public to participate in the *development, implementation, review, and revision* of the *SWMP*;
- c. **Local stormwater public contact.**

Identify a local point of contact for public concerns regarding *stormwater* management and compliance with this *SPDES general permit*. The name or title of this contact and the telephone number must be published in public outreach and public participation materials and kept updated with the *Department* on the MCC form;
- d. **Annual report presentation.**

Below are the requirements for the annual report presentation:

  - i. prior to submitting the final annual report to the *Department*, by June 1 of each reporting year (see Part V.C.), present the draft annual report in a format that is open to the public, where the public can ask questions and make comments on the report. This can be done:
    - at a meeting that is open to the public, where the public attendees are able to ask questions about and make comments on the report. This may be a regular meeting of an existing board. It may also be a separate meeting, specifically for *stormwater*. If multiple *covered entities* are working together, they may have a group meeting (refer to Part V.C.2); or
    - on the internet by:
      - making the annual report available to the public on a website:
      - providing the public the opportunity to provide comments on the internet or otherwise; and



**(Part VIII.A.2.d.i.)**

- making available the opportunity for the public to request an open public meeting to ask questions about and make comments on the report;
- ii. *traditional non-land use control MS4s* must comply with Part VIII.A.2.(d)(i) above. If they choose to present the draft annual report at a meeting, it may be presented at an existing meeting ( e.g. a meeting of the Environmental Management Council , Water Quality Coordinating Committee, other agencies, or a meeting specifically for stormwater), or made available for review on the internet. The *covered entity* must make public the following information when noticing the presentation in accordance with *Open Meetings Law* or other local public notice requirements:
- the placement of the annual report on the agenda of this meeting or location on the internet;
  - the opportunity for public comment. This *SPDES general permit* does not require a specified time frame for public comments, although it is recommended that *covered entities* provide the public an opportunity to comment for a period after the meeting. Comments received after the final annual report is submitted shall be reported with the following year's annual report. *Covered entities* must take into account those comments in the following year;
  - the date and time of the meeting or date annual report becomes available on the internet; and
  - the availability of the draft report for review prior to the public meeting or duration of availability of the annual report on the internet;
- iii. *non-traditional MS4s* typically do not have regular meetings during which a presentation on the annual report can be made. Those *covered entities* may comply with this requirement by either:
- noticing the availability of the report for public comment by posting a sign, posting on web site, or other methods with information about the availability and location where the public can view it and contact information for those that read the report to submit comments; or
  - following the internet presentation as explained in Part VIII.A.2(d)(i) above;
- iv. the *Department* recommends that announcements be sent directly to individuals (public and private interested parties) known to have a specific interest in the covered entity's *SWMP*;

**(Part VIII.A.2.d.)**

- v. include a summary of comments and intended responses with the final annual report. Changes made to the *SWMP* in response to comments should be described in the annual report; and
- vi. ensure that a copy of the final report and, beginning in 2009, the *SWMP* plan are available for public inspection;
- e. *Develop (for newly authorized MS4s), record, periodically assess and modify as needed measurable goals; and*
- f. Select and implement appropriate public involvement / participation *activities* and *measurable goals* to ensure the reduction of all of the *POCs* in *stormwater discharges* to the *MEP*.

**Required SWMP Reporting**

- g. **Program *implementation* reporting for continuing covered entities** (MS4s covered for 3 or more years on the *reporting date*). At a minimum, the *covered entity* shall report on the items below:
  - i. annual report presentation information (date, time, attendees) or information about how the annual report was made available for comment;
  - ii. comments received and intended responses (as an attachment); and
  - iii. report on effectiveness of program, *BMP* and *measurable goal* assessment;
- h. Reporting for **newly regulated covered entities** (MS4s covered for less than 3 years on the *reporting date*). At a minimum, the *covered entity* shall report on the items below:
  - i. **program development deadlines and reporting:**  
Complete for Year 1, 2, and 3:
    - annual report presentation information (date, time, attendees) or information about how the annual report was made available for comment; and
    - comments received and intended responses (as an attachment).
  - ii. **program *implementation* reporting** as set forth in Part VIII.A.2.g above.  
Commence *implementation* reporting after three year *development* period.  
*Implementation* reporting may begin earlier if *implementation* begins during development period.

**3. Illicit Discharge Detection and Elimination (IDDE) - SWMP Development / Implementation**

At a minimum, all *covered entities* must:

**(Part VIII.A.3.)**

- a. *Develop (for newly authorized MS4s), implement and enforce a program to detect and eliminate illicit discharges (as defined at 40CFR 122.26(b)(2)) into the small MS4;*
- b. *Develop (for newly authorized MS4s) and maintain a map, at a minimum within the covered entity's jurisdiction in the urbanized area and additionally designated area, showing:*
  - i. *the location of all outfalls and the names and location of all surface waters of the State that receive discharges from those outfalls;*
  - ii. *by March 9, 2010, the preliminary boundaries of the covered entity's storm sewersheds determined using GIS or other tools, even if they extend outside of the urbanized area (to facilitate trackdown), and additionally designated area within the covered entity's jurisdiction; and*
  - iii. *when grant funds are made available or for sewer lines surveyed during an illicit discharge trackdown, the covered entity's storm sewer system in accordance with available State and EPA guidance;*
- c. *Field verify outfall locations;*
- d. *Conduct an outfall reconnaissance inventory, as described in the EPA publication entitled Illicit Discharge Detection and Elimination: A Guidance Manual for Program Development and Technical Assessment, addressing every outfall within the urbanized area and additionally designated area within the covered entity's jurisdiction at least once every five years, with reasonable progress each year;*
- e. *Map new outfalls as they are constructed or discovered within the urbanized area or additionally designated area;*
- f. *Prohibit illicit discharges into the small MS4 and implement appropriate enforcement procedures and actions below, as applicable:*
  - i. *for traditional non-land use control MS4s:*
    - *effectively prohibit, through a law, ordinance, or other regulatory mechanism, illicit discharges into the small MS4 and implement appropriate enforcement procedures and actions; and*
    - *the law, ordinance, or other regulatory mechanism must be equivalent to the State's model IDDE local law "NYSDEC Model Local Law to Prohibit Illicit Discharges, Activities and Connections to Separate Storm Sewer Systems" developed by the State, as determined and certified to be equivalent by the attorney representing the small MS4 ; and*

**(Part VIII.A.3.f.)**

- ii. for *non-traditional MS4s*:
  - prohibit and enforce against *illicit discharges* through available mechanisms (ie. tenant lease agreements, bid specifications, requests for proposals, standard contract provisions, connection permits, maintenance directives / BMPS, access permits, consultant agreements, internal policies);
  - procedures or policies must be developed for implementation and enforcement of the mechanisms;
  - a written directive from the person authorized to sign the NOI stating that updated mechanisms must be used and who (position(s)) is responsible for ensuring compliance with and enforcing the mechanisms for the *covered entity's IDDE* program; and
  - the mechanisms and directive must be equivalent to the *State's* model illicit discharge local law;
- g. *Develop (for newly authorized MS4s) and implement* a program to detect and address non-stormwater *discharges*, including illegal dumping, to the *small MS4* . The program must include: procedures for identifying priority areas of concern (geographic, audiences, or otherwise) for IDDE program; description of priority areas of concern, available equipment, staff, funding, etc.; procedures for identifying and locating *illicit discharges* (trackdown); procedures for eliminating *illicit discharges*; and procedures for documenting actions;
- h. Inform the public of the hazards associated with illegal *discharges* and the improper disposal of waste;
- i. Address the categories of non-stormwater *discharges* or flows listed in Part I.A.2 as necessary and maintain records of notification;
- j. *Develop (for newly authorized MS4s)*, record, periodically assess, and modify as needed, *measurable goals*; and
- k. Select and implement appropriate IDDE *BMPs* and *measurable goals* to ensure the reduction of all *POCs* in *stormwater discharges* to the *MEP*

**Required SWMP Reporting**

- l. **Program *implementation* reporting** for **continuing *covered entities*** (MS4s covered for 3 or more years on the *reporting date*). At a minimum, the *covered entity* shall report on the items below:
  - i. number and percent of *outfalls* mapped;

**(Part VIII.A.3.I.)**

- ii. number of *illicit discharges* detected and eliminated;
  - iii. percent of outfalls for which an outfall reconnaissance inventory has been performed. ;
  - iv. status of system mapping;
  - v. activities to and results from informing the public of hazards associated with illegal *discharges* and improper disposal of waste;
  - vi. for traditional non-land use control MS4s, regulatory mechanism status - certification that law is equivalent to the *State's* model *IDDE* local law (if not already completed and submitted with a prior annual report); and
  - vii. report on effectiveness of program, *BMP* and *measurable goal* assessment.
- m. Required reporting for **newly authorized covered entities** (MS4s covered for less than 3 years on the *reporting date*). At a minimum, the *covered entity* shall report on the items below:
- i. **program development deadlines and reporting:**
    - Initiate by end of Year 1; complete by end of Year 3:
      - regulatory mechanism development and adoption - by end of Year 3 certify that regulatory mechanism is equivalent to the *State's* model *IDDE* local law (traditional non-land use control MS4s) or certification of equivalence may be accomplished as set forth in Part VIII.A.3(f)(ii).
    - Complete in Year 1 (revise in Year 2 and 3 if changes are made):
      - describe procedures for identifying priority areas of concern (geographic, audiences, or otherwise) for *IDDE* program;
      - describe priority areas of concern, available equipment, staff, funding, etc.;
    - Initiate by end of Year 1; complete by end of Year 2 (revise in Year 3 if changes are made):
      - describe procedures for identifying and locating *illicit discharges* (trackdown);
      - describe procedures for eliminating *illicit discharges*;
      - describe procedures for enforcing against illicit dischargers;
      - describe procedures for documenting actions;
      - describe the program being developed for informing the public of hazards associated with illegal *discharges* and improper disposal of waste;
    - Initiate by end of Year 2; complete by end of Year 3:
      - number and percent of *outfalls* mapped;

**(Part VIII.A.3.m.i.)**

Complete by Year 3:

- *outfall* map; and

- ii. **program implementation reporting** as set forth in Part VIII.A.3(l) above. Commence *implementation* reporting after three year *development* period. *Implementation* reporting may begin earlier if *implementation* begins during development period.

**4. Construction Site Stormwater Runoff Control - SWMP Development / Implementation**

At a minimum, all *covered entities* must:

- a. *Develop (for newly authorized MS4s), implement, and enforce* a program that:
  - i. provides equivalent protection to the NYS SPDES General Permit for Stormwater Discharges from Construction Activities, unless more stringent requirements are contained within this *SPDES general permit* ;
  - ii. addresses *stormwater* runoff to the *small MS4* from *construction activities* that result in a land disturbance of greater than or equal to one acre. Control of *stormwater discharges* from *construction activity* disturbing less than one acre must be included in the program if:
    - that *construction activity* is part of a *larger common plan of development or sale* that would disturb one acre or more; or
    - if controlling such activities in a particular watershed is required by the *Department*;
  - iii. incorporates mechanisms for construction runoff requirements from new development and redevelopment projects to the extent allowable under *State* and local law that meet the *State's* most current technical standards:
    - through available mechanisms (ie. tenant lease agreements, bid specifications, requests for proposals, standard contract provisions, connection permits, maintenance directives / BMPS, access permits, consultant agreements, internal policies);
    - procedures or policies must be developed for implementation and enforcement of the mechanisms;
    - a written directive from the person authorized to sign the NOI stating that updated mechanisms must be used and who (position(s)) is responsible for ensuring compliance with and enforcing the mechanisms for construction projects that occur on property owned, under easement to, within the

**(Part VIII.A.4.a.iii.)**

right-of-way of, or under the maintenance jurisdiction by the *covered entity* or within the maintenance jurisdiction of the MS4; and

- the mechanisms and directive must be equivalent to the to the requirements of the NYS SPDES General Permit for Stormwater Discharges from Construction Activities.
- iv. allows for sanctions to ensure compliance to the extent allowable by *State* law;
- v. describes procedures for receipt and follow up on complaints or other information submitted by the public regarding construction site stormwater runoff;
- vi. educates construction site operators, design engineers, *municipal* staff and other individuals to whom these regulations apply about the construction requirements in the *covered entity's* jurisdiction, including the procedures for submission of *SWPPPs*, construction site inspections, and other procedures associated with control of construction stormwater;
- vii. Ensures that construction site contractors have received erosion and sediment control training, including the *trained contractors* as defined in the SPDES general permit for construction, before they do work within the *covered entity's* jurisdiction:
- training may be provided by the *Department* or other qualified entities (such as Soil and Water Conservation Districts);
  - the *covered entity* is not expected to perform such training, but they may co-sponsor training for construction site operators in their area;
  - the *covered entity* may ask for a certificate of completion or other such proof of training; and
  - the *covered entity* may provide notice of upcoming sediment and erosion control training by posting in the building department or distribute with building permit application.
- viii. establishes and maintains an inventory of active construction sites, including the location of the site, owner / operator contact information;
- ix. develop (*for newly authorized MS4s*), record, periodically assess and modify as needed *measurable goals*; and

**(Part VIII.A.4.a.)**

- x. select and implement appropriate construction stormwater *BMPs* and *measurable goals* to ensure the reduction of all *POCs* in *stormwater discharges* to the *MEP*.

**Required SWMP Reporting**

- b. **Program *implementation* reporting for continuing covered entities** (MS4s covered for 3 or more years on the *reporting date*). At a minimum, the *covered entity* shall report on the items below:
  - i. number and type of sanctions employed;
  - ii. status of regulatory mechanism - certify that mechanisms will assure compliance with the NYS SPDES General Permit for Stormwater Discharges from Construction Activities;
  - iii. number of construction sites authorized for disturbances of one acre or more; and
  - iv. report on effectiveness of program, *BMP* and *measurable goal* assessment.
  
- c. Reporting for **newly regulated covered entities** (MS4s covered for less than 3 years on the *reporting date*). At a minimum, the *covered entity* shall report on the items below:
  - i. **Program *development* deadlines and reporting:**
    - Initiate by end of Year 1:
      - procedures, activities and identify personnel to educate and train construction site operators about requirements to develop and implement a SWPPP and any other requirements that must be met within the MS4's jurisdiction;
  
    - Initiate by the end of Year 1; complete by the end of Year 3:
      - status of mechanism for construction runoff requirements - by end of Year 3 certify that mechanisms will assure compliance with the NYS SPDES General Permit for Stormwater Discharges from Construction Activities; and
  
    - Complete in Year 1 (revise in Year 2 and 3 if changes are made):
      - describe procedures for the receipt and consideration of information submitted by the public. Identify the responsible personnel.
  
  - ii. Program implementation reporting as set forth in Part VIII.A.4(b) above. Commence *implementation* reporting after three year development period. *Implementation* reporting may begin earlier if *implementation* begins during development period.



**(Part VIII.A.)**

**5. Post-Construction Stormwater Management SWMP Development / Implementation**

At a minimum, all *covered entities* must:

a. *Develop (for newly authorized MS4s), implement, and enforce* a program that:

- i. provides equivalent protection to the NYS SPDES General Permit for Stormwater Discharges from Construction Activities, unless more stringent requirements are contained within this *SPDES general permit*;
- ii. addresses *stormwater* runoff from new development and redevelopment projects to the *small MS4* from projects that result in a land disturbance of greater than or equal to one acre. Control of *stormwater discharges* from projects of less than one acre must be included in the program if:
  - that project is part of a *larger common plan of development or sale*;
  - if controlling such activities in a particular watershed is required by the *Department*;
- iii. incorporates enforceable mechanisms for post-construction runoff control from new development and re-development projects to the extent allowable under *State* or local law that meet the *State's* most current technical standards:
  - through available mechanisms (i.e. tenant lease agreements, bid specifications, requests for proposals, standard contract provisions, connection permits, maintenance directives / BMPS, access permits, consultant agreements, internal policies);
  - procedures or policies must be developed for implementation and enforcement of the mechanisms;
  - a written directive from the person authorized to sign the NOI stating that updated mechanisms must be used and who (position(s)) is responsible for ensuring compliance with and enforcing the mechanisms for construction projects that occur on property owned by the *covered entity* or within the maintenance jurisdiction of the MS4; and
  - the mechanisms and directive must assure compliance with the requirements of the NYS SPDES General Permit for Stormwater Discharges from Construction Activities;
- iv. includes a combination of structural or non-structural management practices (according to standards defined in the most current version of the NYS Stormwater management Design Manual) that will reduce the *discharge* of pollutants to the MEP. In the development of environmental plans such as watershed plans, open space preservation programs, local laws, and ordinances covered entities must incorporate principles of *Low Impact Development (LID)*, *Better Site Design (BSD)* and other *Green Infrastructure* practices to the MEP.

**(Part VIII.A.5.a.iv.)**

Covered entities must consider natural resource protection, impervious area reduction, maintaining natural hydrologic condition in developments, buffers or set back distances for protection of environmentally sensitive areas such as streams, wetlands, and erodible soils in the development of environmental plans.

- if a *stormwater* management practice is designed and installed in accordance with the New York State Stormwater Management Design Manual or has been demonstrated to be equivalent and is properly operated and maintained, then *MEP* will be assumed to be met for the post construction *stormwater* discharged by the practice;
- v. establish and maintain an inventory of post-construction stormwater management practices to include at a minimum practices discharging to the *small MS4* that have been installed since March 10, 2003, those owned by the small MS4, and those found to cause water quality standard violations.
  - the inventory shall include, at a minimum: location of practice (street address or coordinates); type of practice; maintenance needed per the NYS Stormwater Management Design Manual, *SWPPP*, or other provided documentation; and dates and type of maintenance performed; and
- vi. ensures adequate long-term operation and maintenance of management practices by trained staff, including assessment to ensure that the practices are performing properly.
  - The assessment shall include the inspection items identified in the maintenance requirements (NYS Stormwater Management Design Manual, *SWPPP*, or other maintenance information) for the practice. *Covered entities* are not required to collect *stormwater* samples and perform specific chemical analysis;
- vii. Covered entities may include in the SWMP Plan provisions for development of a banking and credit system. MS4s must have an existing watershed plan based on which offsite alternative stormwater management in lieu of or in addition to on-site stormwater management practices are evaluated. Redevelopment projects must be evaluated for pollutant reduction greater than required treatment by the state standards. The individual project must be reviewed and approved by the *Department*. Use of a banking and credit system for new development is only acceptable in the impaired watersheds to achieve the no net increase requirement and watershed improvement strategy areas to achieve pollutant reductions in accordance with watershed plan load reduction goals. A banking and credit system must at minimum include:

**(Part VIII.A.5.a.vii.)**

- Ensures offset exceeds standard reduction by factor of at least 2
  - Offset is implemented within the same watershed
  - Proposed offset addresses the POC of the watershed
  - Tracking system is established for the watershed
  - Mitigation is applied for retrofit or redevelopment
  - Offset project is completed prior to beginning the proposed construction
  - A legal mechanism is established to implement the banking and credit system
- b. *Develop (for newly authorized MS4s), implement, and provide adequate resources for a program to inspect development and re-development sites by trained staff and to enforce and employ sanctions;*
- c. *Develop (for newly authorized MS4s), record, annually assess and modify as needed measurable goals; and*
- d. *Select and implement appropriate post-construction stormwater BMPs and measurable goals to ensure the reduction of all POCs in stormwater discharges to the MEP.*

**Required SWMP Reporting**

- e. Program *implementation* reporting for continuing *covered entities* (MS4s covered for 3 or more years on the *reporting date*). At a minimum, the *covered entity* shall report on the items below:
- i. number and type of sanctions;
  - ii. number and type of post-construction stormwater management practices;
  - iii. number and type of post-construction stormwater management practices inspected;
  - iv. number and type of post-construction stormwater management practices maintained;
  - v. status of regulatory mechanism, equivalent mechanism, that regulatory mechanism is equivalent ; and
  - vi. report on effectiveness of program, *BMP* and *measurable goal* assessment, and implementation of a banking and credit system, if applicable.
- f. Program reporting for **newly regulated covered entities** (MS4s covered for less than 3 years on the *reporting date*). At a minimum, the *covered entity* shall report on the items below:

**(Part VIII.A.5.f.)**

**i. program *development* deadlines and reporting:**

Initiate by end of Year 1; complete by end of Year 3:

- mechanism of post-construction stormwater management - by end of Year 3 certify that mechanisms will assure compliance with the NYS Construction General Permit (GP-0-10-001);

Initiate by end of Year 2; complete by end of Year 3:

- procedures for inspection and maintenance of post-construction management practices; and
- procedures for enforcement and penalization of violators;

**ii. program *implementation* reporting** as set forth in Part VIII.A.5(e). Commence *implementation* reporting after three year development period. *Implementation* reporting may begin earlier if *implementation* begins during *development* period.

**6. Pollution Prevention/Good Housekeeping For Municipal Operations  
SWMP Development / Implementation**

At a minimum, all *covered entities* must:

- Develop (for newly authorized MS4s) and implement* a pollution prevention / good housekeeping program for *municipal* operations and facilities that:
  - addresses *municipal* operations and facilities that contribute or potentially contribute *POCs* to the *small MS4* system. The operations and facilities may include, but are not limited to: street and bridge maintenance; winter road maintenance; stormwater system maintenance; vehicle and fleet maintenance; park and open space maintenance; municipal building maintenance; solid waste management; new construction and land disturbances; right-of-way maintenance; marine operations; hydrologic habitat modification, or other;
  - includes the performance and documentation of a self assessment of all municipal operations to:
    - determine the sources of pollutants potentially generated by the *covered entity's* operations and facilities; and
    - identify the *municipal* operations and facilities that will be addressed by the pollution prevention and good housekeeping program, if it is not done already;
  - determines *management practices*, policies, procedures, etc. that will be *developed* and *implemented* to reduce or prevent the discharge of (potential)

**(Part VIII.A.6.a.iii.)**

pollutants. Refer to *management practices* identified in the “NYS Pollution Prevention and Good Housekeeping Assistance Document” or other guidance materials available from the EPA, the *State*, or other organizations;

- iv. prioritizes pollution prevention and good housekeeping efforts based on geographic area, potential to improve water quality, facilities or operations most in need of modification or improvement, and *covered entity's* capabilities;
  - v. addresses pollution prevention and good housekeeping priorities;
  - vi. includes an employee pollution prevention and good housekeeping training program and ensure that staff receive and utilize training;
  - vii. requires third party entities performing contracted services, including but not limited to, street sweeping, snow removal, lawn / grounds care, etc., to make the necessary certification in Part IV.G; and
  - viii. requires *municipal* operations and facilities that would otherwise be subject to the NYS Multisector General Permit (MSGP, GP-0-06-002) for industrial stormwater discharges to prepare and *implement* provisions in the SWMP that comply with Parts III. A, C, D, J, K and L of the MSGP. The covered entity must also perform monitoring and record keeping in accordance with Part IV. of the MSGP. Discharge monitoring reports must be attached to MS4 annual report. Those operations or facilities are not required to gain coverage under the MSGP. *Implementation* the above noted provisions of the SWMP will ensure that MEP is met for discharges from those facilities;
- b. Consider and incorporate cost effective runoff reduction techniques and green infrastructure in the routine upgrade of the existing stormwater conveyance systems and municipal properties to the MEP. Some examples include replacement of closed drainage with grass swales, replacement of the existing islands in parking lots with rain garden, or curb cuts to route the flow through below grade infiltration areas or other low cost improvements that provide runoff treatment or reduction.
- c. *Develop (for newly authorized MS4s), record, periodically assess and modify as needed measurable goals ; and*

**(Part VIII.A.6.)**

- d. Select and implement appropriate pollution prevention and good housekeeping *BMPs* and *measurable goals* to ensure the reduction of all *POCs* in *stormwater discharges* to the *MEP*.
- e. Adopt techniques to reduce the use of fertilizers, pesticides, and herbicides, as well as potential impact to surface water.

**Required SWMP Reporting**

- f. **Program *implementation* reporting for continuing *covered entities*** (MS4s covered for 3 or more years on the *reporting date*). *Covered entities* are required to report on all *municipal* operations and facilities within their jurisdiction (*urbanized area* and *additionally designated area*) that their program is addressing. The *covered entity* shall report at a minimum on the items below:
  - i. indicate the *municipal* operations and facilities that the pollution prevention and good housekeeping program assessed;
  - ii. describe, if not done so already, the management practices, policies and procedures that have been developed, modified, and / or implemented and report, at a minimum, on the items below that the *covered entity's* pollution prevention and good housekeeping program addresses during the reporting year:
    - acres of parking lot swept;
    - miles of street swept;
    - number of catch basins inspected and, where necessary, cleaned;
    - post-construction control stormwater management practices inspected and, where necessary, cleaned;
    - pounds of phosphorus applied in chemical fertilizer
    - pounds of nitrogen applied in chemical fertilizer; and
    - acres of pesticides / herbicides applied.
  - iii. staff training events and number of staff trained; and
  - iv. report on effectiveness of program, *BMP* and *measurable goal* assessment. If the pollution prevention and good housekeeping program addresses other operations than what is listed above in Part VIII.A.6.a(ii), the *covered entity* shall report on items that will demonstrate program effectiveness.
- g. Reporting for **newly regulated *covered entities*** (MS4s covered for less than 3 years on the *reporting date*). *Covered entities* are required to report on all *municipal* operations and facilities within their jurisdiction (*urbanized area* and *additionally*

**(Part VIII.A.6.g.)**

*designated area*) that their program is addressing. The *covered entity* shall report at a minimum on the items below:

**i. program *development* deadlines and reporting:**

Complete by end of Year 1:

- identify the municipal operations and facilities that will be considered for inclusion in the pollution prevention and good housekeeping program;
- describe the pollution prevention and good housekeeping program priorities (geographic area, potential to improve water quality; facilities or operations most in need of modification or improvement);
- describe management practices, policies, procedures, etc. that will be developed or modified;
- identify the staff and equipment available;

Initiate by Year 2; complete Year 3:

- describe employee pollution prevention and good housekeeping program training program and begin training, report on number of staff trained;

Complete by end of Year 3:

- description of developed management practices.

**ii. program *implementation* reporting** as set forth in Part VIII.A.6(d) above. Commence *implementation* reporting after three year *development* permit. *Implementation* reporting may begin earlier if *implementation* begins during *development* period.

## **Part IX. WATERSHED IMPROVEMENT STRATEGY REQUIREMENTS**

The covered entities in the watershed improvement strategy areas must develop or modify their SWMP to address the watershed specific additional requirements to achieve the pollutant load reduction by the deadline as defined in the Tables in Part IX of this general SPDES permit. The Pollutant Load Reductions are the reductions necessary from the discharge loads associated with MS4s that, when combined with reductions in the discharge loads from non-MS4s to the waterbody, will meet water quality standards. The calculated reductions are based on TMDL models and may be recalculated according to 40CFR Part 130.

The MS4 portion of the pollutant load reduction shall be achieved by implementation of BMPs required of all MS4s, reductions from implementation of additional BMPs for watershed improvement strategy areas including any retrofits required by this permit. These reductions are intended to be targeted and credited using models, loading factors and load reductions predicted based on the best scientific information available.

The Pollutant Load Reduction Deadlines are deadlines by which the MS4 portion of the pollutant load reduction must be met. Watershed Improvement Strategy Deadlines are the deadlines by which the watershed improvement strategy requirements for addressing the POC are to be completed and implemented. Retrofit Plan Submission Deadlines are the deadlines by which the retrofit plan component of the watershed improvement strategies are submitted to the *Department* for review and approval.

Ultimately, the effectiveness of the load reductions in meeting water quality standards will be verified by ambient monitoring of the affected waterbody. Where ambient monitoring demonstrates consistent compliance with water quality standards, the covered entity may request that the *Department* suspend the additional BMP requirements to install stormwater retrofits.



**(Part IX.)**

**A. New York City East of Hudson Watershed MS4s - (Mapped in Appendix 3)**

Table IX.A - Pollutant Load Reduction and Timetable for New York City East of Hudson Phosphorus Watershed Improvement Strategy Area

Watershed	Watershed Improvement Strategy Deadline	Retrofit Plan Submission Deadline	Pollutant Load Reduction (Load Allocation)	Pollutant Load Reduction Deadline
New York City East of Hudson Watershed	05/01/2011	03/09/ 2009 (single) and 12/ 31/2009 (RSE)	In accordance with the TMDL Implementation Plan	03/09/2019 (single) 12/31/2019 (RSE)

By the deadline defined in the Table IX. A, covered entities in these watersheds shall, in addition to the requirements in Part VII or VIII, depending on the type of the MS4, develop and implement the following minimum control measures for areas within their jurisdiction and their storm sewersheds:

**1. Public Education and Outreach on Stormwater Impacts-** applicable to *traditional land use control, traditional non-land use control and non-traditional MS4s.*

- a. Plan and conduct an ongoing public education and outreach program designed to describe the impacts of phosphorus (the *POC*) on waterbodies. The program must identify potential sources of phosphorus in *stormwater* runoff and describe steps that contributors can take to reduce the concentration of this *POC* in *stormwater* runoff. The program must also describe steps that contributors of non-*stormwater* discharges (Part I.A.2) can take to reduce phosphorus.
- b. Develop, or acquire if currently available, specific educational material dealing with sources of phosphorus in *stormwater* and pollutant reduction practices. At a minimum, the educational material should address the following topics:
  - i. understanding the phosphorus issue;
  - ii. septic systems as a source of phosphorus;
  - iii. phosphorus concerns with fertilizer use;
  - iv. phosphorus concerns with grass clippings and leaves entering streets and storm sewers;
  - v. construction sites as a source of phosphorus; and

**(Part IX.A.1.b.)**

- vi. phosphorus concerns with detergent use.

**2. Public Involvement/ Participation**

No additional requirements proposed for this permit term.

**3. Illicit Discharge Detection and Elimination**

- a. Mapping - applicable to *traditional land use control, traditional non-land use control and non-traditional MS4s.*

Develop and maintain a map showing the entire *small MS4* conveyance system. The *covered entity* shall complete the mapping of approximately 20% of the system every year, with the entire system being mapped by January 8, 2013.

At a minimum, the map and/or supportive documentation for the conveyance system should include the following information:

- i. type of conveyance system - closed pipe or open drainage;
- ii. for closed pipe systems - pipe material, shape, and size;
- iii. for open drainage systems - channel/ditch lining material, shape, and dimensions; location and dimensions of any culvert crossings;
- iv. drop inlet, catch basin, and manhole locations; and
- v. number and size of connections (inlets/outlets) to catch basins and manholes, direction of flow.

All information shall be prepared in digital format suitable for use in GIS software and in accordance with the *Department's* guidance on Illicit Discharge Detection and Elimination. The scale shall be 1:24,000 or better.

- b. On-site wastewater systems - applicable to *traditional land use control and traditional non-land use control MS4s.*
  - *Develop, implement and enforce a program that ensures that on-site sanitary systems designed for less than 1000 gallons per day (septic systems, cesspools, including any installed absorption fields) are inspected at a minimum frequency of once every five years and, where necessary, maintained or rehabilitated. Regular field investigations/inspections should be done in accordance with the most current*

**(Part IX.A.3.b.)**

version of the EPA publication entitled Illicit Discharge Detection and Elimination: A Guidance Manual for Program Development and Technical Assessment, to detect the presence of ongoing and/or intermittent on-site sanitary discharges to the storm sewer system. An advanced system inspection requiring completion by a certified professional is not required by this permit, but may be used where site specific conditions warrant. Program development shall include the establishment of the necessary legal authority to implement the program.

**4. Construction Site Stormwater Runoff Control-** applicable to *traditional land use control MS4s*.

- a. *Develop, implement and enforce a program to reduce pollutants in stormwater runoff to the small MS4 from construction activities that result in a land disturbance of greater than or equal to five thousand (5000) square feet. At a minimum, the program must provide equivalent protection to the NYS DEC SPDES General Permit for Stormwater Discharges from Construction Activity and must include the development and implementation of:*
  - i. *by December 31, 2009, an ordinance or other regulatory mechanism that requires erosion and sediment controls designed in accordance with the most current version of the technical standard New York State Standards and Specifications for Erosion and Sediment Control for all construction activities that disturb between five thousand (5000) square feet and one acre of land. For construction activities that disturb between five thousand (5000) square feet and one (1) acre of land, one of the standard erosion and sediment control plans included in Appendix E (Erosion & Sediment Control Plan For Small Homesite Construction) of the New York Standards and Specifications for Erosion and Sediment Control may be used as the Stormwater Pollution Prevention Plan (SWPPP);*
  - ii. *policy and procedures for the covered entity to perform, or cause to be performed, compliance inspections at all sites with a disturbance of one (1) or more acres. By December 31, 2009, the covered entity shall have started performing, or cause to be performed, compliance inspections at all sites with a disturbance between five thousand (5000) square feet and one (1) acre of land;*

**5. Post-Construction Stormwater Management**

- a. *Construction stormwater program - applicable to traditional land use control, traditional non-land use control and non-traditional MS4s.*

**(Part IX.A.5.a.)**

Develop, *implement* and enforce a program to address post-construction *stormwater* runoff from new development and redevelopment projects that disturb greater than or equal to one (1) acre. This includes projects of less than one acre that are part of a larger common plan of development or sale. At a minimum, the program must provide equivalent protection to the NYS DEC SPDES General Permit for Stormwater Discharges from Construction Activity and must include the *development* and *implementation* of:

- i. a law or other mechanism that requires post-construction stormwater management controls designed in accordance with the most current version of the technical standards the New York State Stormwater Management Design Manual including the Enhanced Phosphorus Removal Design Standards. An MS4 must ensure that their ordinance or other mechanism requires post-construction stormwater management controls to be designed in accordance with the final version of the Enhanced Phosphorus Removal Design Standards by September 30, 2008 .
- b. Retrofit program - applicable to *traditional land use control, traditional non-land use control* and *non-traditional MS4s*.

Develop and commence implementation of a Retrofit Program that addresses runoff from sites to correct or reduce existing erosion and/or pollutant loading problems, with a particular emphasis placed on the pollutant phosphorus. At a minimum, the MS4 shall:

- i. establish procedures to identify sites with erosion and/or pollutant loading problems;
- ii. establish policy and procedures for project selection. Project selection should be based on the phosphorus reduction potential of the specific retrofit being constructed/installed; the ability to use standard, proven technologies; and the economic feasibility of constructing/installing the retrofit. As part of the project selection process, the *covered entity* should participate in locally based watershed planning efforts which involve the *Department, other covered entities, stakeholders* and other interested parties;
- iii. establish policy and procedures for project permitting, design, funding, construction and maintenance.

**(Part IX.A.5.b.)**

- iv. for covered entities that develop their own retrofit program, by March 9, 2009 develop and submit approvable plans with schedules for completing retrofit projects, including identification of funding sources. Upon DEC approval of those schedules, the plans and schedules shall become enforceable requirements of this permit.
- v. pursuant to Part IV. B (Cooperation Between Covered entities Encouraged), retrofit projects can be completed in cooperation with other covered entities in the East of Hudson Watershed through the formation of a cooperative entity with other MS4s. Participating MS4s shall work with the Department and other members of the cooperative entity in implementing the requirements of i, ii and iii above. In addition, each covered entity that becomes a member of the cooperative entity shall work closely with the Department and other members of the cooperative entity to, by December 31, 2009, develop and submit approvable plans and schedules for completing retrofit projects, including identification of funding sources. Upon DEC approval of those plans and schedules, the plans and schedules shall become enforceable requirements of this permit.

**6. Pollution Prevention/Good Housekeeping For Municipal Operations-** applicable to *traditional land use control, traditional non-land use control and non-traditional MS4s.*

- a. By December 31, 2009, develop and implement a Stormwater Conveyance System inspection and maintenance program. At a minimum, the program shall include the following:
  - i. policy and procedures for the inspection and maintenance of catch basin and manhole sumps. Catch basin and manhole sumps should be inspected in the early spring and late fall for sediment and debris build-up. If sediment and debris fills greater than 50% of the sump volume, the sump should be cleaned. All sediment and debris removed from the catch basins and manholes shall be properly disposed of;
  - ii. policy and procedures for the inspection, maintenance and repair of conveyance system *outfalls*. Beginning June 30, 2008, the MS4 must inspect 20% of their *outfalls* each year and make repairs as necessary. All outfall protection and/or bank stability problems identified during the inspection shall be corrected in accordance with the New York Standards and Specifications for Erosion and Sediment Control;

**(Part IX.A.6.a.)**

- iii. policy and procedures for the inspection, maintenance and repair of a *covered entity's* stormwater management practices. The inspection and maintenance schedule for all stormwater management practices shall assure continued operation of stormwater management practices; and
  - iv. develop a Corrective Action Plan for each Stormwater Conveyance System component that has been identified as needing repair. A file of all corrective actions implemented and *illicit discharges* detected and repaired should be maintained for a period of not less than five years.
- b. By December 31, 2010, develop and implement a turf management practices and procedures policy. The policy shall address the following:
- i. procedures for proper fertilizer application on municipally-owned lands. The application of any phosphorus-containing fertilizer (as labeled) shall only be allowed following a proper soil test and analysis documenting that soil phosphorus concentrations are inadequate;
  - ii. procedures for the proper disposal of grass clippings from municipally-owned lawns where grass clipping collection equipment is used. Grass clippings shall be disposed of in a compost pile or a proper containment device so that they cannot enter the *small MS4* or surface waters;
  - iii. procedures for the proper disposal of leaves from municipally-owned lands where leaves are collected. Leaves shall be disposed of in a compost pile or a proper containment device so that they cannot enter *small MS4s* or surface waters;
  - iv. for municipalities with lawn waste collection programs, the development of a curbside lawn waste management policy which ensures that lawn waste does not decay and release phosphorus to the storm sewer system; and
  - v. the planting of wildflowers and other native plant material to lessen the frequency of mowing and the use of chemicals to control vegetation.

**(Part IX.)**

**B. Other Phosphorus Watershed MS4s (Mapped in Appendices 4, 5, and 10)**

Table IX.B - Pollutant Load Reduction and Timetable for Other Phosphorus Watershed Improvement Strategy Areas

Watershed	Watershed Improvement Strategy Deadline	Retrofit Plan Submission Deadline	Pollutant Load Reduction (Waste Load Allocation %*)	Pollutant Load Reduction Deadline
Greenwood Lake	05/01/2011	03/09/2011	43* (load allocation)	03/09/2011
Onondaga Lake	TMDL approval + 3 years	TMDL approval + 3 years	TBD	TMDL approval + 13 years
Oscawana Lake	05/01/2013	Not Applicable	18	2020

By the deadline defined in the Table IX.B, covered entities in these watersheds shall, in addition to the requirements in Part VII or VIII, depending on the type of the MS4, develop and implement the following minimum control measures for areas within the permittee's jurisdiction and the covered entities's storm sewersheds:

**1. Public Education and Outreach on Stormwater Impacts-** applicable to *traditional land use control, traditional non-land use control and non-traditional MS4s.*

- a. Plan and conduct an ongoing public education and outreach program designed to describe the impacts of phosphorus (the POC) on waterbodies. The program must identify potential sources of Phosphorus in stormwater runoff and describe steps that contributors can take to reduce Phosphorus in stormwater runoff.
- b. develop, or acquire if currently available, specific educational material dealing with sources of Phosphorus in stormwater and pollutant reduction practices. At a minimum, the educational material should address the following topics:
  - i. understanding the phosphorus issue;
  - ii. septic systems as a source of phosphorus; and
  - iii. phosphorus concerns with fertilizer use.

**2. Public Involvement/ Participation**

No additional requirements proposed for at this time.

**3. Illicit Discharge Detection and Elimination** applicable to *traditional land use control and traditional non-land use control MS4s*, except within the Onondaga Lake Watershed.

- a. *Develop, implement and enforce* a program that ensures that on-site sanitary systems designed for less than 1000 gallons per day (septic systems, cesspools, including any installed absorption fields) are inspected at a minimum frequency of once every five

**(Part IX.B.3.a.)**

years and, where necessary, maintained or rehabilitated. Conduct of regular field investigations/inspections should be done in accordance with the most current version of the EPA publication entitled Illicit Discharge Detection and Elimination: A Guidance Manual for Program Development and Technical Assessment, to detect the presence of ongoing and/or intermittent on-site sanitary discharges to the storm sewer system. An advanced system inspection requiring completion by a certified professional is not required by this permit, but may be used where site specific conditions warrant. Program development shall include the establishment of the necessary legal authority to implement the program.

**4. Construction Site Stormwater Runoff Control**

No additional requirements at this time.

**5. Post-Construction Stormwater Management**, - applicable to *traditional land use, traditional non-land use control and non-traditional MS4s*.

- a. The *covered entity* must require the use of the “Enhanced Phosphorus Removal Design Standards” in accordance with NYS Stormwater Design Manual;
- b. *Develop* and commence implementation of a Retrofit Program that addresses runoff from sites to correct or reduce existing erosion and/or pollutant loading problems, with a particular emphasis placed on the pollutant Phosphorus. At a minimum, the MS4 shall:
  - i. establish procedures to identify sites with erosion and/or pollutant loading problems;
  - ii. establish policy and procedures for project selection. Project selection should be based on the Phosphorus reduction potential of the specific retrofit being constructed/installed; the ability to use standard, proven technologies; and the economic feasibility of constructing/installing the retrofit. As part of the project selection process, the *covered entity* should participate in locally based watershed planning efforts which involve the *Department*, other *covered entities*, stakeholders and other interested parties;
  - iii. establish policy and procedures for project permitting, design, funding, construction and maintenance



**(Part IX.B.5.)**

- iv. by the date specified for each watershed in the appropriate Watershed Improvement Strategy Requirement Table develop and submit approvable plans and schedules for completing retrofit projects, including identification of funding sources. Upon DEC approval of those plans and schedules, the plans and schedules shall become enforceable requirements of this permit.

**6. Pollution Prevention/Good Housekeeping For Municipal Operations** applicable to *traditional land use control, traditional non-land use control and non-traditional MS4s.*

- a. Develop a turf management practices and procedures policy. The policy should address the following:
  - i. procedures for proper fertilizer application on municipally-owned lands. The application of any phosphorus-containing fertilizer (as labeled) shall only be allowed following a proper soil test and analysis documenting that soil phosphorus concentrations are inadequate; and
  - ii. the planting of native plant material to lessen the frequency of mowing and the use of chemicals to control vegetation.

**(Part IX.)**

**C. Pathogen Impaired Watershed MS4s (Mapped in Appendix 6, 7 and 9)**

Table IX.C - Pollutant Load Reduction and Timetable for Pathogen Impaired Watershed Improvement Strategy Areas

Watershed	Watershed Improvement Strategy Deadline	Retrofit Plan Submission Deadline	Pollutant Load Reduction (Waste Load Allocation %)	Pollutant Load Reduction Deadline
Budds Pond*	05/01/2013	09/30/2012	61	09/30/2022
Stirling Creek*	05/01/2013	09/30/2012	28	09/30/2022
Town & Jockey Creeks*	05/01/2013	09/30/2012	76	09/30/2022
Goose Creek*	05/01/2013	09/30/2012	70	09/30/2022
Hashamomuck Pond, Zone HP-1*	05/01/2013	09/30/2012	77	09/30/2022
Hashamomu ck Pond , Zone HP-2*	05/01/2013	09/30/2012	43	09/30/2022
Richmond Creek*	05/01/2013	09/30/2012	71	09/30/2022
Deep Hole Creek*	05/01/2013	09/30/2012	29	09/30/2022
James Creek*	05/01/2013	09/30/2012	51	09/30/2022
Flanders Bay	05/01/2011	03/09/2011	98	03/09/2021
Reeves Bay	05/01/2011	03/09/2011	97	03/09/2021
Sebonac Creek	05/01/2011	03/09/2011	58	03/09/2021
North Sea Harbor, Zone NSH-1	05/01/2011	03/09/2011	97	03/09/2021
North Sea Harbor, Zone NSH-2	05/01/2011	03/09/2011	62	03/09/2021
North Sea Harbor, Zone NSH-3	05/01/2011	03/09/2011	99	03/09/2021
North Sea Harbor, Zone NSH-5	05/01/2011	03/09/2011	74	03/09/2021
Wooley Pond	05/01/2011	03/09/2011	97	03/09/2021
Noyac Creek, Zone NC-1	05/01/2011	03/09/2011	64	03/09/2021
Sag Harbor, Zone SH-2*	05/01/2013	09/30/2012	50	09/30/2022
Northwest Creek*	05/01/2013	09/30/2012	76	09/30/2022
Acabonac Harbor, Zone AH-2*	05/01/2013	09/30/2012	42	09/30/2022
Acabonac Harbor, Zone AH-3*	05/01/2013	09/30/2012	85	09/30/2022
Acabonac Harbor, Zone AH-4*	05/01/2013	09/30/2012	81	09/30/2022
Acabonac Harbor, Zone AH-5*	05/01/2013	09/30/2012	87	09/30/2022
Montauk Lake, Zone LM-1*	05/01/2013	09/30/2012	52	09/30/2022
Montauk Lake, Zone LM-2*	05/01/2013	09/30/2012	52	09/30/2022
Montauk Lake, Zone LM-3*	05/01/2013	09/30/2012	48	09/30/2022
Little Sebonac Creek	05/01/2011	03/09/2011	70	03/09/2021
Oyster Bay (Harbor 2)	05/01/2011	03/09/2011	20	03/09/2021
Oyster Bay (Harbor 3)	05/01/2011	03/09/2011	90	03/09/2021

\*Additionally Designated Area

Watershed	Enhanced Plan Implementation Deadline	First Retrofit Plan Submission Deadline	Pollutant Reduction (Waste Load Allocation %)	Pollutant Load Reduction Deadline
Hempstead Harbor, north, and tidal tributaries	05/01/2013	09/30/2012	95	09/30/2022
Cold Spring Harbor, and tidal tributaries, Inner	05/01/2013	09/30/2012	95	09/30/2022
Cold Spring Harbor, Eel Creek	05/01/2013	09/30/2012	90	09/30/2022
Huntington Harbor	05/01/2013	09/30/2012	89	09/30/2022
Centerport Harbor	05/01/2013	09/30/2012	91	09/30/2022
Northport Harbor	05/01/2013	09/30/2012	92	09/30/2022
Stony Brook Harbor and West Meadow Creek, Inner	05/01/2013	09/30/2012	99	09/30/2022
Stony Brook Creek	05/01/2013	09/30/2012	99	09/30/2022
Stony Brook Yacht Club	05/01/2013	09/30/2012	48	09/30/2022
Stony Brook Harbor, Westmeadow Creek	05/01/2013	09/30/2012	99	09/30/2022
Setauket Harbor, Little Bay	05/01/2013	09/30/2012	84	09/30/2022
Setauket Harbor, East Setauket	05/01/2013	09/30/2012	79	09/30/2022
Setauket Harbor, Poquot	05/01/2013	09/30/2012	100	09/30/2022
Mt. Sinai Harbor, Crystal Brook	05/01/2013	09/30/2012	88	09/30/2022
Mt. Sinai Harbor, Inner Harbor	05/01/2013	09/30/2012	96	09/30/2022
Mt. Sinai Harbor, Pipe Stave Hollow	05/01/2013	09/30/2012	93	09/30/2022
Mattituck Inlet/Creek, Low, and tidal tributaries	05/01/2013	09/30/2012	64	09/30/2022
Goldsmith Inlet	05/01/2013	09/30/2012	91	09/30/2022
West Harbor, Fishers Island, Davloy Cove	05/01/2013	09/30/2012	41	09/30/2022
Georgica Pond, Upper	05/01/2013	09/30/2012	93	09/30/2022

Georgica Pond, Lower	05/01/2013	09/30/2012	93	09/30/2022
Georgica Pond Cove	05/01/2013	09/30/2012	92	09/30/2022
Sagaponack Pond	05/01/2013	09/30/2012	88	09/30/2022
Mecox Bay and tributaries	05/01/2013	09/30/2012	89	09/30/2022
Heady Creek and tributaries	05/01/2013	09/30/2012	88	09/30/2022
Taylor Creek and tributaries	05/01/2013	09/30/2012	52	09/30/2022
Penny Pond	05/01/2013	09/30/2012	31	09/30/2022
Weesuck Creek and tidal tributaries	05/01/2013	09/30/2012	37	09/30/2022
Penniman Creek and tidal tributaries	05/01/2013	09/30/2012	32	09/30/2022
Ogden Pond	05/01/2013	09/30/2012	28	09/30/2022
Quantuck Bay	05/01/2013	09/30/2012	91	09/30/2022
Quantuck Canal/Moneybogue Bay	05/01/2013	09/30/2012	62	09/30/2022
Seatuck Cove	05/01/2013	09/30/2012	94	09/30/2022
Harts Cove	05/01/2013	09/30/2012	12	09/30/2022
Narrow Bay	05/01/2013	09/30/2012	16	09/30/2022
Bellport Bay, Beaver Dam Creek	05/01/2013	09/30/2012	94	09/30/2022
Bellport Bay, West Cove	05/01/2013	09/30/2012	94	09/30/2022
Patchogue Bay, Swan River	05/01/2013	09/30/2012	90	09/30/2022
Patchogue Bay, Mud Creek	05/01/2013	09/30/2012	71	09/30/2022

By the deadline defined in the Table IX.C, *covered entities* in these watersheds shall, in addition to the requirements in Part VII. or VIII., depending on the type of the MS4, develop and implement the following MCMs for areas within the *covered entity's* jurisdiction and the covered entities's storm sewersheds:

**(Part IX.C.)**

**1. Public Education and Outreach on Stormwater Impacts-** applicable to *traditional land use control, traditional non-land use control and non-traditional MS4s*

a. Plan and conduct an ongoing public education and outreach program designed to describe the impacts of Pathogens (the *POC*) on waterbodies. The program must identify potential sources of Pathogens in *stormwater* runoff and describe steps that contributors can take to reduce the Pathogens in *stormwater* runoff. The program must also describe steps that contributors of non-*stormwater discharges* can take to reduce Pathogens.

b. *Develop*, or acquire if currently available, specific educational material dealing with sources of Pathogens in *stormwater* and pollutant reduction practices. At a minimum, the educational material should address the following topics:

i. where, why, and how Pathogens pose threats to the environment and to the community;

ii. septic systems, geese and pets as a source of pathogens;

iii. dissemination of educational materials / surveys to households/businesses in proximity to Pathogen *TMDL* waterbodies; and

iv. education for livestock / horse boarders regarding manure *BMPs*.

**2. Public Involvement / Participation**

No additional requirements proposed at this time.

**3. Illicit Discharge Detection and Elimination, SWMP Development / Implementation-** Mapping applicable to *traditional land use control and traditional non-land use control MS4s*.

a. Develop, implement, and enforce a program to detect and eliminate discharges to the municipal separate storm sewer system from on-site sanitary systems in areas where factors such as shallow groundwater, low infiltrative soils, historical on-site sanitary system failures, or proximity to pathogen-impaired waterbodies, indicate a reasonable likelihood of system discharge.

In such areas, ensure that on-site sanitary systems designed for less than 1000 gallons per day (septic systems, cesspools, including any installed absorption fields) are inspected at a minimum frequency of once every five years and, where necessary, maintained or rehabilitated. Conduct regular field investigations/inspections in accordance with the most current version of the EPA publication entitled Illicit Discharge

**(Part IX.C.3.a.)**

Detection and Elimination: A Guidance Manual for Program Development and Technical Assessment, to detect the presence of ongoing and/or intermittent on-site sanitary discharges to the storm sewer system. An advanced system inspection requiring completion by a certified professional is not required by this permit, but may be used where site specific conditions warrant.

On-site sanitary system IDDE program development shall include the establishment of the necessary legal authority (such as new or revised local laws) for implementation and enforcement.

b. Develop and maintain a map showing the entire *small MS4* conveyance system. The *covered entity* shall complete the mapping of approximately 20% of the system every year, with the entire system being mapped by May 1, 2015. At a minimum, the map and/or supportive documentation for the conveyance system shall include the following information:

- i. type of conveyance system - closed pipe or open drainage;
- ii. for closed pipe systems - pipe material, shape, and size;
- iii. for open drainage systems - channel/ditch lining material, shape, and dimensions; location and dimensions of any culvert crossings;
- iv. drop inlet, catch basin, and manhole locations; and
- v. number and size of connections (inlets/outlets) to catch basins and manholes, direction of flow.

All information shall be prepared in digital format suitable for use in GIS software and in accordance with the *Department's* guidance on Illicit Discharge Detection and Elimination. The scale shall be 1:24000 or better.

#### **4. Construction Site Stormwater Runoff Control**

No additional requirements at this time.

**5. Post-Construction Stormwater Management-** applicable to *traditional land use control, traditional non-land use control and non-traditional MS4s.*

Develop and commence implementation of a Retrofit Program that addresses runoff from sites to correct or reduce pollutant loading problems, with a particular emphasis placed on the pollutant Pathogens. At a minimum, the MS4 shall:

- a. establish procedures to identify sites with erosion and/or pollutant loading problems;

**(Part IX.C.5.)**

- b. establish policy and procedures for project selection. Project selection should be based on the Pathogen reduction potential of the specific retrofit being constructed/installed; the ability to use standard, proven technologies; and the economic feasibility of constructing/installing the retrofit. As part of the project selection process, the *covered entity* should participate in locally based watershed planning efforts which involve the *Department*, other *covered entities*, stakeholders and other interested parties;
- c. establish policy and procedures for project permitting, design, funding, construction and maintenance
- d. by March 9, 2011, develop and submit approvable plans and schedules for completing retrofit projects. Upon DEC approval of those plans and schedules and identification of funding sources, the plans and schedules shall become enforceable requirements of this permit.

**6. Pollution Prevention/Good Housekeeping For Municipal Operations**, - applicable to *traditional land use control* and traditional non-land use control MS4s.

- a. *Develop*, enact and enforce a local law prohibiting pet waste on municipal properties and prohibiting goose feeding.
- b. *Develop* and *implement* a pet waste bag program for collection and proper disposal of pet waste.
- c. *Develop* a program to manage goose populations.

**(Part IX.)**

**D. Nitrogen Watershed MS4s (Mapped in Appendix 8)**

Table IX.D - Pollutant Load Reduction and Timetable for Nitrogen Watershed Improvement Strategy Area

Watershed	Watershed Improvement Strategy Deadline	Retrofit Plan Submission Deadline	Pollutant Reduction (Load Allocation %)	Pollutant Load Reduction Deadline
Peconic Bay	05/01/2011	03/09/2011	15	03/09/2021

By the deadline defined in the Table IX.D, covered entities in these watersheds shall, in addition to the requirements in Part VII or VIII, depending on the type of the MS4, develop and implement the following minimum control measures for areas within the covered entity's jurisdiction and the covered entities' storm sewersheds:

**1. Public Education and Outreach on Stormwater Impacts** - applicable to *traditional land use control, traditional non-land use control and non-traditional MS4s*.

- a. Plan and conduct an ongoing public education and outreach program designed to describe the impacts of Nitrogen (the POC) on waterbodies. The program must identify potential sources of Nitrogen in stormwater runoff and describe steps that contributors can take to reduce the Nitrogen in stormwater runoff.
- b. develop, or acquire if currently available, specific educational material dealing with sources of Nitrogen in stormwater and pollutant reduction practices. At a minimum, the educational material should address the following topics:
  - i. understanding the Nitrogen issue;
  - ii. septic systems as a source of Nitrogen; and
  - iii. Nitrogen concerns with fertilizer use.

**2. Public Involvement/ Participation**

No additional requirements proposed for at this time.

**3. Illicit Discharge Detection and Elimination** - applicable to *traditional land use control and traditional non-land use control MS4s*



**(Part IX.D.3.)**

a. Develop and maintain a map showing the entire small MS4 conveyance system. The covered entity shall complete the mapping of approximately 20% of the system every year, with the entire system being mapped by May 1, 2015. At a minimum, the map and/or supportive documentation for the conveyance system shall include the following information:

- i. type of conveyance system - closed pipe or open drainage;
- ii. for closed pipe systems - pipe material, shape, and size;
- iii. for open drainage systems - channel/ditch lining material, shape, and dimensions; location and dimensions of any culvert crossings;
- iv. drop inlet, catch basin, and manhole locations; and
- v. number and size of connections (inlets/outlets) to catch basins and manholes, direction of flow.

All information shall be prepared in digital format suitable for use in GIS software and in accordance with the *Department's* guidance on Illicit Discharge Detection and Elimination. The scale shall be 1:24000 or better.

**4. Construction Site Stormwater Runoff Control**

No additional requirements at this time.

**5. Post-Construction Stormwater Management** - applicable to *traditional land use control, traditional non-land use control and non-traditional MS4s.*

*Develop* and commence implementation of a Retrofit Program that addresses runoff from sites to correct or reduce existing erosion and/or pollutant loading problems, with a particular emphasis placed on the pollutant Nitrogen. At a minimum, the MS4 shall:

- a. establish procedures to identify sites with erosion and/or pollutant loading problems;
- b. establish policy and procedures for project selection. Project selection should be based on the Nitrogen reduction potential of the specific retrofit being constructed/installed; the ability to use standard, proven technologies; and the economic feasibility of constructing/installing the retrofit. As part of the project selection process, the *covered entity* should participate in locally based watershed planning efforts which involve the *Department, other covered entities, stakeholders and other interested parties;*
- c. establish policy and procedures for project permitting, design, funding, construction and maintenance; and

**(Part IX.D.5.)**

d. by March 9, 2011, develop and submit approvable plans and schedules for completing retrofit projects, including identification of funding sources. Upon DEC approval of those plans and schedules, the plans and schedules shall become enforceable requirements of this permit.

**6. Pollution Prevention/Good Housekeeping For Municipal Operations** - applicable to *traditional land use control, traditional non-land use control and non-traditional MS4s.*

a. Develop a turf management practices and procedures policy. The policy should address the following:

- i. procedures for proper fertilizer application on municipally-owned lands. The application of any Nitrogen-containing fertilizer shall only be allowed under the supervision of a Certified Crop Advisor or Certified Landscape Architect; and
- ii. the planting of native plant material to lessen the frequency of mowing and reduce the use of chemicals to control vegetation.

## Part X. ACRONYMS AND DEFINITIONS

### A. Acronym List

BMP - Best Management Practice  
CFR - Code of Federal Regulations  
CWA - Clean Water Act  
ECL - Environmental Conservation Law  
MCC - Municipal Compliance Certification  
MCM - Minimum Control Measure  
MEP - Maximum Extent Practicable  
MS4 - Municipal Separate Storm Sewer System  
NPDES - National Pollutant Discharge Elimination System  
POC - Pollutant of Concern  
SPDES - State Pollutant Discharge Elimination System  
SWMP - Stormwater Management Program  
SWMP Plan - Stormwater Management Program Plan  
SWPPP - Stormwater Pollution Prevention Plan  
TMDL - Total Maximum Daily Load  
UA - Urbanized Area

### B. Definitions

**Activities** - See best management practice

**Additionally Designated Areas** - EPA required the Department to develop a set of criteria for designating additional MS4 areas as subject to these regulations. The following criteria have been adopted to designate additional MS4s in New York State:

Criteria 1: MS4s discharging to waters for which and EPA-approved TMDL required reduction of a pollutant associated with stormwater beyond what can be achieved with existing programs (and the area is not already covered under automatic designation as UA).

Criteria 2: MS4s contiguous to automatically designated urbanized areas (town lines) that discharge to sensitive waters classified as AA Special (fresh surface waters), AA (fresh surface waters) with filtration avoidance determination or SA (saline surface waters).

Criterion 3: Automatically designated MS4 areas are extended to Town, Village or City boundaries, but only for Town, Village or City implementation of Minimum Control Measures (4) Construction Site Stormwater Runoff Control and (5) Post Construction Stormwater Management in Development and Redevelopment. This additional designation may be waived, by written request to the Department, where the automatically designated area is a small portion of the total area of the Town, Village or City (less than 15 %) and where there is

little or no construction activity in the area outside of the automatically designated area (less than 5 disturbed acres per year).

**Best Management Practice** - means schedules activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of waters of the state. BMPs also include treatment requirements (if determined necessary by the covered entity), operating procedures, and practices to control runoff, spillage and leaks, sludge or waste disposal, or drainage from areas that could contribute pollutants to stormwater discharges. BMP is referred to in EPA's fact sheets and other materials. BMPs are also referred to as "activities" or "management practices" throughout this *SPDES general permit*.

**Better Site Design (BSD)** - Better Site Design incorporates non-structural and natural approaches to new and redevelopment projects to reduce impacts on watersheds by conserving natural areas, reducing impervious cover and better integrating stormwater treatment. Better site design is a form of Green Infrastructure and is similar to Low Impact Development (LID). See also Green Infrastructure and Low Impact Development.

**Construction Activity(ies)** - means any clearing, grading, excavation, demolition or stockpiling activities that result in soil disturbance. Clearing activities can include but are not limited to logging equipment operation, the cutting and skidding of trees, stump removal and/or brush root removal. Construction activity does not include routine maintenance that is performed to maintain the original line and grade, hydraulic capacity, or original purpose of a facility.

**Covered entity** - means the holder of this *SPDES general permit* or an entity required to gain coverage under this *SPDES general permit*. The owner / operator of the small MS4.

**Department** - means the New York State Department of Environmental Conservation as well as meaning the Department 's designated agent.

**Development** - period after initial authorization under this *SPDES general permit* when the covered entity creates, designs or develops activities, BMPs, tasks or other measures to include in their SWMP

**Discharge(s)** - any addition of any pollutant to waters of the State through an outlet or point source.

**Discharge Authorized by a SPDES Permit** - means discharges of wastewater or stormwater from sources listed in the permit, that do not violate ECL Section 17-0501, that are through outfalls listed in the permit, and that are:

1. discharges within permit limitations of pollutants limited in the SPDES permit;

2. discharges within permit limitations of pollutants limited by an indicator limit in the SPDES permit;
3. discharges of pollutants subject to action level requirements in the SPDES permit;
4. discharges of pollutants not explicitly listed in the SPDES permit, but reported in the SPDES permit application record as detected in the discharge or as something the covered entity knows or has reason to believe to be present in the discharge, provided the special conditions section of the applicable SPDES permit does not otherwise forbid such a discharge and provided that such discharge does not exceed, by an amount in excess of normal effluent variability, the level of discharge that may reasonably be expected for that pollutant from information provided in the SPDES permit application record;
5. discharges of pollutants not required to be reported on the appropriate and current New York State SPDES permit application; provided the special conditions section of the permit does not otherwise forbid such a discharge. The Department may, in accordance with law and regulation, modify the permit to include limits for any pollutant even if that pollutant is not required to be reported on the SPDES permit application; or
6. discharges from fire fighting activities; fire hydrant flushings; testing of fire fighting equipment, provided that such equipment is for water only fire suppression; potable water sources including waterline flushings; irrigation drainage; lawn watering; uncontaminated infiltration and inflow; leakage from raw water conveyance systems; routine external building washdown and vehicle washing which does not use detergents or other compounds; pavement washwaters where spills or leaks of toxic or hazardous materials, other than minor and routine releases from motor vehicles, have not occurred (unless such material has been removed) and where detergents are not used; air conditioning and steam condensate; springs; uncontaminated groundwater; and foundation or footing drains where flows are not contaminated with process materials such as solvents provided that the covered entity has implemented an effective plan for minimizing the discharge of pollutants from all of the sources listed in this subparagraph.

Environmental Conservation Law - means chapter 43-B of the Consolidated Laws of the State of New York, entitled the Environmental Conservation Law.

**Green Infrastructure** - Green infrastructure approaches essentially infiltrate, evapotranspire or reuse stormwater, with significant utilization of soils and vegetation rather than traditional hardscape collection, conveyance and storage structures . Common green infrastructure approaches include green roofs, trees and tree boxes, rain gardens, vegetated swales, pocket wetlands, infiltration planters, vegetated median strips, reforestation, and protection and enhancement of riparian buffers and floodplains. See also Low Impact Development and Better Site Design.

**Groundwater** - means waters in the saturated zone. The saturated zone is a subsurface zone in which all the interstices are filled with water under pressure greater than that of the

atmosphere. Although the zone may contain gas-filled interstices or interstices filled with fluids other than water, it is still considered saturated.

**Illicit Discharges** - discharges not entirely composed of stormwater into the small MS4, except those identified in Part I.A.2. Examples of illicit discharges are non-permitted sanitary sewage, garage drain effluent, and waste motor oil. However, an illicit discharge could be any other non-permitted discharge which the covered entity or Department has determined to be a substantial contributor of pollutants to the small MS4.

**Impaired Water** - a water is impaired if it does not meet its designated use(s). For purposes of this permit 'impaired' refers to impaired waters for which TMDLs have been established, for which existing controls such as permits are expected to resolve the impairment, and those needing a TMDL. Impaired waters compilations are also sometimes referred to as 303(d) lists; 303(d) lists generally include only waters for which TMDLs have not yet been developed. States will generally have associated, but separate lists of impaired waters for which TMDLs have already been established.

**Implementation** - period after development of SWMP, where the covered entity puts into effect the practices, tasks and other activities in their SWMP.

**Individual SPDES Permit** - means a SPDES permit issued to a single facility in one location in accordance with this Part (as distinguished from a *SPDES general permit*).

**Industrial Activity** - as defined by the SPDES Multi-Sector General Permit (GP-0-06-002).

**Larger Common Plan of Development or Sale** - means a contiguous area where multiple separate and distinct construction activities are occurring, or will occur, under one plan. The term "plan" in "larger common plan of development or sale" is broadly defined as any announcement or piece of documentation (including a sign, public notice or hearing, sales pitch, advertisement, drawing, permit application, State Environmental Quality Review Act Application, zoning request, computer design, etc.) or physical demarcation (including boundary signs, lot stakes, surveyor markings, etc.) indicating that construction activities may occur on a specific plot.

For discrete construction projects that are located within a larger common plan of development or sale that are at least 1/4 mile apart, each project can be treated as a separate plan of development or sale provided any interconnecting road, pipeline or utility project that is part of the same "common plan" is not concurrently being disturbed.

**Low Impact Development** - is a site design strategy with a goal of maintaining or replicating the predevelopment hydrologic regime through the use of design techniques to create a functionally equivalent hydrologic landscape. Hydrologic functions of storage, infiltration,

and ground water recharge, as well as the volume and frequency of discharges are maintained through the use of integrated and distributed micro scale stormwater retention and detention areas, reduction of impervious surfaces, and the lengthening of flow paths and runoff time. Other strategies include the preservation/protection of environmentally sensitive site features such as riparian buffers, wetlands, steep slopes, valuable (mature) trees, flood plains, woodlands and highly permeable soils. LID principles are based on controlling stormwater at the source by the use of micro scale controls that are distributed throughout the site. This is unlike conventional approaches that typically convey and manage runoff in large facilities located at the base of drainage areas. See also Green Infrastructure and Better Site Design.

**Management Practices** - See best management practices

**Maximum Extent Practicable** - is a technology-based standard established by Congress in the Clean Water Act §402(p)(3)(B)(iii). Since no precise definition of MEP exists, it allows for maximum flexibility on the part of MS4 operators as they develop their programs. (40CFR 122.2 See also: Stormwater Phase II Compliance Assistance Guide EPA 833-R-00-002, March 2000). When trying to reduce pollutants to the MEP, there must be a serious attempt to comply, and practical solutions may not be lightly rejected. If a covered entity chooses only a few of the least expensive methods, it is likely that MEP has not been met. On the other hand, if a covered entity employs all applicable BMPs except those where it can be shown that they are not technically feasible in the locality, or whose cost would exceed any benefit to be derived, it would have met the standard. MEP required covered entities to choose effective BMPs, and to reject applicable BMPs only where other effective BMPs will serve the same purpose, the BMPs would not be technically feasible, or the cost would be prohibitive.

**Measurable Goals** - are the goals of the SWMP that should reflect the needs and characteristics of the covered entity and the areas served by its small MS4. Furthermore, the goals should be chosen using an integrated approach that fully addresses the requirements and intent of the MCM. The assumption is that the program schedules would be created over a 5 year period and goals would be integrated into that time frame. For example, a larger MS4 could do an outfall reconnaissance inventory for 20% of the collection system every year so that every outfall is inspected once within the permit cycle

**Municipal / Municipalities** - referred to in the federal rule that describes the Phase II stormwater program includes not only the State's municipal governments (cities, towns, villages and counties), but any publicly funded entity that owns or operates a separate storm sewer system. Examples of other public entities that are included in this program include the State Department of Transportation, State University Campuses, federal and State prisons, State and federal hospitals, Thruway and Dormitory Authorities, public housing authorities, school and other special districts.

**Municipal Separate Storm Sewer System** - a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains):

1. owned or operated by a State, city, town, village, borough, county, parish, district, association, or other public body (created by or pursuant to State law) having jurisdiction over disposal of sewage, industrial wastes, stormwater, or other wastes, including special districts under State law such as a sewer district, flood control district or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under section 208 of the CWA, that discharges to surface waters of the State;
2. designed or used for collecting or conveying stormwater;
3. which is not a combined sewer; and
4. which is not part of a Publicly Owned Treatment Works (POTW) as defined at 40 CFR 122.2.

**National Pollutant Discharge Elimination System** - means the national system for the issuance of wastewater and stormwater permits under the Federal Water Pollution Control Act (Clean Water Act).

**Non-traditional MS4s** - state and federal prisons, office complexes, hospitals; state: transportation agencies; university campuses, public housing authorities, schools, other special districts.

**Open Meetings Law** - per Public Officers Law, Article 7, Open Meetings Law, Section 104, Public notice:

1. Public notice of the time and place of a meeting scheduled at least one week prior thereto shall be given to the news media and shall be conspicuously posted in one or more designated public locations at least seventy two hours before such meeting.
2. Public notice of the time and place of every other meeting shall be given, to the extent practicable, to the news media and shall be conspicuously posted in one or more designated public locations at a reasonable time prior thereto.
3. The public notice provided for by this section shall not be construed to require publication as a legal notice.
4. If videoconferencing is used to conduct a meeting, the public notice for the meeting shall inform the public that videoconferencing will be used, identify the locations for the meeting, and state that the public has the right to attend the meeting at any of the locations.

**Operator** - the person, persons or legal entity that is responsible for the small MS4, as indicated by signing the NOI to gain coverage for the MS4 under this *SPDES general permit*.



**Outfall** - is defined as any point where a municipally owned and operated separate storm sewer system discharges to either surface waters of the State or to another MS4. Outfalls include discharges from pipes, ditches, swales, and other points of concentrated flow. However, areas of non-concentrated (sheet) flow which drain to surface waters of the State or to another MS4's system are not considered outfalls and should not be identified as such on the system map.

**Pollutants of Concern** - there are POCs that are primary (comprise the majority) sources of stormwater pollutants and others that are secondary (less likely).

- The POCs that are primarily of concern are: nitrogen, phosphorus, silt and sediment, pathogens, flow, and floatables impacting impaired waterbodies listed on the Priority Waterbody List known to come in contact with stormwater that could be discharged to that water body.
- The POCs that are secondarily of concern include but are not limited to petroleum hydrocarbons, heavy metals, and polycyclic aromatic hydrocarbons (PAHs), where stormwater or runoff is listed as the source of this impairment.
- The primary and secondary POCs can also impair waters not on the 303(d) list. Thus, it is important for the covered entity to assess known and potential POCs within the area served by their small MS4. This will allow the covered entity to address POCs appropriate to their MS4.

**Qualified Professional** - means a person that is knowledgeable in the principles and practices of stormwater management and treatment, such as a licensed Professional Engineer, Registered Landscape Architect or other Department endorsed individual(s). Individuals preparing SWPPPs that require the post-construction stormwater management practice component must have an understanding of the principles of hydrology, water quality management practice design, water quantity control design, and, in many cases, the principles of hydraulics in order to prepare a SWPPP that conforms to the Department's technical standard. All components of the SWPPP that involve the practice of engineering, as defined by the NYS Education Law (see Article 145), shall be prepared by, or under the direct supervision of, a professional engineer licensed to practice in the State of New York.

**Reporting Date** – means the end of the annual reporting period, March 9, as indicated in Part V.C.1.

**Retrofit** - means modifying or adding to existing infrastructure for the purpose of reducing pollutant loadings. Examples, some of which may not be effective for all pollutants, include:

Better site design approaches such as roof top disconnection, diversion of runoff to infiltration areas, soil de-compaction, riparian buffers, rain gardens, cisterns

Rehabilitation of existing storm sewer system by installation of standard stormwater treatment systems (ponds, wetlands, filtering, infiltration) or proprietary practices

Stabilize dirt roads (gravel, stone, water bar, check dam, diversion)

Conversion of dirt parking lots to pervious pavement, grassed or stone cover

Conversion of dry detention ponds to extended detention or wetland treatment systems

Retrofit by converting abandoned buildings to stormwater treatment systems

Retrofit of abandoned building to open space

Retrofit road ditches to enhance open channel design

Control the downstream effects of runoff from existing paved surfaces resulting in flooding and erosion in receiving waters

Control stream erosion by plunge pool, velocity dissipaters, and flow control devices for discharges from conveyance systems

Upgrade of an existing conveyance system to provide water quality and /or quantity control within the drainage structure

**Section 303(d) Listed Waters** - Section 303(d) is part of the federal CWA that requires the Department to periodically to prepare a list of all surface waters in the State for which beneficial uses of the water – such as for drinking, recreation, aquatic habitat, and industrial use – are impaired by pollutants. These are water quality-limited estuaries, lakes, and streams that fall short of state surface water quality standards, and are not expected to improve within the next two years. Refer to impaired waters for more information.

**Single entity** - An entity, formed in accordance with the applicable state and/or local legislation, with a legal authority and capacity (financial, resources, etc...) that gains coverage under the MS4 general permit to implement all or parts of the MS4 program within a jurisdiction on behalf of multiple MS4s in that geographic area.

**Small MS4** - MS4 system within an urbanized area or other areas designated by the State.

**SPDES general permit** - means a SPDES permit issued pursuant to 6 NYCRR Part 750-1.21 authorizing a category of discharges.

**Staff** - actual employees of the covered entity or contracted entity.

**State** - means the State of New York.

**State Pollutant Discharge Elimination System** - means the system established pursuant to Article 17 of the ECL and 6 NYCRR Part 750 for issuance of permits authorizing discharges to the waters of the state.

**Stormwater** - means that portion of precipitation that, once having fallen to the ground, is in excess of the evaporative or infiltrative capacity of soils, or the retentive capacity of surface features, which flows or will flow off the land by surface runoff to waters of the state.

**Stormwater Management Program** - the program implemented by the covered entity. Covered entities are required at a minimum to develop, implement and enforce a SWMP designed to address POCs and reduce the discharge of pollutants from the small MS4 to the MEP, to protect water quality, and to satisfy the appropriate water quality requirements of the *ECL* and Clean Water Act. The SWMP must address the MCM described in Part VIII.

The *SWMP* needs to include *measurable goals* for each of the *BMPs*. The measurable goals will help the covered entities assess the status and progress of their program. The *SWMP* should:

1. describe the *BMP* / measureable goal;
2. identify time lines / schedules and milestones for development and implementation;
3. include quantifiable goals to assess progress over time; and
4. describe how the covered entity will address POCs.

Guidance on developing *SWMPs* is available from the Department on its website. Examples of successful *SWMPs* and suggested measurable goals are also provided in EPA's Menu of *BMPs* available from its website. Note that this information is for guidance purposes only. An *MS4* may choose to develop or implement equivalent methods equivalent to those made available by the Department and EPA to demonstrate compliance with the *MCMs*.

When creating the *SWMP*, the *covered entities* should assess activities already being performed that could help meet, or be modified to meet, permit requirements and be included in the *SWMP*. *Covered entities* can create their *SWMP* individually, with a group of other individual *covered entities* or a coalition of *covered entities*, or through the work of a third party entity.

**Stormwater Management Program Plan**- used by the covered entity to document developed, planned and implemented SWMP elements. The *SWMP plan* must describe how pollutants in stormwater runoff will be controlled. For previously unauthorized *small MS4s* seeking coverage, information included in the NOI should be obtained from the *SWMP plan*. The *SWMP plan* is a separate document from the NOI and should not be submitted with the NOI or any annual reports unless requested.

The *SWMP plan* should include a detailed written explanation of all management practices, activities and other techniques the covered entity has developed, planned and implemented for their SWMP to address POCs and reduce pollutant discharges from their small MS4 to the MEP. The *SWMP plan* shall be revised to incorporate any new or modified *BMPs* or *measurable goals*.

*Covered entities* can create their *SWMP plan* individually, with a group of other individual *covered entities* or a coalition of *covered entities*, or through the work of a third party entity.

Documents to include are: applicable local laws, inter-municipal agreements and other legal authorities; staffing and staff development programs and organization charts; program budget; policy, procedures, and materials for each minimum measure; outfall and small MS4 system maps; stormwater management practice selection and measurable goals; operation and maintenance schedules; documentation of public outreach efforts and public comments; submitted construction site SWPPPs and review letters and construction site inspection reports.

The *SWMP plan* shall be made readily available to the covered entity's staff and to the public and regulators, such as *Department* and EPA staff. Portions of the *SWMP plan*, primarily policies and procedures, must be available to the management and staff of a *covered entity* that will be called upon to use them. For example, the technical standards and associated technical assistance documents and manuals for stormwater controls should be available to code enforcement officers, review engineers and planning boards. The local laws should be readily available to the town board and planning board. An integrated pest management program would have to be available to the the parks department and the stormwater outfall and available sewer system mapping and catch basin cleaning schedule would have to be available to the department of public works.

**Storm sewershed** - the catchment area that drains into the storm sewer system based on the surface topography in the area served by the stormsewer. Adjacent catchment areas that drain to adjacent outfalls are not separate storm sewersheds.

**Surface Waters of the State** - shall be construed to include lakes, bays, sounds, ponds, impounding reservoirs, springs, rivers, streams, creeks, estuaries, marshes, inlets, canals, the Atlantic ocean within the territorial seas of the state of New York and all other bodies of

surface water, natural or artificial, inland or coastal, fresh or salt, public or private (except those private waters that do not combine or effect a junction with natural surface or underground waters), which are wholly or partially within or bordering the state or within its jurisdiction. Waters of the state are further defined in 6 NYCRR Parts 800 to 941.

Storm sewers are not waters of the state unless they are classified in 6 NYCRR Parts 800 to 941. Nonetheless, a discharge to a storm sewer shall be regulated as a discharge at the point where the storm sewer discharges to waters of the state. Waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of the Act and Environmental Conservation Law (other than cooling ponds as defined in 40 CFR 423.11(m)(see section 750 - 1.24) which also meet the criteria of this definition are not waters of the state. This exclusion applies only to manmade bodies of water which neither were originally created in waters of the State (such as a disposal area in wetlands) nor resulted from impoundment of waters of the state.

**SWPPP** - as defined per the NYS DEC SPDES General Permit for Stormwater Discharges from Construction Activity or NYS DEC SPDES Multi-Sector General Permit for Stormwater Associated with Industrial Activity .

**Total Maximum Daily Load** - A TMDL is the sum of the allowable loads of a single pollutant from all contributing point and nonpoint sources. It is a calculation of the maximum amount of a pollutant that a waterbody can receive and still meet water quality standards, and an allocation of that amount to the pollutant's sources. A TMDL stipulates wasteload allocations for point source discharges, load allocations for nonpoint sources, and a margin of safety.

**Traditional Land Use Control MS4s** - means a city, town or village with land use control authority.

**Traditional Non-land Use Control MS4s** - means any county agency without land use control.

**Urbanized Area** - is a land area comprising one or more places (central place(s)) and the adjacent densely settled surrounding area (urban fringe) that together have a residential population of at least 50,000 and an overall population density of at least 1,000 people per square mile, as defined by the US Bureau of Census. Outlines the extent of automatically regulated areas, often do not extend to the political boundaries of a city, town, or village. SWMPs are only required within the UA. However, the Department encourages covered entities to voluntarily extend their SWMP programs at least to the extent of the storm sewershed that flows into the UA or extend further to their entire jurisdiction. For ease of creation and administration of local laws, ordinances or other regulatory mechanisms, these should be created to apply to the full jurisdictional boundary of municipalities.

**Water Quality Standard** - means such measures of purity or quality for any waters in relation to their reasonable and necessary use as promulgated in 6 NYCRR Part 700 et seq.

## **Part XI. RE-OPENER CLAUSE**

If there is evidence indicating that the stormwater discharges authorized by this permit cause or have the reasonable potential to cause or contribute to a violation of a water quality standard, the covered entity may be required at the Department's sole discretion to obtain an individual SPDES permit or an alternative *SPDES general permit* or the permit may be modified. In addition, coverage under this permit could terminate, meaning the discharge must cease.

# APPENDICES

## APPENDIX 1: LIST OF NYS DEC REGIONAL OFFICES

<u>Region</u>	<u>COVERING THE FOLLOWING COUNTIES:</u>	<u>DIVISION OF ENVIRONMENTAL PERMITS (DEP) PERMIT ADMINISTRATORS</u>	<u>DIVISION OF WATER (DOW) WATER (SPDES) PROGRAM</u>
1	NASSAU AND SUFFOLK	50 CIRCLE ROAD STONY BROOK, NY 11790 TEL. (631) 444-0365	50 CIRCLE ROAD STONY BROOK, NY 11790-3409 TEL. (631) 444-0405
2	BRONX, KINGS, NEW YORK, QUEENS AND RICHMOND	1 HUNTERS POINT PLAZA, 47-40 21ST ST. LONG ISLAND CITY, NY 11101-5407 TEL. (718) 482-4997	1 HUNTERS POINT PLAZA, 47-40 21ST ST. LONG ISLAND CITY, NY 11101-5407 TEL. (718) 482-4933
3	DUTCHESS, ORANGE, PUTNAM, ROCKLAND, SULLIVAN, ULSTER AND WESTCHESTER	21 SOUTH PUTT CORNERS ROAD NEW PALTZ, NY 12561-1696 TEL. (845) 256-3059	100 HILLSIDE AVENUE, SUITE 1W WHITE PLAINS, NY 10603 TEL. (914) 428 - 2505
4	ALBANY, COLUMBIA, DELAWARE, GREENE, MONTGOMERY, OTSEGO, RENSSELAER, SCHENECTADY AND SCHOHARIE	1150 NORTH WESTCOTT ROAD SCHENECTADY, NY 12306-2014 TEL. (518) 357-2069	1130 NORTH WESTCOTT ROAD SCHENECTADY, NY 12306-2014 TEL. (518) 357-2045
5	CLINTON, ESSEX, FRANKLIN, FULTON, HAMILTON, SARATOGA, WARREN AND WASHINGTON	1115 STATE ROUTE 86, PO BOX 296 RAY BROOK, NY 12977-0296 TEL. (518) 897-1234	232 GOLF COURSE ROAD, PO BOX 220 WARRENSBURG, NY 12885-0220 TEL. (518) 623-1200
6	HERKIMER, JEFFERSON, LEWIS, ONEIDA AND ST. LAWRENCE	STATE OFFICE BUILDING 317 WASHINGTON STREET WATERTOWN, NY 13601-3787 TEL. (315) 785-2245	STATE OFFICE BUILDING 207 GENESEE STREET UTICA, NY 13501-2885 TEL. (315) 793-2554
7	BROOME, CAYUGA, CHENANGO, CORTLAND, MADISON, ONONDAGA, OSWEGO, TIOGA AND TOMPKINS	615 ERIE BLVD. WEST SYRACUSE, NY 13204-2400 TEL. (315) 426-7438	615 ERIE BLVD. WEST SYRACUSE, NY 13204-2400 TEL. (315) 426-7500
8	CHEMUNG, GENESEE, LIVINGSTON, MONROE, ONTARIO, ORLEANS, SCHUYLER, SENECA, STEUBEN, WAYNE AND YATES	6274 EAST AVON-LIMA ROAD AVON, NY 14414-9519 TEL. (585) 226-2466	6274 EAST AVON-LIMA RD. AVON, NY 14414-9519 TEL. (585) 226-2466
9	ALLEGANY, CATTARAUGUS, CHAUTAUQUA, ERIE, NIAGARA AND WYOMING	270 MICHIGAN AVENUE BUFFALO, NY 14203-2999 TEL. (716) 851-7165	270 MICHIGAN AVE. BUFFALO, NY 14203-2999 TEL. (716) 851-7070



**APPENDIX 2: IMPAIRED SEGMENTS AND PRIMARY POLLUTANTS OF CONCERN**

COUNTY	WATERBODY NAME	POLLUTANT
Albany	Ann Lee (Shakers) Pond, Stump Pond	phosphorus
Albany	Basic Creek Reservoir	phosphorus
Bronx	Van Cortlandt Lake	phosphorus
Bronx	Bronx River, Lower	pathogens
Bronx	Bronx River, Lower	floatables
Bronx	Bronx River, Middle, and tribs	pathogens
Bronx	Bronx River, Middle, and tribs	floatables
Bronx	Westchester Creek	floatables
Bronx	Hutchinson River, Lower, and tribs	floatables
Broome	Susquehanna River, Lower, Main Stem	pathogens
Broome	Whitney Point Lake/Reservoir	phosphorus
Broome	Park Creek and tribs	pathogens
Broome	Beaver Lake	phosphorus
Broome	White Birch Lake	phosphorus
Cayuga	Little Sodus Bay	phosphorus
Cayuga	Owasco Lake	pathogens
Cayuga, Tompkins	Owasco Inlet, Upper, and tribs	phosphorus
Chautauqua	Lake Erie (Dunkirk Harbor)	pathogens
Chautauqua	Chadakoin River and tribs	phosphorus
Chautauqua	Chautauqua Lake, South	phosphorus
Chautauqua	Chautauqua Lake, North	phosphorus
Chautauqua	Bear Lake	phosphorus
Chautauqua	Lower Cassadaga Lake	phosphorus
Chautauqua	Middle Cassadaga Lake	phosphorus
Chautauqua	Findley Lake	phosphorus
Chenango	Unadilla River, Lower, Main Stem	pathogens
Clinton	Lake Champlain, Main Lake, North	phosphorus
Clinton	Lake Champlain, Main Lake, Middle	phosphorus
Clinton	Great Chazy River, Lower, Main Stem	silt/sediment
Columbia	Robinson Pond	phosphorus
Columbia	Kinderhook Lake	phosphorus
Delaware	Cannonsville Reservoir	phosphorus
Dutchess	Hillside Lake	phosphorus
Dutchess	Wappinger Lakes	phosphorus
Dutchess	Wappinger Lakes	silt/sediment
Dutchess	Fall Kill and tribs	phosphorus
Dutchess	Rudd Pond	phosphorus
Erie	Ellicott Creek, Lower, and tribs	phosphorus
Erie	Ellicott Creek, Lower, and tribs	silt/sediment

COUNTY	WATERBODY NAME	POLLUTANT
Erie	Ransom Creek, Lower, and tribs	pathogens
Erie	Ransom Creek, Upper, and tribs	pathogens
Erie	Beeman Creek and tribs	phosphorus
Erie	Beeman Creek and tribs	pathogens
Erie	Murder Creek, Lower, and tribs	phosphorus
Erie	Murder Creek, Lower, and tribs	pathogens
Erie	Two Mile Creek and tribs	pathogens
Erie	Two Mile Creek and tribs	floatables
Erie	Scajaquada Creek, Lower, and tribs	floatables
Erie	Scajaquada Creek, Lower, and tribs	pathogens
Erie	South Branch Smoke Cr, Lower, and tribs	phosphorus
Erie	South Branch Smoke Cr, Lower, and tribs	silt/sediment
Erie	Rush Creek and tribs	pathogens
Erie	Rush Creek and tribs	phosphorus
Erie	Little Sister Creek, Lower, and tribs	phosphorus
Erie	Little Sister Creek, Lower, and tribs	pathogens
Essex	Lake Champlain, Main Lake, South	phosphorus
Essex	Lake Champlain, South Lake	phosphorus
Genesee	Tonawanda Creek, Middle, Main Stem	phosphorus
Genesee	Tonawanda Creek, Middle, Main Stem	silt/sediment
Genesee	Tonawanda Creek, Upper, and minor tribs	silt/sediment
Genesee	Bowen Brook and tribs	phosphorus
Genesee	Little Tonawanda Creek, Lower, and tribs	silt/sediment
Genesee	Oak Orchard Cr, Upper, and tribs	phosphorus
Genesee	Black Creek, Upper, and minor tribs	phosphorus
Genesee	Bigelow Creek and tribs	phosphorus
Greene	Schoharie Reservoir	silt/sediment
Greene	Shingle Kill and tribs	pathogens
Greene	Sleepy Hollow Lake	silt/sediment
Herkimer	Unadilla River, Middle, and minor tribs	pathogens
Herkimer	Mohawk River, Main Stem	pathogens
Herkimer	Mohawk River, Main Stem	floatables
Herkimer	Steele Creek tribs	phosphorus
Herkimer	Steele Creek tribs	silt/sediment
Jefferson	Moon Lake	phosphorus
Kings	Coney Island Creek	pathogens
Kings	Coney Island Creek	floatables
Kings	Gowanus Canal	floatables
Kings	Hendrix Creek	nitrogen
Kings	Hendrix Creek	pathogens
Kings	Hendrix Creek	floatables
Kings	Paerdegat Basin	floatables

COUNTY	WATERBODY NAME	POLLUTANT
Kings	Mill Basin and tidal tribs	floatables
Lewis	Beaver River, Lower, and tribs	pathogens
Lewis	Beaver River, Lower, and tribs	floatables
Lewis	Mill Creek/South Branch, and tribs	phosphorus
Lewis	Mill Creek/South Branch, and tribs	pathogens
Livingston	Conesus Lake	phosphorus
Livingston	Jaycox Creek and tribs	phosphorus
Livingston	Jaycox Creek and tribs	silt/sediment
Livingston	Mill Creek and minor tribs	silt/sediment
Madison	Canastota Creek, Lower, and tribs	pathogens
Monroe	Rochester Embayment - West	pathogens
Monroe	Mill Creek and tribs	phosphorus
Monroe	Mill Creek and tribs	pathogens
Monroe	Shipbuilders Creek and tribs	phosphorus
Monroe	Shipbuilders Creek and tribs	pathogens
Monroe	Minor Tribs to Irondequoit Bay	phosphorus
Monroe	Minor Tribs to Irondequoit Bay	pathogens
Monroe	Thomas Creek/White Brook and tribs	phosphorus
Monroe	Buck Pond	phosphorus
Monroe	Long Pond	phosphorus
Monroe	Cranberry Pond	phosphorus
Monroe	Genesee River, Lower, Main Stem	phosphorus
Monroe	Genesee River, Lower, Main Stem	pathogens
Monroe	Genesee River, Lower, Main Stem	silt/sediment
Monroe	Genesee River, Middle, Main Stem	phosphorus
Monroe	Black Creek, Lower, and minor tribs	phosphorus
Nassau	Long Island Sound, Nassau County	pathogens
Nassau	Long Island Sound, Nassau County	nitrogen
Nassau	Manhasset Bay, and tidal tribs	pathogens
Nassau	Manhasset Bay, and tidal tribs	pathogens
Nassau	Hempstead Harbor, south, and tidal tribs	pathogens
Nassau	Glen Cove Creek, Lower, and tribs	pathogens
Nassau	Glen Cove Creek, Lower, and tribs	silt/sediment
Nassau	Dosoris Pond	pathogens
Nassau	Mill Neck Creek and tidal tribs	pathogens
Nassau	South Oyster Bay	pathogens
Nassau	East Bay	pathogens
Nassau	LI Tribs (fresh) to East Bay	phosphorus
Nassau	LI Tribs (fresh) to East Bay	silt/sediment
Nassau	Middle Bay	pathogens
Nassau	East Rockaway Inlet	pathogens
Nassau	Reynolds Channel, east	pathogens

COUNTY	WATERBODY NAME	POLLUTANT
Nassau	East Meadow Brook, Upper, and tribs	silt/sediment
Nassau	Hempstead Bay	Nitrogen
Nassau	Hempstead Bay	pathogens
Nassau	Hempstead Lake	phosphorus
Nassau	Grant Park Pond	phosphorus
Nassau	Woodmere Channel	pathogens
New York	East River, Lower	floatables
New York	Harlem River	floatables
Niagara	Bergholtz Creek and tribs	phosphorus
Niagara	Bergholtz Creek and tribs	pathogens
Oneida	Utica Harbor	pathogens
Oneida	Utica Harbor	floatables
Oneida	Mohawk River, Main Stem	pathogens
Oneida	Mohawk River, Main Stem	floatables
Oneida	Mohawk River, Main Stem	pathogens
Oneida	Mohawk River, Main Stem	floatables
Oneida	Ballou, Nail Creeks and tribs	phosphorus
Oneida	Ninemile Creek, Lower, and tribs	pathogens
Onondaga	Limestone Creek, Lower, and minor tribs	pathogens
Onondaga	Seneca River, Lower, Main Stem	pathogens
Onondaga	Onondaga Lake, northern end	phosphorus
Onondaga	Onondaga Lake, southern end	pathogens
Onondaga	Onondaga Lake, southern end	phosphorus
Onondaga	Minor Tribs to Onondaga Lake	phosphorus
Onondaga	Minor Tribs to Onondaga Lake	pathogens
Onondaga	Bloody Brook and tribs	pathogens
Onondaga	Ley Creek and tribs	pathogens
Onondaga	Ley Creek and tribs	phosphorus
Onondaga	Onondaga Creek, Lower, and tribs	phosphorus
Onondaga	Onondaga Creek, Lower, and tribs	pathogens
Onondaga	Onondaga Creek, Middle, and tribs	silt/sediment
Onondaga	Onondaga Creek, Middle, and tribs	phosphorus
Onondaga	Onondaga Creek, Middle, and tribs	pathogens
Onondaga	Onondaga Creek, Upper, and minor tribs	silt/sediment
Onondaga	Harbor Brook, Lower, and tribs	phosphorus
Onondaga	Harbor Brook, Lower, and tribs	pathogens
Onondaga	Ninemile Creek, Lower, and tribs	phosphorus
Onondaga	Ninemile Creek, Lower, and tribs	pathogens
Ontario	Hemlock Lake Outlet and minor tribs	phosphorus
Ontario	Hemlock Lake Outlet and minor tribs	pathogens
Ontario	Honeoye Lake	phosphorus
Ontario	Great Brook and minor tribs	phosphorus

COUNTY	WATERBODY NAME	POLLUTANT
Ontario	Great Brook and minor tribs	silt/sediment
Orange	Greenwood Lake	phosphorus
Oswego	Lake Neatahwanta	phosphorus
Otsego	Susquehanna River, Main Stem	pathogens
Putnam	Croton Falls Reservoir	phosphorus
Putnam	West Branch Reservoir	phosphorus
Putnam	Boyd Corners Reservoir	phosphorus
Putnam	Middle Branch Reservoir	phosphorus
Putnam	Lake Carmel	phosphorus
Putnam	Diverting Reservoir	phosphorus
Putnam	East Branch Reservoir	phosphorus
Putnam	Bog Brook Reservoir	phosphorus
Putnam	Oscawana Lake	phosphorus
Queens	Newtown Creek and tidal tribs	floatables
Queens	East River, Upper	floatables
Queens	East River, Upper	floatables
Queens	Flushing Creek/Bay	nitrogen
Queens	Flushing Creek/Bay	floatables
Queens	Little Neck Bay	pathogens
Queens	Alley Creek/Little Neck Bay Trib	floatables
Queens	Jamaica Bay, Eastern, and tribs	nitrogen
Queens	Jamaica Bay, Eastern, and tribs	pathogens
Queens	Jamaica Bay, Eastern, and tribs	floatables
Queens	Thurston Basin	floatables
Queens	Bergen Basin	Nitrogen
Queens	Bergen Basin	pathogens
Queens	Bergen Basin	floatables
Queens	Shellbank Basin	nitrogen
Queens	Spring Creek and tribs	pathogens
Queens	Spring Creek and tribs	floatables
Rensselaer	Snyders Lake	phosphorus
Richmond	Raritan Bay (Class SA)	pathogens
Richmond	Arthur Kill (Class I) and minor tribs	floatables
Richmond	Newark Bay	floatables
Richmond	Kill Van Kull	floatables
Richmond	Grasmere, Arbutus and Wolfes Lakes	phosphorus
Saratoga	Dwaas Kill and tribs	Phosphorus
Saratoga	Dwaas Kill and tribs	silt/sediment
Saratoga	Schuyler Creek and tribs	phosphorus
Saratoga	Schuyler Creek and tribs	pathogens
Saratoga	Lake Lonely	phosphorus
Saratoga	Trib to Lake Lonely	Phosphorus

COUNTY	WATERBODY NAME	POLLUTANT
Saratoga	Tribs to Lake Lonely	pathogens
Schenectady	Collins Lake	phosphorus
Schoharie	Cobleskill Creek, Lower, and tribs	pathogens
Schoharie	Engleville Pond	phosphorus
Schoharie	Summit Lake	phosphorus
St.Lawrence	Black Lake Outlet/Black Lake	phosphorus
Steuben	Lake Salubria	phosphorus
Steuben	Smith Pond	phosphorus
Suffolk	Millers Pond	phosphorus
Suffolk	Stony Brook Harbor and West Meadow	pathogens
Suffolk	Port Jefferson Harbor, North, and tribs	pathogens
Suffolk	Conscience Bay and tidal tribs	pathogens
Suffolk	Beach/Island Ponds, Fishers Island	pathogens
Suffolk	Dering Harbor	pathogens
Suffolk	Tidal Tribs to Gr Peconic Bay, Northshr	pathogens
Suffolk	Mattituck (Marratooka) Pond	phosphorus
Suffolk	Mattituck (Marratooka) Pond	pathogens
Suffolk	Flanders Bay, West/Lower Sawmill	nitrogen
Suffolk	Meetinghouse/Terrys Creeks and tribs	nitrogen
Suffolk	Meetinghouse/Terrys Creeks and tribs	pathogens
Suffolk	Peconic River, Lower, and tidal tribs	nitrogen
Suffolk	Peconic River, Lower, and tidal tribs	pathogens
Suffolk	Scallop Pond	pathogens
Suffolk	Oyster Pond/Lake Munchogue	pathogens
Suffolk	Phillips Creek, Lower, and tidal tribs	pathogens
Suffolk	Quogue Canal	pathogens
Suffolk	Forge River, Lower and Cove	pathogens
Suffolk	Tidal tribs to West Moriches Bay	Nitrogen
Suffolk	Tidal tribs to West Moriches Bay	pathogens
Suffolk	Canaan Lake	silt/sediment
Suffolk	Canaan Lake	phosphorus
Suffolk	Nicoll Bay	pathogens
Suffolk	Lake Ronkonkoma	phosphorus
Suffolk	Lake Ronkonkoma	pathogens
Suffolk	Great Cove	pathogens
Tompkins	Cayuga Lake, Southern End	phosphorus
Tompkins	Cayuga Lake, Southern End	silt/sediment
Tompkins	Cayuga Lake, Southern End	pathogens
Ulster	Ashokan Reservoir	silt/sediment
Ulster	Esopus Creek, Upper, and minor tribs	silt/sediment
Warren	Lake George	silt/sediment
Warren	Tribs to L.George, Village of L George	silt/sediment

COUNTY	WATERBODY NAME	POLLUTANT
Warren	Huddle/Finkle Brooks and tribs	silt/sediment
Warren	Indian Brook and tribs	silt/sediment
Warren	Hague Brook and tribs	silt/sediment
Washington	Lake Champlain, South Bay	phosphorus
Washington	Tribs to L.George, East Shore	silt/sediment
Washington	Cossayuna Lake	phosphorus
Wayne	Blind Sodus Bay	phosphorus
Wayne	Port Bay	phosphorus
Westchester	Saw Mill River, Lower, and tribs	floatables
Westchester	New Croton Reservoir	phosphorus
Westchester	Upper New Croton/Muscoot Reservoir	phosphorus
Westchester	Amawalk Reservoir	phosphorus
Westchester	Lake Lincolndale	phosphorus
Westchester	Peach Lake	pathogens
Westchester	Peach Lake	phosphorus
Westchester	Titicus Reservoir	phosphorus
Westchester	Cross River Reservoir	phosphorus
Westchester	Lake Meahaugh	phosphorus
Westchester	Bronx River, Upper, and tribs	pathogens
Westchester	New Rochelle Harbor	pathogens
Westchester	New Rochelle Harbor	floatables
Westchester	Long Island Sound, Westchester Co	pathogens
Westchester	Long Island Sound, Westchester Co	nitrogen
Westchester	Larchmont Harbor	pathogens
Westchester	Larchmont Harbor	floatables
Westchester	Hutchinson River, Middle, and tribs	pathogens
Westchester	Mamaroneck Harbor	pathogens
Westchester	Mamaroneck Harbor	floatables
Westchester	Mamaroneck River, Lower	silt/sediment
Westchester	Mamaroneck River, Upper, and minor	silt/sediment
Westchester	Sheldrake River and tribs	phosphorus
Westchester	Sheldrake River and tribs	silt/sediment
Westchester	Milton Harbor	pathogens
Westchester	Milton Harbor	floatables
Westchester	Blind Brook, Lower	silt/sediment
Westchester	Blind Brook, Upper, and tribs	silt/sediment
Westchester	Port Chester Harbor	pathogens
Westchester	Port Chester Harbor	floatables
Westchester	Byram River, Lower	pathogens
Wyoming	Java Lake	phosphorus
Wyoming	Silver Lake	phosphorus

**APPENDIX 2 (CONTINUED)**  
**IMPAIRED SEGMENTS AND SECONDARY POLLUTANTS OF CONCERN**

COUNTY	WATERBODY	POLLUTANT
Oneida	Mohawk River, Main Stem	Copper
Westchester	Hutchinson River, Middle and tribs	Oil and Grease



**APPENDIX 3: NEW YORK CITY WATERSHED EAST OF THE HUDSON RIVER  
WATERSHED MAP**

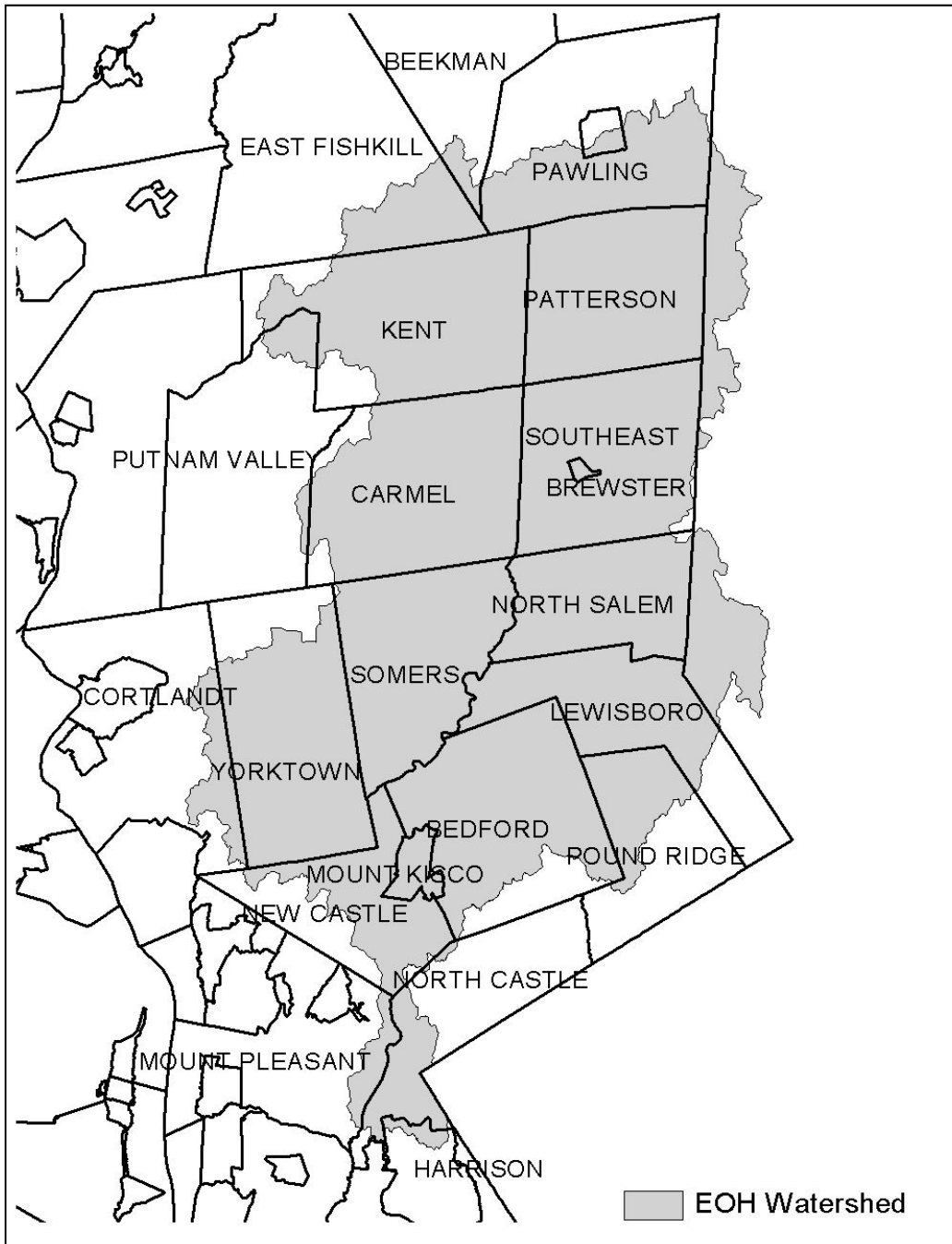


Figure 1. The requirements of watershed improvement strategies apply to the sewersheds within the shaded areas.

**APPENDIX 4: ONONDAGA LAKE WATERSHED MAP**



Figure 2. The requirements of watershed improvement strategies apply to the sewer sheds within the shaded areas.

**APPENDIX 5: GREENWOOD LAKE WATERSHED MAP**

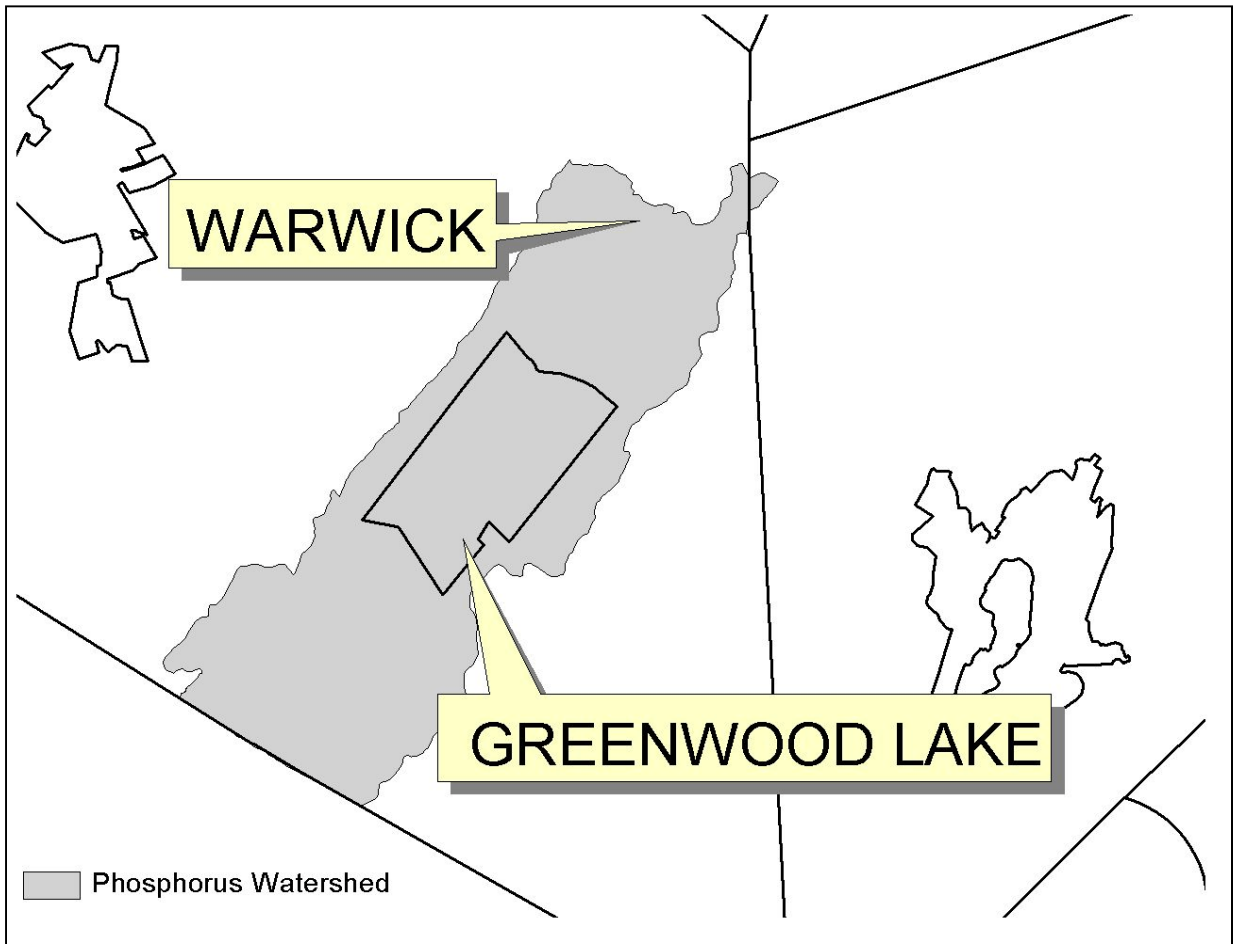


Figure 3. The requirements of watershed improvement strategies apply to the sewersheds within the shaded areas.

## APPENDIX 6: OYSTER BAY WATERSHED MAP

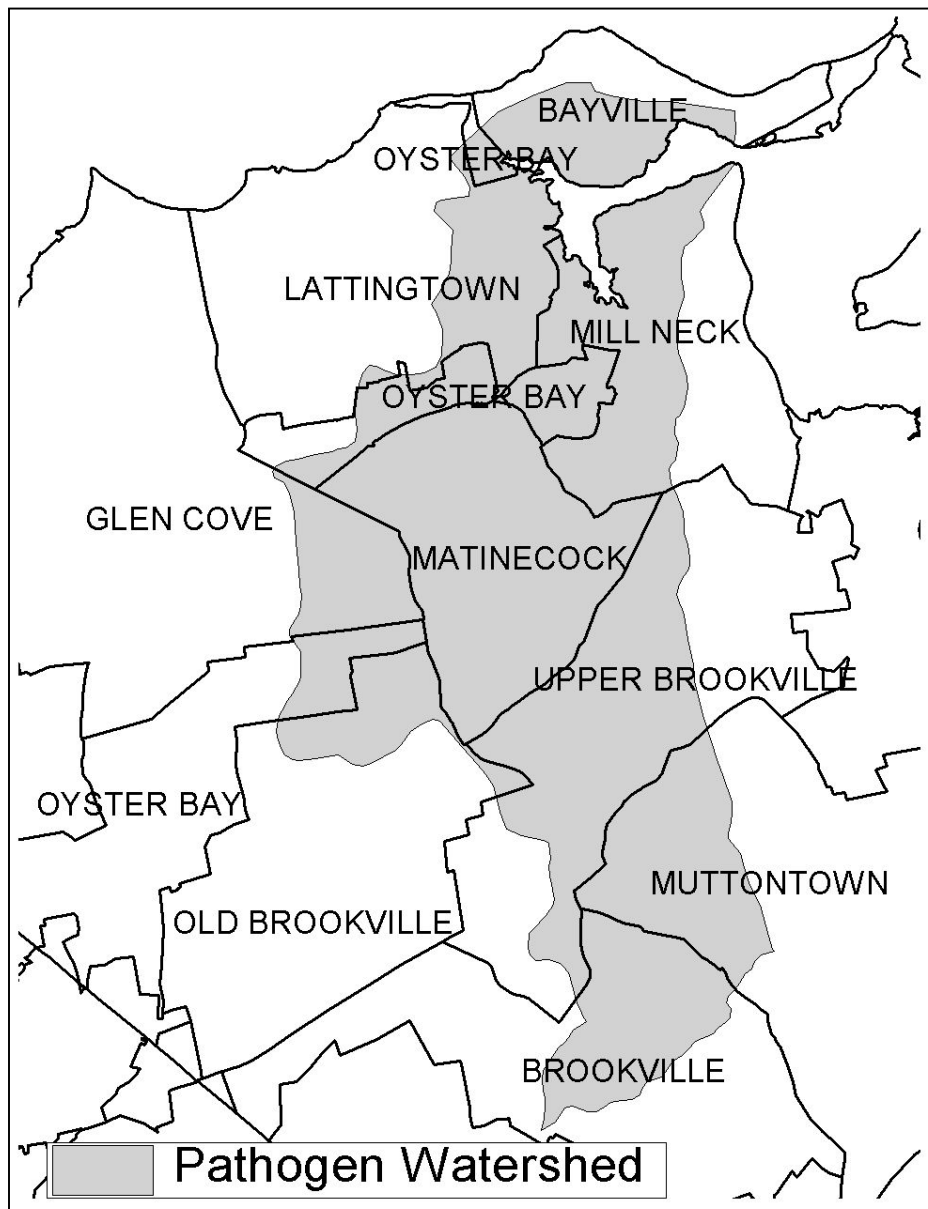
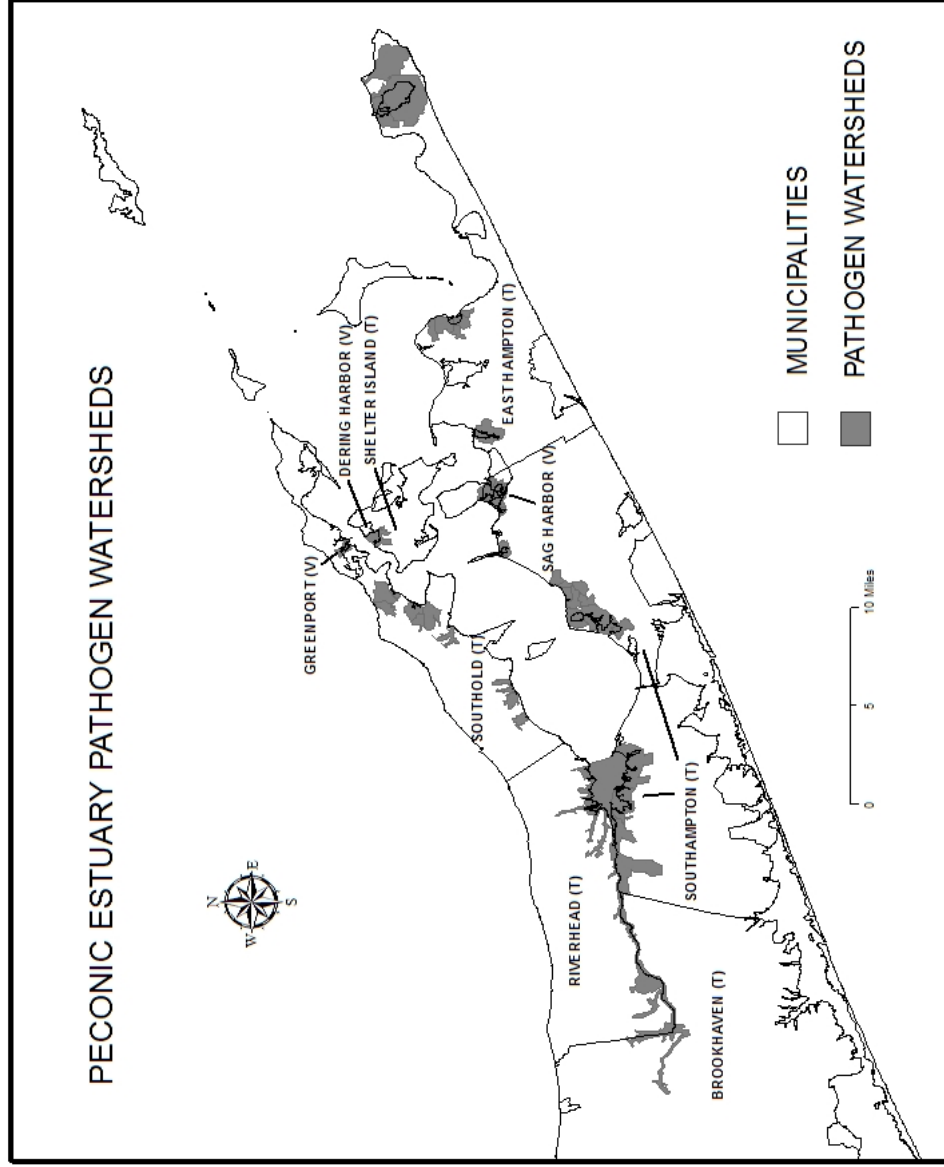


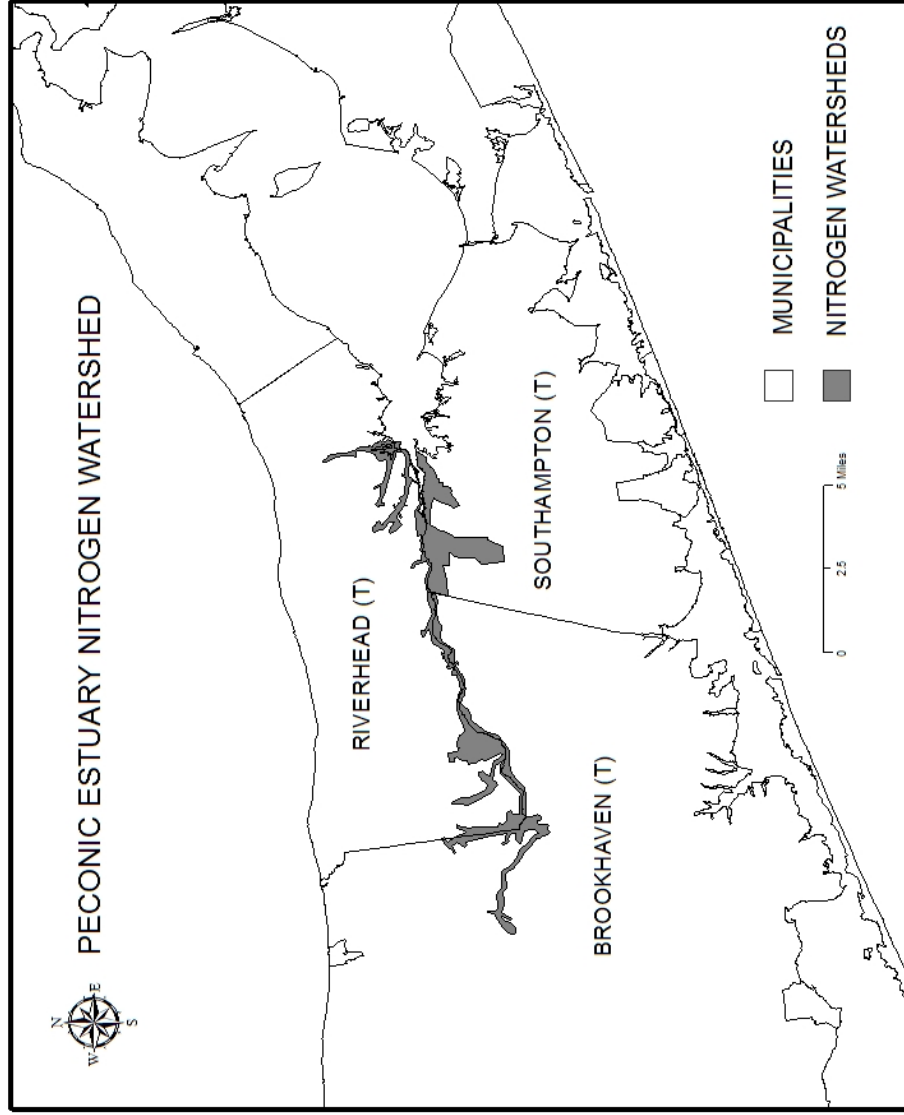
Figure 4. The requirements of watershed improvement strategies apply to the sewer sheds within the shaded areas.

**APPENDIX 7: PECONIC ESTUARY PATHOGEN WATERSHED MAP**



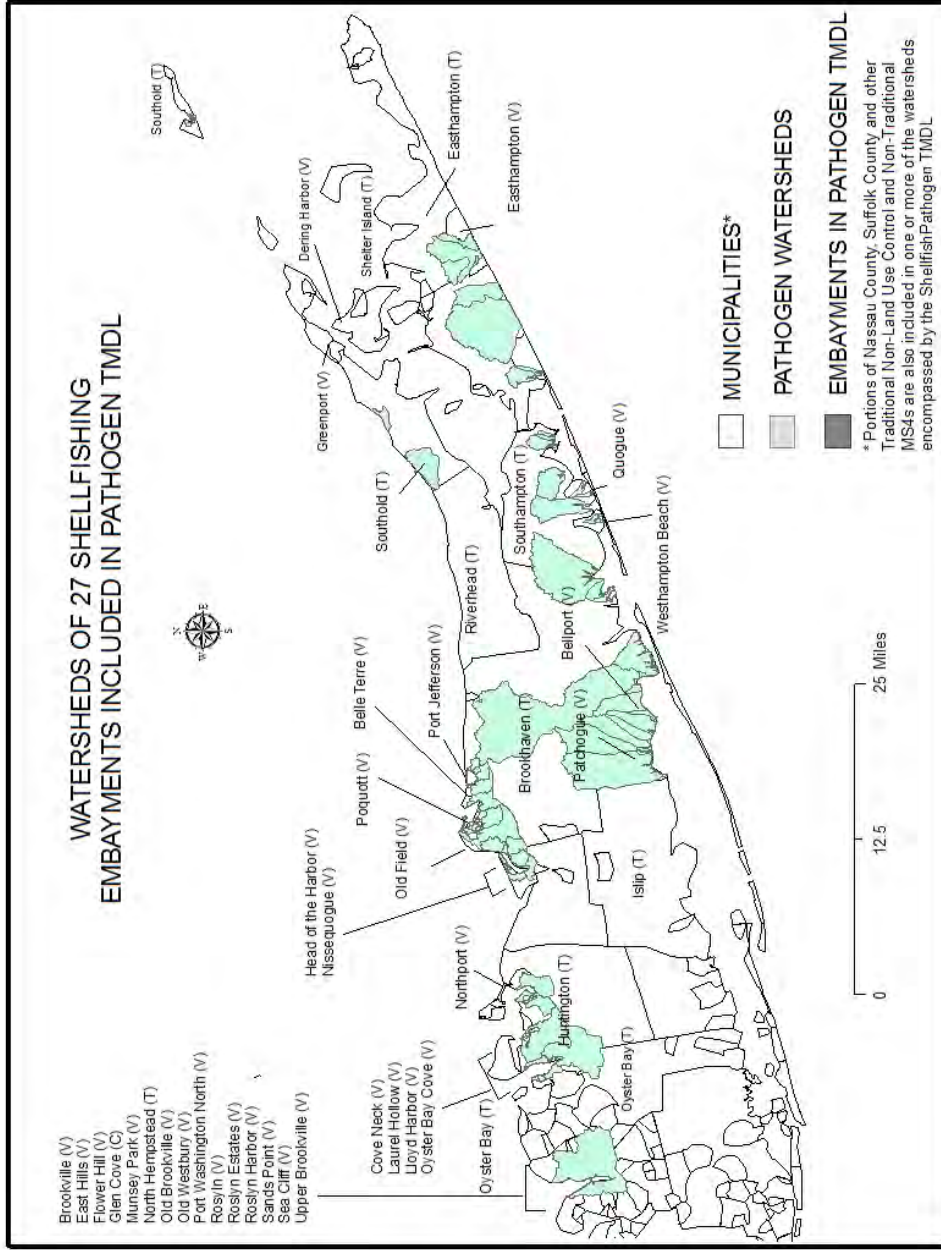
**Figure 5. The requirements of watershed improvement strategies apply to the sewersheds within the shaded areas.**  
SPDES General Permit for Stormwater Discharge from MS4s, GP-0-10-002

**APPENDIX 8: PECONIC ESTUARY NITROGEN WATERSHED MAP**



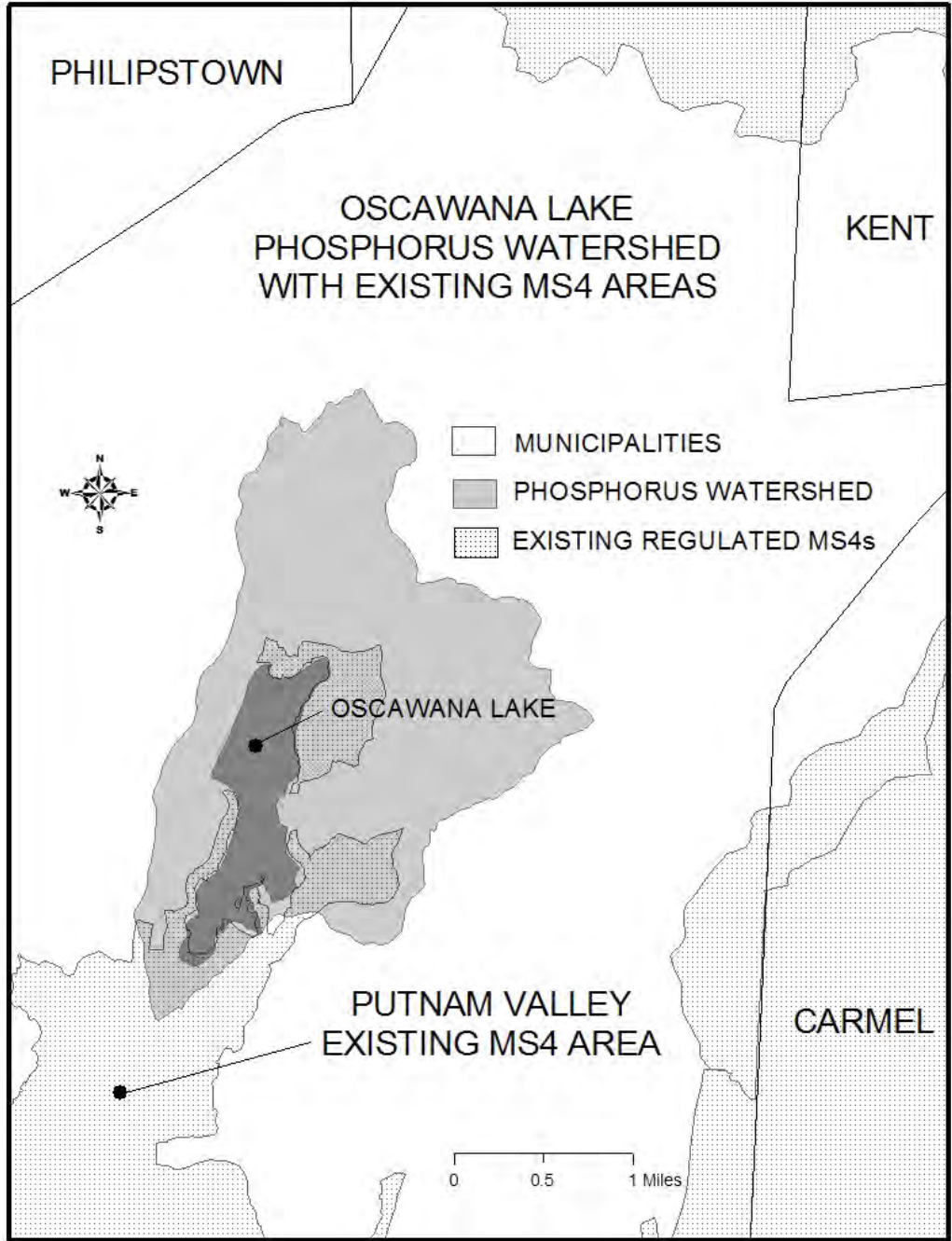
**Figure 6. The requirements of watershed improvement strategies apply to the sewersheds within the shaded areas.**

**APPENDIX 9: THE 27 LONG ISLAND SHELLFISHING IMPAIRED EMBAYMENT MAP**



**Figure 7. The requirements of watershed improvement strategies apply to the watersheds within the shaded areas.**

**APPENDIX 10: LAKE OSCAWANA WATERSHED MAP**



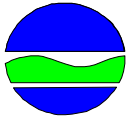
**Figure 8. The requirements of watershed improvement strategies apply to the sewersheds within the shaded areas.**



**APPENDIX H**

Notice of Intent (NOI) Form

# NOTICE OF INTENT



**New York State Department of Environmental Conservation  
Division of Water  
625 Broadway, 4th Floor  
Albany, New York 12233-3505**

**NYR**   
(for DEC use only)

**Stormwater Discharges Associated with Construction Activity Under State Pollutant Discharge Elimination System (SPDES) General Permit # GP-0-10-001**  
All sections must be completed unless otherwise noted. Failure to complete all items may result in this form being returned to you, thereby delaying your coverage under this General Permit. Applicants must read and understand the conditions of the permit and prepare a Stormwater Pollution Prevention Plan prior to submitting this NOI. Applicants are responsible for identifying and obtaining other DEC permits that may be required.

**- IMPORTANT -**  
**RETURN THIS FORM TO THE ADDRESS ABOVE**  
OWNER/OPERATOR MUST SIGN FORM

### Owner/Operator Information

Owner/Operator (Company Name/Private Owner Name/Municipality Name)

Owner/Operator Contact Person Last Name (NOT CONSULTANT)

Owner/Operator Contact Person First Name

Owner/Operator Mailing Address

City

State  Zip  -

Phone (Owner/Operator)  -  -  Fax (Owner/Operator)  -  -

Email (Owner/Operator)

FED TAX ID  -  (not required for individuals)



3. Select the predominant land use for both pre and post development conditions.  
**SELECT ONLY ONE CHOICE FOR EACH**

**Pre-Development  
Existing Land Use**

- FOREST
- PASTURE/OPEN LAND
- CULTIVATED LAND
- SINGLE FAMILY HOME
- SINGLE FAMILY SUBDIVISION
- TOWN HOME RESIDENTIAL
- MULTIFAMILY RESIDENTIAL
- INSTITUTIONAL/SCHOOL
- INDUSTRIAL
- COMMERCIAL
- ROAD/HIGHWAY
- RECREATIONAL/SPORTS FIELD
- BIKE PATH/TRAIL
- LINEAR UTILITY
- PARKING LOT
- OTHER

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

**Post-Development  
Future Land Use**

- SINGLE FAMILY HOME
- SINGLE FAMILY SUBDIVISION
- TOWN HOME RESIDENTIAL
- MULTIFAMILY RESIDENTIAL
- INSTITUTIONAL/SCHOOL
- INDUSTRIAL
- COMMERCIAL
- MUNICIPAL
- ROAD/HIGHWAY
- RECREATIONAL/SPORTS FIELD
- BIKE PATH/TRAIL
- LINEAR UTILITY (water, sewer, gas, etc.)
- PARKING LOT
- CLEARING/GRADING ONLY
- DEMOLITION, NO REDEVELOPMENT
- WELL DRILLING ACTIVITY \*(Oil, Gas, etc.)
- OTHER

Number of Lots

--	--	--

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

\*note: for gas well drilling, non-high volume hydraulic fractured wells only

4. Will future use of this site be an agricultural property as defined by the NYS Agriculture and Markets Law ?  Yes  No

5. Is this a project which does not require coverage under the General Permit (e.g. Project done under an Individual SPDES Permit, or department approved remediation)?  Yes  No

6. Is this property owned by a state authority, state agency, federal government or local government?  Yes  No

7. In accordance with the larger common plan of development or sale, enter the total project site acreage, the acreage to be disturbed and the future impervious area (acreage)within the disturbed area. Round to the nearest tenth of an acre.

Total Site Acreage	Acreage To Be Disturbed	Existing Impervious Area Within Disturbed	Future Impervious Area Within Disturbed																				
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8. Do you plan to disturb more than 5 acres of soil at any one time?  Yes  No

9. Indicate the percentage of each Hydrologic Soil Group(HSG) at the site.

<table border="1" style="display: inline-table; width: 40px; height: 25px;"> <tr> <td style="width: 10px;">A</td> <td style="width: 10px;"></td> <td style="width: 10px;"></td> <td style="width: 10px;"></td> </tr> </table> %	A				<table border="1" style="display: inline-table; width: 40px; height: 25px;"> <tr> <td style="width: 10px;">B</td> <td style="width: 10px;"></td> <td style="width: 10px;"></td> <td style="width: 10px;"></td> </tr> </table> %	B				<table border="1" style="display: inline-table; width: 40px; height: 25px;"> <tr> <td style="width: 10px;">C</td> <td style="width: 10px;"></td> <td style="width: 10px;"></td> <td style="width: 10px;"></td> </tr> </table> %	C				<table border="1" style="display: inline-table; width: 40px; height: 25px;"> <tr> <td style="width: 10px;">D</td> <td style="width: 10px;"></td> <td style="width: 10px;"></td> <td style="width: 10px;"></td> </tr> </table> %	D			
A																			
B																			
C																			
D																			

10. Is this a phased project?

Yes  No

11. Enter the planned start and end dates of the disturbance

Start Date

/  /

End Date

/  /

12. Identify the nearest, natural, surface waterbody(ies) to which construction site runoff will discharge.

Name

12a. Type of waterbody identified in Question 12?

- Wetland / State Jurisdiction On Site (Answer 12b)
- Wetland / State Jurisdiction Off Site
- Wetland / Federal Jurisdiction On Site (Answer 12b)
- Wetland / Federal Jurisdiction Off Site
- Stream / Creek On Site
- Stream / Creek Off Site
- River On Site
- River Off Site
- Lake On Site
- Lake Off Site
- Other Type On Site
- Other Type Off Site

12b. How was the wetland identified?

- Regulatory Map
- Delineated by Consultant
- Delineated by Army Corps of Engineers
- Other (identify)

13. Has the surface waterbody(ies) in question 12 been identified as a 303(d) segment in Appendix E of GP-0-10-001?

Yes  No

14. Is this project located in one of the Watersheds identified in Appendix C of GP-0-10-001?

Yes  No

15. Is the project located in one of the watershed areas associated with AA and AA-S classified waters? **If no, skip question 16.**

Yes  No











30. Provide the total water quality volume required and the total provided for the site.

WQv Required  
[ ][ ][ ] . [ ][ ][ ] acre-feet

WQv Provided  
[ ][ ][ ] . [ ][ ][ ] acre-feet

31. Provide the following Unified Stormwater Sizing Criteria for the site.

Total Channel Protection Storage Volume (CPv) - Extended detention of post-developed 1 year, 24 hour storm event

CPv Required  
[ ][ ][ ] . [ ][ ][ ] acre-feet

CPv Provided  
[ ][ ][ ] . [ ][ ][ ] acre-feet

31a. The need to provide for channel protection has been waived because:

Site discharges directly to fourth order stream or larger

Total Overbank Flood Control Criteria (Qp) - Peak discharge rate for the 10 year storm

Pre-Development  
[ ][ ][ ] . [ ][ ][ ] CFS

Post-development  
[ ][ ][ ] . [ ][ ][ ] CFS

Total Extreme Flood Control Criteria (Qf) - Peak discharge rate for the 100 year storm

Pre-Development  
[ ][ ][ ] . [ ][ ][ ] CFS

Post-development  
[ ][ ][ ] . [ ][ ][ ] CFS

31b. The need to provide for flood control has been waived because:

- Site discharges directly to fourth order stream or larger
- Downstream analysis reveals that flood control is not required

**IMPORTANT:** For questions 31 and 32, impervious area should be calculated considering the project site and all offsite areas that drain to the post-construction stormwater management practice(s). (Total Drainage Area = Project Site + Offsite areas)

32. Pre-Construction Impervious Area - As a percent of the Total Drainage Area enter the percentage of the existing impervious areas before construction begins. [ ][ ][ ] %

33. Post-Construction Impervious Area - As a percent of the Total Drainage Area, enter the percentage of the future impervious areas that will be created/remain on the site after completion of construction. [ ][ ][ ] %

34. Indicate the total number of post-construction stormwater management practices to be installed/constructed. [ ][ ]

35. Provide the total number of stormwater discharge points from the site. (include discharges to either surface waters or to separate storm sewer systems) [ ][ ]



**APPENDIX I**

Notice of Termination (NOT) Form



**New York State Department of Environmental Conservation  
Division of Water  
625 Broadway, 4th Floor  
Albany, New York 12233-3505**

\*(NOTE: Submit completed form to address above)\*

**NOTICE OF TERMINATION for Storm Water Discharges Authorized  
under the SPDES General Permit for Construction Activity**

**Please indicate your permit identification number:** NYR \_\_\_\_ \_

**I. Owner or Operator Information**

1. Owner/Operator Name:

2. Street Address:

3. City/State/Zip:

4. Contact Person:

4a. Telephone:

5. Contact Person E-Mail:

**II. Project Site Information**

5. Project/Site Name:

6. Street Address:

7. City/Zip:

8. County:

**III. Reason for Termination**

9a.  All disturbed areas have achieved final stabilization in accordance with the general permit and SWPPP.  
\*Date final stabilization completed (month/year): \_\_\_\_\_

9b.  Permit coverage has been transferred to new owner/operator. Indicate new owner/operator's permit identification number: NYR \_\_\_\_ \_  
(Note: Permit coverage can not be terminated by owner identified in I.1. above until new owner/operator obtains coverage under the general permit)

9c.  Other (Explain on Page 2)

**IV. Final Site Information:**

10a. Did this construction activity require the development of a SWPPP that includes post-construction stormwater management practices?  yes  no (If no, go to question 10f.)

10b. Have all post-construction stormwater management practices included in the final SWPPP been constructed?  yes  no (If no, explain on Page 2)

10c. Identify the entity responsible for long-term operation and maintenance of practice(s)?

**NOTICE OF TERMINATION for Storm Water Discharges Authorized under the  
SPDES General Permit for Construction Activity - continued**

10d. Has the entity responsible for long-term operation and maintenance been given a copy of the operation and maintenance plan required by the general permit?  yes  no

10e. Indicate the method used to ensure long-term operation and maintenance of the post-construction stormwater management practice(s):

- Post-construction stormwater management practice(s) and any right-of-way(s) needed to maintain practice(s) have been deeded to the municipality.
- Executed maintenance agreement is in place with the municipality that will maintain the post-construction stormwater management practice(s).
- For post-construction stormwater management practices that are privately owned, the deed of record has been modified to include a deed covenant that requires operation and maintenance of the practice(s) in accordance with the operation and maintenance plan.
- For post-construction stormwater management practices that are owned by a public or private institution (e.g. school, college, university), or government agency or authority, policy and procedures are in place that ensures operation and maintenance of the practice(s) in accordance with the operation and maintenance plan.

10f. Provide the total area of impervious surface (i.e. roof, pavement, concrete, gravel, etc.) constructed within the disturbance area? \_\_\_\_\_ (acres)

11. Is this project subject to the requirements of a regulated, traditional land use control MS4?  yes  no  
(If Yes, complete section VI - "MS4 Acceptance" statement)

**V. Additional Information/Explanation:**  
(Use this section to answer questions 9c. and 10b., if applicable)

**VI. MS4 Acceptance - MS4 Official (principal executive officer or ranking elected official) or Duly Authorized Representative** (Note: Not required when 9b. is checked -transfer of coverage)

I have determined that it is acceptable for the owner or operator of the construction project identified in question 5 to submit the Notice of Termination at this time.

Printed Name:

Title/Position:

Signature:

Date:

**NOTICE OF TERMINATION for Storm Water Discharges Authorized under the  
SPDES General Permit for Construction Activity - continued**

**VII. Qualified Inspector Certification - Final Stabilization:**

I hereby certify that all disturbed areas have achieved final stabilization as defined in the current version of the general permit, and that all temporary, structural erosion and sediment control measures have been removed. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of the referenced permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings.

Printed Name:

Title/Position:

Signature:

Date:

**VIII. Qualified Inspector Certification - Post-construction Stormwater Management Practice(s):**

I hereby certify that all post-construction stormwater management practices have been constructed in conformance with the SWPPP. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of the referenced permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings.

Printed Name:

Title/Position:

Signature:

Date:

**IX. Owner or Operator Certification**

I hereby certify that this document was prepared by me or under my direction or supervision. My determination, based upon my inquiry of the person(s) who managed the construction activity, or those persons directly responsible for gathering the information, is that the information provided in this document is true, accurate and complete. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of the referenced permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings.

Printed Name:

Title/Position:

Signature:

Date:

**APPENDIX J**

SWMP Acceptance Form





New York State Department of Environmental Conservation  
Division of Water  
625 Broadway, 4th Floor  
Albany, New York 12233-3505

**MS4 Stormwater Pollution Prevention Plan (SWPPP) Acceptance Form**  
for

**Construction Activities Seeking Authorization Under SPDES General Permit**

\*(NOTE: Attach Completed Form to Notice Of Intent and Submit to Address Above)

**I. Project Owner/Operator Information**

1. Owner/Operator Name:

2. Contact Person:

3. Street Address:

4. City/State/Zip:

**II. Project Site Information**

5. Project/Site Name:

6. Street Address:

7. City/State/Zip:

**III. Stormwater Pollution Prevention Plan (SWPPP) Review and Acceptance Information**

8. SWPPP Reviewed by:

9. Title/Position:

10. Date Final SWPPP Reviewed and Accepted:

**IV. Regulated MS4 Information**

11. Name of MS4:

12. MS4 SPDES Permit Identification Number: NYR20A \_\_\_\_\_

13. Contact Person:

14. Street Address:

15. City/State/Zip:

16. Telephone Number:

(NYS DEC - MS4 SWPPP Acceptance Form - January 2010)

**MS4 SWPPP Acceptance Form - continued**

**V. Certification Statement - MS4 Official (principal executive officer or ranking elected official) or Duly Authorized Representative**

I hereby certify that the final Stormwater Pollution Prevention Plan (SWPPP) for the construction project identified in question 5 has been reviewed and meets the substantive requirements in the SPDES General Permit For Stormwater Discharges from Municipal Separate Storm Sewer Systems (MS4s).

Note: The MS4, through the acceptance of the SWPPP, assumes no responsibility for the accuracy and adequacy of the design included in the SWPPP. In addition, review and acceptance of the SWPPP by the MS4 does not relieve the owner/operator or their SWPPP preparer of responsibility or liability for errors or omissions in the plan.

Printed Name:

Title/Position:

Signature:

Date:

**VI. Additional Information**

**APPENDIX K**

Site Assessment and Inspection Log

# SWMP Inspection Report

Construction Stormwater Inspection Report (for SPDES General Permit GP-0-10-002)

Project Name and Location:     Municipality:	Date:	Report No.
	Weather Conditions: Reason:	
	Soil Conditions:	
	Entry Time	Exit Time:

Overall Inspection Rating: <input type="checkbox"/> Satisfactory <input type="checkbox"/> Marginal <input type="checkbox"/> Unsatisfactory			
Name of Qualified Inspector: Name: Title:	Signature of Qualified Inspector:	Reviewed by:	Signature of Reviewer:

Yes	No	N/A		Date of last inspection: Notes: _____ _____ _____
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Routine Inspection?	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Inspection following rain event?	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Is this a final inspection?	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Has the site undergone final stabilization?	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	If so, have all temporary erosion and sediment controls been removed?	

## REPORT CHECKLIST

Complete the following report checklist and key issue items to attached site plan

### 1. Site Disturbance (Indicate Locations on Plan)

Yes	No	N/A	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1.1 Areas previously disturbed, but have not undergone active site work in the last 14 days?
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1.2 Areas disturbed within last 14 days?
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1.3 Areas expected to be disturbed in next 14 days?
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1.4 Do areas of steep slopes or complex stabilization issues exist? If "YES," explain:
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1.5 Are there currently more than 5 acres of disturbed soil at the site?

Additional comments: \_\_\_\_\_

### 2. Inspection of Erosion and Sediment Control Practices

Yes	No	N/A	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2.1 Do any erosion and sediment control practices require repair or maintenance? If yes, identify required maintenance below.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2.2 Are any erosion and sediment control practices not installed properly or not functioning as designed? If yes, identify required corrective action below.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2.3 Were all practices inspected in accordance with the New York State Standard Specifications for Erosion and Sediment Control?

Additional comments: \_\_\_\_\_

### 3. Inspection of Post-Construction Stormwater Management Practices

Yes No N/A

3.1 Has construction begun on any Post-Construction Practices? If yes, provide status of construction below.

3.2 Has construction been completed on any Post-Construction Practices? If so, identify any deficiencies below.

3.3 Do any completed Post-Construction Practices require maintenance or repair? If so, identify required action below.

Additional  
comments: \_\_\_\_\_

---

### 4. Stabilization

Yes No N/A

4.1 Are all existing disturbed areas contained by erosion control and sediment practices?

4.2 Are there areas that require stabilization within the next 14 days?

4.3 Have stabilization measures been initiated in inactive areas?

4.4 Is there current snow cover or frozen ground conditions?

4.5 Rills or gullies?

4.6 Slumping / deposition?

4.7 Loss of vegetation?

4.8 Lack of germination?

4.9 Loss of mulching?

Additional  
comments: \_\_\_\_\_

---

### 5. Receiving Structures / Water Bodies (Indicate locations where runoff leaves the project site on the plan)

Yes No N/A

5.1 Surface water swale or stream?

5.2 Municipal or community system?

Inspect locations where runoff from project site enters the receiving waters and indicate if there is evidence of:

5.3 Rills or gullies?

5.4 Slumping / deposition?

5.5 Loss of vegetation?

5.6 Undermining of structures?

5.7 Was there a discharge into the receiving water on the day of inspection?

5.8 Is there evidence of turbidity, sedimentation, or oil in the receiving waters?

Additional  
comments: \_\_\_\_\_

---

**6. General Site Conditions**

Yes No N/A

- 6.1 Have action Items from previous reports been addressed??
- 6.2 Does routine maintenance of protection components occur on a regular basis?
- 6.3 Does cleaning and/or sweeping affected roadways occur, at minimum, daily?
- 6.4 Is debris and litter removed on a monthly basis, or as necessary?
- 6.5 Is the site maintained in an orderly manner?

**Contractor progress over last 7 days:** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Anticipated work to begin over the next 7 days:** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**7. Visual Observations**

Yes No N/A

- 7.1 All erosion and sediment control measures have been installed/constructed?
- 7.2 All erosion and sediment control measures are being maintained properly?

Outstanding Item	Photo(s)	Action Item
<input type="checkbox"/>	_____	_____ _____
<input type="checkbox"/>	_____	_____ _____
<input type="checkbox"/>	_____	_____ _____

**Any Additional Comments:** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Action Reported to / Company:** \_\_\_\_\_  
(Name) (Title) (Company) (Date)

**Received By / Company:** \_\_\_\_\_  
(Name) (Title) (Company) (Date)

## **APPENDIX L**

### Operations and Maintenance Checklists

## Open Channel and Culvert Operation, Maintenance, and Management Inspection Checklist

Project: \_\_\_\_\_

Location: \_\_\_\_\_

Site Status: \_\_\_\_\_

Date: \_\_\_\_\_

Time: \_\_\_\_\_

Inspector: \_\_\_\_\_

MAINTENANCE ITEM	SATISFACTORY/ UNSATISFACTORY	COMMENTS
<b>A. Debris Cleanout (Monthly)</b>		
1. Contributing areas clean of debris		
<b>B. Vegetation (Monthly)</b>		
1. Mowing done when needed		
2. Minimum mowing depth not exceeded		
3. No evidence of erosion		
<b>C. Dewatering (Monthly)</b>		
1. Dewaterers between storms		
<b>D. Sediment deposition (Annual)</b>		
1. Clean of sediment		
<b>E. Culverts (Annual)</b>		
1. Good condition, no need for repairs		
2. Inlets and outlets open and free of debris		

**Comments:**

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**Actions to be Taken:**

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_



## Rain Garden Operation, Maintenance and Management Inspection Checklist

Project: \_\_\_\_\_  
 Location: \_\_\_\_\_  
 Site Status: \_\_\_\_\_  
 Date: \_\_\_\_\_  
 Time: \_\_\_\_\_  
 Inspector: \_\_\_\_\_

MAINTENANCE ITEM	SATISFACTORY / UNSATISFACTORY	COMMENTS
<b>A. Debris Cleanout (Monthly)</b>		
1. Bioretention and contributing areas clean of debris		
2. No dumping of yard wastes into practice		
3. Litter (branches, etc.) have been removed		
<b>B. Vegetation (Monthly)</b>		
1. Plant height not less than design water depth		
2. Fertilized per specifications		
3. Plant composition according to approved plans		
4. No placement of inappropriate plants		
5. Grass height not greater than 6 inches		
6. No evidence of erosion		

## Rain Garden Operation, Maintenance and Management Inspection Checklist (cont.)

MAINTENANCE ITEM	SATISFACTORY / UNSATISFACTORY	COMMENTS
<b>C. Check Dams/Energy Dissipaters/Sumps (Annual, After Major Storms)</b>		
1. No evidence of sediment buildup		
2. Sumps should not be more than 50% full of sediment		
3. No evidence of erosion at downstream toe of drop structure		
<b>D. Dewatering (Monthly)</b>		
1. Dewaterers between storms		
2. No evidence of standing water		
<b>E. Sediment Deposition (Annual)</b>		
1. Swale clean of sediments		
2. Sediments should not be > 20% of swale design depth		
<b>F. Outlet/Overflow Spillway (Annual, After Major Storms)</b>		
1. Good condition, no need for repair		
2. No evidence of erosion		
3. No evidence of any blockages		
<b>G. Integrity of Filter Bed (Annual)</b>		
1. Filter bed has not been blocked or filled inappropriately		

**Comments:**

**Actions to be Taken:**

## Sand Filter Operation, Maintenance and Management Inspection Checklist

Project: \_\_\_\_\_  
 Location: \_\_\_\_\_  
 Site Status: \_\_\_\_\_

Date: \_\_\_\_\_  
 Time: \_\_\_\_\_

Inspector: \_\_\_\_\_

MAINTENANCE ITEM	SATISFACTORY / UNSATISFACTORY	COMMENTS
<b>A. Debris Cleanout (Monthly)</b>		
1. Contributing areas clean of debris		
2. Filtration facility clean of debris		
3. Inlet and outlets clear of debris		
<b>B. Oil and Grease (Monthly)</b>		
1. No evidence of filter surface clogging		
2. Activities in drainage area minimize oil and grease entry		
<b>C. Vegetation (Monthly)</b>		
1. Contributing drainage area stabilized		
2. No evidence of erosion		
3. Area mowed and clipping removed		
<b>D. Sediment Deposition (Annual)</b>		
1. Filter chamber free of sediments		
2. Sedimentation chamber not more than half full of sediments		

## Sand Filter Operation, Maintenance and Management Inspection Checklist (cont.)

MAINTENANCE ITEM	SATISFACTORY / UNSATISFACTORY	COMMENTS
<b>E. Outlet/Overflow Spillway (Annual)</b>		
1. Good condition, no need for repairs		
2. No evidence of erosion (if draining into a natural channel)		
<b>F. Overall Function of Facility (Annual)</b>		
1. Evidence of flow bypassing facility		
2. No noticeable odors outside of facility		

**Comments:**

**Actions to be Taken:**

## Bioretention Operation, Maintenance and Management Inspection Checklist

Project: \_\_\_\_\_  
 Location: \_\_\_\_\_  
 Site Status: \_\_\_\_\_  
 Date: \_\_\_\_\_  
 Time: \_\_\_\_\_  
 Inspector: \_\_\_\_\_

MAINTENANCE ITEM	SATISFACTORY / UNSATISFACTORY	COMMENTS
<b>A. Debris Cleanout (Monthly)</b>		
1. Bioretention and contributing areas clean of debris		
2. No dumping of yard wastes into practice		
3. Litter (branches, etc.) have been removed		
<b>B. Vegetation (Monthly)</b>		
1. Plant height not less than design water depth		
2. Fertilized per specifications		
3. Plant composition according to approved plans		
4. No placement of inappropriate plants		
5. Grass height not greater than 6 inches		
6. No evidence of erosion		

## Bioretention Operation, Maintenance and Management Inspection Checklist (cont.)

MAINTENANCE ITEM	SATISFACTORY / UNSATISFACTORY	COMMENTS
<b>C. Check Dams/Energy Dissipaters/Sumps (Annual, After Major Storms)</b>		
1. No evidence of sediment buildup		
2. Sumps should not be more than 50% full of sediment		
3. No evidence of erosion at downstream toe of drop structure		
<b>D. Dewatering (Monthly)</b>		
1. Dewaterers between storms		
2. No evidence of standing water		
<b>E. Sediment Deposition (Annual)</b>		
1. Swale clean of sediments		
2. Sediments should not be > 20% of swale design depth		
<b>F. Outlet/Overflow Spillway (Annual, After Major Storms)</b>		
1. Good condition, no need for repair		
2. No evidence of erosion		
3. No evidence of any blockages		
<b>G. Integrity of Filter Bed (Annual)</b>		
1. Filter bed has not been blocked or filled inappropriately		

**Comments:**

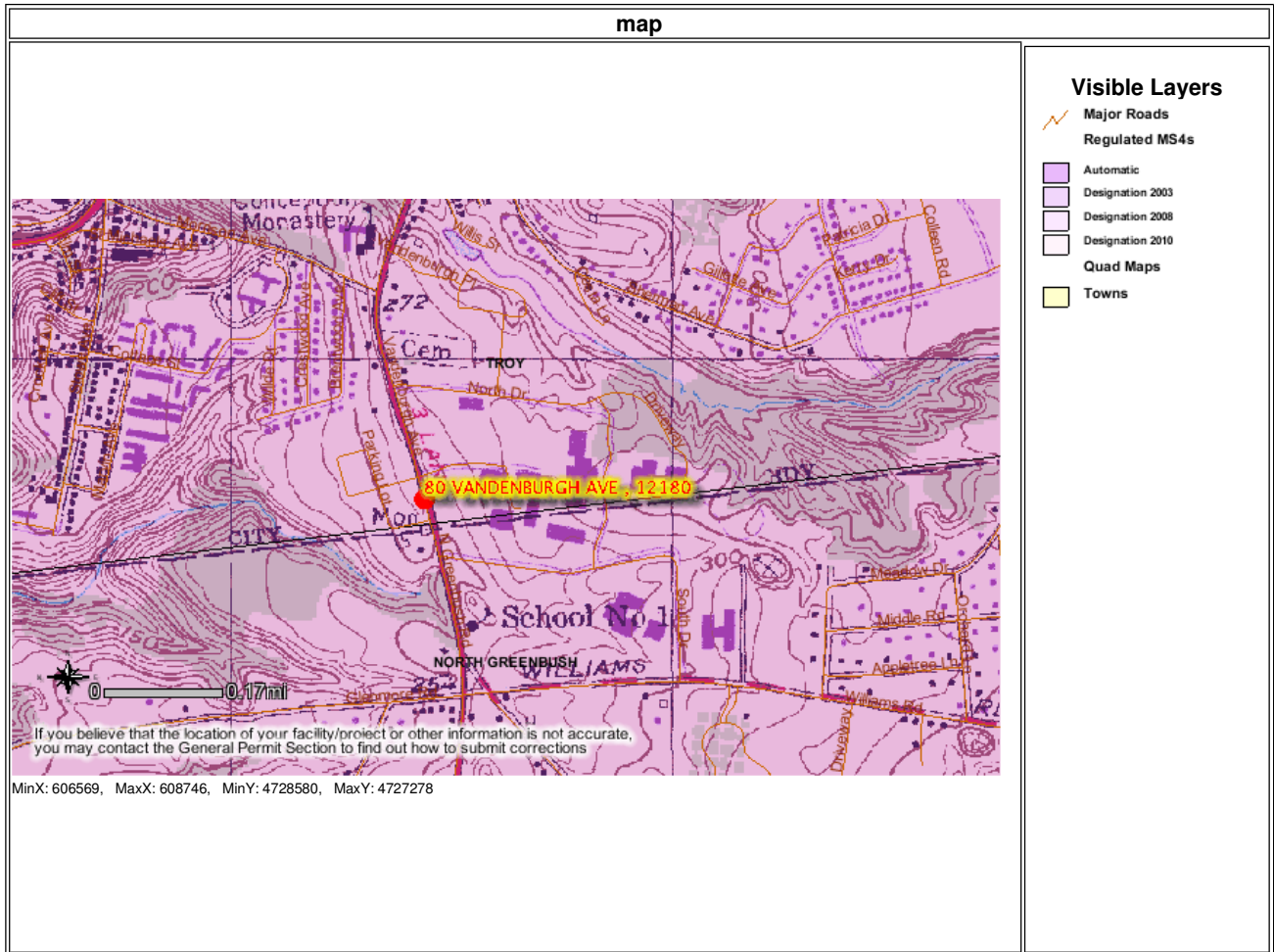
**Actions to be Taken:**

**APPENDIX M**

MS4 Map

[print page] [close window]

Please set your printer orientation to "Landscape".

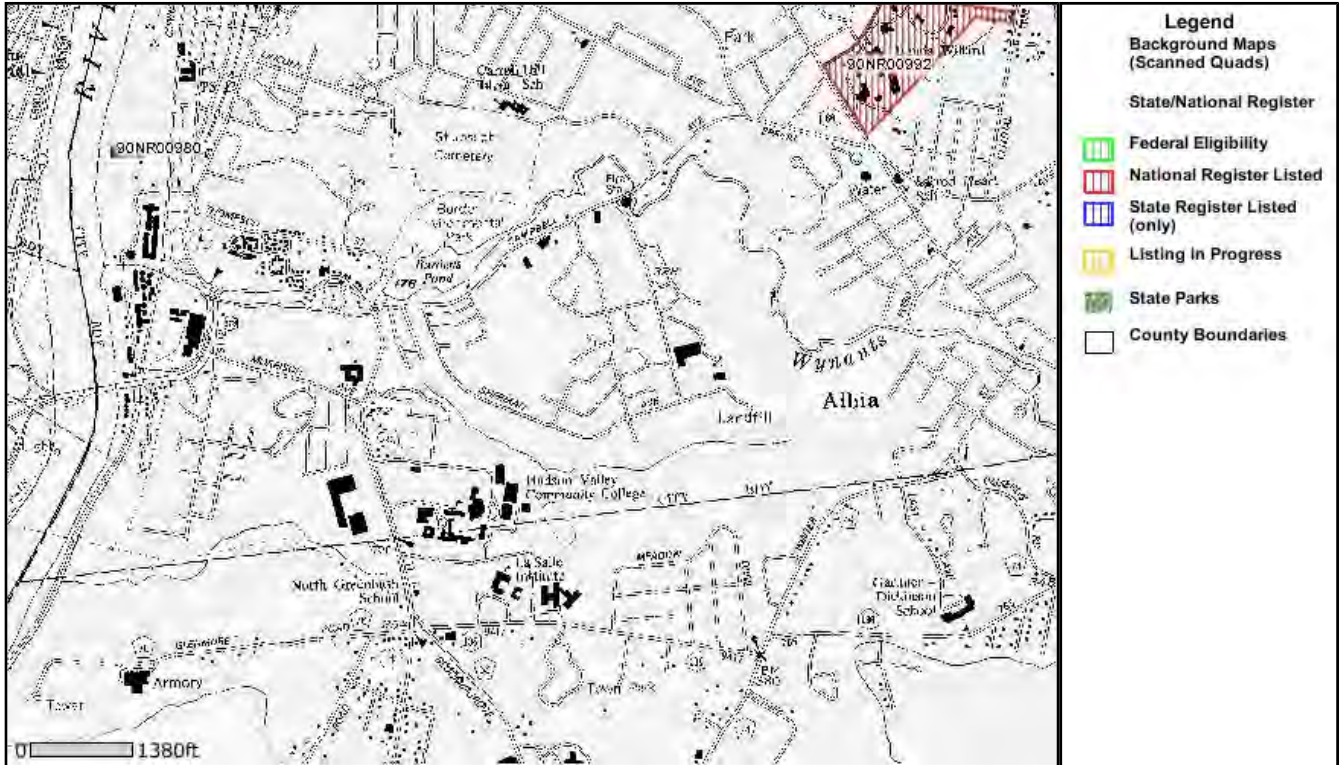




**APPENDIX N**

SHPO Map

SHPO



January 18, 2011

Disclaimer: This map was prepared by the New York State Parks, Recreation and Historic Preservation National Register Listing Internet Application. The information was compiled using the most current data available. It is deemed accurate, but is not guaranteed.

## **APPENDIX O**

### Pipe Sizing Calculations

---

**WS 1.3\_AD#1**

---

**Project Description**

Friction Method                      Manning Formula  
Solve For                                Discharge

**Input Data**

Roughness Coefficient                      0.012  
Channel Slope                                0.00600    ft/ft  
Normal Depth                                1.00    ft  
Diameter                                      1.00    ft

**Results**

Discharge                                    2.99    ft<sup>3</sup>/s  
Flow Area                                    0.79    ft<sup>2</sup>  
Wetted Perimeter                            3.14    ft  
Top Width                                    0.00    ft  
Critical Depth                                0.74    ft  
Percent Full                                100.0    %  
Critical Slope                                0.00742    ft/ft  
Velocity                                      3.81    ft/s  
Velocity Head                                0.23    ft  
Specific Energy                               1.23    ft  
Froude Number                               0.00  
Maximum Discharge                           3.22    ft<sup>3</sup>/s  
Discharge Full                               2.99    ft<sup>3</sup>/s  
Slope Full                                    0.00600    ft/ft  
Flow Type                                    SubCritical

**GVF Input Data**

Downstream Depth                            0.00    ft  
Length                                        0.00    ft  
Number Of Steps                               0

**GVF Output Data**

Upstream Depth                               0.00    ft  
Profile Description  
Profile Headloss                               0.00    ft  
Average End Depth Over Rise                    0.00    %  
Normal Depth Over Rise                       100.00    %  
Downstream Velocity                            Infinity    ft/s  
Upstream Velocity                               Infinity    ft/s

**WS-1.3\_AD#1**

Type II 24-hr 10 Year Rainfall=3.80"

Prepared by Saratoga Associates

HydroCAD® 8.00 s/n 003576 © 2006 HydroCAD Software Solutions LLC

Page 4

3/10/2011

**Subcatchment AD#2: WS 1.3\_AD#1**

Runoff = 0.63 cfs @ 11.97 hrs, Volume= 0.030 af, Depth> 2.65"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
Type II 24-hr 10 Year Rainfall=3.80"

Area (ac)	CN	Description
0.041	74	>75% Grass cover, Good, HSG C
0.095	98	Paved parking & roofs
0.136	91	Weighted Average
0.041		Pervious Area
0.095		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, TR55 minimum

---

## WS 1.3\_AD#2

---

### Project Description

Friction Method	Manning Formula
Solve For	Discharge

### Input Data

Roughness Coefficient	0.012	
Channel Slope	0.00500	ft/ft
Normal Depth	1.00	ft
Diameter	1.00	ft

### Results

Discharge	2.73	ft <sup>3</sup> /s
Flow Area	0.79	ft <sup>2</sup>
Wetted Perimeter	3.14	ft
Top Width	0.00	ft
Critical Depth	0.71	ft
Percent Full	100.0	%
Critical Slope	0.00692	ft/ft
Velocity	3.47	ft/s
Velocity Head	0.19	ft
Specific Energy	1.19	ft
Froude Number	0.00	
Maximum Discharge	2.94	ft <sup>3</sup> /s
Discharge Full	2.73	ft <sup>3</sup> /s
Slope Full	0.00500	ft/ft
Flow Type	SubCritical	

### GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

### GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Average End Depth Over Rise	0.00	%
Normal Depth Over Rise	100.00	%
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s

**WS-1.3\_AD#2**

Type II 24-hr 10 Year Rainfall=3.80"

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**Subcatchment AD#2: WS 1.3\_AD#2**

Runoff = 0.21 cfs @ 11.97 hrs, Volume= 0.010 af, Depth> 2.37"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
Type II 24-hr 10 Year Rainfall=3.80"

Area (ac)	CN	Description
0.021	74	>75% Grass cover, Good, HSG C
0.028	98	Paved parking & roofs
0.049	88	Weighted Average
0.021		Pervious Area
0.028		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, TR55 minimum

---

## WS 1.3\_AD#3

---

### Project Description

Friction Method	Manning Formula
Solve For	Discharge

### Input Data

Roughness Coefficient	0.012	
Channel Slope	0.00500	ft/ft
Normal Depth	1.00	ft
Diameter	1.00	ft

### Results

Discharge	2.73	ft <sup>3</sup> /s
Flow Area	0.79	ft <sup>2</sup>
Wetted Perimeter	3.14	ft
Top Width	0.00	ft
Critical Depth	0.71	ft
Percent Full	100.0	%
Critical Slope	0.00692	ft/ft
Velocity	3.47	ft/s
Velocity Head	0.19	ft
Specific Energy	1.19	ft
Froude Number	0.00	
Maximum Discharge	2.94	ft <sup>3</sup> /s
Discharge Full	2.73	ft <sup>3</sup> /s
Slope Full	0.00500	ft/ft
Flow Type	SubCritical	

### GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

### GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Average End Depth Over Rise	0.00	%
Normal Depth Over Rise	100.00	%
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s



**Subcatchment AD#3: WS 1.3\_AD#3**

Runoff = 0.05 cfs @ 11.98 hrs, Volume= 0.002 af, Depth> 1.32"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 10 Year Rainfall=3.80"

Area (ac)	CN	Description
0.020	74	>75% Grass cover, Good, HSG C
0.020		Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, TR55 minimum

---

**WS 1.3 CB#1**

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**Project Description**

Friction Method                      Manning Formula  
Solve For                                Discharge

**Input Data**

Roughness Coefficient	0.012	
Channel Slope	0.00500	ft/ft
Normal Depth	1.00	ft
Diameter	1.00	ft

**Results**

Discharge	2.73	ft <sup>3</sup> /s
Flow Area	0.79	ft <sup>2</sup>
Wetted Perimeter	3.14	ft
Top Width	0.00	ft
Critical Depth	0.71	ft
Percent Full	100.0	%
Critical Slope	0.00692	ft/ft
Velocity	3.47	ft/s
Velocity Head	0.19	ft
Specific Energy	1.19	ft
Froude Number	0.00	
Maximum Discharge	2.94	ft <sup>3</sup> /s
Discharge Full	2.73	ft <sup>3</sup> /s
Slope Full	0.00500	ft/ft
Flow Type	SubCritical	

**GVF Input Data**

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

**GVF Output Data**

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Average End Depth Over Rise	0.00	%
Normal Depth Over Rise	100.00	%
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s

**WS-1.3\_CB#1**

Type II 24-hr 10 Year Rainfall=3.80"

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**Subcatchment CB#1: WS 1.3\_CB#1**

Runoff = 0.21 cfs @ 11.97 hrs, Volume= 0.009 af, Depth> 1.88"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
Type II 24-hr 10 Year Rainfall=3.80"

Area (ac)	CN	Description
0.040	74	>75% Grass cover, Good, HSG C
0.020	98	Paved parking & roofs
0.060	82	Weighted Average
0.040		Pervious Area
0.020		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, TR55 minimum

---

## WS 1.3 AD#4

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### Project Description

Friction Method	Manning Formula
Solve For	Discharge

### Input Data

Roughness Coefficient	0.012	
Channel Slope	0.00500	ft/ft
Normal Depth	0.50	ft
Diameter	0.50	ft

### Results

Discharge	0.43	ft <sup>3</sup> /s
Flow Area	0.20	ft <sup>2</sup>
Wetted Perimeter	1.57	ft
Top Width	0.00	ft
Critical Depth	0.33	ft
Percent Full	100.0	%
Critical Slope	0.00809	ft/ft
Velocity	2.19	ft/s
Velocity Head	0.07	ft
Specific Energy	0.57	ft
Froude Number	0.00	
Maximum Discharge	0.46	ft <sup>3</sup> /s
Discharge Full	0.43	ft <sup>3</sup> /s
Slope Full	0.00500	ft/ft
Flow Type	SubCritical	

### GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

### GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Average End Depth Over Rise	0.00	%
Normal Depth Over Rise	100.00	%
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s

**WS-1.3\_AD#4**

Type II 24-hr 10 Year Rainfall=3.80"

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**Subcatchment AD#4: WS 1.3\_AD#4**

Runoff = 0.26 cfs @ 11.97 hrs, Volume= 0.012 af, Depth> 2.65"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
Type II 24-hr 10 Year Rainfall=3.80"

Area (ac)	CN	Description
0.017	74	>75% Grass cover, Good, HSG C
0.039	98	Paved parking & roofs
0.056	91	Weighted Average
0.017		Pervious Area
0.039		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, TR55 minimum

---

**WS 1.3 CB#2**

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**Project Description**

Friction Method                      Manning Formula  
Solve For                                Discharge

**Input Data**

Roughness Coefficient                      0.012  
Channel Slope                                0.00680    ft/ft  
Normal Depth                                1.00    ft  
Diameter                                      1.00    ft

**Results**

Discharge                                    3.18    ft<sup>3</sup>/s  
Flow Area                                    0.79    ft<sup>2</sup>  
Wetted Perimeter                            3.14    ft  
Top Width                                    0.00    ft  
Critical Depth                                0.76    ft  
Percent Full                                100.0    %  
Critical Slope                                0.00783    ft/ft  
Velocity                                      4.05    ft/s  
Velocity Head                                0.26    ft  
Specific Energy                               1.26    ft  
Froude Number                               0.00  
Maximum Discharge                           3.42    ft<sup>3</sup>/s  
Discharge Full                               3.18    ft<sup>3</sup>/s  
Slope Full                                    0.00680    ft/ft  
Flow Type                                    SubCritical

**GVF Input Data**

Downstream Depth                            0.00    ft  
Length                                      0.00    ft  
Number Of Steps                               0

**GVF Output Data**

Upstream Depth                               0.00    ft  
Profile Description  
Profile Headloss                               0.00    ft  
Average End Depth Over Rise                    0.00    %  
Normal Depth Over Rise                       100.00    %  
Downstream Velocity                            Infinity    ft/s  
Upstream Velocity                               Infinity    ft/s

**WS-1.3\_CB#2**

Type II 24-hr 10 Year Rainfall=3.80"

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**Subcatchment CB#2: WS 1.3\_CB#2**

Runoff = 0.29 cfs @ 11.97 hrs, Volume= 0.013 af, Depth> 1.80"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
Type II 24-hr 10 Year Rainfall=3.80"

Area (ac)	CN	Description
0.061	74	>75% Grass cover, Good, HSG C
0.026	98	Paved walks and plaza's
0.087	81	Weighted Average
0.061		Pervious Area
0.026		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, TR55 minimum

---

**WS 1.3\_AD#5**

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**Project Description**

Friction Method                      Manning Formula  
Solve For                                Discharge

**Input Data**

Roughness Coefficient                      0.012  
Channel Slope                                0.00500    ft/ft  
Normal Depth                                0.50    ft  
Diameter                                      0.50    ft

**Results**

Discharge                                    0.43    ft<sup>3</sup>/s  
Flow Area                                    0.20    ft<sup>2</sup>  
Wetted Perimeter                            1.57    ft  
Top Width                                    0.00    ft  
Critical Depth                                0.33    ft  
Percent Full                                100.0    %  
Critical Slope                                0.00809    ft/ft  
Velocity                                      2.19    ft/s  
Velocity Head                                0.07    ft  
Specific Energy                               0.57    ft  
Froude Number                               0.00  
Maximum Discharge                           0.46    ft<sup>3</sup>/s  
Discharge Full                                0.43    ft<sup>3</sup>/s  
Slope Full                                    0.00500    ft/ft  
Flow Type                                    SubCritical

**GVF Input Data**

Downstream Depth                            0.00    ft  
Length                                      0.00    ft  
Number Of Steps                              0

**GVF Output Data**

Upstream Depth                              0.00    ft  
Profile Description  
Profile Headloss                              0.00    ft  
Average End Depth Over Rise                0.00    %  
Normal Depth Over Rise                      100.00    %  
Downstream Velocity                            Infinity    ft/s  
Upstream Velocity                              Infinity    ft/s



**WS-1.3\_AD#5**

Type II 24-hr 10 Year Rainfall=3.80"

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**Subcatchment AD#5: WS 1.3\_AD#5**

Runoff = 0.37 cfs @ 11.97 hrs, Volume= 0.017 af, Depth> 2.03"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
Type II 24-hr 10 Year Rainfall=3.80"

Area (ac)	CN	Description
0.060	74	>75% Grass cover, Good, HSG C
0.040	98	Paved walks and plaza's
0.100	84	Weighted Average
0.060		Pervious Area
0.040		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, TR55 minimum

---

**WS 1.3\_AD#6**

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**Project Description**

Friction Method                      Manning Formula  
Solve For                                Discharge

**Input Data**

Roughness Coefficient                      0.012  
Channel Slope                                0.00500    ft/ft  
Normal Depth                                0.67    ft  
Diameter                                      0.67    ft

**Results**

Discharge                                    0.94    ft<sup>3</sup>/s  
Flow Area                                    0.35    ft<sup>2</sup>  
Wetted Perimeter                            2.10    ft  
Top Width                                    0.00    ft  
Critical Depth                                0.46    ft  
Percent Full                                100.0    %  
Critical Slope                                0.00756    ft/ft  
Velocity                                      2.66    ft/s  
Velocity Head                                0.11    ft  
Specific Energy                                0.78    ft  
Froude Number                                0.00  
Maximum Discharge                            1.01    ft<sup>3</sup>/s  
Discharge Full                                0.94    ft<sup>3</sup>/s  
Slope Full                                    0.00500    ft/ft  
Flow Type                                    SubCritical

**GVF Input Data**

Downstream Depth                            0.00    ft  
Length                                      0.00    ft  
Number Of Steps                                0

**GVF Output Data**

Upstream Depth                                0.00    ft  
Profile Description  
Profile Headloss                                0.00    ft  
Average End Depth Over Rise                    0.00    %  
Normal Depth Over Rise                        100.00    %  
Downstream Velocity                            Infinity    ft/s  
Upstream Velocity                                Infinity    ft/s

**WS-1.3\_AD#6**

Type II 24-hr 10 Year Rainfall=3.80"

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**Subcatchment AD#6: WS 1.3\_AD#6**

Runoff = 0.74 cfs @ 11.97 hrs, Volume= 0.034 af, Depth> 2.12"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
Type II 24-hr 10 Year Rainfall=3.80"

Area (ac)	CN	Description
0.100	74	>75% Grass cover, Good, HSG C
0.090	98	Paved parking & roofs
0.190	85	Weighted Average
0.100		Pervious Area
0.090		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, TR55 minimum

---

**WS 1.3\_AD#7**

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**Project Description**

Friction Method                      Manning Formula  
Solve For                                Discharge

**Input Data**

Roughness Coefficient                      0.012  
Channel Slope                                0.00500    ft/ft  
Normal Depth                                1.00    ft  
Diameter                                      1.00    ft

**Results**

Discharge                                    2.73    ft<sup>3</sup>/s  
Flow Area                                    0.79    ft<sup>2</sup>  
Wetted Perimeter                            3.14    ft  
Top Width                                    0.00    ft  
Critical Depth                                0.71    ft  
Percent Full                                100.0    %  
Critical Slope                                0.00692    ft/ft  
Velocity                                      3.47    ft/s  
Velocity Head                                0.19    ft  
Specific Energy                               1.19    ft  
Froude Number                               0.00  
Maximum Discharge                           2.94    ft<sup>3</sup>/s  
Discharge Full                                2.73    ft<sup>3</sup>/s  
Slope Full                                    0.00500    ft/ft  
Flow Type                                    SubCritical

**GVF Input Data**

Downstream Depth                            0.00    ft  
Length                                       0.00    ft  
Number Of Steps                               0

**GVF Output Data**

Upstream Depth                               0.00    ft  
Profile Description  
Profile Headloss                               0.00    ft  
Average End Depth Over Rise                    0.00    %  
Normal Depth Over Rise                       100.00    %  
Downstream Velocity                            Infinity    ft/s  
Upstream Velocity                               Infinity    ft/s

**Subcatchment AD#7: WS 1.3\_AD#7**

Runoff = 0.57 cfs @ 11.98 hrs, Volume= 0.025 af, Depth> 1.45"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 10 Year Rainfall=3.80"

Area (ac)	CN	Description
0.015	98	Paved parking & roofs
0.193	74	>75% Grass cover, Good, HSG C
0.208	76	Weighted Average
0.193		Pervious Area
0.015		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, TR55 minimum

---

**WS 1.3 AD#8**

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**Project Description**

Friction Method                      Manning Formula  
Solve For                                Discharge

**Input Data**

Roughness Coefficient                      0.012  
Channel Slope                                0.00500    ft/ft  
Normal Depth                                1.00    ft  
Diameter                                      1.00    ft

**Results**

Discharge                                    2.73    ft<sup>3</sup>/s  
Flow Area                                    0.79    ft<sup>2</sup>  
Wetted Perimeter                            3.14    ft  
Top Width                                    0.00    ft  
Critical Depth                                0.71    ft  
Percent Full                                100.0    %  
Critical Slope                                0.00692    ft/ft  
Velocity                                      3.47    ft/s  
Velocity Head                                0.19    ft  
Specific Energy                               1.19    ft  
Froude Number                               0.00  
Maximum Discharge                           2.94    ft<sup>3</sup>/s  
Discharge Full                               2.73    ft<sup>3</sup>/s  
Slope Full                                    0.00500    ft/ft  
Flow Type                                    SubCritical

**GVF Input Data**

Downstream Depth                            0.00    ft  
Length                                        0.00    ft  
Number Of Steps                               0

**GVF Output Data**

Upstream Depth                               0.00    ft  
Profile Description  
Profile Headloss                               0.00    ft  
Average End Depth Over Rise                0.00    %  
Normal Depth Over Rise                    100.00    %  
Downstream Velocity                        Infinity    ft/s  
Upstream Velocity                            Infinity    ft/s

**Subcatchment AD#8: WS 1.3\_AD#8**

Runoff = 0.36 cfs @ 11.96 hrs, Volume= 0.019 af, Depth> 3.29"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 10 Year Rainfall=3.80"

Area (ac)	CN	Description
0.069	98	Paved parking & roofs
0.069		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, TR55 minimum

---

**WS 1.3\_AD#9**

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**Project Description**

Friction Method                      Manning Formula  
Solve For                                Discharge

**Input Data**

Roughness Coefficient                      0.012  
Channel Slope                                0.00530    ft/ft  
Normal Depth                                0.83    ft  
Diameter                                      0.83    ft

**Results**

Discharge                                      1.71    ft<sup>3</sup>/s  
Flow Area                                      0.54    ft<sup>2</sup>  
Wetted Perimeter                            2.61    ft  
Top Width                                      0.00    ft  
Critical Depth                                0.59    ft  
Percent Full                                 100.0    %  
Critical Slope                                0.00735    ft/ft  
Velocity                                        3.16    ft/s  
Velocity Head                                0.16    ft  
Specific Energy                               0.99    ft  
Froude Number                                0.00  
Maximum Discharge                         1.84    ft<sup>3</sup>/s  
Discharge Full                                1.71    ft<sup>3</sup>/s  
Slope Full                                      0.00530    ft/ft  
Flow Type                                      SubCritical

**GVF Input Data**

Downstream Depth                         0.00    ft  
Length                                        0.00    ft  
Number Of Steps                             0

**GVF Output Data**

Upstream Depth                             0.00    ft  
Profile Description  
Profile Headloss                            0.00    ft  
Average End Depth Over Rise             0.00    %  
Normal Depth Over Rise                   100.00    %  
Downstream Velocity                        Infinity    ft/s  
Upstream Velocity                          Infinity    ft/s



**WS-1.3\_AD#9**

Type II 24-hr 10 Year Rainfall=3.80"

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**Subcatchment AD#9: WS 1.3\_AD#9**

Runoff = 0.28 cfs @ 11.98 hrs, Volume= 0.012 af, Depth> 1.32"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
Type II 24-hr 10 Year Rainfall=3.80"

Area (ac)	CN	Description
0.110	74	>75% Grass cover, Good, HSG C
0.110		Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, TR55 minimum

---

## WS 1.3\_AD#10

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### Project Description

Friction Method	Manning Formula
Solve For	Discharge

### Input Data

Roughness Coefficient	0.012	
Channel Slope	0.00500	ft/ft
Normal Depth	0.83	ft
Diameter	0.83	ft

### Results

Discharge	1.66	ft <sup>3</sup> /s
Flow Area	0.54	ft <sup>2</sup>
Wetted Perimeter	2.61	ft
Top Width	0.00	ft
Critical Depth	0.58	ft
Percent Full	100.0	%
Critical Slope	0.00721	ft/ft
Velocity	3.07	ft/s
Velocity Head	0.15	ft
Specific Energy	0.98	ft
Froude Number	0.00	
Maximum Discharge	1.79	ft <sup>3</sup> /s
Discharge Full	1.66	ft <sup>3</sup> /s
Slope Full	0.00500	ft/ft
Flow Type	SubCritical	

### GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

### GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Average End Depth Over Rise	0.00	%
Normal Depth Over Rise	100.00	%
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s

**WS-1.3\_AD#10**

Type II 24-hr 10 Year Rainfall=3.80"

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**Subcatchment AD#10: WS 1.3\_AD#10**

Runoff = 1.41 cfs @ 11.97 hrs, Volume= 0.067 af, Depth&gt; 2.55"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
Type II 24-hr 10 Year Rainfall=3.80"

Area (ac)	CN	Description
0.098	74	>75% Grass cover, Good, HSG C
0.215	98	Paved parking & roofs
0.313	90	Weighted Average
0.098		Pervious Area
0.215		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, TR55 minimum

---

## WS 1.3\_STMH#1

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### Project Description

Friction Method	Manning Formula
Solve For	Discharge

### Input Data

Roughness Coefficient	0.012	
Channel Slope	0.00700	ft/ft
Normal Depth	1.25	ft
Diameter	1.25	ft

### Results

Discharge	5.85	ft <sup>3</sup> /s
Flow Area	1.23	ft <sup>2</sup>
Wetted Perimeter	3.93	ft
Top Width	0.00	ft
Critical Depth	0.98	ft
Percent Full	100.0	%
Critical Slope	0.00765	ft/ft
Velocity	4.77	ft/s
Velocity Head	0.35	ft
Specific Energy	1.60	ft
Froude Number	0.00	
Maximum Discharge	6.30	ft <sup>3</sup> /s
Discharge Full	5.85	ft <sup>3</sup> /s
Slope Full	0.00700	ft/ft
Flow Type	SubCritical	

### GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

### GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Average End Depth Over Rise	0.00	%
Normal Depth Over Rise	100.00	%
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s

---

## WS 1.3\_STMH#2

---

### Project Description

Friction Method	Manning Formula
Solve For	Discharge

### Input Data

Roughness Coefficient	0.012	
Channel Slope	0.00720	ft/ft
Normal Depth	1.25	ft
Diameter	1.25	ft

### Results

Discharge	5.94	ft <sup>3</sup> /s
Flow Area	1.23	ft <sup>2</sup>
Wetted Perimeter	3.93	ft
Top Width	0.00	ft
Critical Depth	0.99	ft
Percent Full	100.0	%
Critical Slope	0.00776	ft/ft
Velocity	4.84	ft/s
Velocity Head	0.36	ft
Specific Energy	1.61	ft
Froude Number	0.00	
Maximum Discharge	6.39	ft <sup>3</sup> /s
Discharge Full	5.94	ft <sup>3</sup> /s
Slope Full	0.00720	ft/ft
Flow Type	SubCritical	

### GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

### GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Average End Depth Over Rise	0.00	%
Normal Depth Over Rise	100.00	%
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s

---

## WS 2.1\_Overflow pipe

---

### Project Description

Friction Method	Manning Formula
Solve For	Discharge

### Input Data

Roughness Coefficient	0.012	
Channel Slope	0.00630	ft/ft
Normal Depth	0.67	ft
Diameter	0.67	ft

### Results

Discharge	1.05	ft <sup>3</sup> /s
Flow Area	0.35	ft <sup>2</sup>
Wetted Perimeter	2.10	ft
Top Width	0.00	ft
Critical Depth	0.49	ft
Percent Full	100.0	%
Critical Slope	0.00819	ft/ft
Velocity	2.99	ft/s
Velocity Head	0.14	ft
Specific Energy	0.81	ft
Froude Number	0.00	
Maximum Discharge	1.13	ft <sup>3</sup> /s
Discharge Full	1.05	ft <sup>3</sup> /s
Slope Full	0.00630	ft/ft
Flow Type	SubCritical	

### GVF Input Data

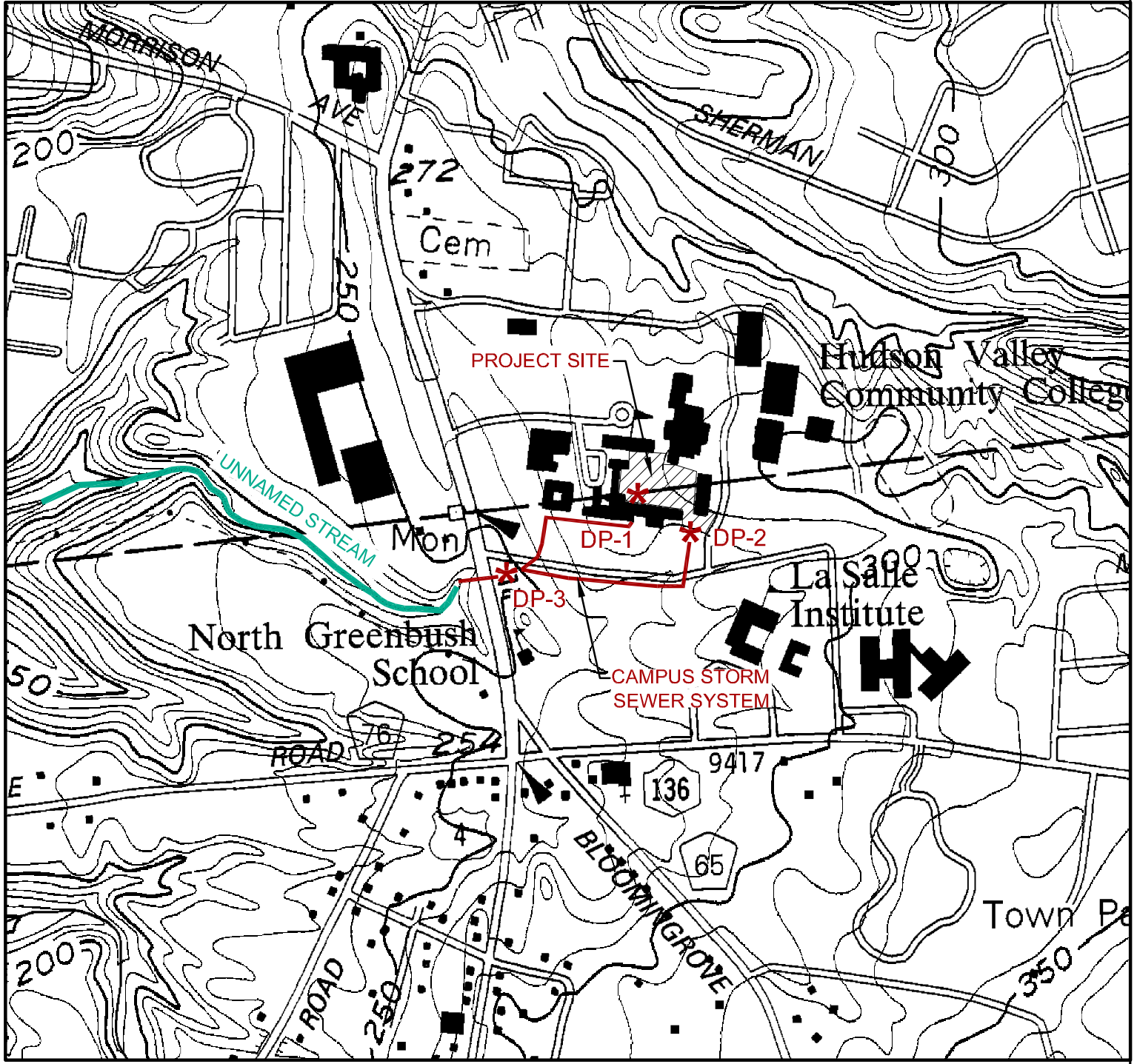
Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

### GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Average End Depth Over Rise	0.00	%
Normal Depth Over Rise	100.00	%
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s

**APPENDIX P**

Storm Water Discharge Map



DP-2 \* DISCHARGE POINT



**SARATOGA ASSOCIATES**

HUDSON VALLEY COMMUNITY COLLEGE

STORM WATER DISCHARGE MAP

SARATOGA ASSOCIATES PROJECT # 2010-043.18U  
 DATE: 03-30-11  
 DRAWN BY: SRD  
 CHECKED BY: RJM

Landscape Architects, Architects, Engineers, and Planners, P.C.  
 NEW YORK CITY > SARATOGA SPRINGS > SYRACUSE

RECONSTRUCTION OF THE MAIN ACADEMIC QUADRANGLE

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