STORMWATER MANAGEMENT PROGRAM PLAN (SWMPP)

TOWN OF POUGHKEEPSIE

NYSDEC SPDES Permit Number – NYR 20A198

August 2007

Last Revised: April 2010

STORMWATER MANAGEMENT PROGRAM PLAN
Town of Poughkeepsie

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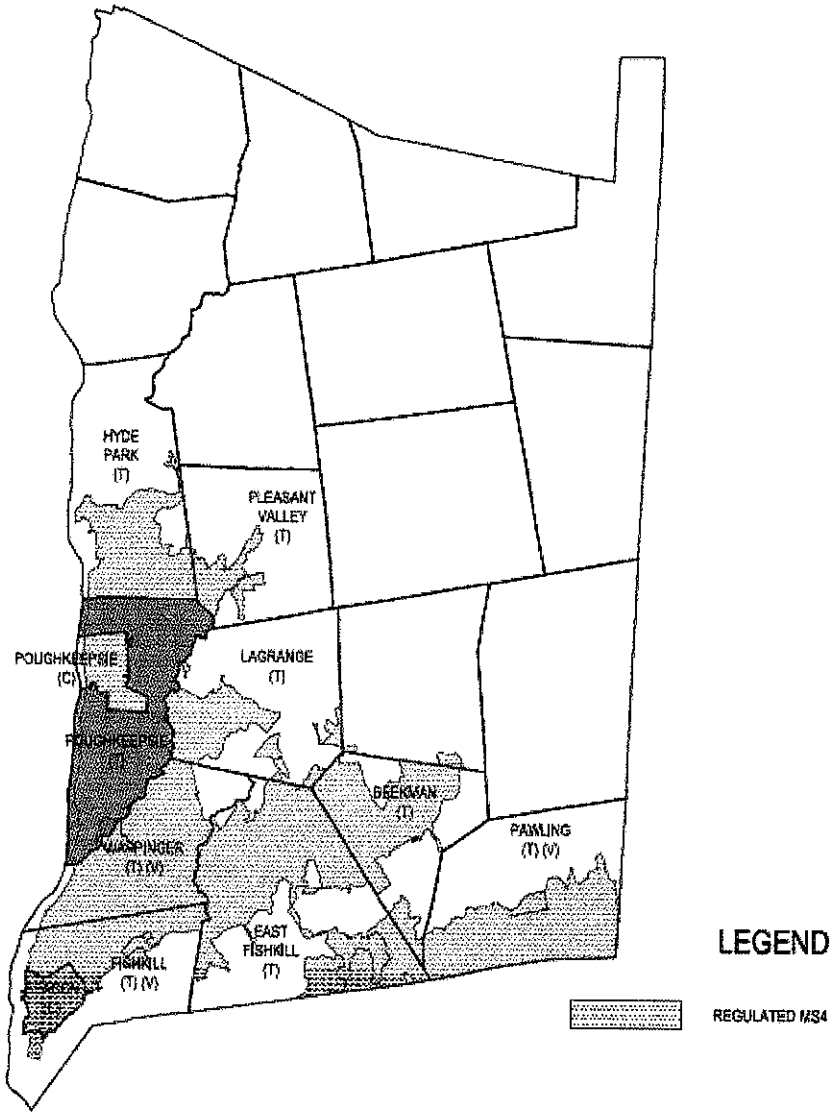
1.0 INTRODUCTION

On December 8, 1999, the U.S. Environmental Protection Agency (USEPA) promulgated Phase II of its National Pollution Discharge Elimination System (NPDES) stormwater regulations. Phase I of the USEPA stormwater program established regulations for stormwater discharges from municipal separate storm sewer systems (MS4s) in municipalities with populations of 100,000 or greater, construction activities disturbing five or more acres of land, and ten categories of industrial facilities. The Phase II Final Rule expanded the Phase I program by requiring smaller communities with MS4s in urbanized areas to implement programs and practices to control polluted stormwater runoff through the use of NPDES permits. Urbanized areas are based on the 2000 census.

The Town of Poughkeepsie is one of fourteen (14) Dutchess County municipalities located completely or partially in an Urbanized Area (see County Cooperative MS4 Map) and therefore automatically designated under the Phase II program. In New York, Phase II regulated communities are required to apply for a State Pollutant Discharge Elimination System (SPDES) permit (first permit GP-02-02, second permit GP-0-08-002, third permit GP-0-010-002, see Appendix A for copies of permits issued by the New York State Department of Environmental Conservation (NYSDEC)). The regulated communities were required to reduce the discharge of pollutants from their storm sewer systems to the "maximum extent practicable" to protect water quality.



REV. No.	DESCRIPTION	DATE	BY

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TOWN OF POUGHKEEPSIE
STORM WATER MANAGEMENT PLAN

DATE	SCALE	DESIGNED BY: MJH	FILE No.
07/20/07	1" = 10,000'	DRAWN BY: MJH CHECKED BY: MJH	204419.2

COUNTY COOPERATIVE MS4 MAP

DUTCHESS COUNTY, NY DWG 1-2

As part of the permitting process, the regulated municipalities are required to develop a Stormwater Management Program Plan (SWMPP) that address how the regulated MS4 will comply with six minimum control measures. These six minimum measures are:

1. Public Education and Outreach
2. Public Involvement/Participation
3. Illicit Discharge Detection and Elimination (IDDE)
4. Construction Site Stormwater Runoff Control
5. Post-Construction Stormwater Management
6. Pollution Prevention/Good Housekeeping for Municipal Operations

Under the first SPDES General Permit for Stormwater Discharges from a MS4 (GP-02-02) the Town of Poughkeepsie submitted a Notice of Intent (NOI). It has been included in Appendix B of this SWMPP report.

Additionally, an organizational charts (Appendix C) and budget for this program (Appendix D) are included in this SWMPP report.

2.0 PUBLIC EDUCATION AND OUTREACH

2.1 The Responsible Party is Eric Hollman, the Public Stormwater Contact, and the Responsible Department is the Town Planning Department.

2.2 State and Federal Regulatory Requirements

The success of any stormwater management program hinges on educating the public about the impacts of certain behaviors and practices on surface water quality in the watershed. In addition, public education will improve the MS4's ability to gain support to implement this program as well as secure required funding. For this reason, the United States Environmental Protection Agency (USEPA) has included public education and outreach as a minimum control measure of the Phase II regulations. The requirements to satisfy this minimum control measure are:

1. Identify pollutants of concern (POCs), waterbodies of concern, geographic areas of concern, target audiences;
2. Develop and implement an ongoing public education and outreach program designed to describe to the general public and target audiences:
   a. The impacts of stormwater discharges on waterbodies;
   b. POCs and their sources;
   c. Steps contributors of the pollutants can take to reduce pollutants in stormwater runoff; and

   d. Steps contributors of non-stormwater discharges can take to reduce pollutants;
3. Develop, record, periodically assess, and modify as needed, measurable goals; and
4. Select appropriate education and outreach activities and measurable goals to ensure the reduction of all POCs in stormwater discharges to the maximum extent practical (MEP).

2.3 Pollutants of Concern

The following are pollutants of concern for the Town of Poughkeepsie in general. (See §2.4.1 regarding impaired waters for additional pollutants of concerns.) Illicit discharges, pet waste, solid waste, sediment from soil erosion, and soluble and floatable contaminants in stormwater runoff from road, parking lots and roofs.

2.4 Existing Water Resources

A watershed is the area of land where all of the surface water drains to a common location. A watershed generally includes lakes, rivers, estuaries, wetlands, streams, and the surrounding landscape. Watersheds are nature's boundaries, which transcend political, social, and economic boundaries. Because watersheds are defined by natural hydrology, they represent the most logical basis for managing water resources. A Watershed Protection Approach is, therefore, a viable strategy for effectively protecting and restoring aquatic ecosystems and protecting human health. Major features of a Watershed Protection Approach are: targeting priority problems, promoting a high level of stakeholder involvement, integrated solutions that make use of the expertise and authority of multiple agencies, and measuring success through monitoring and other data gathering. A watershed framework offers many opportunities to simplify and streamline the workload between involved parties, thus generating cost efficiencies. Each watershed presents unique opportunities and challenges. More importantly they present an opportunity for partnering with watershed advocates, academic institutions, industry, private landowners, neighboring communities, or state agencies to achieve mutual beneficial goals.

Significant water resources in, or partially within, the Town of Poughkeepsie (see also the maps on the next pages) include the following streams and watersheds

Fall Kill
Casper Kill

Wappinger Creek
Wappinger Lake
Hudson River estuary

and the following lakes
Cobalt Lake
Inwood Lake

and the following DEC wetlands in Town of Poughkeepsie
Hyde Park – 27
Pleasant Valley – 2
Wappingers Falls - 31
Poughkeepsie – 3
Poughkeepsie – 4
Poughkeepsie – 5
Poughkeepsie - 7
Poughkeepsie – 12
Poughkeepsie – 13
Poughkeepsie – 16
Poughkeepsie – 18
Poughkeepsie – 19
Poughkeepsie – 21
Poughkeepsie – 24
Poughkeepsie – 25

There are many other significant water resources in the MS4 that exist as small, unnamed ponds, watercourses, and wetlands. Some of these are isolated while others are located along stream lengths.

2.4.1 Impaired Waters

The Division of Water of the NYSDEC has prepared a list of impaired waters in New York in compliance with section 303(d) of the federal Clean Water Act (CWA). These impaired waters are defined as those that do not meet State of New York Water Quality standards. NYSDEC is required to develop Total Maximum Daily Loads (TMDLs) for each of these waters. The purpose of the TMDLs is to identify the capacity of a surface water to assimilate pollutants without impacting its designated uses (e.g., fishable, swimmable), as well as meeting the State Water Quality Standards.

Surface waters within the Town of Poughkeepsie MS4 boundary that have been identified on the State's 303(d) list

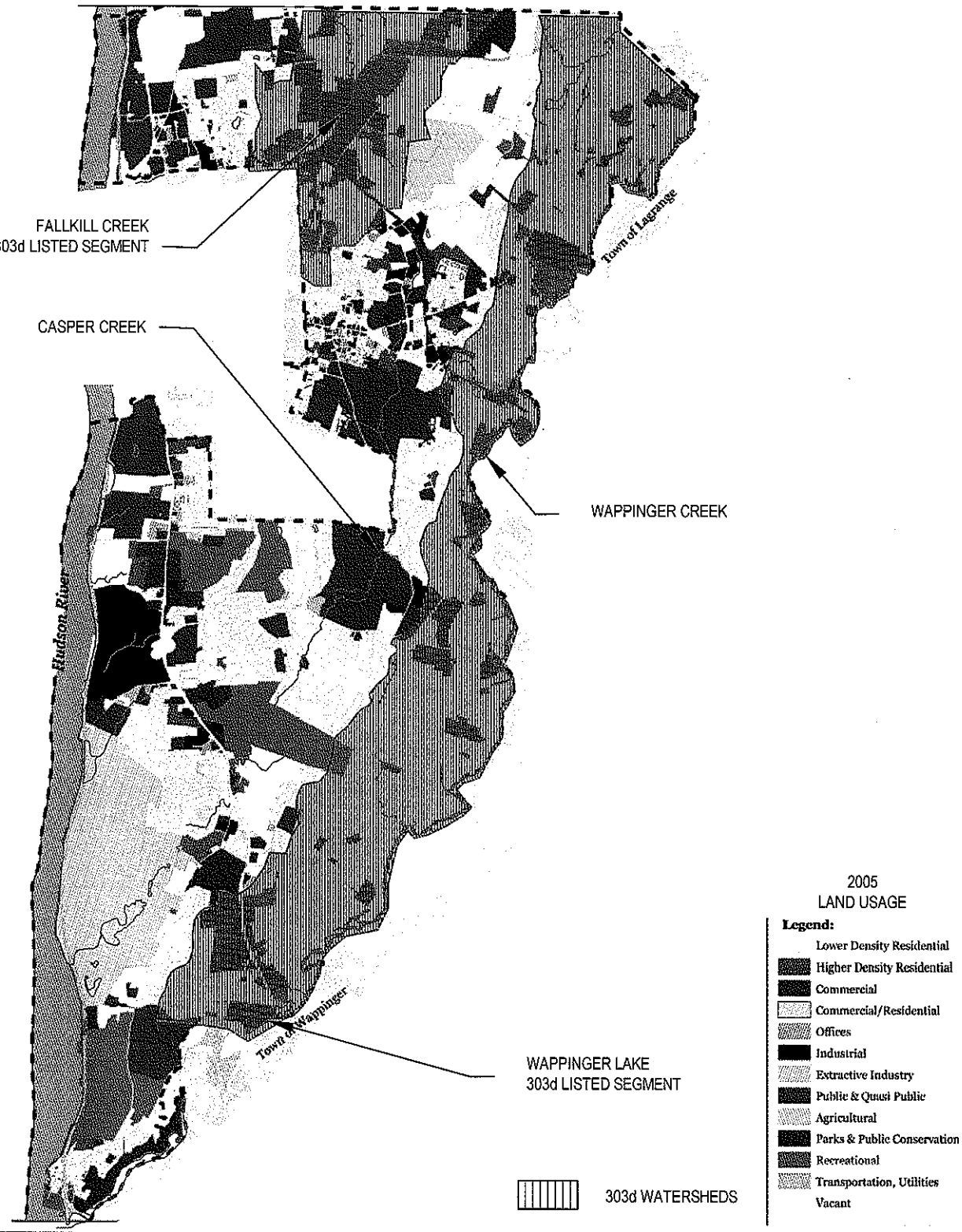
(issued May 26, 2008) are stated in Table 2.4.1 below, along with the cause(s) of the impairment and the sources.

TABLE 2.4.1
IMPAIRED WATERS
TOWN OF POUGHKEEPSIE

WATERBODY NAME	WATER INDEX NUMBER	CLASS	CAUSE/POLLUTANT	SOURCE
Wappinger Lake (1305-0001)	H-101-P365	B	Phosphorus Silt/Sediment	Urban/Storm Runoff
Fall Kill (1301-0087)	H-114	C	Phosphorus	Urban/Storm Runoff

2.4.2 Wappinger Creek watershed

The Wappinger Creek watershed is divided into 16 subwatersheds to facilitate study and planning (Table 3, Map 1). The subwatersheds were delineated by the Dutchess County Environmental Management Council (EMC) on United States Geological Survey (USGS) maps and subsequently digitized in the EMC's Geographic Information System (GIS).The Wappinger Creek Watershed covers portions of 11 towns and 2 villages (Table 2, Map 1). Portions of the watershed are included in the Towns of Pine Plains, Milan, Stanford, Clinton, Washington, Hyde Park, Pleasant Valley, Poughkeepsie, LaGrange, Wappinger and Fishkill; and portions are in the villages of Millbrook and Wappingers Falls. The Wappinger Creek is the dominant feature of the Watershed, running 37.95 miles from Pine Plains to the Hudson River in the Town of Wappinger. The Wappinger Creek is fed by approximately 320 miles of tributaries, including (north to south) the Cold Spring Creek, Hunns Lake Creek, Tamarack Creek, Grist Mill Creek, Willow Brook, East Branch Wappinger Creek, Upton Lake Creek, Little Wappinger Creek and Great Spring Creek (Map 1).



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DUTCHESS COUNTY, NY

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		CHECKED BY: MJH	

STORMWATER MAP

POUGHKEEPSIE, NY QUADRANGLE DWG 1-1

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Municipality, % of Municipality in the Watershed and % of Watershed in the Municipality
PINE PLAINS, 35% 5%
MILAN, 35% 7%
CLINTON, 70% 13%
STANFORD, 80% 20%
WASHINGTON, 60% 16%
PLEASANT VALLEY, 90% 14.5%
POUGHKEEPSIE, 35% 4%
LA GRANGE, 50% 8%
WAPPINGER, 70% 8.5%
HYDE PARK, 7% 1%
Fishkill, 1% 1%
VILLAGE OF WAPPINGERS FALLS, 100% 1%
VILLAGE OF MILLBROOK 100% 1%

Direct Drainage West Subwatershed
The Direct Drainage West subwatershed encompasses 5,369 acres in the southern portion of the Wappinger Creek watershed (Map 22). Contained within the Town of Poughkeepsie and the Village of Wappingers Falls, this subwatershed comprises 4% of the entire Wappinger Creek watershed.

Direct Drainage West has the highest percentage of residential land use (53%) of all the subwatersheds (Table 8). Other land uses include 28% forested, 2% agriculture, 4% wetland and waterbodies, .04% transportation and communication, 8% commercial and light manufacturing, 4% public land and outdoor recreation, and .08% gravel mining. Well-drained soils are found in 77% of this subwatershed.

The dominant soil types are Galway-Farmington complex at 18%, Hoosic gravelly loam at 15% and Dutchess-Cardigan complex at 10%. The Dutchess-Cardigan complex and Galway-Farmington complex tend to be well drained and have a moderate permeability. With these soil types water is generally available to plants throughout the growing season, and water usually doesn't inhibit root growth. Hoosic Gravelly Loam tends to be excessively drained, has a rapid permeability, and water tends to be removed quickly due to sandy soils, shallow soils, or steep slopes. The Hoosic, Galway, Farmington, and Cardigan soil series are all poor for septic system siting due to their high permeability.

The Direct Drainage West subwatershed consists of six smaller streams that discharge directly into the Wappinger Creek. The New York State Department of Environmental Conservation (NYSDEC) has classified five of the tributaries as class D streams (see Table 5), and one as an unclassified stream. The best usage for class D waters is fishing, and there is minimal protection for class D waterways. Due to the scattered locations of the streams in this subwatershed the EMC did not have a stream sampling point in these tributaries, therefore

pollutant loading cannot be determined. However, the fact that a majority of the tributaries are classified as D waters indicates poor or undetermined water quality in this subwatershed. Creation or maintenance of storm water runoff devices, proper septic system siting and maintenance, and properly designed residential best management practices should be employed to help alleviate some of the potential water quality impacts in this subwatershed. Also, the destruction of the vegetated buffer zone along these smaller streams will increase sediment and nutrient loading, warm water temperatures, and threaten the ability of aquatic life to reproduce. Therefore, it should be a priority to protect or restore natural vegetated buffer zones along the streams.

Wappinger Creek Subwatershed Nonpoint Source Pollution Identification Project Data

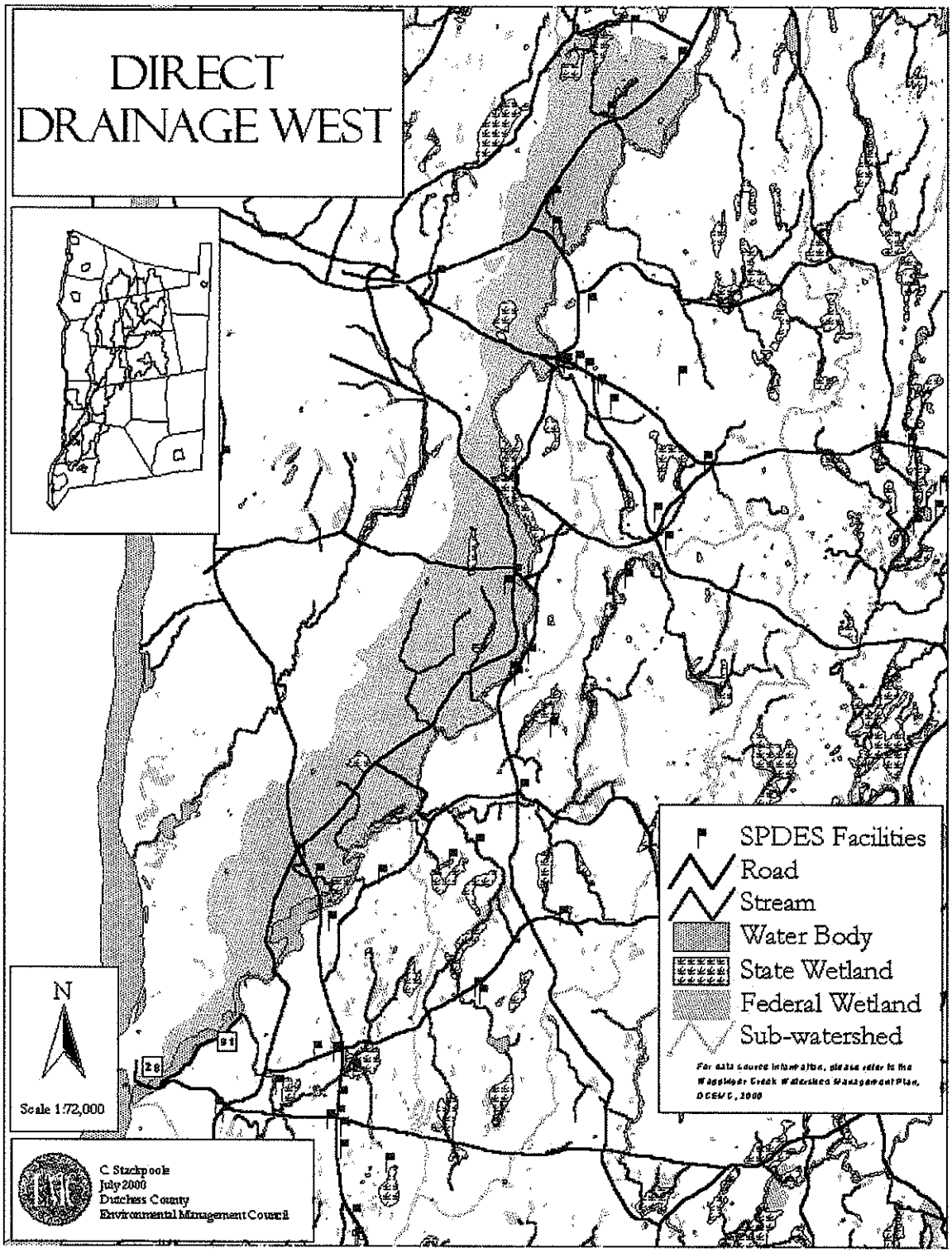
Pleasant Valley (Main Stem) - Wapp 16.56 Miles								
					Fecal			
	NO3-N	NO3	PO4-P	Suspended	Coliforms	Discharge	Temperature	
Date	mg/L	mg/L	mg/L	Solids - mg/L	Per 100/mL	CFS	Degrees C	Notes
10/7/97	0.30	1.31	0.038	2.2	NA	*7.6*	NA	
11/11/97	0.08	0.36	0.044	NA	NA	252.3	7.5	
12/17/97	0.27	1.17	0.041	0.8	NA	*92.6*	0.75	
1/8/98	0.12	0.52	0.033	27.1	NA	*425.1*	NA	Event
1/28/98	0.47	2.08	0.018	1.2	NA	278.1	2.5	
2/23/98	0.32	1.39	0.019	1.9	NA	148.8	NA	
3/9/98	0.34	1.48	0.027	16.2	NA	*387.5*	NA	Event
4/1/98	0.25	1.10	0.024	4.1	NA	*250.6*	NA	
4/29/98	0.13	0.59	0.021	2.5	NA	*181.4*	11.25	
5/26/98	0.18	0.77	0.009	1.5	NA	*147.2*	17	
6/12/98	0.33	1.46	0.013	2.4	NA	*64.2*	16	
6/15/98	0.15	0.67	0.032	9.6	NA	*274.9*	16.5	Event
6/30/98	0.32	1.42	0.041	NA	NA	*305.9*	19	Event
8/4/98	0.49	2.14	0.075	NA	NA	*21.4*	NA	
8/11/98	0.45	1.97	0.054	NA	NA	*16.8*	NA	
9/17/98	0.26	1.12	0.048	NA	NA	*6.3*	15	
10/5/98	0.17	0.76	0.011	NA	NA	6.2	10	
2/9/99	0.45	1.96	0.028	1.9	10	223.8	0.75	
3/9/99	0.42	1.87	0.018	2.2	0	270.6	0.5	
5/26/99	1.05	4.62	0.040	3.7	160	198.9	11.75	
6/24/99	0.19	0.83	0.001	2.1	200	25.9	19	
8/3/99	0.07	0.33	0.047	0.8	80	7.1	19.75	
10/4/99	0.18	0.77	0.024	1.5	NA	113.6	12	Event
11/23/99	0.27	1.17	0.030	2.4	30	70.2	8.5	
Italicized = Projected Flow - Provisional data, subject to review								

Table 2.4.2

Wappinger Creek Subwatershed Nonpoint Source Pollution Identification Project Data

Red Oaks Mill - Wapp 8.01 Miles								
					Fecal			
	NO3-N	NO3	PO4-P	Suspended	Coliforms	Discharge	Temperature	
Date	mg/L	mg/L	mg/L	Solids - mg/L	Per 100/mL	CFS	Degrees C	Notes
10/7/97	0.27	1.17	0.044	2.17	NA	15	NA	
11/11/97	0.09	0.39	0.032	NA	NA	304	7	
12/17/97	0.32	1.43	0.035	2.06	NA	144	1.5	
1/8/98	0.09	0.37	0.048	35.74	NA	649	NA	Event
1/28/98	0.54	2.39	0.056	1.03	NA	414	1.5	
2/23/98	0.39	1.71	0.031	1.14	NA	286	NA	
3/9/98	0.42	1.83	0.025	28.91	NA	592	NA	Event
4/1/98	0.29	1.28	0.026	2.36	NA	384	NA	
5/26/98	0.23	0.99	0.012	1.89	NA	227	15.5	
6/12/98	0.41	1.82	0.027	2.22	NA	101	16	
6/15/98	0.18	0.81	0.023	10.04	NA	421	16.5	Event
6/30/98	0.34	1.51	0.034	NA	NA	468	20.25	Event
8/4/98	0.49	2.16	0.068	NA	NA	36	NA	
8/11/98	0.41	1.81	0.101	NA	NA	29	NA	
9/17/98	0.11	0.47	0.044	NA	NA	13	16.5	
10/5/98	0.14	0.62	0.036	NA	NA	10	11.5	
1/13/99	NA	NA	NA	1	NA	165	0.25	Not Preserved
2/9/99	0.52	2.31	0.024	1.7	7	352	0.75	
3/9/99	0.41	1.80	0.023	2.5	0	393	0.75	
5/26/99	0.17	0.76	0.044	2.5	200	309	11.25	
6/24/99	0.22	0.96	0.02	1.3	200	34	19	
6/29/99	0.45	1.98	0.028	55.57	NA	26	19	
8/3/99	0.07	0.30	0.05	4.327	60	6.9	19.75	
8/26/99	NA	NA	NA	NA	NA	36	NA	Not Sampled
9/16/99	0.10	0.44	0.056	4.501	5480	92	15	Floyd First Flush
9/17/99	0.35	1.54	0.075	33.2	NA	2050	12	Floyd Peak Flow
9/30/99	0.33	1.44	0.034	1.8182	1300	163	14.75	Event
10/4/99	0.24	1.07	0.034	4.3767	550	173	12.5	Event
11/23/99	0.19	0.85	0.023	1.0358	10	110	10	
Discharge - USGS gauging station at Red Oaks Mill site.								

Table 2.4.2 (Continued)


DIRECT
DRAINAGE WEST
SPDES Facilities
Road
Stream
Water Body
State Wetland
Federal Wetland
Sub-watershed
N
Scale 1:72,000
C Stackpoole
July 2000
Dutchess County
Environmental Management Council

2.4.3 Casper Kill watershed
Vassar College through the associated Vassar Environmental Research Institute concluded a study of the existing water quality of the Casper Kill in a study dated February 2009. A reference to this report is included as a link on the Town Website.

2.4.4 Fall Kill watershed
The Fall Kill watershed (also known as the Fall Kill and as Fall Kill Creek) is contained entirely within Dutchess County, NY, and covers approximately 12,476 acres or 19.5 square miles (Figure 1 and Table 1). The Fall Kill originates in northern Hyde Park and Clinton, and flows through Pleasant Valley, the Town of Poughkeepsie, and the City of Poughkeepsie where it enters the Hudson River. Approximately 28,500 people live within the watershed (U.S. Census Bureau, 2000). Based on existing zoning, the number of dwelling units in the watershed's municipalities could increase considerably in the future (Table 2). Over half of the watershed area and 65% of the stream's length is within the Town of Hyde Park (Table 2).

Table 1. Size and area characteristics of each municipality within the Fall Kill watershed.

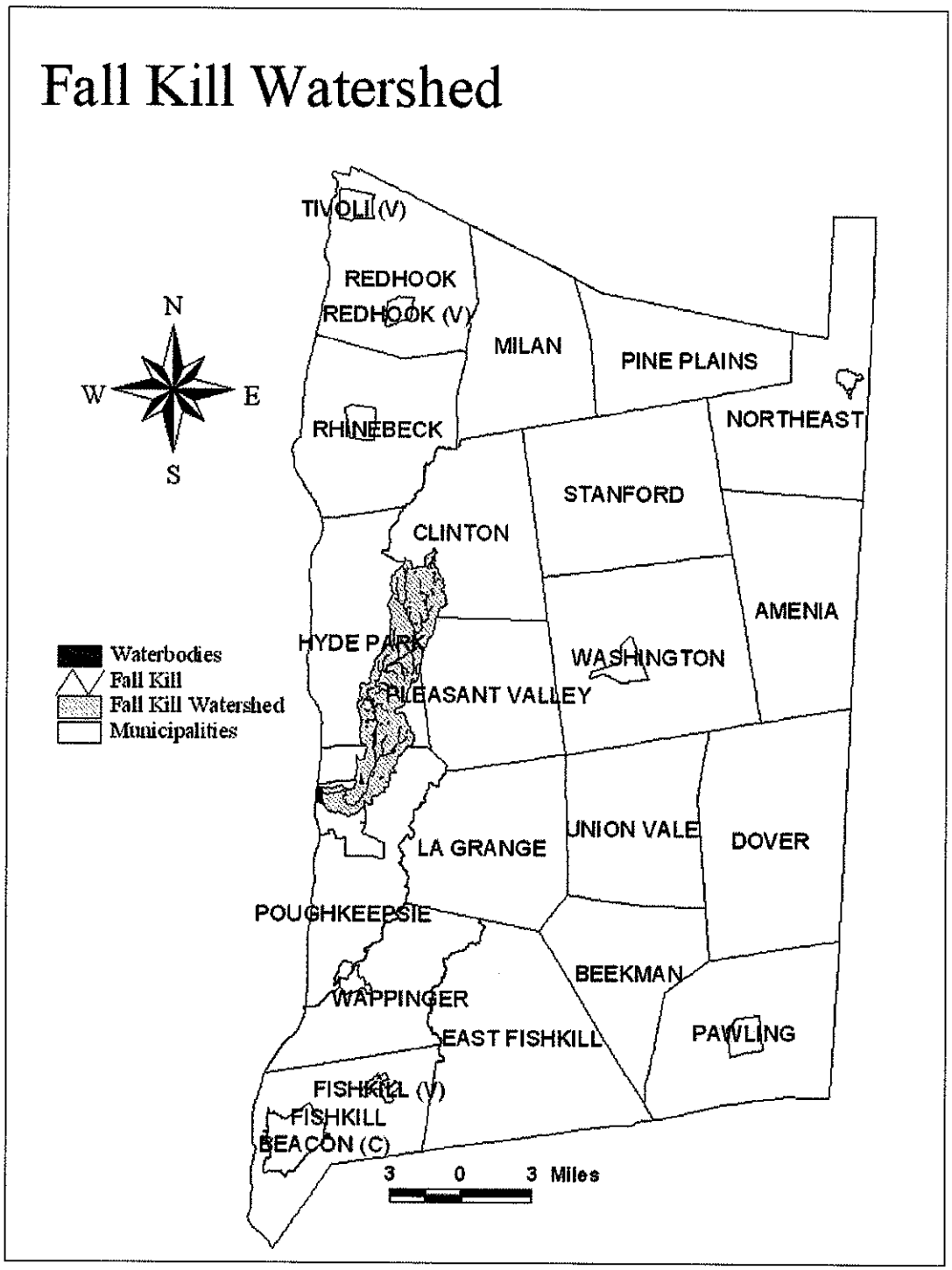
Municipality/Municipality Size (Acres)/ Watershed Area in Municipality (Acres)/ Percent of
Municipality in Watershed/ Percent of Watershed in Municipality

Clinton 24,847 1,888 7.6% 15.1%
Pleasant Valley 21,201 613 2.9% 4.9%
Hyde Park 25,467 6,905 27.1% 55.3%
Town of Poughkeepsie 19,773 1,700 8.6% 13.6%
City of Poughkeepsie 3,649 1,301 35.7% 10.4%

Table 2. Stream mileage and watershed characteristics of the Fall Kill by municipality.

Municipality Length of stream (miles) (includes tribs.)/ Percent of stream miles/ Estimated existing # of dwelling/ Units (DU) Additional # of DU if built out

Clinton 4.8 12.3% 162 278
Pleasant V. 1.4 3.7% 56 181
Hyde Park 25.4 65.3% 2452 1978
T. of Poughkeepsie 4.2 10.8% 1165 3184
C. of Poughkeepsie. 3.1 7.9% 3579 N.D.


Fall Kill Watershed
TIVOLI (V)
REDHOOK
REDHOOK (V)
MILAN
PINE PLAINS
NORTHEAST
RHINEBECK
STANFORD
CLINTON
AMENIA
HYDE PARK
WASHINGTON
PLEASANT VALLEY
LA GRANGE
UNION VALE
DOVER
POUGHKEEPSIE
BEEKMAN
WAPPINGER
EAST FISHKILL
PAWLING
FISHKILL (V)
FISHKILL
BEACON (C)
N
W
E
S
Waterbodies
Fall Kill
Fall Kill Watershed
Municipalities
3 0 3 Miles

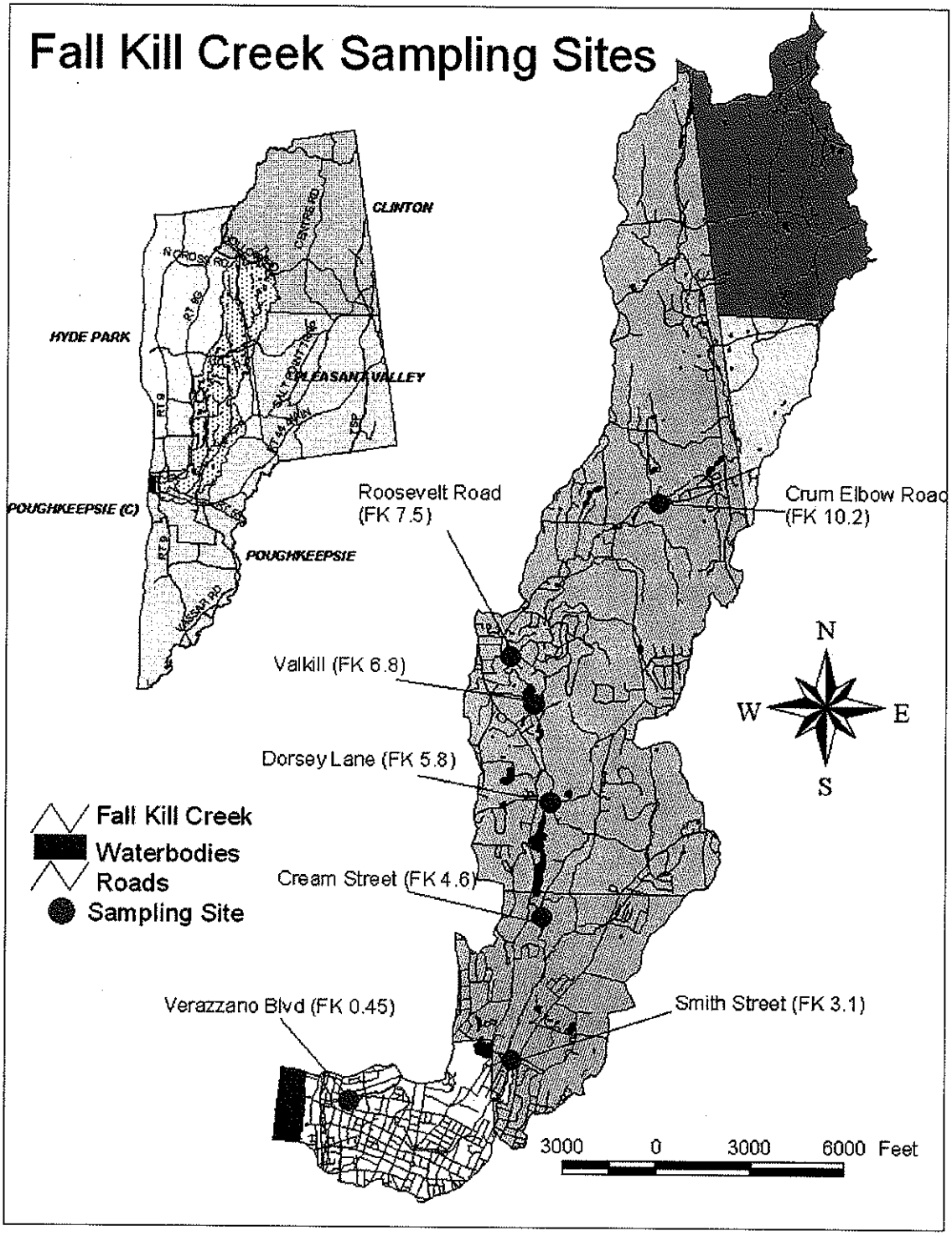

Fall Kill Creek Sampling Sites
CLINTON
HYDE PARK
PLEASANT VALLEY
POUGHKEEPSIE (C)
POUGHKEEPSIE
Roosevelt Road (FK 7.5)
Crum Elbow Road (FK 10.2)
Valkill (FK 6.8)
Dorsey Lane (FK 5.8)
Cream Street (FK 4.6)
Verazzano Blvd (FK 0.45)
Smith Street (FK 3.1)
N
W
E
S
Fall Kill Creek
Waterbodies
Roads
Sampling Site
3000 0 3000 6000 Feet

Table 7. Fall Kill mean water temperature and dissolved oxygen content collected in the summer of 2004.

Site	Mean Temperature (Degrees Celsius)	SD	Mean Dissolved Oxygen	SD	Mean pH	SD
Dorsey Lane	21.1	1.23	5.7	0.69	7.5	0.21
Cream St	22.7	0.85	6.6	2.1	7.4	0.22
Smith St	21.5	0.61	7	0.45	7.5	0.05
Verazzano Blvd	20.8	0.65	8.5	0.5	7.7	0.09

Table 8. Nutrient analysis (ppm) of water samples from the Fall Kill, summer 2004. Values are means based on four samples taken at weekly intervals for each site.

Site	Chloride	Nitrate	Phosphate	Sulfate
Dorsey Lane	60.51	1.20	0.120	19.3
Cream Street	59.58	0.35	0.058	13.06
Smith Street	61.44	0.70	0.051	15.70
Verazzano Blvd.	80.40	1.15	0.048	19.30

2.4.5 Hudson River estuary watershed

2.4.5.1

The Beacon Institute for Rivers and Estuaries (www. BIRE.org) is an organization that is dedicated to the research and preservation of rivers and estuaries worldwide. Please visit their website for additional information about current activities.

2.5 Geographic Areas of Concern

Land use directly affects the potential for storm water pollution and the types of pollutants found in storm water. Different land uses expose different pollutants to storm water. For example, residential land uses often result in higher nutrient (nitrogen and phosphorous) concentrations in runoff due to the use of fertilizers while metals concentrations are often higher in runoff from commercial areas due to traffic.

High-risk land uses are those that have a higher potential risk or actual presence of pollutants such as sediment, metals, nutrients, and pathogens. The highest risk areas are those that contain a high percentage of impervious area, activities using dangerous chemicals, and high human activity thus creating a higher degree of human impacts (including automotive impacts). The high risk areas often have industrial, commercial, transportation, quarry, and waste

disposal land use designations. Industrial and commercial land uses can contribute solids, and oils and grease from high volume parking areas. They may also contribute toxics and metals dependent upon the activities conducted at the site from areas associated with manufacturing and waste disposal. Transportation related land uses have the potential to degrade water quality from vehicular spills (oils, grease, antifreeze), salting and sanding, and particulate deposition. Higher concentration of metals can also be found due to tire wear, brake pads, and body wear.

High risk areas within the Town of Poughkeepsie include:

- (To be determined)

Medium risk areas are those that contain a considerable amount of impervious area and human impacts (including pet waste impacts). These areas consist of high density and medium density land use designations. Residential land uses can be significant sources of nutrients and pathogens. Improper lawn care can contribute excess nutrients to the storm drainage system. Sanitary systems that are not properly designed, constructed, or maintained can be significant sources of nutrients, pathogens, and organic contaminants. Residential land uses may be a source of toxic contaminants due to improper disposal of household hazardous wastes.

Medium risk areas within the Town of Poughkeepsie include:

- (To be determined)

Active and idle agricultural lands, as well as cemeteries and developed recreation (e.g. golf course) lands are associated with fertilizer and pesticide runoff pollution.

Areas of potentially higher concentrations of fertilizer and pesticide runoff pollution include:

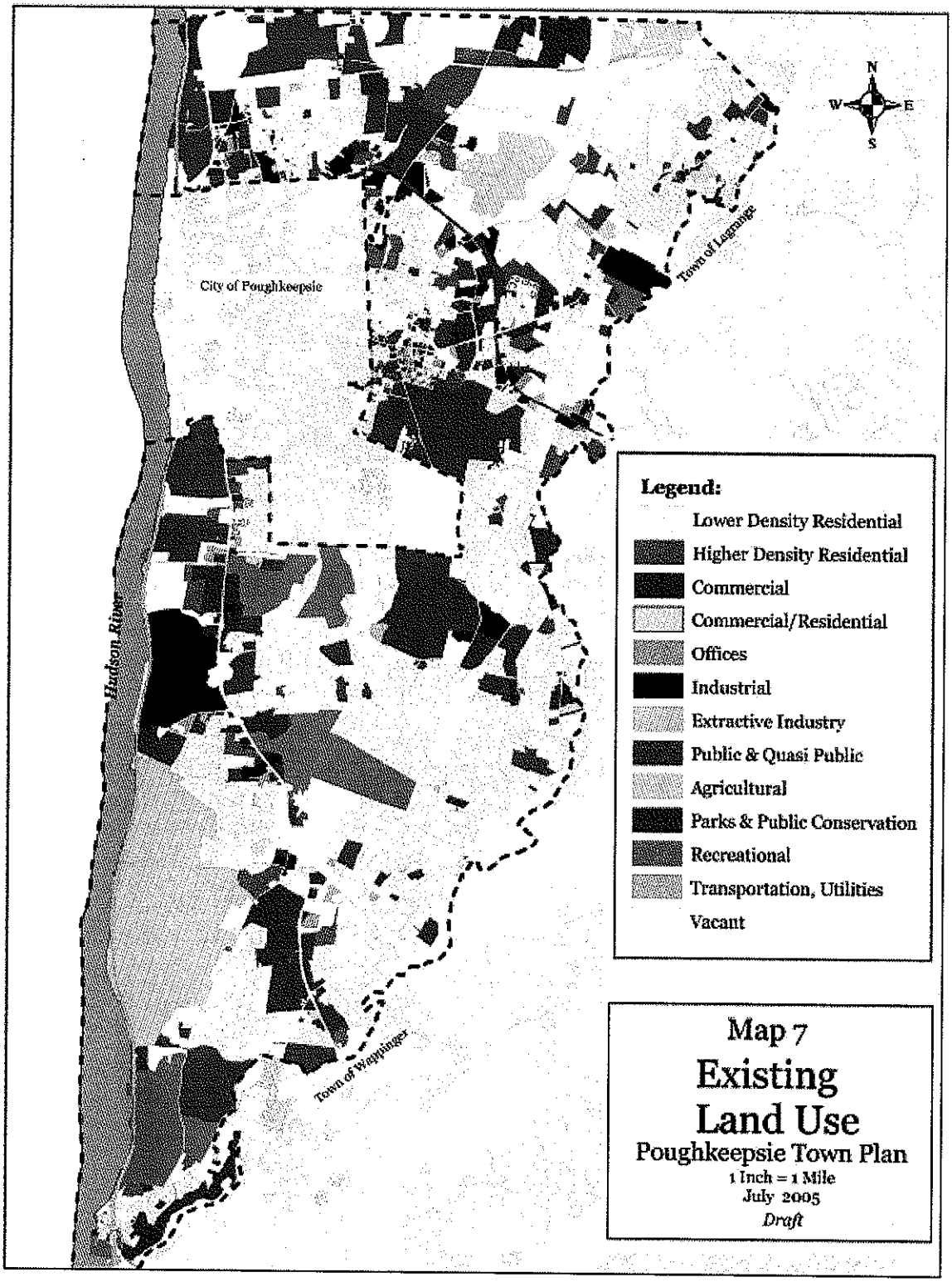


Figure 1 EXISTING LAND USE

2.6 Target Audiences

IDENTIFY TARGET GROUPS. MAY INCLUDE, BUT IS NOT LIMITED TO, NON-ENGLISH SPEAKERS, TOURISTS, THOSE RECREATING IN YOUR AREA, ETC. CAN USE CENSUS DATA TO DETERMINE NEED FOR NON-ENGLISH LANGUAGE EDUCATIONAL CAMPAIGNS.

2.7 Available Educational Resources

There are a number of resources and public education currently available or in-place to assist the Town of Poughkeepsie achieve the requirements of this minimum control measure. Examples of education and outreach materials are provided in Appendix G. The following is a list of the groups or programs that represent opportunities for education and outreach to the public.

2.7.1 School Programs

The following paragraphs summarize existing environmental education or non-point source pollution education programs that are taught in public schools within the Town of Poughkeepsie MS4.

Grades K-5:
XXX

Middle School:
XXX

High School
XXX

2.7.2 Available Teaching Resources

Teachers in schools within the Town of Poughkeepsie MS4 have a number of resources and periodicals available to them that focus on environmental issues including water quality. Some of these resources are:

USEPA Environmental Education Center (EEC)
The on-line EEC provides teachers with technical background, curriculum and activities information, and workshops on a variety of environmental topics. This resource is useful in providing educators with the tools to teach students in grades K-12. The EEC web page is

www.epa.gov/teachers. More information on educational resources, including having USEPA employees provide talks and presentations at public events or in schools, may be obtained from the USEPA Region 2 office located at 290 Broadway New York, NY 10007-1866, (212) 637-3000.

The Environmental Education Grant Program was developed to provide financial support for projects that "design, demonstrate or disseminate environmental education practices, methods or techniques." Organizations eligible to apply for grant funds are:

- A local or tribal government education agency, college, or university; a state education or environmental agency; a 501(c)(3) not-for-profit organization; or a noncommercial educational broadcasting entity is eligible.
- A teacher's school district, an educator's not-for-profit organization, or a faculty member's college or university may apply, but an individual teacher is not eligible.
- The primary applicant must be based in the U.S.; partner organizations and project activities may be located outside the U.S.

USEPA Student Center
USEPA's Student Center web site provides information and activities for students to learn more about surface water ecosystems, environmental laws, and pollution. The site is located at www.epa.gov/students. There is also the Explorers' Club web page for younger students with games, activities and documents on the basics of environmental education. The Explorers' Club is found at www.epa.gov/kids.

President's Environmental Youth Awards
The President's Environmental Youth Awards is a program that recognizes young people across America for projects that demonstrate their commitment to the environment. Winners of regional certificates in the program are evaluated against winners in other USEPA regions. The national winner receives a plaque issued by the President of the United States at an USEPA awards ceremony. Participants of completed projects will receive a certificate signed by the President. Projects can include a variety topics focused on environmental issues and environmental science. Participation in this awards program can be a mechanism to

promote student interest in other education or participation programs.

Green Teacher
This magazine is produced by and for educators to enhance environmental and global education at all grade levels. It is produced four times per year and contains approximately fifty pages of ideas, activities, perspective articles, reports of what successful teachers, parents, and schools are doing, activities for various grade levels, evaluations of new books, kits, games and other resources. Green Teacher may be contacted at P.O. Box 452, Niagara Falls, NY 14304-0452, e-mail: greentea@web.net, (416) 960-1244.

EARTHWATCH
This magazine is produced bimonthly by the organization of the same name to link business, science, and the community in search of environmental solutions. Contact information: 680 Mt. Auburn Street, P.O. Box 403, Watertown, MA 02272, (800) 776-0188.

Earth Preservers
Earth Preservers is an "environmental newspaper" for kids in grades 3-9 published monthly during the academic season. Contact information: P.O. Box 6, Westfield, NJ 07090.

EE-Link
EE-Link is an on-line environmental education resource guide that can assist educators in locating materials and information for class study guides, activities, and programs (www.eelink.net).

Project WET
Project WET (Water Education for Teachers) is a national nonprofit water education program for educators and young people located on the campus of Montana State University. The goal of Project WET is to facilitate and promote the awareness, appreciation, knowledge and stewardship of water resources through the development and distribution of classroom ready teaching aids and through the establishment of Project WET programs. It is active in all 50 states, the District of Columbia, the U.S. islands and select provinces of Canada. Certified Project WET facilitators conduct free workshops where educators, community leaders and natural resource managers receive instruction in the use of Project WET materials. A workshop lasts six

hours and participants receive the highly acclaimed Project WET Curriculum and Activity Guide. Workshop participants are then encouraged to integrate activities from the Guide into the existing school curriculum or other appropriate forums. This guide is a 500-page publication filled with over 90 innovative, interdisciplinary activities for grades K – 12, most of which are hands-on. Designed to coincide with state and national standards, the Guide addresses the following content areas:

- Water has unique physical and chemical characteristics.
- Water is essential for all life to exist.
- Water connects all Earth systems.
- Water is a natural resource.
- Water resources are managed.
- Water resources exist within social contexts.
- Water resources exist within cultural contexts.

The NYSDEC Regional Environmental Educator, Betsy Ukeritis, may be contacted at (718) 482-6404 for more information about this program.

Healthy Water, Healthy People
Healthy Water, Healthy People is an innovative water quality education program sponsored by Project WET and the Hach Scientific Foundation, which offers hands-on activity guides, testing kits, and training. Healthy Water, Healthy People is for anyone interested in learning and teaching about contemporary water quality education topics. The goal of the program is to raise the awareness and understanding of water quality topics and issues and their relationship to personal, public, and environmental health. The program attempts to provide a clear understanding of these relationships, the connection between water quality and land uses, and the process of analyzing and interpreting data. Healthy Water, Healthy People will help educators address science standards through interactive activities that interpret water quality concepts and promote diverse learning styles, with foundations in the scientific method. The program comes with educator guides for the fourth grade through university level age students as well as testing kits and manuals. The Healthy Water, Healthy People Testing Kits yield in-depth information about eleven water quality parameters. The water quality testing kits include all materials and equipment needed for field and classroom analysis of water samples for chemical, physical, and biological parameters. Healthy Water, Healthy People

Testing Kits are available for a variety of parameters, grade levels, skills, and prices.

For more information about the Healthy Water, Healthy People program visit their website at www.healthywater.org.

2.7.3 Citizen's Groups

Several organizations exist that either currently provide public education resources on stormwater quality issues or could provide a public outreach avenue in developing stormwater awareness and developing partnerships with the public. The organizations that have the best potential to support future stormwater education programs in the Town of Poughkeepsie MS4 are the following:

Dutchess County Soil and Water Conservation District (DCSWCD)
The Dutchess County Soil and Water Conservation District (DCSWCD) is a non-profit, quasi-public organization that functions as a facilitator for meeting the needs of the local land user in the conservation of soil, water and other related resources. DCSWCD's mission is to foster a community-based, locally led approach for the stewardship of Dutchess County's natural resources through educational campaigns and outreaches into local communities, as well as providing technical assistance to residents. The DCSWCD has established partnerships with the Dutchess County MS4 Coordination Committee.

DCSWCD has many programs which provide environmental education including the annual Envirothon and Conservation Field Day, and the educational model, Enviroscape, which may be borrowed by the public for use.

For more information about DCSWCD, contact Ed Hoxsie, Executive Director, at DCSWCD's District Office, 2715 Route 44, Suite 3; Millbrook, NY 12545, (845) 677-8011 ext 3. DCSWCD board meetings are the 3rd Wednesday of each month from 7-9 PM at the District Office and are open to the public.

Dutchess County MS4 Coordination Committee
The Dutchess County MS4 Coordination Committee consists of consists of the Cities of Beacon and Poughkeepsie, the Towns of Beekman, East Fishkill, Fishkill, Hyde Park,

LaGrange, Pawling, Pleasant Valley, Poughkeepsie, Wappinger, and the Villages of Fishkill, Pawling, and Wappingers Falls. The Committee also includes representatives from the Dutchess County Department of Department of Public Works, the New York State Department of Transportation, and the Dutchess County Soil and Water Conservation District.

The purpose of the Committee is to foster the cooperation and exchange of information among the participating communities in addressing issues of mutual concern related to compliance with the State and Federal Phase II Stormwater regulations; to promote a discussion of issues relating to the Phase II Stormwater program; to propose recommendations and make reports that identify mutually beneficial solutions to the concerns facing the membership; to seek funding sources that may help to accomplish the goals of the Committee and the participating communities, and to disburse funds as may be required. Copies of the Intermunicipal Agreement and the bylaws for this organization are located in Appendix E.

For more information about the Dutchess County MS4 Coordination Committee contact Ed Hoxsie, Executive Director, at DCSWCD's District Office, 2715 Route 44, Suite 3; Millbrook, NY 12545, (845) 677-8011 ext 3.

Conservation Advisory Commission
contact person: Doreen Tignanelli
doreentig@aol.com

As part of the Town's Public Outreach, a listing of agencies And/or people that have expressed an interest in the Town's Policies in regard to Stormwater Management has been Identified. This constant list is described as a "Stakeholders" List (see appendix F). This group receives regular bulletins via email from the Public Stormwater Contact on various issues.

2.7.4 Regional, State and National Resources

There are a number of educational resources available for homeowners and businesses such as stormwater guidance documents, programs for children, and educator training

workshops. Many of the education and outreach materials developed can, in many cases, eliminate the need for the Town of Poughkeepsie to develop its own materials. Some of the available resources are listed below.

U.S. Environmental Protection Agency
The Office of Wastewater Management (OWM) provides technical resources to persons responsible for designing and implementing BMPs recommended to achieve the goals of the six minimum control measures. These resources are available electronically at USEPA web sites. While the resources provide some background to the development of the Phase II regulations, they are largely oriented to municipalities and organizations that are developing stormwater management plans as opposed to the general public.

The Office of Water has created Adopt Your Watershed, a campaign to encourage citizens and groups to work at protecting and restoring surface and groundwater quality (www.epa.gov/adopt). The program provides a resource for communities or groups to network with other groups nationwide. This networking and watershed approach can enable a community to share, develop or use successful strategies from existing programs. The resources available include training courses and publications offered by the Watershed Academy to assist with implementing stormwater programs. These educational materials can be used by educators, private groups that adopt a watershed, or by municipal employees responsible for implementing the program. The Watershed Academy also offers Academy 2000, an internet-based learning tool for distance learning (www.epa.gov/owow/watershed/wacademy).

New England Interstate Water Pollution Control Commission (NEIWPCC)
The New England Interstate Water Pollution Control Commission (NEIWPCC) provides educational programs, promotes participation in water quality restoration programs, and supplies outreach materials. Highlights of the NEIWPCC offerings are the NEIWPCC website, an Environmental Training Center, youth programs, newsletters such as L.U.S.T.LINE and Water Connection, informational brochures, workshops, and technical advice.

American Rivers
American Rivers is a national, non-profit, conservation organization dedicated to protecting and restoring healthy natural rivers and the variety of life they sustain for people, fish, and wildlife. They provide innovative solutions to improve river health; raise awareness among decision makers; serve and mobilize the river conservation movement; and are collaborating with their partners to develop a national "river agenda." This will create a unified vision for improving river health across the country. Along with conservation efforts, they promote public awareness about why healthy rivers matter for fish and wildlife, kayakers, canoeists, and anglers, and for our communities as a whole. American Rivers works closely with grassroots river and watershed groups across the country. Staff members also collaborate with other conservation groups, local citizens and businesses, and various federal, state, and tribal agencies to build coalitions and provide technical support. Their website provides educational resources including a Lewis and Clark animation about how the Missouri River has changed, River ABC's for kids and teachers, and a tools and links page. American Rivers has also published a Draft River Threats List and a River Agenda, which is a plan for creating healthy rivers. For more information, please visit www.amrivers.org.

National Watershed Network (NWN)
The National Watershed Network (NWN) is a coordinated national effort to encourage the formation of local, voluntary watershed partnerships and help assure that these partnerships successfully attain their goals. More than 70 diverse National Partners representing private and public corporations, government agencies, and non-profit organizations sponsor the initiative.

Each National Partner agrees to provide financial and/or in-kind support. The conservation Technology Information Center (CTIC), a non-profit data and technology information transfer center coordinate the national effort. In addition to maintaining the watershed network, National Watershed Calendar, and many other on-going tools for watershed coordinators, NWN also provides the following:

- Consistent messaging among all National Partners to state and local leaders of organizations, government agencies and companies.

- A connection between National Partners who have useful tools and coordinators of local watershed partnerships.
- A resource to share state activities and successes with state-level stakeholders in other states and regions.
- Encouragement for broad-based state-level partnerships that provide support to local watershed partnerships.
- A way to use and share processes and methods that have been found to work successfully for watershed coordinators.

For more information, please visit www.ctic.purdue.edu/KYW/nwn/nwn.html.

Natural Resources Conservation Service (NRCS)
The Natural Resources Conservation Service (NRCS) is a federal agency that works hand-in-hand with the people of Rhode Island to improve and protect their soil, water and other natural resources. For decades, private landowners have voluntarily worked with NRCS specialists to prevent erosion, improve water quality and promote sustainable agriculture. This includes helping landowners develop conservation plans, create and restore wetlands, restore and manage other natural ecosystems as well as advise on stormwater remediation, nutrient and animal waste management, and watershed planning. NRCS provides has several educational resources including tip sheets on topics like nutrient management and multi-media information on topics like backyard conservation.

Conservation Programs offered and assisted by NRCS include:

- Environmental Quality Incentives Program (EQIP) – Provides technical, educational, and financial assistance to farmers to help them comply with environmental laws while encouraging environmental enhancement.
- Farmland Protection Program (FPP) – Provides funds to purchase the development rights to farmland, thus preserving quality farmland for agricultural use.
- Wildlife Habitat Incentives Program (WHIP) – Provides both technical assistance and cost-share assistance for farmers who want to voluntarily improve fish and wildlife habitat and restore and managing natural ecosystems on their property.
- Watershed and River Basin Planning and Installation (PL566) – Provides technical and financial assistance in cooperation with local sponsoring organizations, state

agencies, and others for watershed-based projects. NCRS cooperates on projects for watershed protection; flood prevention; water quality improvements; soil erosion reduction; rural, municipal and industrial water supply; irrigation water management; sedimentation control; fish and wildlife habitat enhancement and wetland restorations.

- Resource Conservation and Development (RC&D) – Provides local people with the means to solve natural resource problems and promote sustainable use of natural resources in rural areas. The program aims to improve the quality of life by providing practical solutions for community development, land conservation, environmental enhancement and water management.
- National Resources Inventory (NRI) – This is a compilation of natural resource information on non-federal land throughout the United States. It captures data on land cover and use, soil erosion, prime farmland, wetlands, habitat diversity, selected conservation practices and related resource attributes at more than 800,000 scientifically selected sample sites.
- Emergency Watershed Protection (EWP) Program – It is a disaster recovery program made available in emergency situations when neither the state nor the local community is able to repair a damaged watershed.
- Earth Team Volunteer Program – Provides volunteers with opportunities to use their talents on behalf of conservation. Earth Team volunteers do not receive a salary from NRCS but they perform services that are essential to the conservation mission of the agency. Anyone 14 years of age and older can join the Earth Team by calling a local NRCS office.

More information about NRCS can be found at www.nrcs.usda.gov, while New York programs can be researched at www.ny.nrcs.usda.gov. In Dutchess County, David Mortensen, Soil Conservationist, can be contacted for more information at (845) 677-3952 or david.mortensen@ny.usda.gov.

Cornell Cooperative Extension – Dutchess County
There are several outreach programs offered by the Cornell Cooperative Extension – Dutchess County (CCEDC) that may be beneficial to the municipality for its stormwater education and outreach program. In fact, the mission of CCEDC's Environment Program is "through education,

research and partnerships, the Environment Program empowers individuals and municipal groups to expand their knowledge and actions to protect, restore and enhance the environment of Dutchess County for future generations. The Environment Program will be a leader in research-based education to increase awareness, knowledge and action on local, regional and global environmental issues."

CCEDC also has an active 4H Youth Development Program including groups for No Child Left Inside (develop teen environmental leaders) and The Outdoor Adventure Club.

The Cornell Cooperative Extension – Dutchess County offices are located 2715 Route 44; Millbrook, NY 12545, (845) 677-8223, ext. 100, http://counties.cce.cornell.edu/dutchess

Beacon Institute for Rivers and Estuaries
199 Main Street
Beacon, NY 12508
Contacts – Regan Chichester
(845) 838-1600
www.bire.org

2.8 Best Management Practices (BMPs)

The public education/outreach program in the Town of Poughkeepsie MS4 includes several elements as follows:

- Providing a general education to the public about stormwater quality issues that will both improve their awareness, change habits that could impact water quality, and build support for funding of stormwater quality programs.
- Developing school programs that will build long-term awareness and support for stormwater programs.
- Targeting specific areas and issues where enhanced public education could provide significant benefits.

The Public Education and Outreach BMPs in Table 2.8 have been chosen by the Town of Poughkeepsie MS4 to meet the requirements of this permit. Each BMP has an associate responsible party(ies) and/or Department(s), measurable goals, and timeline to assist in evaluate the success of the Town's public education/outreach program. Any additional reference material pertaining to the public education/outreach minimum measure can be found in Appendix G.

TABLE 2.8
PUBLIC EDUCATION/OUTREACH BEST MANAGEMENT PRACTICES
TOWN OF POUGHKEEPSIE

Best Management Practice (BMP)	Responsible Party(ies)/Department	Measurable Goals	Timeline
Regional stormwater education program.	Dutchess County MS4 Coordination Committee	Brochures Developed and Distributed	
Town staff trained on pollution prevention/good housekeeping	SMO, Town Highway, Parks and Recreation, Building Maintenance	Staff trained	Trained [annually/2 years]
Town/City staff trained on erosion and sediment control	SMO, Town Engineer	Staff trained	Trained [annually/2 years/4 years]

2.9 Required Implementation Reporting

The Town of Poughkeepsie shall report on the following items annually:

- 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.).
- Education and outreach activities performed as required by other MCMs including but not limited to:
  - IDDE education activities planned or completed for public employees, businesses, and the general public
  - construction site stormwater control training planned or completed
  - employee pollution prevention / good housekeeping training planned or completed
- Report on effectiveness of program.

3.0 PUBLIC INVOLVEMENT/ PARTICIPATION

3.1 The Responsible Party is Eric Hollman and the Responsible Department is the Town Planning Department.

3.2 State and Federal Regulatory Requirements

The objective of this minimum control measure is to encourage public participation in the MS4's stormwater program. The anticipated benefits of public involvement and the success of the program are: free intellectual and labor resources; greater support for programs operated by citizen volunteers; faster implementation of minimum control measures (such as illicit discharge detection); fewer legal challenges; and a potential measure of program success. Involvement can include participating in public meetings, providing legislative activism, developing and implementing BMPs, or becoming an educator. To satisfy the requirements of this minimum control measure, the MS4 must:

1. Comply with the State Open Meeting Law and local public notice requirements, such as Open Meetings Law, when implementing a public involvement/participation program;
2. Develop and implement a public involvement/participation program that:
   a. identifies key individuals and groups, public and private, who are interested in or affected by the SWMPP;

b. identifies types of input the permittee will seek from the key individuals and groups, public and private, to support development and implementation of the SWMPP and how the input will be used; and
c. describes the public involvement / participation activities the permittee 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

3. Identify a local stormwater public contact
4. Complete an annual report presentation
5. Develop, record, periodically assess and modify as needed measurable goals; and
6. Select appropriate public involvement / participation activities and measurable goals to ensure the reduction of POCs in stormwater discharges to the MEP.

3.3 Public Noticing

According to the State Open Meeting Law and local public notice requirements all events will be noticed on the municipal website.

3.4 Local Stormwater Public Contact

Eric Hollman is designated as the Stormwater Public Contact in the Town of Poughkeepsie.

3.5 Presentation of Annual Report

Per GP-0-008-002, prior to submitting the final annual report to the NYSDEC, a draft annual report will be presented to the public so that the public can ask questions about and make comments on the annual report. The Town of Poughkeepsie includes the draft and final annual reports on the internet as a link on the municipal webpage. The public, including identified stakeholders, will have the opportunity to provide comments on the draft report by submitting them to the Stormwater Public Contact, Eric Hollman. In addition, the Town of Poughkeepsie will hold a public hearing at a Town Board meeting to receive public input on the draft report before preparing and submitting the final report.

3.6 Available Resources

The following section describes some of the organizations and programs that may help the Town implement the public participation component of its stormwater program. Encouraging public participation in existing volunteer programs that are offered by local and regional groups can minimize the need for creating new programs and allow the Town to focus its financial and human resources on outreach and sponsorship for these programs.

3.6.1 School Programs

The school department currently operates a school wide recycling program and students from several of the schools are actively involved with its implementation. There are no programs in place for students to participate in stormwater pollution prevention or cleanup projects, however the students are responsible for the sorting of recyclables in preparation for transportation to the local recovery center.

3.6.2 Boy and Girl Scouts of America

Boys and girls may be involved in Scout programs from ages 5 through 17 and are supervised by adult volunteers. Scouts are involved in various community service projects and can be beneficial to implementing outfall identification, storm drain marking, and river cleanup projects or environmental awareness outreach programs. Coordination with local Scout leaders is necessary to implement any activity with their group. The Boy Scouts have eight District Executives that meet monthly to discuss possible projects. Material about potential stormwater related projects can be distributed at this meeting and then passed on to troop leaders. The Girl Scouts have Field Coordinators and Service Managers in every town. Information about potential projects can be shared with the Field Coordinators, who will in turn pass the information to the Service Managers and then the troops. Distributing information about the impacts of polluted stormwater on our environment, the Town's Phase II program, and the capacity in which Boy and Girl scouts can help their community are the first steps to promote participation.

The Boy Scouts provides its youth with a conservation program designed to be incorporated throughout the Scouting program and teaches awareness and understanding of conservation as a wise and intelligent

management of natural resources. The conservation "Good Turn" program is an opportunity for scouts to join with conservation and environmental organizations (federal, state, local, and private) to carry out a conservation "Good Turn" in their home communities.

The Boy Scouts also provide an outdoor adventures program of which their "Leave No Trace" policy plays a key role. This principles of this policy include planning ahead (not bringing materials that create waste and knowing the area to be explored), traveling and camping on durable surfaces (not trampling vegetated areas which can lead to erosion), dispose of waste properly (pack out what you pack in, dispose of wastewater far enough from surface water), leave what you find, minimize campfire impacts, respect wildlife, and be considerate of other visitors. A "Leave No Trace Awareness Award" is available to scouts who successfully follow these principles. In Dutchess County, scouts have participated in many activities in their communities including Earth Day cleanups.

The Girl Scouts are offering a partnership initiative called Linking Girls to the Land. This partnership is between the Girl Scouts of the USA and nine natural resource conservation agencies including USDI Bureau of Land Management, USDA Forest Service and USDA Natural Resource Conservation Service. This initiative encourages girls to become involved in conservation and natural resource issues and careers on a national and local level. Most program activities fall into four areas: environmental education; volunteer service; outdoor skills development; and career awareness.

The Water Drop Patch, a facet of Linking Girls to the Land, is a project jointly developed by the United States Environmental Protection Agency and the Girl Scout Council of the Nation's Capital (GSCNC). The participants gain hands-on skills in water management and resource conservation by encouraging the girls to:

- Make a difference in their communities by becoming watershed and wetlands stewards;
- Use their skills and their knowledge to educate others in their community about the need to protect the nation's valuable water resources;
- Explore the natural world to gain an interest in science and math; and

- Use the Internet as a source of information.

For additional information about the Water Drop patch view the project booklet at www.epa.gov/adopt/patch or by calling the National Service Center for Environmental Publications at (800) 490-9198.

Funding for these can be acquired through the EarthPACT (Plant and Animal Conservation Team), which will award implementation grants to each council for up to $2,500. The EarthPACT encourages the formation of partnerships with local environmental education, nature, or science-related organizations, business or county government agencies.

The Girl Scouts are also offering a new program called GirlFACTS (Girls, Families, and Communities Together in Science). This program offers two related activities entitled "geology rocks" and "weather wise" which discuss the topics of the water cycle and acid rain. The topics of stormwater runoff pollution and prevention could easily be added as a topic to these established programs.

The Girls Scouts have also been involved in Earth Day community clean-ups. The Girl Scouts Heart of The Hudson is located in Pleasantville, NY 10570, (914) 747-3080 and may be found at www.girlscoutshh.org. The field manager for Dutchess County is Ms. Dolores DaSilva, at (845) 452-1810 ext 11.

The Boy Scouts of America Hudson Valley Council office is located at 6 Jeanne Drive; Newburgh, NY 12550 and may be found at www.hvcbsa.org. The Executive Director of the area is Mr. Stephen Gray (845) 566-7300.

3.6.3 Citizen's Groups

The groups outlined in the Public Education/Outreach minimum control measure may also provide opportunities for public involvement in a variety of watershed based or specific water body protection and cleanup projects. Some existing projects may help achieve the Town's goals in their program with or without modification and, in some cases, new programs may need to be established. A listing of groups and a summary of some of their current activities available to residents: Is described in Appendices F and H.

3.6.4 Regional, State and National Resources

Adopt Your Watershed
As described in the public education and outreach section of this report, the USEPA has created this campaign to encourage citizens and groups to work at protecting and restoring surface and groundwater quality in their watershed. The networking and training resources available from this program can help educators, communities, or private citizens improve water quality and implement their local stormwater program through education and participation.

Give Water a Hand
This is a national watershed education program of the University of Wisconsin Environmental Resources Center. Support for Give Water a Hand is provided by National Fish and Wildlife Foundation, the U.S. Department of Agriculture, CSREES and NRCS designed to involve young people in local environmental service projects (www.uwex.edu/erc/gwah). The program provides guidance to students on how to complete an environmental service project and the basic information necessary to understand their watershed. Free guides are available on the Internet, but printed copies require printing and shipping fees. The publications are the youth Action Guide (also in Spanish) and the teacher's Leader Guidebook.

3.6.5 Local Media Resources

The local media can be a valuable asset to the Town as part of their public education and outreach. There are several available resources for cable television and newspapers including:

The Poughkeepsie Journal (www.poughkeepsiejournal.com)

Cable Access Channel 22 for Cablevision system subscribers includes viewing of all Town Board and Planning Board meetings as well as airings of video education materials (i.e. USFPA video entitled "After the Storm").

Town of Poughkeepsie Municipal Web Page – www.townofpoughkeepsie.com

3.7 Best Management Practices (BMPs)

The Public Involvement/Participation BMPs in Table 3.7 have been chosen by the Town of Poughkeepsie to meet the requirements of this permit. Each BMP has an associate responsible party(ies) and/or Department(s), measurable goals, and timeline to assist in evaluate the success of the Town's public involvement/participation program. Any additional reference material pertaining to the illicit discharge detection and elimination minimum measure can be found in Appendix H.

TABLE 3.7
PUBLIC INVOLVEMENT/PARTICIPATION BEST MANAGEMENT PRACTICES
TOWN OF POUGHKEEPSIE

Best Management Practice (BMP)	Responsible Party(ies)/Department	Measurable Goals	Timeline
Inform local Girl Scout troops about the Water Drop Patch. Provide them with the information found herein and encourage them to participate as a means to foster environmental stewardship in the Town of Poughkeepsie. This program would not only benefit the scouts but also would provide an avenue for a broader public education, as the scouts become watershed and wetland stewards. The Boy Scouts could also be encouraged to use their conservation "Good Turn" program in the area.			

Best Management Practice (BMP)	Responsible Party(ies)/Department	Measurable Goals	Timeline
Coordinate with local Boy and Girl Scout organizations to discuss potential resources that they could contribute to the program (i.e., flyer distribution, storm drain stenciling).			
Use volunteers from the community and local organizations for simple tasks that would improve water quality as well as raise the public's awareness. Public participation will enhance the public education component of the stormwater program with the following tasks: • Expand the Town's current municipal website to include information pertaining to volunteering opportunities either through the Town itself or contact information for other non-profit organizations serving the area. The website should also include notices of upcoming stenciling and cleanup events (including those sponsored by groups other than the Town).			

Best Management Practice (BMP)	Responsible Party(ies)/Department	Measurable Goals	Timeline
Allow the public access to the MS4's Annual Report for review and comment.	Eric Hollman	Present the MS4's draft annual report on the Town's municipal webpage annually. Allow for public comment and questions.	Present draft at first Town Board meeting in May and close comment period 2 weeks later

3.8 Required Implementation Reporting

The Town shall report on the following items annually:

- Annual report presentation information (date, time, attendees) or information about how the annual report was made available for comment.
- Comments received and intended responses.
- 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).
- Report on effectiveness of program.

4.0 ILLICIT DISCHARGE DETECTION AND ELIMINATION

4.1 The Responsible Party is Morris Associates, PLLC and the Responsible Department is the Town Engineering Department.

4.2 State and Federal Regulatory Requirements

Under this Minimum Control Measure, the Town of Poughkeepsie is required to develop and implement a plan to detect and eliminate illicit discharges to its MS4, including development of a storm sewer outfall map showing the location of all outfalls and the names and location of all waters of the United States that receive discharges from those outfalls. This also requires an education and outreach component that is addressed under the Public Education Minimum Control Measure (see Section 2.0). The potential for illicit discharges remains with illegal connections that are often the result of failing septic systems. The following sections detail the regulatory requirements for this effort, the Town's existing programs and controls to meet these requirements, and recommended measures for the Town to become fully compliant with these regulatory requirements.

Commonly, MS4 discharges include wastes and other wastewaters from non-stormwater sources that can significantly impact water quality. Sanitary sewage, process wastewater, floor drains and other wastewaters have been documented in MS4 systems. A common impact is elevated levels of bacteria and pathogens as a result of improper sanitary connections. Because of these water quality impacts, these discharges must either be permitted or removed and connected to the municipal sanitary sewer system for treatment at a wastewater treatment plant. These non-stormwater discharges are often more common in older storm sewer systems

due to less awareness and enforcement in the past when these connections were made.

National Pollution Discharge Elimination System (NPDES) Phase II Stormwater Regulations define these discharges as "illicit discharges," which are further defined in New York State Pollutant Discharge Elimination System (SPDES) regulations. Rule 31(b) Definitions as:

"Illicit discharge means any discharge to a municipal separate storm sewer that is not composed entirely of stormwater except discharges pursuant to a NPDES permit (other than the NPDES permit for discharges from the municipal separate storm sewer) and discharges from fire fighting activities."

Specific requirements of this program consist of the following:

1. Develop, implement and enforce a program to detect and eliminate illicit discharges into the small MS4.
2. Develop and maintain a map, at a minimum within the permittee's jurisdiction in the urbanized area and additionally designated area, showing:
   a. the location of all outfalls and the names and location of all surface waters of the State that receive discharges from those outfalls
   b. by March 9, 2010, the preliminary boundaries of the permittee'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 permittee's jurisdiction
   c. the permittee's storm sewer system (when grant funds are made available or for sewer lines surveyed during an illicit discharge trackdown) in accordance with available State and EPA guidance
3. Field verify outfall locations.
4. 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 permittee's jurisdiction at least once every five years.
5. Map new outfalls as they are constructed or newly discovered within the urbanized area and additionally designated area.
6. 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.

7. Develop 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.
8. Inform public employees, businesses, and the general public of the hazards associated with illegal discharges and improper disposal of waste.
9. Address the categories of non-stormwater discharges or flows as necessary.
10. Develop, record, periodically assess, and modify as needed, measurable goals.
11. Select appropriate IDDE BMPs and measurable goals to ensure the reduction of all POCs in stormwater discharges to the MEP.

Table 4.2.1 provides examples of sources of common illicit discharges.

TABLE 4.2.1
EXAMPLES OF SOURCES OF ILLICIT DISCHARGES

Sanitary Wastes
Improper Oil Disposal
Radiator Flushing
Laundry Wastewaters
Automobile and Household Hazardous Wastes

The New York SPDES regulations allow several categories of non-stormwater discharges to an MS4 if they are not identified as significant contributors of pollutants in the system.

Table 4.2.2 lists allowable non-stormwater discharges, provided they do not adversely impact water quality.

TABLE 4.2.2
ALLOWABLE NON-STORMWATER DISCHARGES

Water Line Flushing
Landscape Irrigation
Diverted Stream Flows
Rising Ground Waters
Uncontaminated Ground Water Infiltration
Uncontaminated Groundwater
Discharges from Potable Water Sources
Foundation Drains
Air Conditioning Condensate
Irrigation Water
Springs
Water from Crawl Space and Basement Sump Pumps
Footing Drains
Lawn and Landscaping Watering Runoff (provided that all pesticides and fertilizers have been applied in accordance with the manufacturer's product label)
Water from Individual Residential Car Washing
Flows from Riparian Habitats and Wetlands
Dechlorinated Swimming Pool Discharges
Residual Street Wash Water
Discharges or Flows from Fire Fighting Activities
Any SPDES Permitted Discharge

With the exception of discharges listed above, current NYS SPDES regulations prohibit non-stormwater discharges to a storm sewer system without specific authorization from NYSDEC in the form of a SPDES permit.

4.3 Illicit Discharge Detection and Elimination

The development of the storm sewer map completed the initial step to detect non-stormwater discharges by locating outfalls where there was a dry weather flow component. While dry weather flow could be groundwater infiltrating into the storm sewer, it is also potentially indicative of an illicit discharge. Moving forward, the following steps will be taken to determine whether the observed flow is from an illicit discharge and, if so, to identify the source of the discharge. To the extent possible, at least 72 hours of dry weather should precede any fieldwork associated with this

program. These inspections should occur during dry weather such that stream height will be lower to expose submerged outfalls as well as to better observe dry weather flows from outfalls that may be indicative of an illicit discharge.

Each outfall has a unique ID number such that its data is correlated with a location on the storm sewer base mapping.

- Where dry weather flow is observed, collect samples to be analyzed for pH, temperature, specific conductivity, ammonia, surfactants and fecal coliform. If the results of these analyses indicate that a potential illicit discharge exists, the upgradient drainage system will be examined to identify the extent of the system where that dry weather flow exists. During these investigations, the following information will be collected on upstream structures:
  - Condition of the structure (including a digital photograph),
  - Pipe sizes, and
  - Specific conductivity of the flow as measured in the field.

An outfall inspection report will be prepared to document the results of the investigations. This report will include the following:

- a cost estimate and work plan to further identify the source(s) of the dry weather flow observed, and
- an opinion of construction cost to correct the anticipated problems.

In those outfalls identified as having a potential illicit discharge, the Town of Poughkeepsie must identify sources of that discharge(s). The recommended approach to accomplish this task follows.

1. Delineate the drainage area of each outfall with a dry weather flow component to determine the extent of potential sources. This could be done by two methods.
   - Utilize TV inspection to identify sources of the dry weather flows. This inspection could identify the extent of the system where there is a dry weather flow component and identify connections to the storm sewer that are contributing dry weather flow.
   - Inspect the drainage system, structure by structure, to determine the extent of the system where there is a dry weather flow component. At this time, the system and its connections where a dry weather flow component was observed, will be mapped, or sketched a minimum. This will be the first task completed as it will limit the extent of the investigation.
2. Inventory the drainage area of each outfall of concern to evaluate the locations of potential pollutant sources. This will

consist of reviewing land use and street maps to identify potential pollutant sources in the drainage area. In addition, when available, water quality data from the outfall of concern should be reviewed to determine what the potential sources may be.

3. Conduct additional "targeted" wet or dry weather sampling at selected locations downgradient of suspected pollutant sources to "bracket" sources of pollutants in the system.
4. Conduct detailed field inventory. Field inventories should be performed on foot and via windshield surveys, beginning at the point discharge, and following the bracketed drainage system up-gradient. The purpose of the field inventories is to further define what the potential source(s) may be.
5. Conduct a site investigation for each suspected source. This may be completed by one of several methods to specifically identify a source. This may include the following methods:
   a. TV inspection to find a specific connection that is contributing dry weather flow. In high groundwater conditions, this method will be less useful. Also, it may be difficult to pin point a specific source in densely developed areas.
   b. Smoke testing could also be used to identify illicit connections. Neighborhoods would need to be warned prior to use of smoke testing in their area. Also, this method may not be effective if the illicit discharges are flowing full or are equipped with traps.
   c. Dye testing would pinpoint a specific discharge. This would require access into buildings and inserting dye at all potential illicit discharges which will require the field staff to be thorough. Permission would be required to enter properties.
6. Eliminate the illicit discharge once found.
7. Confirm elimination of illicit discharges. This could either be done at the outfall or just downstream of the eliminated discharge.

At least initially, the goal of this program will not necessarily be to detect all illicit discharges to the MS4, but instead to focus on identifying the discharges that may actually impact water quality of receiving waters. For example, this program is focused on eliminating illicit discharges that are actually observed to be discharged to waters of the State as opposed to all discharges that may evaporate or infiltrate prior to being discharged from the MS4.

Throughout the implementation of the above program, efforts will be made to maximize public participation. Depending on the success of the public participation program, interested citizens

could provide a significant amount of labor to complete the fieldwork necessary to implement these program components. Public participation in this program will require organization and training of the volunteers to ensure the quality of work is adequate and defensible for any future corrective actions.

Outfalls where access could be hazardous or would require access onto private property will be investigated by Town or other contract employees and not members of the public. Assigned staff will receive appropriate training that includes Occupational Safety and Health Administration (OSHA) health and safety training as well as confined space entry training as needed to implement this program.

Any actions and documents generated in the detection and elimination of illicit discharges will be noted in Appendix I of this document.

4.4 Outfall Mapping

An outfall map was created for the Town of Poughkeepsie which maps 100% of the Town storm sewer system. A large scale map is found at the Town Engineering Department office at Town Hall, and a smaller scale map is found in Appendix J. Additionally, outfall locations have also been included as a layer on the Dutchess County GIS mapping system for access and viewing via the County Intranet system.

As of the last revision of this SWMPP, there are 599 outfalls in the Town of Poughkeepsie, broken down by watershed as follows:

Fall Kill	69
Wappinger	255
Casper Kill	163
Hudson	112

All outfall locations will be verified as part of this program and newly added and/or discovered outfalls will be added to the MS4s mapping as needed.

4.5 Outfall Sewersheds

Outfall sewersheds will be delineated using the following method:

- Existing outfalls will be overlaid over the associated USGS topographic map.
- Sewersheds will be delineated following the topography surrounding each point. Sewersheds may extend outside of the urbanized area and municipal boundaries.

- Where information is available, connections within the stormsewer system which divert stormwater in a direction other than that dictated by topography will be taken into account and the storm sewershed will be adjusted as necessary.

4.6 Outfall Reconnaissance Inventory

All outfalls within the Town of Poughkeepsie jurisdiction will be inspected at least once every five (5) years. The "Outfall Dry Weather Inspection Screening Field Sheet" found in Appendix K will be filled out during this task. All field sheets generated will be added to this SWMPP report in the same Appendix K.

4.7 Municipal Regulations

A municipal law prohibiting illicit discharges into the small MS4 including enforcement procedures was adopted by the Town of Poughkeepsie on May 18, 2005. A copy of this law is included in Appendix L.

The municipal law adopted was certified as being equivalent to the State's model illicit discharge local law by the Dave Hagstrom, Esq., Town Attorney, on April 6, 2010 (letter of certification found in the same Appendix L).

Documentation regarding the enforcement of this law is included in Appendix M.

4.8 Non-Stormwater Discharges

The Town of Poughkeepsie prohibits polluting non-stormwater discharges such as illegal dumping and those listed in Table 4.2.2, as necessary, by Chapter 210 – Zoning.

The MS4 has the following priority areas of concern as it relates to polluting non-stormwater discharges:

- INSERT DESCRIPTION OF AREAS OF CONCERN (GEOGRAPHIC, AUDIENCES, ETC)

Documentation regarding the detection and elimination of polluting non-stormwater discharges will be included in Appendix N.

AVAILABLE EQUIPMENT?
STAFF?
FUNDING?

4.9 Public Education

Public employees, businesses, and the general public will be informed of the hazards associated with illegal discharges and improper disposal of wastes as part of Minimum Measure 1 – Public Education and Outreach.

4.10 Best Management Practices (BMPs)

The Illicit Discharge Detection and Elimination BMPs in Table 4.3 have been chosen by the Town of Poughkeepsie to meet the requirements of this permit. Each BMP has an associate responsible party(ies) and/or Department(s), measurable goals, and timeline to assist in evaluate the success of the Town's public education/outreach program. Any additional reference material pertaining to the illicit discharge detection and elimination minimum measure can be found in Appendix O.

TABLE 4.3
ILLICIT DISCHARGE DETECTION AND ELIMINATION BEST MANAGEMENT PRACTICES
TOWN OF POUGHKEEPSIE

Best Management Practice (BMP)	Responsible Party(ies)/Department	Measurable Goals	Timeline
Include illicit discharge education as part of the overall education associated with this program.			
Inspect stormwater outfalls within MS4's jurisdiction	Town Engineering Department	Inspect all stormwater outfalls once every five (5) years.	On-going basis
Delineate preliminary boundaries of the storm sewersheds to each stormwater outfall.	Town Engineering Department		All preliminary boundaries delineated by March 9, 2010.
Verify all outfall locations			All verified by April 30, 2010
Certification of the local law adopted which prohibits illicit discharges into the small MS4.	Town Attorney	Compete local law certification	Completed as of 6 April 2010

4.11 Required Implementation Reporting

The Town shall report on the following items annually:

- Number and percent of outfalls mapped
- Number of illicit discharges detected and eliminated
- Percent of outfalls for which an outfall reconnaissance inventory has been performed
- Status of system mapping
- Activities in and results from informing public employees, businesses, and the general public of hazards associated with illegal discharges and improper disposal of waste.
- 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)
- Report on effectiveness of program

5.0 CONSTRUCTION SITE RUNOFF CONTROL

5.1 The Responsible Party is Morris Associates, PLLC and the Responsible Department is the Town Engineering Department.

5.2 State and Federal Regulatory Requirements

Typical construction activities have significant potential to impact surface water quality in the State by creating the potential for sediment, construction materials, waste and other pollutants to be transported to surface waters by wind or stormwater runoff. As a result, the USEPA promulgated construction site runoff control regulations as part of its Phase I stormwater permitting program. This program focused on projects that disturb more than five acres of land (total project). As part of this program, these projects were required to secure a New York State Pollutant Discharge Elimination System (SPDES) permit and prepare a detailed Stormwater Pollution Control Plan that specifies soil erosion and sediment control as well as waste and product management practices to control potential impacts.

The New York State Department of Environmental Conservation (NYSDEC) currently regulates activities that disturb more than one acre of land through the use of a general permit for the SPDES program. This general permit requires submittal of a Notice of Intent to NYSDEC and the preparation of a Stormwater Pollution Prevention Plan (SWPPP) that must be certified by a professional such as a professional engineer.

The Phase II program that has been promulgated by the USEPA requires regulated municipalities to develop, implement, and enforce a program to reduce pollutants in stormwater runoff to small municipal storm sewer system (MS4) from construction projects that result in a land disturbance of greater than or equal to one acre (greater than or equal to 5,000 square feet in the New York City Watershed East of the Hudson River Watershed). Sites smaller than this would still require a permit if the land is part of a plan, such as a subdivision, that alters a total area greater than one acre.

The specific state and federal requirements of the construction site runoff control minimum measures, which the Town must develop and implement, are as follows:

1. Develop, implement, and enforce a program that:
    a. Provides equivalent protection to the NYS SPDES General Permit for Stormwater Discharges from Construction Activities (GP-0-010-001), unless more stringent requirements are contained within the MS4 SPDES permit (GP-0-010-002)
    b. 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:
        i. that construction activity is part of a larger common plan of development or sale that would disturb one acre or more
        ii. if controlling such activities in a particular watershed is required by the Department
    c. 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 up-to-date technical standards:
        i. this mechanism must be equivalent to one of the versions of the "NYSDEC Sample Local Laws for Stormwater Management and Erosion and Sediment Control"
        ii. equivalence must be documented using the NYSDEC Gap Analysis Workbook or be certified by the attorney representing the small MS4 as being equivalent to one of the versions of the sample laws if one of the sample laws is not adopted or if a modified version of the sample law is adopted
    d. Contains requirements for construction site operators to implement erosion and sediment control management practices

e. Allows for sanctions to ensure compliance to the extent allowable by State or local law
f. 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
g. describes procedures for SWPPP review that incorporate consideration of potential water quality impacts and review of individual pre-construction SWPPPs to ensure consistency with State and local sediment and erosion control requirements
    i. ensure that the individuals performing the reviews are adequately trained and understand the State and local sediment and erosion control requirements
    ii. all SWPPPs must be reviewed for sites where the disturbance is one acre or greater
    iii. after review of SWPPPs, the permittee must utilize the "SWPPP Acceptance Form" created by the Department and required by the SPDES General Permit for Stormwater Discharges from Construction Activity (GP-0-08-001) when notifying construction site owner / operators that their plans have been accepted and approved by the permittee
h. Describes procedures for receipt and follow up on complaints or other information submitted by the public regarding construction site storm water runoff
i. 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
    i. the permittee 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
    ii. all sites must be inspected where the disturbance is one acre or greater
j. 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

k. By two years from the date this permit is issued, ensures that construction site operators have received erosion and sediment control training before they do work within the permittee's jurisdiction. 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:
   i. training may be provided by the Department or other qualified entities (such as Soil and Water Conservation Districts)
   ii. the permittee is not expected to perform such training, but they may cosponsor training for construction site operators in their area
   iii. the permittee may ask for a certificate of completion or other such proof of training
   iv. the permittee may provide notice of upcoming sediment and erosion control training by posting in the building department or distribute with building permit application

l. Establishes and maintains an inventory of active construction sites, including the location of the site, owner / operator contact information

m. Develop, record, periodically assess and modify as needed measurable goals

n. Select appropriate construction stormwater BMPs and measurable goals to ensure the reduction of all POCs in stormwater discharges to the MEP.

5.3 Municipal Regulations

A municipal law providing equivalent protection to the NYS SPDES General Permit for Stormwater Discharges from Construction Activities, addresses stormwater runoff to the small MS4 from construction activities that result in a land disturbance of greater than or equal to one acre, and requires a SWPPP for each applicable land disturbing activity was adopted by the Town of Poughkeepsie on May 18, 2005. A copy of this law is included in Appendix P.

The municipal law adopted was certified as being equivalent to the "NYSDEC Sample Local Laws for Stormwater Management and Erosion and Sediment Control" by the Dave Hagstrom, Esq., Town Attorney, on April 6, 2010 (letter of certification found in the same Appendix P).

Documentation regarding the enforcement of this law is included in Appendix Q.

5.4 SWPPP Review Procedures

The Town of Poughkeepsie uses the following procedures in the review of submitted SWPPPs.

The Town uses a standard form when reviewing each SWPPP to ensure its adequacy. A copy of this form is located in Appendix R.

The "SWPPP ACCEPTANCE FORM", created by the DEC and required by the SPDES general permit for stormwater discharges from construction activity (GP-0-010-001), is used when notifying construction site owners / operators that their plans have been accepted and approved by the Town.

5.5 Public Submittals

All public complaints and submitted documents regarding construction site stormwater runoff will be responded to by YYY. Details of these complaints or submitted documents can be found in Appendix S.

5.6 Site Inspections and Enforcement Procedures

The Town of Poughkeepsie uses the following procedures in the inspection and enforcement of construction sites. All construction sites disturbing one or more acres of land will be inspected by the Town.

- XXX [INCLUDE A DESCRIPTION OF THE IDENTIFICATION OF PRIORITY SITES (NATURE OF CONSTRUCTION ACTIVITY, TOPO, SOIL TYPE, AND RECEIVING WATER)]

An inventory of active construction sites is located in Appendix T.

5.7 Erosion and Sediment Control Education

In Dutchess County, the Dutchess County Soil and Water Conservation District (DCSWCD) is the lead agency in the hosting of NYSDEC approved erosion and sediment control trainings for contractor and site inspectors (4-hour training). The Town has submitted a list of contractors who regularly working within the Town to the DCSWCD for inclusion in their local contractor database. All those noted in the database are notified of upcoming

trainings. In addition to DCSWCD advertisement, the NYSDEC lists all upcoming trainings throughout the State on their "Calendar of Stormwater Training" (www.dec.ny.gov/chemical/8699.html). If possible, the training will also noticed on the MS4s municipal webpage.

Tim Richard (employee of Morris Associates PLLC) is the primary Town site inspector. He is adequately trained for this responsibility by DCSWCD. Certification of Attendance for each erosion and sediment control training is included in Appendix U as well as in the employee's personnel file.

Construction site owners / operators, design engineers, municipal staff and other individuals to whom these regulations apply are notified of the MS4s regulations, SWPPP submittal, and construction site inspections by the Town. See the Contact List in Appendix V.

5.8 Best Management Practices (BMPs)

The Construction Site Stormwater Runoff Control BMPs in Table 5 have been chosen by the Town of Poughkeepsie to meet the requirements of this permit. Each BMP has an associate responsible party(ies) and/or Department(s), measurable goals, and timeline to assist in evaluate the success of the Town's public education/outreach program. Any additional reference material pertaining to the construction site stormwater runoff control minimum measure can be found in Appendix W.

TABLE 5
CONSTRUCTION SITE STORMWATER RUNOFF CONTROL BEST MANAGEMENT PRACTICES
TOWN OF POUGHKEEPSIE

Best Management Practice (BMP)	Responsible Party(ies)/Department	Measurable Goals	Timeline
Cosponsor a NYSDEC approved Erosion and Sediment Control Training	Dutchess County MS4 Coordination Committee, Dutchess County Soil and Water Conservation District		By May 1, 2010, ensure that construction site operators have received erosion and sediment control training before they do work within the Town.
Develop a checklist for designers and reviewers to confirm the minimum application requirements are met, potential water quality impacts are considered, and BMPs are used appropriately. The checklist can be compiled from the Town regulations and the New York Standards and Specifications for Erosion and Sediment Control (Blue Book).	Dutchess County MS4 Coordination Committee		

Best Management Practice (BMP)	Responsible Party(ies)/Department	Measurable Goals	Timeline
Inspect construction sites.	Town Engineering Department	Inspect all construction sites disturbing one acre or greater	On-going
Create and maintain MS4 inventory of active construction sites.	Town Engineering Department	Update MS4 inventory of active construction sites on a quarterly basis.	on-going done

5.9 Required Implementation Reporting

The Town shall report on the following items annually:

- Number of SWPPPs reviewed
- Number and type of enforcement actions
- Percent of active construction sites inspected once
- Percent of active construction sites inspected more than once
- Number of construction sites authorized for disturbances of one acre or more
- Report on effectiveness of program

6.0 POST-CONSTRUCTION RUNOFF CONTROL

6.1 The Responsible Party is Morris Associates, PLLC and the Responsible Department is the Town Engineering Department.

6.2 State and Federal Regulatory Requirements

New development and redevelopment projects have significant potential to increase pollutant loadings to receiving surface waters. These pollutants include solids, nutrients, organics, metals as well as physical impacts such as increases in temperature. The USEPA Phase I stormwater permitting program did not specifically address the post-development impacts from land development that were not classified as "industrial activities," but the NY SPDES General Permit for stormwater discharges associated with construction activities does include requirements for "post-construction stormwater management" (Part III.B.2).

NYSDEC's Phase II stormwater management regulations require regulated municipalities to:

1. Develop, implement, and enforce a program that:
   a. provides equivalent protection to the NYS SPDES General Permit for Stormwater Discharges from Construction Activities (GP-0-010-001), unless more stringent requirements are contained within the MS4 SPDES general permit GP-0-010-002
   b. 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:
      i. that project is part of a larger common plan of development or sale

   ii. if controlling such activities in a particular watershed is required by the Department;

c. 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 or local law that meet the State's most up-to-date technical standards:
   i. the mechanism must be equivalent to one of the versions of the" NYSDEC Sample Local Laws for Stormwater Management and Erosion and Sediment Control;" or
   ii. equivalence must be documented using the NYSDEC Gap Analysis Workbook or certified by the Town Attorney as being equivalent to one of the sample laws if one of those sample laws is not adopted or if a modified version of one of the sample laws is adopted

d. includes a combination of structural management practices (including, but not limited to practices from the NYS Stormwater Management Design Manual or equivalent) and / or non-structural management practices (including, but not limited to comprehensive plans, open space preservation programs, Low Impact Development (LID), Better Site Design (BSD) and other Green Infrastructure practices, land use regulations) appropriate for the permittee that will reduce the discharge of pollutants to the MEP. Permittees are encouraged to implement Green Infrastructure practices at a site level and to review, and revise where appropriate, local codes and laws that include provisions that preclude construction that minimizes or reduces pollutant loadings.
   i. 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

e. describes procedures for SWPPP review that incorporate consideration of potential water quality impacts and review of individual pre-construction SWPPPs to ensure consistency with local post-construction stormwater requirements
   i. ensure that the individuals performing the reviews are adequately trained and understand the State and local post construction stormwater requirements
   ii. 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

iii. all SWPPPs must be reviewed for sites where the disturbance is one acre or greater
iv. after review of SWPPPs, the permittee must utilize the "SWPPP Acceptance Form" created by the Department and required by the SPDES General Permit for Stormwater Discharges from Construction Activity (GP-0-010-001) when notifying construction site owners / operators that their plans have been accepted and approved by the Town

f. By May 1, 2009 establish and maintain an inventory of post-construction stormwater management practices within the MS4's 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.
   i. 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 dates and type of maintenance performed
g. Ensures adequate long-term operation and maintenance of management practices by trained staff, including inspection to ensure that practices are performing properly.
   i. The inspection shall include inspection items identified in the maintenance requirements (NYS Stormwater Management Design Manual, SWPPP, or other maintenance information) for the practice. Permittees are not required to collect stormwater samples and perform specific chemical analysis

2. Develop, implement, and provide adequate resources for a program to inspect development and re-development sites by trained staff and to enforce and penalize violators;
3. Develop, record, periodically assess and modify as needed measurable goals
4. Select appropriate post-construction stormwater BMPs and measurable goals to ensure the reduction of all POCs in stormwater discharges to the MEP.

6.3 Municipal Regulations

A municipal law requiring post-construction runoff controls form new development and re-development projects was adopted by the Town of Poughkeepsie on May 18, 2005. A copy of this law is included in Appendix X.

The municipal law adopted was certified as being equivalent to the "NYSDEC Sample Local Laws for Stormwater Management and Erosion and Sediment Control" by Dave Hagstrom, Esq, the Town Attorney, on April 6, 2010 (letter of certification found in same Appendix X).

Documentation regarding the enforcement of this law is included in Appendix Y.

6.4 Approved Practices

6.4.1 Structural

The Town of Poughkeepsie approves the use of all practices found in the NYS Stormwater Management Design Manual.

6.4.2 Non-Structural

The Town of Poughkeepsie approves the use of the following non-structural practices

- [DESCRIBE APPROVED PRACTICES (including, but not limited to comprehensive plans, open space preservation programs, Low Impact Development (LID), Better Site Design (BSD) and other Green Infrastructure practices, land use regulations)]

6.5 SWPPP Review Procedures

For the Town's SWPPP review procedures, refer to Section 5.3.

6.6 Inventory of Post-Construction Stormwater Practices

An inventory of post-construction stormwater practices located within the Town of Poughkeepsie has been developed. This inventory includes practices discharging to the Town that have been installed since March 10, 2003, all practices owned by the Town, and those practices found to cause or contribute to water quality standard violations. The inventory will list the location of each practice (street address or coordinates), type of practice, maintenance needed per the NYS Stormwater Management Design Manual, SWPPP, or other provided documentation and a history of maintenance performed including dates and activity.

The inventory of post-construction stormwater practices is included in Appendix Z.

6.7 Long-Term Operation and Maintenance of Management Practices

In order to ensure long term operation and maintenance of stormwater management practices within the Town of Poughkeepsie, the Town Engineering Department will inspect structures regularly. The inspection shall include inspection items identified in the maintenance requirements (NYS Stormwater Management Design Manual, SWPPP, or other maintenance information) for the practice. The practice will be maintained by the responsible party or the Town in accordance with the maintenance agreement.

6.8 Best Management Practices (BMPs)

The Post-Construction Stormwater Management BMPs in Table 6 have been chosen by the Town of Poughkeepsie to meet the requirements of this permit. Each BMP has an associate responsible party(ies) and/or Department(s), measurable goals, and timeline to assist in evaluate the success of the Town's post-construction stormwater management program. Any additional reference material pertaining to the post-construction stormwater management program minimum measure can be found in Appendix AA.

TABLE 6
POST-CONSTRUCTION STORMWATER MANAGEMENT PROGRAM BEST MANAGEMENT PRACTICES
TOWN OF POUGHKEEPSIE

Best Management Practice (BMP)	Responsible Party(ies)/Department	Measurable Goals	Timeline
Develop a common post-construction stormwater practices inspection form for use throughout the County. NYSDEC SW DESIGN MANUAL	Dutchess County MS4 Coordination Committee		
Review SWPPPs	Town Engineering Department	Review all SWPPPs for sites where the disturbance is one acre or greater.	On-going
Establish and maintain an inventory of post-construction stormwater management practices within the MS4's jurisdiction.	Town Engineering Department		On-going

Best Management Practice (BMP)	Responsible Party(ies)/Department	Measurable Goals	Timeline
Notify holders of Storm Water Maintenance Agreements annually of their obligations related to reporting and maintenance	Town Engineering Department	Send a letter to each owner that holds a maintenance agreement with the Town.	Once per year.

6.9 Required Implementation Reporting

The Town shall report on the following items annually:

- Number of SWPPPs reviewed
- Number and type of enforcement actions
- Number and type of post-construction stormwater management practices inventoried
- Number and type of post-construction stormwater management practices inspected
- Number and type of post-construction stormwater management practices maintained
- Regulatory mechanism status - certification that regulation is equivalent to one of the "NYSDEC Sample Local Laws for Stormwater Management and Erosion and Sediment Control"
- Report on effectiveness of program

7.0 POLLUTION PREVENTION /GOOD HOUSEKEEPING

7.1 The Responsible Party is Morris Associates, PLLC and the Responsible Department is the Town Engineering Department.

7.2 State and Federal Regulatory Requirements

The goal of this element of the stormwater pollution prevention plan is twofold. The first is to minimize the pollutants that enter the MS4 prior to being discharged to surface waters of the State. This would consist of pollutants from land uses that drain to Town of Poughkeepsie MS4 as well as those pollutants that are swept from municipally owned streets, parking lots, and facilities. The second goal is to minimize pollution caused by activities at municipal owned facilities such as storage of materials and wastes where they are exposed to precipitation.

The Phase II program that has been promulgated by NYSDEC requires regulated municipalities to develop a pollution prevention/good housekeeping element that achieves the above referenced goals. This element largely consists of properly maintaining existing infrastructure such as roads and drainage structures as well as implementing appropriate pollution control practices at municipal facilities. Specific regulatory requirements for this element of the stormwater pollution prevention plan are:

1. Develop and implement a pollution prevention / good housekeeping program for municipal operations and facilities that:

a. 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
b. At a minimum frequency of once every three years, perform a self assessment of all municipal operations addressed by the SWMPP to:
   i. Determine the sources of pollutants potentially generated by the permittee's operations and facilities
   ii. Identify the municipal operations and facilities that will be addressed by the pollution prevention and good housekeeping program, if it is not done already
c. 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
d. 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 permittee's capabilities
e. Addresses pollution prevention and good housekeeping priorities
f. Includes an employee pollution prevention and good housekeeping training program and ensures that staff receive and utilize training
g. 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
h. 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 SWMPP that comply with Parts III. A, C, D, J, K and L of the MSGP. The permittee 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 of the above noted provisions of the SWMPP will ensure that MEP is met for discharges from those facilities

2. Develop, record, periodically assess and modify as needed measurable goals
3. Select appropriate pollution prevention and good housekeeping BMPs and measurable goals to ensure the reduction of all POCs in stormwater discharges to the MEP.

7.3 Highway Department

7.3.1 Street and Bridge Maintenance

[DESCRIBE THE MS4'S PROGRAM.

Approximately 296 lane miles of road are maintained by the Town Highway Department.

All streets are swept annually WHEN?, DURING WHAT MONTHS? ARE THEIR LOCATIONS SWEPT MORE THAN ONCE? ARE RESIDENTS NOTIFIED OF THE SWEEPING SO THEY CAN MOVE THEIR VEHICLES AS NECESSARY? DO PARKED CARS GET IN THE WAY? WHO DOES THE SWEEPING? TOWN OR 3RD PARTY? IF MS4 DOES THE SWEEPING,

WHAT EQUIPMENT DO YOU OWN? HOW MANY EMPLOYEES ARE TRAINED TO USE IT? HOW MUCH MATERIAL IS REMOVED? HOW IS IT DISPOSED OF? ARE AREAS OF HEAVY DEBRIS NOTED? ARE AREAS IN NEED OF MAINTENANCE NOTED? HAVE 3RD PARTY SIGNED "CONTRACTED ENTITY CERTIFICATION STATEMENT? HOW ARE BRIDGES MAINTAINED? HOW IS EROSION/SEDIMENT CONTROL IMPLEMENTED IN THESE MAINTENANCE ITEMS?]

7.3.2 Winter Road Maintenance

[DESCRIBE THE MS4'S PROGRAM.

WHO IS RESPONSIBLE FOR PLOWING/SANDING OF PARKING LOTS? ROADWAYS? WHAT IS THE MIX OF SAND/SALT? HOW MUCH SAND/SALT USED PER WINTER? HAS 3RD PARTY SIGNED "CONTRACTED ENTITY CERTIFICATION STATEMENT? IS THERE A

WRITTEN PROGRAM FOR THE APPLICATION OF SAND/SALT? IF SO, INCLUDE AS APPENDIX. WHERE IS SAND, SALT, MIX PILES STORED? INDOORS? OUTDOORS? IF OUTDOORS, ARE THERE ANY PLANS TO GET A SALT SHED? ARE PAVED DPW FACILITY AREAS SWEPT AFTER A STORM TO REMOVE EXCESS SAND/SALT? WHEN NECESSARY, WHERE IS EXCESS SNOW DISPOSED OF?]

7.3.3 Stormwater System Maintenance

[DESCRIBE THE MS4'S PROGRAM.

IF KNOWN, HOW MANY CATCH BASINS? MILES OF SEWER PIPE?

OUTFALLS?

The Town is RESPONSIBLE TO MAINTAIN 5 STORMWATER TREATMENT ponds

DOES THE MS4 HAVE RECORD OF WHERE CATCH BASINS ARE? WHERE STORMWATER STRUCTURES ARE? IF SO, INCLUDE AS APPENDIX ITEM. MAINTENANCE RECORDS? HOW ARE CATCH BASINS INSPECTED? CLEANED? WITH WHAT? HOW OFTEN? DO ANY GET ADDITIONAL CLEANING? ARE ANY AREAS PRIORITIZED? MATERIAL REMOVED? HOW ARE SPOILS DISPOSED OF? HOW OFTEN ARE STORMWATER STRUCTURES CLEANED? HOW OFTEN ARE DITCHES MAINTAINED? HOW ARE THEY MAINTAINED? HOW OFTEN ARE STORMWATER OUTFALLS INSPECTED? DOES THE MS4 RETAIN RECORDS OF INSPECTIONS?]

7.3.4 Vehicle and Fleet Maintenance

[DESCRIBE THE MS4'S PROGRAM.

WHERE ARE VEHICLES MAINTAINED? FACILITY NAME? INDOORS/OUTDOORS? BY MS4 EMPLOYEES? HOW MANY VEHICLES ARE MAINTAINED BY MS4? ANY FLOOR DRAINS IN ANY OF THE AREAS WHERE MAINTENANCE OCCURS? WHERE DO THEY DISCHARGE? OIL/GRIT SEPARATOR? HOW OFTEN IS O/G SEPARATOR MAINTAINED? HOW OFTEN IS IT

INSPECTED? ARE RECORDS MAINTAINED ON VEHICLES? O/G SEPARATOR? WHERE ARE VEHICLES WASHED? BIODEGRADABLE SOAPS?]

7.3.5 Solid Waste Management

[DESCRIBE THE MS4'S PROGRAM.

DOES THE MS4 PICK UP GARBAGE/RECYCLING? IF NOT, HOW WOULD THE MS4 HANDLE A MESSY 3RD PARTY WASTE HAULER? IF KNOWN, HOW MUCH GARBAGE AND/OR RECYCLABLES ARE COLLECTED? WHAT HAPPENS TO WHITE GOODS? IS FREON REMOVED? BY WHOM? WHERE DOES METAL GO? TIRES? PROPANE TANKS? ELECTRONICS? IF KNOWN, HOW MUCH IS COLLECTED PER YEAR? ARE YARD WASTES COLLECTED? CHRISTMAS TREES? HOW MUCH/MANY? WHAT IS DONE WITH THEM? WHO IS RESPONSIBLE FOR LITTER CLEAN UP ALONG ROADWAYS? WHAT IS DONE WITH GARBAGE? IS THERE A LAW AGAINST LITTERING? ARE PROBLEM AREAS POSTED? MONITORED BY POLICE/DPW? HOW ARE DUMPERS PUNISHED? HOW MANY ENFORCEMENT ACTIONS?]

7.3.6 Hazardous Materials Management

[DESCRIBE THE MS4'S PROGRAM.

WHAT IS COLLECTED WHERE? WASTE OIL? ANTIFREEZE? OIL FILTERS? BATTERIES? ITEMS RECYCLED? AMOUNT RECYCLED? SECONDARY CONTAINMENT? SECONDARY CONTAINMENT STRUCTURES? ARE HOUSEHOLD HAZARDOUS WASTES COLLECTED? ARE RESIDENTS EDUCATED ON WHERE AND HOW TO GET RID OF HAZARDOUS WASTES?]

7.3.7 New Construction and Land Disturbance

7.3.8 Right-of-Way Management

7.3.9 Hydrological Habitat Modification

7.3.10 Tree Management

[DESCRIBE THE MS4'S PROGRAM.

DOES THE MS4 HAVE A TREE ORDINANCE? HOW ARE TOWN TREES MAINTAINED? WHAT HAPPENS TO WASTES?]

7.3.11 Spill Response

[DESCRIBE THE MS4'S PROGRAM.

WHO IS RESPONSIBLE? SMALL SPILLS? LARGE SPILLS...FIRE DEPARTMENT? WHAT SPILL MATERIALS ARE OWNED AND MAINTAINED BY MS4? WHERE ARE THESE ITEMS? WHAT IS DONE WITH USED ITEMS? ARE MSDS READILY AVAILABLE? WHERE?]

7.3.12 Personnel Training Program

[DESCRIBE THE MS4'S PROGRAM.

SPILL RESPONSE TRAINING? STORMWATER POLLUTION PREVENTION TRAINING? EROSION AND SEDIMENT CONTROL TRAINING? HOW MANY EMPLOYEES TRAINED? ANY SPILL RESPONSE POSTERS POSTED?]

7.4 Department of Parks and Recreation

[DESCRIBE THE MS4'S DEPARTMENT.

WHERE ARE THE FACILITIES? WHAT ARE THEY? ACREAGE? WHERE ARE DEPARTMENT VEHICLES/EQUIPMENT, LANDSCAPING CHEMICALS STORED? ANY CATCH BASINS AT FACILITIES? HOW OFTEN MAINTAINED? INSPECTED? WHO INSPECTS?]

7.4.1 Park and Open Space Maintenance

[DESCRIBE THE MS4'S PROGRAM.

WHO CLEARS AND MOWS? HAS 3RD PARTY SIGNED "CONTRACTED ENTITY CERTIFICATION STATEMENT"? WHERE ARE LAWN WASTES DISPOSED OF? WHAT KIND OF LAWNCARE EQUIPMENT IS OWNED? WHO MAINTAINS? WHERE IS IT MAINTAINED?]

7.4.2 Fertilizer and Pesticide Application

[DESCRIBE THE MS4'S PROGRAM.

WHO APPLIES? HAS 3RD PARTY SIGNED "CONTRACTED ENTITY CERTIFICATION STATEMENT"? HOW MUCH IS APPLIED? WHERE IS IT STORED?]

7.4.3 Marine Operations [IF NECESSARY]

7.4.4 Solid Waste Management

[DESCRIBE THE MS4'S PROGRAM.

WHERE IS IT DISPOSED OF? HOW OFTEN ARE PARK RECEPTACLES EMPTIED? DO THE PARKS HAVE ENOUGH RECEPTACLES?]

7.4.5 Pet and Bird Waste

[DESCRIBE THE MS4'S PROGRAM.

DOES THE MS4 HAVE A PET WASTE LAW? IS IT POSTED? HOW MANY ENFORCEMENT ACTIONS? PET WASTE BAG DISPENSERS? DOES THE MS4 HAVE A WATERFOWL PROBLEM (DUCKS, GEESE)? WHAT IS BEING DONE?]

7.4.6 Spill Response

[DESCRIBE THE MS4'S PROGRAM.

WHO IS RESPONSIBLE? SMALL SPILLS? LARGE SPILLS...FIRE DEPARTMENT? WHAT SPILL MATERIALS ARE OWNED AND MAINTAINED? WHERE ARE THESE ITEMS? WHAT IS DONE WITH USED ITEMS? ARE MSDS READILY AVAILABLE? WHERE?]

7.4.7 Personnel Training Program

[DESCRIBE THE MS4's PROGRAM.

SPILL RESPONSE TRAINING? STORMWATER POLLUTION PREVENTION TRAINING? EROSION AND SEDIMENT CONTROL TRAINING? HOW MANY

EMPLOYEES TRAINED? ANY SPILL RESPONSE POSTERS POSTED?]

7.5 Department of Building Maintenance

[HOW ARE FACILITIES MAINTAINED? WHAT ARE THE FACILITIES MAINTAINED? WHAT ARE ACTIVITIES THAT COULD CONTRIBUTE POCs TO MS4]

7.5.1 Solid Waste Management

[DESCRIBE THE MS4's PROGRAM.

WHERE IS IT DISPOSED OF? HOW OFTEN ARE OUTDOOR RECEPTACLES EMPTIED? ARE THERE DUMPSTERS? ARE THEY KEPT COVERED?]

7.5.2 Hazardous Materials Management

[DESCRIBE HOW/WHERE CHEMICALS ARE STORED? ARE THERE FLOOR DRAINS IN STORAGE AREA? WHERE DO THEY DISCHARGE? IS THERE ANY RISK OF CHEMICALS GETTING IN CONTACT WITH STORMWATER?]

7.5.3 Spill Response

[DESCRIBE THE MS4's PROGRAM.

WHO IS RESPONSIBLE? SMALL SPILLS? LARGE SPILLS...FIRE DEPARTMENT? WHAT SPILL MATERIALS ARE OWNED AND MAINTAINED? WHERE ARE THESE ITEMS? WHAT IS DONE WITH USED ITEMS? ARE MSDS READILY AVAILABLE? WHERE?]

7.5.4 Personnel Training Program

[DESCRIBE THE MS4's PROGRAM.

SPILL RESPONSE TRAINING? STORMWATER POLLUTION PREVENTION TRAINING? HOW MANY EMPLOYEES TRAINED? ANY SPILL RESPONSE POSTERS POSTED?]

7.6 Police Department

[HOW ARE FACILITIES MAINTAINED? WHAT ARE THE FACILITIES MAINTAINED? WHAT ARE ACTIVITIES THAT COULD CONTRIBUTE POCs TO MS4]

7.6.1 Vehicle and Fleet Maintenance

[DESCRIBE THE MS4'S PROGRAM.

WHERE ARE VEHICLES MAINTAINED? FACILITY NAME? INDOORS/OUTDOORS? BY MS4 EMPLOYEES? HOW MANY VEHICLES ARE MAINTAINED BY MS4? ANY FLOOR DRAINS IN ANY OF THE AREAS WHERE MAINTENANCE OCCURS? WHERE DO THEY DISCHARGE? OIL/GRIT SEPARATOR? HOW OFTEN IS O/G SEPARATOR MAINTAINED? HOW OFTEN IS IT INSPECTED? ARE RECORDS MAINTAINED ON VEHICLES? O/G SEPARATOR? WHERE ARE VEHICLES WASHED? BIODEGRADABLE SOAPS?]

7.6.2 Solid Waste Management

[DESCRIBE THE MS4's PROGRAM.

WHERE IS IT DISPOSED OF? HOW OFTEN ARE OUTDOOR RECEPTACLES EMPTIED? ARE THERE DUMPSTERS? ARE THEY KEPT COVERED?]

7.6.3 Hazardous Materials Management

[DESCRIBE HOW/WHERE CHEMICALS ARE STORED? ARE THERE FLOOR DRAINS IN STORAGE AREA? WHERE DO THEY DISCHARGE? IS THERE ANY RISK OF CHEMICALS GETTING IN CONTACT WITH STORMWATER?]

7.6.4 Spill Response

[DESCRIBE THE MS4's PROGRAM.

WHO IS RESPONSIBLE? SMALL SPILLS? LARGE SPILLS...FIRE DEPARTMENT? WHAT SPILL MATERIALS ARE OWNED AND MAINTAINED? WHERE ARE THESE ITEMS? WHAT IS DONE WITH USED ITEMS? ARE MSDS READILY AVAILABLE? WHERE?]

7.6.5 Personnel Training Program

[DESCRIBE THE MS4's PROGRAM.

SPILL RESPONSE TRAINING? STORMWATER POLLUTION PREVENTION TRAINING? HOW MANY EMPLOYEES TRAINED? ANY SPILL RESPONSE POSTERS POSTED?]

7.7 SPILL RESPONSE TRAINING? STORMWATER POLLUTION PREVENTION TRAINING? HOW MANY EMPLOYEES TRAINED? ANY SPILL RESPONSE POSTERS POSTED?]

7.8 Best Management Practices (BMPs)

The Pollution Prevention/Good Housekeeping for Municipal Operations BMPs in Table 7 have been chosen by the Town of Poughkeepsie to meet the requirements of this permit. Each BMP has an associate responsible party(ies) and/or Department(s), measurable goals, and timeline to assist in evaluate the success of the Town's pollution prevention/good housekeeping for municipal operations program. Any additional reference material pertaining to the pollution prevention/good housekeeping for municipal operations minimum measure can be found in Appendix FF.

TABLE 7
POLLUTION PREVENTION/GOOD HOUSEKEEPING FOR MUNICIPAL OPERATIONS
BEST MANAGEMENT PRACTICES
TOWN OF POUGHKEEPSIE

Best Management Practice (BMP)	Responsible Party(ies)/Department	Measurable Goals	Timeline
Perform a self assessment of all municipal operations addressed by this SWMPP.			Once every three (3) years.

7.9 Required Implementation Reporting

The Town shall report on the following items annually:

- Indicate the municipal operations and facilities that the pollution prevention and good housekeeping program assessed
- Describe, if not done so already, the management practices, polices and procedures that have been developed, modified, and / or implemented and report, at a minimum, on the items below that the permittee'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
  - Pounds of pesticides / herbicides applied as pure product.
- Staff training events and number of staff trained
- Report on effectiveness of program. Note: If the pollution prevention and good housekeeping program addresses other operations than what is listed above, the Town shall report on items that will demonstrate program effectiveness.

8.0 ANNUAL REPORTING

8.1 The Responsible Party is Morris Associates, PLLC and the Responsible Department is the Town Engineering Department.

8.2 Reporting

By the aforementioned general permit, the Town of Poughkeepsie is required to collect and report information regarding the development and implementation of their SWMPP and evaluate the MS4's compliance annually. The annual reporting period ends March 9th of each year. The Town's annual report will be submitted to the NYSDEC for review prior to June 1 of each year.

8.3 Recordkeeping

Per the recordkeeping requirements of this permit, the Town will keep records required by this permit including, but not limited to, records that document SWMPP, records included in the SWMPP, NOI, past annual reports, and comments from the public and the NYSDEC for at least five (5) years after they are generated.

Records, including the NOI and the SWMPP, will be available to the public at reasonable times during regular business hours.

APPENDIX A

TOWN MS4 SPDES PERMITS

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SPDES GENERAL PERMIT
FOR STORMWATER DISCHARGES

from

MUNICIPAL SEPARATE STORM SEWER SYSTEMS (MS4s)

Permit No. GP-0-08-002

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

Effective Date: May 1, 2008

Expiration: April 30, 2010

William R. Adriance
Chief Permit Administrator

Address:

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

William R. Adriance
Authorized Signature

April 15, 2008
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 Stateare 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 permit are authorized to *discharge stormwater* from their *small MS4* under this *general SPDES permit*.

A *permittee* authorized under GP-02-02 as of the effective date of GP-0-08-002, shall be permitted to discharge in accordance with the renewed permit, GP-0-08-002 unless otherwise notified by the Department. Coverage will be continued automatically upon renewal.

An *operator* not authorized under GP-02-02 may[1] obtain coverage under this *general SPDES permit* by submitting a Notice of Intent ("NOI") to the address provided on the NOI form. Copies of this *general SPDES 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 permit. Authorization under this *general SPDES permit* occurs thirty (30) calendar days after receipt by the *Department* of a complete NOI.

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

[1] The term "may" is used to recognize that there are circumstances under which the *operator* is ineligible for coverage under this *general SPDES permit* because of exclusionary provisions of this permit. *Operators* that are excluded from coverage under this *general SPDES 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 *general SPDES permit* coverage does not authorize the *small MS4* to *discharge stormwater* runoff under the authority of this *general SPDES 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 *general SPDES 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 permit are met.

2. Exempt Non-Stormwater Discharges. The following non-stormwater *discharges* are exempt from the need for SPDES permit coverage unless the *Department* has determined them to be substantial contributors of pollutants to a particular *small MS4* applying for coverage under this *general SPDES 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 *permittee* 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
   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* requires that the *permittee'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 *general SPDES 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 *permittee's SWMP*, which adversely affect properties listed or eligible for listing in the National Register of Historic Places, unless the permittee 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 *general SPDES permit* if the *discharges* are:

1. Effectively addressed by and in compliance with a different *general SPDES permit* or an *individual SPDES permit*; or

2. Identified by and in compliance with Part I.A.2 of this *general SPDES permit*.

Part II. OBTAINING PERMIT COVERAGE

A. Continuance of Permit Coverage for Permittees Authorized by GP-02-02 (Continuing Permittees)

These procedures apply to *permittees* whose *stormwater discharges* were authorized by GP-02-02 and need to continue coverage under this *general SPDES permit*. For these *permittees*, authorization will be automatically continued when GP-02-02 is renewed, provided that the authorization under GP-02-02 was granted by the date that this *general SPDES permit* became effective.

For a single permittee, 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).

B. Permit Coverage for Permittees Newly Designated Under GP-0-08-002 (Small MS4s not Previously Authorized by GP-02-02)

Certain *small MS4s* designated by 40CFR Section 122.32(a)(1) were not authorized by

(Part II. B.)

GP-02-02, but are now required to gain coverage under this *general SPDES permit*. The *small MS4s* were not previously authorized because they were either:

- required to gain coverage under GP-02-02, but were granted a waiver from that requirement;
- were not required to gain coverage under GP-02-02 based on the designation criteria, but they are now within an *Additionally Designated Area*; or
- were otherwise not permitted under GP-02-02.

1. In order for *stormwater discharges* from *small MS4s* to be newly authorized under this *general SPDES permit*, an *operator* must:

   a. within 180 days of receiving written notification from the department that a permit for discharges from MS4s is required, submit an NOI using the form provided by the *Department* (or a photocopy thereof); and

   b. submit an NOI, signed in accordance with Part VI.J of this *general SPDES permit*, to:

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

2. Unless notified by the *Department* to the contrary, *operators* who submit a complete NOI in accordance with the requirements of this *general SPDES permit* are authorized to *discharge stormwater* from *small MS4s* under the terms and conditions of this *general SPDES permit* thirty (30) days after the date that a complete NOI is received by the *Department*.

3. In the *Department*'s sole discretion, it may deny coverage under this general SPDES permit and require submittal of an application for an *individual SPDES permit* based on a review of the NOI or other information (see Part VI.O of this permit).

C. Small MS4s Not Required to Gain Coverage
Operators of unregulated *small MS4s* may apply for coverage under this *general SPDES permit* at any time, per Part II.B.

D. Voluntary Extension of Permit Coverage to Permittee's Full Jurisdiction
Operators of regulated *small MS4s* may also extend their permit coverage to areas under their control, but outside of the existing area covered by this permit. This may be done by describing the program components 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 *permittee's* full jurisdiction.

Part III. SPECIAL CONDITIONS

A. Discharge Compliance with Water Quality Standards
Where a *discharge* is already authorized under this *general SPDES 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 *permittee* of such violation(s) and may take enforcement actions for such violations. The *permittee* 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 *permittee* must document these actions in the *SWMP*. If violations occur, then coverage under this *general SPDES permit* may be terminated by the *Department* at its sole discretion, and an alternative *general SPDES permit* or *individual SPDES permit* may be issued. 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.

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 *impaired* waters listed in Appendix 2, the permittee must ensure no net increase in its *discharge* of the listed *POC* to that water.

By January 8, 2013, *permittees* must assess their progress and evaluate their *SWMP* with respect to the MS4's effectiveness in ensuring no net increased discharge of stormwater *POC*(s) to the impaired waters for *storm sewersheds* that have undergone non-negligible changes to land areas or practices during the time the MS4 has been covered by this permit. This assessment shall be conducted for the portions of the *small MS4 storm sewershed* that *discharge* to the listed waters. 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.

2. Watershed Improvement Strategies

The *SWMPs* for *permittees* in the watersheds listed below must be modified to comply with the following requirements. *Permittees* implementing these BMPs in addition to the BMPs required of all *permittees* will be taking satisfactory first steps towards achieving compliance with TMDL requirements. The *permittees* 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.

By January 8, 2013, permittees 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*.

If the modeling shows 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.

a. **New York City Watershed East of the Hudson River**
Permittees 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**
Permittees 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 and 5.

c. **Pathogen Watersheds**
Permittees 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 and 7.

d. **Nitrogen Watersheds**
Permittees 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 *permittee* must review the applicable *TMDL* to see if it includes requirements for control of *stormwater discharges*. If a *permittee* 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.

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.

Within three years of having modified its SWMP to ensure that reduction of the POC specified in the TMDL is achieved, permittees 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

Permittees must *develop, 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. *Permittees* must, by March 9, 2009 (or at the time of a Department audit of the SWMP), prepare a *SWMP plan* documenting 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 *permittee*, by a shared effort through a group or coalition of individual *permittees*, or by a third party entity. The *SWMP plan* shall be made readily available to permittee's staff and to the public and to *Department* and EPA staff.

B. Cooperation Between Permittees Encouraged

The *Department* encourages *permittees* to cooperate when *developing* and *implementing* their *SWMP*[2]. However, each *permittee* is responsible for obtaining its own permit coverage and for filing its own NOI. If one *permittee* is relying on another *permittee* to satisfy one or more of its permit obligations, that fact must be noted on the *permittee's* MCC form. The other entity must, in fact, *implement* the MCM(s) and must agree to *implement* the MCM(s) on the first *permittee's* behalf. This agreement between the two or more parties must be documented in writing and signed by both (all) parties. Part IV.G. below may apply if such an agreement is not already in place. The agreement must be included in the *SWMP plan*, and be retained by the *permittee* for the duration of this *general SPDES permit*, including any adminstrative extensions of the permit term. Irrespective of any agreements between *permittees*, each individual *permittee* remains legally responsible for satisfying all GP-0-08-002 requirements and for its own *discharges*.

Permittees that are working together to *develop* or *implement* their *SWMPs* are encouraged to complete shared annual reports. *Permittees* 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, *permittees* are required to *develop* 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[3].

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[2] 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.

[3] The purpose of this section is to minimize conflicts between adjacent *small MS4s*. For the purposes of this *general SPDES permit*, areas under the *permittee's* jurisdiction shall mean areas where the legal authority exists for the subject *permittee* to *develop* and *implement* an *SWMP* including the six MCMs. It is not a permit requirement for *permittees* to *implement* and enforce any portion of their *SWMP* in any area that is under the jurisdiction of another *permittee*. 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 *general SPDES permit*, this despite the fact that the subject drainage does not directly enter the town's system.

SWMP coverage shall include all UA or additionally designated areas within the *permittee*'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 Permittees Authorized by GP-02-02 (Continuing Permittees)

Permittees authorized under GP-02-02 were required to *develop* an initial *SWMP* prior to March 10, 2003 and provide adequate resources to fully *implement* the *SWMP* no later than January 8, 2008. Under GP-02-02, *permittees* were also required to make steady progress toward full *implementation*.

Permittees authorized under GP-02-02 shall continue to fully *implement* their *SWMP*. A *permittee* may modify its *SWMP* if it determines changes are needed to improve *implementation* of their *SWMP*. Any changes to a *SWMP* shall be reported to the *Department* in the MS4's annual report and Municipal Compliance Certification (MCC) form (See Part V.C and V.D).

E. SWMP Development and Implementation for Newly Regulated Permittees (Small MS4s not Previously Authorized by GP-02-02)

Certain *small MS4s* designated by 40CFR Section 122.32(a)(1) were not authorized by GP-02-02, but are now required to gain coverage under this *general SPDES permit*. The *small MS4s* were not previously authorized because they were either:

- required to gain coverage under GP-02-02, but were granted a waiver from that requirement;
- were not required to gain coverage under GP-02-02 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-02-02.

Operators of *small MS4s* newly regulated under this *general SPDES 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 *permittee* may modify its *SWMP* at any time, provided the modification complies with the terms and conditions of this *general SPDES permit*. 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).

Permittees 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 permit.

F. Minimum Control Measures

Each *permittee* is required to develop and implement a *SWMP* that satifies 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 *permittees* in watersheds with improvement strategies must address, referred to in Part III.B.2, are described in Part IX.

G. Reliance Upon Third Parties

This section applies when a *permittee* 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 *permittee* for services provided (for example businesses that create policies or procedures for *permittees*, perform illicit discharge identification and track down, maintain roads, remove snow, clean storm sewer system, sweep streets, etc as contracted by the permittee).

The permittee 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 (permittee's name) stormwater management program and agree to implement any corrective actions identified by the (permittee's name) or a representative. I also understand that the (permittee'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 (permittee's name) will not diminish, eliminate, or lessen my own liability."

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

A. Assessment

Permittees 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 *permittee's SWMP* by allowing the examination of trends in the information collected.

The *permittee* must conduct an annual evaluation of its program compliance, the appropriateness of its identified *BMPs*, 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*.

B. Recordkeeping

The *permittee* must keep records required by this 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 *permittee* shall keep duplicate records (either hard copy or electronic), to have one copy for public observation and a separate working copy where the *permittee'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:

NYS DEC "MS4 Coordinator"
Bureau of Water Permits
625 Broadway, 4th Floor
Albany, NY 12233-3505

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

a. Annual Report Submittal for Newly Regulated Permittees (Small MS4s not Previously Authorized by GP-02-02)

Newly regulated *permittees 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 *permittees* 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 year.

b. Annual Report Submittal for Permittees Authorized by GP-02-02 (Continuing Permittees)

Beginning with annual reports due in 2009 *permittees* 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

Permittees working together to *develop* 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 *permittees* (*BMPs*, *measurable goals*, schedules of planned activities, etc.). To facilitate the submission of one annual report for the entire group of *permittees*, individual *permittee's* activities may be incorporated into the report by either:

- providing the details specific to the *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 the *small MS4*(s) on a separate sheet(s) that will be attached with the one group report.

Regardless of the method chosen, each *permittee* 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 *permittee* 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 *permittee*;

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 *permittee* at an existing *municipal* meeting or may be made available for comments on the internet. Additionally, *permittees* participating in shared annual reporting may combine meetings to have a group or regional meeting. While the group meeting is allowable, each *permittee* shall ensure that local officials are informed about the program, activities and progress made; and

c. Submit a summary of any comments received and (intended) responses on the individual *permittee*'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 additional *TMDL* 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 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 may be submitted 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 MS4s* 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 *general SPDES 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 the annual report (Part V.C.) and 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 *permittees*, however, are not enabled by state law to adopt local laws or ordinances. Those *permittees* (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 *permittee* 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, permit revocation, suspension, or modification; or for denial of a permit renewal application.

C. Enforcement

Failure of the *permittee,* its contractors, subcontractors, agents and/or assigns to strictly adhere to any of the 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 General SPDES Permit

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

E. Technology Standards

Permittees, 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 *general SPDES permit* or controlling a pollutant not limited in the permit is promulgated or approved 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 *permittee* 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 *general SPDES permit.*

G. Duty to Mitigate

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

H. Duty to Provide Information
The *permittee* 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 *general SPDES permit*. Failure to provide information requested shall be a violation of the terms of this *general SPDES permit* and applicable regulation.

I. Other Information
Permittees 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 *general SPDES permit* requires be maintained by the *permittee*, 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 , 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 *general SPDES permit* and other information requested by the *Department* including MCC forms (part V.D.) or authorized representative of the *Department* shall be signed by a person described above or by a duly authorized representative of that person[4].

NOTE: 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 *permittee* (a duly authorized representative may thus be either a named individual or any individual occupying a named position); and

c. **Changes to authorization.** If an authorization to discharge is no longer accurate because a different *permittee* has responsibility for the overall operation of another *permittee's* program, these changes must be indicated on the MCC form submitted to the *Department* per Part V.D.

[4]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.

d. **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.

e. **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 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."

3. 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 *general SPDES permit* shall be construed to preclude the institution of any legal action or relieve the *permittee* 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 *general SPDES 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 *general SPDES permit* are severable, and if any provision of this *general SPDES permit*, or the application of any provision of this *general SPDES 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 *general SPDES permit* to apply for and/or obtain either an *individual SPDES permit* or an alternative *general SPDES permit*. Where the *Department* requires a *permittee* to apply for an *individual SPDES permit*, the *Department* will notify such 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 permittee'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 *permittee* authorized by this *general SPDES permit* may request to be excluded from the coverage of this *general SPDES permit* by applying for an *individual SPDES permit or an alternative general SPDES permit*. In such cases, a *permittee* must submit an individual application or an application for an alternative general SPDES 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 *general SPDES permit* if the reasons cited by the *permittee* are adequate to support the request.

3. When an individual SPDES permit is issued to a permittee authorized to discharge under a general SPDES 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 *general SPDES permit* shall be construed to preclude the institution of any legal action or relieve a *permittee* 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 *general SPDES permit* releases the *permittee* from any responsibility or requirements under other environmental statutes or regulations.

Q. Proper Operation and Maintenance

A *permittee* 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 *permittee* to achieve compliance with the conditions of this *general SPDES 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, installed by a *permittee* only when necessary to achieve compliance with the conditions of the *general SPDES permit*.

R. Inspection and Entry

The *permittee* 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 *permittee's* premises where a regulated facility or activity is located or conducted or where records must be kept under the conditions of this *general SPDES 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 *general SPDES permit* may be modified, revoked, or suspended for cause at any time. The filing of a request by the *permittee* for a permit modification, reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not limit, diminish and / or stay compliance with any terms of this permit.

T. Anticipated noncompliance.

The permittee 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.

U. Permit Transfers.

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

Part VII. MINIMUM CONTROL MEASURES - TRADITIONAL LAND USE CONTROL MS4s

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 permittees refer to assistance and guidance documents available from the *State* and EPA.

Continuing permittees (authorized by GP-02-02) were required to develop a SWMP with the MCM requirements below by January 8, 2008. Under this *general SPDES permit*, the continuing *permittees* are required to implement their SWMP, including the MCM requirements below. Notwithstanding any sooner deadlines contained elsewhere within this permit, newly regulated *permittees* 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 plan, the *permittee* must identify (i) the agencies and/or offices that would be responsible for implementing the plan element and (ii) any protocols for coordination among such agencies and/or offices necessary for the implementation of the plan element.

The *permittee* may *develop* and /or *implement* their *SWMP* within their jursidiction on their own. The *permittee* may also *develop* and / or *implement* part or all of their *SWMP* through an intermunicipal program with another *permittee*(s) or through other cooperative or contractual agreements with third parties that provide services to the *permittees*.

1. **Public Education and Outreach - SWMP Development / Implementation**
At a minimum, all *permittees* must:

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

b. *Develop* 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. *POC*s and their sources;
   iii. steps contributors of these pollutants can take to reduce pollutants in *stormwater* runoff; and
   iv. steps contributors of non-*stormwater discharges* can take to reduce pollutants (non-*stormwater discharges* are listed in Part I.A.2);

c. *Develop*, record, periodically assess, and modify as needed, *measurable goals*; and

d. Select appropriate education and outreach *activities* and *measurable goals* to ensure the reduction of all *POC*s in *stormwater discharges* to the *MEP*.

Required SWMP Reporting

e. **Program *implementation* reporting** for **continuing *permittees*** (authorized under GP-02-02). At a minimum, the *permittee* 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. *permittees* 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; and

      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; and
   iii. report on effectiveness of program, *BMP* and *measurable goal* assessment.

f. Reporting for **newly regulated *permittees*** (small MS4s not authorized under GP-02-02). At a minimum, the *permittee* 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 neccessary) *POCs*;
      - *development* of education and outreach program and *activities* for the general public and target or priority audiences that address *POC*s, geographic areas of concern, and / or *discharges* to *303(d) / TMDL* waterbodies;
      - *permittees* 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 *permittees* 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* 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* ;
ii. identifies types of input the *permittee* will seek from the key individuals and groups, public and private, to support *development* and *implementation* of the SWMP and how the input will be used; and
iii. describes the public involvement / participation activities the *permittee* 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;

c. **Local stormwater public contact.**
Identify a local point of contact for public concerns regarding *stormwater* management and compliance with this *general SPDES 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 *permittees* 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
  - 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 permittee must hold such a meeting. However, the permittee 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 *State 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 *general SPDES permit* does not require a specified time frame for public comments, although it is recommended that *permittees* 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. *Permittees* 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 *permittee'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*, record, periodically assess and modify as needed *measurable goals*; and

f. Select 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 *permittees*** (authorized under GP-02-02). At a minimum, the *permittee* 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 *permittees*** (small MS4s not authorized under GP-02-02). At a minimum, the *permittee* 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 *permittee'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.

3. **Illicit Discharge Detection and Elimination (IDDE) - SWMP Development / Implementation**
At a minimum, all *permittees* must:
a. *Develop, implement* and enforce a program to detect and eliminate *illicit discharges* (as defined at Section 122.26(b)(2)) into the *small MS4*;

b. *Develop* and maintain a map, at a minimum within the *permittee'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 *permittee'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 *permittee's* jurisdiction; and
iii. when grant funds are made available or for sewer lines surveyed during an illicit discharge trackdown, the *permittee'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 *permittee'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;

g. *Develop* 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 public employees, businesses, and the general public of the hazards associated with illegal *discharges* and improper disposal of waste;

i. Address the categories of non-stormwater *discharges* or flows listed in Part I.A.2 as necessary;

j. *Develop*, record, periodically assess, and modify as needed, *measurable goals*; and

k. Select 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 *permittees*** (authorized under GP-02-02). At a minimum, the *permittee* 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.

m. Reporting for **newly regulated *permittees*** (small MS4s not authorized under GP-02-02). At a minimum, the *permittee* 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 *permittees* must:

a. *Develop, implement,* and enforce a program that:

i. provides equivalent protection to the NYS SPDES General Permit for Stormwater Discharges from Construction Activities (either GP-02-01or GP-0-08-001), unless more stringent requirements are contained within this *general SPDES permit* (GP-0-08-002);

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 up-to-date 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 using the NYSDEC Gap Analysis Workbook or be certified by the attorney representing the small MS4 as being equivalent to one of the versions of the sample laws if one of the sample laws is not adopted or if a modified version of the sample law is adopted;

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 or local 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;

vii. describes procedures for *SWPPP* review that incorporate consideration of potential water quality impacts and review of individual pre-construction *SWPPPs* to ensure consistency with *State* and local sediment and erosion control requirements;
- 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 *permittee* must utilize the "SWPPP Acceptance Form" created by the *Department* and required by the SPDES General Permit for Stormwater Discharges from Construction Activity (GP-0-08-001) when notifying construction site owner / operators that their plans have been accepted and approved by the *permittee*;

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 *permittee* 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;

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;

xi. by two years from the date this permit is issued, ensures that construction site operators have received erosion and sediment control training before they do work within the *permittee's* jurisdiction. 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 *permittee* is not expected to perform such training, but they may co-sponsor training for construction site operators in their area;
- the *permittee* may ask for a certificate of completion or other such proof of training; and
- the *permittee* 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*, record, periodically assess and modify as needed *measurable goals*; and

xiv. select 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 *permittees*** (authorized under GP-02-02). At a minimum, the *permittee* 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 *permittees*** (small MS4s not authorized under GP-02-02). At a minimum, the *permittee* 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;

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 *permittees* must:
a. *Develop*, *implement*, and enforce a program that:

i. provides equivalent protection to the NYS SPDES General Permit for Stormwater Discharges from Construction Activities (either GP-02-01or GP-0-08-001), unless more stringent requirements are contained within this *general SPDES permit* (GP-0-08-002);

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*; 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* or local law that meet the *State*'s most up-to-date 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 using the NYSDEC Gap Analysis Workbook or certified by the attorney representing the *small MS4* as being equivalent to one of the sample laws if one of those sample laws is not adopted or if a modified version of one of the sample laws is adopted;

iv. includes a combination of structural management practices (including, but not limited to practices from the NYS Stormwater Management Design Manual or equivalent) and / or non-structural management practices (including, but not limited to comprehensive plans, open space preservation programs, *Low Impact Development* (LID), Better Site Design (BSD) and other *Green Infrastructure* practices , , land use regulations) appropriate for the *permittee* that will reduce the *discharge* of pollutants to the MEP. Permittees are encouraged to implement *Green Infrastructure* practices at a site level and to review, and revise where appropriate, local codes and laws that include provisions that preclude construction that minimizes or reduces pollutant loadings.
- 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 that incorporate consideration of potential water quality impacts and review of individual pre-construction *SWPPPs* to ensure consistency with 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; and
- after review of *SWPPPs*, the *permittee* must utilize the "SWPPP Acceptance Form" created by the *Department* and required by the SPDES General Permit for Stormwater Discharges from Construction Activity (GP-0-08-001) when notifying construction site owner / operators that their plans have been accepted and approved by the *permittee*;

vi. by May 1, 2009 establish and maintain an inventory of post-construction stormwater management practices within the *permittees* 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

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. *Permittees* are not required to collect *stormwater* samples and perform specific chemical analysis;

b. *Develop*, *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*, record, periodically assess and modify as needed *measurable goals*; and

d. Select 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 *permittees*** (authorized under GP-02-02). At a minimum, the *permittee* 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;

f. Reporting for **newly regulated *permittees*** (small MS4s not authorized under GP-02-02). At a minimum, the *permittee* 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:
- 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 *permittees* must:

a. *Develop* 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 a self assessment of all municipal operations addressed by the SWMP to:
- determine the sources of pollutants potentially generated by the *permittee*'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 *permittee*'s capabilities;

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 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 permittee 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* of the above noted provisions of the SWMP will ensure that MEP is met for discharges from those facilities;

b. *Develop*, record, periodically assess and modify as needed measurable goals; and

c. Select appropriate pollution prevention and good housekeeping *BMPs* and *measurable goals* to ensure the reduction of all *POCs* in *stormwater discharges* to the *MEP*.

Required SWMP Reporting

d. **Program *implementation* reporting** for **continuing *permittees*** (authorized under GP-02-02). *Permittees* 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 *permittee* 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, polices and procedures that have been developed, modified, and / or implemented and report, at a minimum, on the items below that the *permittee'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
- pounds of pesticides / herbicides applied as pure product.

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 *permittee* shall report on items that will demonstrate program effectiveness.

e. Reporting for **newly regulated *permittees*** (small MS4s not authorized under GP-02-02). *Permittees* 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 *permittee* 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);
- 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 MS4'S

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 permittees refer to assistance and guidance documents available from the *State* and EPA.

Continuing permittees (authorized by GP-02-02) were required to develop a SWMP with the MCM requirements below by January 8, 2008. Under this *general SPDES permit*, the continuing *permittees* are required to implement their SWMP, including the MCM requirements below. Newly regulated permittees are required to develop their SWMP, containing the MCM requirements below, within the first 3 years of coverage and then commence implementation.

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

For each of the elements of the plan, the *permittee* must identify (i) the agencies and/or offices that would be responsible for implementing the 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 *general SPDES 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 *permittees* - general public using or living along transportation systems, staff, contractors;
- educational *permittees* - faculty, other staff, students, visitors;
- other government *permittees* - staff, contractors, visitors.

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

At a minimum, all *permittees* must:

a. Identify *POC*s, waterbodies of concern, geographic areas of concern, target audiences;

b. *Develop* 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 contributors of these pollutants can take to reduce pollutants in *stormwater* runoff; and
   iv. steps 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 *permittee's* website;
   iv. with pay checks; and
   v. in employee break rooms;

d. *Develop*, record, periodically assess and modify as needed *measurable goals*; and

e. Select 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. **Program *implementation* reporting** for **continuing *permittees*** (authorized under GP-02-02). At a minimum, the *permittee* 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. *permittee'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 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; and
   iv. report on effectiveness of program, *BMP* and *measurable goal* assessment.

g. Reporting for **newly regulated *permittees*** (small MS4s not authorized under GP-02-02). At a minimum, the *permittee* 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;
      - *permittees* 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 *permittees* must:
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* and review of the *SWMP*;

c. **Local stormwater public contact.**
Identify a local point of contact for public concerns regarding *stormwater* management and compliance with this *general SPDES 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 *permittees* 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
  - 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 *permittee* 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 *general SPDES permit* does not require a specified time frame for public comments, although it is recommended that *permittees* 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. *Permittees* 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 *permittees* 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) known to have a specific interest in the permittee's *SWMP*;

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*, record, periodically assess and modify as needed *measurable goals*; and

f. Select 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 *permittees*** (authorized under GP-02-02). At a minimum, the *permittee* 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 *permittees*** (small MS4s not authorized under GP-02-02). At a minimum, the *permittee* 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 *permittees* must:

a. *Develop*, *implement* and enforce a program to detect and eliminate *illicit discharges* (as defined at Section 122.26(b)(2)) into the *small MS4;*

b. *Develop* and maintain a map, at a minimum within the *permittee'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 *permittee'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 *permittee's* jurisdiction; and
   iii. when grant funds are made available or for sewer lines surveyed during an illicit discharge trackdown, the *permittee'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 *permittee'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

   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 *permittee's IDDE* program; and
      - the mechanisms and directive must be equivalent to the to the *State*'s model illicit discharge local law;

g. *Develop* 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;

j. *Develop*, record, periodically assess, and modify as needed, *measurable goals;* and

k. Select 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 *permittees*** (authorized under GP-02-02). At a minimum, the *permittee* 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 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 *permittees*** (small MS4s not previously authorized under GP-02-02). At a minimum, the *permittee* 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;

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 *permittees* must:

a. *Develop*, *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 *general SPDES 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 up-to-date 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 right-of-way of, or under the maintenance jurisdiction by the *permittee* or within the maintenance jurisdiction of the MS4; and
- the mechanisms and directive must be equivalent 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* or local 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 *permittee's* jurisdiction, including the procedures for submission of *SWPPPs*, construction site inspections, and other procedures associated with control of construction stormwater;

vii. by two years from the date this permit is issued, ensures that construction site operators have received erosion and sediment control training before they do work within the *permittee's* jurisdiction:
- training may be provided by the *Department* or other qualified entities (such as Soil and Water Conservation Districts);
- the *permittee* is not expected to perform such training, but they may co-sponsor training for construction site operators in their area;
- the *permittee* may ask for a certificate of completion or other such proof of training; and
- the *permittee* 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, record, periodically assess and modify as needed *measurable goals*; and

x. select 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 *permittees*** (authorized under GP-02-02). At a minimum, the *permittee* 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 *permittees*** (small MS4s not authorized under GP-02-02). At a minimum, the *permittee* 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.

5. **Post-Construction Stormwater Management SWMP Development / Implementation**
At a minimum, all *permittees* must :
a. *Develop*, *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 *general SPDES 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 up-to-date 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 by the *permittee* 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 management practices (including, but not limited to practices from the NYS Stormwater Management Design Manual or equivalent) and / or non-structural management practices (including, but not limited to comprehensive plans, open space preservation programs, *Low Impact Development* (LID), Better Site Design (BSD) and other *Green Infrastructure* practices , , land use regulations) appropriate for the *permittee* that will reduce the *discharge* of pollutants to the MEP. Permittees are encouraged to implement *Green Infrastructure* practices at a site level and to review, and revise where appropriate, local codes and laws that include provisions that preclude construction that minimizes or reduces pollutant loadings.
- 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. by May 1, 2009 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. *Permittees* are not required to collect *stormwater* samples and perform specific chemical analysis;

b. *Develop*, *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*, record, periodically assess and modify as needed *measurable goals*; and

d. Select 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** *permittees* (authorized under GP-02-02). At a minimum, the *permittee* 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 mechanismequivalent mechanism,that regulatory mechanism is equivalent ; and
vi. report on effectiveness of program, *BMP* and *measurable goal* assessment.

f. Program reporting for **newly regulated *permittees***(small MS4s not authorized under GP-02-02). At a minimum, the *permittee* shall report on the items below:

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-0-08-001);

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 *permittees* must:

a. *Develop* 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. includes the performance of a self assessment of all municipal operation to:

- determine the sources of pollutants potentially generated by the *permittee*'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" 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 *permittee*'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., 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 permittee 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. D*evelop*, record, periodically assess and modify as needed *measurable goals* ; and

c. Select appropriate pollution prevention and good housekeeping *BMPs* and *measurable goals* to ensure the reduction of all *POCs* in *stormwater discharges* to the *MEP*.

Required SWMP Reporting

d. **Program *implementation* reporting** for **continuing *permittees*** (authorized under GP-02-02). *Permittees* 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 *permittee* 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, polices and procedures that have been developed, modified, and / or implemented and report, at a

minimum, on the items below that the *permittee'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
- pounds of pesticides / herbicides applied as pure product.

iii. staff training events and number of staff trained; and

vii. 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 *permittee* shall report on items that will demonstrate program effectiveness.

e. Reporting for **newly regulated *permittees*** (small MS4s not authorized under GP-02-02). *Permittees* 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 *permittee* 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. ADDITIONAL BEST MANAGEMENT PRACTICES - WATERSHED IMPROVEMENT STRATEGIES

Part IX. ADDITIONAL BEST MANAGEMENT PRACTICES FOR WATERSHED IMPROVEMENT STRATEGIES

A. <u>New York City East of Hudson Watershed MS4s -</u> (Mapped in Appendix 3)
Within 3 years of the effective date of this permit (unless otherwise noted), permittees 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

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 *permittee* 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 1:24000 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 to ensure that onsite wastewater treatment (septic) systems are inspected and, where necessary, maintained or rehabilitated at a minimum frequency of once every three years. 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 *permittee* 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 *permittee* shall start 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.*

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 *permittee* should participate in locally based watershed planning efforts which involve the *Department*, other *permittees*, stakeholders and other interested parties;

iii. establish policy and procedures for project permitting, design, funding, construction and maintenance.

iv. for permittee's 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. F (Cooperation Between Permittees Encouraged), retrofit projects can be completed in cooperation with other permittees 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 permittee 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;

iii. policy and procedures for the inspection, maintenance and repair of a *permittee'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.

B. Other Phosphorus Watershed MS4s (Mapped in Appendices 4 and 5)

Within 3 years of the effective date of this permit (unless otherwise noted), permittees 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 permitttee's jurisdiction and the permittees'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 Eliminationapplicable 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 to ensure that onsite wastewater treatment (septic) systems are inspected and, where necessary, maintained or rehabilitated at a minimum frequency of once every three years. 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. By September 30, 2008, the *permittee* 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 *permittee* should participate in locally based watershed planning efforts which involve the *Department*, other *permittees*, stakeholders and other interested parties;

   iii. establish policy and procedures for project permitting, design, funding, construction and maintenance

   iv. 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 Operationsapplicable 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.

C. **Pathogen Impaired Watershed MS4s (Mapped in Appendix 6 and7)**
Within 3 years of the effective date of this permit, *permittees* 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 permitttee's jurisdiction and the permittees'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 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- applicable to *traditional land use* control and *traditional non-land use control MS4s*.

a. *Develop*, *implement* and enforce a program to ensure that onsite wastewater treatment (septic) systems are inspected and, where necessary, maintained or rehabilitated at a minimum frequency of once every three years. 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 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;

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 *permittee* should participate in locally based watershed planning efforts which involve the *Department*, other *permittees*, 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.

D. Nitrogen Watershed MS4s (Mapped in Appendix 8)

Within 3 years of the effective date of this permit, permittees 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 permitttee's jurisdiction and the permittees'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 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*

a. *Develop, implement* and enforce a program to ensure that onsite wastewater treatment (septic) systems are inspected and, where necessary, maintained or rehabilitated at a minimum frequency of once every three years. 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 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 *permittee* should participate in locally based watershed planning efforts which involve the *Department*, other *permittees*, stakeholders and other interested parties;

c. establish policy and procedures for project permitting, design, funding, construction and maintenance; and

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.*

Develop a turf management practices and procedures policy. The policy should address the following:

a. 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 Licensed Landscape Architect; and

b. 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).

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 permittee), 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 general SPDES 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.

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 general SPDES permit when the permittee 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 permittee 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 permittee 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.

General SPDES Permit - means a SPDES permit issued pursuant to 6 NYCRR Part 750-1.21 authorizing a category of discharges.

Green Infrastructure - Green infrastructure approaches essentially infiltrate, evapotranspirate 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 permittee or Department has determined to be a substantial contributor of pollutants to the small MS4.

Implementation - period after development of SWMP, where the permittee puts into effect the practices, tasks and other activities in their SWMP.

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.

Individual SPDES Permit - means a SPDES permit issued to a single facility in one location in accordance with this Part (as distinguished from a general SPDES 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 microscale 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 permittee chooses only a few of the least expensive methods, it is likely that MEP has not been met. On the other hand, if a permittee 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 permittees 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 permittee 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-madechannels, 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 general SPDES 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.

Permittee - means the holder of this general SPDES permit or an entity required to gain coverage under this general SPDES permit. The owner / operator of the small MS4.

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, and floatables impacting waterbodies on the 303(d) list known to come in contact with stormwater that could be discharged to that water body. The sources of these pollutants are typically: urban runoff; urban / stormwater runoff; erosion; municipal; on-site waste treatment system (WTS); or other various, multiple sources.

- 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 permittee to assess known and potential POCs within the area served by their small MS4. This will allow the permittee 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, licensed 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..

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 abandon buildings to stormwater treatment systems
- Retrofit of abandon 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 to streams
- Upgrade of an existing conveyance system to provide water quality and /or quantity control within the drainage structure
- Reforestation

Small MS4 - MS4 system within an urbanized area or other areas designated by the State.

Staff - actual employees of the permittee 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.

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.**

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 .

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 permittee. Permittees 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 permittees 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 permittee 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 *permittee*should assess activities already being performed that could help meet, or be modified to meet, permit requirements and be included in the *SWMP*. *Permittees* can create their *SWMP* individually, with a group of other individual *permittees* or a coalition of *permittees*, or through the work of a third party entity.

Stormwater Management Program Plan- used by the permittee 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 permittee 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*.

Permittees can create their *SWMP plan* individually, with a group of other individual *permittees* or a coalition of *permittees*, 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 permittee'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 *permittee* 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.

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.

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 souce 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 permittees 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 muncipalities.

Surface Waters of the State - shall be construed to include lakes, bays, sounds, ponds, impounding reservoirs, springs, wells, 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.

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 permittee may be required at the Department's sole discretion to obtain an individual SPDES permit or an alternative general SPDES permit or the permit may be modified. In addition, coverage under this permit could terminate, meaning the discharge must cease.

APPENDIX 1
LIST OF NYS DEC REGIONAL OFFICES

Region	COVERING THE FOLLOWING COUNTIES:	DIVISION OF ENVIRONMENTAL PERMITS (DEP) PERMIT ADMINISTRATORS	DIVISION OF WATER (DOW) WATER (SPDES) PROGRAM
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 STREAM 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	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

APPENDIX 2.
IMPAIRED STREAM SEGMENTS AND PRIMARY POLLUTANTS OF CONCERN

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

APPENDIX 2.
IMPAIRED STREAM SEGMENTS AND PRIMARY POLLUTANTS OF CONCERN

COUNTY	WATERBODY NAME	POLLUTANT
Kings	Hendrix Creek	pathogens
Kings	Hendrix Creek	floatables
Kings	Paerdegat Basin	floatables
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 Waters	pathogens
Nassau	Long Island Sound, Nassau County Waters	nitrogen
Nassau	Manhasset Bay, and tidal tribs	pathogens
Nassau	Manhasset Bay, and tidal tribs	pathogens
Nassau	Hempstead Harbor, north, 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	Oyster Bay Harbor	pathogens

APPENDIX 2.
IMPAIRED STREAM SEGMENTS AND PRIMARY POLLUTANTS OF CONCERN

COUNTY	WATERBODY NAME	POLLUTANT
Nassau	Mill Neck Creek and tidal tribs	pathogens
Nassau	Cold Spring Harbor, 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
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

APPENDIX 2.
IMPAIRED STREAM SEGMENTS AND PRIMARY POLLUTANTS OF CONCERN

COUNTY	WATERBODY NAME	POLLUTANT
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
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 (Queens)	nitrogen
Queens	Jamaica Bay, Eastern, and tribs (Queens)	pathogens
Queens	Jamaica Bay, Eastern, and tribs (Queens)	floatables
Queens	Thurston Basin	floatables
Queens	Bergen Basin	Nitrogen
Queens	Bergen Basin	pathogens
Queens	Bergen Basin	floatables

APPENDIX 2.
IMPAIRED STREAM SEGMENTS AND PRIMARY POLLUTANTS OF CONCERN

COUNTY	WATERBODY NAME	POLLUTANT
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	Tribs to Lake Lonely	Phosphorus
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	Huntington Harbor	pathogens
Suffolk	Centerport Harbor	pathogens
Suffolk	Northport Harbor	pathogens
Suffolk	Millers Pond	phosphorus
Suffolk	Stony Brook Harbor and West Meadow Creek	pathogens
Suffolk	Port Jefferson Harbor, North, and tribs	pathogens
Suffolk	Conscience Bay and tidal tribs	pathogens
Suffolk	Setauket Harbor	pathogens
Suffolk	Mt Sinai Harbor and tidal tribs	pathogens
Suffolk	Mattituck Inlet/Cr, Low, and tidal tribs	pathogens
Suffolk	Goldsmith Inlet	pathogens
Suffolk	Beach/Island Ponds, Fishers Island	pathogens
Suffolk	West Harbor, Fishers Island	pathogens
Suffolk	Dering Harbor	pathogens
Suffolk	Stirling Creek and Basin	pathogens
Suffolk	Budds Pond	pathogens

APPENDIX 2.
IMPAIRED STREAM SEGMENTS AND PRIMARY POLLUTANTS OF CONCERN

COUNTY	WATERBODY NAME	POLLUTANT
Suffolk	Town/Jockey Creeks and tidal tribs	pathogens
Suffolk	Goose Creek	pathogens
Suffolk	Hashamomuck Pond	pathogens
Suffolk	Richmond Creek and tidal tribs	pathogens
Suffolk	Tidal Tribs to Gr Peconic Bay, Northshr	pathogens
Suffolk	Mattituck (Marratooka) Pond	phosphorus
Suffolk	Mattituck (Marratooka) Pond	pathogens
Suffolk	Flanders Bay, East/Center, and tribs	pathogens
Suffolk	Flanders Bay, West/Lower Sawmill Creek	nitrogen
Suffolk	Flanders Bay, West/Lower Sawmill Creek	pathogens
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	Reeves Bay and tidal tribs	pathogens
Suffolk	Sebonac Cr/Bullhead Bay and tidal tribs	pathogens
Suffolk	Little Sebonac Creek	pathogens
Suffolk	Scallop Pond	pathogens
Suffolk	North Sea Harbor and tribs	pathogens
Suffolk	Wooley Pond	pathogens
Suffolk	Noyack Creek and tidal tribs	pathogens
Suffolk	Sag Harbor and Sag Harbor Cove	pathogens
Suffolk	Acabonack Harbor	pathogens
Suffolk	Northwest Creek and tidal tribs	pathogens
Suffolk	Lake Montauk	pathogens
Suffolk	Oyster Pond/Lake Munchogue	pathogens
Suffolk	Georgica Pond	pathogens
Suffolk	Sagaponack Pond	pathogens
Suffolk	Mecox Bay and tribs	pathogens
Suffolk	Heady and Taylor Creeks and tribs	pathogens
Suffolk	Penny Pond, Wells and Smith Creeks	pathogens
Suffolk	Weesuck Creek and tidal tribs	pathogens
Suffolk	Phillips Creek, Lower, and tidal tribs	pathogens
Suffolk	Penniman Creek and tidal tribs	pathogens
Suffolk	Quogue Canal	pathogens
Suffolk	Ogden Pond	pathogens
Suffolk	Quantuck Bay	pathogens
Suffolk	Quantuck Canal/Moneybogue Bay	pathogens
Suffolk	Tuthill, Harts, Seatuck Coves	pathogens

APPENDIX 2.
IMPAIRED STREAM SEGMENTS AND PRIMARY POLLUTANTS OF CONCERN

COUNTY	WATERBODY NAME	POLLUTANT
Suffolk	Forge River, Lower and Cove	pathogens
Suffolk	Tidal tribs to West Moriches Bay	Nitrogen
Suffolk	Tidal tribs to West Moriches Bay	pathogens
Suffolk	Narrow Bay	pathogens
Suffolk	Bellport Bay	pathogens
Suffolk	Patchogue 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
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

APPENDIX 2.
IMPAIRED STREAM SEGMENTS AND PRIMARY POLLUTANTS OF CONCERN

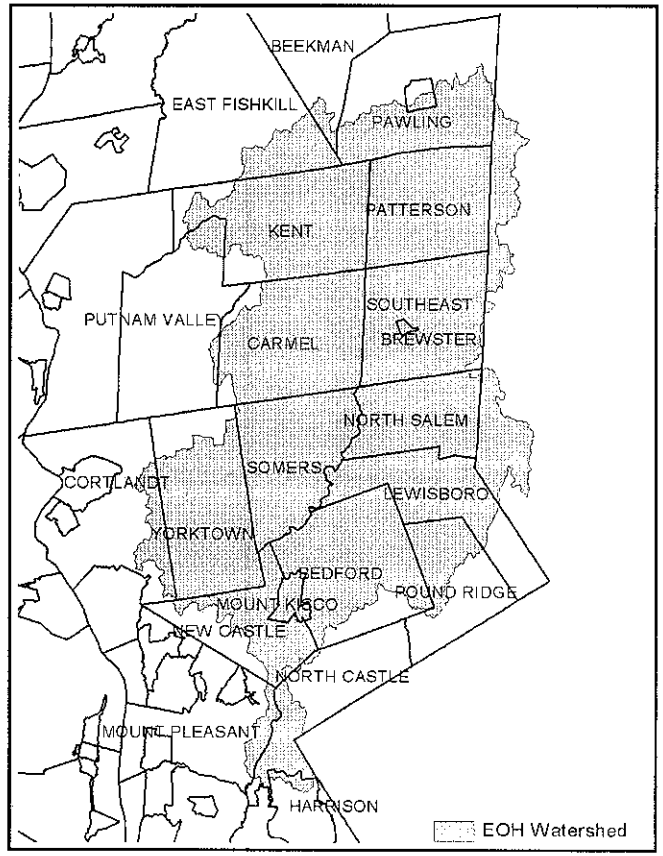
COUNTY	WATERBODY NAME	POLLUTANT
Westchester	New Rochelle Harbor	floatables
Westchester	Long Island Sound, Westchester Co Waters	pathogens
Westchester	Long Island Sound, Westchester Co Waters	nitrogen
Westchester	Larchmont Harbor	pathogens
Westchester	Larchmont Harbor	floatables
Westchester	Hutchinson 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 tribs	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 STREAM SEGMENTS AND SECONDARY POLLUTANTS OF CONCERN

COUNTY	WATERBODY	POLLUTANT
Oneida	Mohawk River, Main Stem	Copper
Westchester	Hutchinson River, Middle and tribs	Oil and Grease

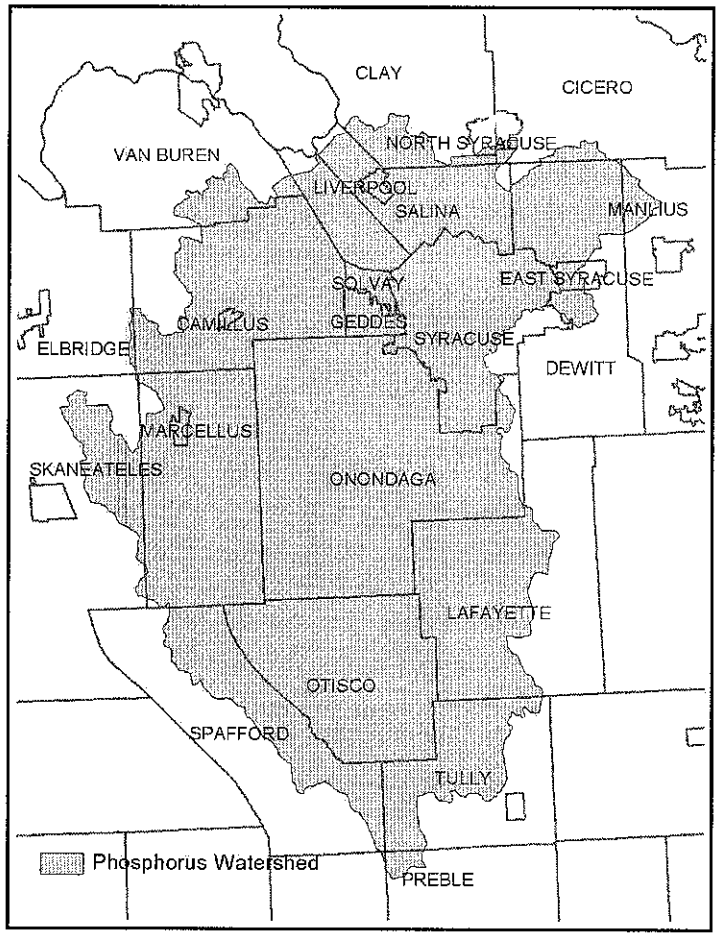
APPENDIX 3

NEW YORK CITY WATERSHED EAST OF THE HUDSON RIVER WATERSHED MAP



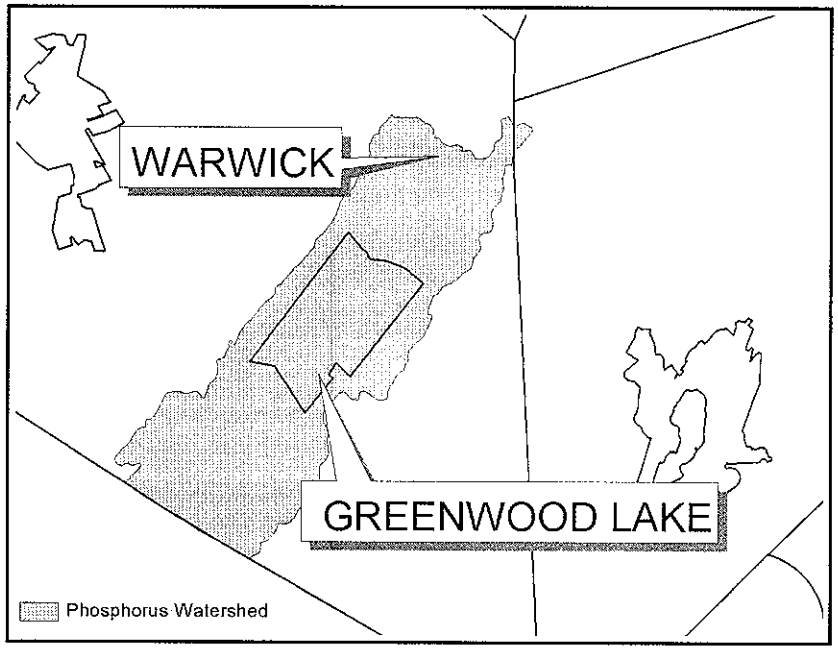
APPENDIX 4

ONONDAGA LAKE WATERSHED MAP



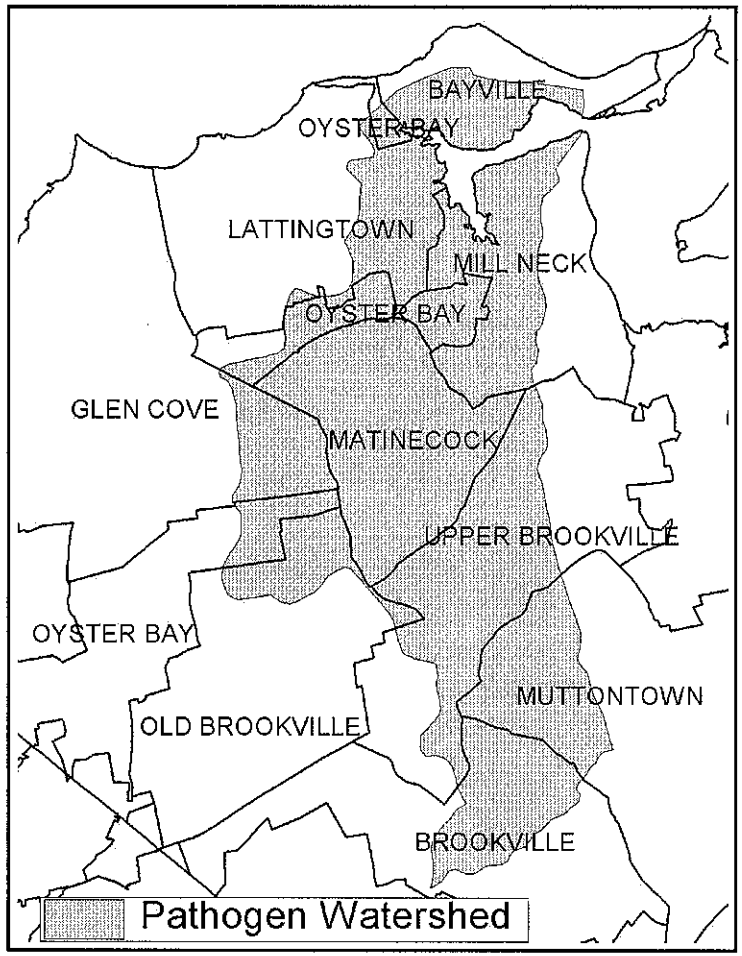
APPENDIX 5

GREENWOOD LAKE WATERSHED MAP



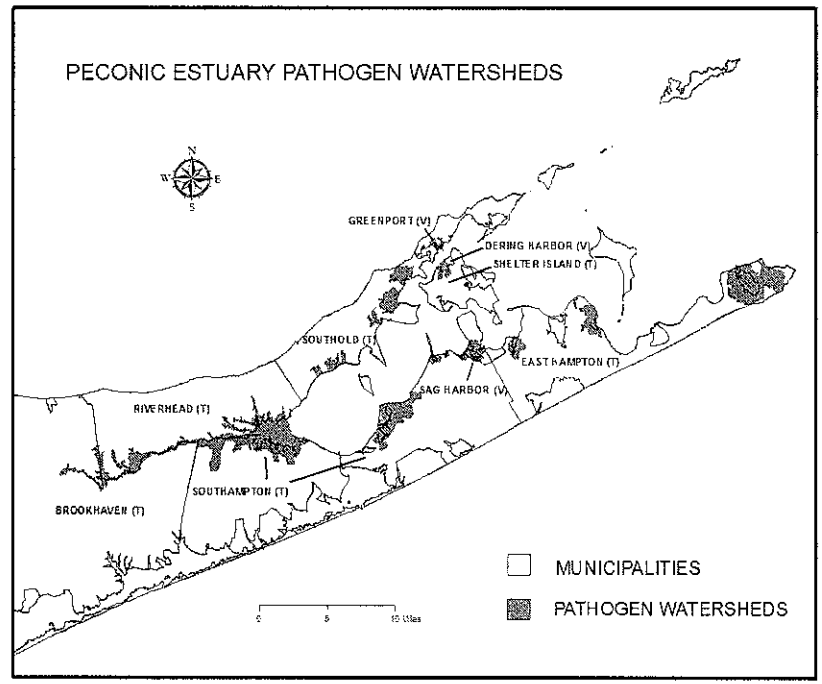
APPENDIX 6

OYSTER BAY WATERSHED MAP



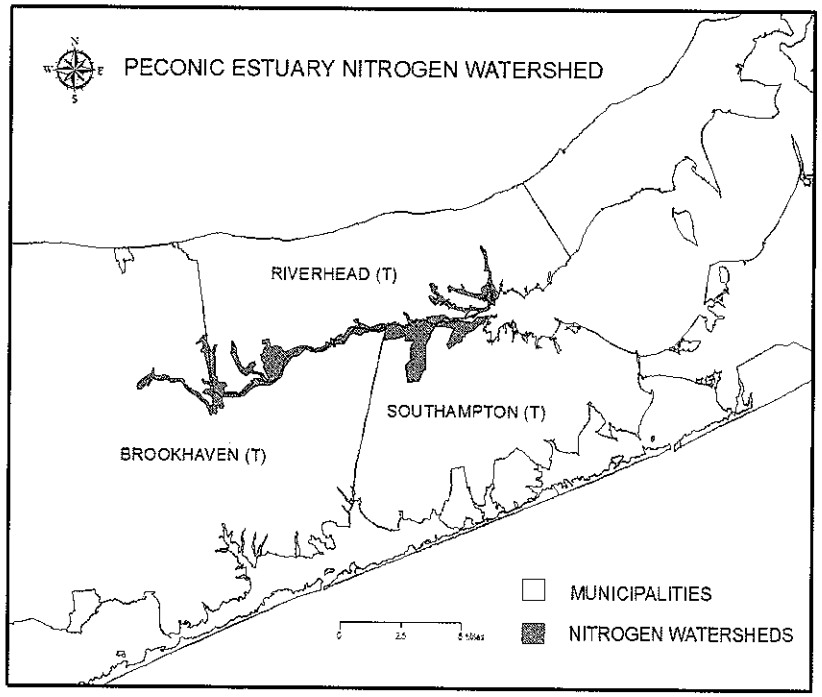
APPENDIX 7

PECONIC ESTUARY PATHOGEN WATERSHED MAP



APPENDIX 8

PECONIC ESTUARY NITROGEN WATERSHED MAP



APPENDIX B

TOWN NOI PER GP-02-02

New York State Department of Environmental Conservation
625 Broadway
Albany NY 12233-3505

Notice of Intent for Coverage Under an SPDES General Permit for Storm Water Discharges From SMALL MUNICIPAL SEPARATE STORM SEWER SYSTEMS

Submission of this Notice of Intent (NOI) constitutes notice that the entity identified in Section A of this form intends to be authorized by DEC's Small MS4 SPDES General Permit issued for storm water discharges from the small municipal separate storm sewer system (MS4) in New York State. Submission of the NOI also constitutes notice that the party identified in Section A of this form has read, understands, and meets the eligibility conditions of Part I.B. of the Small MS4 General Permit; agrees to comply with all applicable terms and conditions of the Small MS4 General Permit; understands that continued authorization under the Small MS4 General Permit is contingent on maintaining eligibility for coverage, and that implementation of the permittee's storm water management program is required to begin within five(5) calendar days after a completed NOI is received by DEC. In order to be granted coverage, all information required on this form must be completed. Please read and make sure you comply with all permit requirements, including the requirement to prepare and implement a storm water management program.

Section A. Small MS4 Owner/Operator Information

1. Name: Town of Poughkeepsie 2. Phone: (845) 486-3603

3. a. Mailing Address: a. Street or P.O. Box: One Overocker Road

b. City: Poughkeepsie c. State: NY d. Zip Code: 12603

Section B. Small MS4 Location Information

1. MS4 Name: Town Wide Drainage Improvements Areas

2. a. City/Town/Village: Town of Poughkeepsie

b. County(ies): Dutchess

3. a. Permit Applicant: ☐ Federal ☐ State ☐ County ☐ City ☒ Town ☐ Village

☐ School District ☐ Fire District ☐ Other public entity

4. Does the MS4 discharge to receiving waters or a watershed which is/are impaired (appears on DEC's 303(d) list or for which a Total Maximum Daily Load (TMDL) has been determined)? ☐ Yes ☐ No

Section C. Initial Identification of Management Practices (attach additional sheets as necessary)

1. Public Education and Outreach on Storm Water Impacts

Outreach Techniques	Management Practices to Encourage
☒ **Plan and conduct an ongoing public education and outreach program (required)**	☒ Proper lawn and garden care (fertilizer and pesticide use, sweeping, etc.)
☒ Classroom education/school programs	☒ Low impact development
☐ Outreach to commercial entities	☐ Pet waste management
☒ Webpage	☒ Pollution prevention for businesses
☒ Printed material	☐ Proper disposal of household hazardous wastes
☒ Media campaign	☐ Trash management
☒ Library of educational materials	☐ Water conservation practices
☒ Events and Programs	☐ Others: .....
☐ Displays	
☐ Posters and signs of varying sizes (magnet to billboards)	
☒ Speakers to community groups	
☐ Economic incentives	
☐ Promotional giveaways	
☐ Other	

2. Public Involvement/Participation

Involvement Techniques	Participation Activities
☒ **Public notice and access to documents and information (required)**	☐ Adopt-a-stream
☒ **Public presentation and comments received SWMP and on annual reports (required)**	☐ Reforestation program
☒ **Public involvement/participation program (required)**	☒ Storm drain stenciling
☒ **Contact person identified (required)**	☒ Stream, beach, roadway cleanup
☐ Advisory/partner committees	☐ Volunteer monitoring
☐ Watershed organizations	☐ Wetland plantings
☐ Attitude surveys	☐ Others .....
☐ Community hot lines	
☐ Stakeholder meetings	
☐ Mailing list development and use	
☐ Other	

3. Illicit Discharge Detection and Elimination

Detection and Elimination Activities	Type of Discharges to Target
☒ **Outfall mapping (required)**	☒ Failing septic systems
☒ **Illicit discharges prohibited (required)**	☒ Illegal dumping
☒ **Public, employees, businesses informed of hazards from illicit discharges (required)**	☒ Industrial/business connections
☒ **Illicit discharges identified (required)**	☐ Recreational sewage
☒ System mapping	☐ Sanitary sewer overflows
☐ Dye testing	☒ Wastewater connections to the storm drain system
☐ Shoreline surveys	☐ Others .....
☒ System inspections	
☐ Other	

4. Construction Site Storm Water Runoff Control

Construction Program Requirements (at a minimum equivalent to GP-02-01)	Program Criteria
☒ **Require erosion and sedimentation controls through an ordinance or other regulatory mechanism (required)**	☒ New York State Standards and Specifications for Erosion and Sediment Control
☒ **Provide opportunity for public comment on construction plans (required)**	☒ New York State Stormwater Management Design Manual
☒ **Require construction site plan review (required)**	
☒ **Require overall construction site waste management (required)**	
☒ **Site inspections and enforcement (required)**	
☒ **Education and training of construction site operators (required)**	
☐ Other	

Section C. Initial Identification of Management Practices (continued)

5. Post-Construction Stormwater Management

Post-Construction Program Requirements	Program Criteria
☒ Assess existing conditions throughout the MS4 and identify appropriate management practices to reduce pollutant discharge to the maximum extent practicable. (required) ☒ Regulate post-construction runoff from development through an ordinance or other regulatory mechanism (required) ☒ Develop management practice inspection and maintenance program. (required) ☐ Other	☒ New York State Stormwater Management Design Manual

6. Pollution Prevention/Good Housekeeping for Municipal Operations

Program Requirements	Management Practices
☒ Prevent discharge of pollutants from municipal operations (required) ☒ Follow DEC NPS Management Practices Catalog, or equivalent (required) ☒ Conduct employee pollution prevention training (required)	☒ Street cleaning ☒ Catch basin and storm drain system cleaning ☐ Alternative discharge options for chlorinated water ☐ Vehicle maintenance and washing ☒ Hazardous and waste materials management ☐ Landscaping and lawn care ☐ Integrated Pest Management (IPM) ☐ Marina Management ☒ Road salt storage ☐ Roadway and bridge maintenance ☐ Municipally-owned septic system management ☒ Spill response and prevention ☐ Others: .....

Section D. Initial Identification of Measurable Goals (attach additional sheets as necessary)

Person(s) responsible for implementing or coordinating the storm water management program:

_____ Phone: _____

1. Public Education and Outreach on Storm Water Impacts

Measurable goals (with start and end dates): 3/10/03-3/10/04 Identify sources of pollutants of concern to Wappingers Lake & Fallkill Creek. Identify contributors of these pollutants, initiate public education programs to address reductions in these pollutants. Hold annual public meeting to present SWMP. 3/10/04-3/10/05 Identify "project wet" information sources; Discuss project with local schools

4. Construction Site Storm Water Runoff Control

Measurable goals (with start and end dates): 3/10/03-3/10/04 Modify existing erosion control, zoning and subdivision regulations to address disturbances of 1 acre and include methods of pollution control outlined in the blue book and NYS Stormwater management guide. Begin to include discussion of project stormwater pollution plans in public hearings and planning board reviews.

2. Public Involvement/Participation

Measurable goals (with start and end dates): 3/10/03-3/10/04

Publicize the contact person. Make SWMP available for public review. Publicize yearly public hearing and hold a public hearing to respond to public comments.

3/10/05-3/10-05 Contact service orginazations that might be able to assist in Adopt-A-Stream, roadway cleanup and storm drain stenciling. Hold public hearing to respond to comments

5. Post-Construction Storm Water Management in New Development and Redevelopment

Measurable goals (with start and end dates): 3/10/03-3/10/04

Begin inspections of stormwater management structures constructed as part of completed project. Revise erosion sediment control, zoning and subdivision regulations to include practical stormwater quantity and quality mitigation measures. Determine how maintenance of stormwater mitigation is funded.

Section D. (continued)

3. Illicit Discharge Detection and Elimination

Measurable goals (with start and end dates): 3/10/03-3/10/04

Complete outfall mapping. Enhance existing code or initiate a new law pertaining to illegal discharges to storm drains.

Begin system wide mapping and begin system inspection to determine illicit connections. Starting with Wappingers Lake and Fallkill Creek basing. (See Item 1 for public business education implementation.)

3/10/04-3/10/05 - Inspections for 75% of Wappingers Lake, Fallkill Creek, with illicit discharges identify and elimate 50% of discharges identified.

6. Pollution Prevention/Good Housekeeping for Municipal Operations

Measurable goals (with start and end dates): 3/10/03-3/10/04

Existing street cleaning and storm drain cleaning program continues with priority given to Fallkill Creek and Wappingers Lake basing. Initiate evaluation of potential pollutants from Town facilities. Develop pollution prevention, spill prevention inspection plans for all facilities.

3/10/04-3/10/05 - Complete pollution prevention, spill detection and prevention plans for each facility. Implement the plans for each facility, educate employees on proper implementation of the plans.

Section E. Cooperating MS4s

Identify any MS4 partners that will be assisting you in carrying out your Stormwater Management Program: (Attach a description of what portions of which management practices that the other MS4s will be doing for you, and similarly what practices that you are assisting them with.)

Name of Cooperating MS4	Address	Contact Person	Telephone number	Email
Surrounding municipailities				

Section F. 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 gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, I certify that 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, including the possibility of fine and imprisonment for knowing violations.

Print Name: Joseph E. Davis

Signature: _____ Date: 03/03/03

MATT

NOTICE OF INTENT
SECTION D
INITIAL IDENTIFICATION OF MEASURABLE GOALS
Page 1

1. PUBLIC EDUCATION AND OUTREACH ON STORMWATER IMPACTS

3/10/03-3/10/04 Identify sources of pollutants of concern to Wappingers Lake & Fallkill Creek. Identify contributors of these pollutants, initiate public education programs to address reductions in these pollutants. Hold annual public meeting to present SWMP.

3/10/04-3/10/05 Identify "project wet" information sources; Discuss project with local schools. Make changes to SWMP in response to public input. Implement Public Education to 75% of groups identified as contributors of pollutants of concern to Wappingers Lake and Fallkill Creek. Identify contributor groups of pollutants in other areas of Town. Identify private and public service groups that might assist in Public Education efforts. Hold yearly public hearing on SWMP and progress.

3/10/05-3/10/06 Make changes to SWMP in response to public input. 100% of groups identified as contributors of pollutants of concern to Wappingers Lake and Fallkill Creek receive Public Education programs and materials. Implement "Project Wet" in 50% of local schools (if possible). Public Education and Outreach programs implemented to 75% of pollutant contributing groups in other areas of Town. Hold yearly public hearing on SWMP and progress.

3/10/06-3/10/07 Make changes to SWMP in response to public input. Continue Education efforts in Wappingers Lake and Fallkill Creek basins. 100% of contributors of pollutants in other areas of Town receive public Education. Implement "Project Wet" in 75% of local schools (if possible). Hold yearly public hearing on SWMP and progress.

3/10/07-3/10/08 Make changes to SWMP in response to public input. Continue public education programs to Wappingers Lake and Fallkill Creek contributors. Continue Education programs to other areas of Town. Implement "Project Wet" in 100% of local schools (if possible). Hold yearly public hearing on SWMP and progress. Achieve reduction in discharge of pollutants of concern.

2. PUBLIC INVOLVEMENT AND PARTICIPATION

3/10/03-3/1/0/04 Publicize the contact person. Make SWMP available for public review. Publicize yearly public hearing and hold a public hearing to respond to public comments.

3/10/04-3/10/05 Contact service organizations that might be able to assist in Adopt-A-Stream, roadway cleanup and storm drain stenciling. Hold public hearing to respond to comments.

3/10/05-3/10/06 Initiate roadway clean up on 30% of Town Roads. Make areas draining to Wappingers Lake and Fallkill Creek the top priority. Hold public hearing and respond to comments.

3/10/06-3/10/07 Initiate roadway clean up on 45% of Town Roads. Hold public hearing and respond to comments.

3/10/07-3/10/08 Initiate roadway clean up on 50% of Town Roads. Hold public hearing and respond to comments. Achieve reduction in discharge of pollutants of concern.

3. ILLICIT DISCHARGE DETECTION AND ELIMINATION

3/10/03-3/10/04 Complete outfall mapping. Enhance existing code or initiate a new law pertaining to illegal discharges to storm drains. Begin system wide mapping and begin system inspection to determine illicit connections. Starting with Wappingers Lake and Fallkill Creek basins. (See item 1 for public business education implementation.)

3/10/04-3/10/05 Inspections for 75% of Wappingers Lake, Fallkill Creek, with illicit discharges identify and eliminate 50% of discharges identified.

3/10/05-3/10/06 Continue Inspections of existing systems for illicit connections. Inspections for systems discharging to Wappingers Lake and Fallkill Creek 100% complete. 75% of the illicit discharges to Wappingers Lake and Fallkill creek eliminated. Continue public education as discussed in Item 1 with emphasis on illicit discharge prevention from businesses. Outfall mapping 100% complete. System mapping 50% complete. Illicit discharge law is 100% implemented and enforced.

3/10/06-3/10/07 100% of detected illicit discharges to Wappingers Lake and Fallkill Creek eliminated. Inspections of entire Town drainage systems 75% complete. Remove 50% of identified illicit discharges. System mapping 100% complete. 100% of business educated on illicit discharge prevention.

3/10/07-3/10/08 100% of drainage systems inspected for illicit discharges. 100% of detected illicit discharges eliminated. Continue public education. Achieve a reduction in discharge of pollutants of concern.

4. CONSTRUCTION SITE STORMWATER RUNOFF CONTROL

3/10/03-3/10/04 Modify existing erosion control, zoning and subdivision regulations to address disturbances of 1 acre and include methods of pollution control outlined in the blue book and MYS Stormwater Management Guide. Begin to include discussion of project stormwater pollution plans in public hearings and planning board reviews.

3/10/04-3/10/05 A stormwater pollution prevention plan is required for construction projects disturbing 1 acre or more. Discussion of the plan is included in every public hearing for project approval. Road inspectors and building inspectors receive training on implementation of "Blue Book" and Stormwater Management Design Guide. Inspections will include inspecting for implementation of pollution prevention plan measures. Revise Erosion control code, zoning laws and subdivision regulations to include penalties for violations.

3/10/05-3/10/06 Inspections for compliance with approved stormwater pollution prevention plans are conducted for construction sites disturbing 1 acre or more. Penalties for non-compliance are assessed for 100% of noted infractions. A yearly education program for contractors working in the Town is initiated.

3/10/06-3/10/07 Inspections continue, penalties continue to be assessed. The yearly education program for contractors becomes a requirement for contractors working on projects in the Town. 25% of contractors receive education. 3/10/07-3/10/08 Inspections continue. The requirement for contractor attendance at the yearly education program is fully implemented. 50% of contractors receive education. A reduction in pollution discharges from construction sites is achieved.

NOTICE OF INTENT
SECTION D
INITIAL IDENTIFICATION OF MEASURABLE GOALS

5. POST-CONSTRUCTION STORMWATER MANAGEMENT IN NEW DEVELOPMENT AND REDEVELOPMENT

3/10/03-3/10/04 Begin inspections of stormwater management structures constructed as part of completed project. Revise erosion sediment control, zoning and subdivision regulations to include practical stormwater quantity and quality mitigation measures. Determine how maintenance of stormwater mitigation is funded.

3/10/04-3/10/05 Implement maintenance program for storm water mitigation structures. Continue inspections of completed structures and identify any problem sites. Implementation of required quantity and quality mitigation measures fully implemented in planning process. Funding for storm water mitigation basins and measures is determined. Maintenance of storm water basins and other measures are implemented with priority given to systems that discharge to Wappingers Lake and the Fallkill Creek.

3/10/05-3/10/06 Inspections continue, 50% of sites are scheduled for maintenance. Maintenance is performed on 50% of completed projects. Maintenance schedule is updated based on inspections.

3/10/06-3/10/07 Inspections continue. 75% of sites are scheduled for Maintenance. Project review continues to include review of quality and quantity measures.

3/10/07-3/20/08 100% of sites are scheduled for maintenance. A reduction in discharges of pollutants of concern is achieved.

6. POLLUTION PREVENTION/ GOOD HOUSE KEEPING FROM MUNICIPAL OPERATIONS

3/10/03-3/10/04 Existing street cleaning and storm drain cleaning program continues with priority given to Fallkill Creek and Wappingers Lake basins. Initiate evaluation of potential pollutants from Town facilities. Develop pollution prevention, spill prevention inspection plans for all facilities.

3/10/04-3/10/05 Complete pollution prevention, spill detection and prevention plans for each facility. Implement the plans for each facility, educate employees on proper implementation of the plans.

3/10/05-3/10/06 Pollution prevention plans fully implemented at 100% of town owned facilities. 100% of Town personnel educated on proper implementation of the plan. Yearly refresher education program developed. 80% of drainage system is cleaned. Planning for the location of additional salt storage facilities begins.

3/10/06-3/10/07 Implementation of pollution plans continues. Yearly refresher education is given to all employees. Design of additional salt storage facilities is completed. 90% of the storm drainage system is cleaned.

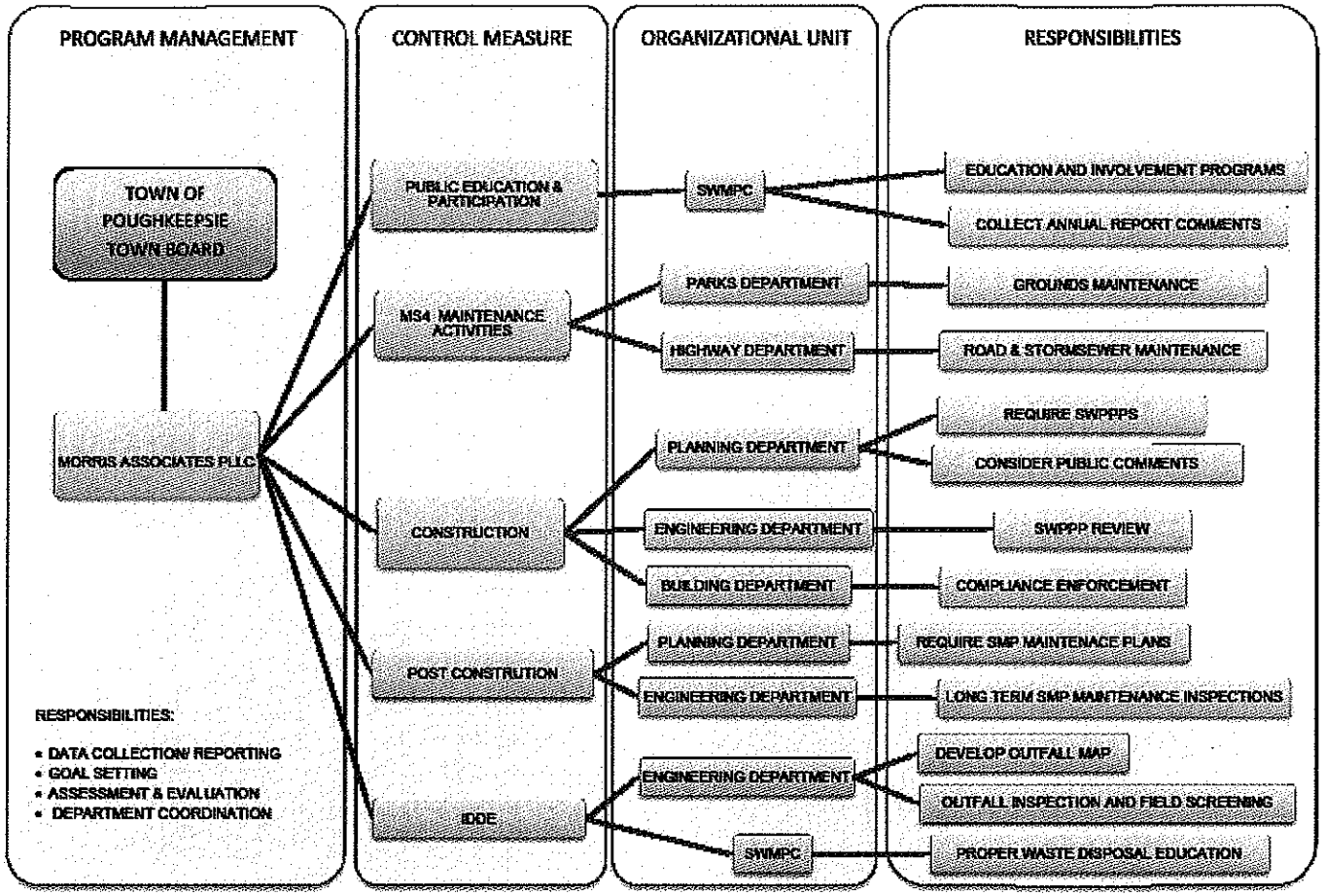
3/10/07-3/10/08 Implementation of pollution prevention plans continues. Yearly refresher education continues. Construction of salt storage facilities completed. 100% of the storm drainage system is cleaned. A reduction in pollutants from Town facilities is achieved.

APPENDIX C

ORGANIZATION CHART

TOWN OF POUGHKEEPSIE STORMWATER MANAGEMENT PLAN

ORGANIZATIONAL STRUCTURE



APPENDIX D

BUDGET FOR IMPLEMENTING THIS SWMPP

Town of Poughkeepsie
MS4 - NYR10A198

2010 Annual Task Budget

Task Description		No. of Hours		Cost
Annual Report		48		$ 5,424
Quarterly Meetings		16		$ 1,808
Monthly MS4 Meetings		24		$ 2,712
Storm Water Management Program Plan/Module		56		$ 6,328
Regulatory Revisions/Summary of Changes		24		$ 2,712
Public Involvement/Coordination/Stakeholders		32		$ 3,616
Preliminary Engineering Evaluations		40		$ 4,520
Inspections/Complaints/Miscellaneous/Software		32		$ 3,616
	Totals	**272**		**$ 30,736**

APPENDIX E

DUTCHESS COUNTY MS4 COORDINATION COMMITTEE INTERMUNICIPAL AGREEMENT AND BYLAWS

RESOLUTION 4:19 - # 13 OF 2006

WHEREAS, the Town of Poughkeepsie has been designated as operating a Municipal Separate Storm Sewer System regulated under the New York State Department of Environmental Conservation Phase II Stormwater Small MS4 Permit (State Pollutant Discharge Elimination system GP-02-02), and has filed a Notice of Intent for coverage under GP-02-02; and

WHEREAS, as a condition of obtaining coverage under GP-02-02, the Town of Poughkeepsie must design a stormwater management program that addresses six (6) Minimum Control Measures designed to protect the quality, and to control the quantity, of stormwater runoff, and which (where applicable) also must achieve a reduction of any pollutant of concern specified in any total Maximum Daily Load or 303(d) listing for any watershed that is in part encompassed by a designated MS4; and

WHEREAS, the 303(d) list designates pollutants of concern for Fallkill Creek, Hillside Lake and Wappingers Lake that must be reduced to the greatest extend possible under the Phase II Stormwater Program; and

WHEREAS, the Town of Poughkeepsie recognizes that it is advantageous to participate in a coordinated approach to developing means to address the six Minimum Control Measures and other requirements of the Phase II Stormwater Program; and

WHEREAS, there has been proposed an intermunicipal organization entitled the Dutchess County MS4 Coordination Committee, which consists of one or more of the designated MS4 jurisdictions within Dutchess County; and

WHEREAS, it is the purpose of the committee to promote a discussion of those issues of mutual concern with regard to the implementation of the Phase II Stormwater

Program that face the aforementioned communities, to propose recommendations and make reports that identify mutually beneficial solutions to the concerns facing the participating communities and to seek funding sources that may help to accomplish the goals of the Committee and the participating municipalities; and

WHEREAS, an intermunicipal organization will also provide a mechanism for coordinating the implementation of regional solutions by the municipalities; and

WHEREAS, the Town of Poughkeepsie recognizes that it is beneficial to promoting the future health, safety and general welfare of the populace of the Town of Poughkeepsie to participate in the aforementioned intermunicipal organization, which will address the requirements of the Phase II Stormwater Program; and

WHEREAS, General Municipal Law Article 5-G and Article 5-J grant the authority to local municipalities to enter intermunicipal agreements in the furtherance of planning for the future of the municipalities; and

WHEREAS, the parties acknowledge that the Town of Poughkeepsie may terminate its membership upon adoption of a resolution by the Town Board of the Town of Poughkeepsie; now therefore

BE IT RESOLVED, that the Town of Poughkeepsie supports the creation of an intermunicipal organization of the regulated Dutchess County MS4 municipal corporations, and that by adoption of this resolution acknowledges its participation in said organization; and

BE IT FURTHER RESOLVED, that the Town of Poughkeepsie, having expressed its desire to participate in said intermunicipal cooperative, appoints Patricia

Myers to represent the Town of Poughkeepsie on the Dutchess County MS4 Coordination Committee; and

BE IT FURTHER RESOLVED, that the Town of Poughkeepsie does hereby ratify the Bylaws of the Dutchess County MS4 Coordination Committee attached hereto.

Dated: April 19, 2006

Moved By: Jon Baisley

Seconded By: Stephan Krakower

Ayes 7 Nays 0

TDM:mlm
Attachment
t-3/17/06
m-4/19/06
G:\ml\legal\r\2006\apr\MS4support.doc

	AYE	NAY
Councilman Baisley		
Councilman Seminara		
Councilman Finn		
Councilman Cifone		
Councilman Krakower		
Councilman Tancredi		
Supervisor Myers		

Dutchess County MS4 Coordination Committee

Bylaws adopted DATE: March 24, 2010

Article I. Title and Purpose.

1.1 Title

The Organization shall be known as the Dutchess County MS4 Coordination Committee (hereafter the Committee).

1.2 Purpose

The purpose of the Committee is to foster the cooperation and exchange of information among the participating jurisdictions in addressing issues of mutual concern related to compliance with the Phase II Stormwater regulations; to promote a discussion of issues relating to the Phase II Stormwater program facing the aforementioned jurisdictions; to propose recommendations and make reports that identify mutually beneficial solutions to the concerns facing the participating communities; to seek funding sources that may help to accomplish the goals of the Committee and the participating municipalities, and to disburse funds as may be required.

Article II. Membership.

2.1 Participating Members

A. Upon the adoption of a resolution acknowledging their desire to participate in the Committee, the following municipalities shall be considered as participating members in the intermunicipal cooperative.

1. City of Beacon
2. City of Poughkeepsie
3. County of Dutchess
4. Town of Beekman
5. Town of East Fishkill
6. Town of Fishkill
7. Town of Hyde Park
8. Town of LaGrange
9. Town of Pawling
10. Town of Pleasant Valley
11. Town of Poughkeepsie
12. Town of Wappinger
13. Village of Fishkill
14. Village of Pawling
15. Village of Wappingers Falls

B. Each resolution acknowledging participation in the Committee shall name a representative, who shall represent the municipality on the Committee and shall have all rights and privileges of each and every member thereon. Each municipality may rename their representative on the Committee as needed.

2.2. Ex Officio Members

A. The Committee shall include as Ex-Officio members the nine Town Supervisors, five Mayors, Dutchess County Soil and Water Conservation District, Dutchess County Department of Public Works, New York State Department of Transportation, and New York State Department of Environmental Conservation-Division of Water. Such Ex-Officio members of the Committee shall be non-voting members, excepting where a Town Supervisor or Mayor has been appointed to the Committee as a voting member.

B. The Committee may also designate other Ex-Officio members as may be deemed appropriate.

2.3 New Members

Subsequent to the third meeting of the Committee, any municipality or institutional MS4 wishing to participate as an Ex Officio or participating member in the cooperative must be approved for membership by a majority of the voting members of the committee.

2.4 Termination

A municipality may terminate its membership upon adoption of a resolution by the legislative body of that municipality.

Article III. Procedures.

3.1 Quorum

At all meetings of the Committee, the presence of a majority of the whole number of the Committee shall constitute a quorum for the transaction of business.

3.2 Regular Meetings

The Committee shall set the time and place of the meetings, excepting as provided under Section 3.3.

3.3 Special Meetings

Special meetings of the Committee may be called by the Chairman on seven (7) days notice to each Committee member, either personally or by mail. Special meetings may also be called, in a like manner and on like notice, at the request of three (3) or more members of the Committee.

3.4 Voting

A. Each participating member shall be entitled to one vote which shall only be exercised by the individual appointed to serve on the Committee by the Legislative Body of their respective municipality. All issues shall be decided by a simple majority of those present at the meeting in which the vote takes place.

B. Each Municipality will be able to appoint a new voting member if the Municipality finds it necessary to do so. This can be done through a resolution or letter submitted to the

Committee. The new appointee will then become the municipality's voting member and be allowed to cast a vote on Committee issues. The prior voting member can still attend meetings if permitted by the Municipality, but will no longer be able to cast a vote.

C. Each Municipality will be allowed 1 (one) alternate to their voting member in the case that their voting member is not able to attend a Committee meeting. The alternate must be appointed by the municipality and a resolution or letter submitted to the Committee. Each municipality will still only be entitled to 1 (one) vote on each issue. If both the voting member and the alternate are in attendance at the same meeting, the voting member will cast the vote.

3.5 Powers

The Committee shall have the following powers:

A. To seek, receive, disburse and distribute funding to accomplish the goals of the Organization including grants and donations.
   1. All disbursement of funds shall be approved by a vote as defined in Section 3.4.
   2. Either the Chairman or Secretary shall be authorized to endorse checks on behalf of the Committee.

B. To prepare such reports, studies, publications, recommendations, and other works as may be necessary to accomplish the goals of the Committee.

C. To retain and employ consultants and staff within the limitations of any funding received by the organization.

D. To appoint additional sub-committees as may be advantageous to furthering the goals of the Committee.

3.6 Limitations

The Committee shall not have the power or authority to place any special duty or requirement or financial obligation on any one or more of the participating members.

Article IV. Officers.

4.1 Officers

A. The Committee shall elect by a majority, from amongst its members a Chairman, a Vice-Chairman, and a Secretary.
   1. The Chairman shall preside at each meeting.
   2. The Vice-Chairman shall preside in the absence of the Chairman. The Vice-Chairman shall also have primary responsibility for the finances of the Committee. The Vice-Chairman shall ensure that an adequate balance is maintained, and that accurate records are kept. The Vice-Chairman shall be responsible for balancing accounting reports against all monies allocated.
   3. The Secretary shall be responsible for recording the minutes of all meetings and maintaining a file of the Committee's records.

B. All Officers shall be elected or re-elected annually by the Committee during the March meeting with Nominations occurring at the February meeting. The committee leadership term will be changed to April through March.

C. The Committee may nominate participating members for each leadership position.

Article V. Sub-committees.

The Committee may create such sub-committees as may be needed, whose members shall be appointed by the Committee. The sub-committees shall report directly to the Committee.

Article VI. Amendments.

These bylaws may be amended upon an affirmative recommendation of the Dutchess County MS4 Coordination Committee and upon approval of two-thirds of the Committee as constituted. Proposed amendments to the bylaws shall not be proposed and adopted during the same Committee meeting.

APPENDIX F

STAKEHOLDERS

STORMWATER STAKEHOLDERS Revised 5/7/09	CONTACT	CONTACT	ADDRESS STREET	CITY	ST	ZIP	PHONE	E-MAIL
Arlington Business District	Bob Raisch, Director		PO Box 2904	Poughkeepsie	NY	12603	(845) 559-0023	robertraisch1@verizon.net
Arlington Central Schools	Henry Cibelli, Maintenance Director						486-4977	hcibelli@acsdny.org
Buechele, Virginia A. (16 Windsor Court, Pok)			P. O. Box 243	Pleasant Valley	NY	12569	(845) 452-6417	ginny243@optonline.net
Casperkill Watershed Alliance	Kelsey Smith	Vassar Environmental Research Institute					845-437-5864	kesmith@vassar.edu
Clearwater, Hudson River Sloop			112 Little Market St.	Poughkeepsie	NY	12601	454-7673	office@clearwater.org
Dutchess Co. Soil & Water Conservation District	Ed Hoxsie, Exec. Dir.		2715 Route 44, Suite 3	Millbrook	NY	12545	677-8011 x3	ed.hoxsie@ny.nacdnet.net
Dutchess Community College	Tim Welling		103 Heritage Road	Clinton Corners	NY	12514	(845) 431-8535	welling@sunydutchess.edu
Dutchess Community College	Bridget Anderson, Assoc. Dean of Bldgs & Grounds						431-8655	banderso@sunydutchess.edu
Dutchess County MS4 Committee (DC SWCD)	Jennifer Cavanaugh, CPESC	Fuss & O'Neill	80 Washington St., Suite 301	Poughkeepsie	NY	12601	(800) 394-8081	jcavanaugh@fando.com
FALLKILL ASSOCIATION	Harvey Flad							flad@vassar.edu
Friends of Wappinger Lake (FOWL)	Wayne Thompson		17 Hasbrouck Drive	Poughkeepsie	NY	12603	(845) 462-2259	waynethompson5@aol.com
Girl Scouts - Hearts of the Hudson	Elaine Ramsey		41 Page Park Dr.	Poughkeepsie	NY	12603	(845) 452-1810	eramsey@girlscoutshh.org
Hudson River Watershed Alliance	Katy Dunlap, Coordinator		PO Box 685	Poughkeepsie	NY	12602	486-1556	katy@hudsonwatershed.org
Hudson Valley Council BSA	John Erksine	Director	PO BOX 374 1230 Route 94	Salisbury Mills	NY	12577	845-497-7337	jerksine@hvcbsa.org
Hudsonia Ltd.	Gretchen Stevens		PO Box 5000	Annandale	NY	12504	(845) 758-7053	stevens@bard.edu
IBM	Marty Carr, Grounds						433-3469, 892-7375	car@us.ibm.com
Kaminski, David	T&C Development Corp.		PO Box 1580	Poughkeepsie	NY	12601	(845) 463-1701	dskaminski@optonline.net
Lenhart, Donna			247 New Hackensack Rd.	Poughkeepsie	NY	12603		dlenhart@optonline.net
Lynch, Tom		Marist College	3399 North Rd.	Poughkeepsie	NY	12601		Thomas.Lynch@marist.edu
Marist College	Ralph Short, Grounds Supervisor						575-3212	Ralph.Short@Marist.edu
Marist College	Justin Butwell, Director Physical Plant						575-3200	justin.butwell@marist.edu
Marist College Student Affairs	Deborah DiCaprio	VP Student Affairs, Dean of Students					845-575-3515	deborah.dicaprio@marist.edu
Mid Hudson Road Runners Club	Bob Kopac							bobkopac@yahoo.com
MID HUDSON TROUT UNLIMITED	JOE RIST	PRESIDENT	12 SPARROW LANE	Poughkeepsie		12601	845-462-4532	twojakes99@aol.com
Mid-Hudson ADK	Jean Claude Fouere						(845) 462-1909	jcfouere@optonline.net
NYS DEC Hudson River Estuary Program	Barbara Kendall		21 S. Putt Corners Rd.	New Paltz	NY	12561	(845) 256-3163	blkendal@gw.dec.state.ny.us
NYSDOT ADOPT A ROAD (NO EMAIL)	Bruce Ralston	Road Maintenance Director	4 Burnett Boulevard	Poughkeepsie		12603	845-575-6142	
Poughkeepsie (T) Conservation Advisory Commission	Doreen Tignanelli							Doreentig@aol.com
SCENIC HUDSON								riverfront@scenichudson.org

Tignanelli, Doreen			29 Colburn Drive	Poughkeepsie	NY	12603	462-0235	Doreentig@aol.com
Vassar College	Thomas Allen						437-7270, 473-0997	thallen@vassar.edu
Vassar College	Jeffrey Horst, Director of Grounds							jehorst@vassar.edu
VASSAR COLLEGE FIELD OPERATIONS	Peter Leonard	Director						leonard@vassar.edu
Wappinger Creek Watershed Intermunicipal Council	Eileen Sassman	Chair	10 Clinton Street	Wappinger Falls		12590		eileen@leverageinc.biz
Wappingers Central Schools	Thomas Rosato, Grounds						298-5150 x119, 298-5138	thomas.rosato@wappingersschools.org
Weiss, Lisa			139 Kingwood Park	Poughkeepsie	NY	12601	462-2516	drwhy@aol.com
Whitehead, Carl			20 Wayne Drive	Poughkeepsie	NY	12601	(845) 462-5902	whitehea@us.ibm.com

APPENDIX G

PUBLIC EDUCATION AND OUTREACH ADDITIONAL REFERENCE MATERIALS

After the Storm

A Citizen's Guide to Understanding Stormwater

WHEN IT RAINS

What is stormwater runoff?

Stormwater runoff occurs when precipitation from rain or snowmelt flows over the ground. Impervious surfaces like driveways, sidewalks, and streets prevent stormwater from naturally soaking into the ground.

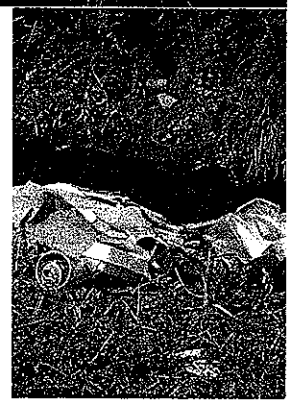
Why is stormwater runoff a problem?

Stormwater can pick up debris, chemicals, dirt, and other pollutants and flow into a storm sewer system or directly to a lake, stream, river, wetland, or coastal water. Anything that enters a storm sewer system is discharged untreated into the waterbodies we use for swimming, fishing, and providing drinking water.

The effects of pollution

Polluted stormwater runoff can have many adverse effects on plants, fish, animals, and people.

- Sediment can cloud the water and make it difficult or impossible for aquatic plants to grow. Sediment also can destroy aquatic habitats.
- Excess nutrients can cause algae blooms. When algae die, they sink to the bottom and decompose in a process that removes oxygen from the water. Fish and other aquatic organisms can't exist in water with low dissolved oxygen levels.

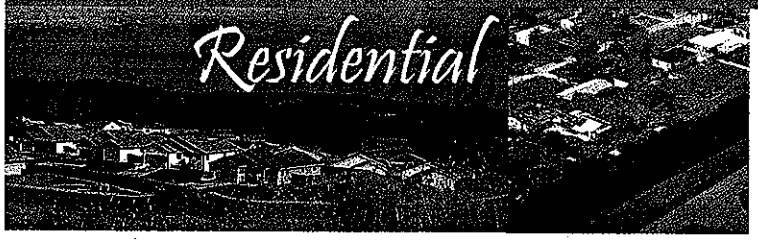


- Bacteria and other pathogens can wash into swimming areas and create health hazards, often making beach closures necessary.
- Debris—plastic bags, six-pack rings, bottles, and cigarette butts—washed into waterbodies can choke, suffocate, or disable aquatic life like ducks, fish, turtles, and birds.
- Household hazardous wastes like insecticides, pesticides, paint, solvents, used motor oil, and other auto fluids can poison aquatic life. Land animals and people can become sick or die from eating diseased fish and shellfish or ingesting polluted water.

- Polluted stormwater often affects drinking water sources. This, in turn, can affect human health and increase drinking water treatment costs.

Stormwater Pollution Solutions

Residential



Recycle or properly dispose of household products that contain chemicals, such as insecticides, pesticides, paint, solvents, and used motor oil and other auto fluids. Don't pour them onto the ground or into storm drains.

Lawn care

Excess fertilizers and pesticides applied to lawns and gardens wash off and pollute streams. In addition, yard clippings and leaves can wash into storm drains and contribute nutrients and organic matter to streams.

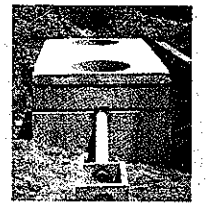
- Don't overwater your lawn. Consider using a soaker hose instead of a sprinkler.
- Use pesticides and fertilizers sparingly. When use is necessary, use these chemicals in the recommended amounts. Use organic mulch or safer pest control methods whenever possible.
- Compost or mulch yard waste. Don't leave it in the street or sweep it into storm drains or streams.
- Cover piles of dirt or mulch being used in landscaping projects.

Auto care

Washing your car and degreasing auto parts at home can send detergents and other contaminants through the storm sewer system. Dumping automotive fluids into storm drains has the same result as dumping the materials directly into a waterbody.

- Use a commercial car wash that treats or recycles its wastewater, or wash your car on your yard so the water infiltrates into the ground.
- Repair leaks and dispose of used auto fluids and batteries at designated drop-off or recycling locations.

Septic systems



Leaking and poorly maintained septic systems release nutrients and pathogens (bacteria and viruses) that can be picked up by stormwater and discharged into nearby waterbodies. Pathogens can cause public health problems and environmental concerns.

- Inspect your system every 3 years and pump your tank as necessary (every 3 to 5 years).
- Don't dispose of household hazardous waste in sinks or toilets.

Pet waste

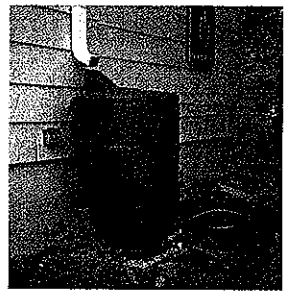
Pet waste can be a major source of bacteria and excess nutrients in local waters.

- When walking your pet, remember to pick up the waste and dispose of it properly. Flushing pet waste is the best disposal method. Leaving pet waste on the ground increases public health risks by allowing harmful bacteria and nutrients to wash into the storm drain and eventually into local waterbodies.

Education is essential to changing people's behavior. Signs and markers near storm drains warn residents that pollutants entering the drains will be carried untreated into a local waterbody.

Residential landscaping

Permeable Pavement—Traditional concrete and asphalt don't allow water to soak into the ground. Instead these surfaces rely on storm drains to divert unwanted water. Permeable pavement systems allow rain and snowmelt to soak through, decreasing stormwater runoff.



Rain Barrels—You can collect rainwater from rooftops in mosquito-proof containers. The water can be used later on lawn or garden areas.

Rain Gardens and Grassy Swales—Specially designed areas planted with native plants can provide natural places for rainwater to collect and soak into the ground. Rain from rooftop areas or paved areas can be diverted into these areas rather than into storm drains.

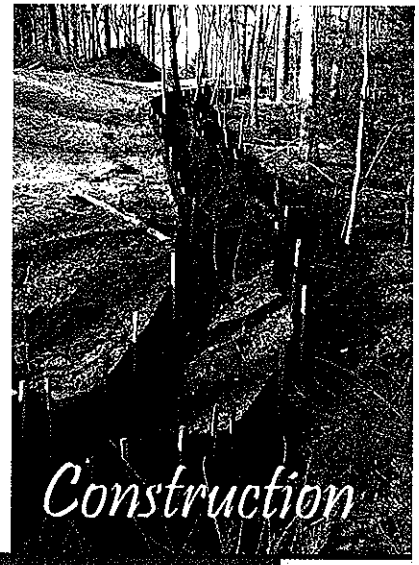
Vegetated Filter Strips—Filter strips are areas of native grass or plants created along roadways or streams. They trap the pollutants stormwater picks up as it flows across driveways and streets.

Dirt, oil, and debris that collect in parking lots and paved areas can be washed into the storm sewer system and eventually enter local waterbodies.

- Sweep up litter and debris from sidewalks, driveways and parking lots, especially around storm drains.
- Cover grease storage and dumpsters and keep them clean to avoid leaks.
- Report any chemical spill to the local hazardous waste cleanup team. They'll know the best way to keep spills from harming the environment.

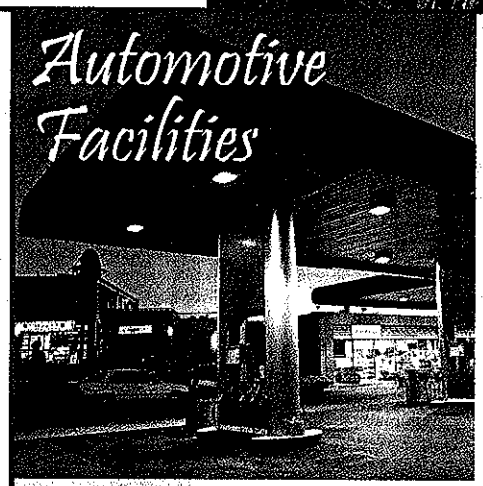
Erosion controls that aren't maintained can cause excessive amounts of sediment and debris to be carried into the stormwater system. Construction vehicles can leak fuel, oil, and other harmful fluids that can be picked up by stormwater and deposited into local waterbodies.

- Divert stormwater away from disturbed or exposed areas of the construction site.
- Install silt fences, vehicle mud removal areas, vegetative cover, and other sediment and erosion controls and properly maintain them, especially after rainstorms.
- Prevent soil erosion by minimizing disturbed areas during construction projects, and seed and mulch bare areas as soon as possible.



Lack of vegetation on streambanks can lead to erosion. Overgrazed pastures can also contribute excessive amounts of sediment to local waterbodies. Excess fertilizers and pesticides can poison aquatic animals and lead to destructive algae blooms. Livestock in streams can contaminate waterways with bacteria, making them unsafe for human contact.

- Keep livestock away from streambanks and provide them a water source away from waterbodies.
- Store and apply manure away from waterbodies and in accordance with a nutrient management plan.
- Vegetate riparian areas along waterways.
- Rotate animal grazing to prevent soil erosion in fields.
- Apply fertilizers and pesticides according to label instructions to save money and minimize pollution.



Uncovered fueling stations allow spills to be washed into storm drains. Cars waiting to be repaired can leak fuel, oil, and other harmful fluids that can be picked up by stormwater.

- Clean up spills immediately and properly dispose of cleanup materials.
- Provide cover over fueling stations and design or retrofit facilities for spill containment.
- Properly maintain fleet vehicles to prevent oil, gas, and other discharges from being washed into local waterbodies.
- Install and maintain oil/water separators.

Improperly managed logging operations can result in erosion and sedimentation.

- Conduct preharvest planning to prevent erosion and lower costs.
- Use logging methods and equipment that minimize soil disturbance.
- Plan and design skid trails, yard areas, and truck access roads to minimize stream crossings and avoid disturbing the forest floor.
- Construct stream crossings so that they minimize erosion and physical changes to streams.
- Expedite revegetation of cleared areas.

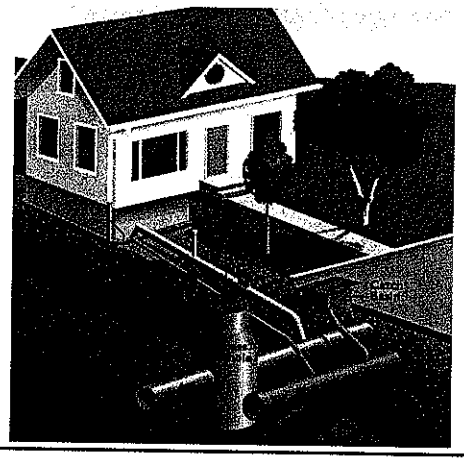
What's the difference?
Sanitary Sewer vs. Storm Drain

The water that drains down a sink or toilet in a home or business flows to the sanitary sewer and associated wastewater treatment plant or individual septic disposal system for treatment.

A storm drain system, on the other hand, is designated to carry rainwater from streets and driveways to prevent flooding. **The stormwater may not receive any treatment.** It flows directly into area streams, rivers, and lakes.

Unfortunately, as rainfall flows over the ground it picks up debris and pollutants and deposit them into our water bodies. Some of the pollutants that are commonly transported in the storm drain system include:

- Sediments
- Road Salt
- Fertilizers and Pesticides
- Metals
- Detergents
- Trash and Debris
- Oil and Grease
- Bacteria and Viruses



To Report Illegal Dumping or Discharges:
Call your local Highway Department

For Spill Emergencies:
Call your local Fire Department

For Soil Testing Prior to Applying Fertilizers:
Contact Cornell Cooperative Extension-Dutchess County: 845-677-8223 x115

For Stormwater Pollution Prevention Employee Training:
Call Dutchess County Soil and Water Conservation District

For more information, check out these websites:
Dutchess County Soil and Water Conservation District: www.dutchessswcd.org

NYS Department of Environmental Conservation: Division of Water Stormwater page: www.dec.state.ny.us/website/dow/mainpage.htm

US Environmental Protection Agency: National Pollutant Discharge Elimination System: www.epa.gov/npdes/stormwater
Polluted Runoff – Nonpoint Source Pollution: www.epa.gov/nps

US Department of Agriculture - Natural Resources Conservation Service: Backyard Conservation: http://www.nrcs.usda.gov/feature/backyard

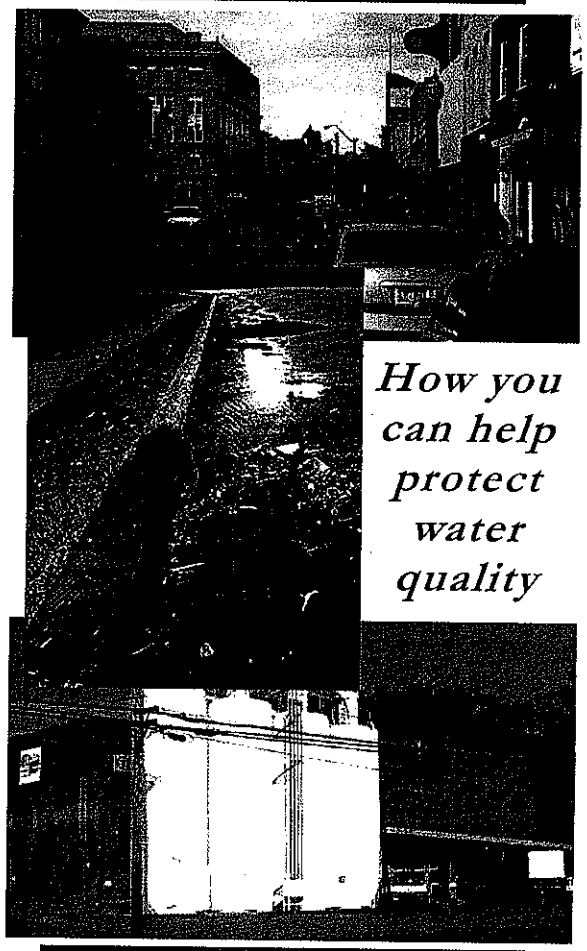
Center for Watershed Protection: www.cwp.org

Dutchess County Soil and Water
Conservation District
2715 Route 44, Suite 3
Millbrook, New York 12545

Phone: 845-677-8011 x3
Fax: 845-677-8354

This brochure was prepared with funding provided by the New York State Department of Environmental Conservation - Hudson River Estuary Program.

Preventing Stormwater Pollution



How you can help protect water quality

Tips for Commercial and Industrial Businesses

If your business is in one of the Dutchess County municipalities listed below, the community you work in has been designated a **regulated MS4** (Municipal Separate Storm Sewer System) under the Phase II Stormwater Regulations.

City of Beacon
Town of Beekman
Town of East Fishkill
Town of Fishkill
Village of Fishkill
Town of Hyde Park
Town of LaGrange
Town of Pawling
Village of Pawling
Town of Pleasant Valley
City of Poughkeepsie
Town of Poughkeepsie
Town of Wappinger
Village of Wappingers Falls

This means that the municipality in which you work needs a permit under the State-wide Pollutant Discharge Elimination System (SPDES) in order to discharge stormwater. Each MS4 community needs help from each resident and business to minimize the impacts on stormwater runoff and thus your area streams, lakes, and rivers.

How You Can Help

The following are simple, but effective, things you can do at your workplace to protect and improve the water quality of our streams, lakes, and rivers through stormwater pollution prevention.

General

⇒ Regularly sweep and collect debris around your site, **do not hose down sidewalks or parking lots**
⇒ Train employees to recognize the impact they have on water quality
⇒ **NEVER** dump anything down a storm drain
⇒ Report any illegal dumping to a storm drain—call your local Highway Department

Landscaping

⇒ Only irrigate during early morning to avoid evaporation (it's also better for your plants)
⇒ Aim sprinklers to avoid watering non-target areas
⇒ Time sprinklers to avoid over watering and causing runoff onto paved areas
⇒ Get your soil tested prior to applying fertilizers **Save money by using only what's needed**
⇒ Minimize pesticide, herbicide, and fertilizer use. Always follow the manufacturer's instructions

Outdoor Material Storage

⇒ Store all potential pollutants indoors or under a covered area or secure tarp
⇒ **Clean up all spills immediately!** Use dry absorbents as necessary and dispose of waste materials properly. Protect the storm drains closest to the spill
⇒ Keep lids on all storage containers
⇒ Label all material storage containers
⇒ Regularly sweep and clean all outdoor storage areas to remove dirt and debris

Waste Management

⇒ Keep the ground around all outdoor garbage and dumpster areas free of trash, sediment, and debris
⇒ **Close the lids on dumpsters and trash cans after every use**
⇒ Do not use dumpsters for liquid wastes. They are rarely leak-proof
⇒ Clean up all spills immediately!

General Cleaning

⇒ Minimize the use of cleaning agents
⇒ Switch to more environmentally friendly cleaning products
⇒ Dispose of waste wash water to sanitary sewer not to storm drains

Vehicle/Equipment Maintenance

⇒ Perform all vehicle maintenance indoors when possible. If not, use a drop cloth or tarp
⇒ **Use drip-pans to collect leaking fluids**
⇒ Clean up all spills immediately! Use dry absorbents as necessary and dispose of waste materials properly

Vehicle/Equipment Washing

⇒ Wash vehicles at a commercial car wash when possible (their wastewater drains to the sanitary sewer)
⇒ If you must wash onsite, wash vehicle over a pervious (absorbent) area such as dirt, gravel or grass to prevent runoff
⇒ Minimize the use of soaps and water while washing. **Use biodegradable soaps**

Roof Runoff Management

⇒ Direct gutter downspouts to a vegetated or grassed area instead of pavement
⇒ **Do not store anything on your roof**

Construction

⇒ **Minimize the amount of exposed soil**
⇒ Cover construction material stockpiles
⇒ Use silt fence around perimeter of site to capture any sediment washed away
⇒ Store materials where not exposed to rain. Use a secured tarp as necessary

Preventing Pollution Is Good Public Relations

Let your customers know what you're doing to minimize stormwater pollution. It shows them that you're a good neighbor. Encourage your customers and other businesses to do the same.

How To Be In Compliance

What is required for construction sites?

If your project will disturb one acre or more of ground, site owners and/or operators are required to:

1. **Develop a Stormwater Pollution Prevention Plan (SWPPP) and follow it.** The SWPPP is the plan for controlling runoff and pollutants from a site during and after construction. Stormwater planning early in project design provides the most aesthetic, effective and inexpensive stormwater controls.
2. Once a SWPPP is prepared, **obtain a Stormwater General Permit** from DEC. You can obtain help from DEC or your County Soil and Water Conservation District about permit requirements. Or, go to the DEC website for detailed stormwater information.
3. **Certify, under penalty of law,** to follow the SWPPP. Landowners and contractors must sign a statement that they understand and agree to comply with the terms and conditions of the SWPPP.
4. **Have a qualified professional* perform inspections after 1/2 inch of rain, as well as weekly,** to determine compliance with water quality standards and adherence to the SWPPP.
   *** As specified in the permit. See the DEC website for more information.**
5. **Maintain erosion and sediment control practices** and update the SWPPP regularly.
6. **Install permanent stormwater management practices** (e.g. pond, wetland, filter, infiltration device or swale) as required by and in accordance with DEC standards.
7. **Keep all SWPPP and inspection forms in a log book on the construction site** and available to regulatory staff.

Contacts

Training is available

The New York State Department of Environmental Conservation (DEC) regulates the Stormwater Program. DEC, Soil and Water Conservation Districts and Regional Planning Boards all provide stormwater training that is essential for contractors and developers.

Contractors and developers can benefit from training and obtaining certification for a staff member who can then conduct project inspections as a Certified Professional in Erosion and Sediment Control. For more information go to: **www.cpesc.net**

Information and assistance

For more information, contact the DEC Bureau of Water Permits at (518) 402-8111 or visit their stormwater website at:

www.dec.state.ny.us/website/dow/mainpage.htm

Information is also available from your County Soil and Water Conservation District.

For more information about stormwater in your area, contact:

All photos courtesy of the U.S. Environmental Protection Agency

Stormwater regulations are required by US EPA's Stormwater Phase II rule and New York 's State Pollution Discharge Elimination System General Permit 02-01.

Stormwater Regulations and the Construction Industry

Preventing Stormwater Pollution at the Source

New York State Department of Environmental Conservation

George E. Pataki, Governor

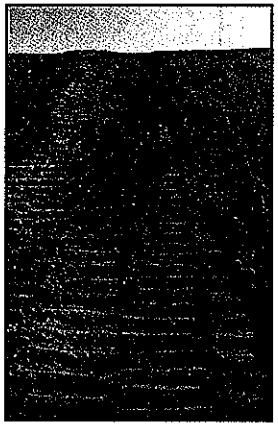
Erin M. Crotty, Commissioner

In cooperation with New York's Soil and Water Conservation Districts

Stormwater Discharges

The construction industry is a critical participant in New York State's efforts to protect our streams, wetlands, rivers, bays, and lakes through the use of erosion and sediment control (**ESC**) practices.

As stormwater flows over a construction site, it picks up soil, debris, and chemicals and washes them into our water resources. The result is degraded water quality and aquatic habitat.



Rough graded or terraced slopes help keep soil in place.

Uncontrolled erosion can also have a significant financial impact on a construction project. It costs money and time to repair gullies, replace vegetation, clean sediment-clogged storm drains, replace poorly installed ESC practices, and repair damage to other people's property or to natural resources.

Uncontrolled erosion degrades water quality and costs time and money to repair.

Soil Erosion Prevention and Sediment Control

An important responsibility on all construction sites

Minimize the area of exposed soil on site:

- To the extent possible, plan the project in stages to minimize the amount of area that is bare and subject to erosion. The less soil exposed, the easier and cheaper it will be to control erosion.
- Seed disturbed areas with permanent or temporary groundcover immediately upon reaching final grade.
- Seed or cover stockpiles that will not be used immediately.

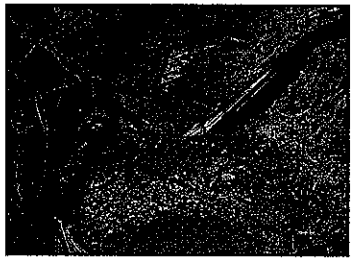
Protect defined channels with ESC practices adequate to handle expected storm flows:

- Use stabilization measures such as sod, geotextile, natural fiber, or riprap to allow channels to carry water without causing erosion.
- Use softer measures like geotextile or vegetation where possible to prevent downstream impacts.

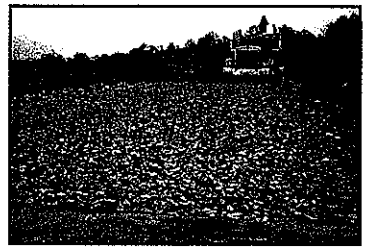
Reduce the velocity of stormwater:

- **Use** ESC practices such as vegetated buffers and check dams to slow down stormwater as it travels across and away from the project site.

- **Don't use** silt fences or other types of perimeter filters to reduce the velocity of runoff; never install them in streams or ditches.



Keep sediment on site:



- Maintain a minimum 50-foot length of clean stone at access points to accommodate large vehicles.
- Sweep the construction entrance road often to prevent soil and debris from entering storm drains.
- Do not hose paved areas.
- Use temporary sediment traps and basins with other permanent measures to retain sediment.

Divert clean water from disturbed soil:

- Use interceptors and diversion structures to direct flow away from exposed areas toward stable portions of the site.

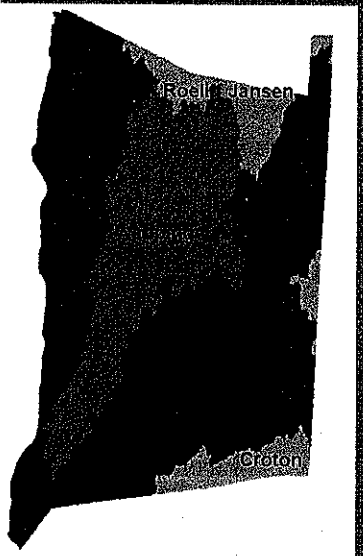
Maintain all ESC practices to ensure their effectiveness during the life of the project:

- Regularly remove collected sediment from silt fences, berms, traps, and other practices.

- Maintain sediment controls that protect sensitive areas such as diversion structures and silt fences.
- Keep geotextiles and mulch in place until vegetation is well established.

What is a Watershed?

Every one of us lives within a watershed, whether we live on a rural farm in Pine Plains, a suburban home in the Town of La Grange, or in an urban apartment in the City of Poughkeepsie. A watershed is an area of land in which all of the [illegible] (rain, snow, sleet, etc.) that falls onto [illegible] single waterbody, often a [illegible]



The map shows the [illegible] watersheds [illegible] within [illegible] County. [illegible] watershed [illegible] do not [illegible] municipal [illegible] as [illegible] of Dutchess [illegible] water [illegible] extend into [illegible] neighboring counties [illegible] communities.

Why are watersheds important?

Healthy watersheds can provide many important and essential functions to the surrounding landscape, including:

- Reduce stream erosion
- Decrease sedimentation
- Provide natural habitat
- Create recreational value (e.g. fishing, swimming, boating, etc.)
- Enhance aesthetic beauty

Dutchess Watershed Coalition

The mission of the Dutchess Watershed Coalition is "to promote awareness and active participation of the community in the stewardship of the land and water resources of Dutchess County through educational and recreational events."

Member organizations of the Coalition include:

- Casperkill Watershed Alliance
- Cornell Cooperative Extension Dutchess County
- Fall Kill Watershed Committee
- Fishkill Creek Watershed Committee
- Friends of the Great Swamp
- Housatonic Valley Association
- Hudson River Sloop Clearwater
- Hudson River Watershed Alliance
- Stream Alliance of Northern Dutchess
- Ralph T. Waterman Bird Club
- Wappinger Creek Watershed Intermunicipal Council

If sponsorship is not an option but you are still interested in helping out...

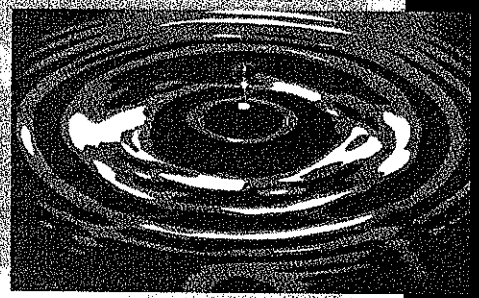
Volunteer at a watershed event being hosted near you or organize your own clean-up! For more information on how to become involved, visit http://dutchesswam.com or contact
Carolyn Klocker Nurre,
CCEDC Environmental Educator,
cak97@cornell.edu or 845-677-8223, ext. 135.

Cornell Cooperative Extension Dutchess County provides equal program and employment opportunities.
Programs provided by this agency are partially funded by monies received from the County of Dutchess.

Dutchess Watershed Awareness Month

~ July 2010 ~

Sponsorship Opportunity



A series of county-wide community outreach events based on watershed awareness in Dutchess County.

Cornell University Cooperative Extension Dutchess County

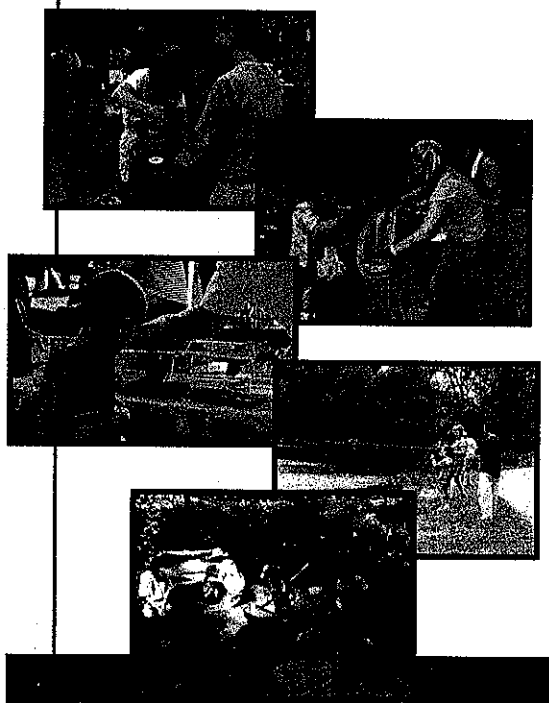
The Dutchess Watershed Coalition

Dutchess Watershed Awareness Month—July 2010

Dutchess Watershed Awareness Month (WAM) is a series of events and activities with the goal of educating the community about the valuable land and water resources in Dutchess County and how to protect them. Events include watershed and stream cleanups, guided nature walks, canoe and kayak trips, lectures, festivals and much more.

When: Throughout the month of July
Where: Communities throughout Dutchess County

All WAM events are free and provide family-friendly activities related to watersheds and are aimed at increasing public awareness of watershed issues.



Images from various WAM 2009 events.

How You Can Help:

We are looking for sponsors that will help defray some of the cost and/or promote our events. Please consider donating at the following levels:

- **Watershed Sponsor - $5,000**
- **River Sponsor - $2,500**
- **Tributary Sponsor - $1,000**
- **Creek Sponsor - $500**
- **Wetland Sponsor - $250**
- **Pond Sponsor - $100**

Possible in-kind donations include: trash bags, gloves, food and beverages, trash removal services, T-shirts, banners, etc. We also accept individual donations of any amount.

How to Donate:

Fill out the sponsorship form provided with this pamphlet and return to:

Cornell Cooperative Extension Dutchess County
Attn: Dutchess Watershed Awareness Month
2715 Route 44
Millbrook, NY 12545

Questions?

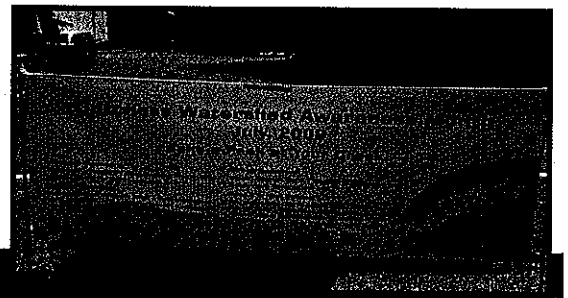
If you have any questions related to WAM and/or WAM sponsorship, contact Carolyn Klocker Nurre, CCEDC Environmental Educator, at cak97@cornell.edu or 845-677-8223, ext. 135.

Benefits To Your Organization:

All sponsors will receive acknowledgment and/or advertising in the Dutchess Watersheds event booklet (provided at all events, at least 1000 copies total). The level of sponsorship will determine the amount of advertising:

- Watershed Sponsor- 2 page ad
- River Sponsor- 1 page ad
- Tributary Sponsor - ½ page ad
- Creek Sponsor - ¼ page ad
- Wetland Sponsor – Company Logo
- Pond Sponsor and In-Kind donations will be acknowledged in a list.

All levels of donation include acknowledgment as a sponsor on the Cornell Cooperative Extension Dutchess County (CCEDC) website (http://ccedutchess.org) and acknowledgment on the Dutchess Watershed Awareness Month website (http://dutchesswam.com.) All sponsors will also be thanked in a 1/8 page print ad in the Poughkeepsie Journal. T-shirts advertising sponsors and commemorating the event, and banners advertising sponsors at 5 or more event locations throughout the County will be created, conditional upon securing appropriate levels of funding.



WAM 2009 Sponsor banner at "Picnic in the Park."

For Up-To-Date Information About WAM 2010, Visit Our Website at www.dutchesswam.com

For more information, check out these websites:

Dutchess County Soil and Water Conservation District:
www.dutchess.ny.nacdnet.org

New York State Department of Environmental Conservation: Division of Water Mainpage:
www.dec.state.ny.us/website/dow/mainpage.html
Phase II Stormwater Requirements:
www.dec.state.ny.us/website/dow/futurreg.htm
Phase II General Permits and Information:
www.dec.state.ny.us/website/dow/PhaseII.html

United States Environmental Protection Agency: National Pollutant Discharge Elimination System:
www.epa.gov/npdes/stormwater
Polluted Runoff – Nonpoint Source Pollution:
www.epa.gov/nps

U.S. Department of Agriculture – Natural Resources Conservation Service: Backyard Conservation:
http://www.nrcs.usda.gov/feature/backyard

Center for Watershed Protection:
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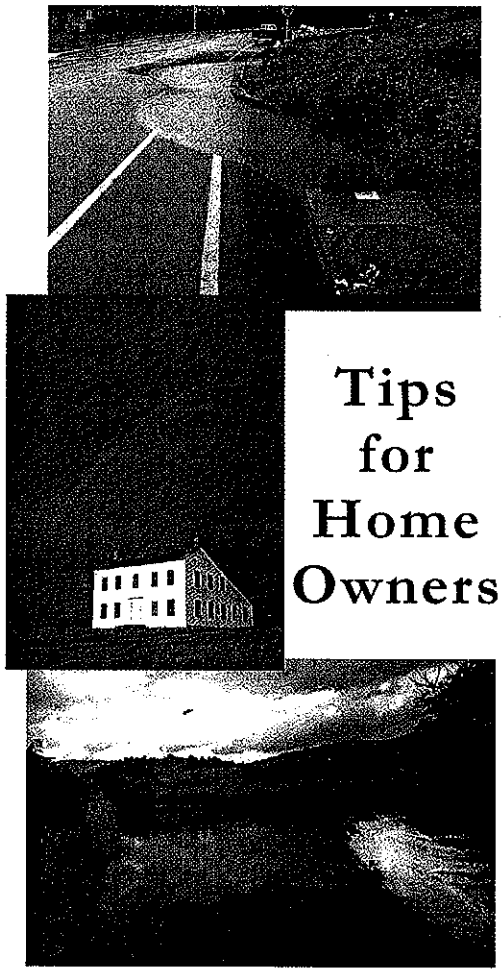
Preventing Stormwater Pollution



Tips for Home Owners

How you can help protect water quality in your community

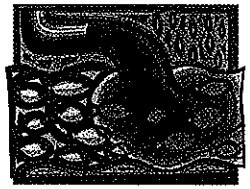
What's the big deal about stormwater?

If you live in one of the Dutchess County municipalities listed below, your community has been designated a **regulated MS4** (Municipal Separate Storm Sewer System) under the new Phase II Stormwater Regulations.

City of Beacon	Village of Pawling
Town of Beekman	Town of Pleasant Valley
Town of East Fishkill	City of Poughkeepsie
Town of Fishkill	Town of Poughkeepsie
Village of Fishkill	Town of Wappinger
Town of Hyde Park	Village of Wappingers Falls
Town of Pawling	

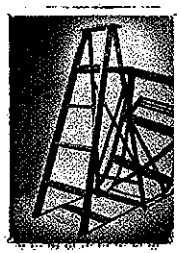
This means that the town, city or village in which you live needs a permit under the State-wide Pollutant Discharge Elimination System (SPDES) in order to discharge **stormwater**. **Stormwater runoff** is the rainwater that falls onto lawns, rooftops, roads, driveways, parking lots, and other outdoor surfaces, and is not soaked up by the soil.

What happens to all of this water? Most of it flows into storm drains, which often flow directly into a stream or lake, and ultimately, to a river such as the Hudson. It can carry with it sediment, trash, oil and hydrocarbons, metals, nutrients such as phosphorus and nitrogen, potentially harmful bacteria, and toxic substances into these water resources. This water may then become muddy, harmful to fish and wildlife, and unsafe for recreation. This is known as **nonpoint source pollution**. Although you may think of a stormwater discharge pipe as a point source because the outflow enters a stream at a single point, contaminants in the pipe are accumulated from all over the surface of the **watershed** (area of land drained by a given stream or outfall pipe). Rain or snowmelt picks up pollutants and carries them downhill in pathways that flow together to one location.



How can I minimize stormwater pollution?

Many people do not realize it, but there are a number of simple things that homeowners can do to minimize water pollution.



Home repair

If you are a do-it-yourselfer, use non-toxic, biodegradable products. Before you begin an outdoor project, locate storm drains and be sure that they are protected from any materials that the work may produce, including mortar, concrete, debris, and other substances. Paint brushes and other application tools should be cleaned indoors rather than washed outside with the hose.

Your lawn and yard

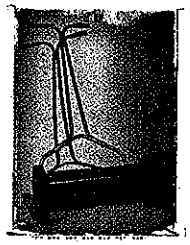
When applying pesticides, do so in dry, calm weather. Follow the recommended application rate on the label.

Spread grass clippings back on the lawn. This returns nutrients to the soil. Otherwise, sweep up yard waste rather than spraying it off the driveway with a hose. Plant debris can be used as mulch or turned into compost.

Don't apply fertilizer right before rain, it will be washed out and wasted. It takes time for biochemical processes in the soil to incorporate fertilizer.

Select native grasses and other plants—they tend to require less water and less fertilizer.

Test your soil - do you really need fertilizer?



Good farmers test their soil before they invest in fertilizer or manure. Find out the blend of nutrients your lawn needs. Call Cornell Cooperative Extension for an inexpensive soil test, at (845) 677-8223 x115. Excess fertilizer is not taken up by plants, but runs off into streams and lakes, where it leads to algae growth and fish kills. Fertilizer can also leach into groundwater, the drinking water supply for most of Dutchess County.

Conservation planting

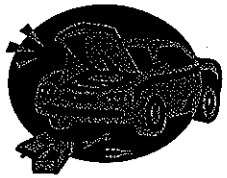
When soil is washed off the surface of the land and into a water body, it becomes a pollutant itself. If you have planted grass seed in a bare soil area, keep it covered with a tarp or burlap until germination occurs, especially during the winter. Don't mow your lawn to the edge of a stream—maintain trees and shrubs near the edge of the bank. These plants have deeper roots more capable of holding soil in place.

Washing your vehicle

Do it on the lawn, not in the driveway. Soaps and accumulated "dirt" can harm our waterways, but lawns filter out these contaminants. **OR**

Better yet, go to a car wash where the dirty water can be properly discarded.

Maintaining your vehicle



Use only as much windshield washer fluid as you really need.

Check periodically for leaking oil, gasoline, engine coolant, and transmission, brake, and power steering fluids.

Use cat litter, sand, or other absorbent material to clean up oil or chemical spills.

Don't pour used automotive liquids into storm drains—have them recycled.

Don't litter. Recycle or dispose of trash properly.

This includes not only metals, plastics, paper, and glass, but also hazardous materials such as batteries, paints, and other household chemicals. Contact Dutchess County Resource Recovery at (845) 463-6020 to find out about County hazardous waste days, or visit their website at www.dcrra.org for more information.

Gutters and sump pumps

Collect roof runoff in rain barrels, and then utilize this water later on to water your garden. Rain barrels to which you can hook up a garden hose can be purchased or constructed. **OR**

Direct water to grassy or vegetated areas rather than down the driveway and into the street. Lawns will soak up much of the water and cleanse it of pollutants.

Pet waste

Flush it down the toilet. Animal waste material is rapidly absorbed by rainfall and carried into storm drains. The nutrients in it encourage the growth of pathogens and harmful bacteria in our waterways.

Swimming Pools

Before you drain your pool, test the water to make sure that chlorine is not detected. Then direct the drainage to a sanitary sewer, if possible.

Outdoor chemicals

Always store chemicals and cleaning products in a covered area, where any leaks can be contained.

Septic systems

Have your septic inspected at least every two years. A malfunctioning septic system can contaminate not only groundwater, but surface water as well. Generally, septic tanks must be pumped every 3 to 5 years at a minimum.

Don't plant trees or park vehicles over your septic absorption field—this can damage the pipes and lead to leaks.

Refrain from pouring any household chemicals, gasoline, oil, pesticides, or antifreeze down the drain or into toilets; these substances will inhibit the action of bacteria that keep the septic tank system functioning. Additionally, avoid disposing of diapers, cat litter, coffee grounds, cigarettes, feminine hygiene products, and grease into a septic system; they will clog the system's components.

APPENDIX H

PUBLIC INVOLVEMENT / PARTICIPATION ADDITIONAL REFERENCE MATERIALS

Cornell University
Cooperative Extension
Dutchess County

2715 Route 44, Suite 1
Millbrook, New York 12545-5566
t. 845.677.8223
845.454.7140 (Poughkeepsie Branch)
845.831.4294 (Beacon NIP)
845.831.4287 (Beacon Green Teen)
845.677.5067 (Master Gardener Hotline)
f. 845.677.6563
dutchess@cornell.edu
http://counties.cce.cornell.edu/dutchess

February 5, 2010

Dutchess County MS4 Coordinating Committee
c/o Ed Hoxsie
2715 Route 44, Suite 3
Millbrook, NY 12545

Dear MS4 Coordinating Committee,

I am writing to once again thank you for your support of Dutchess Watershed Awareness Month as well as let you know just how much of an impact your donation had on watershed education and outreach in Dutchess County. Upon reading this letter we also hope you will consider becoming a sponsor of WAM 2010.

Throughout the month of July we were able to hold 35 events, with over 1200 people in attendance, educating participants about the importance of the water and land resources in our communities. As a valued sponsor, we wanted to let you know the many ways we were able to make your generosity known to the Dutchess community and participants of these events.

- 1500 event booklets were printed with an advertisement of your organization, a copy of which you received with our previous thank you letter. These booklets were made available to the public at WAM events across Dutchess County and were also placed in many other public locations throughout the County, including libraries, town and village halls, shopping centers and local businesses and non-profits.
- 2 banners listing our sponsors were also displayed at a majority of our events and even marched in the Village of Wappinger Falls "Picnic in the Park Parade."
- Sponsors were also listed on the T-shirts worn by over 200 WAM volunteers at each of the month's events.
- Your sponsorship continues to be listed on the WAM website (http://dutchesswam.com) on both the home page and the sponsors page. These pages have received over 800 page views since your information has been listed. Acknowledgement of your contribution has also been cited on the Cornell Cooperative Extension Dutchess County Website (http://ccedutchess.org.)
- Members of the Dutchess Watershed Coalition spoke about WAM on several radio shows throughout the county. On each of these occasions, the sponsors were either listed on-the-air or listeners were referred to the WAM website, where sponsors are listed.

Cornell Cooperative Extension provides equal program and employment opportunities.
The County of Dutchess partially funds Cooperative Extension programming in Dutchess County.

- The Poughkeepsie Journal had several articles about watershed topics in July and many listed the WAM website where your sponsorship is acknowledged.
- An ad was placed in the July 30, 2009 edition of the Poughkeepsie Journal thanking our sponsors and listing their names. A copy of the ad is enclosed.
- **To view pictures and articles of WAM 2009 visit our website at http://dutchesswam.com**

Due to the great success of WAM 2009 plans are already underway for Dutchess Watershed Awareness Month 2010 to take place during the month of July. We encourage you once again to participate in this important series of events by becoming a 2010 sponsor. For your benefit we have enclosed a copy of our 2010 sponsorship brochure and form. One of the Dutchess Watershed Coalition members will be following up this letter by phone, in the next week or two, to see if your organization would be interested in sponsoring WAM 2010.

If you have any questions, concerns, comments or feedback on your experience working with us for WAM 2009, or related to becoming a sponsor for WAM 2010, please feel free to contact me.

Once again, on behalf of the Dutchess Watershed Coalition, Cornell Cooperative Extension Dutchess County, Clearwater, the Vassar Environmental Research Institute, the NYSDEC Hudson River Estuary Program and the many other participating organizations of Dutchess Watershed Awareness Month, thank you for your generous donation to Dutchess Watershed Awareness Month (WAM).

Sincerely,

Carolyn Klocker Nurre
Environmental Resource Educator
phone: 845.677.8223, ext.135
email: cak97@cornell.edu
http://dutchesswam.com

Cornell Cooperative Extension provides equal program and employment opportunities.
The County of Dutchess partially funds Cooperative Extension programming in Dutchess County.

APPENDIX I

IDDE ACTIONS AND DOCUMENTS

ENGINEERING DEPARTMENT

Town of Poughkeepsie

MICHAEL J. MORRIS, P. E.
Town Engineer
DONALD A. BEER
Associate Town Engineer
RUSSELL D. KING
Assistant Town Engineer

ONE OVEROCKER ROAD
POUGHKEEPSIE, NY 12603
TEL # (845) 485-3638
FAX # (845) 485-4159

April 10, 2008

Richard DuPilka, P.E.,
City Engineer
62 Civic Center Plaza
P.O. Box 300
Poughkeepsie, NY 12602

COPY

Phase 2 Drainage

Dear Mr. DuPilka:

During our annual inspection of outfalls in the Town in accordance with Phase 2 Drainage Regulations, we received notice of a septic problem which may be emanating from the City of Poughkeepsie.

There is a small stream which crosses Park Avenue from the City about 700 feet down from College Avenue. We first received reports of a septic odor coming from this stream and have since received test data from Vassar College that appears to indicate a possible septic problem.

In accordance with the regulations we are passing this information on to the City of possible contaminants and requesting that you investigate further into the source of this possible illicit discharge.

Thank you for your attention to this matter. If you have any questions, please call me at (845) 485-3635.

Very truly yours,

Russell D. King
Assistant Town Engineer

Todd Tancredi
Councilman –Ward 6

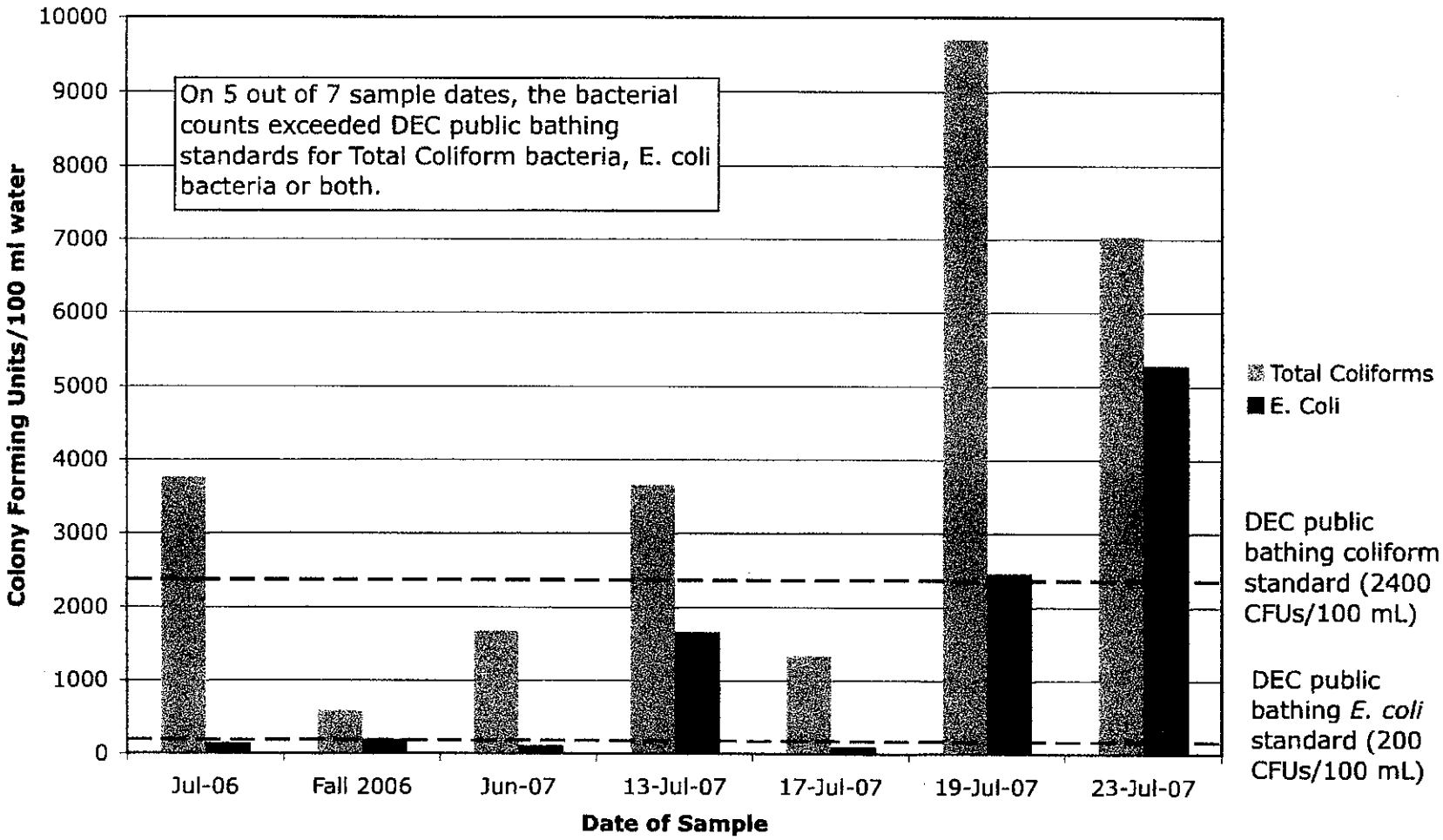
RDK/jag

Attachments: 2

cc: Gwen Johnson, 7th Ward Councilwoman, City of Poughkeepsie w/attachments

Drainage/2008/parkave

Coliform Bacteria Counts in Fonteynkill at Park Avenue, City of Poughkeepsie, NY



Sampling Dates	Total Coliform CFUs/100mL	E. col CFUs/100mL
Jul-06	3763	160
Fall 2006	599	209
Jun-07	1683	123
13-Jul-07	3665	1670
17-Jul-07	1353	108
19-Jul-07	9705	24470
23-Jul-07	7040	5290

ENGINEERING DEPARTMENT

Town of Poughkeepsie

PETER D. SETARO, P. E.
Town Engineer
DONALD A. BEER
Associate Town Engineer
RUSSELL D. KING
Assistant Town Engineer

ONE OVEROCKER ROAD
POUGHKEEPSIE, NY 12603
TEL # (845) 485-3638
FAX # (845) 485-4159

November 24, 2008

Richard DuPilka, P.E., City Engineer
62 Civic Center Plaza
P.O. Box 300
Poughkeepsie, NY 12602

COPY

Re: Phase 2 Drainage Inspections

Dear Mr. DuPilka:

During our reinspection of outfalls in the Town, in accordance with the Phase 2 Drainage Regulations, we again noticed a possible grease buildup where the small stream crosses Fallkill Avenue.

We followed the stream back to the Morgan Lake outfall where we noticed a substantial buildup of suds (picture attached). Maybe some testing might be in order. Please advise.

Sincerely,

Russell D. King
Assistant Town Engineer

RDK/jag

Attachment: 1

cc: Patricia Myers, Supervisor w/attachment
Jim Wojtowicz, Comptroller w/attachment

Drainage/2008/FallkillAve

August __, 2008

Ren Yu Hui
c/o Buffet 2000
Route 44
Poughkeepsie NY 12603

BVS Poughkeepsie, LLC
1720 Post Road
Fairfield CT 06430

Gentlemen:

Please be advised that on September 26, 2007 the Buffet 2000 facility caused an illegal discharge of grease into the Casperkill Creek. A subsequent investigation indicated that the grease trap located on the east side of the building had overflowed and the grease flowed into the manhole as a result of the removal of the screen to prevent said action. The grease went into the manhole, it blocked the manhole immediately south of the property and caused the sewer to overflow and work its way into the Casperkill Creek. The investigation also showed that the manholes in the area were filled with grease, although they had not overflowed. It is the opinion of the Sewer Department that the illegal overflow and discharge into the Town system had been ongoing for approximately 60 days.

You have violated the rules and regulations of the Town of Poughkeepsie Sewer Ordinance, specifically Section 168-72, tampering with the portion of the sewer system, to wit, the screen, Section 168-84, subparagraph 10 and subparagraph 14 B (2). You also violated Section 168 in failing to maintain the interceptors. You also violated Chapter 173 of the Town Code dealing with storm water discharge and specifically Section 173-5 dealing with prohibited discharges.

You are hereby fined for such illegal activity $1,000.00 a day for each day of the violation for a total of $60,000.00 as and for its damages along with reimbursement of all its expenses incurred as a result of your illegal actions.

The costs to date are as follows:

1.	Employee salary		$ 326.55
2.	Employee overtime		258.36
3.	Employee benefits		204.71
4.	Testing	165.00	
5.	Equipment		200.00
			$1,154.62

To avoid a further enforcement action by the Town, please remit the fine and costs of $61,154.62, payable to the Town of Poughkeepsie and mail the same to the attorneys for the Town, Kyle W. Barnett, Esq., Van DeWater & Van DeWater, LLP, P.O. Box 112, Poughkeepsie, New York, 12602, no later than **September 19, 2008**.

Sincerely yours,

RUSSELL KING, Town Engineer

RK/tlr

cc: Patricia Myers, Supervisor
Thomas D. Mahar, Jr., Esq.
Patrick Brown, Sr., Treatment Plant Operator
Kyle W. Barnett, Esq.

APPENDIX J

OUTFALL MAPS

APPENDIX K

OUTFALL DRY WEATHER INSPECTION SCREENING FIELD SHEETS

OTN SYSTEM INSPECTION *INFORMATION REQUEST*
Individual Residential Wastewater Treatment System
(Please type or print)

Property and Owner Identification (Please attach property survey or tax parcel map)

Tax parcel identification number _____

Property address _____

Property owner _____

Address _____

_____

Telephone number _____

Inspection Request Information

Inspection requested by: _____

Affiliation: _____

Address: _____

_____

Telephone number: _____

Requested date of inspection (give two or three) _____

Purpose of request: _____property transfer _____agency request _____malfunction

_____other (please describe) _____

Inspection fee to be paid by: _____

Payment is due before report is released

Household Information

___Owner-occupied *or* ___Rental

___Full-time *or* ____Seasonal .....If seasonal, # weeks per year:_____

Last known date of occupancy: _____.....Number of occupants: _____

Age of home: _____.....Total square footage:_____

# of bedrooms:_____ # of bathrooms:_____ Water-saving fixtures? _____Yes _____No

Home, business or hobby? (E.g. daycare, photography, taxidermy, salon): _____Yes _____No

Type _____

Regularly used medications? (e.g. chemotherapy, dialysis): _____Yes _____No

Are there any wells on the property? _____ How many? _____

Household fresh water source: _____public _____wells _____springs _____other

List of all public or private buried utilities or structures on property: (gas, electric, phone, etc.)

_____

Onsite Wastewater Treatment System(s)

How many systems are on the property? _____

Year systems(s) installed: Tank_____ Leach system _____

Are all system components wholly within the property boundaries? _____Yes _____No

Are system plans available? _____Yes _____No

Does the system(s) serve multiple properties? _____Yes _____No

If yes, describe: _____

Maintenance

Service agreement? _____Yes _____No If yes, vendor name_____

Date of last inspection _____; N/A ____ Date tank last pumped _____; N/A ____

Frequency of pumping _____; N/A _____.

OTN SYSTEM INSPECTION *INFORMATION REQUEST* (page 2 of 2)

List known repairs/replacements, with dates:

Date	Type of Repair/Replacement
_____	_____
_____	_____
_____	_____
_____	_____

Operation

- System problems? ____Yes ____No
- Sewage odors?
- Direct surface discharge(s)?
- Back-up of toilets?
- Back-up of any other fixtures? (e.g. slow drains)
- Seasonal ponding or breakout of leachfield?

Statement of Acceptance of Conditions

I agree to:

_ ensure that the septic tank(s), distribution box(es), and/or seepage pit(s), if any, will be uncovered **prior to** the requested inspection time;

_ have a septage hauler on site (to pump the tank ***after**** the inspector arrives);
** tank must be pumped in presence of inspector*

_ have an authorized representative present at the site to provide access to home for inspection of interior plumbing;

_ have an authorized representative present at the site to provide access to home for inspection of interior plumbing

_ allow the inspector to verify information provided above, and to conduct an inspection of the indicated onsite wastewater treatment system(s), including all system components, and interior and exterior plumbing.

To the best of my knowledge, the information provided above is accurate.
I agree to be responsible for inspection fee payment.

Signature of property owner or authorized agent:

Please print name: _____

Affiliation: ___owner _____agent, _____

Signature: _____ Date: _____

Comments/Directions to property/etc. (optional)

- -

Inspector

Name of Inspector _____

Affiliation _____

Address _____

_____

Telephone Number _____

OUTFALL RECONNAISSANCE INVENTORY/ SAMPLE COLLECTION FIELD SHEET

Section 1: Background Data

Subwatershed:		Outfall ID:	
Today's date:		Time (Military):	
Investigators:		Form completed by:	
Temperature (°F):	Rainfall (in.): Last 24 hours:	Last 48 hours:	
Latitude:	Longitude:	GPS Unit:	GPS LMK #:
Camera:		Photo #s:	

Land Use in Drainage Area (Check all that apply):

- ☐ Industrial
- ☐ Ultra-Urban Residential
- ☐ Suburban Residential
- ☐ Commercial
- ☐ Open Space
- ☐ Institutional
- Other: _____
- Known Industries: _____

Notes (e.g., origin of outfall, if known):

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE		DIMENSIONS (IN.)	SUBMERGED
☐ Closed Pipe	☐ RCP ☐ CMP ☐ PVC ☐ HDPE ☐ Steel ☐ Other: _____	☐ Circular ☐ Eliptical ☐ Box ☐ Other: _____	☐ Single ☐ Double ☐ Triple ☐ Other: _____	Diameter/Dimensions: _____	In Water: ☐ No ☐ Partially ☐ Fully With Sediment: ☐ No ☐ Partially ☐ Fully
☐ Open drainage	☐ Concrete ☐ Earthen ☐ rip-rap ☐ Other: _____	☐ Trapezoid ☐ Parabolic ☐ Other: _____		Depth: _____ Top Width: _____ Bottom Width: _____	
☐ In-Stream	(applicable when collecting samples)				
Flow Present?	☐ Yes ☐ No *If No, Skip to Section 5*				
Flow Description (If present)	☐ Trickle ☐ Moderate ☐ Substantial				

Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS				
PARAMETER		RESULT	UNIT	EQUIPMENT
☐Flow #1	Volume		Liter	Bottle
	Time to fill		Sec	
☐Flow #2	Flow depth		In	Tape measure
	Flow width	_____' _____"	Ft, In	Tape measure
	Measured length	_____' _____"	Ft, In	Tape measure
	Time of travel		S	Stop watch
Temperature			°F	Thermometer
pH			pH Units	Test strip/Probe
Ammonia			mg/L	Test strip

Outfall Reconnaissance Inventory Field Sheet

Section 4: Physical Indicators for Flowing Outfalls Only

Are Any Physical Indicators Present in the flow? ☐ Yes ☐ No *(If No, Skip to Section 5)*

INDICATOR	CHECK if Present	DESCRIPTION	RELATIVE SEVERITY INDEX (1-3)		
Odor	☐	☐ Sewage ☐ Rancid/sour ☐ Petroleum/gas ☐ Sulfide ☐ Other:	☐ 1 – Faint	☐ 2 – Easily detected	☐ 3 – Noticeable from a distance
Color	☐	☐ Clear ☐ Brown ☐ Gray ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other:	☐ 1 – Faint colors in sample bottle	☐ 2 – Clearly visible in sample bottle	☐ 3 – Clearly visible in outfall flow
Turbidity	☐	See severity	☐ 1 – Slight cloudiness	☐ 2 – Cloudy	☐ 3 – Opaque
Floatables -Does Not Include Trash!!	☐	☐ Sewage (Toilet Paper, etc.) ☐ Suds ☐ Petroleum (oil sheen) ☐ Other:	☐ 1 – Few/slight; origin not obvious	☐ 2 – Some; indications of origin (e.g., possible suds or oil sheen)	☐ 3 - Some; origin clear (e.g., obvious oil sheen, suds, or floating sanitary materials)

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls

Are physical indicators that are not related to flow present? ☐ Yes ☐ No *(If No, Skip to Section 6)*

INDICATOR	CHECK if Present	DESCRIPTION	COMMENTS
Outfall Damage	☐	☐ Spalling, Cracking or Chipping ☐ Peeling Paint ☐ Corrosion	
Deposits/Stains	☐	☐ Oily ☐ Flow Line ☐ Paint ☐ Other:	
Abnormal Vegetation	☐	☐ Excessive ☐ Inhibited	
Poor pool quality	☐	☐ Odors ☐ Colors ☐ Floatables ☐ Oil Sheen ☐ Suds ☐ Excessive Algae ☐ Other:	
Pipe benthic growth	☐	☐ Brown ☐ Orange ☐ Green ☐ Other:	

Section 6: Overall Outfall Characterization

☐ Unlikely ☐ Potential (presence of two or more indicators) ☐ Suspect (one or more indicators with a severity of 3) ☐ Obvious

Section 7: Data Collection

1. Sample for the lab?	☐ Yes	☐ No	
2. If yes, collected from:	☐ Flow	☐ Pool	
3. Intermittent flow trap set?	☐ Yes	☐ No	If Yes, type: ☐ OBM ☐ Caulk dam

Section 8: Any Non-Illicit Discharge Concerns (e.g., trash or needed infrastructure repairs)?

IDENT	DATE	INSPECTION	TYPE	BASIN
C-035	6/12/2009	Some suds Reinspect	WAYPOINT	Casper Creek
C-036	6/12/2009	No flow	WAYPOINT	Casper Creek
C-038	6/12/2009	Flow clear	WAYPOINT	Casper Creek
C-039	6/12/2009	Clear	WAYPOINT	Casper Creek
C-040	6/12/2009	No flow	Driveway	Casper Creek
C-30A	6/12/2009	No flow	CMP	Casperkill
C-34A	6/12/2009	No flow		Casperkill
C-034	6/12/2009	Slight flow clear	WAYPOINT	Casper Creek
C-166B	9/1/2009	Road Dry	WAYPOINT	Casper Creek
C-166C	9/1/2009	Dry	Pipe	Casperkill
C-166D	9/1/2009	Dry	Pipe	Casperkill
C-116A	9/1/2009	Dry	Pipe	Casperkill
C-116	9/1/2009	Dry	WAYPOINT	Casper Creek
C-135	9/17/2009	Dry	WAYPOINT	Casper Creek
C-136	9/17/2009	Slight flow Clear	WAYPOINT	Casper Creek
C-167B	9/17/2009	Dry	CMP	Casper Creek
C-135A	9/17/2009	Dry	Road	Casperkill
C-133A	9/17/2009	Slight flow Clear	Pipe	Casperkill
C-167C	9/17/2009	Dry	Swale	Casperkill
C-168-C	9/17/2009	Dry	Road	Casperkill
C-133	9/17/2009	Dry	WAYPOINT	Casper Creek
C-127B	9/18/2009	Dry	Drywell	Casperkill
C-127A	9/18/2009	Dry	Pipe	Casperkill
C-127C	9/18/2009	Dry	Drywell	Casperkill
C-113	9/22/2009	Dry	WAYPOINT	Casper Creek
C-121	9/23/2009	Dry	WAYPOINT	Casper Creek
C-122	9/23/2009	Dry	WAYPOINT	Casper Creek
C121A	9/23/2009	Dry	Pipe	Casperkill
C-117A	9/23/2009	Dry	Road	Casperkill
C-120	9/23/2009	Dry	WAYPOINT	Casper Creek
C-130	9/24/2009	Okay	WAYPOINT	Casper Creek
C-131	9/24/2009	Road Dry	WAYPOINT	Casper Creek
C-132	9/24/2009	Suds Reinspect	Calvert	Casperkill
C-132A	9/24/2009	Dry	Pipe	Casperkill
C-132B	9/24/2009	Dry	Pipe	Casperkill
C-129	9/24/2009	Okay	WAYPOINT	Casper Creek
C-031	10/2/2009	Slight flow Clear	Pipe	Casper Creek
C-033	10/2/2009	Slight flow	WAYPOINT	Casper Creek
C-045	10/2/2009	Dry	WAYPOINT	Casper Creek
C-046	10/2/2009	Dry	WAYPOINT	Casper Creek
C-047	10/2/2009	Slight flow	WAYPOINT	Casper Creek
C-044A	10/2/2009	Dry	Pipe	Casperkill
C-044B	10/2/2009	Dry	Pipe	Casperkill
C-046A	10/2/2009	Slight Flow	Culvert	Casperkill
C-047A	10/2/2009	No flow		Casperkill
C-047B	10/2/2009	Clear	Culvert	Casperkill
C-030	10/2/2009	Dry	Pipe	Casper Creek
C-001	10/19/2009	Dry	WAYPOINT	Casper Creek
C-004	10/19/2009	Dry	WAYPOINT	Casper Creek
C-011	10/19/2009	Dry	WAYPOINT	Casper Creek

W-001A	10/19/2009	Clear	Culvert	Wappingers
C003A	10/19/2009	No flow	Pipe	Casperkill
C003B	10/19/2009	No flow	Pipe	Casperkill
C002C	10/19/2009	Dry	Road	Casperkill
C-004A	10/19/2009	Dry	Pipe	Casperkill
C-11A	10/19/2009	Dry	Pipe	Casperkill
C-007A	10/19/2009	Slight flow	Culvert	Casperkill
HP-2	10/19/2009	Dry	Road	Hyde Park
C-050	10/20/2009	Dry	WAYPOINT	Casper Creek
C-021	10/20/2009	Light flow clear	WAYPOINT	Casper Creek
C-20A	10/20/2009	Slight flow	Pipe	Casperkill
C-50A	10/20/2009	No flow	Pipe	Casperkill
C-160	10/20/2009	Dry	WAYPOINT	Casper Creek
H-43	10/21/2009	Dry	Pipe	Hudson
H-60	10/21/2009	Dry	Road	Hudson
C-113A	10/21/2009	Dry	Drywell	Casperkill
C-163	10/21/2009	Dry	WAYPOINT	Casper Creek
C-164	10/21/2009		WAYPOINT	Casper Creek
C-146	10/21/2009		WAYPOINT	Casper Creek
C-104	10/21/2009	Dry	WAYPOINT	Casper Creek
C-105	10/21/2009	No flow	WAYPOINT	Casper Creek
C-106	10/21/2009	Dry	WAYPOINT	Casper Creek
C-107	10/21/2009	Dry	WAYPOINT	Casper Creek
C-109	10/21/2009	Dry	WAYPOINT	Casper Creek
C-110	10/21/2009	Dry	WAYPOINT	Casper Creek
C-098	10/21/2009	Dry	WAYPOINT	Casper Creek
C-099	10/21/2009	Flow	WAYPOINT	Casper Creek
C-100	10/21/2009	Dry	WAYPOINT	Casper Creek
C-102	10/21/2009	No flow	WAYPOINT	Casper Creek
C146A	10/21/2009	Dry	Road	Casperkill
C-110A	10/21/2009	Dry	Road	Casperkill
C-112A	10/21/2009	No flow	Dry well	Casperkill
C-163A	10/21/2009	Slight flow Sheen reinspe	Pipe	Casperkill
C-164A	10/21/2009	No flow	Pipe	Casperkill
H-45	10/21/2009	Slight flow clear	Pipe	Hudson
C-092	10/22/2009	Dry Debris	WAYPOINT	Casper Creek
C-096	10/22/2009	Dry	WAYPOINT	Casper Creek
C-097	10/22/2009	Dry	WAYPOINT	Casper Creek
C-080	10/22/2009	Dry	WAYPOINT	Casper Creek
C-097A	10/22/2009	Dry		Casperkill
C-112	10/22/2009	Slight Flow Clear Silt in	WAYPOINT	Casper Creek
C-017	10/23/2009	Dry	WAYPOINT	Casper Creek
C-029	10/23/2009	Slight flow Clear	WAYPOINT	Casper Creek
C-159	10/23/2009	Clear	WAYPOINT	Casper Creek
C-048	11/25/2009	Dry	WAYPOINT	Casper Creek
H-101	12/11/2009	Dry	Drywell	Hudson
H-104	12/11/2009	Dry	Drywell	Hudson
H-103	12/11/2009	Dry	Drywell	Hudson
H-106	12/11/2009	Dry	Road	Hudson
H-108	12/11/2009	Dry	Pipe	Hudson
H-109	12/11/2009	Dry	Road	Hudson

H-110	12/11/2009	Clear	Pipe	Hudson
H-111	12/11/2009	No flow	Pipe	Hudson
W-230	12/11/2009	Dry	Pipe	Wappingers
W-9	12/17/2009	Dry	Road	Wappingers
PV-1	12/17/2009	Dry	Pipe	Pleasant Val
W-001B	12/17/2009	Clear	Pipe	Wappingers
W-8	12/17/2009	Dry	Pipe	Wappingers
W-91	12/22/2009	Dry	Road	Wappingers
W-88	12/22/2009	Dry	Pipe	Wappingers
W-92	12/22/2009	Dry	Dry Well	Wappingers
W-93	12/22/2009	No flow	PIpe	Wappingers
W-105	12/22/2009	No flow	Pipe	Wappingers
W-113	12/22/2009	Clear Outlet blocked	Swale	Wappingers
W-112	12/22/2009	Dry	Pipe	Wappingers
W-111	12/22/2009	Dry	Pond	Wappingers
W-110	12/22/2009	Dry	Pond	Wappingers
W-105A	12/22/2009	Dry	Pipe	Wappingers
W-96	12/22/2009	Slight flow clear	Pipe	Wappingers
W-12	12/23/2009	Slight flow clear	Pipe	Wappingers
W-13	12/23/2009	Dry	Pipe	Wappingers
W-26	12/23/2009	Slight flow clear	Ditch	Wappingers
W-109	12/23/2009	Light flow clear	Pipe	Wappingers
W-23	12/23/2009	Dry	Pipe	Wappingers
W-24	12/23/2009	Slight flow clear	Road	Wappingers
W-25	12/23/2009	Dry	Road	Wappingers
W-22	12/23/2009	No flow	Pipe	Wappingers
W-21	12/23/2009	No flow	Pipe	Wappingers
W-14	12/23/2009	Light flow clear	Ditch	Wappingers
W-18	12/23/2009	Slight flow clear	Ditch	Wappingers
W-10	12/23/2009	No flow	Pipe	Wappingers
W-75	12/28/2009	No flow/Dry	Drywell	Wappingers
W-75A	12/28/2009	No flow/Dry	Drywell	Wappingers
W-76	12/28/2009	Dry	Road	Wappingers
W-77	12/28/2009	Dry	Road	Wappingers
W-77A	12/28/2009	Dry	Road	Wappingers
W-77B	12/28/2009	Dry	Ditch	Wappingers
W-82	12/28/2009	Dry	Ditch	Wappingers
W-78	12/28/2009	Dry	Pipe	Wappingers
W-79	12/28/2009	No flow	Pipe	Wappingers
W-81	12/28/2009	No flow	Pipe	Wappingers
W-84	12/28/2009	Dry	Drywell	Wappingers
W-83	12/28/2009	Dry	Drywell	Wappingers
W-87	12/28/2009	Dry	Road	Wappingers
W-85	12/28/2009	No flow	Pipe	Wappingers
W-74	12/28/2009	Dry	Road	Wappingers
W-56	12/30/2009	Dry	Pipe	Wappingers
W-52	12/30/2009	Slight flow Clear	Road	Wappingers
W-57	12/30/2009	Dry	Road	Wappingers
W-61A	12/30/2009	Dry	Ditch	Wappingers
W-61	12/30/2009	Dry	Road	Wappingers
W-65	12/30/2009	Dry	Pipe	Wappingers

W-64	12/30/2009	Dry	Pipe	Wappingers
W-62	12/30/2009	No flow	Pipe	Wappingers
W-63	12/30/2009	Clear	Pipe	Wappingers
C-018	12/30/2009	Slight flow clear	WAYPOINT	Casper Creek
C-019	12/30/2009	Flow Clear	WAYPOINT	Casper Creek
W-53	12/30/2009	Clear	Pipe	Wappingers
C-140	12/7/2010	Dry	WAYPOINT	Casper Creek
C-143	12/7/2010	Dry	WAYPOINT	Casper Creek
C-060	12/7/2010	Dry	WAYPOINT	Casper Creek
C-1	12/7/2010		Road	Casperkill
C-053	12/8/2010	Slight flow Clear	WAYPOINT	Casper Creek
C-62A	12/8/2010	No flow	Pipe/Basin	Casperkill
C-140A	12/8/2010	No flow	Pipe/Basin	Casperkill
C-148B	12/8/2010	Dry	Road	Casperkill?
C-148A	12/8/2010	Dry	Drywell	Casperkill
C-051	12/8/2010	No flow	WAYPOINT	Casper Creek

APPENDIX L

LOCAL STORMWATER CONTROL LAW

Debbie or Suzanne Scan to PDF and insert

Chapter

STORMWATER M

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Stormwater Discharge Management

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Part 2
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§ 173-32. Fees for services.

Schedule A, Contents of Stormwater Pollution Prevention Plan

Schedule B, Stormwater Pollution Prevention Plan

Requirements for Conditions A, B and C

Schedule C, Stormwater Control Facility Agreements

[HISTORY: Adopted by the Town Board of the Town of Poughkeepsie as indicated in Part histories. Amendments noted where applicable.]

GENERAL REFERENCES

Environmental quality review — See Ch. 94.	Sewers — See Ch. 168.
Erosion and sediment control — See Ch. 97.	Subdivision of land — See Ch. 177.
Flood damage prevention — See Ch. 113.	Waterfront consistency review — See Ch. 205.
Aquatic resource protection — See Ch. 116.	Zoning — See Ch. 210.

Part 1
Stormwater Discharge Management
[Adopted 5-18-2005 by L.L. No. 6-2005[1]]

ARTICLE I
Discharge Management Regulations

§ 173-1. Purpose and intent.

The purpose of this article is to provide for the health, safety, and general welfare of the citizens of the Town of Poughkeepsie through the regulation of non-stormwater discharges to the municipal separate storm sewer system (MS4) to the maximum extent practicable as required by federal and state law. This article establishes methods for controlling the introduction of pollutants into the MS4 in order to comply with requirements of the SPDES general permit for municipal separate storm sewer systems. The objectives of this article are:

A. To meet the requirements of the SPDES general permit for stormwater discharges from MS4s, Permit No. GP-02-02, or as amended or revised;

B. To regulate the contribution of pollutants to the MS4 since such systems are not designed to accept, process or discharge non-stormwater wastes;

C. To prohibit illicit connections, activities and discharges to the MS4;

D. To establish legal authority to carry out all inspection, surveillance and monitoring procedures necessary to ensure compliance with this article; and

1. Editor's Note: This local law also repealed former Ch. 173, Stormwater Discharge Management, adopted 4-21-2004 by L.L. No. 6-2004.

E. To promote public awareness of the hazards involved in the improper discharge of trash, yard waste, lawn chemicals, pet waste, wastewater, grease, oil, petroleum products, cleaning products, paint products, hazardous waste, sediment and other pollutants into the MS4.

§ 173-2. Definitions.

Whenever used in this article, unless a different meaning is stated in a definition applicable to only a portion of this article, the following terms will have meanings set forth below:

BEST MANAGEMENT PRACTICES (BMPs) — Schedules of activities, prohibitions of practices, general good housekeeping practices, pollution prevention and educational practices, maintenance procedures, and other management practices to prevent or reduce the discharge of pollutants directly or indirectly to stormwater, receiving waters, or stormwater conveyance systems. BMPs also include treatment practices, operating procedures, and practices to control site runoff, spillage or leaks, sludge or water disposal, or drainage from raw materials storage.

CLEAN WATER ACT — The Federal Water Pollution Control Act (33 U.S.C. § 1251 et seq.), and any subsequent amendments thereto.

CONSTRUCTION ACTIVITY — Activities requiring authorization under the SPDES permit for stormwater discharges from construction activity, GP-02-01, as amended or revised. These activities include construction projects resulting in land disturbance of one or more acres. Such activities include but are not limited to clearing and grubbing, grading, excavating, and demolition.

DEPARTMENT — The New York State Department of Environmental Conservation.

DESIGN PROFESSIONAL — A New York State licensed professional engineer or licensed architect.

HAZARDOUS MATERIALS — Any material, including any substance, waste, or combination thereof, which because of its quantity, concentration, or physical, chemical, or infectious characteristics may cause, or significantly contribute to, a substantial present or potential hazard to human health, safety, property, or the environment when improperly treated, stored, transported, disposed of, or otherwise managed.

ILLICIT CONNECTIONS — Any drain or conveyance, whether on the surface or subsurface, which allows an illegal discharge to enter the MS4, including but not limited to:

A. Any conveyances which allow any non-stormwater discharge, including treated or untreated sewage, process wastewater, and washwater, to enter the MS4 and any connections to the storm drain system from indoor drains and sinks, regardless of whether said drain or connection had been previously allowed, permitted, or approved by an authorized enforcement agency; or

B. Any drain or conveyance connected from a commercial or industrial land use to the MS4 which has not been documented in plans, maps, or equivalent records and approved by an authorized enforcement agency.

ILLICIT DISCHARGE — Any direct or indirect non-stormwater discharge to the MS4, except as exempted in § 173-6 of this article.

INDIVIDUAL SEWAGE TREATMENT SYSTEM — A facility serving one or more parcels of land or residential households, or a private, commercial or institutional facility, that treats sewage or other liquid wastes for discharge into the groundwaters of New York State, except where a permit for such a facility is required under the applicable provisions of Article 17 of the Environmental Conservation Law or where such facility is regulated by the New York State Department of Health.

INDUSTRIAL ACTIVITY — Activities requiring the SPDES permit for discharges from industrial activities except construction, GP-98-03, as amended or revised.

MS4 — Municipal separate storm sewer system.

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 the Town of Poughkeepsie;

(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.

MUNICIPALITY — The Town of Poughkeepsie.

NON-STORMWATER DISCHARGE — Any discharge to the MS4 that is not composed entirely of stormwater.

PERSON — Any individual, association, organization, partnership, firm, corporation or other entity recognized by law and acting as either the owner or as the owner's agent.

POLLUTANT — Dredged spoil, filter backwash, solid waste, incinerator residue, treated or untreated sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand and industrial, municipal, agricultural waste and ballast discharged into water; which may cause or might reasonably be expected to cause pollution of the waters of the state in contravention of the standards.

PREMISES — Any building, lot, parcel of land, or portion of land whether improved or unimproved, including adjacent sidewalks and parking strips.

QUALIFIED INDIVIDUAL — For the purpose of performing an inspection of an individual sewage treatment system, a qualified individual includes licensed engineers and architects, employees of state and county health units, watershed inspectors, and persons who have completed training from the National Association of Wastewater Transporters (NAWT), the New York Onsite Wastewater Training Network (OTN), or equivalent.

SPECIAL CONDITIONS —

(1) DISCHARGE COMPLIANCE WITH WATER QUALITY STANDARDS—The condition that applies where a municipality has been notified that the discharge of stormwater authorized under its MS4 permit may have caused or has the reasonable potential to cause or contribute to the violation of an applicable water quality standard. Under this condition, the municipality must take all necessary actions to ensure future discharges do not cause or contribute to a violation of water quality standards.

(2) 303(d) LISTED WATERS—The condition in the municipality's MS4 permit that applies where the MS4 discharges to a 303(d) listed water. Under this condition, the stormwater management program must ensure no increase of the listed pollutant of concern to the 303(d) listed water.

(3) TOTAL MAXIMUM DAILY LOAD (TMDL) STRATEGY—The condition in the municipality's MS4 permit where a TMDL including requirements for control of stormwater discharges has been approved by EPA for a waterbody or watershed into which the MS4 discharges. If the discharge from the MS4 did not meet the TMDL stormwater allocations prior to September 10, 2003, the municipality was required to modify its stormwater management program to ensure that reduction of the pollutant of concern specified in the TMDL is achieved.

(4) The condition in the municipality's MS4 permit that applies if a TMDL is approved in the future by EPA for any waterbody or watershed into which an MS4 discharges. Under this condition, the municipality must review the applicable TMDL to see if it includes requirements for control of stormwater discharges. If an MS4 is not meeting the TMDL stormwater allocations, the municipality must, within six months of the TMDL's approval, modify its stormwater management program to ensure that reduction of the pollutant of concern specified in the TMDL is achieved.

STATE POLLUTANT DISCHARGE ELIMINATION SYSTEM (SPDES) STORMWATER DISCHARGE PERMIT — A permit issued by the Department that authorizes the discharge of pollutants to waters of the state.

STORMWATER — Rainwater, surface runoff, snowmelt and drainage.

STORMWATER MANAGEMENT OFFICER (SMO) — An employee, the municipal engineer or other public official(s) designated by the Town of Poughkeepsie to enforce this article. The SMO may also be designated by the municipality to accept and review stormwater pollution prevention plans, forward the plans to the applicable municipal board and inspect stormwater management practices.

2.23 303(d) LIST — A list of all surface waters in the state for which beneficial uses of the water (drinking, recreation, aquatic habitat, and industrial use) are impaired by pollutants, prepared periodically by the Department as required by Section 303(d) of the Clean Water Act. 303(d) listed waters are estuaries, lakes and streams that fall short of state surface water quality standards and are not expected to improve within the next two years.

TMDL — "Total maximum daily load."

TOTAL MAXIMUM DAILY LOAD — The maximum amount of a pollutant to be allowed to be released into a waterbody so as not to impair uses of the water, allocated among the sources of that pollutant.

WASTEWATER — Water that is not stormwater, is contaminated with pollutants and is or will be discarded.

§ 173-3. Applicability.

This article shall apply to all water entering the MS4 generated on any developed and undeveloped lands unless explicitly exempted by an authorized enforcement agency.

§ 173-4. Responsibility for administration.

The Town Engineer shall administer, implement, and enforce the provisions of this article as, and be, the Stormwater Management Officer (SMO). Such powers granted or duties imposed upon the authorized enforcement official may be delegated in writing by the SMO as may be authorized by the municipality.

§ 173-5. Discharge prohibitions.

A. Prohibition of illegal discharges. No person shall discharge or cause to be discharged into the MS4 any materials other than stormwater except as provided in Subsection A(1). The commencement, conduct or continuance of any illegal discharge to the MS4 is prohibited except as described as follows:

(1) The following discharges are exempt from discharge prohibitions established by this article, unless the Department or the municipality has determined them to be substantial contributors of pollutants: water line flushing or other potable water sources, landscape irrigation or lawn watering, existing diverted stream flows, rising groundwater, uncontaminated groundwater infiltration to storm drains, uncontaminated pumped groundwater, foundation or footing drains, crawl space or basement sump pumps, air conditioning condensate, irrigation water, springs, water from individual residential car washing, natural riparian habitat or wetland flows, dechlorinated swimming pool discharges, residential street wash water, water from fire-fighting activities, and any other water source not containing pollutants. Such exempt discharges shall be made in accordance with an appropriate plan for reducing pollutants.

(2) Discharges approved in writing by the SMO to protect life or property from imminent harm or damage, provided that such approval shall not be construed to constitute compliance with other applicable laws and requirements, and further provided that such discharges may be permitted for a specified time period and under such conditions as the SMO may deem appropriate to protect such life and property while reasonably maintaining the purpose and intent of this article.

(3) Dye testing in compliance with applicable state and local laws is an allowable discharge, but requires a verbal notification to the SMO prior to the time of the test.

(4) The prohibition shall not apply to any discharge permitted under an SPDES permit, waiver, or waste discharge order issued to the discharger and administered under the authority of the Department, provided that the discharger is in full compliance with all requirements of the permit, waiver, or order and other applicable laws and regulations, and provided that written approval has been granted for any discharge to the MS4.

B. Prohibition of illicit connections.

(1) The construction, use, maintenance or continued existence of illicit connections to the MS4 is prohibited.

(2) This prohibition expressly includes, without limitation, illicit connections made in the past, regardless of whether the connection was permissible under law or practices applicable or prevailing at the time of connection.

(3) A person is considered to be in violation of this article if the person connects a line conveying sewage to the municipality's MS4, or allows such a connection to continue.

C. Prohibition of discharges to Town roads.

(1) No person shall discharge or cause to be discharged any stormwater, surface water, groundwater, roof runoff, subsurface drainage, non-contract cooling water, or unpolluted industrial process water onto any street, highway, or road of the Town of Poughkeepsie, when in the opinion of the Superintendent of Highways or the Deputy Superintendent of Highways said property owner is notified that such discharge is a threat to the health, safety or welfare of the residents of the Town of Poughkeepsie and fails to take corrective action within 10 days of the written notification.

(2) Said water may be discharged into a stormwater drainage system maintained by the Town of Poughkeepsie upon application to the Superintendent of Highways and the construction of such discharge system in accordance with plans and specifications approved by the Superintendent of Highways and construction approved by the Superintendent of Highways.

§ 173-6. Failing individual sewage treatment systems prohibited.

No persons shall operate a failing individual sewage treatment system in areas tributary to the municipality's MS4. A failing individual sewage treatment system is one which has one or more of the following conditions:

A. The backup of sewage into a structure.

B. Discharges of treated or untreated sewage onto the ground surface.

C. A connection or connections to a separate stormwater sewer system.

D. Liquid level in the septic tank above the outlet invert.

E. Structural failure of any component of the individual sewage treatment system that could lead to any of the other failure conditions as noted in this section. Structural failure shall be determined by an inspection of the facility performed according to § 173-8B(2).

F. Contamination of off-site groundwater.

§ 173-7. Activities contaminating stormwater prohibited.

A. Activities that are subject to the requirements of this section are those types of activities that:

(1) Cause or contribute to a violation of the municipality's MS4 SPDES permit.

(2) Cause or contribute to the municipality being subject to the special conditions as defined in § 173-2 (Definitions) of this article.

B. Such activities include failing individual sewage treatment systems as defined in § 173-6, improper management of pet waste or any other activity that causes or contributes to violations of the municipality's MS4 SPDES permit authorization.

C. Upon notification to a person that he or she is engaged in activities that cause or contribute to violations of the municipality's MS4 SPDES permit authorization, that person shall take all reasonable actions to correct such activities such that he or she no longer causes or contributes to violations of the municipality's MS4 SPDES permit authorization.

§ 173-8. Use of best management practices to prevent, control, and reduce stormwater pollutants.

A. Best management practices. Where the SMO has identified illicit discharges as defined in § 173-2 or activities contaminating stormwater as defined in § 173-7, the municipality may require implementation of best management practices (BMPs) to control those illicit discharges and activities.

(1) The owner or operator of a commercial or industrial establishment shall provide, at his/her own expense, reasonable protection from accidental discharge of prohibited materials or other wastes into the MS4 through the use of structural and nonstructural BMPs.

(2) Any person responsible for a property or premises, which is, or may be, the source of an illicit discharge as defined in § 173-2 or an activity contaminating stormwater as defined in § 173-7, may be required to implement, at said person's expense, additional structural and nonstructural BMPs to reduce or eliminate the source of pollutant(s) to the MS4.

(3) Compliance with all terms and conditions of a valid SPDES permit authorizing the discharge of stormwater associated with industrial activity, to the extent practicable, shall be deemed compliance with the provisions of this section.

B. Individual sewage treatment systems; response to special conditions requiring no increase of pollutants or requiring a reduction of pollutants. Where individual sewage treatment systems are contributing to the municipality's being subject to the special conditions as defined in § 173-2 of this article, the owner or operator of such individual sewage treatment systems shall be required to:

(1) Maintain and operate individual sewage treatment systems as follows:

(a) Inspect the septic tank annually to determine scum and sludge accumulation. Septic tanks must be pumped out whenever the bottom of the scum layer is within three inches of the bottom of the outlet baffle or sanitary tee or the top of the sludge is within 10 inches of the bottom of the outlet baffle or sanitary tee;

(b) Avoid the use of septic tank additives;

(c) Avoid the disposal of excessive quantities of detergents, kitchen wastes, laundry wastes, and household chemicals; and

(d) Avoid the disposal of cigarette butts, disposable diapers, sanitary napkins, trash and other such items.

(2) Inspect individual sewage treatment systems as follows:

(a) A qualified individual shall inspect the system at time of transfer or sale of real property upon which the system is located.

(b) The qualified individual shall utilize the inspection form and protocol developed by the New York Onsite Wastewater Treatment Network (Schedule A),[2] or equivalent.

(c) A copy of the certified inspection report shall be furnished to the municipality.

(3) Repair or replace individual sewage treatment systems as follows:

(a) In accordance with 10 NYCRR Appendix 75A to the maximum extent practicable.

(b) A design professional licensed to practice in New York State shall prepare design plans for any type of absorption field that involves:

[1] Relocating or extending an absorption area to a location not previously approved for such.

[2] Installation of a new subsurface treatment system at the same location.

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2. **Editor's Note: Schedule A is on file in the Town Clerk's office.**

[3] Use of alternate system or innovative system design or technology.

(c) A written certificate of compliance shall be submitted by the design professional to the municipality at the completion of construction of the repair or replacement system.

§ 173-9. Suspension of access to MS4; illicit discharges in emergency situations.

A. The SMO may, without prior notice, suspend MS4 discharge access to a person when such suspension is necessary to stop an actual or threatened discharge which presents or may present imminent and substantial danger to the environment, to the health or welfare of persons, or to the MS4. The SMO shall notify the person of such suspension within a reasonable time thereafter, in writing, of the reasons for the suspension. If the violator fails to comply with a suspension order issued in an emergency, the SMO may take such steps as deemed necessary to prevent or minimize damage to the MS4 or to minimize danger to persons.

B. Suspension due to the detection of illicit discharge. Any person discharging to the municipality's MS4 in violation of this article may have his/her MS4 access terminated if such termination would abate or reduce an illicit discharge. The SMO will notify a violator in writing of the proposed termination of its MS4 access and the reasons therefor. The violator may petition the SMO for a reconsideration and hearing. Access may be granted by the SMO if he/she finds that the illicit discharge has ceased and the discharger has taken steps to prevent its recurrence. Access may be denied if the SMO determines in writing that the illicit discharge has not ceased or is likely to recur. A person commits an offense if the person reinstates MS4 access to premises terminated pursuant to this section, without the prior approval of the SMO.

§ 173-10. Industrial or construction activity discharges.

Any person subject to an industrial or construction activity SPDES stormwater discharge permit shall comply with all provisions of such permit. Proof of compliance with said permit may be required in a form acceptable to the municipality prior to the allowing of discharges to the MS4.

§ 173-11. Access and monitoring of discharges.

A. Applicability. This section applies to all facilities that the SMO must inspect to enforce any provision of this article, or whenever the authorized enforcement agency has cause to believe that there exists, or potentially exists, in or upon any premises any condition which constitutes a violation of this article.

B. Access to facilities.

(1) The SMO shall be permitted to enter and inspect facilities subject to regulation under this article as often as may be necessary to determine compliance with this article. If a discharger has security measures in force which require proper

identification and clearance before entry into its premises, the discharger shall make the necessary arrangements to allow access to the SMO.

(2) Facility operators shall allow the SMO ready access to all parts of the premises for the purposes of inspection, sampling, examination and copying of records as may be required to implement this article.

(3) The municipality shall have the right to set up on any facility subject to this article such devices as are necessary in the opinion of the SMO to conduct monitoring and/or sampling of the facility's stormwater discharge.

(4) The municipality has the right to require the facilities subject to this article to install monitoring equipment as is reasonably necessary to determine compliance with this article. The facility's sampling and monitoring equipment shall be maintained at all times in a safe and proper operating condition by the discharger at its own expense. All devices used to measure stormwater flow and quality shall be calibrated to ensure their accuracy.

(5) Unreasonable delays in allowing the municipality access to a facility subject to this article is a violation of this article. A person who is the operator of a facility subject to this article commits an offense if the person denies the municipality reasonable access to the facility for the purpose of conducting any activity authorized or required by this article.

(6) If the SMO has been refused access to any part of the premises from which stormwater is discharged, and he/she is able to demonstrate probable cause to believe that there may be a violation of this article, or that there is a need to inspect and/or sample as part of a routine inspection and sampling program designed to verify compliance with this article or any order issued hereunder, then the SMO may seek issuance of a search warrant from any court of competent jurisdiction.

§ 173-12. Notification of spills.

Notwithstanding other requirements of law, as soon as any person responsible for a facility or operation, or responsible for emergency response for a facility or operation, has information of any known or suspected release of materials which are resulting or may result in illegal discharges or pollutants discharging into the MS4, said person shall take all necessary steps to ensure the discovery, containment, and cleanup of such release. In the event of such a release of hazardous materials said person shall immediately notify emergency response agencies of the occurrence via emergency dispatch services. In the event of a release of nonhazardous materials, said person shall notify the municipality in person or by phone or facsimile no later than the next business day. Notifications in person or by phone shall be confirmed by written notice addressed and mailed to the municipality within three business days of the phone notice. If the discharge of prohibited materials emanates from a commercial or industrial establishment, the owner or operator of such establishment shall also retain an on-site written record of the discharge and the actions taken to prevent its recurrence. Such records shall be retained for at least three years.

§ 173-13. Enforcement; penalties for offenses.

A. Notice of violation. When the municipality's SMO finds that a person has violated a prohibition or failed to meet a requirement of this article, he/she may order compliance by written notice of violation to the responsible person. Such notice may require, without limitation:

(1) The elimination of illicit connections or discharges;

(2) That violating discharges, practices, or operations shall cease and desist;

(3) The abatement or remediation of stormwater pollution or contamination hazards and the restoration of any affected property;

(4) The performance of monitoring, analyses, and reporting;

(5) Payment of a fine; and

(6) The implementation of source control or treatment BMPs. If abatement of a violation and/or restoration of affected property is required, the notice shall set forth a deadline within which such remediation or restoration must be completed. Said notice shall further advise that, should the violator fail to remediate or restore within the established deadline, the work will be done by a designated governmental agency or a contractor and the expense thereof shall be charged to the violator.

B. Penalties. In addition to or as an alternative to any penalty provided herein or by law, any person who violates the provisions of this article shall be guilty of a violation punishable by a fine not exceeding $350 or imprisonment for a period not to exceed six months, or both, for conviction of a first offense; for conviction of a second offense, both of which were committed within a period of five years, punishable by a fine not less than $350 nor more than $700 or imprisonment for a period not to exceed six months, or both; and upon conviction for a third or subsequent offense, all of which were committed within a period of five years, punishable by a fine not less than $700 nor more than $1,000 or imprisonment for a period not to exceed six months, or both. However, for the purposes of conferring jurisdiction upon courts and judicial officers generally, violations of this article shall be deemed misdemeanors, and for such purpose only all provisions of law relating to misdemeanors shall apply to such violations. Each week's continued violation shall constitute a separate additional violation.

§ 173-14. Appeal of notice of violation.

Any person receiving a notice of violation may appeal the determination of the SMO to the Town Board within 15 days of its issuance, which shall hear the appeal within 30 days after the filing of the appeal, and within five days of making its decision, file its decision in the office of the municipal clerk and mail a copy of its decision by certified mail to the discharger.

§ 173-15. Corrective measures after appeal.

A. If the violation has not been corrected pursuant to the requirements set forth in the notice of violation, or, in the event of an appeal, within five business days of the decision of the municipal authority upholding the decision of the SMO, then the SMO shall request the owner's permission for access to the subject private property to take any and all measures reasonably necessary to abate the violation and/or restore the property.

B. If refused access to the subject private property, the SMO may seek a warrant in a court of competent jurisdiction to be authorized to enter upon the property to determine whether a violation has occurred. Upon determination that a violation has occurred, the SMO may seek a court order to take any and all measures reasonably necessary to abate the violation and/or restore the property. The cost of implementing and maintaining such measures shall be the sole responsibility of the discharger.

§ 173-16. Injunctive relief.

It shall be unlawful for any person to violate any provision or fail to comply with any of the requirements of this article. If a person has violated or continues to violate the provisions of this article, the SMO may petition for a preliminary or permanent injunction restraining the person from activities which would create further violations or compelling the person to perform abatement or remediation of the violation.

§ 173-17. Alternative remedies.

A. Where a person has violated a provision of this article, he/she may be eligible for alternative remedies in lieu of a civil penalty, upon recommendation of the Municipal Attorney and concurrence of the Municipal Code Enforcement Officer, where:

(1) The violation was unintentional.

(2) The violator has no history of previous violations of this article.

(3) Environmental damage was minimal.

(4) The violator acted quickly to remedy the violation.

(5) The violator cooperated in investigation and resolution.

B. Alternative remedies may consist of one or more of the following:

(1) Attendance at compliance workshops.

(2) Storm drain stenciling or storm drain marking.

(3) River, stream or creek cleanup activities.

§ 173-18. Violations deemed to be public nuisances.

In addition to the enforcement processes and penalties provided, any condition caused or permitted to exist in violation of any of the provisions of this article is a threat to public health, safety, and welfare, and is declared and deemed a nuisance, and may be summarily abated or restored at the violator's expense, and/or a civil action to abate, enjoin, or otherwise compel the cessation of such nuisance may be taken.

§ 173-19. Remedies not exclusive.

The remedies listed in this article are not exclusive of any other remedies available under any applicable federal, state or local law, and it is within the discretion of the authorized enforcement agency to seek cumulative remedies.

Part 2
Stormwater Control
[Adopted 5-18-2005 by L.L. No. 7-2005]

ARTICLE II
General Provisions

§ 173-20. Findings.

It is hereby determined that:

A. Land development activities and associated increases in site impervious cover often alter the hydrologic response of local watersheds and increase stormwater runoff rates and volumes, flooding, stream channel erosion, or sediment transport and deposition;

B. This stormwater runoff contributes to increased quantities of water-borne pollutants, including siltation of aquatic habitat for fish and other desirable species;

C. Clearing and grading during construction tends to increase soil erosion and add to the loss of native vegetation necessary for terrestrial and aquatic habitat;

D. Improper design and construction of stormwater management practices can increase the velocity of stormwater runoff, thereby increasing stream bank erosion and sedimentation;

E. Impervious surfaces allow less water to percolate into the soil, thereby decreasing groundwater recharge and stream baseflow;

F. Substantial economic losses can result from these adverse impacts on the waters of the municipality;

G. Stormwater runoff, soil erosion and nonpoint source pollution can be controlled and minimized through the regulation of stormwater runoff from land development activities;

H. The regulation of stormwater runoff discharges from land development activities in order to control and minimize increases in stormwater runoff rates and volumes, soil erosion,

stream channel erosion, and nonpoint source pollution associated with stormwater runoff is in the public interest and will minimize threats to public health and safety;

I. Regulation of land development activities by means of performance standards governing stormwater management and site design will produce development compatible with the natural functions of a particular site or an entire watershed and thereby mitigate the adverse effects of erosion and sedimentation from development.

§ 173-21. Purpose.

The purpose of Part 2 of this chapter is to establish minimum stormwater management requirements and controls to protect and safeguard the general health, safety, and welfare of the public residing within this jurisdiction, to protect water quality, maintain habitat, and prevent streambank and lake shore erosion in the Town's water resources, and to address the findings of fact in § 173-20 hereof. Part 2 of this chapter seeks to meet those purposes by achieving the following objectives:

A. Meet the requirements of minimum measures 4 and 5 of the SPDES general permit for stormwater discharges from municipal separate stormwater sewer systems (MS4s), Permit No. GP-02-02, or as amended or revised;

B. Require land development activities to conform to the substantive requirements of the NYS Department of Environmental Conservation state pollutant discharge elimination system (SPDES) general permit for construction activities, GP-02-01, or as amended or revised;

C. Minimize increases in stormwater runoff from land development activities in order to reduce flooding, siltation, increases in stream temperature, and streambank erosion and maintain the integrity of stream channels;

D. Minimize increases in pollution caused by stormwater runoff from land development activities which would otherwise degrade local water quality;

E. Minimize the total annual volume of stormwater runoff which flows from any specific site during and following development to the maximum extent practicable; and

F. Reduce stormwater runoff rates and volumes, soil erosion and nonpoint source pollution, wherever possible, through stormwater management practices and to ensure that these management practices are properly maintained and eliminate threats to public safety.

§ 173-22. Statutory authority.

In accordance with Article 10 of the Municipal Home Rule Law of the State of New York, the Town Board has the authority to enact local laws and amend local laws and for the purpose of promoting the health, safety or general welfare of the Town of Poughkeepsie and for the protection and enhancement of its physical environment. The Town Board may include in any such local law provisions for the appointment of any municipal officer, employees, or independent contractor to effectuate, administer and enforce such local law.

§ 173-23. Applicability.

A. Part 2 of this chapter shall be applicable to all land development activities as defined in § 173-25.

B. The municipality shall designate the Building Inspector to accept and review all stormwater pollution prevention plans (SWPPP) and forward such plans to the applicable municipal board. The Building Inspector may:

(1) Review the plans;

(2) Upon approval by the Town Board of the Town of Poughkeepsie, engage the services of a registered professional engineer to review the plans, specifications and related documents at a cost not to exceed a fee schedule established by said governing board; or

(3) Accept the certification of a licensed professional that the plans conform to the requirements of Part 2 of this chapter.

C. All land development activities subject to review and approval by the Town Planning Board of the Town of Poughkeepsie under subdivision, site plan, and/or special permit regulations shall be reviewed subject to the standards contained in Part 2 of this chapter.

D. All land development activities not subject to review as stated in Subsection C shall be required to submit a SWPPP to the Building Inspector, who shall approve the SWPPP if it complies with the requirements of Part 2 of this chapter.

§ 173-24. Exemptions.

The following activities may be exempt from review under Part 2 of this chapter:

A. Agricultural activity as defined in Part 2 of this chapter.

B. Silvicultural activity, except that landing areas and log haul roads are subject to Part 2 of this chapter.

C. Routine maintenance activities that disturb less than five acres and are performed to maintain the original line and grade, hydraulic capacity or original purpose of a facility.

D. Repairs to any stormwater management practice or facility deemed necessary by the Building Inspector.

E. Any part of a subdivision if a plat for the subdivision has been approved by the Town of Poughkeepsie on or before the effective date of Part 2 of this chapter.

F. Land development activities for which a building permit has been approved on or before the effective date of Part 2 of this chapter.

G. Cemetery graves.

H. Installation of fence, sign, telephone, and electric poles and other kinds of posts or poles.

I. Emergency activity immediately necessary to protect life, property or natural resources.

J. Activities of an individual engaging in home gardening by growing flowers, vegetable and other plants primarily for use by that person and his or her family.

K. Landscaping and horticultural activities in connection with an existing structure.

ARTICLE III
Terms Defined

§ 173-25. Definitions.

The terms used in Part 2 of this chapter or in documents prepared or reviewed under Part 2 of this chapter shall have the meaning as set forth in this section.

AGRICULTURAL ACTIVITY — The activity of an active farm, including grazing and watering livestock, irrigating crops, harvesting crops, using land for growing agricultural products, and cutting timber for sale, but shall not include the operation of a dude ranch or similar operation, or the construction of new structures associated with agricultural activities.

APPLICANT — A property owner or agent of a property owner who has filed an application for a land development activity.

BUILDING — Any structure, either temporary or permanent, having walls and a roof, designed for the shelter of any person, animal, or property, and occupying more than 100 square feet of area.

CHANNEL — A natural or artificial watercourse with a definite bed and banks that conducts continuously or periodically flowing water.

CLEARING — Any activity that removes the vegetative surface cover.

DEDICATION — The deliberate appropriation of property by its owner for general public use.

DEPARTMENT — The New York State Department of Environmental Conservation.

DESIGN MANUAL — The New York State Stormwater Management Design Manual, most recent version, including applicable updates, that serves as the official guide for stormwater management principles, methods and practices.

DEVELOPER — A person who undertakes land development activities.

EROSION CONTROL MANUAL — The most recent version of the New York Standards and Specifications for Erosion and Sediment Control manual, commonly known as the "Blue Book."

GRADING — Excavation or fill of material, including the resulting conditions thereof.

IMPERVIOUS COVER — Those surfaces, improvements and structures that cannot effectively infiltrate rainfall, snow melt and water (e.g., building rooftops, pavement, sidewalks, driveways, etc.).

INDUSTRIAL STORMWATER PERMIT — A state pollutant discharge elimination system permit issued to a commercial industry or group of industries which regulates the pollutant levels associated with industrial stormwater discharges or specifies on-site pollution control strategies.

INFILTRATION — The process of percolating stormwater into the subsoil.

JURISDICTIONAL WETLAND — An area that is inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support a prevalence of vegetation typically adapted for life in saturated soil conditions, commonly known as "hydrophytic vegetation."

LAND DEVELOPMENT ACTIVITY — Construction activity, including clearing, grading, excavating, soil disturbance or placement of fill that results in land disturbance of equal to or greater than one acre, or activities disturbing less than one acre of total land area that is part of a larger common plan of development or sale, even though multiple separate and distinct land development activities may take place at different times on different schedules.

LANDOWNER — The legal or beneficial owner of land, including those holding the right to purchase or lease the land, or any other person holding proprietary rights in the land.

MAINTENANCE AGREEMENT — A legally recorded document that acts as a property deed restriction, and which provides for long-term maintenance of stormwater management practices.

NONPOINT SOURCE POLLUTION — Pollution from any source other than from any discernible, confined, and discrete conveyances, and shall include, but not be limited to, pollutants from agricultural, silvicultural, mining, construction, subsurface disposal and urban runoff sources.

PHASING — Clearing a parcel of land in distinct pieces or parts, with the stabilization of each piece completed before the clearing of the next.

POLLUTANT OF CONCERN — Sediment or a water quality measurement that addresses sediment (such as total suspended solids, turbidity or siltation) and any other pollutant that has been identified as a cause of impairment of any water body that will receive a discharge from the land development activity.

PROJECT — Land development activity.

RECHARGE — The replenishment of underground water reserves.

SEDIMENT CONTROL — Measures that prevent eroded sediment from leaving the site.

SENSITIVE AREAS — Cold water fisheries, shellfish beds, swimming beaches, groundwater recharge areas, water supply reservoirs, habitats for threatened, endangered or special concern species.

SPDES GENERAL PERMIT FOR CONSTRUCTION ACTIVITIES, GP-02-01 — A permit under the New York State pollutant discharge elimination system (SPDES) issued to developers of construction activities to regulate disturbance of one or more acres of land.

SPDES GENERAL PERMIT FOR STORMWATER DISCHARGES FROM MUNICIPAL SEPARATE STORMWATER SEWER SYSTEMS, GP-02-02 — A permit under the New York State pollutant discharge elimination system (SPDES) issued to municipalities to regulate discharges from municipal separate storm sewers for compliance with EPA-established water quality standards and/or to specify stormwater control standards.

STABILIZATION — The use of practices that prevent exposed soil from eroding.

STOP WORK ORDER — An order issued which requires that all construction activity on a site be stopped.

STORMWATER — Rainwater, surface runoff, snowmelt and drainage.

STORMWATER HOTSPOT — A land use or activity that generates higher concentrations of hydrocarbons, trace metals or toxicants than are found in typical stormwater runoff, based on monitoring studies.

STORMWATER MANAGEMENT — The use of structural or nonstructural practices that are designed to reduce stormwater runoff and mitigate its adverse impacts on property, natural resources and the environment.

STORMWATER MANAGEMENT FACILITY — One or a series of stormwater management practices installed, stabilized and operating for the purpose of controlling stormwater runoff.

STORMWATER MANAGEMENT OFFICER — An employee or officer designated by the municipality to accept and review stormwater pollution prevention plans, forward the plans to the applicable municipal board and inspect stormwater management practices.

STORMWATER MANAGEMENT PRACTICES (SMPs) — Measures, either structural or nonstructural, that are determined to be the most effective, practical means of preventing flood damage and preventing or reducing point source or nonpoint source pollution inputs to stormwater runoff and water bodies.

STORMWATER POLLUTION PREVENTION PLAN (SWPPP) — A plan for controlling stormwater runoff and pollutants from a site during and after construction activities.

STORMWATER RUNOFF — Flow on the surface of the ground, resulting from precipitation.

SURFACE WATERS OF THE STATE OF NEW YORK — Lakes, bays, sounds, ponds, impounding reservoirs, springs, wells, 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. Storm sewers and waste treatment systems, including treatment ponds or lagoons, which also meet the criteria of this definition are not waters of the state. This exclusion applies only to man-made 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.

WATERCOURSE — A permanent or intermittent stream or other body of water, either natural or man-made, which gathers or carries surface water.

WATERWAY — A channel that directs surface runoff to a watercourse or to the public storm drain.

ARTICLE IV
Plans, Construction and Maintenance

§ 173-26. Stormwater pollution prevention plans.

A. Stormwater pollution prevention plan requirement. No application for approval of a land development activity shall be reviewed until the appropriate board has received a stormwater pollution prevention plan (SWPPP) prepared in accordance with the specifications in Part 2 of this chapter.

B. Contents.

(1) All SWPPPs shall provide the following background information and erosion and sediment controls:

(a) As per the New York Standards and Specifications for Erosion and Sediment Control (Empire State Chapter of the Soil and Water Conservation Society, 2004, most current version or its successor, hereafter referred to as the "Erosion Control Manual").

(b) As per the Instruction Manual for Stormwater Construction Permit (New York State Department of Environmental Conservation, most current version or its successor).

(c) As per Schedule A of Part 2 of this chapter.[3]

(2) Land development activities as defined in § 173-25 and meeting Condition A, B or C below shall also include water quantity and water quality controls (post-construction stormwater runoff controls) as set forth in Subsection B(3) below as applicable:

(a) Condition A: stormwater runoff from land development activities discharging a pollutant of concern to either an impaired waterbody identified on the New York State Department of Environmental Conservation's 303(d) list of impaired waters or a total maximum daily load (TMDL) designated watershed for which pollutants in stormwater have been identified as a source of the impairment.

(b) Condition B: stormwater runoff from land development activities disturbing five or more acres.

3. **Editor's Note: Schedule A is included at the end of this chapter.**

(c) Condition C: stormwater runoff from land development activity disturbing between one and five acres of land during the course of the project, exclusive of the construction of single-family residences and construction activities at agricultural properties.

(3) SWPPP requirements for Conditions A, B and C:

(a) All information in Subsection B(1) of this section.

(b) As per the New York State Stormwater Management Design Manual (New York Stale Department of Environmental Conservation, most current version or its successor, hereafter referred to as the "Design Manual").

(c) Maintenance easements to ensure access to all stormwater management practices at the site for the purpose of inspection and repair. Easements shall be recorded on the plan and shall remain in effect with transfer of title to the property.

(d) Inspection and maintenance agreement binding on all subsequent landowners served by the on-site stormwater management measures in accordance with § 173-28 of Part 2 of this chapter.

(e) As per Schedule B of Part 2 of this chapter.[4]

C. Plan certification. The SWPPP shall be prepared by a landscape architect, certified professional or professional engineer and must be signed by the professional preparing the plan, who shall certify that the design of all stormwater management practices meet the requirements in Part 2 of this chapter.

D. Other environmental permits. The applicant shall assure that all other applicable environmental permits have been or will be acquired for the land development activity prior to approval of the final stormwater design plan.

E. Contractor certification.

(1) Each contractor and subcontractor identified in the SWPPP who will be involved in soil disturbance and/or stormwater management practice installation shall sign and date a copy of the following certification statement before undertaking any land development activity: "I certify under penalty of law that I understand and agree to comply with the terms and conditions of the Stormwater Pollution Prevention Plan. I also understand that it is unlawful for any person to cause or contribute to a violation of water quality standards."

(2) The certification must include the name and title of the person providing the signature; address and telephone number of the contracting firm; the address (or other identifying description) of the site; and the date the certification is made.

(3) The certification statement(s) shall become part of the SWPPP for the land development activity.

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4. **Editor's Note: Schedule B is included at the end of this chapter.**

F. A copy of the SWPPP shall be retained at the site of the land development activity during construction from the date of initiation of construction activities to the date of final stabilization.

§ 173-27. Performance and design criteria for stormwater management and erosion and sediment control.

All land development activities shall be subject to the following performance and design criteria:

A. Technical standards. For the purpose of Part 2 of this chapter, the following documents shall serve as the official guides and specifications for stormwater management. Stormwater management practices that are designed and constructed in accordance with these technical documents shall be presumed to meet the standards imposed by Part 2 of this chapter:

(1) The New York State Stormwater Management Design Manual (New York State Department of Environmental Conservation, most current version or its successor, hereafter referred to as the "Design Manual").

(2) New York Standards and Specifications for Erosion and Sediment Control (Empire State Chapter of the Soil and Water Conservation Society, 2004, most current version or its successor, hereafter referred to as the "Erosion Control Manual").

B. Water quality standards. Any land development activity shall not cause an increase in turbidity that will result in substantial visible contrast to natural conditions in surface waters of the State of New York.

§ 173-28. Maintenance and repair of stormwater facilities.

A. Maintenance during construction.

(1) The applicant or developer of the land development activity shall 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 applicant or developer to achieve compliance with the conditions of Part 2 of this chapter. Sediment shall be removed from sediment traps or sediment ponds whenever their design capacity has been reduced by 50%.

(2) The applicant or developer or their representative shall be on site at all times when construction or grading activity takes place and shall inspect and document the effectiveness of all erosion and sediment control practices. Inspection reports shall be completed every seven days and within 24 hours of any storm event producing 0.5 inch of precipitation or more. The reports shall be delivered to the Building Inspector and also copied to the site log book.

B. Maintenance easement(s). Prior to the issuance of any approval that has a stormwater management facility as one of the requirements, the applicant or developer must execute a maintenance easement agreement that shall be binding on all subsequent landowners

served by the stormwater management facility. The easement shall provide for access to the facility at reasonable times for periodic inspection by the Town of Poughkeepsie to ensure that the facility is maintained in proper working condition to meet design standards and any other provisions established by Part 2 of this chapter. The easement shall be recorded by the grantor in the office of the County Clerk after approval by the Town Attorney for the Town of Poughkeepsie.

C. Maintenance after construction. The owner or operator of permanent stormwater management practices installed in accordance with Part 2 of this chapter shall operate and maintain the stormwater management practices (SMP) to achieve the goals of Part 2 of this chapter. Proper operation and maintenance also includes, as a minimum, the following:

(1) A preventive/corrective maintenance program for all critical facilities and systems of treatment and control (or related appurtenances) which are installed or used by the owner or operator to achieve the goals of Part 2 of this chapter.

(2) Written procedures for operation and maintenance and training new maintenance personnel.

(3) Discharges from the SMPs shall not exceed design criteria or cause or contribute to water quality standard violations in accordance with § 173-27B.

D. Maintenance agreements. The Town of Poughkeepsie shall approve a formal maintenance agreement for stormwater management facilities binding on all subsequent landowners and recorded in the office of the County Clerk as a deed restriction on the property prior to any final plan approval. The maintenance agreement shall be in a form acceptable to the Town Attorney and shall be consistent with the terms and conditions of Schedule C of Part 2 of this chapter, entitled "Stormwater Control Facility Maintenance Agreements."[5] The Town of Poughkeepsie, in lieu of a maintenance agreement, at its sole discretion, may accept dedication of any existing or future stormwater management facility, provided such facility meets all the requirements of Part 2 of this chapter and includes adequate and perpetual access and sufficient area, by easement or otherwise, for inspection and regular maintenance.

ARTICLE V
Administration and Enforcement

§ 173-29. Construction inspection.

A. Erosion and sediment control inspection.

(1) The Town of Poughkeepsie Building Inspector may require such inspections as necessary to determine compliance with Part 2 of this chapter and may either approve that portion of the work completed or notify the applicant wherein the work fails to comply with the requirements of the SWPPP as approved. To obtain inspections, the applicant shall notify the Town of Poughkeepsie enforcement

5. Schedule C is included at the end of this chapter.

official at least two working days before any of the following as required by the Town Building Inspector:

(a) Start of construction.

(b) Installation of sediment and erosion control measures.

(c) Completion of site clearing.

(d) Completion of rough grading.

(e) Completion of final grading.

(f) Close of the construction season.

(g) Completion of final landscaping.

(h) Successful establishment of landscaping in public areas.

(2) If any violations are found, the applicant and developer shall be notified in writing of the nature of the violation and the required corrective actions. No further work shall be conducted, except for site stabilization, until any violations are corrected and all work previously completed has received approval by the Town Engineer.

B. Stormwater management practice inspections. The Town of Poughkeepsie Building Inspector is responsible for conducting inspections of stormwater management practices (SMPs). All applicants are required to submit "as built" plans for any stormwater management practices located on-site after final construction is completed. The plan must show the final design specifications for all stormwater management facilities and must be certified by a professional engineer.

C. Inspection of stormwater facilities after project completion. Inspection programs shall be established on any reasonable basis, including but not limited to: routine inspections; random inspections; inspections based upon complaints or other notice of possible violations; inspection of drainage basins or areas identified as higher than typical sources of sediment or other contaminants or pollutants; inspections of businesses or industries of a type associated with higher than usual discharges of contaminants or pollutants or with discharges of a type which are more likely than the typical discharge to cause violations of state or federal water or sediment quality standards or the SPDES stormwater permit; and joint inspections with other agencies inspecting under environmental or safety laws. Inspections may include, but are not limited to: reviewing maintenance and repair records; sampling discharges, surface water, groundwater, and material or water in drainage control facilities; and evaluating the condition of drainage control facilities and other stormwater management practices.

D. Submission of reports. The Town of Poughkeepsie Building Inspector may require monitoring and reporting from entities subject to Part 2 of this chapter as are necessary to determine compliance with Part 2 of this chapter.

E. Right-of-entry for inspection. When any new stormwater management facility is installed on private property or when any new connection is made between private property and the public stormwater system, the landowner shall grant to the Town of Poughkeepsie the

right to enter the property at reasonable times and in a reasonable manner for the purpose of inspection as specified in Subsection C.

§ 173-30. Performance guarantee.

A. Construction completion guarantee. In order to ensure the full and faithful completion of all land development activities related to compliance with all conditions set forth by the Town of Poughkeepsie in its approval of the SWPPP, the Town of Poughkeepsie may require the applicant or developer to provide, prior to construction, a performance bond, cash escrow, or irrevocable letter of credit, in a form acceptable to the Town Attorney, from an appropriate financial or surety institution which guarantees satisfactory completion of the project and names the Town of Poughkeepsie as the beneficiary. The security shall be in an amount to be determined by the Town of Poughkeepsie based on submission of final design plans, with reference to actual construction and landscaping costs. The performance guarantee shall remain in force until the surety is released from liability by the Town of Poughkeepsie, provided that such period shall not be less than one year from the date of final acceptance or such other certification that the facility(ies) has (have) been constructed in accordance with the approved plans and specifications and that a one-year inspection has been conducted and the facilities have been found to be acceptable to the Town of Poughkeepsie.

B. Maintenance guarantee. Where stormwater management and erosion and sediment control facilities are to be operated and maintained by the developer or by a corporation that owns or manages a commercial or industrial facility, the developer, prior to construction, may be required to provide the Town of Poughkeepsie with an irrevocable letter of credit from an approved financial institution or surety to ensure proper operation and maintenance of all stormwater management and erosion control facilities both during and after construction, and until the facilities are removed from operation. If the developer or landowner fails to properly operate and maintain stormwater management and erosion and sediment control facilities, the Town of Poughkeepsie may draw upon the account to cover the costs of proper operation and maintenance, including engineering and inspection costs.

C. Recordkeeping. The Town of Poughkeepsie may require entities subject to Part 2 of this chapter to maintain records demonstrating compliance with Part 2 of this chapter.

§ 173-31. Enforcement; penalties for offenses.

A. Notice of violation. When the Town of Poughkeepsie by its Building Inspector, determines that a land development activity is not being carried out in accordance with the requirements of Part 2 of this chapter, it may issue a written notice of violation to the landowner. The notice of violation shall contain: **[Amended 4-19-2006 by L.L. No. 10-2006]**

(1) The name and address of the landowner, developer or applicant;

(2) The address, when available, or a description of the building, structure or land upon which the violation is occurring;

(3) A statement specifying the nature of the violation;

(4) A description of the remedial measures necessary to bring the land development activity into compliance with Part 2 of this chapter and a time schedule for the completion of such remedial action;

(5) A statement of the penalty or penalties that shall or may be assessed against the person to whom the notice of violation is directed;

(6) A statement that the determination of violation may be appealed to the municipality by filing a written notice of appeal within 15 days of service of notice of violation.

B. Stop-work orders. The Town of Poughkeepsie by its Building Inspector, may issue a stop-work order for violations of Part 2 of this chapter. Persons receiving a stop-work order shall be required to halt all land development activities, except those activities that address the violations leading to the stop-work order. The stop-work order shall be in effect until the Town of Poughkeepsie confirms that the land development activity is in compliance and the violation has been satisfactorily addressed. Failure to address a stop-work order in a timely manner may result in civil, criminal or monetary penalties in accordance with the enforcement measures authorized in Part 2 of this chapter. **[Amended 4-19-2006 by L.L. No. 10-2006]**

C. Violations. Any land development activity that is commenced or is conducted contrary to Part 2 of this chapter may be restrained by injunction or otherwise abated in a manner provided by law.

D. Penalties. In addition to or as an alternative to any penalty provided herein or by law, any person who violates the provisions of Part 2 of this chapter shall be guilty of a violation punishable by a fine not exceeding $350 or imprisonment for a period not to exceed six months, or both, for conviction of a first offense; for conviction of a second offense, both of which were committed within a period of five years, punishable by a fine not less than $350 nor more than $700 or imprisonment for a period not to exceed six months, or both; and upon conviction for a third or subsequent offense, all of which were committed within a period of five years, punishable by a fine of not less than $700 nor more than $1,000 or imprisonment for a period not to exceed six months, or both. However, for the purposes of conferring jurisdiction upon courts and judicial officers generally, violations of Part 2 of this chapter shall be deemed misdemeanors, and for such purpose only, all provisions of law relating to misdemeanors shall apply to such violations. Each week' s continued violation shall constitute a separate additional violation.

E. Withholding of certificate of occupancy. If any building or land development activity is installed or conducted in violation of Part 2 of this chapter, the Building Inspector may prevent the occupancy of said building or land.

F. Restoration of lands. Any violator may be required to restore land to its undisturbed condition. In the event that restoration is not undertaken within a reasonable time after notice, the Town of Poughkeepsie may take necessary corrective action, the cost of which shall become a lien upon the property until paid.

G. In addition to any other remedies set forth herein authorizing the Town to enforce the provisions of this chapter, establishing penalties, and setting forth additional remedies, the person charged with the responsibility to enforce the provisions of this chapter may impose a civil fine or agree to a civil fine not to exceed $1,000 per day for each day of the violation. If said civil fine is imposed, then the alleged violator may appeal to the Town Board of the Town of Poughkeepsie. **[Added 6-3-2009 by L.L. No. 22-2009]**

§ 173-32. Fees for services.

The Town of Poughkeepsie may require any person undertaking land development activities regulated by Part 2 of this chapter to pay reasonable costs at prevailing rates for review of SWPPPs, inspections, or SMP maintenance performed by the Town of Poughkeepsie or performed by a third party for the Town of Poughkeepsie.

173 Attachment 1

Town of Poughkeepsie

Schedule A
Contents of Stormwater Pollution Prevention Plan

All SWPPPs shall provide the following background information and erosion and sediment controls:

1. Background information about the scope of the project, including location, type and size of project;

2. Site map/construction drawing(s) for the project, including a general location map. At a minimum, the site map should show the total site area; all improvements; areas of disturbance; areas that will not be disturbed; existing vegetation; on-site and adjacent off-site surface water(s); wetlands and drainage patterns that could be affected by the construction activity; existing and final slopes; locations of off-site material, waste, borrow or equipment storage areas; location(s) of the stormwater discharges(s) at a scale no smaller than 1"=100' (e.g., 1"=500" is smaller than 1"=100");

3. Description of the soil(s) present at the site;

4. Construction phasing plan describing the intended sequence of construction activities, including clearing and grubbing, excavation and grading, utility and infrastructure installation and any other activity at the site that results in soil disturbance. Consistent with the New York Standards and Specifications for Erosion and Sediment Control (Erosion Control Manual), not more than five acres shall be disturbed at any one time unless pursuant to an approved SWPPP;

5. Description of the pollution prevention measures that will be used to control litter, construction chemicals and construction debris from becoming a pollutant source in stormwater runoff;

6. Description of construction and waste materials expected to be stored on-site with updates as appropriate, and a description of controls to reduce pollutants from these materials, including storage practices to minimize exposure of the materials to stormwater, and spill prevention and response;

7. Temporary and permanent structural and vegetative measures to be used for soil stabilization, runoff control and sediment control for each stage of the project from initial land clearing and grubbing to project close-out;

8. A site map/construction drawing(s) specifying the location(s), size(s) and length(s) of each erosion and sediment control practice;

9. Dimensions, material specifications and installation details for all erosion and sediment control practices, including the siting and sizing of any temporary sediment basins;

10. Temporary practices that will be converted to permanent control measures;

11. Implementation schedule for staging temporary erosion and sediment control practices, including the timing of initial placement and duration that each practice should remain in place;

12. Maintenance schedule to ensure continuous and effective operation of the erosion and sediment control practice;

13. Name(s) of the receiving water(s);

14. Delineation of SWPPP implementation responsibilities for each part of the site;

15. Description of structural practices designed to divert flows from exposed soils, store flows, or otherwise limit runoff and the discharge of pollutants from exposed areas of the site to the degree attainable; and

16. Any existing data that describes the stormwater runoff at the site.

173 Attachment 2

Town of Poughkeepsie

Schedule B
Stormwater Pollution Prevention Plan Requirements
for Conditions A, B and C

SWPPP Requirements for Conditions A, B and C shall be as follows:

1. All information in § 173-26B(1) of this chapter.

2. Description of each post-construction stormwater management practice.

3. Site map/construction drawing(s) showing the specific location(s) and size(s) of each post-construction stormwater management practice.

4. Hydrologic and hydraulic analysis for all structural components of the stormwater management system for the applicable design storms.

5. Comparison of post-development stormwater runoff conditions with pre-development conditions.

6. Dimensions, material specifications and installation details for each post-construction stormwater management practice.

7. Maintenance schedule to ensure continuous and effective operation of each post-construction stormwater management practice.

8. Maintenance easements to ensure access to all stormwater management practices at the site for the purpose of inspection and repair. Easements shall be recorded on the plan and shall remain in effect with transfer of title to the property.

9. Inspection and maintenance agreement binding on all subsequent landowners served by the on-site stormwater management measures in accordance with § 173-28 of this chapter.

173 Attachment 3

Town of Poughkeepsie

Schedule C
Stormwater Control Facility Agreements

1. The agreement will bind the Town of Poughkeepsie and the facility owner, its successors and assigns, to the maintenance provisions depicted in the approved project plans which shall be attached as Schedule A to the agreement.

2. The facility owner shall maintain, clean, repair, replace and continue the stormwater control measures depicted in Schedule A of the agreement as necessary to ensure optimum performance of the measures to design specifications. The stormwater control measures shall include, but shall not be limited to, the following: drainage ditches, swales, dry wells, infiltrators, drop inlets, pipes, culverts, soil absorption devices and retention ponds.

3. The facility owner shall be responsible for all expenses related to the maintenance of the stormwater control measures and shall establish a means for the collection and distribution of expenses among parties for any commonly owned facilities.

4. The facility owner shall provide for the periodic inspection of the stormwater control measures, not less than once in every five-year period, to determine the condition and integrity of the measures. Such inspection shall be performed by a professional engineer licensed by the State of New York. The inspecting engineer shall prepare and submit to the Town of Poughkeepsie Town Engineer, within 30 days of the inspection, a written report of the findings, including recommendations for those actions necessary for the continuation of the stormwater control measures.

5. The facility owner shall not authorize, undertake or permit alteration, abandonment, modification or discontinuation of the stormwater control measures except in accordance with written approval of the Town of Poughkeepsie Town Engineer.

6. The facility owner shall undertake necessary repairs and replacement of the stormwater control measures at the direction of the Town of Poughkeepsie Town Engineer or in accordance with the recommendations of the inspecting engineer.

7. The facility owner shall provide to the municipality, within 30 days of the date of the agreement, a security for the maintenance and continuation of the stormwater control measures in the form of a bond, letter of credit or escrow account, as required by the Town Engineer.

8. This agreement shall be recorded in the office of the County Clerk, County of Dutchess, together with the deed for the common property and shall be included in the offering plan and/or prospectus approved.

9. If ever the Town of Poughkeepsie Town Engineer determines that the facility owner has failed to construct or maintain the stormwater control measures in accordance with the

project plan or has failed to undertake corrective action specified by the Town of Poughkeepsie Town Engineer or by the inspecting engineer, the Town Engineer is authorized to undertake such steps as reasonably necessary for the preservation, continuation or maintenance of the stormwater control measures and to affix the expenses thereof as a lien against the property.

APPENDIX M

LOCAL LAW CERTIFICATION OF EQUIVALENCY

LEGAL DEPARTMENT
Town of Poughkeepsie

DAVID D. HAGSTROM
TOWN ATTORNEY

KYLE W. BARNETT
JAMES E. NELSON
OF COUNSEL

ONE OVEROCKER ROAD
POUGHKEEPSIE, NY 12603

(845) 485-3633
FAX (845) 486-7878

RECEIVED
APR - 7 2010
MORRIS ASSOCIATES

April 6, 2010

Neil A. Wilson
Director of Municipal Development
Town of Poughkeepsie
One Overocker Road
Poughkeepsie, NY 12603

Joseph P. Dennis, P.E.
Morris Associates, PLLC
9 Elks Lane
Poughkeepsie, NY 12601

Re: MS4 Audit – Code Equivalency

Dear Neil and Joe:

In response to your recent e-mails, this letter is to certify that the Town of Poughkeepsie MS4 Local Law for Stormwater Discharge Management (Sections 173-1 – 173-19) conform to the DEC Model Local Law to prohibit illicit discharges, activities and connections to a separate storm sewer system.

The additions or minor variations are as follows:

1) At the end of the definition for Individual Sewage Treatment System, the Town has added "or where such facility is regulated by the New York State Department of Health."

2) The Town added a definition for Qualified Individual, which reads as follows:

"For the purpose of performing an inspection of an individual sewage treatment system, a qualified individual includes licensed engineers and architects, employees of state and county health units, watershed inspectors and persons with completed training from the National Association of Wastewater Transporters (NAWT), the New York Onsite Wastewater Training Network (OTN), or equivalent."

3) In code Section 173-4, the Town Board designated the Town Engineer as the Stormwater Management Officer (SMO).

4) Section 5 of the model local law, entitled "Severability" is not included in the Town's local law.

5) The Town has added an additional prohibition under the title of "Discharge Prohibitions", Section 173-5 of the Town Code, and Section 6 of the model local law. That section has a prohibition of discharges to Town roads, after the subsection on prohibition of illicit connections.

6) The Town has added a sentence to the equivalent of "7.5" involving prohibitions against failing individual sewage treatment systems, which reads:

> "Structural failure shall be determined by an inspection of the facility performed according to Section 173-8 B (2)." (This is in the Town Code Section 173-6 (E).

7) The Town has added an additional paragraph between the model local law, Sections 9.2.1 and 9.2.2, which section reads as follows:

> "Inspect individual sewage treatment systems as follows:
> (a) A qualified individual shall inspect the system at time of transfer or sale of real property upon which the system is located.
> (b) The qualified individual shall utilize the inspection form and protocol developed by the New York Onsite Wastewater Treatment Network (Schedule A), or equivalent.
> (c) A copy of the certified inspection report shall be furnished to the municipality." {Town Code Section 173-8 (B)(2)}

The rest of the Town Code, Part 1, is identical to the model local law.

Very truly yours,

David D. Hagstrom

David D. Hagstrom
Town Attorney

DDH:mlp
G:\mllegal\10ltrs\wilsondennisltr-MS4.doc

APPENDIX N

HIGHWAY DEPARTMENT
STORMWATER SYSTEM MAINTENANCE PLAN

TOWN OF POUGHKEEPSIE HIGHWAY DEPARTMENT OPERATION AND MAINTENANCE PLAN

TO REDUCE AND PREVENT POLLUTANT DISCHARGES FROM DAILY MUNICIPAL ACTIVITIES

JANUARY 2007

DRAFT

PURPOSE 1
KEY OPERATIONS 2
  STREET MAINTENANCE 2
  WINTER ROAD MAINTENANCE 2
  STORMWATER SYSTEM MAINTENANCE 3
  VEHICLE AND FLEET MAINTENANCE 4
  BUILDING MAINTENANCE 4
  SOLID WASTE MANAGEMENT 5
KEY RESOURCES 6
CRITICAL FOLLOW-UP 7
  EVALUATION OF EFFECTIVENESS 7
  AMENDMENTS 7
  INTER-MUNICIPAL PARTNERSHIPS 7

PURPOSE

It is the intent of this plan to document the existing policies and procedures used for certain key activities conducted during normal operations of the Town of Poughkeepsie Highway Department to further the following goals:

- To reduce and prevent nom-stormwater waste from entering or polluting the municipalities storm sewers, streams, rivers, and waterways
- To acknowledge the hazards involved in the improper discharge of trash, yard waste, lawn chemicals, pet wastes, wastewater, grease, oil, petroleum products, cleaning products, paint products, hazardous waste, and sediment
- To demonstrate responsible stewardship of the natural environment and by the Town of Poughkeepsie Highway Department
- To satisfy the requirements of the Stormwater discharge Management Laws of the Town of Poughkeepsie
- To satisfy the requirements of the SPDES General Permit for stormwater discharges from Municipal Separate Stormwater Systems (MS4's)

KEY OPERATIONS

The following key operations have been identified for development and implementation of Best Management Practices to meet the pollution prevention goals of the Town of Poughkeepsie Highway Department.

STREET MAINTENANCE

DESCRIPTION

The Town of Poughkeepsie Highway Department is responsible for the regular maintenance of approximately 140 miles of Town roads.

FREQUENCY

Street Maintenance is conducted continuously town wide as needed.

POLLUTION PREVENTION PRIORITIES

Street Maintenance activities should be conducted so as to minimize the potential for problems associated with sediment and erosion, particularly in areas contributory to the Wappingers Lake, which has been identified as an impaired waterbody due to sediment.

EVALUATION CRITERIA

The effectiveness of meeting the stated goals during street maintenance operations in can be evaluated based on the following minimum criteria

- Lane miles of road surfaces maintained
- Lane miles of road surfaces swept
- Man hours spent maintaining or sweeping road surfaces
- Quantity of temporary sediment and erosion controls utilized during construction operations

WINTER ROAD MAINTENANCE

DESCRIPTION

The Town of Poughkeepsie highway department is responsible for plowing snow and preventing accumulation of ice on Town Roads

FREQUENCY

Winter Road maintenance is conducted as needed during winter months

POLLUTION PREVENTION PRIORITIES

Winter maintenance activities should be conducted so as to reasonably minimize the potential for problems associated with accumulation of deicing materials in the municipalities storm-sewers and waterways.

- Deicing materials should be stored at all times in contained facilties to prevent wash away
- Operations should be conducted in a manner to prevent spills and spills should be disposed of appropriately
- Application vehicles should be calibrated annually and regularly maintained as needed to control the volume of de-icing materials applied
- Application vehicles should be washed down in approved areas that drain to treatment centers (such as the municipal wastewater treatment facility) only

EVALUATION CRITERIA

The effectiveness in meeting the stated goals during winter maintenance operations can be evaluated based on the following minimum criteria:

- Lane miles of Roads plowed or de-iced
- Volume of de-icing materials applied
- Man hours spent plowing and de-icing
- Man hours spent calibrating applicators
- Quantity of vehicles maintained or replaced
- Average age of equipment

STORMWATER SYSTEM MAINTENANCE

DESCRIPTION

The Town of Poughkeepsie highway department is responsible for maintaining and preventing accumulation of sediment and wastes in municipal storm-sewers and waterways. System components are inspected and their condition noted. Any dry weather flows or visually obvious illicit connections to the stormwater system are noted and reported to the Town Engineer. Any sediment and wastes accumulated in catch-basins, manholes, pipes, ditches, or other municipal waterways are removed and disposed of appropriately as needed. Repairs and additional maintenance to existing systems are conducted as needed as well.

FREQUENCY

Maintenance and inspection of storm-sewers and waterways is conducted continuously as needed.

POLLUTION PREVENTION PRIORITIES

Stormwater system maintenance and inspection activities should be conducted so as to reduce the transport and deposition of sediment and wastes in the stormwater system, particularly in areas contributory to the Wappingers Lake, which has been identified as an impaired waterbody due to sediment. Particular attention should be paid to discovering any illicit connections to the stormwater system contributing to the Wappingers Lake and the Kallkill which have been identified as impaired waterbodies due to phosphorus.

EVALUATION CRITERIA

The effectiveness in meeting the stated goals during stormwater system maintenance operations can be evaluated based on the following minimum criteria:

- Quantity of individual components visually inspected
- Quantity of watersheds visually inspected
- New components installed in the system since last inspection
- Quantity of waste or sediment removed from individual components or from watersheds
- Quantity of components repaired or replaced
- Quantity and location of illicit connections identified

VEHICLE AND FLEET MAINTENANCE

DESCRIPTION

Highway department vehicles are lightly maintained and cleaned at Town highway facilities. Vehicles are washed down in restricted areas that drain to the Municipal wastewater treatment plant. Waste oils from maintenance activities are disposed of in an on-site furnace.

FREQUENCY

Vehicles maintained is conducted on an as needed basis.

POLLUTION PREVENTION PRIORITIES

Improper disposal of road salt and de-icing chemicals that accumulate on department vehicles or used waste oil can result in degradation of the municipality's waterways.

EVALUATION CRITERIA

The effectiveness in meeting the stated goals during vehicle and fleet maintenance operations can be evaluated based on the following minimum criteria:

- Quantity and location of wash-down areas
- Quantity of waste oil diverted from landfilling or improper disposal

BUILDING MAINTENANCE

DESCRIPTION

Hazardous materials commonly used during maintenance activities are stored in conditions meeting generally accepted safety standards and the recommended methods listed on containers. Unused or waste chemicals are properly disposed of at the County Resource recovery facility. Spill prevention and response training of staff in generally accepted methods is conducted according to individual chemical storage and usage concerns.

EVALUATION CRITERIA

The effectiveness in meeting the stated goals during building maintenance operations can be evaluated based on the following minimum criteria:

- Quantities and locations of hazardous chemical storage
- Special storage practices used for hazardous chemicals
- Frequency of chemical spills and response time
- Quantity of chemicals properly disposed of at CDRR facility

SOLID WASTE MANAGEMENT

DESCRIPTION

Bulk wastes are accepted from town residents at the Town Highway garage. Additional bulk wastes and hazardous wastes are accepted and or recycled at the DCRR facility.

FREQUENCY

Bulk wastes are collected at the highway garage on an annual basis, typically bi-weekly between April and September. Wastes are accepted at the DCRR on a monthly basis.

POLLUTION PREVENTION PRIORITIES

Illegal dumping or unregulated storage of hazardous chemicals by residents or neighbors can result in degradation of the natural environment of the town and its waterways.

EVALUATION CRITERIA

The effectiveness in meeting the stated goals during solid waste maintenance operations can be evaluated based on the following minimum criteria:

- Frequency of bulk waste collections
- Quantity of bulk wastes collected

KEY RESOURCES

The following key resources have been identified as available to the Town of Poughkeepsie Highway Department in meeting its pollution prevention goals.

- NYSDEC
  - **NYS MANAGEMENT PRACTICE CATALOGS FOR NONPOINT SOURCE POLLUTION PREVENTION** (CALL 518-402-8179 FOR ADDITIONAL COPIES & UPDATES)
  - **MUNICIAPAL POLLUTION PREVENTION AND GOOD HOUSEKEEPING PROGRAM ASSISTANCE** (http://www.dec.state.ny.us)
  - **New York State - Pollution Prevention Guidance for Small Business and Local Government** (http://www.dec.state.ny.us/website/ppu/eppgsblg.pdf)
  - **New York State Bulk Storage Program Guidance** (http://www.dec.state.ny.us/website/der/bulkstor/guidance)
- USEPA
  - **Pollution Prevention/ Good Housekeeping for Municipal Operations** (http://cfpub.epa.gov/npdes/stormwater/menuofbmps/index.cfm)
- NYSDOT
  - **NYSDOT Environmental Procedures Manual** (http://www.dot.state.ny.us/eab/epm.html)
- FEDERAL HIGHWAY ADMINISTRATION (FHWA)
  - **Manual of Practice for an Effective Anti-icing Program** (http://www.fhwa.dot.gov/reports/mopeap/eapcov.htm)
- CENTER FOR WATERSHED PROTECTION
  - **Urban Subwatershed Restoration Manual Series** http://www.cwp.org
- CALIFORNIA STORMWATER QUALITY ASSOCIATION
  - **Best Management Practice Handbook – Municipal** (http://www.cabmphandbooks.com/Municipal.asp)
- TRANSPORTATION ASSOCIATION OF CANADA (TAC)
  - **Synthesis of Best Practices-Road Salt Maintenance** (http://tac-atc.ca/english/informationservices/readingroom.cfm)
- OTHER
  - **New York State County Highway Superintendents Association (NYSCHSA)** http://www.countyhwys.org
  - **Guidance for Highway Drainage and Unpaved Road Maintenance** http://www.mass.gov/dep/images/dirtroad.pdf
  - **American Public Works Association (APWA)** (http://www.apwa.net/ResourceCenter/)
  - **Cornell Local Roads Program (CLRP)** (http://www.clrp.cornell.edu)
  - **Association of Towns of the State of New York** (http://www.nytowns.org)
  - **New York State Conference of Mayors and Municipal Officials (NYCOM)** http://www.nycom.org
  - **New York State Association of Counties (NYSAC)** http://www.nysac.org

CRITICAL FOLLOW-UP

EVALUATION OF EFFECTIVENESS

INCLUDE EVALUATION OF EFFECTIVENESS OF MEETING GOALS DURING NORMAL OPERATIONS

AMENDMENTS

INCLUDE WRITTEN AMENDMENTS TO POLICIES AND PROCEDURES

INTER-MUNICIPAL PARTNERSHIPS

INCLUDE DOCUMENTATION OF ANY INTER-MUNICIPAL PARTNERSHIPS OR AGREEMENTS FOR MAINTENANCE OR REPAIR OPERATIONS

APPENDIX O

IDDE REFERENCE MATERIAL

Illicit Discharge Hotline Incident Tracking Sheet

Incident ID:

Responder Information	
Call taken by:	Call date:
Call time:	Precipitation (inches) in past 24-48 hrs:
Reporter Information	
Incident time:	Incident date:
Caller contact information (*optional*):	

Incident Location *(complete one or more below)*

Latitude and longitude:

Stream address or outfall #:

Closest street address:

Nearby landmark:

Primary Location Description	**Secondary Location Description:**		
☐ Stream corridor *(In or adjacent to stream)*	☐ Outfall	☐ In-stream flow	☐ Along banks
☐ Upland area *(Land not adjacent to stream)*	☐ Near storm drain	☐ Near other water source (storm water pond, wetland, etc.):	

Narrative description of location:

Upland Problem Indicator Description

☐ Dumping	☐ Oil/solvents/chemicals	☐ Sewage
☐ Wash water, suds, etc.	☐ Other: _____	

Stream Corridor Problem Indicator Description

Odor	☐ None	☐ Sewage	☐ Rancid/Sour	☐ Petroleum (gas)
	☐ Sulfide (rotten eggs); natural gas	☐ Other: Describe in "Narrative" section		
Appearance	☐ "Normal"	☐ Oil sheen	☐ Cloudy	☐ Suds
	☐ Other: Describe in "Narrative" section			
Floatables	☐ None:	☐ Sewage (toilet paper, etc)	☐ Algae	☐ Dead fish
	☐ Other: Describe in "Narrative" section			

Narrative description of problem indicators:

Suspected Violator (name, personal or vehicle description, license plate #, etc.):

Investigation Notes	
Initial investigation date:	Investigators:
☐ No investigation made	Reason:
☐ Referred to different department/agency:	Department/Agency:
☐ Investigated: No action necessary	
☐ Investigated: Requires action	Description of actions:
Hours between call and investigation:	Hours to close incident:
Date case closed:	
Notes:	

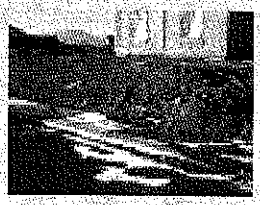
Stormwater Pollution Found in Your Area!

This is not a citation.

This is to inform you that our staff found the following pollutants in the storm sewer system in your area. This storm sewer system leads directly to

_____.

- ❑ Motor oil
- ❑ Oil filters
- ❑ Antifreeze/ transmission fluid
- ❑ Paint
- ❑ Solvent/degreaser
- ❑ Cooking grease
- ❑ Detergent
- ❑ Home improvement waste (concrete, mortar)
- ❑ Pet waste
- ❑ Yard waste (leaves, grass, mulch)
- ❑ Excessive dirt and gravel
- ❑ Trash
- ❑ Construction debris
- ❑ Pesticides and fertilizers
- ❑ Other



_____

For more information or to report an illegal discharge of pollutants, please call:

Town Engineering Dept.
(845)485-3638

WHEN IT RAINS IT DRAINS

EPA
United States Environmental Protection Agency

www.epa.gov/npdes/stormwater

EPA 833-F-03-002
April 2003

Stormwater runoff is precipitation from rain or snowmelt that flows over the ground. As it flows, it can pick up debris, chemicals, dirt, and other pollutants and deposit them into a storm sewer system or waterbody.

Anything that enters a storm sewer system is discharged *untreated* into the waterbodies we use for swimming, fishing, and providing drinking water.

Remember:
Only Rain Down the Drain

To keep the stormwater leaving your home or workplace clean, follow these simple guidelines:

- Use pesticides and fertilizers sparingly.
- Repair auto leaks.
- Dispose of household hazardous waste, used auto fluids (antifreeze, oil, etc.), and batteries at designated collection or recycling locations.
- Clean up after your pet.
- Use a commercial car wash or wash your car on a lawn or other unpaved surface.
- Sweep up yard debris rather than hosing down areas. Compost or recycle yard waste when possible.
- Clean paint brushes in a sink, not outdoors. Properly dispose of excess paints through a household hazardous waste collection program.
- Sweep up and properly dispose of construction debris like concrete and mortar.

MS4 Maintenance Facility Field Inspection Worksheet

Permittee:	
Address of facility:	**Size of facility:**
Date of visit:	**Time of visit**
Provide the name(s) and title(s) of permittee and staff present during inspection	
Name:	**Title**
Evaluator Observations:	
SWMPP or O&M Plan	**Comments**
Has the maintenance facility developed an O&M plan?	
Does the plan include a site map, list of pollutant sources, BMPs, and maintenance procedures?	
Are storm drains labeled and free of debris?	
Vehicle maintenance, fueling and washing	
Are vehicle maintenance activities conducted in a designated place not exposed to stormwater?	
Are fueling stations properly designed with spill kits nearby?	
Are vehicles washed on-site? Is wash water discharged to the MS4 or sanitary sewer?	
Material Storage	
Are all materials that are potential stormwater contaminants stored under cover or in secondary containment?	
Hazardous waste management	
Are all hazardous materials properly labeled and stored to prevent exposure to stormwater runoff?	
Waste Management	
Are waste bins covered with waste properly disposed in containers?	
How is landscape waste stored?	
Spill response	
Does the facility have a spill response plan, and are spill kits readily available?	
Employee Training	
What type of stormwater training do maintenance staff receive?	
Notes or additional information:	

Stormwater Pollution Found in Your Area!

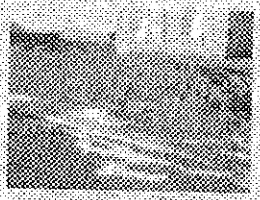
This is not a citation.

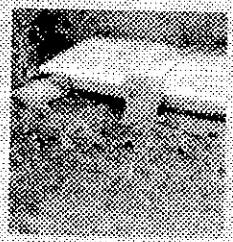
This is to inform you that our staff found the following pollutants in the storm sewer system in your area. This storm sewer system leads directly to

_____

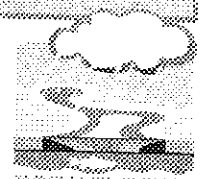
- ❑ Motor oil
- ❑ Oil filters
- ❑ Antifreeze/ transmission fluid
- ❑ Paint
- ❑ Solvent/degreaser
- ❑ Cooking grease
- ❑ Detergent
- ❑ Home improvement waste (concrete, mortar)
- ❑ Pet waste
- ❑ Yard waste (leaves, grass, mulch)
- ❑ Excessive dirt and gravel
- ❑ Trash
- ❑ Construction debris
- ❑ Pesticides and fertilizers
- ❑ Other

_____





For more information or to report an illegal discharge of pollutants, please call:



WHAT'S DOWN IT DRAINS

EPA
United States Environmental Protection Agency

www.epa.gov/npdes/stormwater

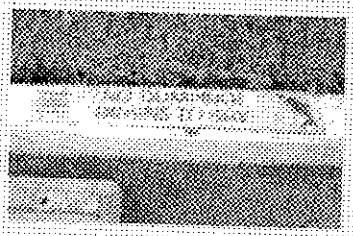
EPA 833-F-03-002
April 2003

Stormwater runoff is precipitation from rain or snowmelt that flows over the ground. As it flows, it can pick up debris, chemicals, dirt, and other pollutants and deposit them into a storm sewer system or waterbody.

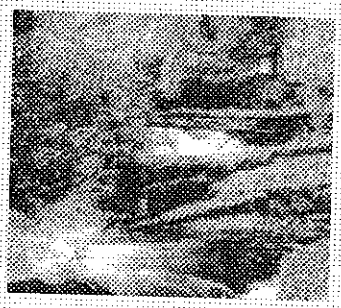
Anything that enters a storm sewer system is discharged *untreated* into the waterbodies we use for swimming, fishing, and providing drinking water.

Remember:
Only Rain Down the Drain

To keep the stormwater leaving your home or workplace clean, follow these simple guidelines:



- Use pesticides and fertilizers sparingly.
- Repair auto leaks.
- Dispose of household hazardous waste, used auto fluids (antifreeze, oil, etc.), and batteries at designated collection or recycling locations.
- Clean up after your pet.
- Use a commercial car wash or wash your car on a lawn or other unpaved surface.
- Sweep up yard debris rather than hosing down areas. Compost or recycle yard waste when possible.
- Clean paint brushes in a sink, not outdoors. Properly dispose of excess paints through a household hazardous waste collection program.
- Sweep up and properly dispose of construction debris like concrete and mortar.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

JAN 20 2006

MATT Hanson

received
2/28/06 NH

OFFICE OF WATER

MEMORANDUM

Subject: Illicit Discharge Detection and Elimination Trainers Program

From: Linda Boornazian, Director
Water Permits Division

To: Municipal Stormwater Managers
State and EPA Stormwater Coordinators
Other Interested Parties

Over the last several years, EPA has been working to provide guidance, training, and technical assistance to Phase I and II communities to help them design and build effective local stormwater management programs. One significant part of this effort has focused on the Illicit Discharge Detection and Elimination (IDDE) minimum measure. Last year, the Center for Watershed Protection and the University of Alabama, working under an EPA grant, produced the excellent IDDE Guidance Manual (www.epa.gov/npdes/stormwater).

EPA and the Center have continued to work together to distribute the manual and to train municipal stormwater managers. With a universe of over 6000 communities, reaching everyone is a major challenge.

In order to more effectively reach out to municipalities, we decided to implement a "train-the-trainer" effort for IDDE. Last fall, as you may recall, we advertised a two-day workshop with the goal of training 25-30 people from around the country, who would then be available to help train and work with municipalities. Twenty-eight people completed the workshop which was held in Landsdowne, VA on November 17-18, 2005.

The participants came from all parts of the country and represented a wide variety of backgrounds and professional positions. These trainers are equipped to provide training on all aspects of the setting up an municipal IDDE program, including program assessment and planning, potential costs, ordinances, and field and lab protocols. Each has indicated the geographic area that they are most comfortable working in. A detailed list is attached and can also be found at www.epa.gov/npdes/stormwater/iddetrainers. The objective of this effort is to

help municipalities obtain IDDE training and assistance. EPA is not endorsing any company or organization and cannot provide funding. We encourage municipalities to make their own arrangements with the IDDE trainers on this list.

If you need more information about how this program works, please visit www.epa.gov/npdes/stormwater/iddetrainers or contact Nikos Singelis (singelis.nikos@epa.gov, 202-564-0692) or Ted Brown, at the Center for Watershed Protection (ewb@cwp.org, 410-461-8323).

Attachment

Illicit Discharge Detection and Elimination (IDDE) Trainers

The people listed below have completed the two-day IDDE train-the-trainer workshop that was held in Landsdowne, VA on November 17-18, 2005. This list is has been compiled for municipal stormwater managers to assist them in obtaining training and assistance as they put their IDDE programs together. EPA is not endorsing the companies or individuals on this list.

Francis Albright
Project Specialist
Gannett Fleming, Inc
601 Holiday Dr
Foster Plaza III, Suite 200
Pittsburgh, PA 15220
Phone: (412) 922-5575
Fax: (412) 922-3717
Email: falbright@gfnet.com
Geographic Regions: Pennsylvania, Ohio, West Virginia, Eastern New York, and Southern Missouri

Zach Bishton
Resource Planner
Christopher Burke Engineering, Ltd
S 115 W Washington St
National City Center, Suite 1368
Phone: (317) 266-8000
Email: zbishton@cbbel-in.com
Geographic Regions: None Specified

Connor Boyle
Environmental Engineer
Alley, Williams, Carmen, & King, Inc
740 Chapel Hill Rd
Burlington, NC 27215
Phone: (336) 226-5534
Fax: (336) 226-3034
Geographic Regions: Nationwide

John Brockmann
Industrial Waste Investigator
Metro St Louis Sewer District
3000 Ridge View Rd
Glen Carbon, IL 62034
Phone: (618) 659-1469
Email: jbrockm@stlmsd.com
Geographic Regions: None Specified

Margarita Chatterton
Stormwater Coordinator
Rhode Island Department of Environmental Management
235 Promenade St
Providence, RI 02908
Phone: (401) 222-4700 x7605
Email: Margarita.chatterton@dem.ri.gov
Geographic Regions: None Specified

Ryan Coyne
Project Engineer
Dolph Rotfeld Engineering, PC
200 White Plains Rd
Tarrytown, NY 10591
Phone: (914) 631-8600
Email: ryan@drepc.com
Geographic Regions: EPA Regions 1, 2, and 3 (New York, New Jersey and Connecticut principally)

Jane Fava
Watershed Watch Coordinator
Brandywine Valley Association
1760 Unionville-Wawaset Rd
West Chester, PA 19380
Phone: (610) 429-0109
Email: janefava@comcast.net
Geographic Regions: Pennsylvania

Bryan Foley
Environmental Biologist
Versar, Inc
Fort Gordon Environmental and Natural Resources
Fort Gordon, GA 30905
Phone: (706) 791-432
Email: foleybr@gordon.army.mil
Geographic Regions: Georgia preference but available Nationwide

Janet Frey
Principal Scientist
URS Corp
200 Orchard Ridge Dr
Suite 101
Gaithersburg, MD 20878
Phone: (301) 670-3345
Fax: (301) 309-1579
Email: janet_frey@urscorp.com
Geographic Regions: Nationwide

Robin Fried
Storm Water Coordinator
University of California Santa Cruz, Environmental Health and Safety Office
1156 High St
Santa Cruz, CA 95064
Phone: (831) 459-4840
Email: rfried@ucsc.edu
Geographic Regions: California and Colleges/Universities Nationwide

Trevor Gauron
Woolpert, Inc
3800 Fernandina Rd
Suite 100
Columbia, SC 29210
Phone: (803) 731-0261
Fax: (803) 731-0132
Geographic Regions: None Specified

Tim Grover
City of South Burlington
575 Dorset St
South Burlington, VT 05403
Phone: (802) 658-7961
Phone 2: x108
Email: sbpwtg@adelphia.net
Geographic Regions: Northern Vermont, New Hampshire

Steve Hall
Project Manager
Fuller, Mossbarger, Scott, and May Engineers, Inc
350 Missouri Ave
Suite 101
Jeffersonville, IN 47130
Phone: (812) 206-0100
Email: shall@fmsm.com
Geographic Regions: Nationwide, especially EPA Regions 4 and 5

Diana Holley
Environmental Specialist
Manufacturing Management Services (MMS)
303 Fort Circle Dr
Charleston, WV 25314
Phone: (304) 546-8953
Email: dfhmmsconsulting@aol.com
Geographic Regions: Region 3 (West Virginia and Virginia), Region 4 (Kentucky), Region 5 (Ohio)

Shohreh Karimipour
Environmental Engineer (P.E.)
New York State Department of
Environmental Conservation
625 Broadway
Albany, NY 12233-3505
Phone: (518) 402-8102
Fax: (518) 402-9029
Email: sxkarimi@gw.dec.state.ny.us
Geographic Regions: New York (preferred), New Jersey, Vermont, Connecticut, Massachusetts

Barbara Kendall
Stormwater Outreach Specialist
New York State Department of
Environmental Conservation
21 South Putt Corners Rd
New Paltz, NY 12561
Phone: (845) 256-3163
Email: blkendal@gw.dec.state.ny.us
Geographic Regions: New York State first priority, other adjacent states as time allows

Elizabeth Ann Krousel
Senior Project Manager
AMEC Earth and Environmental
14428 Albemarle Point Place
Suite 150
Chantilly, VA 20151
Phone: (703) 488-3706
Email: Elizabeth.krousel@amec.com
Geographic Regions: Southeast, including the Washington DC area

Christopher Loughman
Principal Project Manager
MACTEC Engineering and Consulting, Inc
San Diego, CA 92131
Phone: (858) 278-3600
Email: ccloughman@mactec.com
Geographic Regions: Nationwide

David Lyons
National Stormwater Center
8031 Lynnfield Dr
Alexandria, VA 22306
Phone: (703) 765-4131
Email: envassist@aol.com
Geographic Regions: All EPA Regions (Nationwide)

Jason Maldonado
Senior Water Quality Scientist
PBS&J
1250 Woodbranch Park Dr
Houston, TX 77079
Phone: (281) 529-4100
Fax: (281) 493-4598
Email: jcmaldonado@pbsj.com
Geographic Regions: EPA Regions 6, 9, and 4 (with the exception of North and South Carolina, Kentucky, and Tennessee), Montana and Virginia

James Maxwell
Project Manager
Dolph Rotfeld Engineering, PC
788 Sherman Ave
Thornwood, NY 10594
Phone: (914) 769-8219
Email: Jimax153@aol.com
Geographic Regions: EPA Regions 1, 2, and 3 (New York, New Jersey, and Connecticut principally)

Thelma Murphy
Environmental Engineer
US EPA Region 1
One Congress St
Suite 1100 CIP
Boston, MA 02114
Phone: (617) 918-1615
Email: Murphy.thelma@epa.gov
Geographic Regions: Northeast

Scott Paszkiewicz
Watershed Planner
Lake County Stormwater Management Commission
333 Peterson Rd
Libertyville, IL 60048
Phone: (847) 918-5275
Fax: (847) 918-9826
Email: spaszkiewicz@co.lake.il.us
Geographic Regions: Illinois with a preference for Lake County

Zbigniew (Zig) Resiak
Vice President
Triad Engineering Inc
3850 Priority Way
Indianapolis, IN 46240
Phone: (317) 573-3620
Email: zig.resiak@triadengineering.com
Geographic Regions: Nationwide

Richard Rusnak
P.E.
MACTEC Engineering and Consulting
9177 Sky Park Ct
Suite A
San Diego, CA 92123
Phone: (858) 514-6464
Geographic Regions: Nationwide, including Alaska and Hawaii

M. Rutheyi Thompson
Civil Environmental Engineer
AECS
PO Box 60174
Grand Junction, CO 81506
Phone: (970) 248-0617
Fax: (970) 248-0601
Geographic Regions: Any Tribal location and the following states: Alaska, Arizona, Arkansas, California, Colorado, Idaho, Kansas, Louisiana, Missouri, Montana, Nebraska, Nevada, New Mexico, North Dakota, Oklahoma, Oregon, South Dakota, Texas, Utah, Washington, and Wyoming

John Wellborn
Georgia-Carolina Environmental Assessments
145 Shady Grove Dr
Harlem, GA 30814
Phone: (706) 556-8095
Email: wellborn692000@yahoo.com
Geographic Regions: Southeast US

John Whitescarver
Executive Director
National Stormwater Center
7000 SE Federal Highway
Suite 205
Stuart, FL 34997
Phone: (772) 288-6852
Email: Stormwater@aol.com
Geographic Regions: All EPA Regions (Nationwide)

Sign Up

For

NPDES News!

NPDES News is a periodic email newsletter published by EPA's NPDES program. It is designed to keep you up-to-date on the latest developments in the NPDES program. *NPDES News* covers all parts of the NPDES program, including the latest news on the stormwater program.

Because of the high cost of mailing, most announcements for regulatory changes, new guidance documents, training courses, etc. are made through *NPDES News*.

To sign up for *NPDES News*, go to www.epa.gov/npdes and click on the *NPDES News* icon which is on the right side of the page.

If you have any questions or need further assistance, contact Nikos Singelis at singelis.nikos@epa.gov or 202-564-0692.

MAR 19 2010

Town of Poughkeepsie

Building Department
1 Overocker Road
Poughkeepsie, NY 12603
845-485-3655 Fax 845-486-7881

March 12, 2010

Tim Sickles
Building Inspector
1 Overocker Rd.
Poughkeepsie, NY 12603

Re: MS4 Report 03/10/09 – 03/09/10

Tim,

Please find attached copies of Actions taken on subject properties.

Owner: Makan Land Development One LLC Property: Tamarack Road, Rear. Grid # 6262-02-956884 Stop Work Order (1) Order to Remedy (1) Violations cited (2)	Owner: Makan Land Development One LLC Property: Tamarack Road, Rear. Grid # 6262-02-987833 Stop Work Order (1) Order to Remedy (1) Violations cited (2)
Owner: Makan Land Development One LLC Property: Tamarack Road, Rear. Grid # 6262-02-936823 Stop Work Order (1) Order to Remedy (1) Violations cited (2)	Owner: Makan Land Development One LLC Property: Tamarack Road, Rear. Grid # 6262-02-939798 Stop Work Order (1) Order to Remedy (1) Violations cited (2)
Owner: Makan Land Development One LLC Property: Tamarack Road, Rear. Grid # 6262-02-985783 Stop Work Order (1) Order to Remedy (1) Violations cited (2)	Owner: Makan Land Development One LLC Property: Tamarack Road, Rear. Grid # 6262-02-941778 Stop Work Order (1) Order to Remedy (1) Violations cited (2)
Owner: Makan Land Development One LLC Property: Tamarack Road, Rear. Grid # 6262-02-982746 Stop Work Order (1) Order to Remedy (1) Violations cited (2)	Owner: Makan Land Development One LLC Property: Tamarack Road, Rear. Grid # 6262-02-940747 Stop Work Order (1) Order to Remedy (1) Violations cited (2)
Owner: Makan Land Development One LLC Property: Tamarack Road, Rear. Grid # 6262-02-934714 Stop Work Order (1) Order to Remedy (1) Violations cited (2)	Owner: Makan Land Development One LLC Property: Tamarack Road, Rear. Grid # 6262-02-938687 Stop Work Order (1) Order to Remedy (1) Violations cited (2)

- Each Order to Remedy per Grid Number shows two (2) violations each.
- The single page Stop Work Order accounts as a separate Stop Work Order for each parcel listed and identified by Grid Number. Copy of Morris Inspector's Report included.
- That there were no fines levied for these violations to my knowledge.
- The Stop Work Order(s) were lifted for these parcels as authorized via an email message received from the Towns Engineering Representative, Morris Associates, PLLC, Engineer Joseph Dennis, P.E. (see attached copies) Stop Work Order lifted September 14, 2009.
- Some pictures are included showing site conditions for the dates shown.

This concludes the actions with my involvement for the reporting year of March 10, 2009 to March 9, 2010.

Respectfully submitted,

Wayne Cichon

Wayne Cichon, CPCA
Deputy Building Inspector
Town of Poughkeepsie

Cc: neil wilson, director of municipal development
joe dennis, morris associates

Town of Poughkeepsie
Building Department

STOP WORK ORDER

Pursuant to Chapter 68 of the Code of the Town of Poughkeepsie and the New York State Uniform Fire Prevention and Building Code, You and those persons working under your direction and control, are hereby...ORDERED TO STOP WORK on the building, structure or premises known or described as: Tamarack Heights Project. Tamarack Rd. Rear. Poughkeepsie, NY. Applies to **ALL WORK**.

Owner Name:_ Makan Land Development One LLC.
Grid Number:_6262/ 02 / 956884, 987833, 936823, 939798, 985783, 941778, 982746, 940747, 934714, 938687__
... Rd. Rear. Poughkeepsie, NY. ___
...man, NY 10926

...mined that reasonable grounds exist to ...ion is being carried out in violation of: ***...-1. Activities Contaminating ... Chapter 173-10, Industrial or ...rges.***

...ORK shall CEASE on the premises until the ...ted and

...epartme...

Time I...

Dayn...

' THE L... EMOVI...

...nis, tim...

COMPLETE THIS SECTION ON DELIVERY

A. Signature X ☐ Agent ☐ Addressee
B. Received by (Printed Name) C. Date of Delivery
D. Is delivery address different from item 1? ☐ Yes If YES, enter delivery address below: ☑ No
3. Service Type ☑ Certified Mail ☐ Express Mail ☐ Registered ☑ Return Receipt for Merchandise ☐ Insured Mail ☐ C.O.D.
4. Restricted Delivery? (Extra Fee) ☐ Yes

HARRIMAN MAR 21

7007 2560 0003 0659 3384

102595-02-M-1540

Domestic Return Receipt

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

Article Addressed to:
MAKAN LAND DEVELOPMENT-ONE LLC.
P.O. Box 979
Harriman, NY 10926

Article Number (Transfer from service label)

S Form 3811, February 2004

7007 2560 0003 0659 3384

U.S. Postal Service™
CERTIFIED MAIL™ RECEIPT
(Domestic Mail Only; No Insurance Coverage Provided)
For delivery information visit our website at www.usps.com®
HARRIMAN NY 10926

OFFICIAL USE

Postage	$ $1.34	0227
Certified Fee	$2.70	09
Return Receipt Fee (Endorsement Required)	$2.20	Postmark Here
Restricted Delivery Fee (Endorsement Required)	$0.00	
Total Postage & Fees	$ $6.24	03/19/2009

MAR 19 2009

Sent To MAKAN LAND Development One LLC
Street, Apt. No.; or PO Box No. PO Box 979
City, State, ZIP+4 Harriman NY. 10926

PS Form 3800, August 2006 See Reverse for Instructions

BUILDING DEPARTMENT

Town of Poughkeepsie

ONE OVEROCKER ROAD POUGHKEEPSIE, NY 12603

phone: (845) 485-3655 Fax: (845) 486-7881

ORDER TO REMEDY VIOLATION

DATE: __March 19, 2009_____

LOCATION: __Tamarack Hill Dr. Rear, Poughkeepsie, NY. _____

TO: __Makan land Development One LLC_____
(Owner or Authorized Agent of Owner)

__PO Box 979 Harriman, NY 10926__
(Mailing Address of Owner or Authorized Agent of Owner)

GRID #: __6262-02-956884__

PLEASE TAKE NOTICE there exists violations of:

NYS Uniform Fire Prevention & Building Code ____

Other Applicable Laws, Ordinances or Regulations __X__

at premises hereinafter described in that;

You have failed to prevent illicit discharges into the MS4 for the site. This is in violation of your MS4 SPDES permit. Code of the Town of Poughkeepsie, Section 173-7. Sub-section A-1. Activities Contaminating Stormwater Prohibited.

You have failed to comply with all provisions of your SPDES permit. This is a violation of the Code of the Town of Poughkeepsie. Section 173-10, Industrial or construction activity discharges.

* see report from town authorized inspection agency (Morris Associates) dated 03/16/2009 attached.

YOU ARE THEREFORE DIRECTED AND ORDERED TO _abate all violations. An inspection for Code Compliance with this Order will be made on or about: '03/26/2009_

FAILURE TO REMEDY THE CONDITIONS AFORESAID AND TO COMPLY WITH THE APPLICABLE PROVISIONS OF LAW MAY CONSTITUTE AN OFFENSE PUNISHABLE BY FINE OR IMPRISONMENT OR BOTH.

**Wayne Cichon** Wayne Cichon
Deputy Building Inspector

Cc: tim sickles, building inspector
neil wilson, director of municipal development
joe dennis, morris associates
tim richards, morris associates
marc pfeifer, superintendent of highways
keith ballard, water department supervisor

BUILDING DEPARTMENT

Town of Poughkeepsie

ONE OVEROCKER ROAD
POUGHKEEPSIE, NY 12603
Phone: (845) 485-3655
Fax: (845) 486-7881

ORDER TO REMEDY VIOLATION

DATE: __March 19, 2009_____

LOCATION: __Tamarack Hill Dr. Rear, Poughkeepsie, NY. _____

TO: __Makan land Development One LLC_____
(Owner or Authorized Agent of Owner)

__PO Box 979 Harriman, NY 10926__
(Mailing Address of Owner or Authorized Agent of Owner)

GRID #: __6262-02-987833__

PLEASE TAKE NOTICE there exists violations of:

NYS Uniform Fire Prevention & Building Code ____

Other Applicable Laws, Ordinances or Regulations __X__

at premises hereinafter described in that:

You have failed to prevent illicit discharges into the MS4 for the site. This is in violation of your MS4 SPDES permit. Code of the Town of Poughkeepsie, Section 173-7. Sub-section A-1. Activities Contaminating Stormwater Prohibited.

You have failed to comply with all provisions of your SPDES permit. This is a violation of the Code of the Town of Poughkeepsie. Section 173-10, Industrial or construction activity discharges.

* see report from town authorized inspection agency (Morris Associates) dated 03/16/2009 attached.

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_**Wayne Cichon**_____
Deputy Building Inspector

Cc: tim sickles, building inspector
neil wilson, director of municipal development
joe dennis, morris associates
tim richards, morris associates
marc pfeifer, superintendent of highways
keith ballard, water department supervisor

BUILDING DEPARTMENT

Town of Poughkeepsie

ONE OVEROCKER ROAD
POUGHKEEPSIE, NY 12603
Phone: (845) 485-3655
Fax: (845) 486-7881

ORDER TO REMEDY VIOLATION

DATE: __March 19, 2009_____

LOCATION: __Tamarack Hill Dr. Rear, Poughkeepsie, NY. _____

TO: __Makan land Development One LLC_____
(Owner or Authorized Agent of Owner)

__PO Box 979 Harriman, NY 10926__
(Mailing Address of Owner or Authorized Agent of Owner)

GRID #: __6262-02-936823__

PLEASE TAKE NOTICE there exists violations of:

NYS Uniform Fire Prevention & Building Code ____

Other Applicable Laws, Ordinances or Regulations __X__

at premises hereinafter described in that;

You have failed to prevent illicit discharges into the MS4 for the site. This is in violation of your MS4 SPDES permit. Code of the Town of Poughkeepsie, Section 173-7. Sub-section A-1. Activities Contaminating Stormwater Prohibited.

You have failed to comply with all provisions of your SPDES permit. This is a violation of the Code of the Town of Poughkeepsie. Section 173-10, Industrial or construction activity discharges.

* see report from town authorized inspection agency (Morris Associates) dated 03/16/2009 attached.

YOU ARE THEREFORE DIRECTED AND ORDERED TO _abate all violations. An inspection for Code Compliance with this Order will be made on or about: `03/26/2009_

FAILURE TO REMEDY THE CONDITIONS AFORESAID AND TO COMPLY WITH THE APPLICABLE PROVISIONS OF LAW MAY CONSTITUTE AN OFFENSE PUNISHABLE BY FINE OR IMPRISONMENT OR BOTH.

_**Wayne Cichon**_____
Deputy Building Inspector

Cc: tim sickles, building inspector
neil wilson, director of municipal development
joe dennis, morris associates
tim richards, morris associates
marc pfeifer, superintendent of highways
keith ballard, water department supervisor

BUILDING DEPARTMENT

Town of Poughkeepsie

ONE OVEROCKER ROAD POUGHKEEPSIE, NY 12603

Phone: (845) 485-3655 Fax: (845) 486-7881

ORDER TO REMEDY VIOLATION

DATE: __March 19, 2009_____

LOCATION: __Tamarack Hill Dr. Rear, Poughkeepsie, NY. _____

TO: __Makan land Development One LLC_____
(Owner or Authorized Agent of Owner)

__PO Box 979 Harriman, NY 10926__
(Mailing Address of Owner or Authorized Agent of Owner)

GRID #: __6262-02-939798__

PLEASE TAKE NOTICE there exists violations of:

NYS Uniform Fire Prevention & Building Code ____

Other Applicable Laws, Ordinances or Regulations __X__

at premises hereinafter described in that;

You have failed to prevent illicit discharges into the MS4 for the site. This is in violation of your MS4 SPDES permit. Code of the Town of Poughkeepsie, Section 173-7. Sub-section A-1. Activities Contaminating Stormwater Prohibited.

You have failed to comply with all provisions of your SPDES permit. This is a violation of the Code of the Town of Poughkeepsie. Section 173-10, Industrial or construction activity discharges.

* see report from town authorized inspection agency (Morris Associates) dated 03/16/2009 attached.

YOU ARE THEREFORE DIRECTED AND ORDERED TO _abate all violations. An inspection for Code Compliance with this Order will be made on or about: '03/26/2009_

FAILURE TO REMEDY THE CONDITIONS AFORESAID AND TO COMPLY WITH THE APPLICABLE PROVISIONS OF LAW MAY CONSTITUTE AN OFFENSE PUNISHABLE BY FINE OR IMPRISONMENT OR BOTH.

**Wayne Cichon** Wayne Cichon
Deputy Building Inspector

Cc: tim sickles, building inspector
neil wilson, director of municipal development
joe dennis, morris associates
tim richards, morris associates
marc pfeifer, superintendent of highways
keith ballard, water department supervisor

BUILDING DEPARTMENT

Town of Poughkeepsie

ONE OVEROCKER ROAD POUGHKEEPSIE, NY 12603

Phone: (845) 485-3655 Fax: (845) 486-7881

ORDER TO REMEDY VIOLATION

DATE: __March 19, 2009_____

LOCATION: __Tamarack Hill Dr. Rear, Poughkeepsie, NY. _____

TO: __Makan land Development One LLC_____
(Owner or Authorized Agent of Owner)

__PO Box 979 Harriman, NY 10926__
(Mailing Address of Owner or Authorized Agent of Owner)

GRID #: __6262-02-985783__

PLEASE TAKE NOTICE there exists violations of:

NYS Uniform Fire Prevention & Building Code ____

Other Applicable Laws, Ordinances or Regulations __X__

at premises hereinafter described in that;

You have failed to prevent illicit discharges into the MS4 for the site. This is in violation of your MS4 SPDES permit. Code of the Town of Poughkeepsie, Section 173-7. Sub-section A-1. Activities Contaminating Stormwater Prohibited.

You have failed to comply with all provisions of your SPDES permit. This is a violation of the Code of the Town of Poughkeepsie. Section 173-10, Industrial or construction activity discharges.

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**Wayne Cichon** Wayne Cichon
Deputy Building Inspector

Cc: tim sickles, building inspector
neil wilson, director of municipal development
joe dennis, morris associates
tim richards, morris associates
marc pfeifer, superintendent of highways
keith ballard, water department supervisor

BUILDING DEPARTMENT

Town of Poughkeepsie

ONE OVEROCKER ROAD POUGHKEEPSIE, NY 12603

Phone: (845) 485-3655 Fax: (845) 486-7881

ORDER TO REMEDY VIOLATION

DATE: __March 19, 2009_____

LOCATION: __Tamarack Hill Dr. Rear, Poughkeepsie, NY. _____

TO: __Makan land Development One LLC_____
(Owner or Authorized Agent of Owner)

__PO Box 979 Harriman, NY 10926__
(Mailing Address of Owner or Authorized Agent of Owner)

GRID #: __6262-02-941778__

PLEASE TAKE NOTICE there exists violations of:

NYS Uniform Fire Prevention & Building Code ____

Other Applicable Laws, Ordinances or Regulations __X__

at premises hereinafter described in that;

You have failed to prevent illicit discharges into the MS4 for the site. This is in violation of your MS4 SPDES permit. Code of the Town of Poughkeepsie, Section 173-7. Sub-section A-1. Activities Contaminating Stormwater Prohibited.

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_**Wayne Cichon**_____
Deputy Building Inspector

Cc: tim sickles, building inspector
neil wilson, director of municipal development
joe dennis, morris associates
tim richards, morris associates
marc pfeifer, superintendent of highways
keith ballard, water department supervisor

BUILDING DEPARTMENT

Town of Poughkeepsie

ONE OVEROCKER ROAD POUGHKEEPSIE, NY 12603

Phone: (845) 485-3655 Fax: (845) 486-7881

ORDER TO REMEDY VIOLATION

DATE: __March 19, 2009_____

LOCATION: __Tamarack Hill Dr. Rear, Poughkeepsie, NY. _____

TO: __Makan land Development One LLC_____
(Owner or Authorized Agent of Owner)

__PO Box 979 Harriman, NY 10926__
(Mailing Address of Owner or Authorized Agent of Owner)

GRID #: __6262-02-982746__

PLEASE TAKE NOTICE there exists violations of:

NYS Uniform Fire Prevention & Building Code ____

Other Applicable Laws, Ordinances or Regulations __X__

at premises hereinafter described in that;

You have failed to prevent illicit discharges into the MS4 for the site. This is in violation of your MS4 SPDES permit. Code of the Town of Poughkeepsie, Section 173-7. Sub-section A-1. Activities Contaminating Stormwater Prohibited.

You have failed to comply with all provisions of your SPDES permit. This is a violation of the Code of the Town of Poughkeepsie. Section 173-10, Industrial or construction activity discharges.

* see report from town authorized inspection agency (Morris Associates) dated 03/16/2009 attached.

YOU ARE THEREFORE DIRECTED AND ORDERED TO _abate all violations. An inspection for Code Compliance with this Order will be made on or about: '03/26/2009_

FAILURE TO REMEDY THE CONDITIONS AFORESAID AND TO COMPLY WITH THE APPLICABLE PROVISIONS OF LAW MAY CONSTITUTE AN OFFENSE PUNISHABLE BY FINE OR IMPRISONMENT OR BOTH.

_**Wayne Clehon**_____
Deputy Building Inspector

Cc: tim sickles, building inspector
neil wilson, director of municipal development
joe dennis, morris associates
tim richards, morris associates
marc pfeifer, superintendent of highways
keith ballard, water department supervisor

BUILDING DEPARTMENT

Town of Poughkeepsie

ONE OVEROCKER ROAD POUGHKEEPSIE, NY 12603

Phone: (845) 485-3635 Fax: (845) 486-7881

ORDER TO REMEDY VIOLATION

DATE: __March 19, 2009_____

LOCATION: __Tamarack Hill Dr. Rear, Poughkeepsie, NY. _____

TO: __Makan land Development One LLC_____
(Owner or Authorized Agent of Owner)

__PO Box 979 Harriman, NY 10926__
(Mailing Address of Owner or Authorized Agent of Owner)

GRID #: __6262-02-940747__

PLEASE TAKE NOTICE there exists violations of:

NYS Uniform Fire Prevention & Building Code ____

Other Applicable Laws, Ordinances or Regulations __X__

at premises hereinafter described in that:

You have failed to prevent illicit discharges into the MS4 for the site. This is in violation of your MS4 SPDES permit. Code of the Town of Poughkeepsie, Section 173-7. Sub-section A-1. Activities Contaminating Stormwater Prohibited.

You have failed to comply with all provisions of your SPDES permit. This is a violation of the Code of the Town of Poughkeepsie. Section 173-10, Industrial or construction activity discharges.

* see report from town authorized inspection agency (Morris Associates) dated 03/16/2009 attached.

YOU ARE THEREFORE DIRECTED AND ORDERED TO _abate all violations. An inspection for Code Compliance with this Order will be made on or about: '03/26/2009_

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_**Wayne Cichon**_____
Deputy Building Inspector

Cc: tim sickles, building inspector
neil wilson, director of municipal development
joe dennis, morris associates
tim richards, morris associates
marc pfeifer, superintendent of highways
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BUILDING DEPARTMENT

Town of Poughkeepsie

ONE OVEROCKER ROAD POUGHKEEPSIE, NY 12603

Phone: (845) 485-3655 Fax: (845) 486-7881

ORDER TO REMEDY VIOLATION

DATE: __March 19, 2009_____

LOCATION: __Tamarack Hill Dr. Rear, Poughkeepsie, NY. _____

TO: __Makan land Development One LLC_____
(Owner or Authorized Agent of Owner)

__PO Box 979 Harriman, NY 10926__
(Mailing Address of Owner or Authorized Agent of Owner)

GRID #: __6262-02-934714__

PLEASE TAKE NOTICE there exists violations of:

NYS Uniform Fire Prevention & Building Code ____

Other Applicable Laws, Ordinances or Regulations __X__

at premises hereinafter described in that;

You have failed to prevent illicit discharges into the MS4 for the site. This is in violation of your MS4 SPDES permit. Code of the Town of Poughkeepsie, Section 173-7, Sub-section A-1, Activities Contaminating Stormwater Prohibited.

You have failed to comply with all provisions of your SPDES permit. This is a violation of the Code of the Town of Poughkeepsie. Section 173-10, Industrial or construction activity discharges.

* see report from town authorized inspection agency (Morris Associates) dated 03/16/2009 attached.

YOU ARE THEREFORE DIRECTED AND ORDERED TO _abate all violations. An inspection for Code Compliance with this Order will be made on or about: '03/26/2009_

FAILURE TO REMEDY THE CONDITIONS AFORESAID AND TO COMPLY WITH THE APPLICABLE PROVISIONS OF LAW MAY CONSTITUTE AN OFFENSE PUNISHABLE BY FINE OR IMPRISONMENT OR BOTH.

**Wayne Cichon** Wayne Cichon
Deputy Building Inspector

Cc: tim sickles, building inspector
neil wilson, director of municipal development
joe dennis, morris associates
tim richards, morris associates
marc pfeifer, superintendent of highways
keith ballard, water department supervisor

BUILDING DEPARTMENT

Town of Poughkeepsie

ONE OVEROCKER ROAD POUGHKEEPSIE, NY 12603

Phone: (845) 485-3655 Fax: (845) 486-7881

ORDER TO REMEDY VIOLATION

DATE: __March 19, 2009_____

LOCATION: __Tamarack Hill Dr. Rear, Poughkeepsie, NY. _____

TO: __Makan land Development One LLC_____
(Owner or Authorized Agent of Owner)

__PO Box 979 Harriman, NY 10926__
(Mailing Address of Owner or Authorized Agent of Owner)

GRID #: __6262-02-938687__

PLEASE TAKE NOTICE there exists violations of:

NYS Uniform Fire Prevention & Building Code ____

Other Applicable Laws, Ordinances or Regulations __X__

at premises hereinafter described in that:

You have failed to prevent illicit discharges into the MS4 for the site. This is in violation of your MS4 SPDES permit. Code of the Town of Poughkeepsie, Section 173-7. Sub-section A-1. Activities Contaminating Stormwater Prohibited.

You have failed to comply with all provisions of your SPDES permit. This is a violation of the Code of the Town of Poughkeepsie. Section 173-10, Industrial or construction activity discharges.

* see report from town authorized inspection agency (Morris Associates) dated 03/16/2009 attached.

YOU ARE THEREFORE DIRECTED AND ORDERED TO _abate all violations. An inspection for Code Compliance with this Order will be made on or about: `03/26/2009_

FAILURE TO REMEDY THE CONDITIONS AFORESAID AND TO COMPLY WITH THE APPLICABLE PROVISIONS OF LAW MAY CONSTITUTE AN OFFENSE PUNISHABLE BY FINE OR IMPRISONMENT OR BOTH.

**Wayne Cichon** Wayne Cichon
Deputy Building Inspector

Cc: tim sickles, building inspector
neil wilson, director of municipal development
joe dennis, morris associates
tim richards, morris associates
marc pfeifer, superintendent of highways
keith ballard, water department supervisor

TOWN OF POUGHKEEPSIE
Construction Stormwater Compliance Inspection Report

Project Name and Location: Tamarack Heights Subdivision	Date: 3/16/09 Page 1 of 3
	Permit # (if any): NYR 10P138
Municipality: Poughkeepsie County: Dutchess	Entry Time: 4:45 pm Exit Time: 5:25 pm
On-site Representative(s) and contact information: none	Weather Conditions: Cloudy 45°F ±
Name and Address of SPDES Permittee/Title/Phone/Fax Numbers: Contacted Yes: No: Via E-mail	
Davinder Makan, Makan Land Development	

INSPECTION CHECKLIST

SPDES Authority

	Yes	No	N/A	
1.	X			Is a copy of the NOI posted at the construction site for public viewing? in Permit Box
2.				Is an up-to-date copy of the signed SWPPP retained at the construction site?
3.			X	Is a copy of the SPDES General Permit retained at the construction site?

SWPPP Content

	Yes	No	N/A	
4.	X			Does the SWPPP describe and identify the erosion & sediment control measures to be employed?
5.	X			Does the SWPPP provide a maintenance schedule for the erosion & sediment control measures?
6.			X	Does the SWPPP describe and identify the post-construction SW control measures to be employed?
7.			X	Does the SWPPP identify the contractor(s) and subcontractor(s) responsible for each measure? — ?
8.			X	Does the SWPPP include all the necessary contractor certification statements? — may need updating
9.	X			Is the SWPPP signed/certified by the permittee?

Recordkeeping

	Yes	No	N/A	
10.		X		Are inspections being performed as required by the TOWN (every 7 days and after ½" rain event)?
11.		X		Are the site inspections being performed by a qualified professional?
12.		X		Are all required reports properly signed/certified?
13.		X		Are the inspection reports complete and adequate?

Visual Observations

	Yes	No	N/A	
14.		X		All erosion and sediment control measures have been installed/constructed?
15.		X		All erosion and sediment control measures are being maintained properly?
16.		X		Are there currently more than 5 acres of disturbed soil at the site without prior approval?
17.		X		Have stabilization measures been initiated in inactive areas?
18.		X		Are permanent stormwater control measures being implemented?
19.	X			Was there a discharge into the receiving water on the day of inspection?
20.				Is there evidence of turbidity, sedimentation, or oil in the receiving waters? (if yes, complete Page 2)

Overall Inspection Rating: Satisfactory Marginal X Unsatisfactory	
Name/Agency of Lead Inspector: Tim Richard	Signature of Lead Inspector: Tim Richard, SE.
Names/Agencies of Other Inspectors:	

Water Quality Observations

Describe the discharge(s) [source(s), impact on receiving water(s), etc.] 1) Rip Rap outlet at box culvert into wetland non disturbance area.
2) Outlet of Holding pond into wetland disturbance area

Describe the quality of the receiving water(s) both upstream and downstream of the discharge 1) outlet flowing slow; water is clear

2) no flow, but evidence of siltation (accumulation) will become more of an issue during rainevent(s).

Describe any other water quality standards or permit violations Lack of maintenance of storm water controls, and lack of stabalization in/on graded areas.

Additional Comments: • Check Dams need to be maintained
• Erosion gullies between holding pond and non disturbance area need to be graded and stabalized.

• Silt fence is beyond capacity below the outlet of holding pond and needs repair.

• Turbid water has entered the outlet control structure - only clean water is to be controlled within this structure

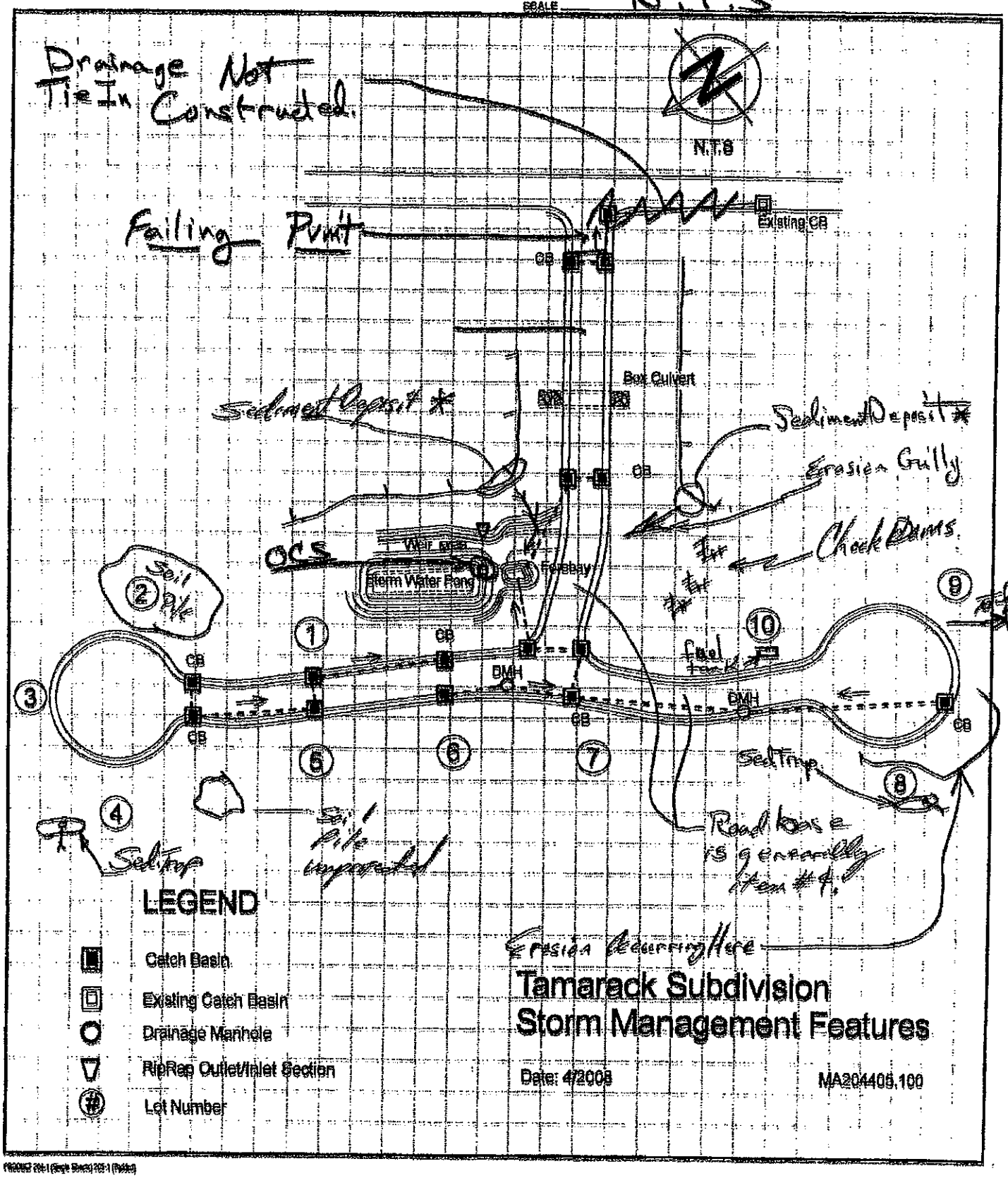
• Most catch basin inlets need proper protection

• Soil Piles on Lot 9 and 4 are uncovered and have no perimeter silt fence (X 2).
→ Recommend mtg. prior to reconstruction.

** Photographs attached

MORRIS ASSOCIATES, P.S., L.L.C.
Engineering Consultants
9 Elks Lane
Poughkeepsie, NY 12601
(845) 454-3411
FAX (845) 473-1962

JOB Tamarack Heights
SHEET NO. 3 OF 3
CALCULATED BY T. Richard DATE 3/16/09
CHECKED BY DATE
SCALE N.T.S



Wayne Cichon

From: Joe Dennis [JDennis@MorrisEngineers.com]
Sent: Wednesday, September 09, 2009 3:41 PM
To: Wayne Cichon; Timothy Sickles
Cc: Timothy Richard
Subject: RE: Tamarack Hgts - Stop Work Order

Wayne and/or Tim,

Upon review of the field conditions and after discussion with the developer's engineer in regard to the installed erosion control measures; this office is satisfied that the installed erosion control measures are now sufficient. Accordingly, it is our opinion that the Stop Work Order may be lifted.

If there are any questions, please contact me.

Joseph P. Dennis, P. E.
Senior Engineer

Morris Associates, PLLC
9 Elks Lane
Poughkeepsie, N. Y. 12601

(845) 454-3411 ext 47
(845)473-1962 Fax

From: Wayne Cichon [mailto:wcichon@TownofPoughkeepsie-ny.gov]
Sent: Tuesday, September 01, 2009 2:00 PM
To: Timothy Richard
Cc: Joe Dennis
Subject: Tamarack Hgts

September 1, 2009

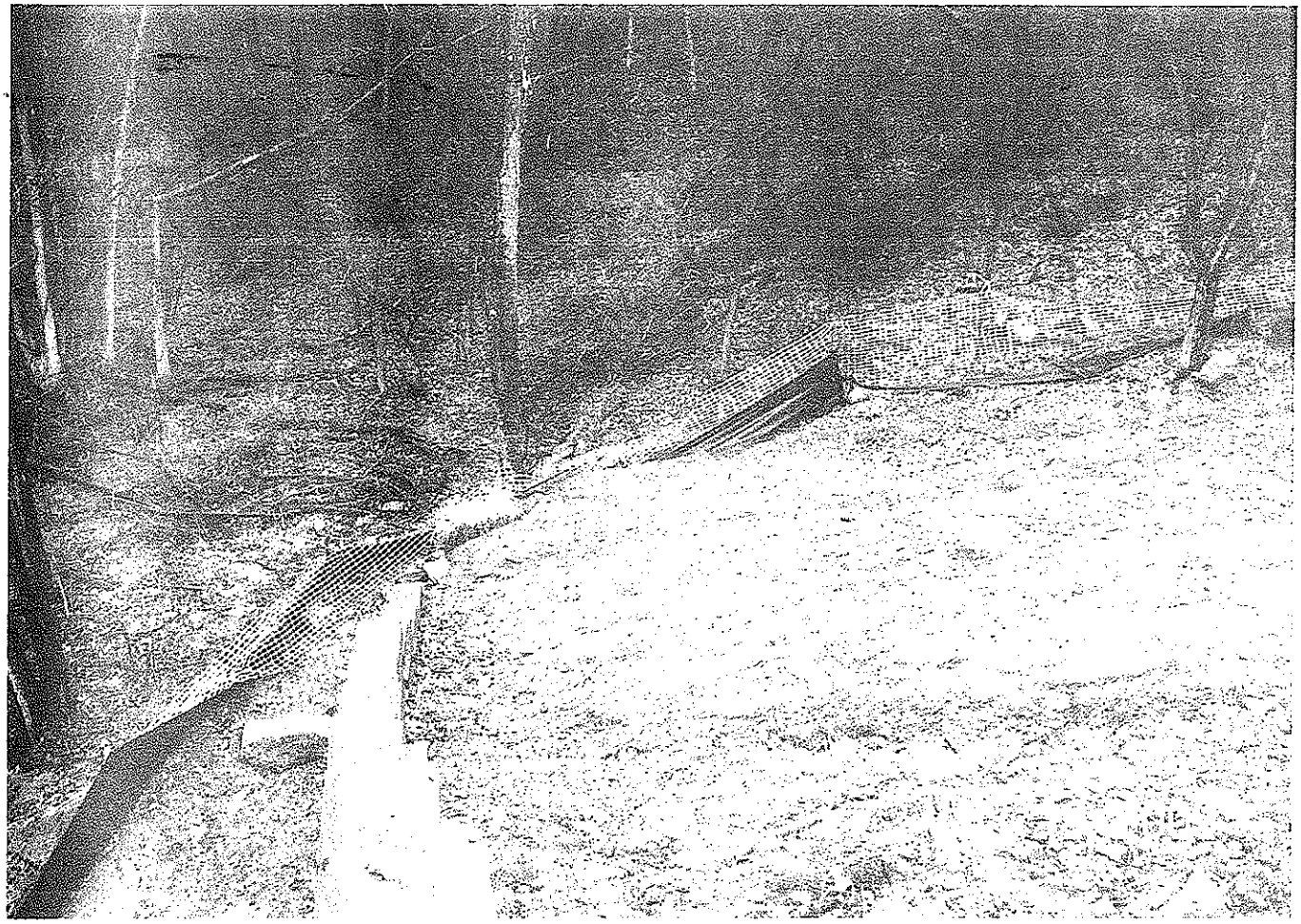
Hi Tim & Joe,

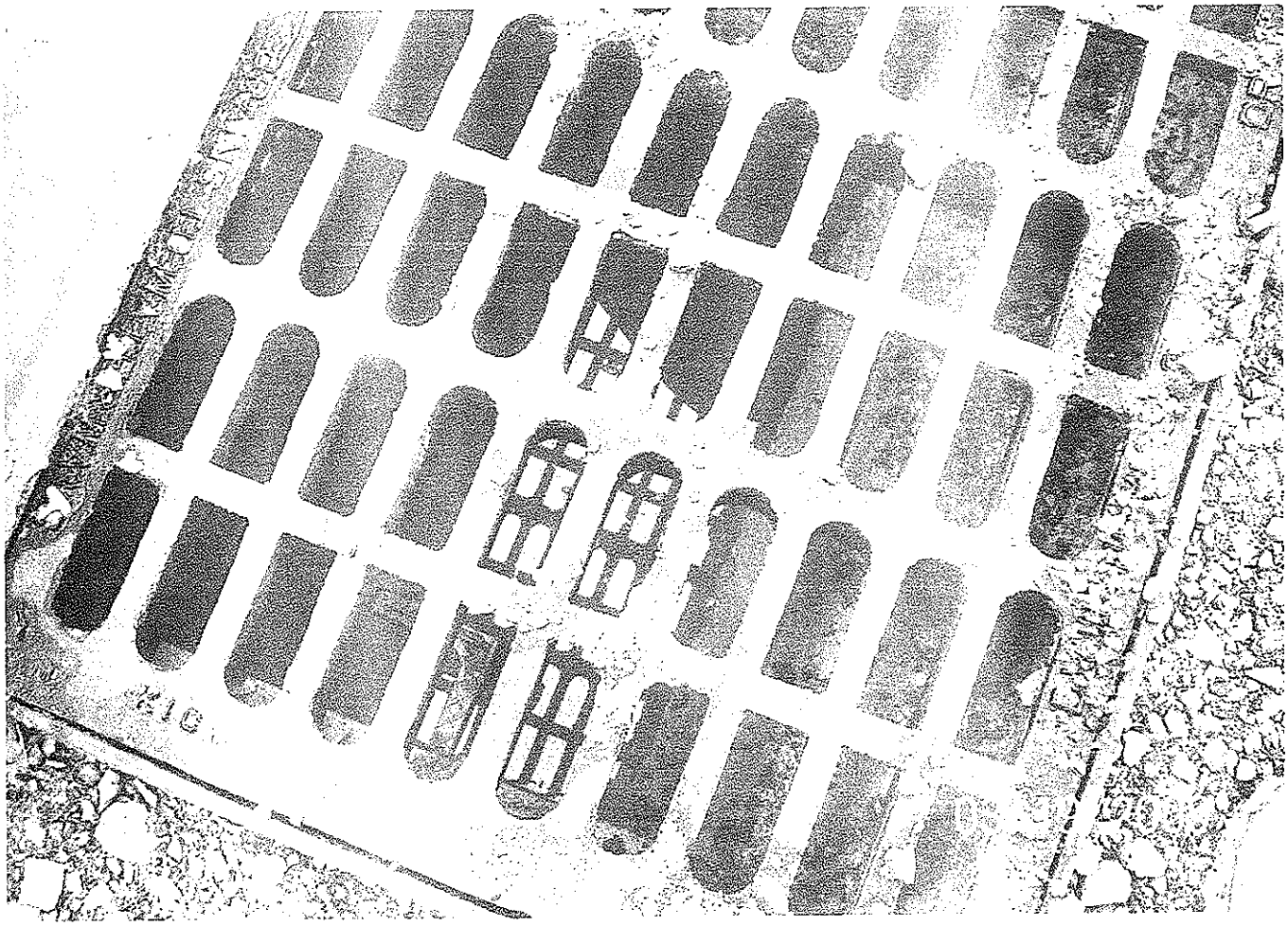
Went out to the site to check remaining items per request by Manny Makan. Clean out of outlet control structure is done. They mucked out the sludge in the bottom. They have laid only two rows of fabric for erosion and control on the steep slopes around the holding pond. Does not go up very far. They have 6 rolls left on site that appear should be installed. Not sure it's the right fabric and it appears that it is not secured or stapled to the ground. Can you stop at the site to check if this is an ok fabric and it is installed correctly, and does it have to go to the top?

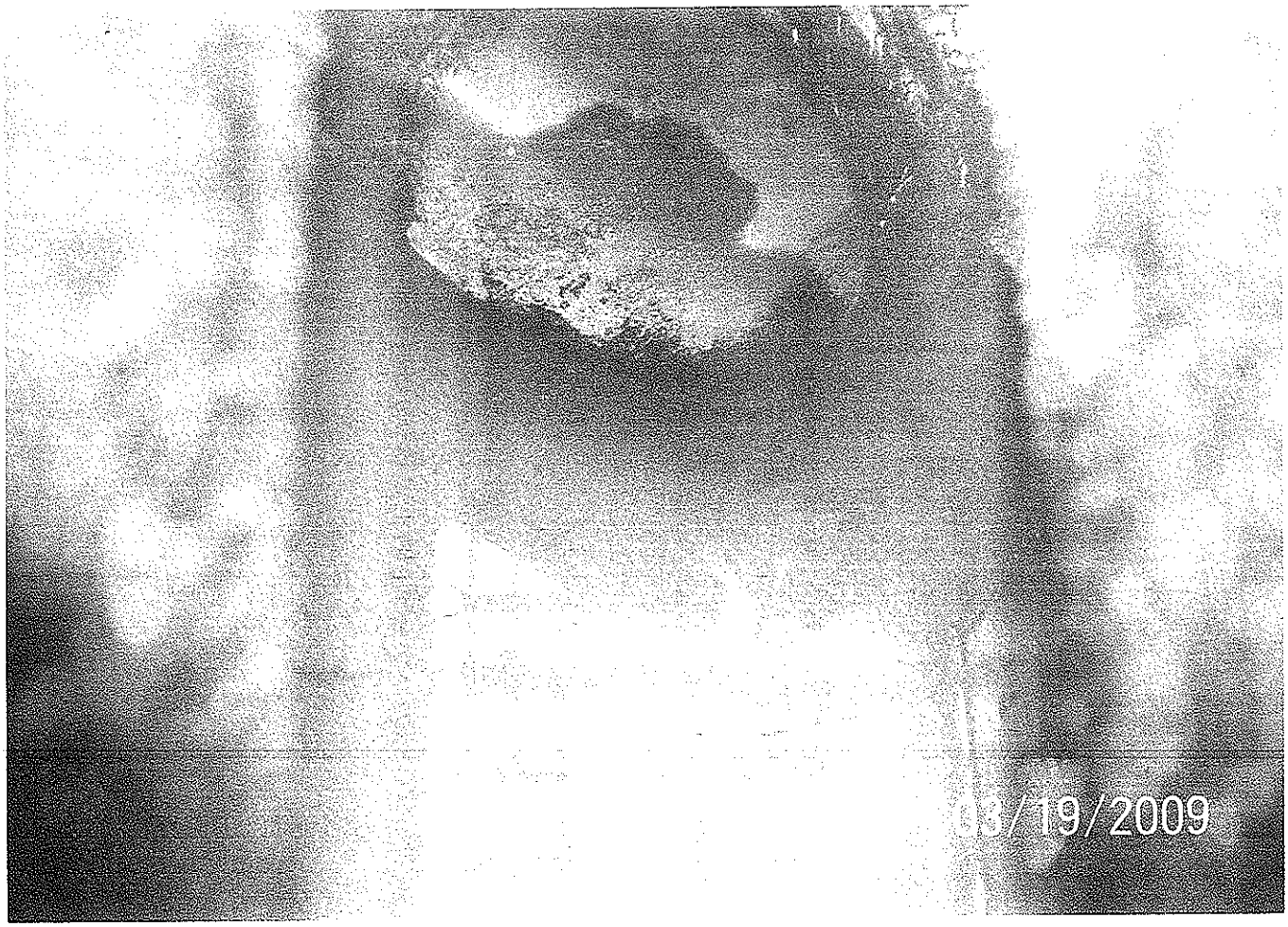
We have not lifted the stop work order yet.
Thanks,

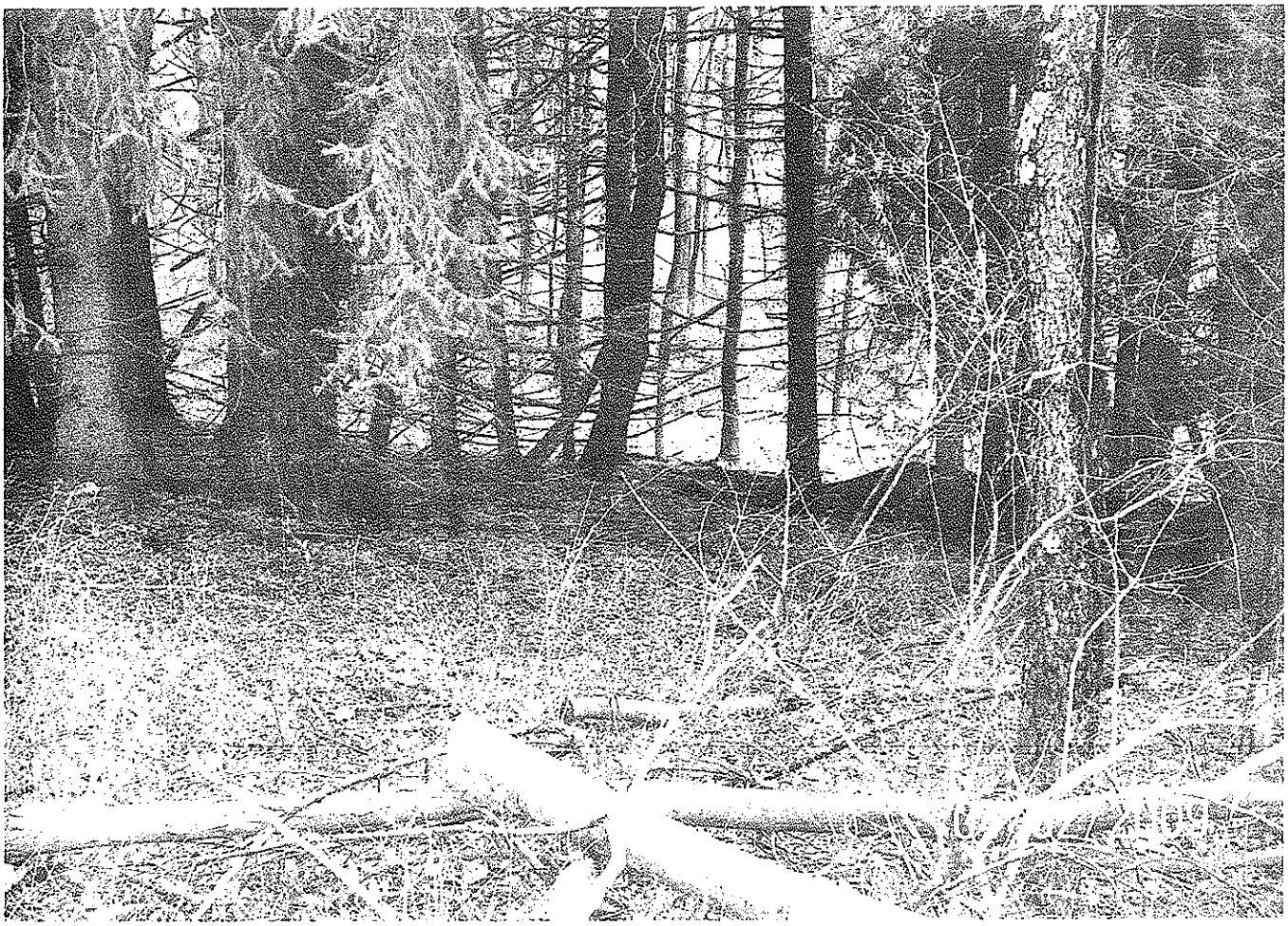
Wayne Cichon CPCA
1 Overocker Road
Poughkeepsie, NY 12603
845.485.3655

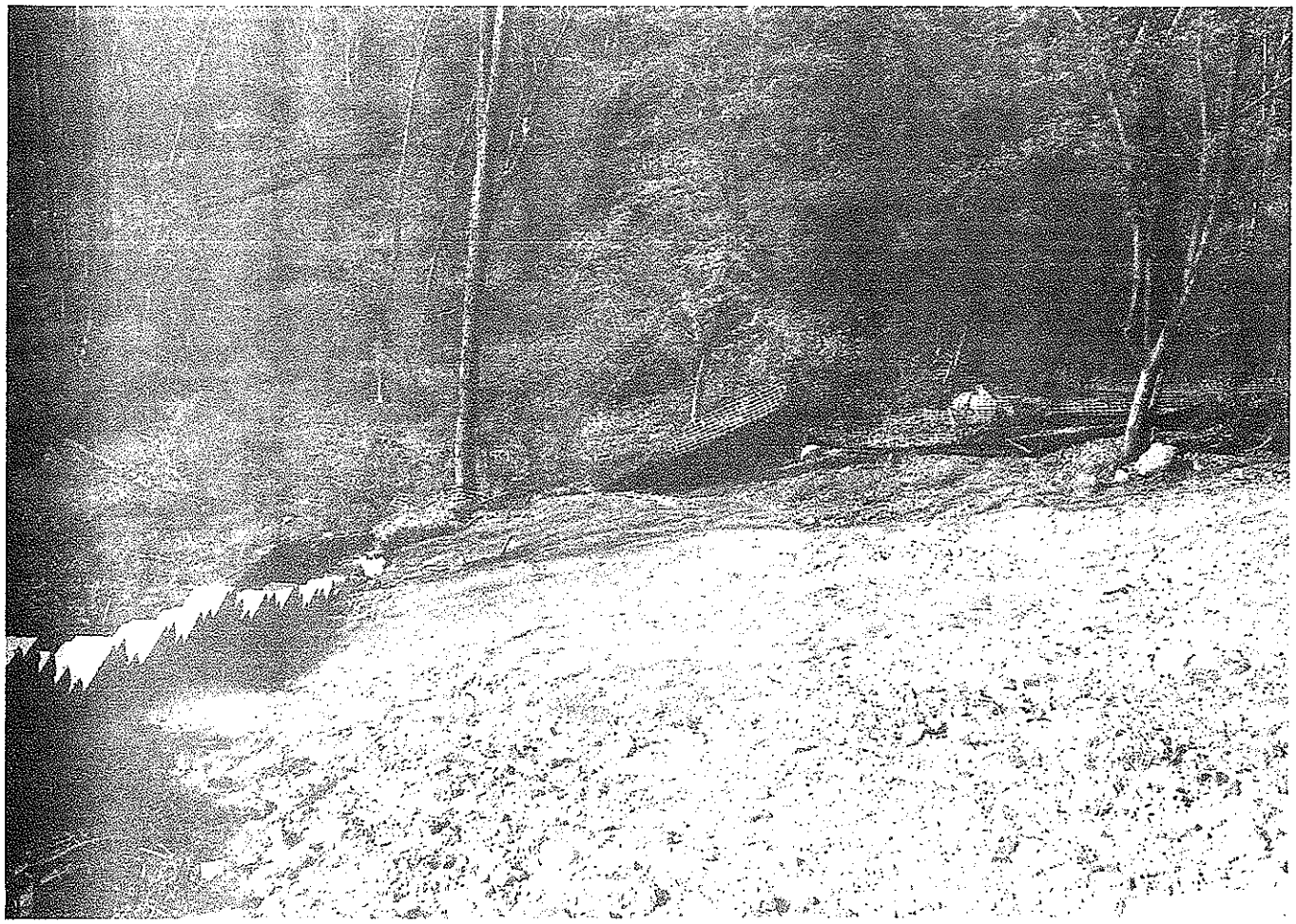
03/19/2009

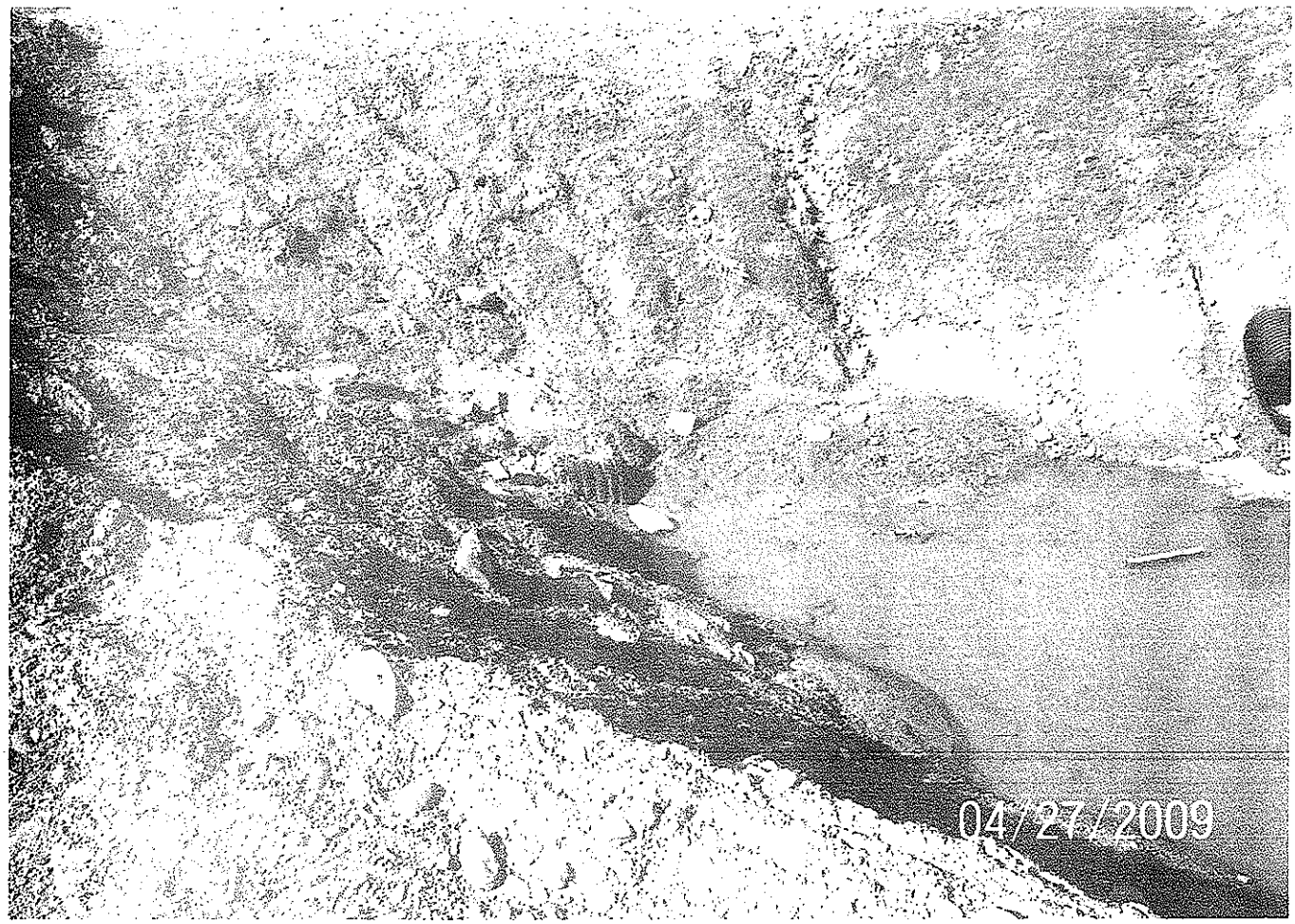





03/19/2009



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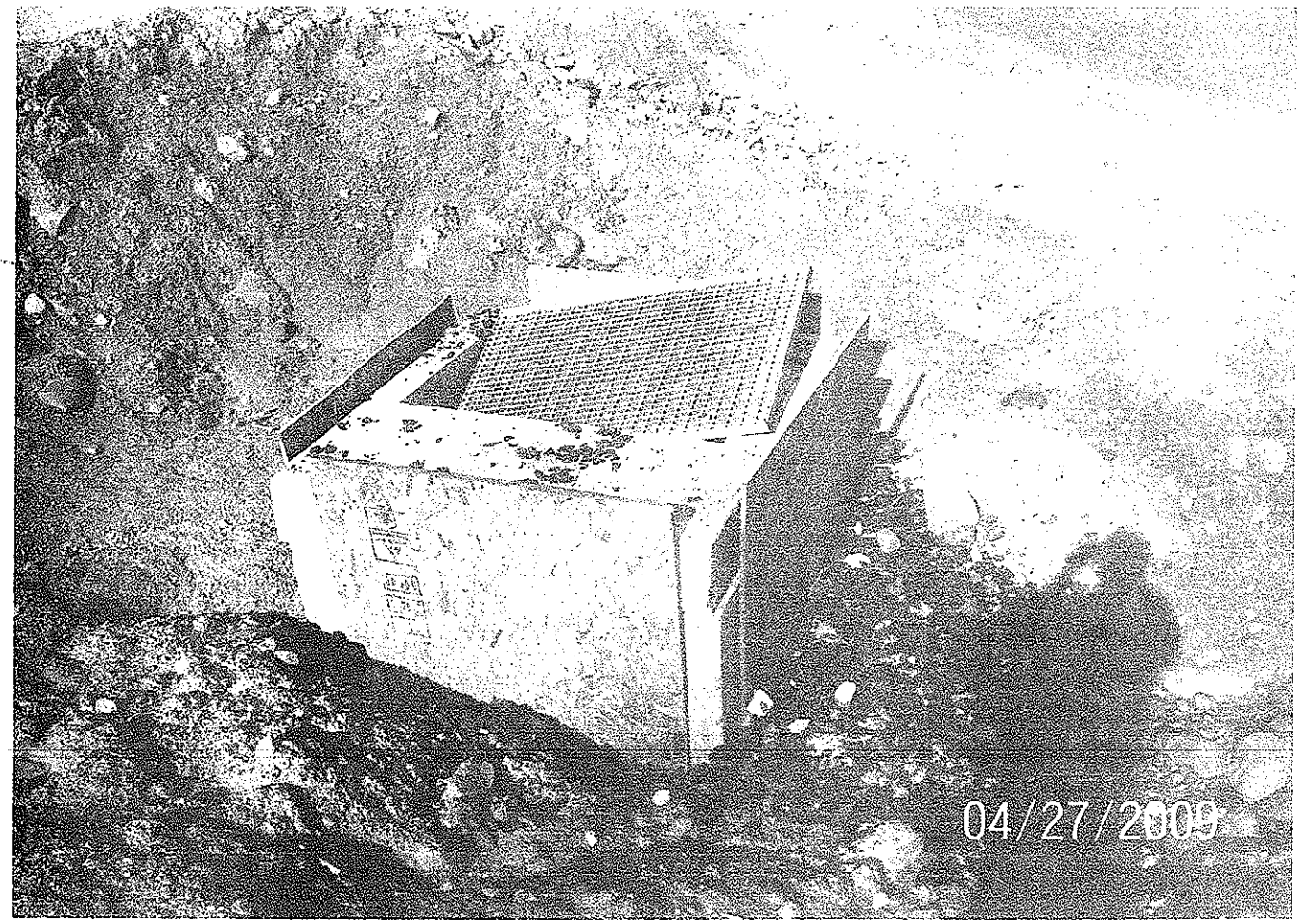
04/27/2009

APPENDIX Q

SWPPP REVIEW CHECKLIST

SWPPP CONTENTS CHECK LIST – Town of Poughkeepsie, Dutchess County, NY

Project: _____

Date: _____

By: _____

GENERAL INFORMATION:

Done	Description of Requirement	Remarks
	Owner/Operator name: _____ Legal Address: _____ Phone Number: _____ Email: _____ Contact Person: _____	
	Copy of signed Notice of Intent (NOI)	
	Signature of SWPPP Preparer on NOI (must be a Professional Engineer for SWPPPs with engineered practices)	
	Contractor (and subcontractors if applicable) certification statement(s) [Part III.A.5. of GP-0-08-001]	
	Site address and legal description (Tax ID) of site	
	Documentation from NYS Historic Preservation Office that the project has no effect on property that is listed or eligible for listing on the State or National Register of Historic Places	
	Vicinity Map, showing project boundary and receiving water(s)	
	MS4 SWPPP Acceptance Form (for project located in regulated MS4s)	

ESC/POST-CONSTRUCTION SMP:

Done	Description of Requirement	Included Page #	Remarks
	Erosion & Sediment Control (ESC) Component		
	Description, scope, location, type & size of project		
	Site map / construction drawings, including:		
	- Total site area;		

Done	Description of Requirement	Included Page #	Remarks
	- Show & label improvements;		
	- Existing and proposed topography (minimum 2-foot contours recommended);		
	- Location of perennial and intermittent streams;		
	- Boundaries of existing predominant vegetation and proposed limits of clearing;		
	- Location and boundaries of resource protection areas such as wetlands, lakes, ponds and other setbacks (e.g. stream buffers, drinking water well setbacks, septic setbacks);		
	- Location of existing and proposed roads, lot boundaries, buildings and other structures;		
	- Location and size of staging areas, equipment storage areas, borrow pits, waste areas and concrete washout areas;		
	- Existing and proposed utilities (e.g. water, sewer, electric) and easements;		
	- Location and flow paths of existing and proposed conveyance systems such as channels, swales, culverts and storm drains;		
	- Location of floodplain/floodway limits;		
	- Location of Steep Slopes;		
	- Location of Erodible Soils;		
	- Location and dimensions of proposed channel modifications, such as bridge or culvert crossing;		
	- Location, size, maintenance access and limits of disturbance of proposed temporary and permanent stormwater management and erosion and sediment control practices, including timing and duration of temporary practices;		

Done	Description of Requirement	Included Page #	Remarks
	- Plans stamped and signed by qualified professional (must be a licensed professional on plans with engineered practices).		
	Mapping and description of soils from USDA Soil Survey, including hydrologic soil group, as well as location of any site specific borehole investigations that may have been performed		
	Construction phasing plan & sequence of operations; Duration of Construction (from – to)		
	Description of temporary and permanent structural and vegetative measures for soil stabilization, runoff control and sediment control for each stage of the project from initial land clearing and grubbing to project close-out		
	Temporary and permanent soil stabilization plan		
	Site map/construction drawing(s) showing the specific locations, sizes, and lengths of each erosion and sediment control practice		
	Material specifications, dimensions, installation details and operation and maintenance requirements for erosion and sediment control practices, including the location and sizing calculations for any temporary sediment basins		
	Inspection and Maintenance schedule for the owner or operator, or the contractor(s) or subcontractor(s), to insure continuous and effective operation of the erosion and sediment control practices, in accordance with the *New York Standards and Specifications for Erosion and Sediment Control*		
	Pollution prevention measures used to control litter, chemicals and construction debris		
	Spill prevention and response		
	Description of structural practices to divert flow from exposed soils, store flows, or otherwise limit runoff and discharge of pollutants from exposed areas of the site to degree attainable		
	Identification of any design elements not in conformance with the *New York Standards and*		

Done	Description of Requirement	Included Page #	Remarks
	Specifications for Erosion and Sediment Control, reason for the deviation or alternative design, and demonstration that the alternative is equivalent to the technical standards		
	Post-construction stormwater management practice component (PCSMPC)		
	Design Manual Practice Identification		
	Design Manual Pretreatment Practice		
	Site map/construction drawing(s) showing specific location and size of each PCSMP		
	Dimensions, material specifications and installation details for each PCSMPC		
	Hydrologic and hydraulic analysis for all structural components of the stormwater management control system:		
	Watercourse Site Drains to (TMDL or 303d?)		
	Existing/Proposed Basin Areas		
	Boundary and acreage of upstream watershed		
	Existing/Proposed Impervious surface area		
	Existing/Proposed Curve Numbers		
	24 Hr Rainfall Events (1, 2, 10, 25, 100 year)		
	Existing/Proposed Times of Concentration		
	Existing/Proposed Peak Rates of Runoff		
	Water Quality Volume required/proposed		
	Channel Protection Volume required/proposed		
	Overbank Volume required/proposed		
	Extreme Flood Volume required/proposed		
	Demonstrated capacity of collection system with HGL for 25/100 year design storm		
	Identification of design elements not conforming with the *Design Manual,* reason for the deviation, and demonstration that the alternative is equivalent		

Done	Description of Requirement	Included Page #	Remarks
	to the technical standards		
	identification of any design criteria that are not required based on redevelopment criteria or waiver criteria included in the *Design Manual*		
	Required enhanced phosphorus removal standards?		
	Inspection and Maintenance Requirements		
	Owner/Operators Inspection Requirements noted (inspect the erosion and sediment controls identified in the SWPPP to ensure that they are being maintained in effective operating condition at all times).		
	Trained Individual's Name and Date of Certification.		
	Qualified Inspector Name and Credentials		
	Qualified Inspector's report contents:		
	- Date & time of inspection		
	- Name & title of inspector		
	- Weather & soil conditions		
	- Condition of all runoff points /discharges from the site		
	- Identification of ESC practices that need maintenance and/or repair		
	- Identification of ESC practices not properly installed		
	- Description & sketch of disturbed area		
	- Current phase of Post Construction Component		
	- Corrective actions to install/repair/replace		

Done	Description of Requirement	Included Page #	Remarks
	TERMINATION OF PERMIT COVERAGE		
	Owner/operator submits completed NOT		
	Notice of termination (NOT) Requirements (required for one or more of the following):		
	- Total project completion		
	- Planned shutdown with partial project completion		
	-New owner or operator		
	Qualified inspector performs final site inspection for completed post-construction stormwater practices and final stabilization		
	Owner/operator ensures one of the following:		
	- Post-construction stormwater management and any rights-of-way needed for O&M have been deeded to municipality		
	- Executed maintenance agreement with municipality in place		
	- Owner has deed restriction for O&M of privately-owned stormwater management practices		
	- O&M procedures in place for stormwater management practices owned by public/private institution		
	Reporting and Retention of Records		
	Owner maintains copies for 5 years after final stabilization of the site:		
	- Notice of Intent (NOI)		
	- NOI acknowledgment letter		
	- Stormwater Pollution Prevention Plan (SWPPP)		
	- MS4 - SWPPP acceptance form		

Done	Description of Requirement	Included Page #	Remarks
	- All inspection reports		
	- Notice of Termination (NOT)		

APPENDIX R

INVENTORY OF ACTIVE CONSTRUCTION SITES

Town of Poughkeepsie
Compliance Inspections
MS4 Audit Summary

Year #	Timeframe	No. of Sites	Avg. No. of Inspections per month	Total Inspections per year
3	2005-2006	16	16	192
4	2006-2007	16	16	192
5	2007-2008	13	12	144
6	2008-2009	13	11	132
7	2009-2010	12	11	132

APPENDIX S

STORMWATER MAINTENANCE PRACTICE
LONG-TERM OPERATION AND MAINTENANCE

TOWN OF POUGHKEEPSIE ENGINEERING DEPARTMENT

STORMWATER MANAGEMENT PRACTICE LONG TERM OPERATION AND MAINTENANCE PLAN

JANUARY 2007

DRAFT

PURPOSE 1
PUBLICLY OWNED OR MAINTAINED PRACTICES 2
Post-Construction Stormwater Management Facilities 2
Maintenance and Inspection Responsibilities 4
Funding Mechanism 1
Attachments 1
PRIVATELY OWNED OR MAINTAINED PRACTICES 1
Post Construction Maintenance Plan Requirements 2
Maintenance Compliance Inspections 3
KEY RESOURCES 5
CRITICAL FOLLOW-UP 6

PURPOSE

It is the intent of this plan to document the existing policies and procedures implemented by the Town of Poughkeepsie Engineering and Highway Departments to further the following goals:

- To reduce and prevent degradation of the structural integrity, retention or detention capacity, and pollutant removal capabilities of privately and publicly owned stormwater management practices in the Town of Poughkeepsie
- To identify minimum requirements for the development of long term operation and maintenance plans of stormwater facilities
- To demonstrate responsible stewardship of the natural environment by the Town of Poughkeepsie Highway and Engineering Departments
- To satisfy the requirements of the Stormwater discharge Management Laws of the Town of Poughkeepsie
- To satisfy the requirements of the SPDES General Permit for stormwater discharges from Municipal Separate Stormwater Systems (MS4's)

PUBLICLY OWNED OR MAINTAINED PRACTICES

The following Post Construction Maintenance Plan which shall be executed by the Town of Poughkeepsie Engineering and Highway Departments to meet the goals stated above:

Acceptability of Stormwater Management Practices

Ponds and Wetlands

The maintenance requirements of the following practices are generally acceptable by the town of Poughkeepsie given that the design and construction meet the minimum technical requirements of the stormwater SPDES general permit and code of the Town of Poughkeepsie

- P-1 Micropool Extended Detention Pond
- P-2 Wet Pond
- P-3 Wet Extended Detention Pond
- P-4 Multiple Pond System
- P-5 Pocket Pond

The maintenance requirements of Stormwater Wetlands are to be considered on a case by case basis and their acceptability will be determined by the Town Engineer given that the design and construction meet the minimum technical and performance requirements of the stormwater SPDES general permit and code of the Town of Poughkeepsie. Consideration of vegetative harvesting, regulatory requirements and maintenance of wetlands planting species should be taken into account prior to acceptance of long term responsibility.

- W-1 Shallow Wetland
- W-2 ED Shallow Wetland
- W-3 Pond/Wetland System
- W-4 Pocket Wetland

Infiltration Practices

The maintenance requirements of the following practices are generally unacceptable by the Town of Poughkeepsie for acceptance of long term maintenance responsibility.

- I-1 Infiltration Trench
- I-2 Infiltration Basin
- I-3 Dry Well

Stormwater Filter Practices

The maintenance requirements of the following practices are generally unacceptable by the Town of Poughkeepsie for acceptance of long term maintenance responsibility.

- F-1 Surface Sand Filter
- F-2 Underground Sand Filter
- F-3 Perimeter Sand Filter

- F-4 Organic Filter

The maintenance requirements of Bioretention cells are to be considered on a case by case basis and their acceptability will be determined by the Town Engineer given that the design and construction meet the minimum technical and performance requirements of the stormwater SPDES general permit and code of the Town of Poughkeepsie.

- F-5 Bioretention

Open Channel Practices

The maintenance requirements of the following practices are generally acceptable by the town of Poughkeepsie given that the design and construction meet the minimum technical requirements of the stormwater SPDES general permit and code of the Town of Poughkeepsie

- O-1 Dry Swale
- O-2 Wet Swale

Pretreatment or Supplemental Practices

The maintenance requirements of the following practices are generally acceptable by the town of Poughkeepsie given that the design and construction meet the minimum technical requirements of the stormwater SPDES general permit and code of the Town of Poughkeepsie

The maintenance requirements of the following practices are generally unacceptable by the Town of Poughkeepsie for acceptance of long term maintenance responsibility.

- On-line storage in the storm drain network
- Catch basin inserts
- Underground vaults (designed for flood control)

The maintenance requirements of the following practices are generally acceptable by the town of Poughkeepsie given that the design and construction meet the minimum technical requirements of the stormwater SPDES general permit and code of the Town of Poughkeepsie

- Grass channels (includes ditches designed primarily for conveyance as well as modified practices that can achieve some pollutant removal)
- Filter strips
- Dry ponds

The maintenance requirements of the following practices are to be considered on a case by case basis and their acceptability will be determined by the Town Engineer given that the design and construction meet the minimum technical and performance requirements of the stormwater SPDES general permit and code of the Town of Poughkeepsie.

- Porous pavement
- Deep sump catch basins
- Oil/grit separators and hydrodynamic structures

Proprietary Devices

The maintenance requirements of proprietary devices are to be considered on a case by case basis and their acceptability will be determined by the Town Engineer given that the design and construction meet the minimum technical and performance requirements of the stormwater SPDES general permit and code of the Town of Poughkeepsie

Maintenance and Inspection Responsibilities

Inspection Schedule

Stormwater management practices (SMPs) and facilities shall be visually inspected once at a minimum during the first 6 months of operation to determine proper function and make use of any warranties. Inspections during the first year of operation shall occur following any 24 hours storm events exceeding 2.8 inches. After the first year of operation Stormwater Management Practices shall be visually inspected on an annual basis at a minimum.

SMP's and facilities shall be visually inspected and inspection records retained by the Town Engineer. At a minimum the records shall indicate that the maintenance items detailed in Appendix G of "The New York State Stormwater Design Manual" have been inspected and an indication of satisfactory or unsatisfactory performance of each item.

Vegetation Management

Grass and Turf Areas

Mowing should occur a minimum of twice per year; however, more frequent mowing may be needed if the SMP is to be used for recreational purposes or is in a residential area. Most grass is hardiest when maintained as an upland meadow, cut no shorter than 6 to 8 inches. Grass should not be cut below 4 inches, for if the grass is routinely cut too short filter strip performance may be impaired.

Typical mowing areas include embankments, side slopes, perimeter areas, and access areas. Grass clippings should be gathered and removed or directed away from the SMP so that clogging of soil or inlet pipes can be avoided.

Other maintenance actions include periodic fertilizing, de-thatching, soil conditioning and re-seeding. Extensive application of fertilizers and pesticides to promote growth should be discouraged since these substances may be picked up in runoff and have an adverse effect on water quality.

Unwanted Vegetation

Unwanted vegetation on embankments requires complete removal to ensure that it does not return. Roots should be removed from the embankment to prevent destabilization due to their decomposition.

Buffer Maintenance

Vegetative buffer areas or filter strips will remove sediment and other contaminants in stormwater runoff prior to its discharge to the SMP. Maintenance costs are sharply reduced for well-established "natural" filter strips. For grass filter strips, vegetative growth should be vigorous and dense and bare spots vegetated as needed.

Erosion Control

Soil may slump and erode from buffer areas surrounding a SMP, side-slopes, the emergency spillway, and from the impoundment or embankment. Deposition of sediment in infiltration and filtration SMPs can adversely affect the functionality of the SMP by clogging the media and creating an impermeable layer. When this occurs, the problem area shall be re-graded and vegetation reestablished to stabilize the soil.

Protective rip-rap that has become dislodged or shifted due to stormwater runoff flows shall be replaced or relocated to design specifications .

Vegetation Harvesting

In stormwater wetlands, vegetation harvesting may be required before winter die-off to prevent nutrients from reentering the water column and being flushed downstream. If identified by the design professional selected plant materials shall be tagged for removal by a qualified professional, then cut and hauled to an upland disposal location.

Debris and Litter Removal

Grass clippings, leaves, soil and trash are often dumped directly into storm drain inlets or stormwater management practices. Any of these items can lead to clogging, and organic materials release bacteria, oxygen consuming materials, and nutrients.

Litter and debris should be removed during each mowing and as required after regular inspections. Preventive maintenance includes removal of debris from pond bottoms, embankments and side slopes, perimeter areas, and access areas that can lead to clogging, as well as debris jams at outlet structures and trash racks.

Sediment Removal

Cleanout frequency for sediment accumulation is a function of storage capacity, recharge characteristics, volume of inflow, and sediment load. **An estimate of the required cleanout frequency should be identified by the design professional prior to issuance**

of any approvals or permits by the Planning, Building, or Zoning departments for land development activities. Periodic removal of sediment from a pre-treatment forebay or chamber is a cost-effective way of extending the clean-out cycle. **Maintenance access to SMP fore-bays or pre-treatment chambers should be identified by the design professional prior to issuance of any approvals or permits by the Planning, Building, or Zoning departments for land development activities.**

Sediment removal from the whole SMP is typically conducted with earthmoving equipment, hydraulic dredging methods, or vacuum trucks (in the case of underground facilities). This process is costly due to mobilization costs, dewatering, and transport of sediment. Additionally, sediment removal could involve considerable disruption to the vegetative community and necessitate replanting.

Prior to conducting or overseeing dredging or sediment removal activities the following NYSDEC Region 3 offices should be contacted to determine permit and regulatory requirements:

- Solid and Hazardous Materials
  21 South Putt Corners Road
  New Paltz, NY 12561-1696
  Phone (845) 256-3134
  Fax (845) 255-3414
- Environmental Permits
  21 South Putt Corners Road
  New Paltz, NY 12561-1696
  Phone (845) 256-3054
  Fax (845) 255-3414

Most accumulated sediment in SMPs will not constitute a hazardous or toxic waste and the sediment can be safely disposed of using conventional techniques such as for fill, land application, or landfill material. Sediment accumulated in practices with stormwater runoff contributed by activities and land uses designated as "hotspots" in "The New York State Stormwater Design Manual" may require testing and be subject to limited disposal options.

Mechanical and Structural Maintenance

Inlet/outlet devices, standpipes, and riser structures will deteriorate with time and may have to be replaced. Indications are that concrete barrels and risers will last from 50 to 75 years or longer, while corrugated steel pipes and standpipes may have a useful life of from 15 to 25 years.

Indications of seepage, settlement, and scouring of embankments shall be addressed and structural repairs conducted as identified. These and other problems can threaten the structural integrity of the embankment, possibly leading to dam failure.

Mechanical components must be maintained according to manufacturer specifications which should be identified by the design engineer. Common signs of mechanical problems include rust and corrosion on metal components, loose or missing parts, and leaking valves. Early identification and repair maximizes the life of mechanical parts.

This maintenance may be out of the range of landscaping or maintenance staff and require a contractor.

Funding Mechanism

Funding for the long term inspection and maintenance of post construction practices is available annually through the town wide stormwater district

Attachments

PRIVATELY OWNED OR MAINTAINED PRACTICES

The NYS *SPDES General Permit for Stormwater Discharges from Construction Activity* (Permit No. GP-02-01) requires that long-term post-construction maintenance of privately owned or maintained stormwater management practices and facilities be ensured through legal, financial, structural, and managerial mechanisms.

Post construction maintenance plans are to be provided to and approved by the town engineer prior to issuance of any approvals or permits by the Planning, Building, or Zoning departments for land development activities proposing privately owned or maintained stormwater management practices.

Post construction "as-built" plans are required to be provided to and approved by the town engineer as a condition of approval prior to issuance of any approvals or permits by the Planning, Building, or Zoning departments for land development activities proposing privately owned or maintained stormwater management practices.

Post Construction Maintenance Plan Requirements

Post construction maintenance plans of privately owned Stormwater Management Practices and facilities are to address at a minimum:

Operation and Maintenance Information

- site location
- property owner
- property manager

Design and Construction Information

- permitting authority
- design engineer
- general contractor
- proprietary device manufactures
- emergency contacts

Maintenance and Inspection Responsibilities

- Inspector
- long term maintenance service providers (landcaper, site engineers, site contractor)
- Inspection schedule
- Typical anticipated maintenance schedule

Funding Mechanisms

- the means by which the responsible party shall ensure long term inspection and maintenance

Post-Construction Stormwater Management Facilities

- A site map showing the location of each stormwater management practice
- A list of the facilities including a numerical identifier or name that corresponds to the site plans, the type of stormwater management practice (e.g. bioretention, stormwater pond with extended detention, underground sand filter), a description of the location on the site, and the contributing drainage area characteristics
- a list of manuals, warranties, or other practice specific information

Attachments

Attachments to the maintenance plan contain relevant, detailed support information to assist engineers, contractors or inspectors with maintenance activities. Many of the items on the following list of attachments will be prepared during design and permitting. The *NYS SPDES General Permit for Stormwater Discharges from Construction Activity* (Part III. D. 2. b.) includes a number of these items on the list of minimum requirements.

- **As-built plans** for all stormwater facilities. If no as-built is available, include the construction drawings. This should include a location map and should clearly indicate access routes to all elements of the facilities.
- **Final landscaping plans** and specifications. Landscaping plans showing planting zones and specifications. Include any specifications on vegetation maintenance as well as any warranty information regarding plantings.
- **Approved design calculations** and drainage areas map for all stormwater facilities. While not needed for routine maintenance and inspection, these calculations will reduce the time and cost for major repairs when given to the designer or contractor completing repairs.
- **Specifications** for potential repair items. These specifications can be employed when contracting with a landscaping company for routine maintenance or with a construction contractor for major repairs.
- **Operation, Maintenance, and Inspection Checklist** to be used during ongoing post- construction inspection that lists frequencies for maintenance and inspection items. This should be adapted from Appendix G of the *New York State Stormwater Management Design Manual*.
- **Manuals and warranties** for proprietary products and mechanical components such as valves, pumps, and aerators.
- **Bid specifications** or other document that includes a copy of construction permits, particularly if there are any performance requirements that extend beyond the transfer of ownership.
- **Easements,** if required by the local jurisdiction, to provide municipal inspectors and the public works department with access to the site.
- **Homeowner's Association legal documents** including
    - a declaration of liens, covenants, easements and deed restrictions as filed with the county clerk
    - an offering plan that contains all legal documentation regarding the association including a list of all services to be provided as filed with the State Attorney General.
- **Maintenance agreements** in their final, recorded form.
- **Detailed cost estimate for maintenance** on an annual basis for each SMP.
- **Blank Maintenance and Tracking log** or description of record-keeping requirements. The municipality or county may require a specific format for the submittal of inspection results and tracking.

Maintenance Compliance Inspections

Stormwater management practices (SMPs) and facilities inspection records shall be inspected once at a minimum during the first 6 months of operation to determine compliance with maintenance requirements. Compliance inspections during the first year of operation shall occur following any 24 hours storm events exceeding 2.8 inches. After the first year of operation Stormwater Management Practices shall be visually inspected for compliance on an bi-annual (once every two years) basis at a minimum.

SMP's and facilities shall be visually inspected and inspection records retained by the parties identified as responsible for long term maintenance. At a minimum the records shall indicate that the maintenance items detailed in Appendix G of "The New York State Stormwater Design Manual" have been inspected and an indication of satisfactory or unsatisfactory performance of each item.

KEY RESOURCES

The following key resources have been identified as available to the Town of Poughkeepsie Highway Department in meeting its pollution prevention goals.

- NYSDEC
  - **NYS MANAGEMENT PRACTICE CATALOGS FOR NONPOINT SOURCE POLLUTION PREVENTION** (CALL 518-402-8179 FOR ADDITIONAL COPIES & UPDATES)
  - **MUNICIAPAL POLLUTION PREVENTION AND GOOD HOUSEKEEPING PROGRAM ASSISTANCE** (http://www.dec.state.ny.us)
  - **New York State - Pollution Prevention Guidance for Small Business and Local Government** (http://www.dec.state.ny.us/website/ppu/eppgsblg.pdf)
  - **New York State Bulk Storage Program Guidance** (http://www.dec.state.ny.us/website/der/bulkstor/guidance)
- USEPA
  - **Pollution Prevention/ Good Housekeeping for Municipal Operations** (http://cfpub.epa.gov/npdes/stormwater/menuofbmps/index.cfm)
- NYSDOT
  - **NYSDOT Environmental Procedures Manual** (http://www.dot.state.ny.us/eab/epm.html)
- FEDERAL HIGHWAY ADMINISTRATION (FHWA)
  - **Manual of Practice for an Effective Anti-icing Program** (http://www.fhwa.dot.gov/reports/mopeap/eapcov.htm)
- CENTER FOR WATERSHED PROTECTION
  - **Urban Subwatershed Restoration Manual Series** http://www.cwp.org
- CALIFORNIA STORMWATER QUALITY ASSOCIATION
  - **Best Management Practice Handbook – Municipal** (http://www.cabmphandbooks.com/Municipal.asp)
- TRANSPORTATION ASSOCIATION OF CANADA (TAC)
  - **Synthesis of Best Practices-Road Salt Maintenance** (http://tac-atc.ca/english/informationservices/readingroom.cfm)
- OTHER
  - **New York State County Highway Superintendents Association (NYSCHSA)** http://www.countyhwys.org
  - **Guidance for Highway Drainage and Unpaved Road Maintenance** http://www.mass.gov/dep/images/dirtroad.pdf
  - **American Public Works Association (APWA)** (http://www.apwa.net/ResourceCenter/)
  - **Cornell Local Roads Program (CLRP)** (http://www.clrp.cornell.edu)
  - **Association of Towns of the State of New York** (http://www.nytowns.org)
  - **New York State Conference of Mayors and Municipal Officials (NYCOM)** http://www.nycom.org
  - **New York State Association of Counties (NYSAC)** http://www.nysac.org

CRITICAL FOLLOW-UP

APPENDIX T

SUMMARY OF MUNICIPAL TRAINING

SUMMARY OF DCSWCD
MUNICIPAL TRAINING
YEAR 7 2009-2010

Planning/Zoning	4
Building	2
Engineering	1
Town Highway	1
Town Water	15
Town Sewer	9
Total	32

78 Sand Dock Road
Poughkeepsie, NY 12601
Phone: (845) 462 - 2280
Fax: (845) 463 - 1520

TOWN OF POUGHKEEPSIE
WPCD
ARLINGTON WWTP

Fax

To: Joe Dennis

From: Louie

Fax: 471-7901

Pages: (INCLUDING COVER) 2

Phone:

Date: 4-27-10

Re:

ATTN:

☐ Urgent ☐ For Review ☐ Please Comment ☐ Please Reply ☐ Please Recycle

Joe,

THE NAMES THAT ARE CHECKED ARE THE ONES THAT SAW THE VIDEO.

LOUIE

LIST OF EMPLOYEES

PAY PERIOD #

AXTMANN, MARIANNE

ALICKI, EDWARD

BALLARD, KEITH

BARANICK, LOUISE

BROWN, PATRICK

BURGIN, WILLIAM

CRISPI, CARMEN

DAVIES, ALBERT

EICHLER, ROBERT

ENSON, JASON

GILROY, JOSEPH

GUNN, GREGORY

HOOVER, WILLIAM

LUCAS, CHARLES

ERS, JOSEPH

PAROLI, MARCUS

PETTIT, LESLIE

PLACE, EDWARD

PLASS, WILLIAM

ODESZEDLIK, LINDA

RAFFAELE, MICHAEL

EILLY, JAMES

ROBINSON, MICHELLE

ERINO,MICHAEL

ORTARELLA, PAUL

VANTASSEL, ADAM

AREMA, GORDON

II, FRANCO

Dutchess County Soil and Water Conservation District

Presents

Contractor/Developer Trained Individual/ Qualified Inspector

Required Training

2 Dates to choose from:

January 27, 2010 OR February 11, 2010

(9:00am – 1:00pm each day)

Under the NYS Department of Environmental Conservation's Stormwater Permit GP-0-08-001, all developers, contractors and subcontractors must identify at least one *trained individual* from their company that will be responsible for implementation of the SWPPP, and have at least one *trained individual* on site on a daily basis when soil disturbance activities are being performed. Also, developers must have a *qualified inspector* conduct regular site inspections in accordance with GP-0-08-001.
Qualified inspectors* and *trained individuals* must have 4 hours of training in the principles and practices of erosion and sediment control endorsed by NYS DEC, SWCD, or CPESC Inc. Training is good for 3 years. Training is **not required for CPESC, LA, and PE certified persons.

LOCATION: Farm & Home Center, 2715 Route 44 Millbrook, NY 12545

COST: $75 per person, *non-refundable*

Pre-payment required: Please make checks payable to Dutchess County Soil and Water Conservation District. We do not accept credit cards.

Registration Deadlines: January 20th (for the January 27th session)
February 5th (for the February 11th session)

Also, a "Trainee Form for 4-Hour ESC Training" is enclosed. A Form for each trainee must be completed and returned with your pre-payment.

Registration begins at 8:30am; **Photo ID Required to Register**
Space is limited and PRE-REGISTRATION IS REQUIRED.

PRE-REGISTRATION INFORMATION:
Contact Jennifer Lusk to register; Email: jennifer.lusk@ny.nacdnet.net or call 845-677-8011 x 3
Mail completed forms to DCSWCD, 2715 Route 44 Suite3, Millbrook, NY 12545

Fill out the tear-off portion below and include it with your training form and payment.

Please check off which session you will be attending and fill out the requested information:

☐ January 27, 2010

OR

☐ February 11, 2010

Name: _____

Company: _____

Email: _____

Phone #: _____

APPENDIX U

INVENTORY OF POST CONSTRUCTION STORMWATER PRACTICES

Project Number	Project Name	Type	Approx. Start Date	Approx. End Date	Watershed/ Outfall	Storm Water Facilities	Maintenance Schedule
974006.00	Stratford Farms Subdivision (WWTP, Phase 1 and 4)	Resid. Subdiv.	January-04	December-07	Wappingers Creek	1 Detention Pond:	
						Catch Basins and Stormwater Piping:	--CB sumps shall be cleaned out at least twice per year. Discharge piping shall be inspected periodically and repaired and/or cleaned as necessary.
						5 Bioretention Filters (BRFs # 1 to 5):	---Shall be inspected on a semi-annual basis for the first year and then annual inspections.
						1 Micropool Extended Detention Pond (SWTP-1):	Spillway trash racks will be inspected during each site maintenance event. Sediment in the forebay shall be removed every 5 to 6 years or after 50 % of total forebay capacity has been lost.
						Oil/Grit Separators and Water Quality Inlets (WQI's) - 2:	---Shall be regularly checked after every major storm event and cleaned at least twice per year.
99403.00	Wiltse Estates Subdivision	Resid. Subdiv.	September-04	December-06	Casperkill Creek / Wappingers Creek	---Pocket Ponds # 1 and # 2 with Forebays; Micropool Extended Detention Ponds - # 3, 4 and 5 with Forebays;	**Catch Basins:** Should be inspected annually and after major storm events (3" of rainfall/24 hrs.); Debris and litter should be removed when 10 % of the available capacity has been used; Sediment will have to be removed either manually or by vacuum truck; Structures should be repaired or replaced as needed. **Stormwater Ponds:** Maintenance shall be in accordance with Appendix G of the NYS Stormwater Management Design Manual; Sediment removal from forebay every 5 to 6 years or when 50 % full; Erosion shall be repaired as necessary; Vegetation on pond side slopes and floor shall be planted in accordance with Appendix H of the NYS stormwater Management Design Manual and shall be maintained in dense and vigorous condition for the period of 1 year after completion of the construction.
99417.00	Gables Phase IV	Resid. Subdiv.	Ongoing			Retention Basin with Forebay and Detention Basin.	**Retention basin** shall be cleaned out when the sediment level reaches 174.3. The **Forebay** shall be cleaned when the sediment level reaches 172.9 and the **Detention Basin** shall be cleaned out when the sediment level reaches 179.1. A wooden stake shall be placed in each basin and forebay including the clean out elevation. **Stabilized Construction Entrance -** shall be cleaned daily and replaced if necessary. **Sediment Control Barrier (silt fence) -** shall be inspected weekly, monthly and after rainfall and cleaned/replaced if necessary. **Stone Check Dams -** shall be inspected weekly, monthly and after rainfall and replaced if needed. **Temporary Sediment Trap -** shall be inspected weekly, monthly and after rainfall and cleaned if necessary. **Storm Drain Inlet Protection -** shall be inspected weekly, monthly and after rainfall and replaced if necessary. **Retention Basin -** shall be inspected monthly and after rainfall and cleaned if needed. **Catch Basins Sumps -** shall be cleaned when sediment depth reaches a maximum of 1/2 the available depth. The **Basins** shall be kept free from debris and sediment. Periodic measurements of the sediment depth shall be made. Sediment shall be excavated from the basins when the sediment depth reaches 50% of its volume. The side slopes of the basins shall be inspected for cracks, rodents, and undesireable vegetative growth. The bottom of the basin shall be inspected for scouring. Repairs shall be made as necessary to the side slopes and bottom of the basin. The spillway for the retention basin shall be cleaned of obstructions and inspected for structural integrity periodically.
200402.00	Cider Mill S/D	Resid. Subdiv.			Casperkill Creek	Swale # 1 and Swale # 2	Travelway to be swept once a year in the Spring

200407.00	Spring Hill Est	Resid. Subdiv.	--	December-04	Wappingers Creek	Pocket pond; Swales # 1, 2, 3, 4, 5, and proposed swale; Drywells and Yard Drains.	**Yard Drains/Catch Basins:** Should be kept free of any siltation, sedimentation and organic debris, bi-weekly inspection during construction, annual inspection after construction, sediment should be removed when approx. 1/2 of the sump depth is filled w/sediment. **Drywells:** Inlet grates shall be covered untill all upstream disturbed areas have been stabilized. Should drywell clogging occur at any time, all sediment shall be removed from drywell. **Storm Sewer Pipe:** Culvert pipes should be inspected bi-annually. The piping should be kept free of siltation and inorganic or organic loading. **Swales:** Should be kept free from organic or inorganic debris. Grass shall be mowed to maintain 4 to 6 inches height.Sediment accumulations shall be removed when the channel has lost 25% of its ponding capacity. Check dams shall be replaced when clogging occurs. Pocket Pond: During construction, sediment from forebay basin shall be removed when 1 foot of sediment has accumulated. Forebay basin shall be completly cleaned out when all upstream areas have been stabilized. Sediments from the forebays should be removed every 2 to 3 years or after 50% of the forebay capacity has been lost. Sediment from the permanent pool shall be removed carefully as necessary.
200408.00	Boardman Estates f/k/a Kreisberg/Ritter	Resid. Subdiv.	--	December-04	Casperkill Creek	Catch Basins # 1, 2, 3, 4 and 5; Concrete Stormwater Chamber.	Catch basins shall be regularly inspected for sediment accumulations. These sumps shall be cleaned when sediment depth reaches a maximum of 1/2 the available sump depth.
201404.01	Forest Glen - Construction	Resid. Subdiv.	--	December-04	Wappingers Creek	Detention Pond - 1 and Detention Pond - 2; Pond - 4 & Pond - 6; Dry wells.	**Inspection:** Infiltration basins/trench drains shall be inspected periodically for the first three months after construction, and then on annual basis thereafter for: settlement of embankment, erosion/rilling, seepage through embankment, and vegetative growth on embankment. **Maintenance:** Mowing at least twice annually to prevent heavy vegetation in the infiltration basin; Debris and litter removal during each mowing operation; Trapped sediment within basin shall be removed when it has accumulated to a depth of five inches, and/or the trench drain cannot function normally to prevent standing water.
201405.00	Woods at Cliffdale	Resid. Subdiv.	September-09		Casperkill Creek	Rain Gardens on Individual Lots	Inspections are to be performed quarterly or after any rain event of 3.5 inches or move (two year storm). Any repair noted in the inspections are to be performed in a timely fashion. Diversion swales are to be kept free of grass clippings or debris. The swales are to be cleaned when they become 50% filled with sediment. The common drive road surface is to be swept once a year in the Spring. Dirt is to be disposed of offsite according to local, state and federal regulations. The rain gardens are to be kept free of debris and have a sturdy growth.
201423.01	St. Francis Linear Accelerator Oncology	Institutional	July-04	December-04			
202401.00	Spring Apartments	Multi Family	--	December-04			
202410.00	Inwood Lake Condos	Resid. Subdiv.	Ongoing	Unknown	Fallkill Creek	Catch Basins, Yard Drains, Curtain Drains, Dry Wells, 2 Stormceptors, Inwood Lake as a Detention Pond, Water Quality Inlet Structures.	**During Construction:-** *Silt Fence Barrier:* Should be inspected weekly and after every storm event. Should be Cleaned/Replaced as needed. *Straw Bales:* Should be inspected weekly and after each storm event. Should be Replaced as needed. *Vegetative Establishment:* Should be inspected weekly and after each rainfall event. Watering/Re-seeding/Re-mulching as necessary. *Inlet Protection:* Should be inspected weekly and after each storm event. Shall be Cleaned/Repaired/Replaced as needed. *Stabilized Construction Entrance:* Should be inspected daily and after rainfall. Should be Cleaned/Replace Stone and Fabric as necessary. *Dust Control:* Should be inspected daily and after rainfall. Mulching/Spraying water as needed. **Post - Construction:-** All catch basins shall be regularly inspected for sediment accumulations and shall be cleaned when sediment depth reaches a maximum of 1/2 the available sump depth. Silt or sediment accumulations will be removed from the first flush basin, if required. All drainage areas damaged by erosion will be repaired and re-stabilized with vegetation and or appropriately sized riprap. All silt or sediment accumulations, litter and debris, will be cleaned from the stormceptor. Any slopes or embankments that have cracks and damaged vegetation will be repaired and reseeded as necessary.
202413.00	Sheafe Woods Subdivision	Resid. Subdiv.	--	Unknown	Wappingers Creek	Detention Basin	The drainage swales, culverts, and storm water basin shall be maintained and left open and unobstructed for storm drainage purposes.

202419.00	Rala Self Storage Facility	Comm. Devel.	July-04	December-05	Casperkill Creek	Eastern Below Ground Detention Basin (EUB), Northern Below Ground Detention Basin (NUB), Catch Basins, Roof Drains, Diversion Manholes, Perforated Underdrain Pipes, Curtain Drain, Stormgate, Stormfilter, etc.	**Storm Filter (Water Quality Structure):** Requires regular maintenance (Refer to operations and maintenance guidelines for details). The expected maintenance interval for systems in New York is 12 - 18 months, but may vary depending on weather and site conditions. All erosion and sediment control practices will be inspected weekly and after rainfall event and needed repairs will be made immediately.
203402.00	The Widewaters Group	Comm. Devel.		Complete		Micropool extended detention pond with forebay for pretreatment.	**Prior to Construction:** Adequate installation and implementation of the appropriate erosion and sediment control structures should be assessed by a qualified professional. **During Construction:** All erosion control measures will be inspected weekly and after each rainfall event of 0.5 inch or greater. Routine inspections will include a visual check of all erosion and sediment control measures, stormwater management structures, and areas downgradient of outlets. Erosion control measures will be repaired and maintained as necessary. Any stockpiling should be surrounded by a silt fence or hay bale barrier and will immediately be covered with topsoil and seeded. **Post Construction:** The stormwater management system will be inspected quarterly and after each significant rainfall event. All drainage areas damaged by erosion will be repaired and re-stabilized with vegetation and or appropriately sized rip-rap. Silt or sediment accumulations will be removed from forebay when it has reached half of its depth (168) and micropool (if required). Cracks and damaged vegetation in slopes or embankments will be repaired and reseeded as necessary. Silt or sediment overburdened rip-rap at pipe outfalls will be cleaned or replaced. Sumps within catch basins will be cleaned annually. Outlet structures will be kept free from debris. Forebays, micropool outlets and side slopes will be kept free from undesirable vegetation (trees). Areas of micropool extended detention basin located above the aquatic bench shall be mowed twice per year. Permanent pool shall be kept free from floating or floatable debris.
203407.00	Marist Student Housing Phase 3	Institutional	June-04	August-05			
205402.00	Marist College Leonidoff Stadium	Institutional	April-08	October-08	Hudson River	Catch Basins, Yard Drains, Trench Drains, Water Quality Inlet Structures, Underground Sand Filter,	**Water Quality Inlet Structures: Annually** - Inspect and clean inlets, grate for clogging and /or sediment accumulation . Repair and remove sediment if necessary. **Underground Sand Filter: Annually** - Inspect and clear trash, debris, or overgrown vegetation: silt or sediment accumulations shall be removed when it reaches 6" or more in depth. Silt/sediment shall be removed from the filter when the accumulation exceeds one (1) inch. **Slopes / Embankments:** Annually - Repair any slopes or embankments that have cracks or damaged vegetation as necessary. **Catch Basins, Yard Drains, Trench Drains:** Annually - Inspect and clean inlet grates: remove accumulated sediment. *** Additionally, all of the above structures shall be inspected after every rainfall event of 1/2-inches or greater.**
203411.00	Grand Meadows Subdivision	Resid. Subdiv.	Ongoing		Casperkill Creek	Detention Pond # 1 and Detention Pond # 2.	**Forebay:** Should be inspected once per week and after 1/2" rainfall. Sediment removal every 5-years or after 50% volume lost. **Detention Pond:** Inspection - once per week and after 1/2 " rainfall. Basins and swales shall be cleaned annually. The grass shall be mowed monthly or as required. Bare spots in the basins shall be scarified, seeded and mulched. Sedimentation basin sumps should be kept free from build-up of organic debris and should be cleaned and inspected on an annual basis. **Catch Basins:** Inspection and maintenance - Bi-annually. Shall be kept free from any accumulation of silts and sedimentation both during and after construction. Shall be protected by a filter fabric sediment trap during construction and the filter sediment trap shopuld be inspected weekly. After the roadway construction is completed and the R.O.W. is stabilized the catch basins shall be cleaned and the sediment trap shall be removed from each basin. **Pipe Network:** Inspection and Maintenance - Bi-annually. The storm sewer piping shall be cleaned on a "As - needed" basis. **Spillways:** Inspection - once per week and Maintenance - annually. The rip-rap aprons and spillways shall be cleaned and replaced as needed on an annual basis. **Silt Fencing and Hay Bale Berms:** Inspection - once per week and Maintenance - as needed. Should be installed **downgradient** from all areas of disturbance and **above** any wetlands or water courses. The stakes should be re-installed in the event that the bale or fencing move. The bales in poor condition and if the silt fence is deflected or pulled from the stakes, they should be repaired or replaced immediately.
203414.00	Bird In Hand / Goddard Development	Comm. Devel.		Complete	Casperkill Creek	Pocket Pond with a Forebay and Permanent Pool (between Route 9 and the proposed structures), A Subsurface Stormwater Retention System (beneath the proposed asphalt parking area).	All stormwater management facilities shall be routinely inspected and any necessary repairs will be made immediately. The parking lot area shall be swept once per year in the spring to clean the surfaces of salt and sand. **Subsurface Infiltration Units:** All catch basin sumps shall be cleaned once per year. Sediments from catch basin sumps will be removed every 5 years or after 50 % of capacity has been lost. The first inspection of the filter units should be made immediately after, or during, the first rainfall. Regular inspections should be made every three months or whenever an extreme storm situation occur. Clean out of the filter units and replacement of the filter fabric should take place every 2 years or when 50 % of the capacity has been lost. **Pocket Pond:** Sediment removal in the forebay will occur every 5 to 6 years or after 50% of total forebay capacity has been lost. The detention pond shall be cleaned of leaves once a year in the fall. **Silt and Sediment Disposal:** Sediments excavated from stormwater ponds can be safely disposed of by either land application or land filling.

203415.00	Guardian Self Storage	Comm. Devel.	August-04	December-05			
203417.00	Rose Garden Condo Subdivision	Resid. Subdiv.		Complete			Underground Storm Chamber System under travel area west of Building
203425.00	Pizzeria Uno (9 Mall)	Comm. Devel.	September-04	December-05		Wapp Lakes Discharge	Prior to storm water regs-sheetflow into catchbasin sumps
207411.11	Vassar Prentiss Fields	Institutional	June-07	December-07		Wappingers Creek	**Inspections:** Site cover and associated structures should be inspected periodically for the first few months following construction and then on a biannual basis. **Catchbasins:** Sumps should be cleaned when sediment is within 6" below pipe outlet elevation. **Winter Maintenance:** Provide maintenance to storm water management facilities as required. **Sediment Chambers:** The sediment chambers shall be pumped out at a minimum of every two years, unless the depth of sediment reaches four inches prior to the schedule cleaning. **Rain Garden:** Rain garden area should be inspected periodically. Checking undesirable tree and shrub growth and replacing diseased trees and shrubs when idenfified. Aso checking inlet for erosion, standing water and accumilation of sediment. **Underground Sand Filter Beds:** Underground sand filter beds should be inspected periodically for the first few months after construction and then on a monthly basis for evidence of standing water, accumulation of sediment, clogging at inlets or outlets and checking for noticeable odors outside of facility **Structural Repairs and Replacement:** Componements of the underground sand filter bed which require repair of replacement should be addressed immediately following identification.
207412.00	Vassar Townhouse Expansion	Institutional			Casperkill Creek	Modified Pocket Ponds, Catch Basins, Yard Drains, Sanitary Sewer, Water Mains, Sediment Basin.	**Inspections:** The overall site, embankments, vegetation, stormwater management basins, forebays and stormwater conveyance system components including catch basins, culverts, swales and outlets should be inspected regularly after every major rain event of 0.5 inch or greater and on an annual basis. A rain gauge should be installed and permanently maintained at the site. **Seasonal Maintenance:** Vegetatived areas should be maintained to promote vigous and dense growth. Lawn areas should be mowed as required. **Structural Repairs and Replacement:** Componements of the storm sewer system such as culverts and catch basins which require repair or replacement should be addressed immediately following identification. **Catch Basin Cleanout:** Catch basin sumps shuld be cleaned when accumulation of sediments and debris are within six inches of the catch basin outlet pipe invert. **Inlets and Outlets:** Rip -rap lined inlets and outlets that show signs of scour should be repaired. **Winter Maintenance:** Remove snow and ice from inlet structures, basin inlets and outlet structures and away from culvert end sections. Materials used for deicing should be removed during the early spring by sweeping and /or vacuuming. **Stormwater Basin Maintenance:** Sideslopes, embankments, inlets and overflow spillways should be mowed at least three times a year but may require more frquent mowings depending on the growth rate.
204402.00	Taft Avenue Subdivision	Resid. Subdiv.	October-06	December-09			Clean and vacuum yard drains once a year. Sweep pavement in early Spring once a year.
204405.00	Tamarack Heights Subdivision	Resid. Subdiv.	Ongoing				**Inspections:** Site cover and associated structures should be inspected periodically for the first few months following construction and then on a biannual basis. **Catch Basins:** Sumps should be cleaned when sediment is within 6" below pipe outlet elevation. The piping should be kept free of siltation and build-up of either inorganic or organic loading. **Stormwater Channels:** Keep stormwater channels free from debris. Scrub type vegetation should be mowed to maintain the hydraulic carring capacity of the channel. **Pond Facility:** Remove build up of silts and sedimentation in ponds when 50% of the forebay capacity has been lost. For accumulation in the permanent pool, sediment shall be caefully removed as necessary. **Drywell / Yard Drain:** Keep yard drains free of any accumulation of silts and sedimentation. Yard drains and drywells should be checked for sediment annually and cleaned out as necessary.
204406.00	Dyal Resources Site Plan	Comm. Devel.	Not Approved				
204408.00	Casperkill Country Club / Ginsberg Development	Resid. Subdiv.	Not Approved				
204409.00	Gagliardo Re-establishment (X 202407)	Resid. Subdiv.	September-04	December-05	Wappingers Creek	Catch Basins, Water Quality Basin, Infiltration Trench, Holding (Detention) Pond.	**Catch Basins:** Should be kept free of any accumulation of silts and sedimentation both during and after construction. *During Construction:* The basins should be protected by an annular ring of hay bales and/or a silt fence. The basins should be inspected on a bi-weekly basis and silt/sedimentation should be immediately removed from the basins to prevent instantaneous wash-out during storm. *After Construction:* The basins should be inspected on an annual basis as a minimum. The sumps should be kept free of any siltation and organic debris. **Outlet Structures:** They must be kept clear of any sedimentation build up and any obstruction. Falling leaves and other organic debris must be removed. **Storm Drain Pipe:** The storm drainage piping should be inspected on a bi-annular basis. The piping should be kept free of any obstruction, siltation and build-up of either inorganic or organic loading. **Stormwater Channels:** Stormwater swales should be kept free from either organic or inorganic debris. Any scrub type vegetation should be mowed to maintain the hydraulic carrying capacity of the channel. **Extended Detention Facility:** If siltation does occur in the pond, the material should be removed and the bottom of the pond should be scarified. If bare soil spots appear in the area of the pond, these areas should be scarified, seeded, and mulched as soon as possible. Vegetation should be kept mowed in the pond to maintain the stage vs. storage carrying capabilities of the pond. A sediment stack shall be placed in the detention facility to allow maintenance workers to see sediment depth.

204410.00	ton Automotive	Comm. Devel.	Not Approved				
204411.00	d View Subdivision	Resid. Subdiv.	Not Approved		Ultimately Hudson River	Detention Pond, Catch Basins and Storm Sewer pipes, Diversion Swale.	**Post Construction:** The inspections should be performed quarterly or after any large storm event of 3.5 inches or more (two-year storm). Any repair noted by inspections shall be performed in a timely fashion. The retention/sedimentation ponds shall be dredged after completion of the project and returned to design capacity and condition. Any built up sediment will be removed from the pond when it reaches 10 % of the design capacity of the structure. All diversion swales shall be kept free of grass clippings and leaves. The sediment shall be removed when the swales 50 % filled with sediment and the swales seeded and mulched. All catch basins shall be cleaned at the end of the construction of this project and shall be inspected periodically thereafter. When the sumps are filled with sediment and or debris the basin shall be cleaned. All road and parking lots surfaces shall be swept after the completion of the construction. The surfaces shall also be swept at least once a year in the spring. All dirt and salt swept up shall be disposed of offsite in accordance with the appropriate local, State and Federal regulations.
204412.00	IBM 7 Lot Lot Line Realignment	Comm. Subdiv	Not Approved	December-05			
207406.00	TD Banknorth	Comm. Devel.		Complete	Ultimately Hudson River	Anti-Sediment Control Devices, Stormwater Management Basin (Pocket Pond) , Outlet ~~Control Structure,~~ Catch Basins, Storm Drains, Vortech Drainage Manhole	**Post-Construction Inspection:** Inspections shall be performed when all disturbed areas are stabilized and all stormwater management systems are operable. Inspect all erosion and sediment control practices and record all maintenance requirements such as verifying the integrity of barrier or diversion systems and containment systems. Identify any evidence of rill or gully erosion. Document any excessive deposition of sediment or ponding water along barrier of diversion systems. Record the depth of sediment within containment structures, any erosion near outlet and overflow structures.
206406.00	Kirchhoff / Industrial Retro Subdivision	Comm. Devel.			Wappingers Creek	Pocket Pond with Forebay, Detention Pond, Drainage Manholes, Catch Basins, Sanitary Sewer	**Pre-construction Inspection:** Prior to the commencement of construction, the "Qualified Professional" shall conduct an assessment of the site and certify that the appropriate erosion and sediment control measures have been adequately installed and implemented. **Inspection and Maintenance:** All erosion and sediment control measures employed will be inspected by the "Qualified Professional" at least every seven (7) calendar days and within 24 hours of the end of a storm event of 1/2-inch or greater. In addition to the inspections performed by the "Qualified Professional", routine inspectios shall be performed by the Contractor and include a visual chedk of all erosion and sediment control measures. All inspections and maintenance shall be performed in accordance with the inspection and maintenance schedule provided on the accompanying plans. **Post-Construction Inspection:** Inspections shall be performed when all disturbed areas are stabilized and all stormwater management systems are in place and operable. Inspect all erosion and sediment control practices and record all maintenance requirements such as verifying the integrity of barrier or diversion systems and containment systems. Identify any evidence of rill or gully erosion. Document any excessive depositio water along barrier of diversion systems. Record the depth of sediment within containment structures, any erosion near outlet and overflow structu **Winter Site Stabilization and Inspections:** At minimum, monthly inspections in all situations (even when there is total winter shutdown) shall be preformed after every storm event of 0.5 inches of greater.
201405.00	The Woods @ Cliffdale	Res. Subd.	September-09		Tributary H101-4a		**Post Construction Inspection:** Inspections shall be performed quarterly or after and storm event of 3.5" or more (two year storm). These inspections shall show devices working properly and those in need of repair. Repairs are to be made in a timely fashion
					Wappinger Creek		**Inspection and Maintenance:** All diversion swales are to be kept clear of leaves, grass clippings or debris. When the swale is 50% filled with sediment, the sediment is to be removed then reseeded and mulched as required.
					Watersheds 2 and 3		Common drive pavement and visitor parking spaces are to be swept at least once a year in Spring. All dirt and salt brine is to be disposed of offsite in accordance with local, State and Federal regulations.
							Rain Garden Maintenance: Once new growth germinates in the Spring to 4-6 inch tall, cut old growth and tattered stems off with a weed trimmer to a height of 6-8 inches. Cuttings to be disposed of appropriately. Any sediment should be removed if it reaches 10% of its design capacity.
205406.00	Oakwood Commons	Comm. Devel.	Phase 1 Compl.		Casperkill		**Post Construction:** Owner to check stormwater Basins and controls monthly and after significant rainfall. Basins to be kept free of unwanted debris and litter.
							Annual Inspection: Inspection of Underground detetention, sand filters and detention vaults.
							Maintenance: Maintenance shall be performed when sand filters become silted.

207414.00	Tilcon /Asphalt Plant Relocation	Quarry	January-10		Cobalt Lake		**Post Construction Maintenance:** stormwater collection system must be inspected on an annual basis minimum to maintain proper operation
							The effectiveness of the permanent features will be evaluated annually.
							All catchbasin sumps will be cleaned in the Spring or when filled to 50% of their capacity.
							Sediment removal in forebays will occur within every 5 to 6 years or after 50% of the total capacity has been lost (in Micropool Extended Detention
							Areas damaged by erosion will be repaired and restabalized with vegetation of appropriately sized rip-rap within 14 days of the rainfall event that caused the damage.
							Any slopes or embankments that have cracks or damaged vegetation will be repaired and seeded wiothin 14 days of the rainfall event that caused the damage.
							Outlet structures will be inspected and cleared of debris after every runoff producing rainfall event.
							Note: Sediment material that does not receive runoff from hot spots can be disposed of by land filling. Sediment material removed from hot spots w be disposed of at an appropriate facility.
209401.00	CHG&E -Spackenkill Substation	Industrial	January		ACOE Wetland	Casper Creek	Inspect dryswale along the northern portion of the site. Maintain free of debris and maintain vegetation by trimming at least twice annually.
					25' Town Aquatic Buffer		Maintain emergncy riser, spillwayoutlet and outlet protection in clean condition free of sediment or debris accumulation. The Wet Detention Basin and dam shall be inspected and reported annually as required by DEC general permit regulation.
							Outlet structure and spillway structures shall be kept clean and operational.
							Preventative measures:
							Grass and weed maintenance
							Removal and disposal of trash
							Removal and disposal of sediment
							Maintenance of access

ROHDE, SOYKA & ANDREWS
Consulting Engineers, P.C.

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Wilfred A. Rohde, P.E • Michael W. Soyka, P.E • John V. Andrews, Jr., P.E.

April 30, 2009

SUBJECT: **Marist College**
Stormwater Management Facilities

Primary Owner: Marist College

Site Plan Name	Site Plan No.	Site Plan Approval Date	Parcel No.	Project Location	Type(s) of Facilities	Facility Location
Hancock Center	08-21	Nov. 20, 2008	6062-02-890825	Main Campus, intersection of Waterworks Road and Campus Drive	Water Quality Only: Green Roof; Permeable Pavers	Roof; Parallel parking spaces along campus drive
North Campus Parking Expansion	08-07	Oct. 16, 2008	6062-02-891913	Main Campus, north end, Fontaine Annex	Water Quality Only: Bioretention Basin	Southwest corner of parking lot
Stadium	05-08	Aug. 18, 2005	6062-02-884713	Main Campus, north of Southern Entrance	Sand Filter	Beneath South end of Stadium
Longview Park	98-14	Jan. 15, 2004	6062-02-776732	Waterfront, western portion of Main Campus	Water Quality Only: Bioretention/Rain Garden	Vegetated area between Cornell and Martin Boathouses
Marist College Campus (1)		1994	6062-02-884713	Main Campus, south of Waterworks Road	Water Quantity Only: Underground Pipe Storage	Beneath parking lot north of Mid Rise Dormitory

(1) Included construction of Student Center/Rotunda/Mid-Rise Dorm and other work

Primary Owner: Marist Real Property Services, Inc.

Site Plan Name	Site Plan No.	Site Plan Approval Date	Parcel No.	Project Location	Type(s) of Facilities	Facility Location
Student Housing Phase 4	06-32	Aug. 16, 2007	6162-05-035776	East of Route 9, Fulton Street	Water Quality & Quantity: (2) Underground Sand Filters; Underground pipe storage	South end of project area, between main sidewalk and Building 9 (known as A during construction)
Beck Place Parking Lot (2)	06-32	Aug. 16, 2007	6162-05-005805	East of Route 9, East side of Beck Place at the intersection with Fulton Street	Water Quality Only: (2) Underground Sand Filters	Beneath parking lot, near the center
Student Housing Phase 3	03-12	Oct. 16, 2003	6162-05-094791	East of Route 9, Fulton Street	Water Quality & Quantity: Underground Pipe Storage with Water Quality Sedimentation Chamber	South of project area, between Phase 3 and Phase 2 project areas. East of Buildings 3 & 4.
Student Housing Phase 2 (3)	99-47 00-02 (4)	Sept. 23, 1999 April 20, 2000	6162-09-100731	East of Route 9, West Cedar Street	Water Quality & Quantity: Underground Pipe Storage with Water Quality Sedimentation Chamber	North of project area, North of Building V.

(2) Beck Place Parking Lot is part of the Student Housing Phase 4 Site Plan
(3) Student Housing Phase 2 had a stormwater pond included for Site Plan Approval and construction. As part of Student Housing Phase 3, the pond was removed and replaced with underground pipe storage that managed stormwater for both Phase 2 and Phase 3.
(4) Student Housing Phase 2 was granted amended site plan approval on April 20, 2000 for tennis courts.

FILE

TOWN OF POUGHKEEPSIE
STORMWATER CONTROL DEVICES

Town's Responsibility (A)

I.D.	Notes	Project Name	I. D. #	Status	Date	Maintenance
B	Ponds inspected and no problems found	Wiltse Estates Subd	B-1 (Pocket Pond#1)	In Const.	11/10/04	**Catch Basins:** Should be inspected annually & after major storm events (3" of rainfall/24hrs).
	Inspected 12/22/09		B-2 (Pocket Pond#2)			Debris & litter should be removed when 10% of the available capacity has been used. Sediment will
			B-3 (DetentionPond#3)			have to be removed either manually or by vaccum truck;Structures should be repaired or replaced
			B-4 (DetentionPond#4)			as needed. **Stormwater Ponds:** Maintenance shall be in accordance with Appendix G of the
			B-5 (DetentionPond#5)			NYS Stormwater Management Design Manual;Sediment removed from forebay every 5 to 6 years
						or when 50% full. Erosion shall be repaired as necessary;Vegetation on pond side slopes & floor
						shall be planted in accordance with Appendix H of the NYS Stormwater Management Design
						Manual & shall be maintained in dense & vigorous condition for the period of 1 year after completion
						of the construction.
C	Inspected 12/17/09	Cider Mill Subd	C-1 (Retention Pond)	In Const.	01/14/02	**Catch Basins:** Sediment should be removed when approximately 1/2 of sump depth is filled with
	No sediment buildup		C-2 (SerpentineSwale)			sediment.
						Retention Basin: Clean when greater then 6 inches sediment.
D	Inspected 12/17/09	Spring Hill Estates	D-1 (Pocket Pond)	In Const.	03/21/03	**Yard Drains/Catch Basins:** Should be kept free of any siltation, sedimentation & organic debris.
	No siltation		D-2 thru 7 (Swales)			bi-weekly inspection during construction,annual inspection after construction,sediment should be
						removed when approx. 1/2 of the sump depth is filled w/sediment. **Drywells:** Inlet grates shall be
						covered until all upstream disturbed areas have been stabilized. Should drywell clogging occur at
						any time, all sediment shall be removed from drywell. Drywell sediment should be removed either
						manually or by vacuum pump when 10% of available capacity has been exceeded or less than
						11 feet deep. **Storm Sewer Pipe:** Culvert pipe should be inspected bi-annually.
						The piping should be kept free of siltation & inorganic or organic loading.
						Swales: Should be kept free from organic or inorganic debris. Sediment accumulations shall
						be removed when the channel has lost 25% of its ponding capacity. Check dams shall
						be replaced when clogging occurs.
						Pocket Pond: During construction, sediment from forebay basin shall be removed when 1 foot of
						sediment has accumulated. Forebay basin shall be completely cleaned out when all upstream areas
						have been stabilized. Sediments from the forebays should be removed every 2 to 3 years or after
						50% of the forebay capacity has been lost. Sediment from the permanent pool shall be removed
						carefully as necessary. **(Infiltration basin)** items to be inspected shall be settlement of
						embankment, erosion, seepage through embankment and vegetation growth on embankment.
						Sediment should be removed when it has accumulated to a depth of 5 inches on the basin floor.
						Grass shall be mowed to maintain 4 to 6 inches height.

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TOWN OF POUGHKEEPSIE
STORMWATER CONTROL DEVICES

Town's Responsibility (A)

I.D.	Notes	Project Name	I. D. #	Status	Date	Maintenance
G	Inspected 12/17/09 WQB No siltation Plunge pool mowed	Gagliardo	G-1 (Plunge Pool) G-2 (Infiltration Trench) G-3 (Detention Pond) G-4 (WaterQualityBasin)	In Const.	07/29/05	**Catch Basins:** Should be kept free of any accumulation of silts & sedimentation both during & after construction. ***After Construction:*** The basins should be inspected on an annual basis as a minimum. The sumps should be kept free of any siltation & organic debris. **Outlet Structures:** They must be kept clear of any sedimentation build up & any obstruction. Falling leaves & other organic debris must be removed. **Storm Drain Pipe:** The storm drainage piping should be inspected on a bi-annual basis. The piping should be kept free of any obstruction, siltation & build-up of either inorganic or organic loading. **Stormwater Channels:** Stormwater swales should be kept free from either organic or inorganic debris. Any scrub type vegetation should be mowed to maintain the hydraulic carrying capacity of the channel. **Extended Detention Facility:** If siltation does occur in the pond, the material should be removed & the bottom of the pool should be scarified. If bare soil spots appear in the area of the pond, these areas should be scarified, seeded & mulched as soon as possible. Vegetation should be kept mowed in the pond to maintain the stage vs. storage carrying capabilities of the pond. A sediment stack shall be placed in the detention facility to allow maintenance workers to see sediment depth.
H	Inspected 12/1709 Breach in pond Reported to Highway	Sheafe Woods	H-1 (Detention Pond)	In Const.	11/21/03	The drainage swales, culverts & storm water basin shall be maintained & left open & unobstructed for storm drainage purposes. Remove sediment from pond when greater than 1 foot. Insure 6 inch outlet flowing free.

TOWN OF POUGHKEEPSIE

STORMWATER CONTROL DEVICES

Town's Responsibility (A)

I.D.	Notes	Project Name	I. D. #	Status	Date	Maintenance
I	Not accepted by Town	Dara View	I-1 (Detention Pond)	In Const.	07/12/05	**Post Construction:** The inspections should be performed quarterly or after any large storm event of 3.5 inches or more (two-year storm). Any repair noted by inspections shall be performed in a timely fashion. The retention/sedimentations ponds shall be dredged after completion of the project & returned to design capacity & condition. Any built up sediment will be removed from the pond when it reaches 10% of the design capacity of the structure. All diversion swales shall be kept free of grass clippings & leaves. The sediment shall be removed when the swales 50% filled with sediment & the swales seeded & mulched. All catch basins shall be cleaned at the end of the construction of this project & shall be inspected periodically thereafter. When the sumps are filled with sediment & or debris the basin shall be cleaned. All road & parking lots surfaces shall be swept after the completion of the construction. The surfaces shall also be swept at least once a year in the spring. All dirt & salt swept up shall be disposed of offsite in accordance with the appropriate local, State & Federal regulations.
J	Still in Construction	Tamarack Heights	J-1 (Holding Pond)	In Const.	01/14/08	**Inspections:** Site cover & associated structures should be inspected periodically for the first few months following construction & then on a bi-annual basis. **Catch Basins:** Sumps should be cleaned when sediment is within 6" below pipe outlet elevation. The piping should be kept free of siltation & build-up of either inorganic or organic loading. **Stormwater Channels:** Keep storm water channels free from debris. Scrub type vegetation should be mowed to maintain the hydraulic carring capacity of the channel. **Pond Facility:** Remove build up of silts & sedimentation in ponds when 50% of the forebay capacity has been lost. For accumulation in the permanent pool, sediment shall be carefully removed as necessary. **Drywell/Yard Drain:** Ieep yard drains free of any accumulation of silts & sedimentation. Yard drains & drywells should be checked for sediment annually & cleaned out as necessary.
	Not accepted by Town	Boardman Estates (Kreisberg/Ritter)	C. 1,2,3,4,5 - C. B. C. 6-Concrete Chamber			Catch basins shall be regularly inspected for sediment accumulations. These sumps shall be cleaned when sediment depth reaches a maximum of 1/2 the available sump depth.
	Not accepted by Town	Dutchess Court	Infiltration Trench 6 - Infiltration Trench Cleanouts		08/17/06	
E	Not accepted by Town	Forest Glen	E-1 (Detention Pond)	In Const.	10/01/03	**Inspection:** Infiltration basins/trench drains shall be inspected periodically for the first three

TOWN OF POUGHKEEPSIE

STORMWATER CONTROL DEVICES

Town's Responsibility (A)

I.D.	Notes	Project Name	I. D. #	Status	Date	Maintenance
			E-2 (Detention Pond)			months after construction & then on annual basis thereafter for: settlement of embankment,
			E-3 (Galley Cluster)			erosion/rilling, seepage through embankment & vegetative growth on embankment.
						Maintenance: Mowing at least twice annually to prevent heavy vegetation in the infiltration
						basin. Debris & litter removal during each mowing operation. Trapped sediment within basin shall
						be removed when it has accumulated to a depgh of five inches, and/or the trench drain cannot
						function normally to prevent standing water.
A	Still in Construction	Stratford Farms Subd	A-1,2,3 (Ponds)	In Const.	10/24/03	Spillway trash racks will be inspected during each site maintenance event. Sediment in the forebay
	Quarterly Inspections	(WWTP,Phase1 & 4)				shall be removed every 5 to 6 years or after 50% of total forebay capacity has been lost
			A-4,5,6,7,9 (BRF's)			Shall be inspected on a semi-annual basis for the first year & then annual inspections.
			A-8 & 10 (WQI's)			Shall be regularly checked after every major storm event & cleaned at least twice per year.
						CB sumps shall be cleaned out at least twice per year. Discharge piping shall be inspected
						periodically & repaired and/or cleaned as necessary.
F	Still in Construction	Grand Meadows	F-1 (Detention Pond#1)	In Const.	11/17/05	**Forebay:** Should be inspected once per week & after 1/2 inch rainfall. Sediment removal every
			F-2 (Detention Pond#2)			5 years or after 50% volume lost. **Detention Pond:** Inspection-once per week & after 1/2 inch
						rainfall. Basins & swales shall be cleaned annually. The grass shall be mowed monthly or as
						required. Bare spots in the basins shall be scarified, seeded & mulched. Sedimentation basin sumps
						should be kept free from build-up of organic debris & should be cleaned & inspedted on an annual
						basis. **Catch Basins:** Inspection & Maintenance-Bi-annually. Shall be kept free from any
						accumulation of sitls & sedimentation both during & after construction. Shall be protected by a
						filter fabric sediment trap during construction & the filter sediment trap should be inspedted weekly.
						After the roadway construction is completed & the R.O.W is stabilized the catch basins shall be
						cleaned & the sediment trap shall be removed from each basin.
						Pipe Network: Inspection & Maintenance-Bi-annually. The storm sewer piping shall be cleaned
						on a "As-needed" basis. **Spillways:** Inspection-once per week and Maintenance-annually. The
						rip-rap aprons & spillways shall be cleaned & replaced as needed on an annual basis.
						Silt Fencing & Hay Bale Berms: Incpection-once per week & Maintenance-as needed. Should be
						installed **downgradient** from all areas of disturbance & **above** any wetlands or water courses.
						The stakes should be re-installed in the event that the bale or fencing move. The bales in poor
						condition & if the silt fence is deflected or pulled from the stakes, they should be repaired or
						replaced immediately.

APPENDIX V

EROSION AND SEDIMENT CONTROL EDUCATION CONTACT LIST

SWCD Distribution: 2/14/05 Erosion Sediment Control Workshop For Land Contractors + Construction Activities

Name	Company	Address1	Address2	Zip
	4X4 Handyman Corp.	215 Longfellow Dr	Carmel, NY 10512	10512
	A DeLuca & Sons Inc.	3483 Pleasant Ridge Rd	Wingdale, NY	12594
	A&F Stortini Hudson Valley Excavating	145 Smith St.	Poughkeepsie, NY	12601
	Adams Landscaping	745 Dutchess Tpke	Poughkeepsie, NY 12603	
	ALC Landscaping	11 Fair Way	Poughkeepsie, NY 12603	
	All Seasons Sewer and Drain	11 Maple	Glenham, NY	12527
	Altmar Excavation	70 Day Road	Stuyvesant, NY	12173
	Anagnos J.S. Excavating Contractor	1 Albie Road	Red Hook, NY	12571
	Beck and Son	30 Todd Hill Road	Poughkeepsie, NY	12603
Joseph Berger	Berger Engineering & Surveying	33 Hawk Lane	Poughkeepsie, NY 12601	
	Bill Neave Landscaping	80 Airport Drive	Wappingers Falls, NY 12590	
	BMP Construction Inc.	8 Joe's Hill Road	Danbury, CT 06811	
	Bovee Construction Co.	1732 Main St.	Pleasant Valley, NY	12569
Skipp Brill	Brill Construction	13 Miller Road	Pawling, NY 12564	
	Brill RF Excavating	13 Miller Road	Pawling, NY	12564
	Center Line Mechanical	10 Brush Hollow Rd	Brewster, NY	10509
	Central Construction of Beacon LLC	105 Catherine St.	Beacon, NY	12508
	Chamberlin Construction Inc. Project Mgt.	132 Coleman Station Rd	Millerton, NY	12546
	Clearwater Excavating	110 Hardscrabble Rd	North Salem, NY	10560
	Clove Excavators, Inc.	P.O. Box 640	Poughquag, NY	12570
	Continental Management	66 Middlebush Rd	Wappingers Falls, NY	12590
	Cornerstone Excavating Inc.	22 Lake Dr	Wappingers Falls, NY	12590
	Custom Frame Builders	201 Mountain Rest Rd	New Paltz, NY	12561
	DDS Construction Service LLC	10 Purcell Dr	Danbury, CT 06810	
	Decesare Excavation Inc.	226 VanWagner Road	Poughkeepsie, NY 12603	
	DiCintio Enterprises	2369 Route 82	Pleasant Valley, NY	12569
	DiLorenzo Tree Care	24 Tricia Blvd.	Highland, NY 12528	
	Double Dee Excavating Corp	53 W. Dorsey Lane	Hyde Park, NY	12539
	Duffy Layton Contracting	P.O. Box F	Stanfordville, NY	12581
	Dutchess Environmental Construction	936 Route 6	Mahopac, NY	10541
	E.R. Baisley Tree & Landscaping Inc	305 North River Road	Wappingers Falls, NY 12590	
	Earth Alterations	3 Old Penny Road	Pawling, NY	12564
	Edrich Builders	14 Murphy's Lane	Brookfield, CT 06804	
	Edward A.Stickle	7 Stone Church Road	Rhinebeck, NY	12572
	Esopus Renovations Management	270 Swartekill Road	Highland, NY	12528
	FAE Construction Services	10 Elbern Drive	Poughkeepsie, NY	12603

SWCD Distribution: 2/14/05 Erosion Sediment Control Workshop For Land Contractors + Construction Activities

	Gary Grey Project Mgr	70 Flint Road	Millbrook, NY	12545
	Greico Custom Homes Inc.	173 Hillside Lake Rd	Wappingers Falls, NY	12590
	Ground Breakers	91 Seven Oaks Lane	Brewster, NY	10509
	Hayward and Pakan Associates	321 Main Street	Poughkeepsie, NY 12601	
	HB Wiltse Inc	339 Dutchess Tpke	Poughkeepsie, NY	12603
	Holback Construction	395 Holmes Road	Holmes, NY	12531
	Huber Farms & Excavating	22 Old Post Road	Rhinebeck, NY	12572
	Insite Engineering & Surveying, PC	1485 Route 22	Brewster, NY 10509	
	Ira D. Conklin & Sons	94 Stewart Ave	Newburgh, NY	12550
	JAC Landscaping and Site Develoment Co.	12 Tree Line Drive	Wappingers Falls, NY 12590	
	Jim Murphy	3306 Franklin Ave	Millbrook, NY	12545
	John P. Smalley Jr.	82 Holsapple Road	Dover Plains, NY	12522
	Jones Bros. Excavating LLC	3334 Route 9G	Tivoli, NY	12583
	Kirchhoff Construction Mgt Inc.	P.O. Box 675	Pleasant Valley, NY	12569
	L B J Excavating	1 Commerce Court	Wappingers Falls, NY	12590
	Lanc and Tully, PC	PO Box 687	Goshen, NY 10916	
	Landscape by Leonard, Inc.	4 Collins Drive	Poughkeepsie, NY 12603	
Thomas LeGrand	LeGrand Excavating	185A Rt. 9	Rhinebeck, NY 12572	
	Lehigh Lawns and Landscaping	141 Daley Road	Poughkeepsie, NY 12603	
	Leo Boyce and Sons	190 Farm to Market Road	Kingston, NY	12401
	Lewis Landscaping	Overlook Road	Poughkeepsie, NY 12603	
	Liberta Brothers Inc.	P.O. Box 541	Pine Plains, NY	12567
	Liberty Construction Group Corp.	84 S. Cherry	Poughkeepsie, NY	12601
	Lombardi Excavating Inc	12 Lyons Drive	Poughkeepsie, NY	12601
	Losee Construction Co	269 Cream Street	Poughkeepsie, NY	12601
	Mallen Excavating Co	22 Fairmount Ave	Poughkeepsie, NY	12603
	McGuire Excavating	13 Ackert Hook Road	Rhinebeck, NY	12572
	Milligans Landscaping Inc	30 S. Cross Rd	Staatsburg, NY 12580	
	Minute Men Construction Co	209 E Main St	Beacon, NY	12508
David J. Decker P.E.	Morris Associates	383 Violet Ave	Poughkeepsie, NY 12601	
	Ninnie Excavating and Leasing Co	5 Bayview Ave	Beacon, NY 12508	
	Nova Contracting	190 S. Robinson Ave	Newburgh, NY	12550
	O'Hanlon Excavation	8 Hawk Ridge Lane	Brewster, NY	10509
	Petterson Excavation Inc.	82 Separate Road	Amenia, NY 12501	
	Polhemus Construction	12 Manitou Station Rd	Garrison, NY	10524
	Robert D. Stobo Excavation	28 Marion Ave	Wappingers Falls, NY	12590
	Rodney Silvernail	966 S. Anson Road	Stanfordville, NY 12581	

SWCD Distribution: 2/14/05 Erosion Sediment Control Workshop For Land Contractors + Construction Activities

	Sass Excavating Inc.	10 Friendship	Tivoli, NY	12583
Edwin Silvers, P.E.	Silvers Engineering Associates	684 East Main St	Middletown, NY 10940	
	Sivulich Contracting Inc	293 Salisbury Tpke	Rhinebeck, NY 12572	
	SJ Lore Excavating and Site Contractor	7296 Route 9	Red Hook, NY	12571
	St. John Gary Excavating	601 Gardnertown Rd	Newburgh, NY	12550
	Steven Ehrmann	157 Deer Ridge Road	Wingdale, NY	12594
	Stoneledge Landscaping and Contracting	PO Box 179	Hopewell Jct., NY 12533	
	Stuart W. Bates Inc.	114 Star Ridge Road	Brewster, NY	10509
	Svoboda Bulldozing and Trucking Corp	272 Cornwall Hill Rd	Patterson, NY	12563
	T. Ferraro And Son Inc.	9 Kennedy Blvd	Hopewell Jct, NY	12533
	Tectonic Engineering Consultants, PC	12 Cornell Road	Latham, NY 12210	
	The Farm Development Corp	PO Box 190	Poughquag, NY	12570
	The Palomba Group	6030 Route 82	Stanford, NY	12581
	Top Shelf Landscaping	23 Mansion Drive	Hyde Park, NY 12538	
	Tremson Corp	56 Lake Ave Ext	Danbury, CT 06811	
	Village Construction	PO Box 690	Millbrook, NY 12545	
	Village Construction Co.	2517 Route 44, Suite 5	Salt Point, NY	12578
	Vonder Lieth John D. and Son	63 White School House R	Rhinebeck, NY	12572
	Wolven Septic and Excavation	253 Old Flatbush Road	Kingston, NY	12401
	Yonkers Excavating Corp	553 Croton Falls Road	Carmel, NY	10512
	Zammielo Bros. Contracting Ltd.	141 New Hackensack Rd.	Wappingers Falls, NY	12590

Phone	Fax	Name	Company		Address	Zip
471-7800	471-8138		BTM	Commerce Street	Poughkeepsie, NY	12603
897-4800	897-8668	Bettina, Vincent	Estate Builders	P.O. Box 435	Fishkill, NY	12524
454-3730	454-4556	Gleason, Thomas	Thomas Gleason, Inc.	42 McKinley Lane	Poughkeepsie, NY	12601
~~635-1800~~	~~635-8548~~ ✓	~~Scott Cruikshank~~	~~Kirchhoff Construction~~	West Side Office Park, West Rd, P.O.Box 67	Pleasant Valley, NY	12569
897-4437	897-3424	Ninnie, Jim	Nenni Equipment	1538 Route 52, Box B	Fishkill, NY	12508
591-7575		Liam Featherstone	Stratford, ABD	198 Bower Road	Pleasant Valley, NY	12569
462-1800	462-8375	John Del Bene	Sun-Up Enterpirses, Inc.	1607 Route 376	Wappingers Falls	12590
677-5009	677-3623 ✓	Fred Volino	Village Construction Corp.	2517 Rt 44 #5	Salt Point, NY	12578
452-0387	452-0127	Ferrari, Tony	Ferrari & Sons	220 Overocker Rd	Poughkeepsie, NY	12603
226-6300	226-2511	Stenger, David	Beekman Country Club	Creek View Ltd. P.O. Box 306	Hopewell Jct., NY	12533
914-273-9600	914-273-9609	Fuller, Robert	Toll Brothers	130 Business Park Dr.	Armonk, NY	10504
473-6836			HHR Construction	329 Slat Point Turnpike	Poughkeepsie, NY	12601

Name	Address1	Address2	Zip	Phone	Fax
A.J. Colarusso & Son's	91 Newman Road	Hudson. NY	12534	518-828-3218	518-828-0546
Beekman Country Club	Creek View Ltd. P.O. Box 306	Hopewell Jct., NY	12533	226-6300	226-2511
BTM	Commerce Street	Poughkeepsie, NY	12603	471-7800	471-8138
Custom Built	1 South Drive	Hyde Park		845-229-0250	845-229-0145
DeCesare excavation	226 Van Wagner Rd, Po Box 3130	Poughkeepsie, NY	12603	845-473-8840	845-473-8844
Estate Builders	P.O. Box 435	Fishkill, NY	12524	897-4800	897-8668
Ferrari & Sons	220 Overocker Rd	Poughkeepsie, NY	12603	452-0387	452-0127
HB Wiltse Ecavating	907 Dutchess Turnpike	Poughkeepsie, NY	12603	845-454-0344	
HHR Construction	329 Slat Point Turnpike	Poughkeepsie, NY	12601	473-6836	
Idema general Contractors Inc.	91 College Ave	Poughkeepsie, NY	12603	845-454-1270	845-454-5098
J Mullens and Son's	863 West saugerties Woodstok Roa	Saugerties. Ny	12477	845-247-0954	845-247-0465
Kirchhoff Construction	West Side Office Park, West Rd, P.O.B	Pleasant Valley, NY	12569	635-1800	635-8548
Metro Builders	22 white Hall Road	Poughkeepsie, NY			
Nenni Equipment	1538 Route 52, Box B	Fishkill, NY	12508	897-4437	897-3424
Pavarini	1111 Summer Street	Stamford CT	6905	203-327-0100	203-964-3187
Sano Construction	14-07 113 St.	College Point	11356	718-961-4757	718-460-2715
Storm King Contrg. Inc.	720 Neeleytown Rd	Montgomery, Ny	12594	845-457-5552	845-457-5022
Stratford, ABD	198 Bower Road	Pleasant Valley, NY	12569	591-7575	
Sun-Up Enterpirses, Inc.	1607 Route 376	Wappingers Falls	12590	462-1800	462-8375
Thomas Gleason, Inc.	42 McKinley Lane	Poughkeepsie, NY	12601	454-3730	454-4556
Toll Brothers	130 Business Park Dr.	Armonk, NY	10504	914-273-9600	914-273-9609
Village construction	2517 Rt.44 Unit 5	Salt Point, Ny	12578	845-677-5009	845-677-3623
Village Construction Corp.	2517 Rt 44 #5	Salt Point, NY	12578	677-5009	677-3623
Wide Waters					

CONTACT LIST

Storm Water Agreements

Applicant Name	Project Name	Tax Map ID/Doc #	Phone No.	Address	E-mail
Elgen Associates Eugene Lois	**Maple Lane Trailer Park**	6160-03-100001 02 006 7083	297-4843 Ext. 202	1176 Route 9 Wappingers Falls NY 12590	glois@gandglaw.com
Oakwood Partners L.L.C. Dave Kaminski	**Oakwood Commons**	6060-04-973475 02 2006 7082	463-1701	20 Kingwood Lane Poughkeepsie, NY 12601	dskaminski@optonline.net
Justin Butwell, Director of Physical Plant	**Marist Campus Wide**	6162-05-094791, 064792 ; 035776 & 6062-02-884713	575-3200	3399 North Rd. Poughkeepsie, NY 12601	jbutwell@marist.edu
James Friend	**Hampton Inn and Suites**	6160-03-057135	(646) 495-3010	445 Park Ave. 9th Fl. New York, NY 10022	jfriend@frienddevelopment.com
Thylan Associates Chuck Genck	**Spacken Partners**	6060-04-922413		1 Summmit Court Suite 103 Fishkill NY 12524	pcataline@spectraenv.com
Gene Paulen Ornstein Leyton Company	**The Park at Inwood** **Lake**	6162-06-378794	(516)-222-0919	200 Garden City Plaza Suite 410 Garden City, NY 11530	gene@olcny.com

Jason B. Barlow	**St Francis Medical** **Arts Pavilion**		431-8171	241 North Road Poughkeepsie NY 12601	jbarlow@sfhhc.org
Clinton Kershaw	**Nieters / Kershaw** **Subdivision**	6263-04-6363-03 6262-02-6362-01	N/A	P.O. Box 773 Pleasant Valley NY 12569	
Joseph Kirchhoff	**Industrial Retro** **Poughkeepsie** **Business Park**	6262-04-830160	635-1800	900 Dutchess Tpk. Poughkeepsie NY 12601	jkirchhoff @kirchhoffcompanies.com
Art Fisher, Vassar Physical Plant	**Vassar College Prentiss** **Fields, and** **Townhouses** **at Brewers's Lane**	6161-04-740465	437-5682 437-5555 Alternate Phone	Brewer's Lane Poughkeepsie, NY 12604	arfisher@vassar.edu
David Moehrke	**TD BankNorth**	6158-01-432889	631-291-3806	1850 South Road	David.W.Moehrkee@jci.com
Marco Marzocchi	**Chestnut Plaza-** **Widewaters Assoc**	6159-03-424307	315-445-8598 Cell: 315-382-8598	2616 to 2024 South Road	marco@widewaters.com

APPENDIX W

SAMPLE LETTER TO OWNERS/DEVELOPERS IN REGARD TO POST-CONSTRUCTION MAINTENANCE

Re: Storm Water Facility Maintenance
{ Insert *FACILITY NAME and LOCATION*}

To Whom It May Concern:

In reference to the above site for which you are identified as the contact person, this letter serves as a request for information related to on-going maintenance. As per Chapter 173 – Stormwater Management of the Town of Poughkeepsie, Municipal Code, the facility owner shall provide copies of records related to the maintenance and care of constructed stormwater management facilities.

In addition, if the facility has been in service for at least a five year period then you are hereby notified that an inspection report prepared by a licensed professional engineer that describes the condition and integrity of the facility is due. Please prepare and submit any available records and reports within 30 days to the office of Town Engineer, One Overocker Road, Poughkeepsie, N. Y. 12601, to the attention of Russell D. King, Assistant Town Engineer.

As per Chapter 173 and in accordance with the terms of the maintenance agreement and easement filed with the Town, it is expected that the facility has been effectively maintained and operated. Under the original site plan approval, a Storm Water Pollution Prevention Plan (SWPPP) was prepared which included detailed maintenance activities on an associated schedule. The Town Engineer acting as the designated Stormwater Management Officer will make a determination as to whether all appropriate measures have been followed.

Sincerely,

Donald A. Beer,
Associate Town Engineer

cc: Patricia Myers, Town Supervisor
Neil Wilson, AICP, Esq., Director of Municipal Development
David Hagstrom, Esq., Deputy Town Attorney
Eric Hollman, Planning Dept

CONTACT LIST

STORM WATER AGREEMENTS

LIST B - PRIVATE

PROJECT NAME	APPLICANT NAME	TAX MAP ID#/DOC#	ADDRESS	PHONE	E-MAIL
Bird In Hand	Adrianne Goddard Goddard Development Partners, LLC	6159-01-276754	PO Box 55 Otterkill Road Mountainville, NY 10953	845-534-0100	
Chestnut Plaza	Marco Marzocchi, Esq Widewaters Group, Inc.	6159-03-440310 6159-03-400306 6159-03-392334	5786 Widewaters Parkway PO Box 3 DeWitt, NY 13214-0003	(B)315-445-8540 (m)315-263-7572	marco@widewaters.com
Oakwood Commons	David Kaminski, Oakwood Commons, LLC	6060-04-973475 02 2006 7082	P. O. Box 1580 Poughkeepsie, NY 12601	463-1701	dskaminski@optonline.net
Hampton Inn Suites	James Friend Friend Development Group	6160-03-057135	445 Park Ave. 9th Floor New York, NY 10022	646-495-3010 212-541-3792 917-821-9566	jfriend@friendd evelopment.com
Vassar College	Arthur Fisher Project Manager	6161-04-740465	124 Raymond Ave Poughkeepsie, NY 12604	437-5682	arfisher@vassar.edu
Marist College Campus Wide Master Agreement	Justin Butwell, P. E. Director, Physical Plant	6162-05-094791 6162-05-064792	3399 North Road Poughkeepsie, NY 12601	575-3200	Justin.Butwell@marist.edu
Raia Self Storage (Hampshire Self Storage)	Hampshire Self Storage	6159-01-283698	2169 South Road Poughkeepsie, NY 12601	845-206-4520	

Rose Gardens	Carl Deising Metro Builders Corp.	6162-19-656094	72 Bowmans Glen Lane Clinton Corners, NJ 12514	845-464-0571	carl@metrobuilderscorp.com
St. Francis Medical Arts Pavillion	Jason Barlow	6162-09-172632	241 North Road Poughkeepsie, NY 12601	845-431-8171	jbarlow@sfhhc.org
TD Banknorth	Lucille Telegades	6158-01-432889	3305 NE 37 St. Ft.Lauderdale, FL 33398	518-789-0406 954-564-0157	

APPENDIX X

POLLUTION PREVENTION / GOOD HOUSEKEEPING ADDITIONAL REFERENCE MATERIAL

POLLUTION PREVENTION/GOOD HOUSEKEEPING FOR MUNICIPAL OPERATIONS

ALTERNATIVE PRODUCTS

- The number of educational materials distributed.
- The number of consumers surveyed who have increased their use of alternative products.

ALTERNATIVE DISCHARGE OPTIONS FOR CHLORINATED WATER

- Whether or not an ordinance was developed to prevent direct discharge of chlorinated water.
- The number of pool owners informed of the options for discharging chlorinated water.
- Chlorine levels in receiving waters.
- The number of enforcement actions pertaining to pool water discharges.

AUTOMOBILE MAINTENANCE

- The number of employees trained in preventing pollution from automobile maintenance activities.
- The number of sites rewarded as being a "clean site" under a rewards program.
- The number of spills reported.
- The number of educational materials distributed at garages, auto shops, and other automobile-related businesses.

HAZARDOUS MATERIALS STORAGE

- The number of regularly inspected storage units.
- The number of employees trained in hazardous material storage and maintenance.
- The total number of storage facilities equipped to store hazardous materials.
- The level of toxic pollutants in receiving waters.
- The number of materials distributed educating citizens on home storage of hazardous materials.

ILLEGAL DUMPING CONTROL

- Whether or not areas where illegal dumping is common were identified.
- The number of "no dumping" signs posted.
- The number of educational materials distributed.
- The number of reports of illegal dumping received.
- The number of dump sites cleaned up.
- The number of sites improved to eliminate them as target dumping spots.
- The number of enforcement actions pertaining to illegal dumping.
- Whether or not a partnership with the community was established to promote reporting and to educate citizens.

LANDSCAPING AND LAWN CARE

- The number of stores/gardens participating in education program.
- The number of people trained in safe landscaping, lawn care, and pest management techniques.
- The number of classes/seminars offered in landscaping and lawn care.
- The number of educational materials distributed.
- Whether or not a survey of lawn and landscaping methods used by the community was conducted.

MATERIALS MANAGEMENT
- The number of facilities storing hazardous materials.
- The frequency of inspection and maintenance visits to storage facilities.
- The number of personnel trained in hazardous material handling and storage.
- The amount of waste generated by municipal operations.
- Whether or not an inventory of hazardous materials was created for each storage facility.

PARKING LOT AND STREET CLEANING
- Whether or not roads and parking lots were inventoried and prioritized for cleaning.
- The number of scheduled road cleanings.
- The suspended solids levels in runoff.
- The pounds of debris collected from street sweeping.

PEST CONTROL
- The number of businesses participating in education at the point of purchase.
- The number of municipal employees trained in integrated pest management.
- Pesticide levels in runoff and receiving waters.
- The number of educational materials distributed.

PET WASTE COLLECTION
- The number of dog parks.
- The number of signs posted stating regulations.
- The number of educational materials distributed.
- The number of "pooper-scooper" stations installed.
- Whether or not an ordinance was created to address pet waste.

ROAD SALT APPLICATION AND STORAGE
- The number of storage facilities included in a regular inspection and maintenance program.
- The number storage facilities repaired.
- The number of employees trained in road salt application.
- The quantity of salt applied to roadways.
- The quantity of alternative products used.
- The water quality at outfalls near downstream of storage facilities.

ROADWAY AND BRIDGE MAINTENANCE
- Whether or not a current list of roadway and bridge construction is maintained.
- The quantity of debris removed from construction sites.
- The number of employees trained in pollution prevention techniques.
- The amount of deicing salts used.
- The number of catch basins at constructions sites that are cleaned regularly.

SEPTIC SYSTEMS CONTROLS
- The number and location of septic systems.
- The number of systems that are inspected and maintained regularly.
- The number of reminder and educational flyers distributed.

• The number of people trained in inspection and installation of septic systems.
• The number of failed septic systems.

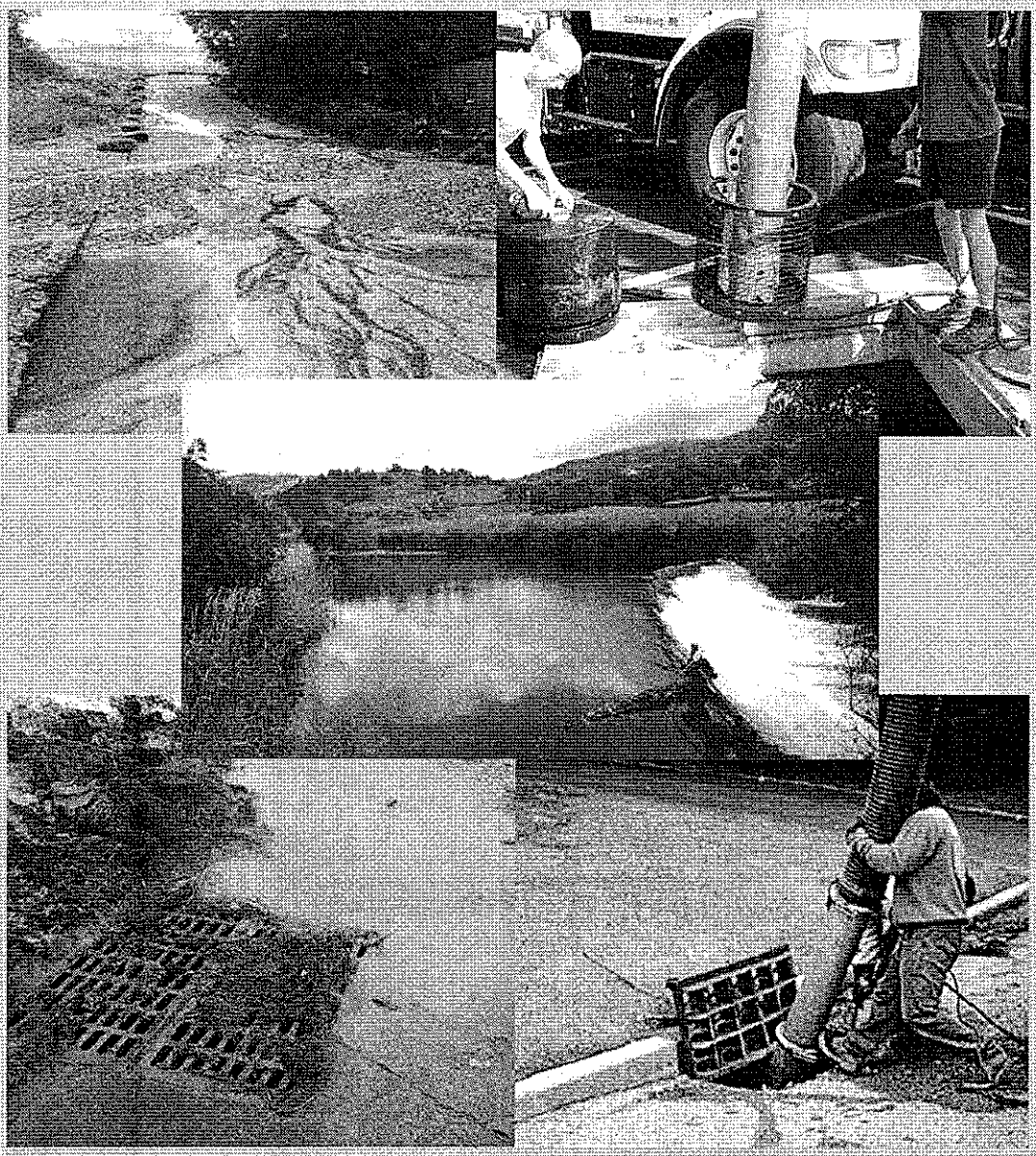
SPILL RESPONSE AND PREVENTION
• Whether or not an inventory of municipal facilities at risk for spills was created.
• The number of leak detection devices installed at municipal facilities.
• The number of preventative maintenance procedures performed on tanks, valves, pumps, pipes, and other equipment.
• Whether or not a spill response plan was developed for municipal facilities.
• The number of personnel trained in spill response.
• The number of regularly inspected high-risk facilities.
• The number of educational materials distributed to municipal employees.

STORM DRAIN SYSTEM CLEANING
• Whether or not areas with high pollutant loadings were inventoried and prioritized for cleaning.
• The length of storm drain pipe cleaned regularly.
• The number of outfalls cleaned regularly.
• The amount of trash, sediment, and other pollutants removed during cleaning.
• Water quality at storm drain system outfalls.

USED OIL RECYCLING
• The number of gallons of used oil collected from municipal operations.
• The number of recycling facilities that collect oil from municipal operations.
• The number of educational materials distributed to municipal employees.

VEHICLE WASHING
• The number of educational materials distributed to municipal employees.
• The number of designated municipal vehicle washing areas.

Pollution Prevention and Good Housekeeping for Municipal Operations



Prepared by:
Dutchess County Soil and Water Conservation District

Pollution Prevention and Good Housekeeping for Municipal Operations

February 2007

Pollution Prevention for Municipal Operations was prepared by the Dutchess County Soil and Water Conservation District with grant funding provided by the New York State Department of Environmental Conservation.

Dutchess County Soil and Water Conservation District
http://dutchess.ny.nacdnet.org

NYS Department of Environmental Conservation
http://www.dec.state.ny.us

POLLUTION PREVENTION AND GOOD HOUSEKEEPING FOR MUNICIPAL OPERATIONS

TOP 15 TAKE HOME MESSAGES

1. Educate, educate, educate and then reinforce that education regularly.
2. If there is a spill, clean it up as quickly and as completely as possible. Create and follow a spill response procedure – make sure it is used every time there is an incident.
3. A clean, organized, and maintained facility is an environmentally friendly facility.
4. Inspect all aspects of all facilities often, document what you see (see the included worksheet for assistance), and implement improvements. Every facility has room for environmental improvement.
5. When it comes to fertilizers, pesticides, herbicides, and winter sand and salt, use only what you need, when you need it. Reduce the use.
6. Keep paved roadways and areas clean and sweep them as often as possible. Cleaner roads = cleaner catch basins = cleaner and healthier waterbodies and wetlands.
7. Note soil erosion when you see it and correct it as soon as possible, especially in roadside ditches and outfall discharge points. Small problems can turn into large ones rapidly.
8. Inspect outfall locations for soil erosion as well as illicit discharges. If something looks or smells off – report it, investigate it, remove it and document it.
9. Learn your facilities, wetlands, waterbodies, watercourses (permanent and intermittent, impaired and protected), and MS4 system.
10. Maintain organized records. Required reports are prepared in a fraction of the time if you spent minutes a day keeping your records up to date.
11. Communication is imperative between field and office staff. Highway and Recreation Department staff should maintain effective communication with the Stormwater Management Officer.
12. Wash vehicles and equipment using "green" products in green areas. Prevent untreated wash water from entering your MS4 or discharging to a waterbody.
13. Implement an adequate maintenance schedule on vehicles and equipment to reduce the risk of leaks or spills.
14. Maintain buffers around all watercourse and waterbodies. Let Mother Nature maintain water quality for you.
15. Reduce, Renew, Reuse, Recycle, Rebuy.

BACKGROUND: THE PHASE II STORMWATER PROGRAM

The Phase II Stormwater Program is mandated by the United States Environmental Protection Agency. In New York, responsibility for implementation and enforcement of the program has been delegated to the New York State Department of Environmental Conservation (NYSDEC). The Pollution Prevention/Good Housekeeping program described in this manual pertains to SPDES General Permit GP-02-02 for Small Municipal Separate Storm Sewer Systems (MS4s).

An MS4 is defined as *a conveyance or system of conveyances owned by a State, City, Town, Village, or other public entity that discharges to the Waters of the United States and is designed or used to collect or convey stormwater* (includes gutters, pipes, and ditches). An MS4 is not a combined sewer, and is also not part of a Publicly Owned Treatment Works (i.e., sewage treatment plant).

The word "stormwater" by definition means surface runoff water that is the result of rainfall and/or snowmelt exclusively.

There are two ways in which a Municipal Separate Storm Sewer System can be designated as a *regulated* Small MS4.

- The municipality is part of, or drains directly to, an urbanized area of population 50,000 to 100,000. The U.S. Census Bureau defines an *urbanized area* as an area in which population density exceeds 1,000 people per square mile. These are referred to as *automatically designated MS4s.*
- The municipality's separate storm sewer system drains to a water body that is designated as *impaired* on the New York State 303(d) list, or is in the watershed of a body of water for which a *Total Maximum Daily Load* (TMDL) for pollutant loading has been developed. These are referred to as *additionally designated MS4s.*

In the County of Dutchess, the following municipalities are automatically designated MS4s:

- City of Beacon
- City of Poughkeepsie
- Town of Beekman
- Town of East Fishkill
- Town of Fishkill
- Town of Hyde Park
- Town of LaGrange
- Town of Pleasant Valley
- Town of Poughkeepsie
- Town of Wappinger
- Village of Fishkill
- Village of Wappingers Falls
- County of Dutchess

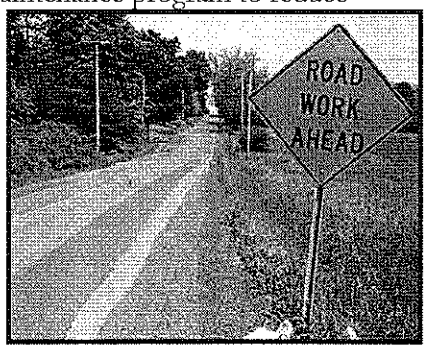
In the County of Dutchess, the following municipalities are additionally designated MS4s, due to their presence in New York City's East of Hudson watershed, for which a TMDL has been developed:

- Town of Pawling
- Village of Pawling

Communities in New York State that are regulated under the Phase II Stormwater SPDES Permit GP-02-02 for Small MS4s are required to have in place a program for pollution

prevention. This requirement fulfills Minimum Measure 6 (Pollution Prevention and Good Housekeeping) of the MS4 permit and is related to portions of other permit requirements including Minimum Measure 3 (Illicit Discharge Detection and Elimination), 4 (Construction Site Runoff Control), and 5 (Post-Construction Stormwater Management). The program pertains to all municipal departments, but is of particular concern to highway departments, parks and recreation departments, and all employees who perform outdoor job tasks.

The New York State Department of Environmental Conservation has outlined the necessary components of a Pollution Prevention and Good Housekeeping program as the development and implementation of an operation and maintenance program to reduce pollutant runoff from municipal operations including:



- Stormwater system maintenance and retrofits
- Fleet and building maintenance
- Road construction and maintenance

Program must consider:

- Maintenance activities and schedules
- Controls to reduce/eliminate pollutants from parking lots, storage areas and waste transfer facilities
- Procedures for proper disposal of waste materials removed from storm drains
- Inspection procedures for controls to reduce floatables and other pollutants
- Training for employees

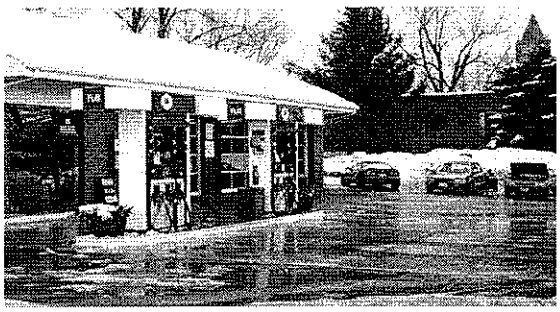
The above requirements listed above should be documented in the Notice of Intent (NOI) and subsequent annual reports submitted to New York State Department of Environmental Conservation. The program requirements must be fully implemented no later than January 2008.

List of pollutants

Many products commonly used or generated in the home, by businesses and industries, or by municipal employees are a source of pollution when they are intercepted by stormwater. The following are some examples:

- **Soil or fill material:** Soil that has eroded from a construction site, roadway, or stockpile can be carried to water bodies as sediment by stormwater.
- **Concrete, cement, and asphalt:** These substances act the same way as sediment when they enter a waterway, and in some cases can contain harmful byproducts.
- **Oil, fuel, antifreeze, and other automotive fluids:** When these substances leak onto a paved surface, they are easily transported by stormwater into watercourses.
- **Road salt:** Salt applied during the winter months is readily soluble and can alter the chemical characteristics of streams and lakes as residue is carried away by snow meltwater.
- **Trash and garbage:** Often referred to as "floatables," trash clogs drainage systems, harms wildlife, and is unpleasant to behold in public settings.

- **Paint:** Paint can be a pollutant if used outdoors and not allowed to dry prior to a major rainfall, or if spilt and not properly cleaned up. Paint often contains metals and other chemicals that can be harmful if they enter waterways.
- **Pesticides:** Insecticides and herbicides, some of which contain toxic substances, pose a potential problem if not applied correctly.
- **Fertilizers:** Fertilizer, if applied in excess, can leach nutrients to stormwater, which may harm aquatic ecosystems by causing algal blooms and heavy aquatic plant growth.
- **Hazardous waste:** Battery acids, solvents, detergents, and other materials, if not properly disposed of, can pose varying degrees of environmental threat when mixed with stormwater.
- **Vegetative waste material:** Grass clippings, tree limbs, and leaf litter contain nutrients that can lead to algal blooms in a water body. Decomposition of these materials can cause a decline in water oxygen levels.
- **Scrap metal:** Because it rusts when exposed to the elements and contains varying contents of potentially harmful different types of metal that can be carried into the stormwater drainage system by rain, scrap metal is considered a source of pollution.
- **Pet waste:** Pet wastes are among the many common stormwater pollutants that can degrade water quality. When water (i.e., rain, hose water, sprinklers, etc.) contacts pet wastes the resulting stormwater runoff has been found to contain high concentrations of pathogens such as bacteria, parasites, and viruses. These bacteria can make people and other animals sick, and result in the spread of disease.



RECEIVING WATER BODIES

An awareness of the location and degree of threat to the various watercourses in a community is of value to the highway department in fulfilling the requirements of the Phase II Stormwater program. Although it is illegal to pollute any body of water in New York State to the extent that a violation of water quality standards occurs, you should know what lakes, streams, and wetlands in your municipality are under special protection through programs and regulations.

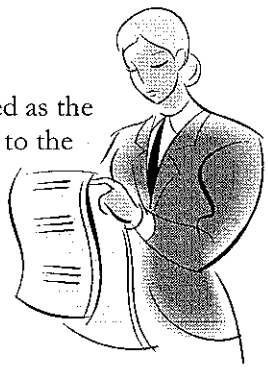
The following is an inventory you should create:

- Waters and watersheds for which a Total Maximum Daily Load (TMDL) has been developed by NYSDEC
- Waters that are on the 303(d) list as impaired
- Waters that are on the Priority Water Bodies considered stressed or threatened
- Federally designated wetlands and bodies of water (i.e., listed on the National Wetlands Inventory)

- State-designated wetlands
- City/Town-designated wetlands (if specified in municipal code)
- All permanent streams, intermittent streams, ponds, lakes, canals, and reservoirs to which roadways and other facilities under your jurisdiction drain
- All conveyances and structures within a Municipal Separate Storm Sewer System (MS4), whether enclosed pipes, open ditch, or other
- Take particular note of the wetlands and bodies of water to which municipal highway garages, transfer stations, and municipal parks discharge

RESPONSIBLE PARTIES

Stormwater Management Officer

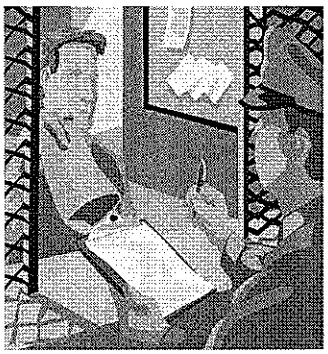


The Stormwater Management Officer (SMO) is an individual identified as the enforcement authority empowered to implement all local laws related to the Phase II Stormwater Program. This individual should be either a municipal official or employed as a member of a municipal department. The duties of the SMO cannot be delegated to a consultant or independent business.

Your municipality also has a Local Stormwater Public Contact,

responsible for handling all inquiries from the public regarding the stormwater program. In some municipalities, this individual is the SMO but may be another individual. Many larger communities also have designated a separate person as the Stormwater Program Coordinator, who can work with both the Public Contact and the SMO to address complaints and manage the program.

The SMO is typically a building inspector, code enforcement officer, or environmental planner employed by the municipality, but in some cases it may even be the highway superintendent. The SMO's responsibilities may be shared among several individuals. Highway and recreation departments interact with the SMO in reporting potential violations or threats to water quality (including spills and illicit discharges), developing an inventory of your facilities and a plan for pollution prevention, as well as obtaining required SPDES Phase II General Construction Permit for any activity exceeding an acre in land disturbance.



Highway/recreation department contact

Within a highway or recreation department, a point of contact should also be established for direct reporting and interaction with the SMO. This person would also be responsible for overseeing the pollution prevention program and ensuring that employees are properly trained in good housekeeping procedures as well as detection of illicit discharges. Usually, these responsibilities will fall to the highway or parks department superintendent but may also lie with the highway foreman.

INVENTORY YOUR FACILITIES

A critical step in the development of a stormwater pollution prevention program is to inventory all facilities and ensuring that a full understanding exists of all activities that take place at these facilities. In small villages, this may be simply one small highway garage, while in larger towns, cities and counties, materials, equipment, and waste transfer stations may be maintained in several separate locations.

Within the facilities themselves, an inventory should be generated of all vehicles, equipment, materials, and substances that are utilized in the department's operations. Further attention should be paid to the buildings, outdoor storage areas, fueling stations, and drainage systems. See Appendix B for a facility inventory worksheet to assist with this task.

VEHICLE AND EQUIPMENT MAINTENANCE

Vehicle washing operations

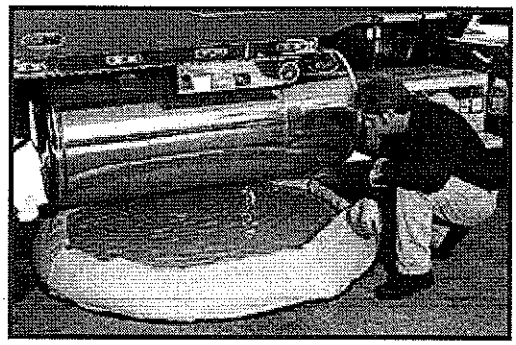
Vehicle washing, when not done inside or in a containment area, is an immediate pollution threat and can constitute a possible illicit discharge. This is true for two reasons. The "dirt" caked on vehicles, in addition to sediment, can contain a number of harmful pollutants; grass or vegetation clippings can be equally harmful. Additionally, detergents and soaps used in cleansing the vehicles pose a hazard to the environment and to water quality.

Therefore, it is best to wash vehicles inside and be sure that wash water drains to a sanitary sewer rather than a storm sewer. If this is not possible, an impervious concrete wash pad that does not drain to a storm sewer is the next best alternative. Treatment of wash water may be accomplished using an oil-grit separator or grassed filter area. Wastewater can be treated by a number of other devices, but you should check with the manufacturer to determine that the appropriate pollutants are being removed. Erecting a roof over an outdoor wash area keeps rainwater for interacting with the pollutants that may collect on the wash surface.

Regardless of where or how you wash your equipment fleet, it is advantageous to water quality to use biodegradable materials that are the least toxic products available. Avoid the use of chlorinated solvents. Use detergents or water-based cleaning agents instead.

Spills and leaks

Spillage of a number of types of vehicular fluids, including engine oil, gasoline, diesel fuel, hydraulic fluid, coolant or antifreeze, and various automotive fluids represents a threat to water quality. These substances are readily washed into stormwater drainage systems and then into water bodies or waterways by rainfall.



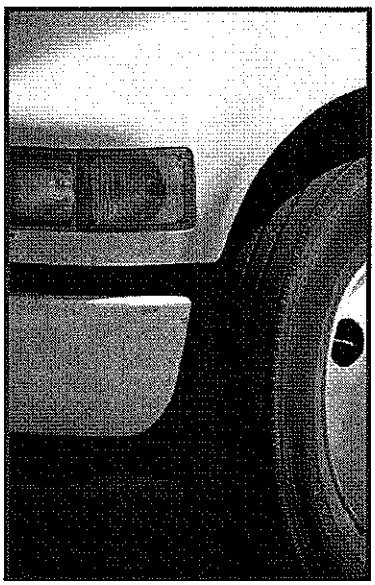
All machinery and vehicles should be inspected regularly for leakage of oil, gasoline, or other fluids. All leaks should be reported to a supervisor for repair. A logbook should be maintained documenting these inspections, with the date and the person who performed the examination noted. Tanks, pumps, fittings, pipes, and containers should also be inspected routinely for leaks. Here are some general guidelines concerning maintenance and repair of vehicles and equipment:

- If a leaking vehicle enters your facility yard, move it indoors as quickly as possible. Place a drip pan underneath it to contain any fluid prior to and once moved indoors.
- Conduct vehicle repairs and maintenance work, including changing of fluids, indoors. Only emergency repairs should be completed outdoors.
- Where work must be done outdoors, grade, pave, or berm outdoor areas to collect discharge into a sanitary drain.
- Never dump anything down a storm drain or catch basin, or direct a drainage line to a storm drain.

Please see the section on "spill response procedure," for information on dry cleanup of liquid spills.

Reportable measurable goals for vehicle and fleet maintenance

The following list of sample measurable goals regarding vehicle and fleet maintenance is based, in part, on guidance from NYSDEC. Additional detailed information is available in NYSDEC's Self-Assessment Guidance Manual for Pollution Prevention and Good Housekeeping.

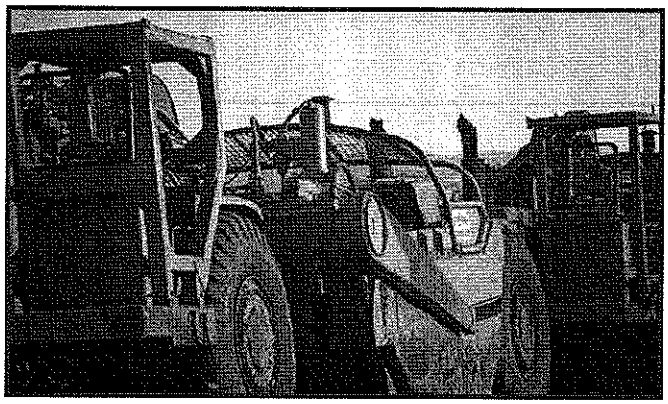


- Number of cleanouts of oil and grit separators or similar maintenance operations for site drainage structures.
- Results (quantity) of recycling program for oil, antifreeze, batteries and other chemicals.
- Number or percent of facilities at which proper treatment from disposal of vehicle washwater has been implemented.
- Documentation of repair of vehicle and equipment problems resulting in fluid spills.
- Development and implementation of policies/procedures, and training of staff, with regard to:
  - Vehicle washing wastewater disposal/treatment
  - Site drainage system maintenance and cleanout
  - Recycling
  - Hazardous materials storage
  - Spill prevention/response for vehicle maintenance (e.g., leaks) and repair

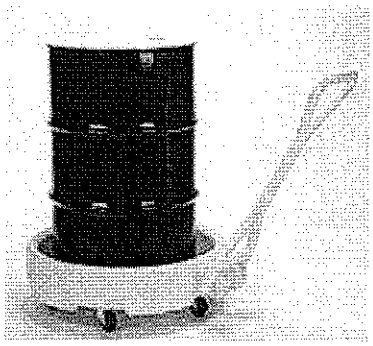
WASTE MANAGEMENT AND SPILL PREVENTION IN ALL MUNICIPAL OPERATIONS

Good Housekeeping

Taking reasonable precautions in work with and storage of materials, and in general, keeping a neat and tidy work area (especially outdoors), will go a long way toward prevention of any impacts to stormwater.

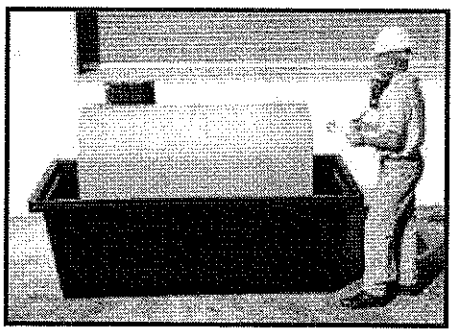


- Place a drop cloth or tarp beneath any outdoor work that could produce overspray or debris. This includes painting, finishing, primer application, sanding and filing, sawcutting, drilling, and similar work.
- Sweep up scraps and debris, and properly dispose of wastes, when work is finished – recycle if possible.
- Clean outside parking and storage areas regularly and put the collected material into the garbage – do not sweep it into the street or off the property.
- Collect bulk grease and oil in containers and contact a firm to recycle it.
- Close the lids of dumpsters and garbage containers after every use. It is recommended that the dumpster compartment(s) be kept locked to prevent illegal dumping.
- Do not use dumpsters for liquid wastes, as they are rarely leak-proof.
- Do not place leaky garbage bags into a dumpster without securing them inside an additional unbroken bag.
- Clean floor mats and garbage cans and dispose of wash water, in a janitorial sink rather than in the parking lot or street.
- Use the least toxic cleaning products available, and use them as sparingly as possible. All detergents, even if considered nontoxic or biodegradable, must be filtered and then discharged to a sanitary sewer (not a storm sewer). Filtered solids can be thrown in the garbage unless they are hazardous materials.



Chemicals used in any type of work should be kept securely covered when not being applied, and should be put away indoors when they are not in use. Indoor storage should be kept orderly to avoid indoor spills that can be tracked outside by foot traffic and equipment. Waste oil drums and containers for spent antifreeze and other fluids should be kept closed except when filling. As a precautionary measure, when large quantities of petroleum products or other chemicals (e.g., in drums) are being transported or handled, storm drains should be covered and/or blocked to help contain a spill if one should occur. Transfers of fluids to and from storage and waste tanks should be observed by an individual trained in spill response procedures. Funnels should be used when transferring fluids.

Waste Management and Materials Storage



Chemicals stored outside in large quantities should be kept in a concrete containment area. The containment area not only prevents spilled liquids from entering the stormwater drainage system, but also protects the area from runoff of stormwater from upslope. Containment areas that accumulate rainwater should be drained only if it is certain that no contamination has entered the storage pool. Typically there is a valve that opens a small drainage outlet. Fit all storage tanks with overfill prevention and spill containment implements.

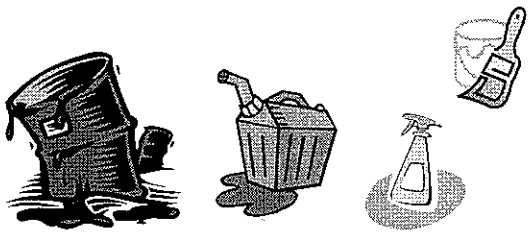
Piles of topsoil, subsoil, gravel, and other materials should be protected to prevent sediment from being carried away by rain or wind. This can be accomplished by placing it on an impervious surface with silt fence downslope of the storage area. Providing cover for the piles would greatly reduce the amount of sediment loss. For long-term storage of topsoil and subsoil, stabilization using seeding and mulching is recommended. Details on acceptable silt fence installation and seeding/mulching methods can be found in the New York Standards and Specifications for Erosion and Sediment Control.

Many municipalities operate transfer stations at which materials such as glass, metal, paper, plastic, and organic materials such as yard waste can be deposited for recycling or reuse. These facilities should record the results of the recycling program on an annual basis in tons or cubic yards of various materials collected. Scrap metal should be cleaned of hazardous materials before it is stored outside. Fuel, oil, and all other fluids should be removed from salvage vehicles prior to storage. It is important that storage of these materials is in covered containers or buildings to avoid both exposure to rainfall and transport offsite by stormwater runoff.

Illegal dumping is a problem in many communities. Unfortunately, for unknown reasons, people who dispose of waste material illegally tend to do so in or near streams or other bodies of water. Municipalities may choose to address this problem either by restricting access to popular dumping sites or making other physical modifications to discourage dumping. Alternatively, heightened enforcement of "No Dumping" ordinances may also serve to attack the problem.

Reportable measurable goals for waste management and materials storage

- Frequency of hazardous material collection events sponsored by the municipality
- Identification and modification of illegal dump sites to discourage illegal dumping
- Municipal recycling program results (tons or cubic yards per year) for glass, metal, paper, plastic, and organic materials
- Development and implementation of policies/procedures, and training of staff, with regard to:
    - Prevention of illicit dumping and littering
    - Waste reduction and recycling
    - Animal waste control
    - Household hazardous waste collection



ILLEGAL CONNECTIONS TO THE STORMWATER DRAINAGE SYSTEM

Sanitary sewage (including septic system waste and laundry wash water), vehicle and equipment garage drain effluent, waste motor oil and other automotive fluids, and industrial waste are all considered illicit discharges if they enter the stormwater drainage system, and constitute a violation of the law. Several other categories of discharges must also be targeted for elimination if they are determined by the New York State Department of Environmental Conservation to be substantial contributors of water pollution to the stormwater drainage system. These include foundation drains, roof gutter leaders, water line flushing,

uncontaminated groundwater infiltration, water from crawlspace and basement sump pumps, and footing drains, among others. Municipalities should considering requiring that those with sump pumps discharging to the MS4 install secondary containment for all heating oil tanks located in the basement area. Adequate containment could prevent petroleum products from discharging into the MS4 and then to nearby waterbodies.

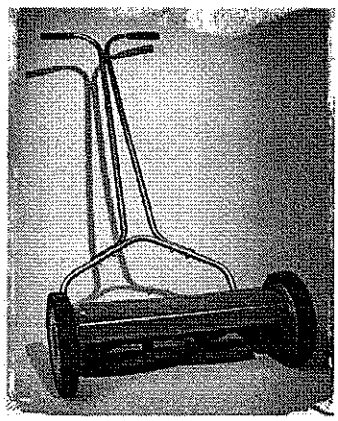
Facilities managers should review all types of drainage systems located on their properties and ascertain that there are no existing connections of non-stormwater conveyances to the stormwater drainage system. If such connections are present, a procedure must be developed for their elimination. If a sanitary sewage is found to be discharging to the MS4 either by direct or in-direct connection (e.g., leaching of material from a failing individual sewage system), the County Department of Health should be notified immediately for further investigation.

PARK AND OPEN SPACE MAINTENANCE

Park and recreation area maintenance encompasses a range of activities that can pose a threat to water quality if not done with due care. The following are some ways to minimize the risk:

- Follow the manufacturer's instructions when applying pesticides or fertilizers. Usually these products should not be applied during, or right before or after, rain.
- Ensure that all sprayers and/or spreaders are calibrated to distribute evenly and at the manufacture's recommended application rate.
- Establish chemical-free buffer zones around water bodies. In these areas, pesticides and fertilizer should not to be applied. We recommend a buffer zone of 25 feet be maintained around all streams, lakes, and other water bodies.
- Sweep granular chemicals and/or grass clippings back onto vegetated areas if they fall onto a paved surface. If not done so, they will be washed into storm sewers and

Test your soil to determine how much fertilizer, and in what nutrient ratio, you really need. There is no benefit to overapplication of fertilizer, and in addition to being potentially harmful to the grass, excess nutrients are readily transported by rainwater into the nearest water body or leached into groundwater.



then into watercourses with the first significant rainfall. Granular chemicals, like any other substance, can constitute a pollution threat, and grass clippings are typically high in nutrient content due to fertilization.

- Mulch mowing (allowing grass clippings to lie on the lawn) can reduce the need for pesticides, fertilizers, and irrigation. It recycles nutrients immediately back into soil and holds water in the soil through absorption and by blocking the effects of evaporation.
- Direct blown grass away from the water rather than towards it when mowing lawn areas adjacent to water bodies.

- Never dump grass clippings or other yard waste into a drainage ditch or waterway. They are often laden with nutrients from uptake of fertilizer that lead to algal blooms and subsequent fish kills.
- Sweep up litter and debris from parking lots; do not hose them into storm drains. Trash and yard waste clog storm drains, interfering with their function, and accumulate in streams causing blockages and erosion.
- Plant rain gardens of native drought-resistant and pest-resistant plants, with curb cuts to allow parking lot stormwater to be filtered and treated by them.
- Use pervious pavement or gravel parking lots where possible, particularly in lightly used overflow parking, to reduce stormwater runoff.

Reportable measurable goals for park and open space maintenance

- Percent of staff applying pesticides who are NYS Certified Applicators
- Reduction in pesticide usage and/or adoption of alternative pest control approaches (less toxic or persistent products, integrated pest management)
- Reduction in fertilizer usage
- Program established for hull washdown debris control at marina(s)
- Program established for sanding and painting debris and dust control at marina(s)
- Waste tank pump out system at marina available and maintained
- Procedure in place for proper drainage and discharge of swimming pool water
- Dates of most recent inspection and pump out for septic systems
- Documentation of any problems in septic system operation
- Ordinance in place for proper collection and disposal of pet wastes (from parks, public sidewalks, and streets)
- Management of ponds and bodies of water and their surrounding vegetation to discourage nuisance waterfowl
- Development and implementation of policies/procedures, and training of staff, with regard to:
    - Integrated pest management and use of pesticide alternatives
    - Fertilizer use, alternatives, and reductions

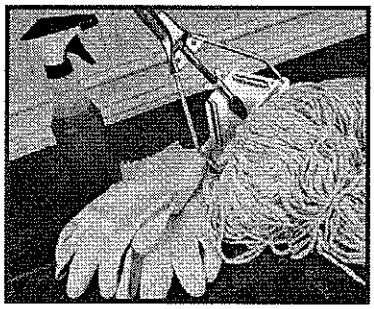
Alongside ponds, lakes, and larger streams, nuisance waterfowl such as Canada geese are a significant threat to water quality. Their waste contains high levels of nitrogen and phosphorus compounds and when large numbers of waterfowl congregate in an area, it can lead to rapid algal blooms. Rather than mowing to the edge of the water, it is recommended that a buffer of taller grass and shrubs be maintained. This discourages waterfowl because it allows predators to hide.

- Pesticide and fertilizer usage records
- Hazardous materials storage
- Erosion control practices
- Boat cleaning and painting operations
- Pump outs and haul-out pit maintenance
- Alternative discharge options for chlorinated water
- Inspection, maintenance, and pump out of septic systems and associated record keeping
- Pet waste control, education, and enforcement

MUNICIPAL BUILDING MAINTENANCE

Municipal buildings can include highway garages, repair garages, parks department storage buildings, town halls, police stations, fire stations, and libraries, as well as any number of other municipal facilities. Some of these facilities, because of the storage and use of vehicles, equipment, and potentially polluting materials, require extra attention to protect water quality. Others, such as office buildings, simply require management of runoff and care in the occasional use of chemical substances to prevent pollution. Handling of stormwater drainage from parking lots, rooftops, and outdoor storage and staging areas should revolve around the principal of "*keeping clean water clean*":

- Roof downspouts should be directed to stormwater management areas or immediately offsite rather discharging water to areas where it can pick up additional pollutants.
- Wherever possible, surface runoff should be directed away from vehicle or materials storage areas that may contain a higher risk of exposure of stormwater to pollutants. Drainage in these areas should be contained in as small an area as possible and treated before being discharged offsite.
- Where soil conditions allow, infiltration of stormwater should be incorporated as a treatment practice.



Buildings that do not utilize public sewage treatment systems will require onsite septic system inspection and maintenance. This means that regular inspection (at least once every two years) and pump out (generally once every 3 to 4 years) should be completed and documented. Any failures or maintenance problems should likewise be addressed and the actions taken should be recorded.

Many public office buildings employ maintenance staff or contract with a cleaning company to perform routine janitorial tasks. It is important that these personnel are made fully aware of the policies and procedures outlined in this section.

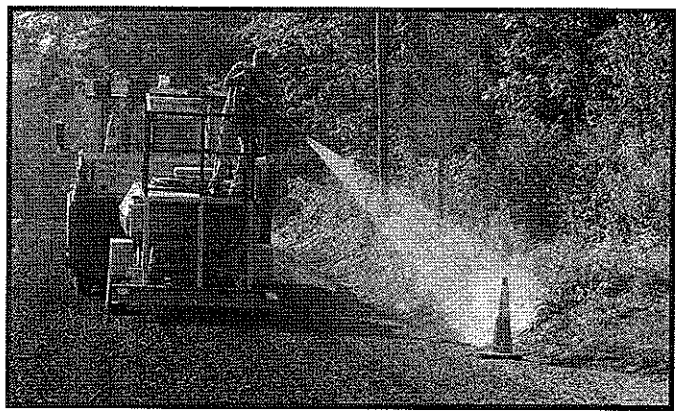
Products used in cleaning and maintenance of facilities should, where possible, be biodegradable and pose a minimum threat to the environment. As further discussed in the section on Waste Management, recycling procedures should be employed wherever possible.

Concerning the maintenance of building grounds, many of the procedures described in the section on Parks and Open Space Maintenance are likely to also be relevant here.

For details on storage and containment, spill prevention, and spill response procedures for petroleum products and hazardous materials, see the sections on "*waste management and materials storage*" and "*spill response procedure.*"

STORMWATER DRAINAGE, CONVEYANCE, AND TREATMENT SYSTEM MAINTENANCE

Ditch cleanout and maintenance



Many highway departments maintain roadside ditches as open and unobstructed waterways. Stabilize ditches with vegetation immediately following cleanout to avoid causing erosion and sediment deposition as a result of necessary maintenance. This can be most easily accomplished through use of a hydroseeder. Vegetation should be allowed to establish and should only be removed when sediment accumulation in the ditch becomes excessive and compromise its function. On ditches where the design velocity exceeds **5.0 ft/sec**, vegetation is insufficient to provide soil stabilization and sediment trapping capacity, and the use of rock riprap or other reinforcement practices becomes necessary. Ditch stabilization practices should be designed and implemented using guidance from the New York Standards and Specifications for Erosion and Sediment Control.

Catch basin and inline structure cleanout procedures

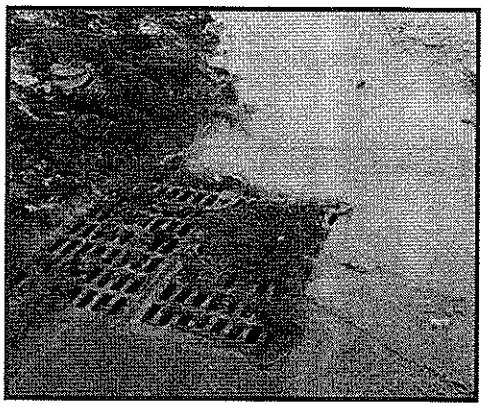
All catch basins should be examined regularly (twice per year is recommended) to determine if cleanout is necessary. More frequent monitoring and maintenance may be necessary in areas where soil disturbance or construction is occurring nearby.

A bucket or vacuum truck may generally be utilized to scoop accumulated material out of catch basins. These spoils should be disposed of in such a way to minimize contact with stormwater and bodies of water. This may mean sending spoils to a sanitary landfill, composting them, or

A rule of thumb is that catch basin sumps should be cleaned out when they are one half to three quarters full. Sumps are rarely able to completely fill up with sediment because the top layer of sediment is continually washed out due to the velocity of water to and from adjacent pipes. This means that partially full sumps may not be functioning in capturing sediment.

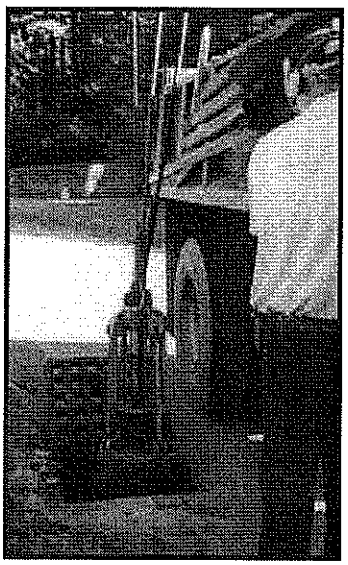
using them as fill material in an area where they will be securely buried and unlikely to come into any contact with either groundwater or surface water. Prior to reuse of the material, consider testing it to determine if it is a polluted (e.g., hazardous waste) material.

Stormwater outfalls themselves must be kept clear of blockages and debris so that they are able to properly transport water. Sediment trapped within conveyance pipes should be periodically removed by a pressure washing procedure.



Other constructed stormwater management structures, such as Vortechnics™ or Stormceptor™ units, may require a different maintenance procedure. Check with the manufacturer to find out the required frequency of maintenance. The above names are offered as illustrative examples. Dutchess County Soil and Water Conservation District does not endorse any particular manufacturer or product of inline stormwater structures.

Reportable Measurable Goals for Stormwater Drainage, Conveyance, and Treatment System Maintenance

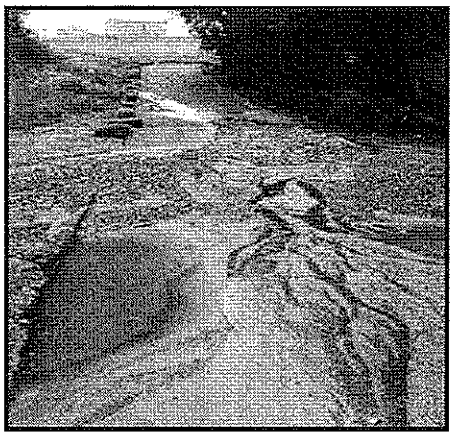


- Quantity (tons or cubic yards per year) of material cleaned from structures in the stormwater drainage, conveyance, and treatment system (also expressed as percentage of sand applied during winter road maintenance)
- Length of storm drain pipe cleaned
- Number of outfalls cleaned (also express as percentage of total number in municipality of possible)
- Number of catch basin sumps inspected and cleaned (also express as percentages of total number in municipality if possible)
- Any upgrades or technology improvements in overall system
- Development, and implementation of policies/procedures, and training of staff, with regard to:
    - Priority setting for different portions of the system based on waterbody impacts and listed waters

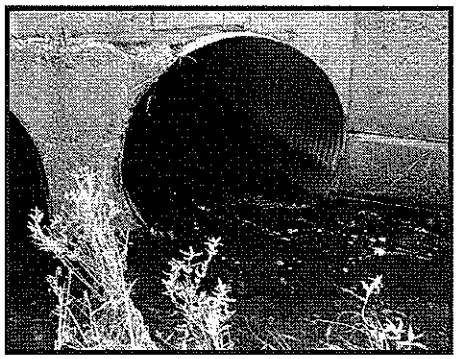
- Inspection of system components and recordkeeping/frequency tracking
- Technology improvements and installation
- Maintenance, repair, stabilization, and cleanout of system components
- Public education and communications

STREET AND BRIDGE MAINTENANCE

Street sweeping

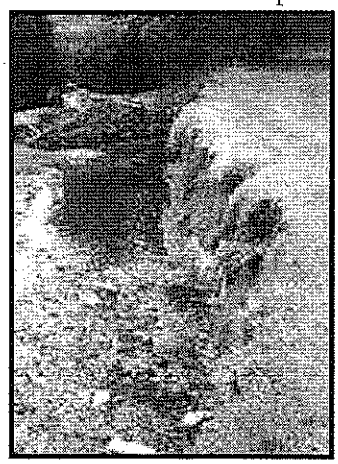


All roadways within a municipality should be swept annually, at a minimum, and more frequently if possible in areas where construction is taking place or in low lying areas where sediment collects. Sweeping removes not only sediment, but also trash, leaf litter, and other debris. Spoils should be disposed of appropriately as described above under "Catch basin and inline structure cleanout procedures."



Bridge and culvert maintenance

Improper sizing or maintenance of bridges and culverts crossing streams or bodies of water can lead to significant erosion and subsequent discharges of sediment to receiving water bodies. Keeping these crossing points stable is an important part of any street or bridge maintenance program. Proper erosion and sediment control techniques based on the New York Standards and Specifications for Erosion and Sediment Control should be employed when bridge or culvert replacement is undertaken. Careful attention to stabilization and minimization of the impact to adjacent streambanks is also critical.



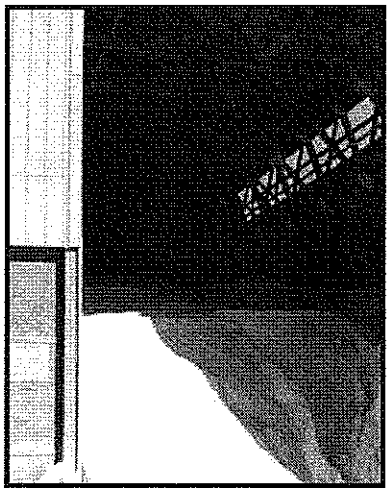
Reportable measurable goals for Street and Bridge Maintenance

- Quantity (tons or cubic yards per year) of debris and material cleaned from streets, sidewalks, and parking lots within calendar year (also expressed as percentage of sand applied during winter road maintenance)
- Number of culverts inspected, repaired, and replaced
- Miles of street swept annually as a percentage of total miles in the municipality.

- Number of bridge repair/replacement projects with incorporated pollution prevention or streambank erosion control components
- Development, staff training, and implementation for policies regarding:
  - Street cleaning prioritization strategy
  - Schedules and frequency for streets sweeping
  - Schedules and frequency for culvert inspection and repair
  - Sidewalk and municipally owned parking lot cleaning
  - Pollution prevention and streambank erosion control in bridge maintenance

WINTER ROAD MAINTENANCE

Salt storage and handling

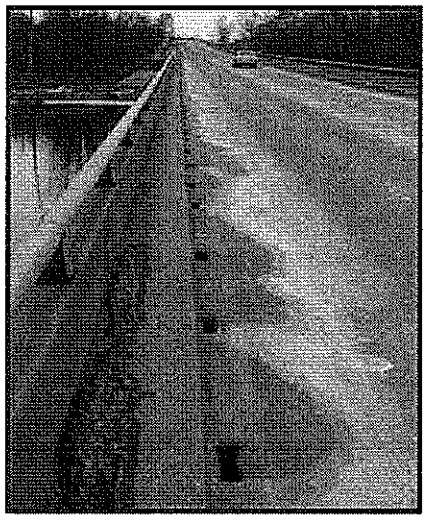


Proper storage and careful handling of deicing materials prevents them from becoming a threat to water quality at municipal facilities. Here are some general guidelines:

- Outdoor loading facilities should be equipped with a catch basin of sufficient capacity to handle the residue.
- Storage facility foundations are to be above the elevation of the surrounding area and should have a 0.5% slope away from the entranceway.
- Salt storage facilities should be covered and rainproof.
- Inspections for structural integrity should be performed periodically and repairs made as needed.

Applying deicing materials

Balancing the need for adequate winter road maintenance to maintain public safety with concerns for water quality represents a substantial challenge. Most products commonly used on roadways have the potential to result in negative impacts to water quality. Heavy use of sand necessitates more frequent street sweeping and cleaning of catch basins to prevent sedimentation, while excessive salt use results in water quality impacts.



Salt brine is also used as a prewetting additive to conventional road salt or as an exclusive deicing material. Prewetting is the process of spraying deicing salt with a solution of liquid chemical before spreading the salt on the roadway. Studies have show that

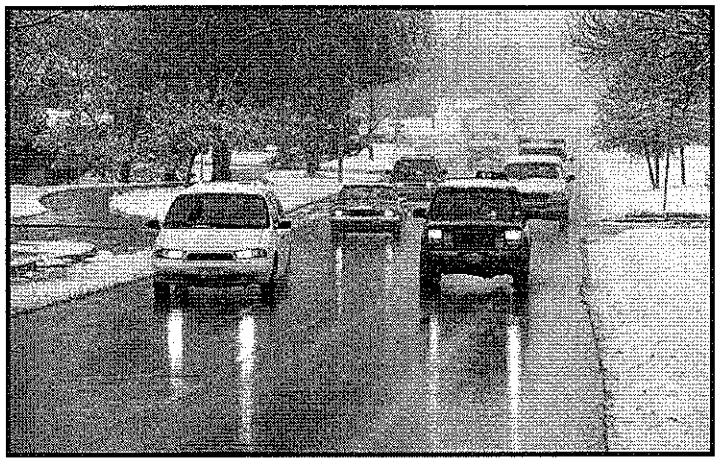
prewetting the salt helps it work more effectively as a deicing agent for two reasons: First, wet salt clings to the road instead of bouncing off or being swept off by traffic. This results in a decrease in the amount of salt spread, thus saving money and minimizing the impact on the environment. Second, to be effective as a deicing agent, salt requires moisture. Prewetting the salt ensures that there will be enough moisture to facilitate the melting process even when temperatures drop below freezing.

Here are some guidelines that can be followed to minimize these water quality impacts:

- Do not discharge excess salt or sand left on the roadways into a catch basin or directly into a stream or lake. This material should be swept up from the roadway with sweeping or scrubbing equipment and properly discarded.
- Maintain equipment and materials (including spreaders, road-weather systems, sand-salt mixture composition) properly.
- Calibrate equipment to manufacturer-recommended levels.
- Decisions about where and how much material to use should be made based on both public need and potential water quality impacts, with attention being paid to priority and listed water bodies.
- Remain up-to-date with available improvements to technology.

Reportable measurable goals for Winter Road Maintenance

- Inspection/repair of salt storage facilities and practices to ensure adequate cover of all deicing materials
- Calibration, testing, and maintenance of application technology equipment



- Reduction in overall sand or salt usage as a result of material selection, improved technology, application strategy, or staff training (e.g., annual tons)
- Development, and implementation of policies/procedures, and training of staff, with regard to:
    - Deicing material storage methods
    - Storage site operations and cleanup
    - Salt reduction options, including alternative methods
    - Improved application technologies
    - Maintenance of application equipment

- Drinking water well considerations, including private wells

SPILL RESPONSE PROCEDURE

Any release (leak or spill) of a petroleum product must be reported to NYSDEC, unless all four of the following criteria are met:

1. The spilled material is known to be less than five (5) gallons in quantity
2. The spill is contained and under the control of the spiller
3. The spill has not, and will not, reach the waters or lands of New York State
4. The spill is cleaned within two (2) hours of discovery

If any of the above criteria are not met, or are in doubt, the NYSDEC Spill Response Unit should be contacted at 1-800-457-7362.

If the person(s) responsible for the spill is (are) unknown, it is the responsibility of the person who discovers the spill to notify NYSDEC. The following information should be provided when calling the hotline:

- Name of the person making the report and his (her) relationship to any person who might be responsible for the spill
- Time and date of the discharge or discovery of the discharge
- Probable source of the discharge
- Location of the discharge in relation to bodies of water
- The type of petroleum discharged
- Possible health, fire, or explosion hazards resulting from the discharge
- The amount of petroleum discharged
- Current and anticipated cleanup and response actions
- Personnel currently at the discharge site
- Other government agencies that have been, or will be, notified

For other hazardous substances, NYSDEC must be notified in a similar manner of discharges that exceed the reportable quantity (RQ). A listing of hazardous substances, with RQs, is available from NYSDEC's website (6 NYCRR Part 597, www.dec.state.ny.us/website/regs/part597b.html).

If there is an immediate health threat, or a fire or explosion hazard, call 911. Generally, spills of hazardous substances also necessitate the contacting of fire or emergency services.

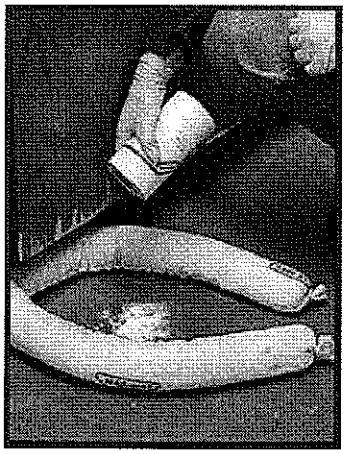
If it is safe to approach the scene, spills are to be contained as close to the source as possible with a dike of absorbent materials from an emergency spill kit.

Additional dikes should be constructed around storm drains, catch basins, and stormwater conveyances. Any contaminated spill residuals and oily debris should be set aside for proper treatment/disposal.

If a drinking water supply is expected to be contaminated as a result of the spill, the Dutchess County Department of Health must be notified at (845) 486-3475. The Department of Health will provide further guidance once they are contacted.

See Appendix J for an example spill response procedure poster to display within each municipal facility with chemical storage.

EMPLOYEE TRAINING



A pollution prevention training program is required for all highway and recreation department employees. The program should encompass the following topics:

- Good housekeeping and spill prevention practices, as detailed in this manual, which should become part of daily operations
- Spill response procedures including notification requirements, who to contact, location of emergency spill response equipment, and what actions to take under different circumstances or types of spills
- Management practices for handling hazardous materials, both new and waste products
- Documentation procedures for vehicle maintenance, catch basin cleanouts, street sweeping, spills, and materials and equipment inventory

An attendance sheet should be kept for each training session given to document that all employees have been fully trained. Training should be conducted annually, as well as when changes are made to the program. It may be most efficient to combine this type of training with other training programs, such as safety education and hazardous materials training.

All employees should be provided with a copy of this manual for review.

Appendices

Appendix A. Employee certification.

I, _____ herby certify that I have received a copy of the *Pollution*
(Print Name)
Prevention for Municipal Operations Manual on _____ and that I have
(Date)
reviewed and understand all information contained within it.

_____
Print Name

_____ _____
Signature Date

_____
Witness

Total time spent reviewing and/or attending training regarding this manual = _____ hours

* This signed certification shall be kept in the employee's file for the duration of their tenure with the municipality. Additionally, NYSDEC shall be notified of this certification as part of the municipality's Phase II stormwater program.

Appendix B. Facility inventory worksheet.

Name of facility: _____

Location of facility: _____

Outdoor Survey:

1. Where does rainwater runoff from roofs and parking areas drains to?
    a. Is this water treated prior to discharge into a receiving water body?

2. Are there any catch basins on the property?
    a. Where do they discharge?
    b. Is there inspection program in place to insure proper operation and maintenance?
    c. Is there erosion or excessive sediment at the discharge point?

3. How is the following stored prior to pick up?
    a. trash and garbage
    b. scrap metal
    c. recyclable material
    d. other

4. Are all storage containers covered?

5. How and where are sand and salt stored?
    a. Is the surface pervious or impervious?
    b. Is the material covered or uncovered?
    c. Is the salt/sand loading area swept to remove excess material?

6. What equipment is stored outdoors?
    a. What is under cover?
    b. What is exposed to the elements?
    c. Are there any signs of spills or leaks?

7. Is there a gas pump(s) at this location? {Note: see NYSDEC- Division of Environmental Remediation (Bulk Storage Help Line: (518) 402-9543) for information about bulk petroleum storage and permit requirements}
    a. What size are the tank(s)?
    b. Above or below ground?
    c. Are the tanks double or single walled?
    d. Is there cathodic protection?
    e. When was the last visual tank inspection (recommended monthly)?
    f. When was the last tightness test conducted (if required, every five years)?
    g. Is the dispensing area (e.g., gas pumps) covered?
    h. Is there an automatic shut off switch?
    i. Is the pumping area contained in case of spillage (e.g., bermed, sloped)

Appendix C. Spill response log.

Date/Time (note man-hours spent on task)	Person Reporting	Receiving catch basin/stream/ waterbody	Substance Spilled	Approx. Amount	Location of Spill	Clean up Action(s)	Person Responsible for Clean up	To Whom Reported	Remedial Action to Prevent Recurrence (if possible)

Appendix D. Sample vehicle repair log for fluid leaks.

Date/Time (note man-hours spent on task)	Vehicle Number/Name	Fluid Discharged	How Discovered	Repair Action Taken	Notes

Appendix E. Chemical substances inventory sheet.

ID #	Substance	Use (Indoor/Outdoor)	Storage Location	Storage Method (e.g., secondary spill containment, locked chemical closet, etc.)	MSDS on file (Y/N)

** A floor plan schematic showing the location of all of the above listed chemicals (using ID numbers) should accompany this table. Both should be included in the front of facility's MSDS binder. This completed table and floor plan should be provided to the local fire department(s) for fire safety purposes.

Appendix F. Catch basin inspection and clean out log.

Date/Time (note man-hours spent on task)	Person Reporting	Name of Roadway	Start Point	End Point	# catch basins inspected	# catch basins cleaned	Amount of material collected	Repairs Needed	Notes

Appendix G. Culvert and road-side ditch inspection and clean out.

Date/Time (note man-hours spent on task)	Person Reporting	Name of Roadway	Start Point	End Point	# culverts inspected	# culverts cleaned	# ditch miles inspected	# ditch miles cleaned	Amount of material collected	Repairs Needed	Notes

Appendix H. Outfall inspection and clean out.

Date/Time: _____ Weather (last 72 hours): _____

Person Reporting: _____ Total man hours spent on task = _____ hrs

Outfall ID								
Closest roadway								
Type of outlet protection								
Outlet protection ok? (Y/N)								
Debris/sediment blockage (Y/N)								
Erosion/scour present (Y/N)								
Excess sediment, debris, and/or trash								
Functioning?								
Odor?								
Color?								
Foam (Y/N)?								
Algae growth (Y/N)?								
Amount of material removed								
Repairs/Cleaning needed								
Possible illicit connections								
Notes								

Appendix I. Street sweeping log.

Date/Time (note man-hours spent on task)	Person Reporting	Name of Roadway	Start Point	End Point	Distance Swept	Amount of Material Collected	Repairs Needed	Notes

Appendix J. Example spill response procedures poster.

In Case of a Spill…

1. **Contain spill (if possible).**
   a. Prevent spill from entering nearby catch basins/drains/water bodies (if possible)

2. **Determine the size of the spill (volume) and the material spilled**

3. **Notify Spill Response Contact**

   Primary Contact: _____ Phone #: _____

   Alternate 1: _____ Phone #: _____

   Alternate 2: _____ Phone #: _____

4. **If <u>5 gallons</u> or more**
   a. **Call 911!**
   b. Notify NYSDEC Spill Response Unit – (800) 457-7362**

5. **If less than <u>5 gallons</u>**
   a. Call 911 if you don't feel you can clean up the spill safely and/or completely
   b. Obtain the MSDS for the substance
   c. Use proper PPE
   d. Absorb spill with proper material (see Spill Kit (if applicable))
   e. Properly clean up and dispose of waste spill containment material
   f. Document spill and clean up activities
   g. Notify NYSDEC Spill Response Unit – (800) 457-7362**
   h. If applicable, address cause of spill to prevent it from happening again in the future

** Any release (leak or spill) of a petroleum product must be reported to NYSDEC, unless <u>all</u> four of the following criteria are met:
1. The spilled material is known to be less than five (5) gallons in quantity
2. The spill is contained and under the control of the spiller
3. The spill has not, and will not, reach the waters or lands of New York State
4. The spill is cleaned within two (2) hours of discovery

Indoor Survey:

1. Are there any active floor drain(s) in the facility?
    a. What activities occur within drainage distance?
    b. Where do the floor drain(s) discharge?

2. How and where are the following stored (see Appendix E for a chemical substances inventory sheet)?
    a. Motor oil
    b. Waste oil
    c. Paints
    d. Cleaning solvents
    e. Antifreeze
    f. Other automotive maintenance fluids
    g. Other liquid chemicals

3. How are waste fuel oil and used automotive fluids recycled?

4. Are heating oil, fuels, hydraulic fluid, and motor oil stored in tanks or drums?
    a. What is the condition of the tanks of drums?
    b. Do these containers have secondary containment structures to provide a reservoir for holding back of the fluid in the event of a spill?
    c. Are there any signs of leaks or staining?

5. Is there a maintenance schedule for vehicles and equipment?

6. Are Material Safety Data Sheets (MSDS) readily accessible?

7. Is a spill cleanup kit containing absorbent pads, household cat litter, or other absorbent materials readily available?

8. Are there signs posted stating steps to be taken in the event of a spill (example: Contain spill if possible, call 911, call NYSDEC)

Comments:

Corrective Actions Taken as a Result of this Inventory:

Inventory completed by:

_____
Print Name

_____
Date/Time:

_____
Signature

Dutchess County
Soil and Water Conservation District
Farm & Home Center
2715 Route 44, Suite 3
Millbrook, New York 12545

NYS Department of
Environmental Conservation
625 Broadway
Albany, New York 12233

APPENDIX Y

HEALTH OF THE CASPERKILL
DUTCHESS COUNTY, NEW YORK

Health of the Casperkill, Dutchess County, New York

February 2009

Vassar College Environmental Research Institute

Cornell Cooperative Extension (CCEDC) Environment Program

Casperkill Watershed Alliance

Photo taken at the site where Rt. 9 crosses the Casperkill

Health of the Casperkill, Dutchess County, New York

February 2009

Prepared by the Vassar College Environmental Research Institute

Financial support provided by:

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Vassar College Environmental Research Institute
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Cornell Cooperative Extension Dutchess County (CCEDC) - Allison Chatrchyan, Environment Program Leader; Carolyn Klocker, Environmental Educator; Kristen Wilson, Interim Water Resources Educator

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Steve Rock and Jenny Arden, Doreen Tignanelli, Margaret and Larry Slomin, Marjorie Robinson, Fred Bunnell, Bill and Mary Lunt, and James Challey generously shared their knowledge of the stream and its watershed along with local environmental regulations. Vassar graduates Joel Dashnaw and Ryder Pearce contributed to the land use/land cover analysis.

We also thank Pat Myers, Town of Poughkeepsie supervisor, and Nancy Cozean, former City of Poughkeepsie mayor, for their support in helping us to acquire a New York State Water Resources Institute grant that made much of this work possible. We further thank Stephan Krakower, Town of Poughkeepsie town board, for his interest in the project and his invitation to present before the Town board.

Finally, we thank Rick Oestrike, Catherine O'Reilly, Tom Lynch, Russell Urban-Mead, David Burns, Doreen Tignanelli, and Jenny Arden for their constructive reviews that improved this report.

Preface: Our Lovely Casperkill

By Dr. A. Scott Warthin, Jr., Prof. of Geology, Vassar College

Once upon a time a little stream began, clear and sweet, in a swamp where the green herons perched in the buttonbushes, and the marsh wrens nested in the long cattails. What this stream may have been called by the Wappinger Indians we do not know, but early Dutch settlers called it the Casperkill. Along its banks the mink and otter hunted and played, while the deer came through the forest to quench their thirst.

The Indians, never of great number, used the stream in small ways; but these ways were in truth so small that they had no visible effect. Some four thousand years of habitation by Indians left the stream and its denizens as little changed as the forests along its banks.

But when the land was granted in patents and sold to settlers the great change began. Forests fell to clear fields, and to furnish lumber and fuel. The Casperkill suffered its first conspicuous indignity in the construction of a mill in its lower reach. Less obvious changes also occurred. Spring rains washed soil from the bare wheat fields, muddying at times the once clear spate. The hot rays of the summer sun warmed the waters that had been sheltered by trees along the banks. And other misfortunes came, at first slowly but at last in a crescendo of disaster. Beneath the headwater swamp lay beds of clay; this was used for the bricks that built much of old Poughkeepsie and the early buildings of Vassar College. When the brick plant closed in 1932 nearly half the swamp had been replaced by a pit, soon full of water. That phase of history remains today only in the name of Brickyard Hill, east of the swamp.

But that hole full of water? What a marvelous place to dump garbage! So a citizen with foresight bought the worthless hole and leased it to the Town of Poughkeepsie for a dump, and the waters that flowed from the swamp down the Casperkill became rich with the organic material of the decaying garbage and charged with iron from the rusting cans. The decay process used up the oxygen normally dissolved in the water; many kinds of life that had swarmed in the stream were drowned in the waters that once nourished them. Some life, however, survived and found that the waters, though fetid, were richer than ever with the decaying organic matter; these things flourished. So the Elodea and waterlilies that once grew in Sunset Lake on Vassar College campus, were replaced by ugly mats of algae. The coliform count of the water grew so high that the Vassar girls had to give up the kayaks in which they once sported. As the sunfish and bass that swam in the lake were replaced by goldfish and carp, so the water loving plants around its edge gave way to Yellow Flags and Sagittaria. And for years, when the Town burned its dump thrice weekly, a north wind brought a snow of burnt paper ashes on the water.

A few atrocities were corrected; a gravel miner was required to settle the mud from his wash water before returning it to the stream. Vassar College ceased to use Sunset Lake as a cooler for condenser water from the power plant. And in time more people protested the Monday-Wednesday-Friday smog from the burning dump, so dumping at that spot ceased.

Of course, it was coincidence that the dumping space had by then all been filled up well above water level, and was now valuable land. So we come to the era of industry and the supermarket, surrounded by acres of parking lots, where rainfall must be drained away at once or business suffers. And where can the storm sewers most cheaply discharge? Poor Casperkill! Today, even a modest rain promptly produces a brown turbid fluid discharge, courtesy of Shoprite and the Great Atlantic and Pacific Tea Company. It is not, however, tea, and it is (slowly, we hope) filling Sunset Lake, which is the first settling basin in its path. And nestling in this unlovely mud are other artifacts – item, two auto tires; item, an estimated 300 beer cans and assorted bottles. How the few surviving Painted Turtles can find a place to burrow for the winter it is hard to imagine. Snug indeed, between Schlitz and Rheingold, in mud spiced with fuel oil released into the Lake by mistake. Why is it that nearly all mistakes made with water are detrimental?

The New York State Water Resources Commission, in effect, has declared the situation hopeless above the Sunset Lake dam, giving that portion a "D" classification. On the theory that running water will gradually cleanse itself, and with the septic tank action in Sunset Lake as an assist, the Commission placed a rating of "C" on the Casperkill below Sunset Lake. This would permit fishing, except for trout, which require more dissolved oxygen than the panfish. This is hardly realistic today, but may come to pass when the organic debris in the Town dump has wasted away.

But will the Casperkill ever return to its early state? No, my friend, the marsh wren can never replace the supermarket, so let us have a care for what is left to us before it is too late.

Published in Wings Over Dutchess, newsletter of the Ralph T. Waterman Bird Club, Dec. 1965, Vol. 6, No. 2

APPENDIX Z

A WATERSHED MANAGEMENT PLAN FOR THE FALL KILL, DUTCHESS COUNTY, NEW YORK

A Watershed Management Plan for the Fall Kill, Dutchess County, New York

October 2006

Prepared by the: Fall Kill Watershed Committee

Financial support provided by the:

Hudson River Estuary Program of the New York State Department of Environmental Conservation

Primary Authors:

Patrick Bean, Department of Environmental Science and Policy, Marist College, **Thomas R. Lynch**, Department of Environmental Science and Policy, Marist College, **David Burns**, Dutchess County Environmental Management Council.

Acknowledgements

Development of any project the size and scope of the Fall Kill Management Plan was really a group effort that involved numerous individuals and organizations who contributed lots of time and effort. Over the last two years, dozens of different individuals representing educational institutions, government agencies, environmental advocacy organizations, community groups, developers, and private citizens have attended meetings of the Fall Kill Committee. While too numerous to mention by name, these individuals willingly gave of their time, talents, and expertise. We are extremely grateful.

At the risk of leaving out someone, we would especially like to thank the following for their contributions to the ongoing effort to conserve and restore the Fall Kill. Without their dedication and many contributions, this project would not have been possible.

Ann Davis of Marist College is responsible for writing the grant proposal that made the project a reality. For over two years she also served as Chair of the committee and provided organizational leadership in moving the project forward and by involving an increasing diversity of individuals and organizations. She was also critical to organizing the all day conference in the fall of 2005.

Mayor Nancy Cozean of the City of Poughkeepsie is acknowledged for her enthusiastic participation in the work of the committee, for her financial and logistical support of the fall, 2005 conference and for providing access to City department heads whenever information or other resources were needed.

Alix Gerosa and Mike Knutson of Scenic Hudson helped immensely by providing use of their offices for meetings, co-sponsorship and organization of the fall, 2005 conference, and providing the planning and the resources needed for the stream clean-ups in the spring of 2006.

Ryan Palmer of Sloop Clearwater was extremely generous with his time and organizational talents. He helped arrange access to meeting space at Clearwater, convinced Clearwater to co-sponsor the fall, 2005 conference, submitted written comments on the management plan, took the lead on the roll-out of the Management Plan, and provided access to the Clearwater.

David Kubek of Dutchess County Soil and Water, Rick Oestrike of Cornell Cooperative Extension, and Roy Budnik provided detailed comments and suggestions for improvement of the Management Plan.

Robert Schmidt of Hudsonia provided invaluable assistance in the assessment of the fish community of the Fall Kill.

Stacy Hoppen generated the build-out analysis for the watershed and assisted in accessing and interpreting data from the Dutchess County Environmental Management Council's GIS database.

The Mid-Hudson's Children's Museum and the Family Partnership Center generously allowed the use of their facilities for meetings and conferences that helped to move the project forward.

Last but not least, we would like to express our gratitude to the Hudson River Estuary Program of the New York State Department of Environmental Conservation for the financial support that made the whole project possible.

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Executive Summary

The Fall Kill Watershed covers approximately 19.5 square miles and is entirely in Dutchess County New York. Portions of the Towns of Hyde Park, Clinton, Pleasant Valley and Poughkeepsie as well as the City of Poughkeepsie are within the watershed. Totaling the lengths of its main channel and that of its tributaries, the Fall Kill is approximately 38 miles long and discharges into the Hudson River in the City of Poughkeepsie.

Land use dramatically changes along the streams length. Areas in the northern headwaters contain wetlands, marshes and forested properties. As the creek flows southward, its riparian zone shrinks and then largely disappears. During the Great Depression the lower reaches of the Fall Kill were channelized and stone walls were constructed to contain the creek as it passed through the City of Poughkeepsie.

The condition of the Fall Kill has been evaluated by this and earlier studies that have measured; 1) various chemicals (nitrate, phosphate, sulfate, heavy metals, hydrocarbons, etc.) in stream water, stream sediments and in organisms, 2) bacteria levels (fecal coliforms and E. coli) in stream water, and 3) biological health using indicator organisms (macroinvertebrates and fish) living in the creek.

Chloride levels were high throughout the length of the creek but highest in the City of Poughkeepsie. Nutrient levels (nitrate and phosphate) were high in the middle reaches of the creek and in the City of Poughkeepsie. High levels of toxic heavy metals were observed in stream sediments in the City of Poughkeepsie. Both fecal coliform and *E. coli* bacteria were found in stream water at every sample location and the fecal coliform levels on the whole were very high. All of the fish species encountered in the Fall Kill were tolerant or moderately tolerant to pollution. Macroinvertebrate studies in the creek indicate most of its length is "slightly impacted" with the lower reaches are "moderately impacted". The aesthetics of the stream in the urbanized areas are impaired by

significant quantities of trash in the streambed and by the poor condition of the stone walls used to channelize it.

Based on this data the health of the Fall Kill can be summarized as follows-
The entire length of the creek has been negatively impacted by human activity.
The region of the stream where deterioration is most noticeable is the stretch running through the City of Poughkeepsie. Trends for individual types of pollutants do not consistently improve with distance upstream from the mouth. Instead there are several "hot spots" of pollutants in the central and upper portions of the Fall Kill that need to be investigated further and remediated.

Recommendations are provided to protect and restore the water and habitat quality of the creek in both the rural/residential and urbanized reaches of the stream. Within the urbanized stretch, a long-term, comprehensive, and systematic effort is needed to address the many problems affecting the Fall Kill. In the middle and upper reaches, the pollution "hot spots" need to be investigated more fully and then remediated. In areas where healthy riparian buffer zones exist they should be maintained.

The Fall Kill Management Plan

The purpose of this document is to provide civic leaders, community groups, environmental organizations, and individual citizens interested in protection and restoration of natural ecosystems with a set of guidelines and recommendations for the management of the Fall Kill watershed. The Fall Kill is a small to moderate-sized stream that flows through five municipalities in Dutchess County, New York, before emptying at the City of Poughkeepsie into the Hudson River. The management plan describes the nature and status of current problems associated with the Fall Kill, a vision for what the Fall Kill could become, goals and objectives that must be met if that vision is to be achieved, and recommendations for specific actions to meet the goals. A section dealing with recent investigations conducted by scientists from Marist College and the Dutchess County Environmental Management Council provides the documentation of ongoing problems in the stream. The latter section also cites other studies that have reached similar conclusions about the water quality status of the Fall Kill.

Watersheds and their Importance

Streams like the Fall Kill are one directional, flowing water ecological systems that range in size from small temporary trickles to mighty rivers traveling thousands of miles and capable of reshaping the faces of continents. Only in the most narrow sense does a stream end at the visible water line along its banks. Except for water that is evaporated back into the atmosphere, all of the water falling on land eventually makes its way back to the ocean via streams and rivers. This land area on which precipitation falls and subsequently drains to an individual channel is known as a watershed. Everyone lives somewhere within a watershed. The water flowing past your legs as you wade or fish in a stream could have fallen anywhere on the land within the watershed that the stream and its tributaries drain. Known as surface runoff, this water is being transported back to the oceans from whence it came to close the great hydrologic cycle – the continuous circular movement of water that starts as evaporation from the oceans, and is followed by condensation, cloud formation, and precipitation in a variety of forms. In streams that

flow throughout the year, the flow is dominated by groundwater inputs. Following infiltration into the soil after a rainfall, this water may have been moving through the porous rocks and sands of aquifers for decades or even centuries before it surfaces as a spring or a seep to see the light of day and complete its journey.

Conditions in a stream are intimately connected to, and reflective of, the entire watershed. The geology of the underlying rocks acting in consort with climate and biological organisms determine the properties of the soil. The chemical properties of emerging groundwater and surface runoff will depend on the geological and chemical nature of the materials present on the land and the various ways that land is used by the human inhabitants of the watershed. If the land in the watershed is contaminated with petroleum products or toxic chemicals from accidental spills or deliberate dumping, the contaminants will eventually appear in the stream. Removal of large quantities of vegetation, extensive soil erosion, or coverage of the land with impervious surfaces like concrete and asphalt anywhere in the watershed will have impacts on the stream or river that drains that watershed.

The chemical properties of the water and the physical properties of the channel will, in turn, affect the variety and abundance of the organisms making up the food chain of the ecosystem. As a result of changes in pH, temperature, oxygen levels, nutrient concentrations, depth, current velocities, composition of the bottom, access to sunlight, types of riparian vegetation, and a host of other variables, the biological populations vary. Any human activities in the watershed that alter these characteristics result in often undesirable changes in the stream such as increased frequency and severity of flooding, loss of valuable species like trout, growths of nuisance algae and plants, and/or contamination with fecal bacteria that preclude swimming and other recreational activities.

Almost any change in the physical, chemical, or biological environment of streams manifests itself as changes in the presence or absence of various types of aquatic organisms, their position within the stream, or their behavior with respect to time. To

defend the integrity of stream ecosystems, all who care about these dynamic but fragile resources must strive to protect and manage the characteristics of the watershed because small and seemingly insignificant alterations in land use can accumulate to have profound and often unintended consequences in our aquatic resources.

Fall Kill Vision Statement

The upper Fall Kill can and should be a valuable resource both for human recreation and as a healthy habitat for complex and diverse plant and animal communities. This portion of the creek should have a nearly intact vegetative buffer zone with an overhead canopy of native trees and shrubs. The creek bed itself should not be modified by people and should contain hydrologically variable flow regimes including riffles, deep pools and runs of well oxygenated water. The plants along the banks should provide both large and small woody debris and leaves to the stream that will act as both food and habitat for many aquatic organisms. In order to achieve this vision, all significant sources of pollutants must be located, identified, and remediated and vegetative buffers must be maintained or expanded in a few areas. If these steps are taken, the upper Fall Kill will support diverse breeding populations of cool-water fish and healthy communities of invertebrate species. A wide buffer zone consisting of native shrubs and trees will help support a wide variety of birds, mammals, reptiles and amphibians.

The lower Fall Kill flows through a highly urbanized area and shows signs of water quality and habitat degradation. As a result, it is often ignored or considered a liability by local property owners. With a long-term systematic effort, the lower Fall Kill could be rehabilitated. The creek and its immediate environs should be transformed into an attractive community resource that is valued for its aesthetic, recreational, and biological attributes as well as its cultural role in the development and history of the City of Poughkeepsie. A series of pocket parks along the creek, enhanced by benches, attractive plantings, community gardens and interpretive signage or kiosks, linked together by footpaths or sidewalks will greatly increase community appreciation of the Fall Kill. Community groups, neighborhood associations, school groups, businesses and civic

organizations will be encouraged to become involved in monitoring and maintenance of adopted creek segments. In order to achieve this vision several things must occur. The Fall Kill Watershed Committee encourages the City of Poughkeepsie to consider removing the stone walls channelizing the creek wherever feasible and to restore the banks to more natural contours. This option should be explored before a major wall restoration project is begun. In areas where wall removal isn't feasible, the stone walls should be repaired and maintained. The City should work with riparian landowners, civic groups and others to discourage the disposal of trash in the Fall Kill and to clean up the trash already present. Illegal sanitary discharges and leaking sewer pipes should be identified and eliminated in accordance with Federal MS4 regulations and in order to lower fecal coliform and nutrient levels in the creek. Then, with the addition of a system of pocket parks along its length, the Fall Kill would truly become a prized community asset.

Watershed Description

The Fall Kill watershed (also known as the Fallkill and as Fallkill Creek) is contained entirely within Dutchess County, NY, and covers approximately 12,476 acres or 19.5 square miles (Figure 1 and Table 1). The Fall Kill originates in northern Hyde Park and Clinton, and flows through Pleasant Valley, the Town of Poughkeepsie, and the City of Poughkeepsie where it enters the Hudson River. Approximately 28,500 people live within the watershed (U.S. Census Bureau, 2000). Based on existing zoning, the number of dwelling units in the watershed's municipalities could increase considerably in the future (Table 2). Over half of the watershed area and 65% of the stream's length is within the Town of Hyde Park (Table 2).

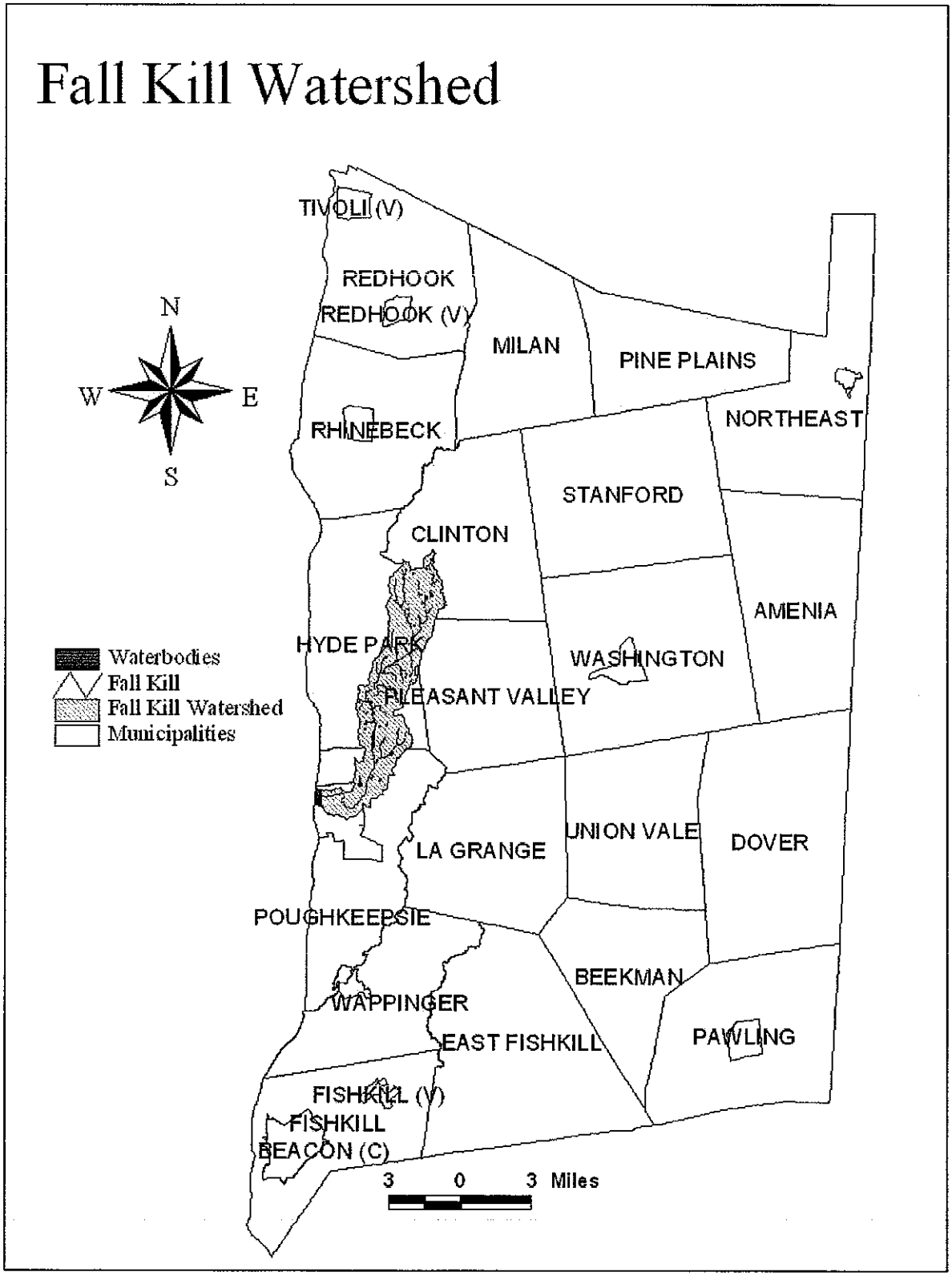
Table 1. Size and area characteristics of each municipality within the Fall Kill watershed.

Municipality	**Municipality Size (Acres)**	**Watershed Area in Municipality (Acres)**	**Percent of Municipality in Watershed**	**Percent of Watershed in Municipality**
Clinton	24,847	1,888	7.6%	15.1%
Pleasant Valley	21,201	613	2.9%	4.9%
Hyde Park	25,467	6,905	27.1%	55.3%
Town of Poughkeepsie	19,773	1,700	8.6%	13.6%
City of Poughkeepsie	3,649	1,301	35.7%	10.4%

Table 2. Stream mileage and watershed characteristics of the Fall Kill by municipality.

Municipality	Length of stream (miles) (includes tribs.)	Percent of stream miles	Estimated existing # of dwelling Units (DU)	Additional # of DU if built out
Clinton	4.8	12.3%	162	278
Pleasant V.	1.4	3.7%	56	181
Hyde Park	25.4	65.3%	2452	1978
T. of Pough.	4.2	10.8%	1165	3184
C. of Pough.	3.1	7.9%	3579	N.D.

Figure 1. Location of the Fall Kill watershed within Dutchess County, NY



The New York State Department of Environmental Conservation (NYSDEC) classifies the creek as a "Class C" stream, suitable for fishing, but not for bathing. In a 2000 report, the DEC listed the Fall Kill as a creek with known impaired aquatic life as a result of urban runoff and suspected nutrients (NYSDEC, 2000a).

The entire creek spans over 38 miles in length and is a third order stream where it enters the Hudson River in Poughkeepsie, NY. Stream ecologists often assign an order value to different stream segments. A first order stream is the smallest perennial stream that can be identified on United States Geological Service, 7.5 minute series, topographic maps. Two first order streams must converge to become a second order stream and two second order streams must meet before a stream segment reaches third order status. There are 11, 5.5, and 12.3 miles of first, second, and third order segments respectively making up the main channel of the Fall Kill and its tributaries. None of the tributaries appear to be individually named.

In 1995, approximately 43% of the land in the watershed, or 5,375 acres, was forested land or brush land. About 27.5% of the watershed, or 3,402 acres, was low, medium or high density residential. There were also approximately 780 acres of wetlands within the watershed. The remainder of the watershed consisted of croplands, pastures, public lands, service facilities, orchards, recreational lands, commercial strips and light manufacturing (Table 3).

Table 3. This table summarizes the dominant land uses within the Fall Kill Watershed, and constitutes 98% of the total land use in the watershed (DCEMC, 1998).

Type	Acres	Percent of Watershed
0Forested Land	5,375.1	43.5%
Residential	3,486.1	28.2%
Agricultural/Pasture	1,138.1	9.2%
Public/Recreational	991.9	8.0%
Wetlands	780.5	6.3%
Commercial Strip	325.4	2.6%
Light Manufacturing	12.5	0.1%

The Fall Kill forms just south of Leroy Mountain in Hyde Park at an elevation of 390 feet above sea level. The creek has a minimal slope of 0.03% or about 1.5 feet/mile between the Crum Elbow Road crossing and the dam at Fall Kill Park. The stream velocity and

slope increases dramatically just west of Garden Street in the City of Poughkeepsie. From that area to the mouth of the creek at the Hudson River, the creek has a 3.35% gradient, or 177 feet/mile.

Areas in the northern reaches of the creek are generally undisturbed. Large wetlands, marshes and woodlots comprise the northern part of the watershed and play an important role in the creek's health, while providing habitat for a number of species. According to the NYSDEC, several threatened and endangered species and habitats are located in the watershed and are listed under the New York State Natural Heritage Program. The creek goes through a dramatic transformation as it flows downstream from its northern reaches in Hyde Park and Clinton to the City of Poughkeepsie and the Hudson River. Moving south from Hyde Park, riparian zones along the creek begin to shrink as the creek passes through residential development. Riffle zones are less common than pools north of the City of Poughkeepsie. Riffles occur at steeper gradients and faster stream velocities than pools and are important areas for aeration, sediment transport and fine particle removal, and also serve as important habitat for macroinvertebrates.. As the creek enters the City of Poughkeepsie, development creeps closer to the creek's edge. Wooded tracts of land are less common, and the landscape is dominated by streets, parking lots, commercial developments and other impervious surfaces.

The stream is channeled by the New Deal Era stone walls that quickly conduct water through the city and into the Hudson River. In several areas of the approximate 2.5 mile channelized stream segment, the walls have deteriorated significantly and have started to crumble into the creek due to undercutting of the foundation courses. In 2005, the City of Poughkeepsie was considering its engineering options and is researching grants to rehabilitate the walls. Wall repair will have to be planned and carried out with utmost consideration to the health and integrity of the riparian zone due to its vital role in maintaining a healthy stream ecosystem.

Aesthetic quality dramatically decreases in downstream segments, particularly in the City of Poughkeepsie where trash and litter are strewn throughout the creek. Plastic bottles, soda and beer cans, candy wrappers and other small pieces of litter can be found throughout, and may be attributed to littering or street run off. However, evidence of individuals using the creek as a dump site is readily seen. Large objects not easily washed down the creek such as couches, bikes, car tires, shopping carts, baby strollers, and auto parts are common in the channel below bridge crossings and high density residential areas bordering on the stream. This might indicate a lack of education concerning trash pick-up, laziness, a lack of caring, criminals using the creek as a dump site for stolen goods (e.g. bicycles), or the high cost and inconvenience associated with the proper disposal of large household items.

Watershed Geology and Soils

The bedrock geology of the Fall Kill Watershed consists primarily of sedimentary rocks (Figure 2). Approximately 78% of the watershed's bedrock is made up of graywacke and shale from the Austin Glen Formation. The remainder of the watershed includes sedimentary rocks varying from argillite, chert, slate and siltstone from the Taconic Melange, Normanskill Group and Mount Merino and Indian River Formations. According to the *Biodiversity Assessment Manual for the Hudson River Estuary Corridor*, the Austin Glen Formation bedrock is potentially calcareous, while the other formations are alkaline (Kiviat and Stevens, 2001). These properties help to insure that the stream is not overly sensitive to chronic inputs of acidic precipitation and that the stream and surface soils will be fairly productive due to weathering of nutrients from the bedrock

Soils are an important feature of any watershed because they are a source of plant nutrients, influence the type and extent of terrestrial vegetation, determine the susceptibility of the land to erosion by wind and water, and significantly influence flood frequency and severity through their ability to absorb precipitation. The Fall Kill Watershed is dominated by two soil combinations, Dutchess and Cardigan, and Nassau

Figure 2. Bedrock geology of the Fall Kill Watershed.

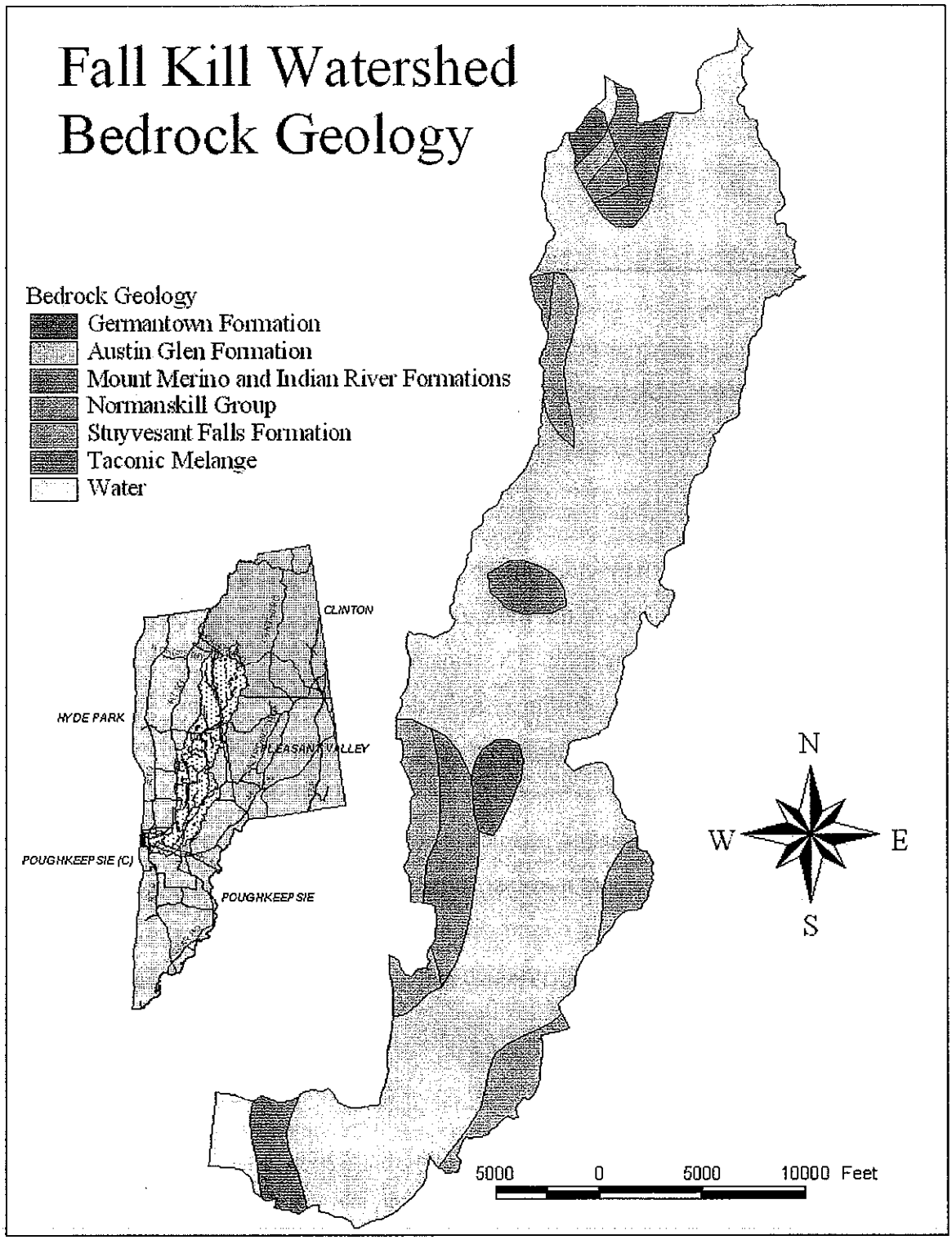
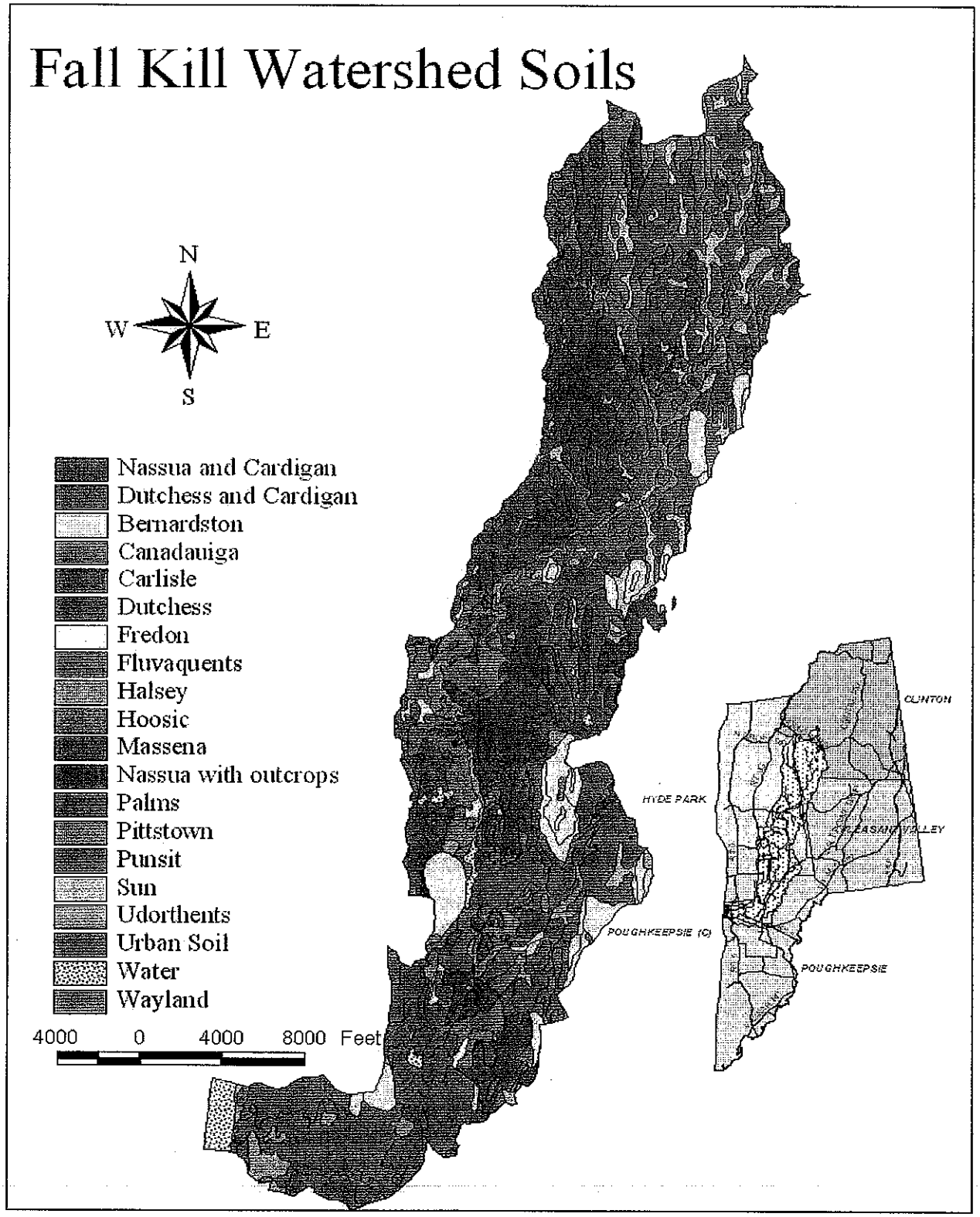


Figure 3. The different soil types within the Fall Kill Watershed.



and Cardigan (Figure 3). Both soil combinations drain well to excessively well, and make up nearly two-thirds of the watershed (Table 4). The remainder of the watershed is made up of seventeen different soils ranging from excessively poorly drained to well drained. These areas of poor drainage occur within or along the banks of the Fall Kill and in wetlands.

Table 4. The dominant soil types and their respective cumulative areas within the watershed. The drainage class for each soil type was obtained from the *Hudson River Corridor Biodiversity Manual* (Kiviat and Stevens, 2001)

Soil Type	Acres	Drainage Class
Dutchess with Cardigan	4,299	well drained
Nassau with Cardigan	3,605	somewhat excessively drained to well drained.
Hoosic	906	excessively to well drained
Bernardston	766	well drained
Urban Soil	584	
Sun	547	poor to very poorly drained
Wayland	258	poor to very poorly drained
Carlisle	234	very poorly drained
Canadauiga	178	poorly to very poorly drained
Palms	172	very poorly drained
Udorthents	172	excessively to somewhat poorly drained
Dutchess	144	well drained
Nassau with Outcrops	124	somewhat excessively drained
Massena	86	somewhat poorly to poorly drained
Fredon	61	somewhat poorly to poorly drained
Punsit	44	somewhat poorly drained
Fluvaquents	39	somewhat poorly to very poorly drained
Halsey	23	very poorly drained
Pittstown	19	moderately well drained

Septic systems built too close to the banks of the creek in excessively drained soils may result in fecal coliform and *E. coli* contamination of both the creek and drinking wells. Heavy rain-producing storms can cause severe flooding and bacterial contamination as

the water flows quickly from the excessively drained soils into the poorly drained soils along the creek. Hyde Park experienced this problem with a storm on August 12, 2003. The residential area between Haviland Road and Roosevelt Road experienced severe flooding and damage caused by heavy rainfall (Figure 4). The soils within and along the banks of the creek in that area, Sun and Carlisle, are both considered very poorly drained, while the soil throughout the surrounding residential area, Hoosic, is very well drained. Impervious surfaces associated with suburban and rural development increase the rate and volume of runoff and compound the flooding problem.

Figure 4. Karl Rabe/Poughkeepsie Journal – This photo was taken on August 13, 2003 at the Haviland Mobile Park in Hyde Park after heavy rains caused the Fall Kill to flood.

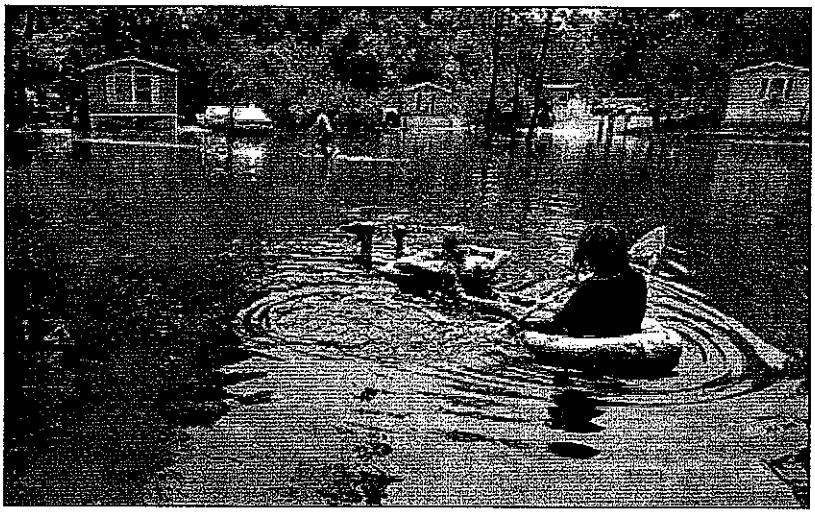
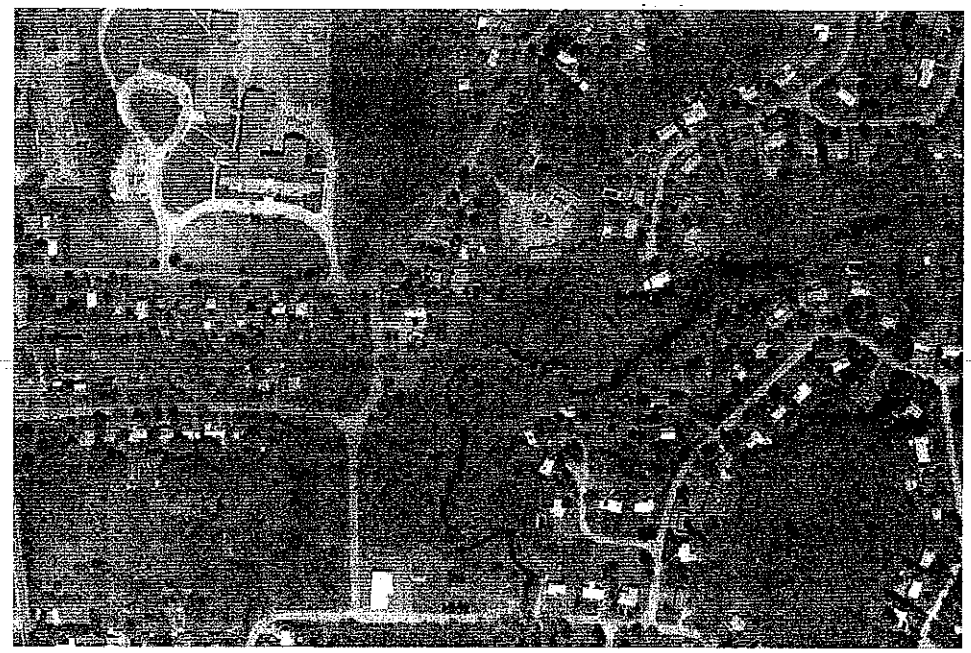


Figure 5. The aerial photo shows the Fall Kill passing through a residential neighborhood between Haviland Road and Roosevelt Road. The area has been prone to flooding and is a suspected source of fecal coliforms because of the use and proximity of septic systems to the creek. (Photo courtesy of DCEMC)



Flow Charateristics of the Fall Kill

Discharge is the amount of water carried by a stream past a given point over some time interval. The unit most commonly used in the United States is cubic feet per second (cfs) where one cubic foot of water corresponds to 7.48 gallons. The United States Geological Survey (USGS) maintains an extensive network of gauging stations on streams and rivers throughout the country. Unfortunately not all streams have a gauging station. Due to budget cutbacks, the number of gauged streams in the network has been reduced in recent years. There is an old gauging station on the Fall Kill along Verazzano Boulevard in the City of Poughkeepsie that operated for an unknown period between 1931 and 1960 and again between 1993 and 1995. Data from this site indicate that the mean flow throughout the year was less than 30 cfs. Maximum flows during 1994 and 1995 were 225 and 232 cfs respectively. The median flow (50th percentile) during the longer mid century term of record was 8.5 cfs, meaning the flow exceeded 8.5 cfs on only 50 percent of the days measurements were taken (usually daily). Discharges exceeding 20 cfs occurred only 30% of the time while flows of 3.6 and 0.9 cfs were exceeded 70% and 90% of the time respectively. The discharge characteristics of the stream may have changed significantly since these data were collected due to development and other land use changes within the watershed.

Recreational Assets and Open Spaces

Within the City of Poughkeepsie there is very little public access to the creek. There is the opportunity to create a greenway trail or public area for people to enjoy the creek along the north bank of the creek between Garden Street and Mount Carmel Avenue along Brookside Avenue and Verazzano Blvd. The Hoffman House along Water Street abuts the Fall Kill before it enters the Hudson River. The Hoffman House is in a historic area of the City of Poughkeepsie and is in a prime location for recreation with the falls of the creek, Waryas Park, and the Mid-Hudson Children's Museum nearby. Waryas Park also offers views of the Hudson River, the Poughkeepsie railroad bridge, the Mid-Hudson Bridge, and also provides a public boat launch area. The Hudson River Greenway passes through the aforementioned properties and allows people to experience the Hudson River

with walking and biking trails that pass over the Fall Kill as it reaches the Hudson River. Further upstream in the center of Poughkeepsie, Malcolm X Park and Morse Elementary School along Mansion Street provide open space areas for recreation, and can become a potential staging area for creek festivals or other public functions. The watershed also includes College Hill Golf Course within the City of Poughkeepsie that borders on Morgan Lake, a popular urban fishery (Figure 6).

Outside of the city, there is significantly more open space with the Hyde Park Memorial Fields along Creek Road and recreational facilities at Dutchess Community College and local public schools. The watershed is generally lacking in nature preserves, hiking trails and other forms of access to the creek. With the cooperation of riparian landowners, the watershed has the potential to provide such amenities. The most promising of these areas is the county-owned Fall Kill Park along Creek Road (Figures 6 and 7). Fall Kill Park was once part of the Hudson River Psychiatric Center and the dam just north of Cream Street allowed the center to use the lake for ice production. The park opened as a public beach in 1968, but was closed in 1974 by the county because of reoccurring problems of contamination by fecal coliform bacteria. Currently, access to the park is limited and the area is underutilized. Improving access to the site could provide a great recreational opportunity for car-top boaters, fishermen, bird watchers, hikers, and photographers.

In Hyde Park, the Fall Kill passes through the historic Valkill property, which was built by President Franklin Delano Roosevelt for his wife, Eleanor. The property provided Eleanor and her friends a getaway from the large house, Springwood, on Route 9. Today, the Dutch fieldstone structure and open space is a draw for tourists and naturalists. Scenic Hudson recently purchased a parcel between Route 9 and Route 9G to create a trail connecting Valkill with FDR's Springwood property and the Vanderbilt property further north on Route 9. The three properties have open fields and serene areas available for Hudson River sightseeing, bird watching, picnicking, nature photography as well as historical buildings and the Presidential Library and Museum.

Figure 6. Surficial aquatic resources including, lakes, ponds, wetlands and stream segments within the Fall Kill Watershed.

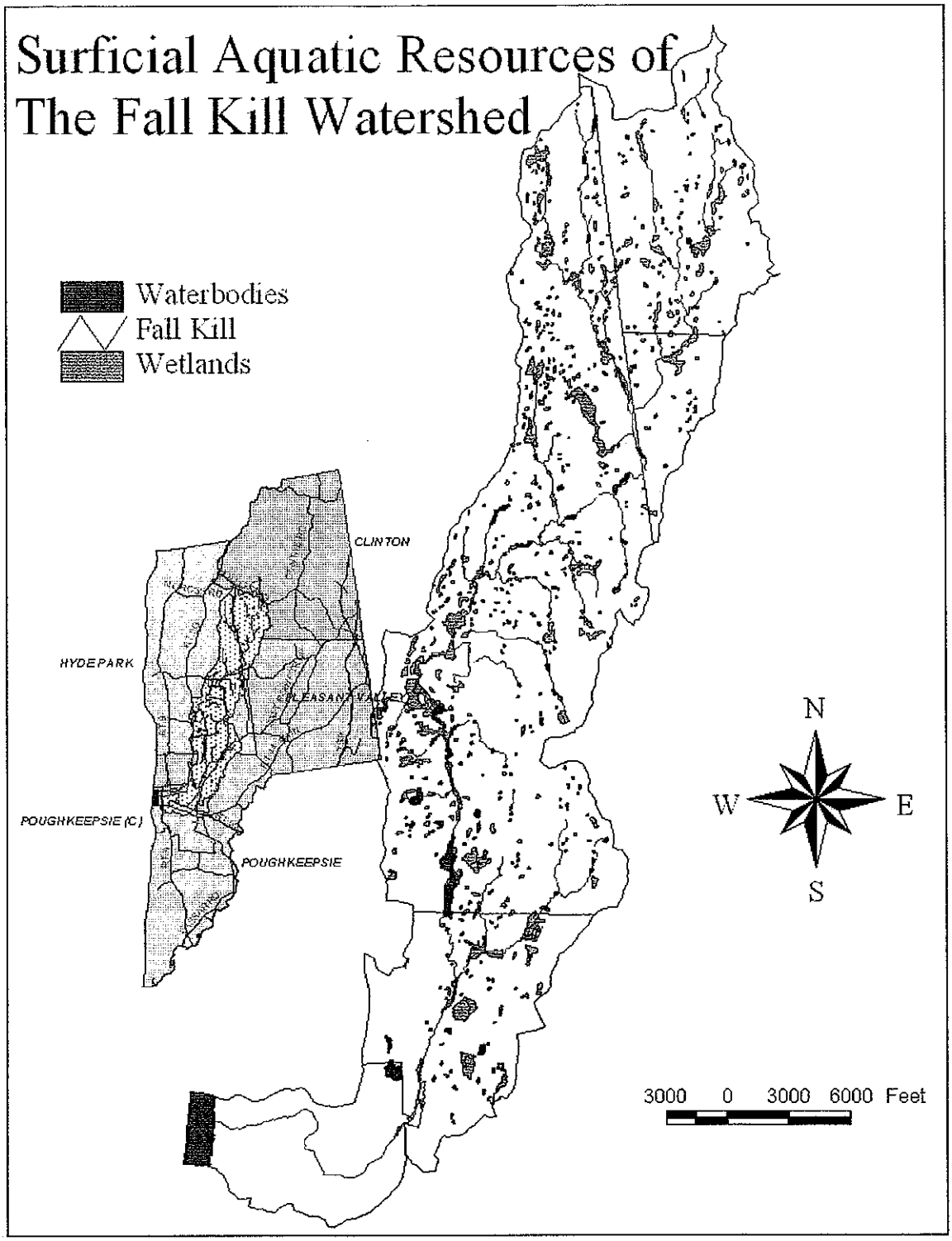
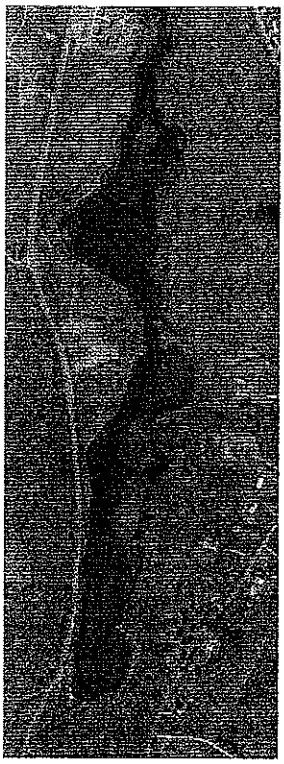


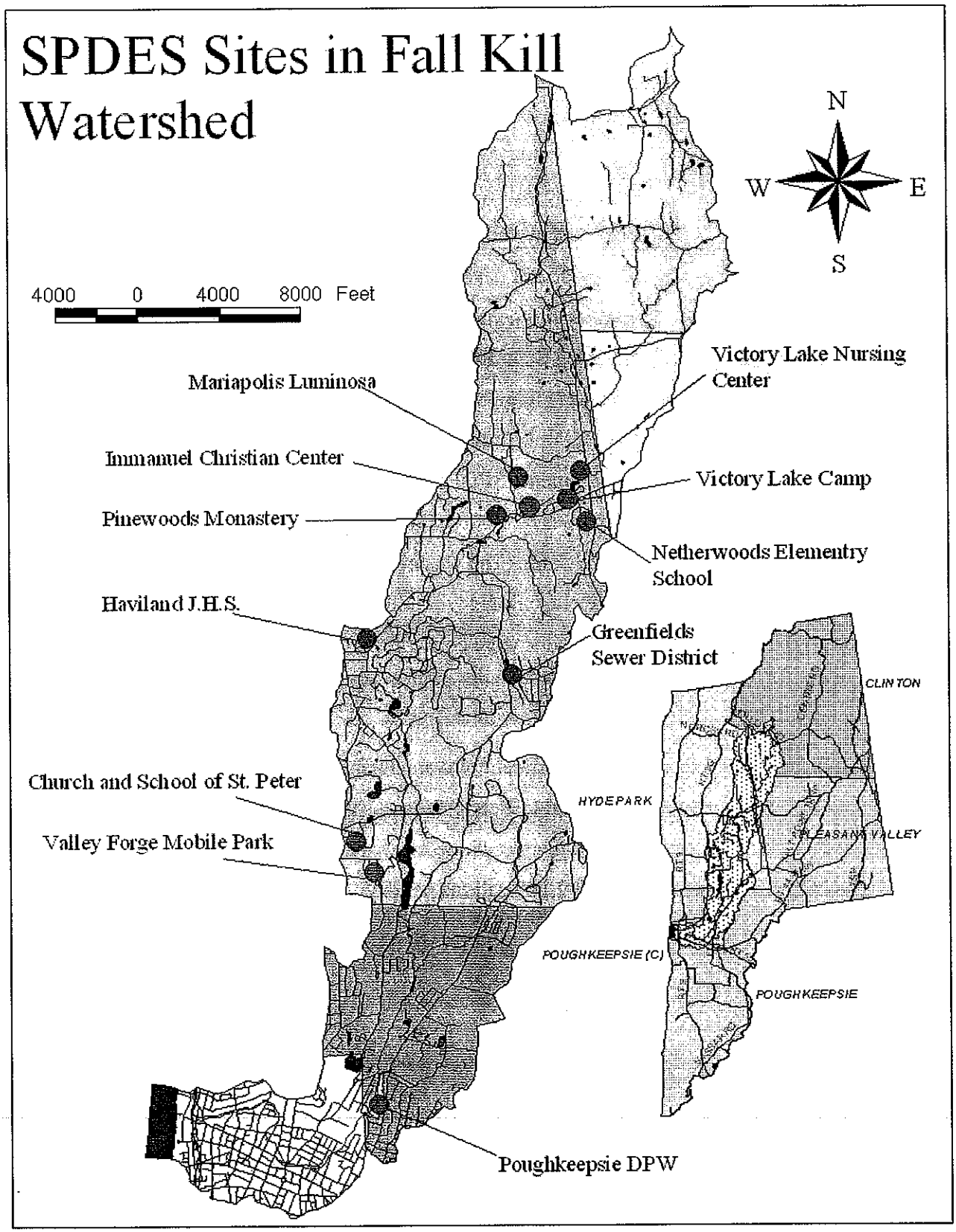
Figure 7. Aerial photo of Fall Kill Park and surrounding area in Hyde Park, NY.



Waste Disposal in the Fall Kill Watershed

The entire areas of the City and Town of Poughkeepsie that fall within the Fall Kill watershed are covered by a central sewage treatment system. The towns of Hyde Park, Clinton, and Pleasant Valley do not have central sewage systems and instead rely on individually owned septic systems or larger onsite systems requiring State Pollution Discharge Elimination System (SPDES) Permits (Figure 8). The SPDES program was instituted to help protect public health and the health of our resources and environment. SPDES permits are required by the NYSDEC for discharges of 1,000 gallons per day of wastewater into surface or groundwater. The wastewater should be treated before being released. In 2005, there were eleven sites within the Fall Kill Watershed with a SPDES permit (NYSDEC, 2005). The sites were concentrated in the northern part of the watershed in Hyde Park. Ten of the eleven sites including the Greenfields Sewer District, have permits for sanitary waste. The sewer district treats the waste from a newer development and discharges the effluent into an unnamed tributary of the Fall Kill. The City of Poughkeepsie Department of Public Works is the only SPDES site not in Hyde Park and is permitted to discharge miscellaneous waste. The cumulative maximum daily discharge for all sites equals 299,100 gallons per day.

Figure 8. SPDES sites within the Fall Kill watershed.



Watershed Protection and Resotration Objectives

Efforts to conserve and enhance the beauty and natural functions of the Fall Kill generally fall into the following categories:

Improve the water quality to the point that the stream could be upgraded from Class C to Class B (capable of supporting swimming and other forms of contact recreation).

Protect open space along the creek to provide habitat for fish and wildlife as well as places where humans can interact with the natural world.

Maintain functionally adequate riparian buffer zones where they already exist and work with adjacent land owners to enhance those areas where the vegetated buffer has been removed or damaged. Healthy riparian zones increase biological diversity and provide natural corridors for movement of organisms.

Provide more public access to the creek and increase recreational opportunities for the public to enhance a sense of community ownership and caring.

Develop educational programs to inform the public and policy makers about the ecological and historical significance of the creek.

Establish an intermunicipal agreement to encourage mutual cooperation in the development of watershed-wide strategic plans for land use, planning and financing of stream restoration projects, coordination of educational outreach programs, enlistment of community groups as stream caretakers, and acquisition and maintenance of environmental monitoring data.

Threats to the Fall Kill

Fecal coliform bacteria

In past and current studies of the Fall Kill, fecal coliform bacteria (including *Escherichia coli*) were found at high levels throughout the Fall Kill. Numbers were highly variable with respect to location and time. Levels often exceeded public health guidelines established for primary contact of the general public. The presence of these bacteria indicates that the Fall Kill is receiving inputs of fecal matter from warm blooded organisms. The most likely sources for the Fall Kill include raw or poorly treated sewage from leaking pipes, illegal connections, leaking septic systems, surface runoff from areas hosting large concentrations of waterfowl, or urban runoff containing pet waste.

Fecal coliforms are gram-negative, rod-shaped bacteria harbored in the intestinal tracts of warm blooded animals. Fecal coliforms are identified by their ability to ferment lactose at 44.5 °C. *Escherichia coli* (*E. coli)* is a commonly occurring fecal coliform and although these bacteria are generally considered to be harmless themselves, they indicate the possible presence of pathogenic bacteria. However, some strains such as the 0157.H7 strain of *E. coli* can cause severe illness and diarrhea and in some cases has caused the death of young children.

The presence of fecal coliforms may not directly affect aquatic organisms such as fish and macroinvertebrates, but the presence of the bacteria could indicate an increased biological oxygen demand (BOD) being placed on the stream ecosystem due to decomposing sewage. The increased BOD could lower the availability of dissolved oxygen to aquatic organisms that would impair their normal respiration and metabolism.

Plant nutrients – especially nitrogen and phosphorus.

Nitrogen

Nitrogen is found in ecosystems in various organic forms, and in inorganic forms such as nitrate (NO_3^-), nitrite (NO_2^-) the ammonium ion (NH_4^+) and as ammonia (NH_3). Ammonia and nitrate are the forms that are most readily available to green plants and are

widely used by farmers to increase crop production. In a similar manner, nitrate in excessive amounts can cause massive growths of rooted aquatic plants or algal blooms when present in surface waters. This type of excessive algal and plant growth is readily observed at Fall Kill Lake along Creek Road.

High concentrations of nitrate can also present a human health concern when present in drinking water. Any water that contains nitrate concentrations of 44 mg/L (equivalent to 10 mg/L nitrate-nitrogen for EPA and NYSDOH standards) or higher has the potential to cause methemoglobinemia, or "blue baby" disease in children. (McCasland et al., 1998). Although the human health standard for nitrate consumption has little correlation with stream health, high levels of nitrate in both surface and groundwater usually indicate widespread nonpoint source pollution of sewage inputs, fertilizer runoff from farms, lawns, and golf courses, and from urban stormwater runoff. Conversion of nitrogen oxides originating in automobile exhaust and industrial emissions to nitric acid and subsequent deposition as acidic precipitation is also a source (Smith et al., 1991).

Concentrations of nitrate in the Fall Kill ranged from 0.3 to 1.2 mg/L. Based upon average concentrations found in water samples from 85 sites in relatively undeveloped watersheds across the United States, the median concentrations of nitrate-nitrogen and total nitrogen were 0.087 and 0.26 mg/L respectively (Clark et al., 2000). However, due to present and past land uses, the undeveloped watershed concentrations (below 0.26 mg/L) of total N rarely occur in Dutchess County in 2004.

Phosphorus

Recent studies described later in the plan detected high phosphate concentrations throughout the Fall Kill. This is an ongoing threat because phosphorus is a nutrient that is essential to plant growth. Inorganic phosphate (orthophosphate) is the form that is available to, and needed by, plants. Plants assimilate orthophosphate from the surrounding water and convert it to organic phosphorus. In freshwater ecosystems phosphate tends to be the nutrient that is least available for plant growth. Consequently,

phosphate is often the limiting factor that controls the amount of plant growth. Small additions to surface waters can result in large amounts of plant growth and algal blooms. The most likely sources of phosphate inputs include animal wastes, human wastes, fertilizer, detergents, eroded soils from disturbed land, road salts (anticaking agent), and stormwater runoff.

Based upon the average concentrations found in water samples from 85 sites across the United States in relatively undeveloped watersheds, the median concentrations of total phosphorus and orthophosphate as P were 0.022 and 0.010 mg/L respectively (Clark et al., 2000). In general, any concentration over 0.05 mg/L of orthophosphate will likely have an impact on surface waters (Behar, 1996). However, in many streams and lakes, concentrations of PO_4 as low as 0.01 mg/L can have a significant impact on water resources by causing a proliferation of aquatic vegetation and phytoplankton. In order to control eutrophication (the excessive growth of plants and algae), the USEPA recommended limiting phosphate concentrations to 0.05 mg/L in waters that drain to lakes and ponds, and 0.1 mg/L in free flowing rivers and streams (USEPA, 1996). Phosphate concentrations in the Fall Kill ranged between 0.05 and 0.12 mg/L.

Dissolved solids

Dissolved solids are organic or inorganic chemicals that are dissolved in the water. Common inorganic dissolved solids include; calcium, magnesium, sodium, potassium, chloride, sulfate, nitrate, and phosphate. Humic, fulvic, and tannic acids are organic dissolved compounds found in watersheds dominated by bogs or coniferous forests. Surface and groundwater contains variable amounts of dissolved solids depending on geological conditions, type and depth of soils, land use, and contributions of contaminants from point and nonpoint sources like stormwater runoff of salts applied to roads during winter deicing operations.

Conductivity refers to the ability of water to carry an electric current and is dependent on the amount of dissolved solids present in the water. Studies of inland fresh waters

indicate that streams supporting good mixed fisheries have a conductivity range of 150 to 500 μmhos/cm (uS/cm) (USEPA, 1997). Conductivity values in the Fall Kill ranged from 320 uS/cm in upstream locations to over 700 uS/cm at downstream locations.

Elevated temperatures during the summer

Water temperature is a critically important attribute of aquatic systems as it regulates the metabolic rates of many organisms, influences the ability of water to hold oxygen and other gases, often enhances the toxicity of pollutants, and may exceed the tolerance range of aquatic organisms. Temperature is influenced by removal of shade cover in the riparian zone, impoundment of water behind dams, discharges of hot water, or stormwater runoff, particularly after brief showers on warm summer afternoons. High water temperatures were detected during the warm summer months at many sampling locations along the Fall Kill.

Inorganic and organic contaminants

Petroleum hydrocarbons result from the accidental or deliberate discharge of petroleum - based fuels and lubricants into aquatic systems often via improper disposal into storm drains that flow directly into nearby waterbodies. Some may be directly toxic to aquatic life while others may lead to the development of cancerous-like lesions in the tissues and organs of invertebrates and fish.

Another type of contaminant found in the sediment at some locations along the Fall Kill were trace metals. Many trace metals occur naturally at low concentrations. Some trace metals are essential to normal biochemistry and metabolism. Elevated concentrations can lead to toxicity and transfer through the food chain to higher organisms. Some trace metals like mercury and lead have no known beneficial biological function.

Trash and litter

While the presence of large items of household trash, construction materials, and litter don't have a direct effect on the biological structure and function of streams, they do create public safety issues associated with exposed nails, trip hazards, and cuts from

broken glass and jagged metal objects. Large quantities of litter detract from the aesthetic enjoyment of the resource and causes people to devalue and abuse the resource.

Loss or degradation of the riparian zone

Riparian zones are distinctive bands of vegetation bordering streams and rivers. These zones provide habitat for wildlife associated with aquatic systems such as birds, amphibians, turtles, beavers, mink, muskrats, and raccoons. The linear arrangement of these transitional areas also serves as a corridor for the migration of wildlife between otherwise disconnected open spaces. The riparian vegetation shades the stream during the warmer months of the year helping to keep water temperatures within the tolerance range of aquatic organisms. Leaves, blossoms, and other types of vegetation fall into the stream throughout the year and become an important food source for the entire aquatic community in small to medium-sized streams. The rooted vegetation in the riparian zone helps to stabilize the banks and thereby reduce the severity of erosion and loss of property. If stormwater flows are dispersed before they enter the riparian zone, the vegetation will help to lower the concentrations of suspended solids, plant nutrients, and toxic chemicals. These values are lost when development is allowed to encroach into the riparian zone or when riparian landowners replace riparian trees, shrubs, and groundcovers with lawns down to the water's edge.

Increase in impervious surfaces

As development in a watershed intensifies, more and more of the land is converted to impervious surfaces associated with roads, sidewalks, parking lots, and rooftops. Precipitation falling on these surfaces is quickly shuttled to storm drains and from there into the nearest stream. Stormwater runoff radically changes the flow rates and volume of water carried by the receiving stream. The result is an increasing frequency and severity of flooding at downstream locations. The flooding causes erosion of the stream banks resulting in either a widening or deepening of the channel as the stream tries to adjust to the larger volume of water it is expected to carry. Surface runoff from

impervious surfaces often carries large amounts of litter, oils, greases, toxic chemicals, and pet waste.

The increase in impervious surfaces also reduces the recharge of groundwater aquifers thereby threatening the quantity of water available in the future to communities dependent on wells. Due to falling water tables, communities may be forced to bring in water from other locations using a centralized water system of pumps, storage tanks, and pipelines. The development of this type of infrastructure would obviously be very expensive. Reduced groundwater recharge will also affect stream flows during periods of low precipitation as water tables drop and groundwater inputs to stream channels decline.

Management Practices

Urban Land, High Density Zones

Litter/Solid Waste - Solid waste is the most visible problem within the City of Poughkeepsie. Litter ranging from candy wrappers to couches can be found on the banks and within the stream channel especially between Smith Street and the mouth of the Fall Kill at the Hudson River. A thorough clean-up of the three-mile segment is necessary, using resources available to the municipality as well as utilizing volunteers from not-for-profit organizations and community groups. Following the clean-up, several measures should be taken. The stream should be regularly monitored for signs of improper trash disposal. Anti-dumping ordinances should be enforced where they exist and promulgated where they do not. Riparian landowners and residents should be encouraged to report any incidents of illegal dumping observed on or near their property. The disposal of large objects that are not readily transported downstream except by very high flows (refrigerators, couches, etc) should be vigorously investigated and prosecuted if the offending parties can be identified. Educational materials describing the effects of illegal dumping and littering on aesthetic quality, property values, as well as impacts on water quality and habitat should be provided to all riparian landowners. Visible signage conveying the message of "No Dumping" or "No Littering" should be placed at street

crossings and areas easily accessible to the public. Storm drains should also be labeled as "Drains Directly into Fall Kill. All storm drains should be cleaned out regularly.

Fecal Coliform Bacteria – Fecal coliform bacteria and E. *coli* were consistently high within the city. Since the area around the creek is urbanized with very little habitat for wildlife capable of creating that much bacteria, the source is most likely from upstream sources, pet wastes in urban storm runoff, and/or faulty or illegal sewer pipes. Dye tests should be conducted in the sewer system to check for leaks. Damaged sewer pipes should be quickly sealed or replaced. Another possible source of coliforms further upstream in the creek is the presence of Canada geese. Riparian landowners should be encouraged not to mow their lawns to the water's edge. Taller vegetation should be grown near the creek as this is a proven deterrent to geese.

High Conductivity and Salinity – Conductivity and salinity were consistently the highest in the City of Poughkeepsie. This can be attributed to dissolved solids getting into the creek either through storm drains, faulty sewer lines or direct runoff into the stream. Road salt is stored at the Poughkeepsie DPW yard along the Fall Kill and can be a source as well. Materials stored at Poughkeepsie DPW should be covered and vegetative buffers or runoff barriers should be placed around the materials or storage units. The city also includes approximately 39 miles of road within the watershed. Road deicing in the winter causes dissolved salts to run into the creek during melts, possibly causing a toxic shock to vegetation and wildlife. As noted in an Institute of Ecosystems Studies Report, freshwater salinity in Hudson River tributaries has been increasing at an alarming rate over the past 30 years. The study warns that within the next century many freshwater sources will be toxic to aquatic life as the salt accumulates in the environment (Shapley, 2005). Calcium magnesium acetate is a safer deicer than sodium chloride. Although it is more expensive, calcium magnesium acetate is less corrosive and has little impact on vegetation and organisms. Storm drain basins should be cleaned following the snow season to remove salt and sand deposits, and streets should be swept to remove the deposits as well.

Heavy Metal Contaminated Soils – Heavy metals have been found in sediment samples from the Fall Kill in the City of Poughkeepsie. Current or historical sources of the metals should be investigated, and hot spots should be remediated.

Education – Informative kiosks or signs placed around public areas of the creek can educate citizens about the history of the Fall Kill, its biological characteristics, and ways to protect the creek. Students and teachers from Poughkeepsie schools can also use the creek as a tool to teach about aquatic wildlife, and also to instill recycling and proper trash disposal practices on the city's youth. The more people know about the creek, how it works, and the potential impacts of our actions, the more the city can spur actions involving private and community stewardship. – A city-wide event tentatively called Fall Kill Week that includes guided tours of the creek, poster displays in government and community buildings, stream clean-ups, and community outreach can instill community pride in the creek and further stewardship initiatives.

Riparian Buffers – Riparian zones are narrow throughout the city, as many properties and buildings are upon the creek's edge. Even though the riparian zones are narrow, the coverage of the creek with a canopy of trees within the City of Poughkeepsie is beneficial in keeping water temperature down. Removing trees within the riparian zone should be strictly discouraged unless the tree is deemed a risk to cause significant property damage or harm to human health. Unaltered stretches of riparian zone should be kept intact to protect the creek from direct sunlight and from unfiltered runoff of contaminated stormwater. Riparian zones should be enhanced with grasses, shrubs and young trees where space is available. The buffer zones should not be used as dumping areas for garbage or yard debris.

Designate Areas of Concern - Compile a database of areas prone to garbage dumping, buildings or industries causing possible environmental impacts (see junkyard aerial photo), and areas creating large amounts of storm water runoff. The city should work together with the owners of these properties to alleviate the problems, such as new runoff

controls or riparian buffers. The city can then monitor areas prone to garbage dumping with increased police patrols or inspections of the sites in order to alleviate the problem.

Continue Aquatic Research – Biological and chemical assessments of the creek should continue in order to track the health of the creek. The success of clean-ups and enacted management practices can be followed with continued research, and the successful rehabilitation of the creek as seen by research data can reinforce the idea of stewardship and rehabilitation of the creek.

Implement Plan for Wall Rehabilitation – Some elected officials and residents have voiced their concerns for the crumbling walls. The channel formed by the walls limits the available habitat for aquatic organisms and severely restricts access by people. If the walls are deemed important for historical reasons, a small section should be rehabilitated for historic purposes. The remaining areas of wall, where public safety and flooding concerns allow, should be left to crumble to help form valuable habitat for fish and macroinvertebrates.

Participate in Government and Elect Capable Officials Who Will Revitalize the Creek – It is important for this committee and community to initiate change on the creek on a biological and economic front. The community should stress the importance and potential of the creek to the livelihood of the City of Poughkeepsie. If officials are failing to meet these demands, the community should participate in various ways including voting, writing letters to their representatives and attending community meetings.

Management - Suburban Areas

Riparian Zones and wetland buffers – Buffer zones have remained intact for the most part, but there are several zones of concern. Riparian zones should not just include large trees that provide shade to the creek, but also shrubs and grasses that prevent nutrients and suspended particles from running into the stream or wetlands.

Protection from further development – Further development along the creek should look to protect riparian zones, use crowned roads without curbs and have innovative storm water runoff plans. These plans can include man-made wetlands or buffer zones that filter the storm water before entering the creek, as opposed to directly flowing into the creek from a pipe.

Litter – Although litter is rarely found within the creek north of the City of Poughkeepsie, litter is often found along roads near the creek. The problem is much different than the City's litter because the litter is smaller and more inclined to flow downstream with little impediment instead of creating large piles of trash. Trash along roads and near the stream crossings should be cleared, and signs of "No Littering" and the "Fall Kill Creek" signs posted.

Pesticides and Fertilizers – Fertilizers and pesticides can easily get into the creek in suburban areas, especially in areas where lawns have replaced riparian buffers. The towns and other organizations should work to educate residents about the adverse effects that fertilizers and pesticides have on the creek, and educate them on alternative methods. If lawns are near the edge of the creek, a five-foot wide strip of grass should be left to grow higher in order to provide habitat and essential root systems.

Clean storm drain catch basins – Storm drains and catch basins should be cleaned several times a year, and after the last snowfall in order to remove sand and possibly deicing materials from the basins to prevent further runoff problems.

Change Road Salt – Salts used to deice roads can easily wash into the creek and accumulate in soils in suburban areas as well. The less toxic calcium magnesium acetate should be considered.

Cleaning Septic Tanks Regularly – Septic tanks should be pumped every one to two years to prevent tank failure and leaching into the creek. Failure to clean septic tanks regularly

can lead to long-term problems for the residents and neighbors, such as failing leach fields thereby harming the health of the creek.

Limit Impervious Surfaces – Limiting the area of impervious surfaces on new development is vital to the health of the creek and the property protection of residents abutting the creek. The area between Haviland Road and Roosevelt Road has been prone to flooding, and with an increase of impervious surfaces dumping sediment and water into the creek, the problem will only get worse. New roads could be made narrower, and parking lots could use other types of materials such as pavers with slots to allow for water to infiltrate into the ground.

Crowned Roads – New roads and road improvement projects should be crowned in order to run water off the sides into grass or vegetative areas. Doing so limits the amount of water running into storm drains, and also creates the opportunity to recharge aquifers, while reducing infrastructure costs.

Removal of dams – If feasible, remove small dams (less than 3' high) from the Fall Kill in order to improve stream flow and prevent obstruction for migrating organisms.

Allow Greater Public Access to Fall Kill Park – Currently, access to the county owned land is limited to the area around the dam. Opening up the area would allow for further recreational usage of the site, including fishing, canoeing, kayaking, bird watching and hiking.

Current Studies and Background Information on Environmental Attributes

The Fall Kill was assessed in the summers of 2004 and 2005 by researchers from Marist College and the Dutchess County Environmental Management Council. The analysis consisted of water chemistry, analysis of water and sediment for trace metals and petroleum hydrocarbons , fecal coliform bacteria, the biologic community - including macroinvertebrates and fish, and a brief habitat assessment.

Macroinvertebrate Sampling Rationale

Benthic macroinvertebrates (BMI) can be simply defined as animals without backbones that are larger than 0.5 millimeter and live at least a portion of their life cycles in or on the bottom of a body of water (Dates and Byrne, 1996). In freshwater systems these animals may live on rocks, logs, sediment, debris and aquatic plants during their various life stages. A few common examples of BMIs include crustaceans such as crayfish, mollusks such as clams and snails, aquatic worms, and the immature forms of aquatic insects such as stoneflies, caddisflies, mayflies and true flies.

BMIs function at the lower levels of the aquatic food chain, with many feeding on algae, dead particulate organic matter (detritus), and bacteria. Some shred and eat leaves and other organic matter that enters the water, and others are predators. Because of their abundance and position in the aquatic food chain, BMIs play a critical role in the natural flow of energy and nutrients through the aquatic system (Covich et al., 1997). For example, Sweeney (1993) demonstrated in a second order stream, that leaf litter and woody debris were primarily consumed in the forested woodlot where the debris originated, rather than being washed downstream. Also, as organisms die, they decay, leaving behind nutrients that are reused by aquatic plants and other animals in the food chain. Insects fill the roles of predators, parasites, herbivores, saprophages, and pollinators, among others, which indicate the pervasive ecological and economic importance of this group of animals in both aquatic and terrestrial ecosystems (Rosenberg et al., 1986).

Biological monitoring is an attractive methodology for documenting water quality for several reasons. First, the community collected at a given site reflects the water quality at that site over several weeks, months, or years. The alternative methodology of grabbing a water sample reflects the water quality at the instant the sample is collected (i.e. a snap shot image). Second, the community-based approach protects the biological integrity of the water body, and doesn't focus on a limited number of chemical parameters. Third, samples can be preserved in reference libraries for future application; this provides a

convenient routine of summer collection and winter analysis. Finally, biological assessments tend to be much more cost effective than chemical analysis. Table 5 lists the rationale for biomonitoring in New York State (Bode et al., 2002).

Table 5 – Rationale for the analysis of macroinvertebrate communities to determine water quality of streams and rivers in New York State (Bode et al., 2002)

1. Benthic Macroinvertebrates (BMIs) are sensitive to environmental impacts;
2. BMIs are less mobile than fish, and thus can avoid discharges;
3. They can indicate the effects of spills, intermittent discharges, and lapses in treatment;
4. They are indicators of overall, integrated water quality, including synergistic effects and substances lower than detectable limits;
5. They are abundant in most streams, and are relatively easy and inexpensive to sample;
6. They are able to detect non-chemical impacts to the habitat, such as siltation or thermal change;
7. They are readily perceived by the public as tangible indicators of water quality;
8. They can often provide an on-site estimate of water quality;
9. They bioaccumulate many contaminants to concentrations that analysis of their tissues is a good monitor of toxic substances in the aquatic food chain;
10. They provide a suitable endpoint to water quality objectives.

Biological assessments have been used by many states to evaluate the effectiveness of water quality programs, particularly for nonpoint source impact determinations (USEPA, 2002). For example, biological assessment models have been tested with field data and the results suggested that macroinvertebrate data collected for establishing the degree of water quality impairment can also be used to identify the impairment source with reasonable accuracy (Murray et al., 2002). The Ohio EPA employs biological response signatures, based on biological, chemical, physical, bioassay, pollution source, and watershed characteristics, that consistently indicate one type of impact over another (Yoder, 1991). In New York State, the first recorded biological monitoring effort dates from 1926-1939, but the regulatory role of stream biological monitoring did not begin in New York until after the passage of the Federal Water Pollution Control Act Amendments of 1972 (Clean Water Act). The primary objective of New York State's

program was to evaluate the relative biological health of the state's streams and rivers through the collection and analysis of macroinvertebrate communities (Bode et al., 2002).

Standardized protocols for benthic macroinvertebrate monitoring were developed in the mid-1980s due to the need for cost-effective habitat and biological survey techniques (Plafkin et al., 1989). The primary driver of the development was limited economic resources available to states with miles of unassessed streams. It was also recognized that it was crucial to collect, compile, analyze, and interpret environmental data rapidly to facilitate management decisions and resulting actions for control and/or mitigation of impairment. Therefore, the conceptual principles of rapid bioassessment protocols (RBPs) were as follows; cost-effective, yet scientifically valid procedures, provisions for multiple site investigations in a field season, quick turn-around of results for management decisions, easily translated to management and the public, and environmentally benign procedures (Barbour et al. 1999).

NYS DEC Community Assessment

The Fall Kill is listed on the New York State Priority Waterbodies List (PWL) for remediation (NYSDEC, 2000). According the PWL (2000), the Fall Kill is impaired from Haviland Road in Hyde Park to its confluence with the Hudson River. The stream uses that are being impaired by pathogens and debris include aquatic life and aesthetics (NYSDEC, 2000). Other suspected types of pollutants include nutrients, sediment, oxygen demand, and unknown toxicity (NYSDEC, 2000). Potential sources of the pollution include failing septic systems (upstream), industrial and municipal sources, construction operations, and the College Hill golf course (NYSDEC, 2000).

The NYS DEC conducted biological sampling in the Fall Kill in 1997 in order to assess general water quality for the PWL and establish a baseline set of data (Bode et al., 1998). In the seven-mile stretch of the Fall Kill that was sampled, water quality declined in a linear manner from upstream to downstream (Figure 9). The biological community at Haviland Road was slightly impacted and resembled both a natural community and a community impacted by nutrient additions (Bode et al., 1998). The invertebrate

community at Smith Street was reflective of a community found downstream of a golf course (Bode et al., 1998). The community at Verazzano Blvd pointed strongly towards impacts from municipal and industrial wastes from urban runoff and the dumping of trash (Bode et al., 1998). Basic water chemistry analyzed at the sites wouldn't seem to limit the biological community (Table 6).

Table 6. Fall Kill Chemical Data Collected 9-04-97 (Bode et al., 1998)

Site	02	03	04	05
Time	10:15	11:10	12:15	12:45
Temperature (°C/°F)	15.2/59.4	17.4/63.3	16.9/62.4	16.9/62.4
Specific Conductance (µmhos)	378	543	510	716
Dissolved Oxygen (mg/L)	8.4	5.8	7.0	9.2
pH	7.7	7.4	7.5	8.0

In 2001, Bode et al. (2001) conducted a more in-depth study of the impacted segment between station four and five (Figure 10). Municipal and industrial water quality impacts were indicated by impact source determinations at both stations four and five (Bode et al., 2001). Impact source determination is a procedure that employs invertebrate community type and models to determine the primary impact to water quality. Station 4, Smith Street, was assessed as slightly impacted and station 5, Garden Street, was assessed as moderately impacted (Bode et al., 2001). Tissue analysis of hellgrammites (station 4) and fish (station 5) showed elevated levels of PAHs at both sites, selenium at the upstream site, and DDD, DDE and PCBs at the downstream site (Bode et al., 2001).

Sampling in 2004-05

In the summer of 2004, water quality, fish and macroinvertebrate samples were taken from four stations along the creek; Dorsey Lane, Hyde Park (designated FK 5.8 where the 5.8 designates miles upstream from mouth) , Cream Street, Town of Poughkeepsie (FK 4.6), Smith Street/Salt Point Turnpike, Town and City of Poughkeepsie border (FK 3.1), and Verazzano Boulevard, City of Poughkeepsie (FK 0.45) (Figure 10). Three more sites were added during the summer of 2005. Valkill National Park, Hyde Park (FK 6.8) was added at the beginning of the summer because of the continuous presence of water

Figure 9 – Monitoring Station Locations from the 1997 New York State DEC Biological Assessment.

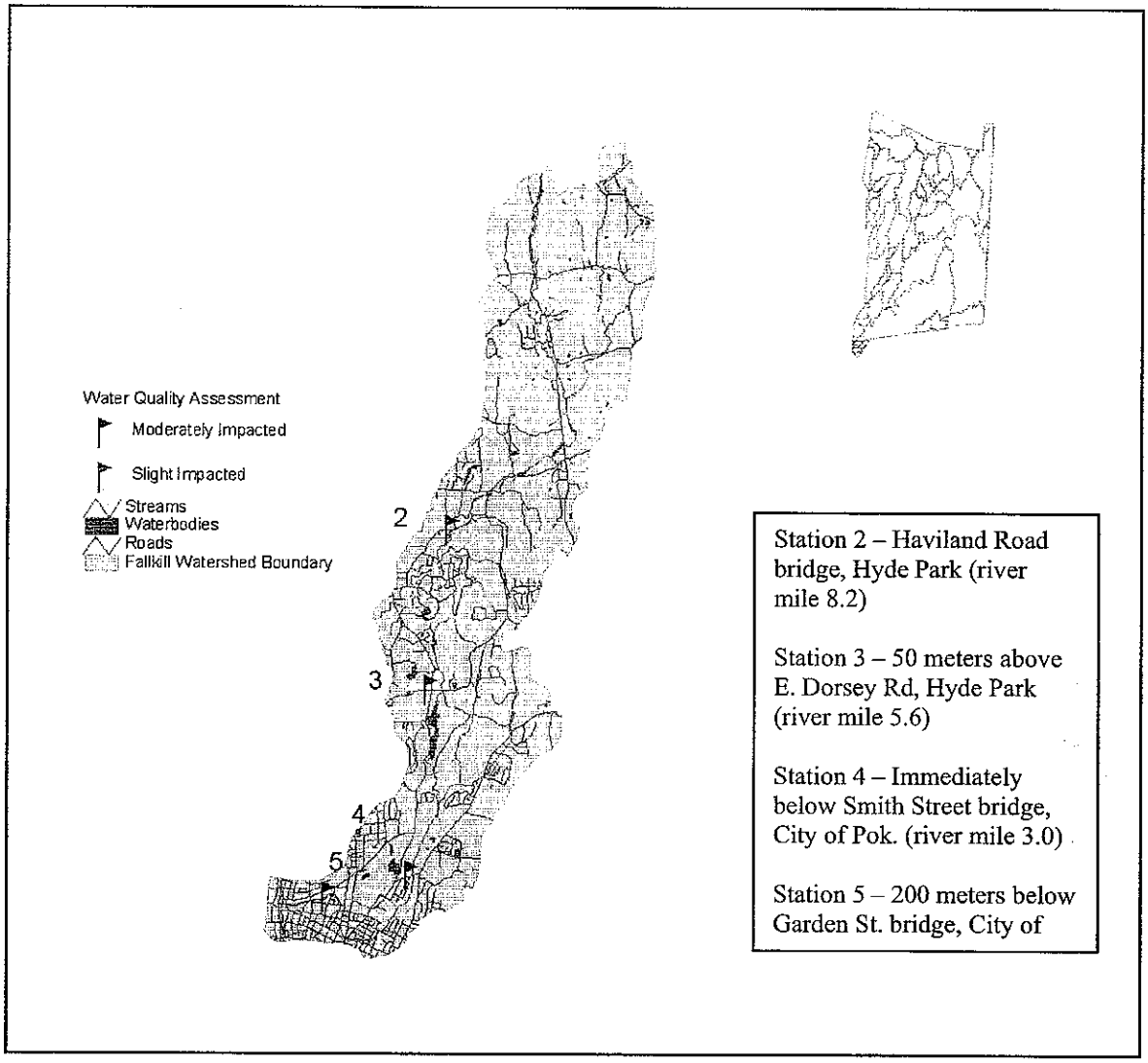
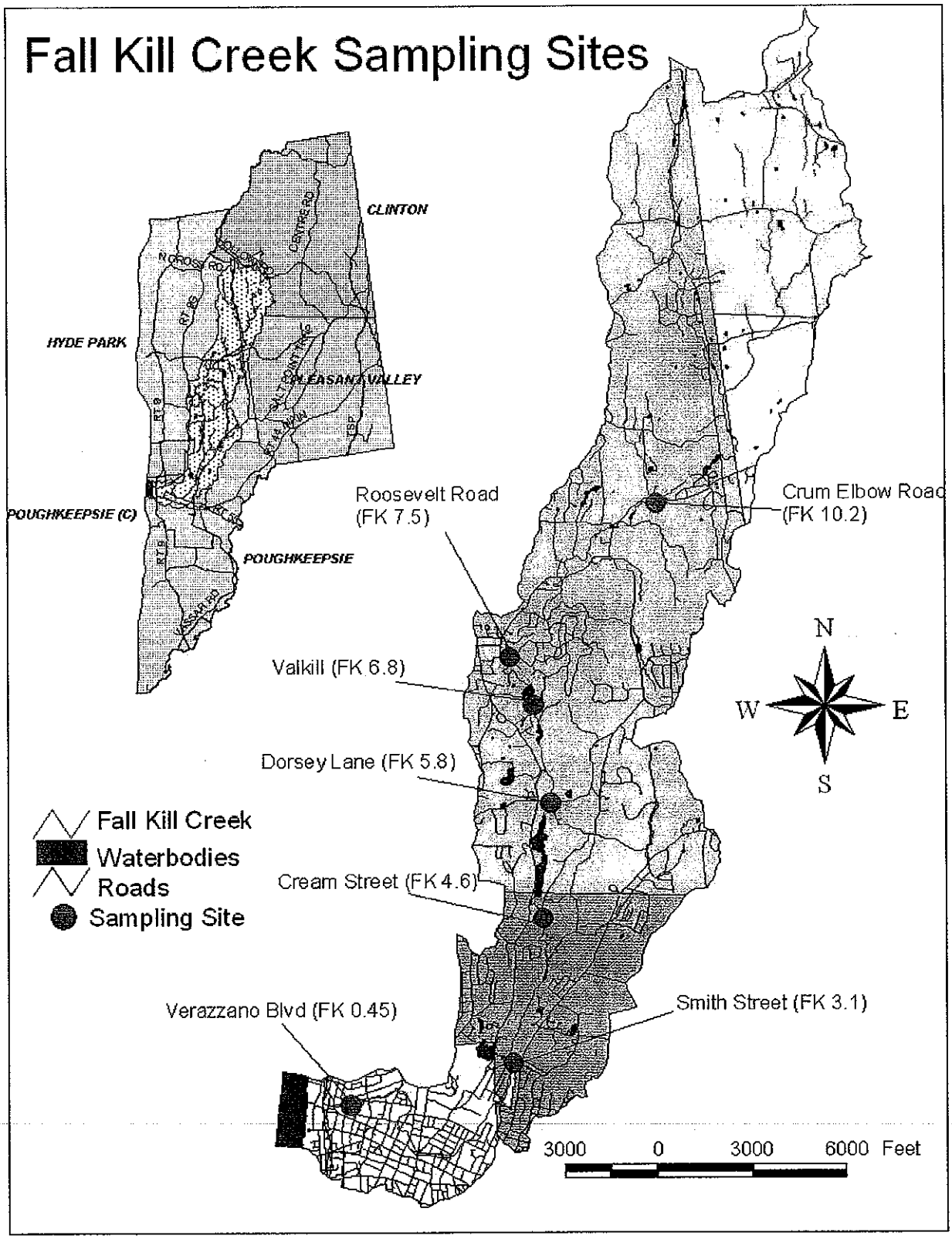


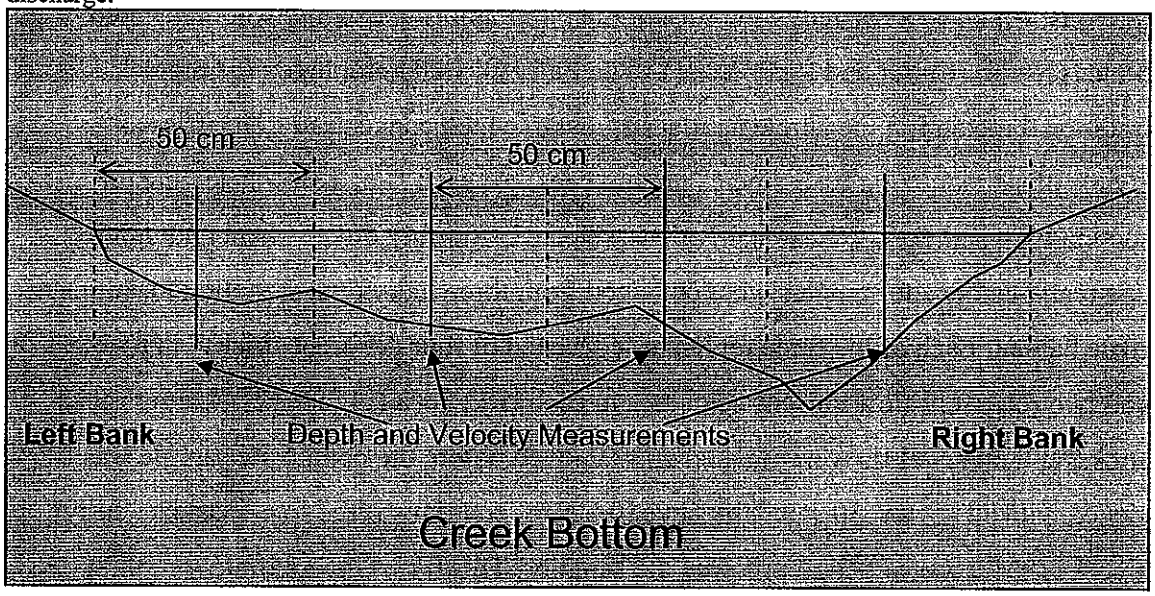
Figure 10. Sampling sites along the Fall Kill. In 2004, sampling sites included Verazzano Blvd, Smith St, Cream St, and Dorsey Lane. In 2005, the aforementioned sites were sampled as well as Valkill, Roosevelt Road and Crum Elbow Road.



fowl were suspected as a possible source of coliform bacteria. After noticing that many of the NYSDEC State Pollution Discharge Elimination System (SPDES) permits occurred in the northern part of the watershed, Crum Elbow Road, Hyde Park (FK 10.2) was added as a sample site. Finally, at the end of the summer, Roosevelt Road, Hyde Park (FK 7.5) was added as a sample site because of the high bacteria counts observed a short distance downstream at Valkill and because it is in a residential area that uses septic systems.

At each site, the temperature, ambient conductivity, specific conductance and salinity were measured using a Yellow Springs Instrument (YSI) Model 33 Salinity/Conductivity/Temperature/Meter. Discharge was measured at Verazzano Boulevard using the protocol described in Gore (1996). Using a meter stick and a current velocity meter, the stream depth and velocity were taken at 50 cm intervals across the channel in order to calculate the discharge. The method is described in more detail in the caption below (Figure 11).

Figure 11. The diagram shows a stream cross section in order to illustrate the procedure for stream discharge determination. Depth and velocity measurements are taken at the center of 50 cm intervals. The stream velocity in cm/sec is then multiplied by the depth (cm) and by 50 cm in order to find the discharge cm^3/sec for each 50 cm interval. The discharge in each interval is then summed to find the total stream discharge.



On each sampling date, two water samples were taken at each site. For the first sample, clean 200 ml amber plastic bottles were rinsed three times with stream water immediately

before sample collection. These samples were taken back to the lab for pH and turbidity measurements using an Orion pH meter and a Nephelometric Turbidity meter respectively.

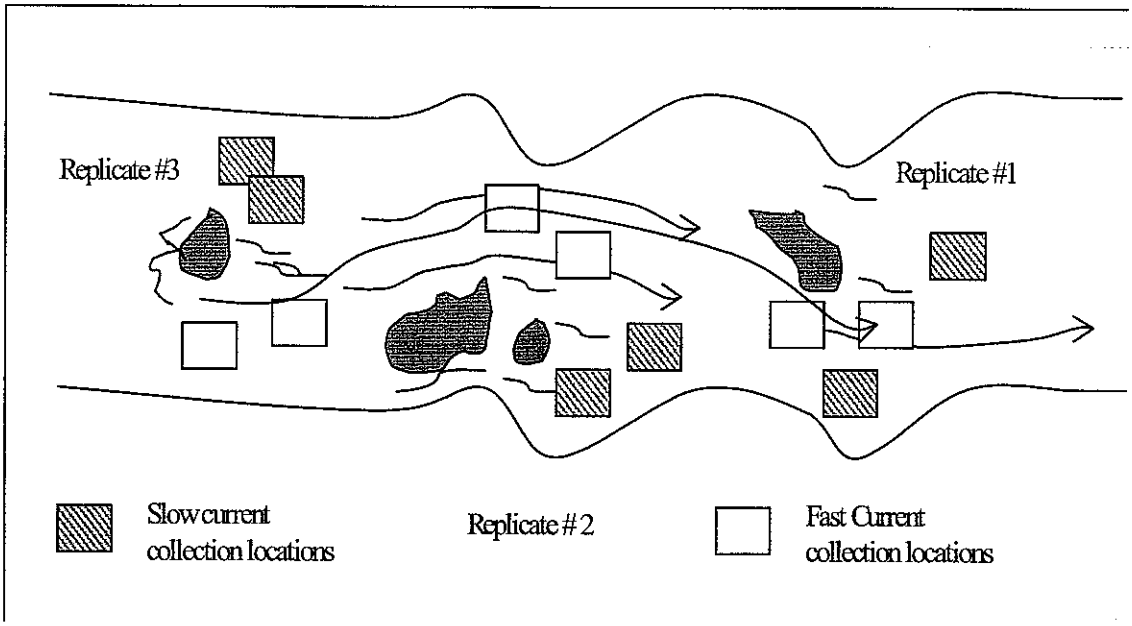
The second sample was obtained for fecal coliforms and *E. coli* bacteria and was collected in autoclaved glass bottles. The bottles were rinsed with stream water before collection and following collection, the bottles were placed in a cooler with ice and brought back to the lab for analysis.

As described in *Standard Methods for the Examination of Water and Wastewater*, the number of fecal coliform and *E. coli* colonies per 100 mL of stream water were determined using the membrane filtration method (Clesceri et al., 1998).

Macroinvertebrate Sampling Methods

During the summer of 2004 rectangular kick nets (30 cm x 50 cm) were used for the collection of macroinvertebrate samples. The nets had a mesh size between 500-600 microns, which is consistent with 80% of the biomonitoring programs in the United States (N=90) (Carter and Resh, 2001). The Fall Kill study employed the more traditional method of the single habitat approach, which concentrates on riffles as a means of standardizing assessments among sites. At each site, a 100-meter stream section with appropriate riffle habitat was selected. Starting downstream and moving upstream, composite samples were collected from three individual sampling locations in riffle habitat. Each of the three replicates consisted of four different "kicks" in two fast and two relatively slow current velocities in each riffle area (Figure 12). Larger rocks, sticks, and other debris were washed and removed before the composite sample was sieved with a U.S. no. 30 standard sieve (0.5 mm) and transferred to a quart jar. Ethyl alcohol (95%) was added to preserve the samples. This macroinvertebrate sampling methodology was consistent with the recommendations of the U.S. Environmental Protection Agency's Rapid Bioassessment Protocols (Barbour et al., 1999).

Figure 12. Example of a three composite sample (adapted from Dates and Byrne, 1996).



In the lab invertebrates were identified to the family level and enumerated. The analysis of macroinvertebrate samples was completed using a variety of metrics, which range from the total number of families present to the percent similarity index of a predefined unimpacted community. New York State has a model community that was developed by the Department of Environmental Conservation based on several years of collection and analysis (Novak and Bode, 1992). Family richness is simply the total number of different families in the subsample. The total number of different families of the orders Ephemeroptera (mayflies), Plecoptera (stoneflies), and Trichoptera (caddisflies) are also recorded as the EPT value. The EPT orders contain many organisms intolerant to pollution. The biotic index was developed by William Hilsenhoff (1988), and assigns each group a value based on its tolerance to organic pollution. Hilsenhoff developed the macroinvertebrate-based family level tolerance values by comparing the occurrence of each family with the average biotic index of streams in which they occurred in the greatest numbers. The family-level index was used for deciding which streams, or which watersheds, should be analyzed closer for organic pollution impacts (Hilsenhoff, 1988). Finally, organism density per sample was included to demonstrate the density of organisms at each site. Organism density per sample is an estimate of the total number of

individuals in the sample. In general, density will increase with the addition of organic matter and/or habitat improvement (Dates and Byrne, 1996). However, density will decrease with lower habitat quality and/or water quality degradation.

Once the various metrics were recorded, they were combined to determine the overall community health of the site. To this end, a combined scaled ranking of the metric values was completed through a biological assessment profile. A conversion formula, based on the expected range for each index within each category of impact for the appropriate waterbody and sampling method, transforms the individual metrics into a common scale of water quality ranging from 0 to 10 (Bode et al., 2001). After all family-level index values were converted to a common scale value, the values were averaged to obtain a score describing the overall assessment of water quality into one of four categories of impact (Smith and Bode, 2004). The categories of impact in New York State include, nonimpacted (pristine community), slightly impacted, moderately impacted, and severely impacted (very degraded system).

Fish Sampling Method

During the summer of 2004, researchers from Marist College, Dutchess County EMC and Dr. Robert Schmidt from Simon's Rock College and Hudsonia, Inc. sampled fish communities at Verazzano Blvd (FK 0.45), Smith St (FK 3.1), Cream St. (FK 4.6) and Dorsey Lane (FK 5.8). A backpack shocker was used to stun the fish while personnel with hand held nets scooped the stunned fish from the water. A seine was also set up 10 meters downstream from the shocker to collect any stunned fish missed by the netters. The fish species were identified, counted, and measured for length at each sampling site. Following identification, the fish were released back into the Fall Kill.

Results

The physical and chemical results show that the Fall Kill is a warm water, moderately well oxygenated, and slightly alkaline stream (Table 7).

Table 7. Fall Kill mean water temperature and dissolved oxygen content collected in the summer of 2004.						
Site	Mean Temperature (Degrees Celsius)	SD	Mean Dissolved Oxygen	SD	Mean pH	SD
Dorsey Lane	21.1	1.23	5.7	0.69	7.5	0.21
Cream St	22.7	0.85	6.6	2.1	7.4	0.22
Smith St	21.5	0.61	7	0.45	7.5	0.05
Verazzano Blvd	20.8	0.65	8.5	0.5	7.7	0.09

Temperature and Dissolved Oxygen

Temperature readings were obtained five times during the summer of 2004 and weekly from June 22, 2005 to August 16, 2005. Samples were taken between 9 A.M. and 11:30 A.M. in both years. On any given sampling date the water temperature throughout the creek varied by about 3-4 °C. Water temperatures occasionally reached 28 °C, with temperatures most likely topping off above 30 °C on warm sunny afternoons. Areas where riparian zones remained intact or where the creek was significantly shaded had the lowest temperatures. The highest temperatures were found in areas where dams slowed the flow of water, i.e. Cream Street (below the dam at Fall Kill Park), at Valkill and at the Reach Out Family Worship Center on Crum Elbow Road.

In 2004, the dissolved oxygen levels varied by location in the stream but showed some improvement in the lower reaches due to an increase in the stream gradient, the amount of riffles, and more extensive canopy coverage by riparian trees. The dissolved oxygen content at Dorsey Lane (FK 5.8) and Cream Street (FK 4.6) were negatively affected by Fall Kill Lake. (Table 7). Dissolved oxygen readings from 8/16/05 showed saturation levels below 50% at Cream Street and the remaining upstream sites. The impoundment of the water allowed the water temperatures to rise. As water temperature increases, its ability to hold dissolved oxygen decreases. In addition, the lake provided habitat for numerous plant species. It is hypothesized that once the aquatic plants died, bacteria proliferated. As the dead plants decomposed, oxygen levels dropped. However, neither

the DO, temperature or pH levels were sufficiently abnormal to have drastically limited the macroinvertebrate community.

Nitrate and phosphate concentrations were highest at the most upstream site sampled and exceeded recommended levels for healthy stream ecosystems. The high levels of these plant nutrients help to fuel the prolific growth of algae and aquatic plants in Fall Kill Reservoir. Levels of the nutrients at Cream Street (immediately below the reservoir) are much lower indicating removal and retention probably as plant biomass in the reservoir. Chloride levels are also high throughout the potion of the system studied. These ion concentrations indicate that there is a significant source of contamination somewhere upstream of Dorsey Lane.

Table 8. Nutrient analysis (ppm) of water samples from the Fall Kill, summer 2004. Values are means based on four samples taken at weekly intervals for each site.

Site	Chloride	Nitrate	Phosphate	Sulfate
Dorsey Lane	60.51	1.20	0.120	19.3
Cream Street	59.58	0.35	0.058	13.06
Smith Street	61.44	0.70	0.051	15.70
Verazzano Blvd.	80.40	1.15	0.048	19.30

Conductivity

The conductivity readings found throughout the study were highest in the residential areas surrounding the creek in Hyde Park and throughout the stream segment in the City of Poughkeepsie. As noted by the EPA, sewage can increase the conductivity because of the presence of chlorides, nitrates and phosphates. However, conductivity is also dependent on other factors such as geology.

On August 11, 2005, the conductivity was taken at sixteen street and stream crossings in the watershed (Table 9). The conductivity at Haviland Rd in Hyde Park just upstream

Table 9. Conductivity and salinity results taken at 16 different street and stream crossings on August 11, 2005.

Streat/Stream Crossing	Temp (°C)	Specific Conductivity (µS at 25 oC)	Salinity (ppt)	Miles Upstream
Quaker Lane	25	350	0.2	11
Crum Elbow Road	26.1	324	0.2	10.2
Haviland Road	27.3	348	0.2	8.67
Roosevelt (2)	24.3	470	0.2	8.16
Roosevelt (1)	21.6	658	0.3	7.5
Valkill	28.8	576	0.3	6.8
Dorsey Lane	25.8	556	0.2	5.8
Cream St	24.9	441	0.2	4.6
Smith St	24.3	485	0.2	3.1
Mansion St (2)	24.3	693	0.3	2.25
Winnekee	24.7	713	0.3	2.03
North Hamilton	25.9	712	0.3	1.53
Mansion St (1)	24.6	701	0.3	1.33
Garden Street	24.2	671	0.3	0.93
Carmel Avenue (Verazzano)	23.4	719	0.4	0.45
Water Street	24	750	0.4	0.07

of a mobile park was 348 microseimens (uS). Less than 0.5 miles downstream at the next crossing, the conductivity jumped to 470 uS. From there through the residential area (Figure 5) the conductivity rose to 658 uS (Table 9). The residential development in this area is very dense, built upon well drained soils along the creek, and each home and trailer uses septic tanks for waste treatment. Given the close proximity of the development to the creek, as well as the high bacteria counts and high conductivity, direct discharges or leaching from septic fields are suspected sources of the contaminants.

Trace Metals and Petroleum Hydrocarbons

As noted previously, several heavy metals were found at high levels in both the Fall Kill sediment and macroinvertebrates (Bode et al, 2001). In the summer of 2005, sediment and water samples from Verazzano Blvd (FK 0.45) and Smith Street (FK 3.1) were sent to Smith Environmental Labs in Hyde Park for trace metal and hydrocarbon analysis (Table 10). According to protocols used by the NYSDEC in a Hudson River Sediment and Biological Survey (NYSEDEC, 2000b), measured lead and zinc values exceeded the

threshold effect concentration (TEC) and probable effects concentration (PEC) thresholds at both Verazzano Blvd and Smith Street. The TEC represents the concentration above which adverse effects on sediment-dwelling organisms are likely to be observed. The PEC is the level below which adverse effects on organisms are not expected to occur. Not all heavy metals have TEC and PEC thresholds. The TEC for zinc is 121 ppm and the PEC 459 ppm. For lead, the TEC is 35.9 ppm and PEC 128 ppm. The sediment at Verazzano was found to exceed the PEC level for lead and the TEC level for zinc, while at Smith St, both zinc and lead were found at or above the TEC levels.

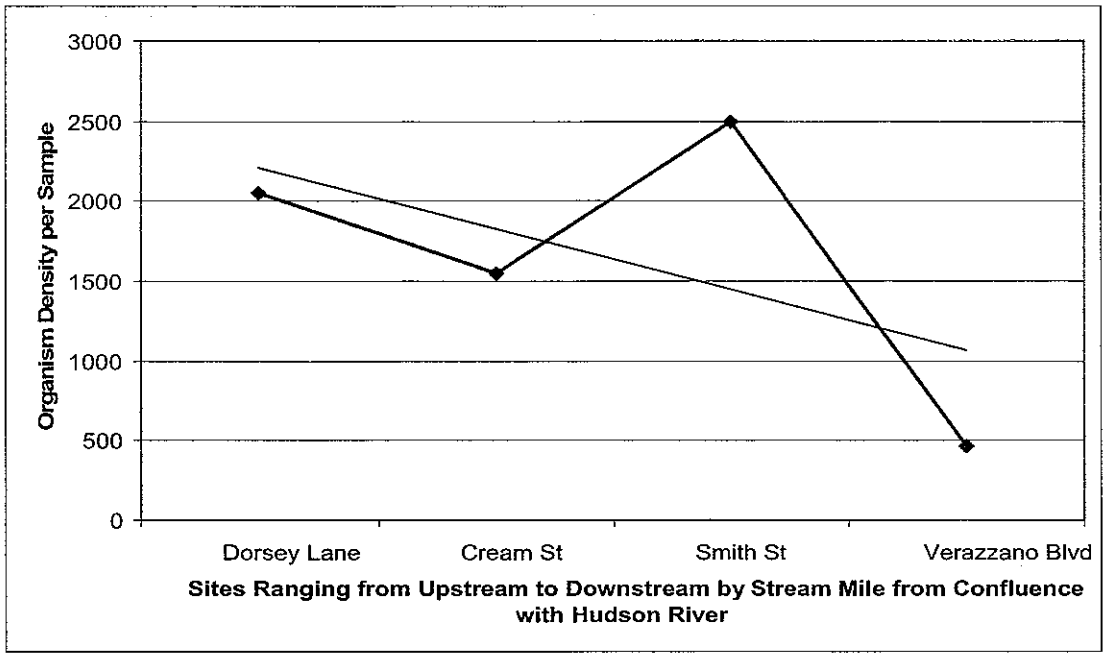
Table 10. Heavy metals found in sediment from Verazzano Blvd and Smith St on 7/20/05 as analyzed by Smith Environmental Labs in Hyde Park, NY.

Metal	Verazzano Blvd (ppm)	Smith St (ppm)
Arsenic	9	< 5
Chromium	15	11
Copper	< 50	16
Lead	220	61
Nickel	< 20	15
Silver	11	4.3
Thallium	15.5	19
Zinc	380	120

Macroinvertebrates

The macroinvertebrate results indicated the Fall Kill ranged from slightly impacted through the majority of the stream's length to moderately impacted in its lower reaches (Figure 13). The organism density per sample varied from upstream to downstream with the most macroinvertebrates inhabiting Smith Street (FK 3.1) and the fewest at Verazzano Blvd (FK 0.45) (Figure 13). The decrease in organism density is particularly acute between Smith Street and Verazzano Boulevard which is also the most hydraulically altered section of the stream.

Figure 13. Macroinvertebrate organism density per sample plotted from upstream to downstream from 2004 collection. Trendline represents a decrease in density from upstream to downstream.



The EPT family richness and total family richness also demonstrated a drop off in community health at Verazzano Blvd (FK 0.45) (Figure 14). The expected ranges for family richness and EPT richness based on 100-organism subsamples of kick samples in most streams in New York State are described in table 8 (Smith and Bode, 2004).

Figure 14. Ephemeroptera, Plecoptera, and Trichoptera (EPT) and total family richness values averaged by site from upstream to downstream (2004).

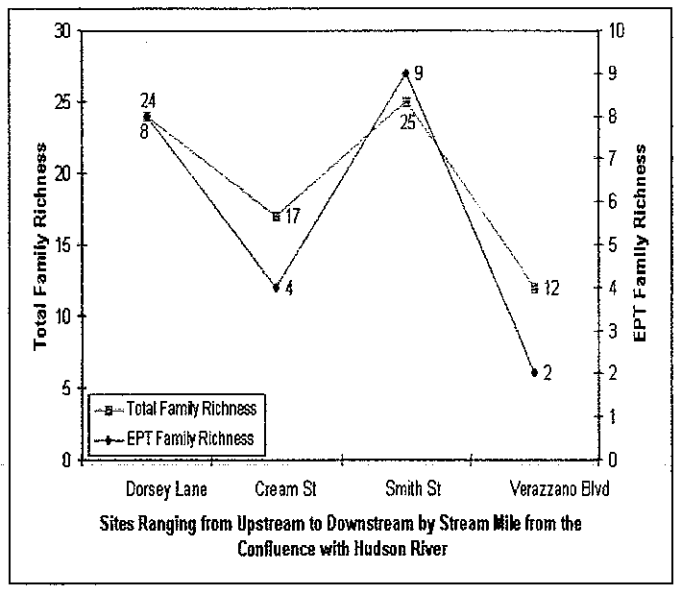


Table 11 - Stream impact classification based on the family richness and EPT richness of 100-organism subsamples.

	Non - Impacted	Slightly Impacted	Moderately Impacted	Severely Impacted
Family Richness	> 13	10 - 13	7 - 9	< 7
EPT Richness	> 7	3 - 7	1 - 2	0

The community at Dorsey Lane (FK 4.6) was impacted by Fall Kill Lake, which is located approximately 0.25 miles (0.4 km) upstream of the sample collection site. Therefore, poor macroinvertebrate metrics may represent impacts on habitat from the creek being impounded and are not necessarily caused by other aquatic contaminants. Total family richness (TFR) values fall within the non-impacted category, with the lone exception of Verazzano Blvd (FK 0.45) (slightly impacted) (Figure 14). EPT values indicated Dorsey Lane (FK 5.8) and Smith Street (FK 3.1) were nonimpacted. Cream Street (FK 4.6) was slightly impacted (upstream dam), and Verazzano Blvd (FK 0.45) was moderately impacted (Figure 14 and Table 11).

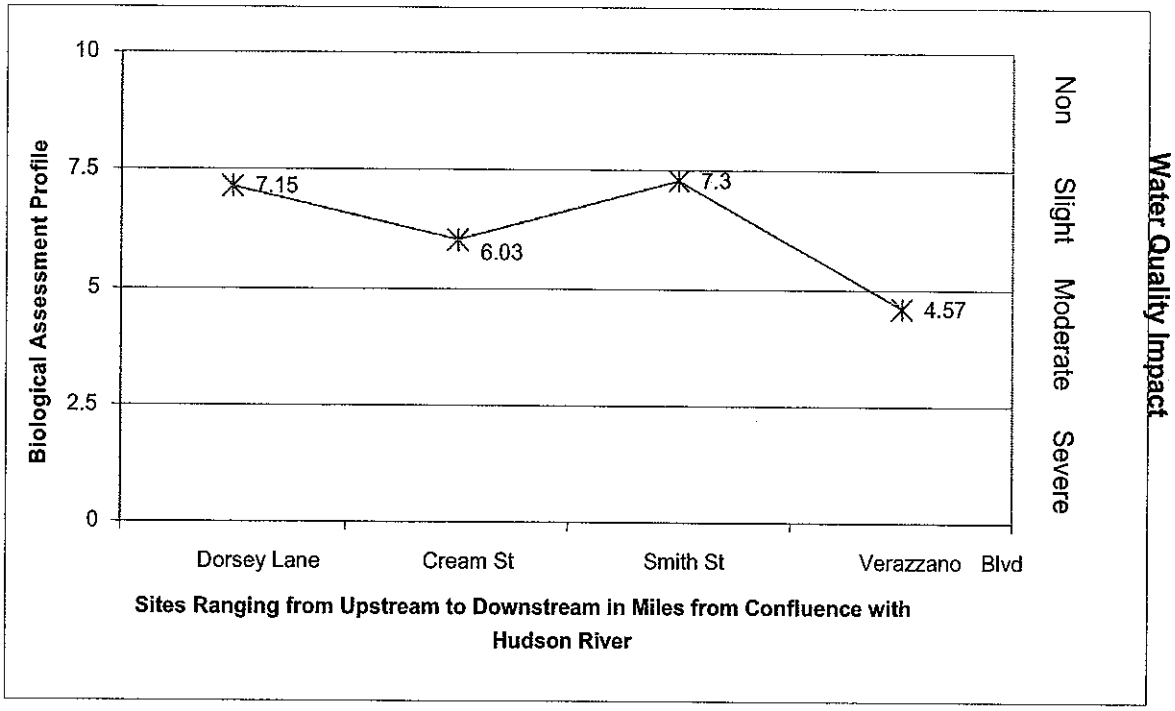
Once the percent model affinity, biotic index, total family richness, and EPT values were determined, they were combined on a common scale to provide an overall assessment of community health. To this end, a combined scaled ranking of the metric values was completed through a biological assessment profile. A conversion formula, based on the expected range for each index within each category of impact for the appropriate water body and sampling method, transforms the individual metrics into a common scale of water quality ranging from 0 to 10 (Bode et al., 2001) (Table 12).

Table 12 - The biological assessment profile scoring criteria which consists of a combination of the individual metric values of percent model affinity, biotic index, total family richness and EPT values.

Impact Scale	Impact Classification
0 - 2.5	Severely Impacted
2.5 – 5	Moderately Impacted
5 - 7.5	Slightly Impacted
7.5 – 10	Nonimpacted

According to the assessment profile, Dorsey Lane (FK 5.8) was the healthiest and Verazzano Blvd (FK 0.45) was the least healthy (Figure 15). Results from Dorsey Lane

Figure 15. Biological assessment profile (BAP) values on a normalized scale (0 to 10). Values represent the BAP variation in the slightly impacted segment (FK 5.8- FK 3.1) and moderately impacted site (FK 0.45) of the normalized scale.



(FK 5.8) and Cream Street (FK 3.1) indicated the water quality was slightly impacted, most likely from nonpoint source pollutants. Verazzano Blvd (FK 0.45) was moderately impacted by urban sources of pollution. These 2004 findings are similar to the 1997 findings of the NYSDEC (Bode et al., 1998), indicating little change in water quality in the intervening years.

Fish Results

Fish samples were taken at Dorsey Lane (FK 5.8), Cream St (FK 4.6), Smith St (FK 3.1), and Verazzano Blvd (FK 0.45) on June, 18, 2004 and August 26, 2004. A total of 375 fish, representing 15 different species, were caught, identified and released during the summer of 2004 (Table 13). The highest fish total and species richness, or variety of species, was found at Smith St (FK 3.1) (Table 14). The Shannon-Wiener Diversity Index ($H^{\prime}$) was used to compare the species richness and evenness of each sampling area. The index assigns a value based on the different types of species found and the number of individuals from each species. A higher diversity index, as seen at Smith St (FK 3.1),

shows a wider variety of species present compared to the low value seen at Verazzano Blvd (FK 0.45) which is dominated by a single species.

Table 13 - The different types of fish species found throughout the Fall Kill, including the number of fish caught, and the respective pollution tolerance of each.

Species	Total Fish Caught (2004)	Pollution Tolerance
American Eel	15	Tolerant
Blacknose Dace	57	Tolerant
Bluegill	56	Tolerant
Brown Bullhead	1	Tolerant
Cutlips Minnow	40	Moderately Tolerant
Golden Shiner	1	Tolerant
Large Mouth Bass	9	Moderately Tolerant
Long Nose Dace	1	Moderately Tolerant
Pumpkinseed	10	Moderately Tolerant
Red Breasted Sunfish	5	Moderately Tolerant
Red-Fin Pickerel	5	Moderately Tolerant
Tessellated Darter	108	Moderately Tolerant
White Sucker	54	Tolerant
Yellow Bullhead	10	Tolerant
2 - Lined Salamander	3	-
	Total = 375	

Dorsey Lane (FK 5.8) and Smith Street (FK 3.1) had the healthiest fish communities based on the species richness, diversity index, number of fish caught, and the pollution tolerance of the fish caught. Cream Street (FK 4.6) and Verazzano Boulevard (FK 0.45) fish catches were smaller, less diverse and included species tolerant to pollution. The community at Cream Street (FK 4.6) is likely impacted by the dam at Fall Kill Park about a quarter-mile upstream. The channelization of the Fall Kill through the City of Poughkeepsie creates minimal habit for fish because of the high current velocity, and the fish that did inhabit the urban section of the creek were hampered by the poor water quality.

Table 14 - Species richness, Shannon-Wiener Diversity Index, dominant species, and total fish caught at each site during the summer of 2004.

Site	Date	Species Richness	Shannon-Wiener Diversity Index (H')	Dominant Species	Total Fish
Dorsey Lane	6/18/2004	8	1.34	Bluegill (22)	36
Dorsey Lane	8/26/2004	5	1.12	Bluegill (31)	48
Cream Street	6/18/2004	3	0.87	Cutlips Minnow (4)	6
Cream Street	8/26/2004	7	0.85	Cutlips Minnow (23)	34
Smith Street	6/18/2004	9	1.21	Tessellated Darter (43)	70
Smith Street	8/26/2004	10	1.47	Tessellated Darter (58)	123
Verazzano Blvd	6/18/2004	3	0.63	White Sucker (26)	34
Verazzano Blvd	8/26/2004	3	0.68	White Sucker (18)	24

Fecal Coliforms

Fecal coliform and *E. coli* bacteria were found at each of the sampling sites. Fecal coliform counts on the whole were extremely high, consistently above the New York State Department of Health's 200 colonies/100ml threshold for safe swimming. The highest counts were found at Valkill and Cream Street, with mean and median values over 10,000 colonies/100ml. *E. coli* was found sporadically at the five northernmost sites, and consistently at Smith Street and Verazzano Boulevard. Downstream of Smith Street, the Fall Kill turns into an urban creek, where there are very few warm-blooded animals capable of producing fecal coliforms and *E. coli* besides humans and pets. The bacteria could be coming from a leaky sewer line or storm sewer run-off. However because of the lack of rain in July and August there was very little storm runoff during the 2005 sampling period, thus indicating a leaking sewer line or illegal discharges as the most likely source.

When Roosevelt Road was added as a sample site in mid to late summer of 2005, high bacteria counts were obtained. The residential area between Haviland Road and Valkill could be the source of the bacteria as the entire area uses septic tanks.

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Appendix Table 1 - Water chemistry data taken from four test sites during the summer of 2004.

Site	Date	Temperature (°C)	Specific Conductivity (uS at 25 °c)	Salinity (ppt)	pH	Turbidity (ntu)	Dissolved Oxygen (mg/L)	Hardness (mg/L)	Calcium (mg/L)	Magnesium (mg/L)	Alkalinity
Dorsey Lane	6/18/2004	22.3	347	0.2	7.76	-	4.5	112	36.1	5.4	95
Dorsey Lane	7/14/2004	22	583	0.3	7.26	3	5.6	132	42.5	6.3	112
Dorsey Lane	7/26/2004	20.8	335	0.2	-	-	-	140	33.7	13.6	74
Dorsey Lane	8/19/2004	21	380	-	7.44	1.3	-	120	45.7	1.4	112
Dorsey Lane	8/26/2004	19.4	407	0.2	7.5	-	6.9	-	-	-	-
Cream Street	6/18/2004	25.7	390	0.2	6.8/7.05	-	7.29	88	36.1	0	70
Cream Street	7/14/2004	23.2	471	0.3	7.31	2.1	6.5	156	49.7	7.7	129
Cream Street	7/26/2004	21.5	427	0.2	-	-	-	168	48.9	11.1	110
Cream Street	8/19/2004	22.5	363	-	7.6	1.2	-	116	48.9	1.5	103
Cream Street	8/26/2004	20.8	345	0.2	7.5	-	8.2	-	-	-	-
Smith Street	6/18/2004	23.1	393	0.2	7.44	-	6.64	112	36.9	4.8	92
Smith Street	7/14/2004	20	519	0.2	7.46	1.8	4.2	150	48.9	6.8	126
Smith Street	7/26/2004	22.1	448	0.2	-	-	-	176	44.1	16	114
Smith Street	8/19/2004	22	393	-	7.55	2	-	164	52.1	8.2	110
Smith Street	8/26/2004	20.1	396	0.2	7.5	-	7.9	-	-	-	-
Verazzano Blvd	6/18/2004	22.6	481	0.2	7.68	-	8	112	36.1	5.4	94
Verazzano Blvd	7/14/2004	19	640	0.3	7.83	2.3	5.6	164	54.1	7	141
Verazzano Blvd	7/26/2004	21.6	494	0.2	-	-	-	180	54.5	10.7	119
Verazzano Blvd	8/19/2004	21	458	-	7.84	4	-	176	52.1	11	126
Verazzano Blvd	8/26/2004	19.7	476	0.2	7.6	-	9	-	-	-	-

Appendix Table 2 - Water chemistry data taken from seven test sites during the summer of 2005.

Site	Date	Temperature (°C)	Specific Conductivity (uS at 25 °C)	Salinity (ppt)	pH	Turbidity (ntu)	Dissolved Oxygen (ppm)	Percent Oxygen Saturation	Discharge (f3/s)
Crum Elbow Rd	7/13/2005	25.1	284	0.1	7.21	1	-	-	-
Crum Elbow Rd	7/20/2005	27.1	271	0.1	7.77	2	-	-	-
Crum Elbow Rd	7/26/2005	24.0	287	0.1	6.89	1	-	-	-
Crum Elbow Rd	8/2/2005	24.8	308	0.1	7.42	2	-	-	-
Crum Elbow Rd	8/9/2005	24.5	320	0.2	6.87	3	-	-	-
Crum Elbow Rd	8/16/2005	23.6	340	0.2	7.08	2	2	23.6	-
Roosevelt Rd	8/2/2005	21.2	589	0.3	7.29	3	-	-	-
Roosevelt Rd	8/9/2005	21.6	671	0.3	6.85	4	-	-	-
Roosevelt Rd	8/6/2005	20.2	647	0.3	7.12	5	2.5	26.9	
Valkill	6/22/2005	23.1	488	0.2	7.46	-	-	-	-
Valkill	6/29/2005	26.3	533	0.3	7.08	2.2	-	-	-
Valkill	7/6/2005	24.2	457	0.2	7.08	4	-	-	-
Valkill	7/13/2005	24.4	444	0.2	7.17	3	-	-	-
Valkill	7/20/2005	27.3	405	0.2	6.95	3	-	-	-
Valkill	7/26/2005	24.3	498	0.2	7.05	3	-	-	-
Valkill	8/2/2005	25.7	556	0.3	7.48	4	-	-	-
Valkill	8/9/2005	25.3	585	0.3	7.1	4	-	-	-
Valkill	8/16/2005	24.6	615	0.3	7.2	3	4.2	50.4	
Dorsey Lane	6/22/2005	21.6	472	0.2	7.48	-	-	-	-
Dorsey Lane	6/29/2005	25.4	518	0.3	7.5	1.5	-	-	-
Dorsey Lane	7/6/2005	23.4	444	0.2	7.43	2	-	-	-
Dorsey Lane	7/13/2005	23.6	430	0.2	7.13	2	-	-	-
Dorsey Lane	7/20/2005	26.2	426	0.2	7.18	2	-	-	-
Dorsey Lane	7/26/2005	23.5	459	0.2	7.01	2	-	-	-
Dorsey Lane	8/2/2005	24.0	522	0.3	7.64	14	-	-	-
Dorsey Lane	8/9/2005	24.0	555	0.3	7.67	5	-	-	-
Dorsey Lane	8/6/2005	22.3	560	0.3	7.19	4	4.4	52.6	
Cream St	6/22/2005	22.4	428	0.2	7.48	-	-	-	-

Appendix Table 2 continued.

Site	Date	Temperature (°C)	Specific Conductivity (uS at 25 °C)	Salinity (ppt)	pH	Turbidity (ntu)	Dissolved Oxygen (ppm)	Percent Oxygen Saturation	Discharge (f3/s)
Cream St	7/6/2005	24.6	455	0.2	7.25	1	-	-	-
Cream St	7/13/2005	24.2	453	0.2	7.3	2	-	-	-
Cream St	7/20/2005	27.6	437	0.2	7.56	3	-	-	-
Cream St	7/26/2005	24.2	442	0.2	7.07	3	-	-	-
Cream St	8/2/2005	23.4	441	0.2	7.32	4	-	-	-
Cream St	8/9/2005	24.5	430	0.2	7.57	6	-	-	-
Cream St	8/16/2005	21.2	461	0.2	7.08	2	3.94	45.2	-
Smith St	6/22/2005	21.6	472	0.2	7.48	-	-	-	-
Smith St	6/29/2005	24.0	457	0.2	7.32	2.8	-	-	-
Smith St	7/6/2005	22.6	482	0.2	7.16	3	-	-	-
Smith St	7/13/2005	22.8	484	0.2	7.43	4	-	-	-
Smith St	7/20/2005	25.3	464	0.2	7.71	3	-	-	-
Smith St	7/26/2005	21.9	453	0.2	7.27	3	-	-	-
Smith St	8/2/2005	23.0	497	0.2	7.65	4	-	-	-
Smith St	8/9/2005	22.7	470	0.2	7.69	5	-	-	-
Smith St	8/6/2005	21.6	484	0.2	7.25	14	4.9	55	-
Verazzano Blvd	6/22/2005	19.3	566	0.3	7.95	-	-	-	-
Verazzano Blvd	6/29/2005	23.3	593	0.3	7.82	1.6	-	-	1.63
Verazzano Blvd	7/6/2005	21.8	597	0.3	7.77	2	-	-	4.09
Verazzano Blvd	7/13/2005	21.5	605	0.3	7.93	3	-	-	3.71
Verazzano Blvd	7/20/2005	24.4	563	0.3	7.81	3	-	-	9.01
Verazzano Blvd	7/26/2005	21.2	646	0.3	7.64	2	-	-	1.46
Verazzano Blvd	8/2/2005	22.5	756	0.4	8.14	3	-	-	-
Verazzano Blvd	8/9/2005	22.3	718	0.4	8.23	3	-	-	-
Verazzano Blvd	8/16/2005	21.1	675	0.3	7.63	1	8.04	91.2	0.46

Appendix Table 3 - Results of trace metal and total hydrocarbon in sediment and water samples from Smith St and Verazzano Blvd taken on 7/21/05 are seen on the table below. The data was analyzed by Smith Laboratory in Hyde Park, NY.

Parameter	Smith Street Sediment (ppm)	Verazzano Blvd Sediment (ppm)	Smith Street Water (ppm)	Verazzano Blvd Water (ppm)
Antimony	< 4.0	< 4.0	< 0.003	0.004
Arsenic	< 5.0	9	< 0.005	< 0.005
Beryllium	< 0.6	< 2.0	< 0.001	< 0.001
Cadmium	< 3.0	< 10	< 0.002	< 0.002
Chromium	11	15	< 0.002	< 0.002
Copper	16	< 50	< 0.003	0.004
Lead	61	220	< 0.001	0.002
Mercury	< 0.20	< .20	< 0.0004	< 0.0004
Nickel	15	< 20	< 0.01	< 0.01
Selenium	< 5.0	< 5.0	< 0.004	< 0.004
Silver	4.3	11	< 0.002	< 0.002
Thallium	19	15.5	< 0.001	< 0.001
Total Petroleum Hydrocarbons	2000 *	280	< 5	< 5
Zinc	120	380	0.01	0.015

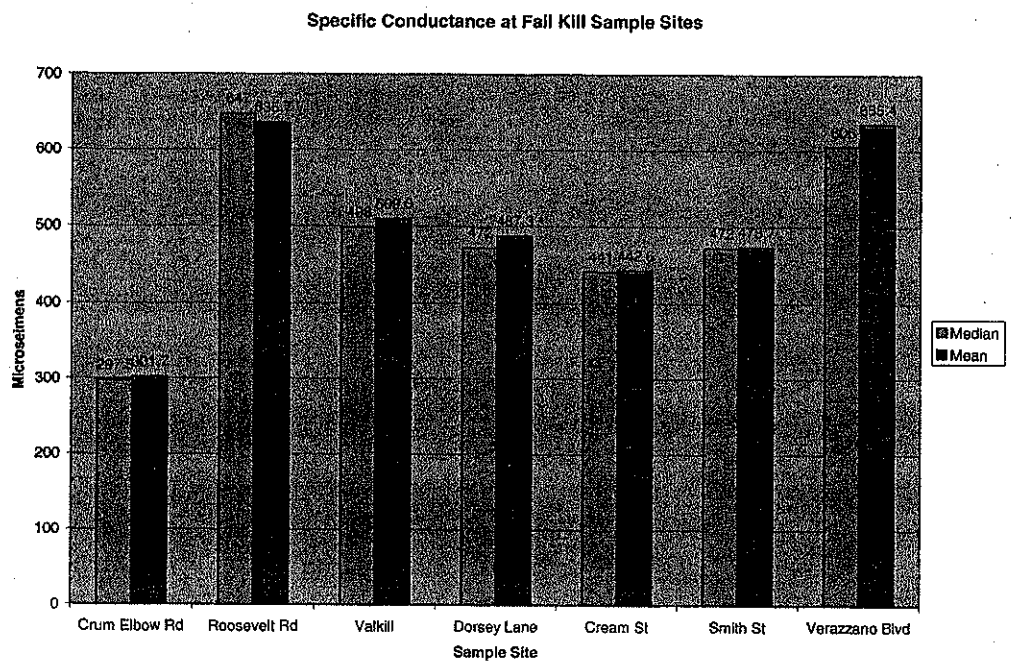
* Sample extract highly colored; results may be biased high

Appendix Table 4 - On August 11, 2005, temperature, conductivity and salinity were tested at several street and stream crossings within the watershed to investigate the change in water chemistry throughout the stream.

Streat/Stream Crossing	Temp (°C)	Specific Conductivity (µS at 25 °C)	Salinity (ppt)	Miles Upstream
Quaker Lane	25	350	0.2	11
Crum Elbow Road	26.1	324	0.2	10.2
Haviland Road	27.3	348	0.2	8.67
Roosevelt (2)	24.3	470	0.2	8.16
Roosevelt (1)	23.6	658	0.3	7.5
Valkill	28.8	576	0.3	6.8
Dersey Lane	25.8	536	0.2	5.8
Cream St	24.9	441	0.2	4.6
Smith St	24.3	485	0.2	3.1
Mansion St (2)	24.3	693	0.3	2.25
Winnekoe	24.7	713	0.3	2.03
North Hamilton	25.9	712	0.3	1.53
Mansion St (1)	24.6	701	0.3	1.33
Garden Street	24.2	671	0.3	0.93
Carmel Avenue (Verazzano)	23.4	719	0.4	0.45
Water Street	24	750	0.4	0.07

Appendix Table 5 - Water chemistry data taken from the summer of 2005.

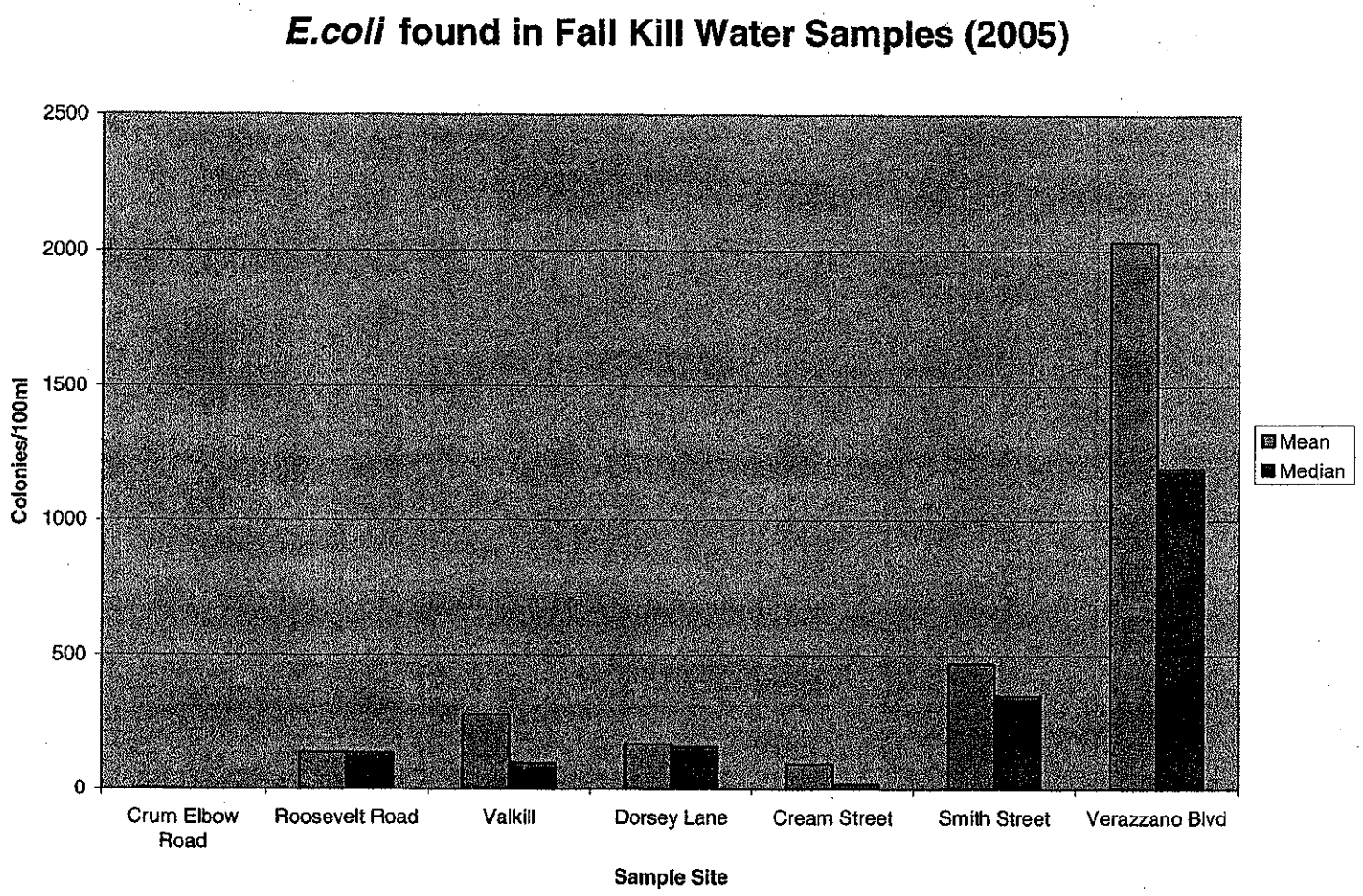
	pH	Temperature (°C)			Specific Conductance (µS at 25 °C)			Salinity (ppt)	Turbidity (ntu)
Site	**Range**	**Range**	**Median**	**Mean**	**Range**	**Median**	**Mean**	**Range**	**Range**
Crum Elbow Rd	6.89 - 7.77	23.6 - 27.1	24.7	24.9	271 - 840	297.5	301.7	0.1 - 0.2	1.0 - 3.0
Roosevelt Rd	6.85 - 7.29	20.2 -21.6	21.2	21.0	589 -671	647	635.7	0.3	3.0 - 5.0
Valkill	6.95 - 7.48	23.1 -27.3	24.6	25.0	405 - 615	498	509.0	0.2 - 0.3	2.2 - 4.0
Dorsey Lane	7.01 - 7.67	21.6 - 26.2	23.6	23.8	426 - 560	472	487.3	0.2 - 0.3	1.5 - 14.0
Cream St	7.07 - 7.66	21.2 - 27.6	24.2	23.8	428 - 461	441	442.6	0.2	1.0 - 6.0
Smith St	7.16 - 7.69	21.6 - 25.3	22.7	22.8	453 - 497	472	473.7	0.2	2.8 - 14.0
Verazzano Blvd	7.63 - 8.23	19.3 - 24.4	21.8	21.9	563 - 756	605	635.4	0.3 - 0.4	1.0 - 3.0



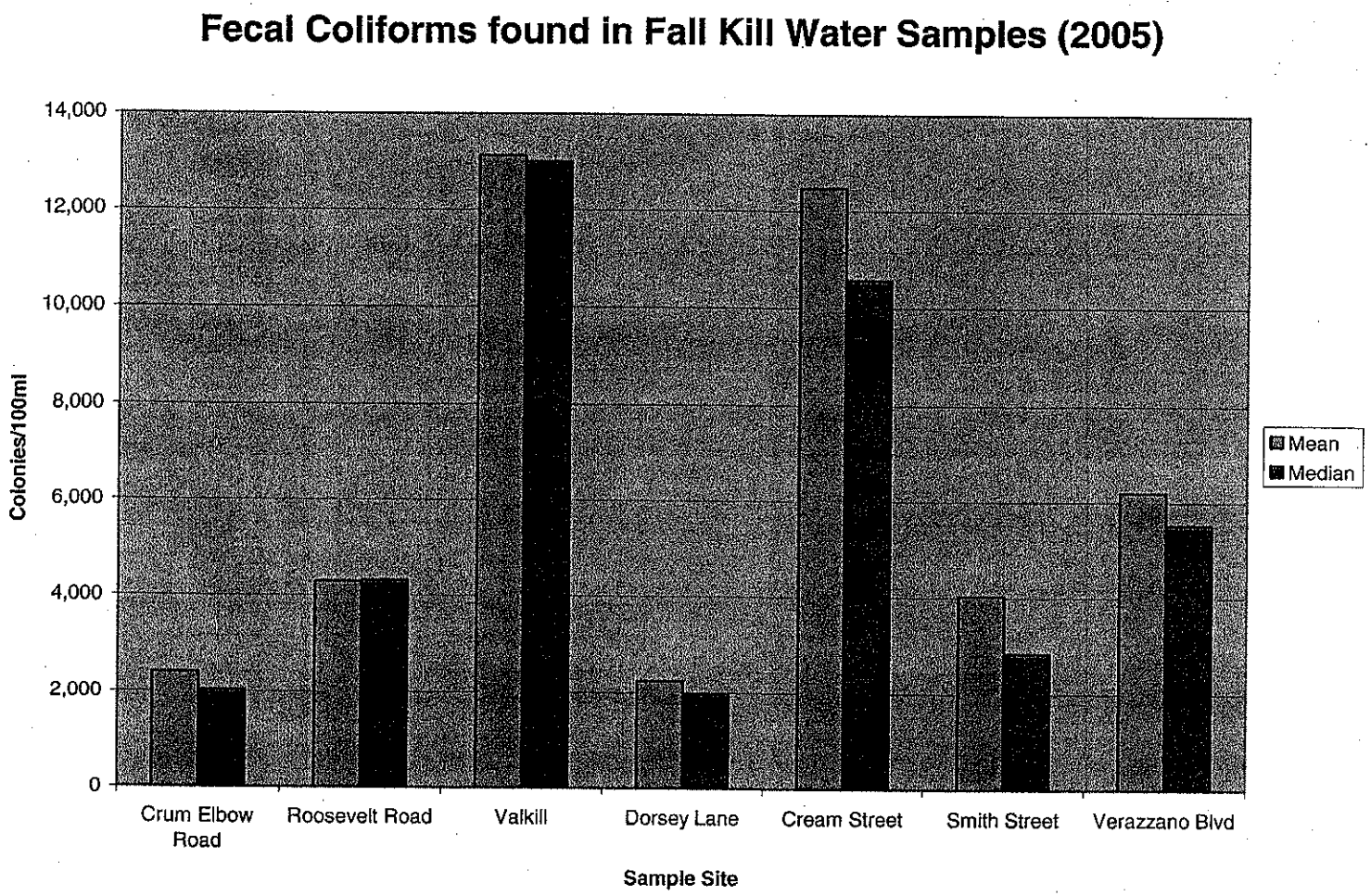
Appendix Chart 1 - Mean and median specific conductance at the seven sample sites during the summer of 2006.

Appendix Table 6 - Mean and median fecal coliform and *E. coli* colonies per 100 ml of stream water at the seven sample sites during the summer of 2005.

	pH	Temperature (°C)			Specific Conductance (µS at 25 °C)			Salinity (ppt)	Turbidity (ntu)
Site	**Range**	**Range**	**Median**	**Mean**	**Range**	**Median**	**Mean**	**Range**	**Range**
Crum Elbow Rd	6.89 - 7.77	23.6 - 27.1	24.7	24.9	271 -340	297.5	301.7	0.1 - 0.2	1.0 - 3.0
Roosevelt Rd	6.85 - 7.29	20.2 -21.6	21.2	21.0	589 -671	647	635.7	0.3	3.0 - 5.0
Valkill	6.95 - 7.48	23.1 -27.3	24.6	25.0	405 - 615	498	509.0	0.2 - 0.3	2.2 - 4.0
Dorsey Lane	7.01 - 7.67	21.6 - 26.2	23.6	23.8	426 - 560	472	487.3	0.2 - 0.3	1.5 - 14.0
Cream St	7.07 - 7.66	21.2 - 27.6	24.2	23.8	428 - 461	441	442.6	0.2	1.0 - 6.0
Smith St	7.16 - 7.69	21.6 - 25.3	22.7	22.8	453 - 497	472	473.7	0.2	2.8 - 14.0
Verazzano Blvd	7.63 - 8.23	19.3 - 24.4	21.8	21.9	563 - 756	605	635.4	0.3 - 0.4	1.0 - 3.0



Appendix Chart 2 – Mean and median *E. coli* concentrations found at the seven sample sites during the summer of 2005.



Appendix Chart 3 – Mean and median fecal coliform concentrations at the seven sample sites during the summer of 2005.

Appendix Table 7 - The number and type of fish species caught at each sample site on the Fall Kill during the two sampling dates during the summer of 2004.

6/18/2004

Site	Yellow Bullhead	Blacknose Dace	White Sucker	Tessellated Darter	Red-Fin Pickerel	Bluegill	American Eel	Cutlips Minnow	Red Breasted Sunfish	Large Mouth Bass	Pumpkin Seed	Brown Bullhead	2-Lined Salamander	Golden Shiner	Total
Dorsey Lane	-	1	-	2	-	22	1	-	1	5	3	-	-	1	36
Cream St	1	-	-	-	1	-	-	4	-	-	-	-	-	-	6
Smith St	2	13	-	43	1	1	5	-	-	-	1	1	3	-	70
Verazzano Blvd.	1	7	26	-	-	-	-	-		-	-	-	-	-	34
Total	4	21	26	45	2	23	6	4	1	5	4	1	3	1	146

8/26/2004

Site	Yellow Bullhead	Blacknose Dace	White Sucker	Tessellated Darter	Long Nose Dace	Red-Fin Pickerel	Bluegill	American Eel	Cutlips Minnow	Red Breasted Sunfish	Large Mouth Bass	Pumpkin Seed	Total
Dorsey Lane	-	2	-	5	-	-	31	-	-	-	4	6	48
Cream St	3	2	1	-	-	-	1	3	23	1	-	-	34
Smith St	2	27	9	58	1	3	1	6	13	3	-	-	120
Verazzano Blvd	1	5	18	-	-	-	-	-	-	-	-	-	24
Total:	***6***	***36***	***28***	***63***	***1***	***3***	***33***	***9***	***36***	***4***	***4***	***6***	***226***

Appendix Table 8 – Macroinvertebrate analysis taken on 7/14/2004 at four sample sites. (GC = Gathering Collector. FC = Filtering Collector. SH = Shredder. PR = Predator. SC = Scraper)

Site								
Date Sampled				**Fallkill - Dorsey - F4**				
				7/14/04				
Replicate		**1**	**2**	**3**				
	T	**D**	**D**	**D**	**Avg. D**	**% Comp**	**T x D**	
Ephemeroptera								
Baetidae	6			1	0.33	0.06	2.00	GC
Baetiscidae	4				0.00	0.00	0.00	GC
Caenidae	6				0.00	0.00	0.00	GC
Ephemerellidae	2				0.00	0.00	0.00	GC
Ephemeridae	4				0.00	0.00	0.00	GC
Heptageniidae	3		89	20	36.33	7.08	109.00	GC
Leptophlebiidae	4				0.00	0.00	0.00	GC
Metretopodidae	2				0.00	0.00	0.00	GC
Isonychidae	2				0.00	0.00	0.00	FC
Polymitarcylidae	2				0.00	0.00	0.00	GC
Potamanthidae	4				0.00	0.00	0.00	GC
Siphlonuridae	7		6	7	4.33	0.84	30.33	GC
Tricorythidae	4		1		0.33	0.06	1.33	GC
Subtotal					41.33	8.06	142.67	
Plecoptera								
Capniidae	3				0.00	0.00	0.00	SH
Chloroperlidae	0				0.00	0.00	0.00	PR
Leuctridae	0				0.00	0.00	0.00	SH
Nemouridae	2				0.00	0.00	0.00	SH
Peltoperlidae	0				0.00	0.00	0.00	SH
Perlidae	3				0.00	0.00	0.00	PR
Perlodidae	2				0.00	0.00	0.00	PR
Pteronarcyidae	0				0.00	0.00	0.00	SH
Taeniopterygidae	2				0.00	0.00	0.00	SH
Subtotal					0.00		0.00	
Trichoptera								
Brachycentridae	2				0.00	0.00	0.00	GC
Glossosomatidae	1		4		1.33	0.26	1.33	SC
Helicopsychidae	3				0.00	0.00	0.00	SC
Hydropsychidae	5		575	19	198.00	38.60	990.00	FC
Hydroptilidae	6				0.00	0.00	0.00	SC
Lepidostomatidae	1				0.00	0.00	0.00	SH
Leptoceridae	4				0.00	0.00	0.00	SH
Limnephilidae	4				0.00	0.00	0.00	SC
Molannidae	6				0.00	0.00	0.00	SC
Odontoceridae	0				0.00	0.00	0.00	SH
Philopotamidae	3		113	12	41.67	8.12	125.00	FC
Phryganeidae	4				0.00	0.00	0.00	SH
Polycentropodidae	6		1	6	2.33	0.45	14.00	PR
Psychomyiidae	2				0.00	0.00	0.00	GC
Rhyacophilidae	1				0.00	0.00	0.00	PR
Sericostomatidae	3				0.00	0.00	0.00	SH
Pupa							0.00	

Appendix Table 8 – Macroinvertebrate analysis taken on 7/14/2004 at four sample sites. (GC = Gathering Collector. FC = Filtering Collector. SH = Shredder. PR = Predator. SC = Scraper)

Subtotal				243.33	47.43	1130.33	
Diptera							
Athericidae	4			0.00	0.00	0.00	PR
Blephariceridae	0			0.00	0.00	0.00	SC
Ceratopogonidae	6			0.00	0.00	0.00	PR
Chironomidae	6	74	73	49.00	9.55	294.00	GC
Empididae	6	3		1.00	0.19	6.00	PR
Simuliidae	5	1		0.33	0.06	1.67	FC
Tabanidae	5			0.00	0.00	0.00	PR
Tipulidae	4		1	0.33	0.06	1.33	SH
Subtotal				50.67		303.00	
Megaloptera							
Corydalidae	4	6		2.00	0.39	8.00	PR
Sialidae	4			0.00	0.00	0.00	PR
Subtotal				2.00		8.00	
Lepidoptera							
Pyralidae	5			0.00	0.00	0.00	SH
Subtotal				0.00		0.00	
Coleoptera							
Dryopidae	5			0.00		0.00	SC
Elmidae	5	201	81	94.00	18.32	470.00	GC
Psephenidae	4	2	3	1.67	0.32	6.67	SC
Hydrophilidae				0.00	0.00	0.00	
Gyrinidae			1	0.33	0.06	0.00	
Subtotal				96.00	18.71	476.67	
Odonata							
Aeshnidae	5			0.00	0.00	0.00	PR
Calopterygidae	6			0.00	0.00	0.00	PR
Coenagrionidae	8			0.00	0.00	0.00	PR
Cordulegastridae	3			0.00	0.00	0.00	PR
Corduliidae	2			0.00	0.00	0.00	PR
Gomphidae	4			0.00	0.00	0.00	PR
Lestidae	9			0.00	0.00	0.00	PR
Libellulidae	2			0.00	0.00	0.00	PR
Macromiidae	2			0.00	0.00	0.00	PR
Subtotal				0.00		0.00	
Amphipoda							
Gammaridae	6	1	2	1.00	0.19	6.00	GC
Talitridae	8		24	8.00	1.56	64.00	GC
Crangonyctidae	6	47		15.67	3.05	94.00	GC
Haustoriidae				0.00	0.00	0.00	GC
Subtotal				24.67	4.81	164.00	
Isopoda							
Asellidae	8	90	7	32.33	6.30	258.67	SH
Subtotal				32.33		258.67	
Decapoda							
Cambaridae	6			0.00	0.00	0.00	GC
Subtotal				0.00		0.00	
Other							
Class Oligochaeta	9		1	0.33	0.06	3.00	GC

Appendix Table 8 – Macroinvertebrate analysis taken on 7/14/2004 at four sample sites. (GC = Gathering Collector. FC = Filtering Collector. SH = Shredder. PR = Predator. SC = Scraper)

Class Hirudinea	7			0.00	0.00	0.00	PR
Class Gastropoda	7	1		0.33	0.06	2.33	SC
Class Pelecypoda	6	31	14	15.00	2.92	90.00	FC
Class Mesouellidae				0.00	0.00	0.00	
Water mite				0.00	0.00	0.00	
Veliidae (Hemiptera)				0.00	0.00	0.00	
Class Corixidae				0.00	0.00	0.00	
Turbellaria				0.00	0.00	0.00	
Platyhelminthes	6	10	11	7.00	1.36	42.00	
Planaria				0.00	0.00	0.00	
Unidentified				0.00	0.00	0.00	
Subtotal				22.67		137.33	
Total				513.00	179.01		
# squares picked	9	3	3	3			
% squares picked	0.250						
Organism D/Sample	2052.00						
Tot. Family Richness	24					sample	lesser
EPT Family Richness	8			Ephem	40	8.06	8.06
Biotic Index	5.11			plec	5	0	0
% Model Affinity	44.22			Tri.	10	47.43	10
Normalized Profile	7.15			Cole	10	18.7	10
% Scraper	0.65			Olig	5	0.06	0.06
% Filtering Collector	49.71			other	10	16.22	10
% Gathering Collector	40.806			Chiron	20	9.55	6.1
% Predator	1.0396				100	100.02	44.22
% Shredder	6.3678						
				Normalized profile			
Ephemeroptera	8.0572				actual	profile	
Plecoptera	0			TFR	24	10	
Trichoptera	47.433			EPT	8	8.33	
Coleoptera	18.713			HBI	5.11	6.11	
Chironomidae	9.5517			PMA	44.22	4.15	
Oligochaeta	0.065					28.59	
Other	16.179					7.1475	

Site			**Cream Street (FK 4.6)**					
Date Sampled			**7/14/2004**					
Replicate		**1**	**2**	**3**				
	T	**D**	**D**	**D**	**Avg. D**	**% Comp**	**T x D**	
Ephemeroptera								
Baetidae	6				0.00	0.00	0.00	GC
Baetiscidae	4				0.00	0.00	0.00	GC
Caenidae	6	1		2	1.00	0.26	6.00	GC
Ephemerellidae	2				0.00	0.00	0.00	GC
Ephemeridae	4				0.00	0.00	0.00	GC
Heptageniidae	3				0.00	0.00	0.00	GC
Leptophlebiidae	4				0.00	0.00	0.00	GC

Appendix Table 8 – Macroinvertebrate analysis taken on 7/14/2004 at four sample sites. (GC = Gathering Collector. FC = Filtering Collector. SH = Shredder. PR = Predator. SC = Scraper)

Metretopodidae	2			0.00	0.00	0.00	GC
Isonychidae	2			0.00	0.00	0.00	FC
Polymitarcylidae	2			0.00	0.00	0.00	GC
Potamanthidae	4			0.00	0.00	0.00	GC
Siphlonuridae	7			0.00	0.00	0.00	GC
Tricorythidae	4			0.00	0.00	0.00	GC
Subtotal				1.00	0.26	6.00	
Plecoptera							
Capniidae	3			0.00	0.00	0.00	SH
Chloroperlidae	0			0.00	0.00	0.00	PR
Leuctridae	0			0.00	0.00	0.00	SH
Nemouridae	2			0.00	0.00	0.00	SH
Peltoperlidae	0			0.00	0.00	0.00	SH
Perlidae	3			0.00	0.00	0.00	PR
Perlodidae	2			0.00	0.00	0.00	PR
Pteronarcyidae	0			0.00	0.00	0.00	SH
Taeniopterygidae	2			0.00	0.00	0.00	SH
Subtotal				0.00		0.00	
Trichoptera							
Brachycentridae	2			0.00	0.00	0.00	GC
Glossosomatidae	1		1	0.33	0.09	0.33	SC
Helicopsychidae	3			0.00	0.00	0.00	SC
Hydropsychidae	5	111	259	123.33	31.90	616.67	FC
Hydroptilidae	6			0.00	0.00	0.00	SC
Lepidostomatidae	1			0.00	0.00	0.00	SH
Leptoceridae	4			0.00	0.00	0.00	SH
Limnephilidae	4			0.00	0.00	0.00	SC
Molannidae	6			0.00	0.00	0.00	SC
Odontoceridae	0			0.00	0.00	0.00	SH
Philopotamidae	3	19	6	8.33	2.16	25.00	FC
Phryganeidae	4			0.00	0.00	0.00	SH
Polycentropodidae	6			0.00	0.00	0.00	PR
Psychomyiidae	2			0.00	0.00	0.00	GC
Rhyacophilidae	1			0.00	0.00	0.00	PR
Sericostomatidae	3			0.00	0.00	0.00	SH
Pupa				0.00			
Subtotal				132.00	34.14	642.00	
Diptera							
Athericidae	4			0.00	0.00	0.00	PR
Blephariceridae	0			0.00	0.00	0.00	SC
Ceratopogonidae	6			0.00	0.00	0.00	PR
Chironomidae	6	39	51	30.00	7.76	180.00	GC
Empididae	6		1	0.33	0.09	2.00	PR
Simuliidae	5			0.00	0.00	0.00	FC
Tabanidae	5			0.00	0.00	0.00	PR
Tipulidae	4		1	0.33	0.09	1.33	SH
Subtotal				30.67		183.33	
Megaloptera							
Corydalidae	4			0.00	0.00	0.00	PR

Appendix Table 8 – Macroinvertebrate analysis taken on 7/14/2004 at four sample sites. (GC = Gathering Collector. FC = Filtering Collector. SH = Shredder. PR = Predator. SC = Scraper)

Sialidae	4				0.00	0.00	PR
Subtotal				0.00		0.00	
Lepidoptera							
Pyralidae	5			0.00	0.00	0.00	SH
Subtotal				0.00		0.00	
Coleoptera							
Dryopidae	5			0.00	0.00	0.00	SC
Elmidae	5	199	183	127.33	32.93	636.67	GC
Psephenidae	4			0.00	0.00	0.00	SC
Hydrophilidae				0.00	0.00	0.00	
Subtotal				127.33	32.93	636.67	
Odonata							
Aeshnidae	5			0.00	0.00	0.00	PR
Calopterygidae	6			0.00	0.00	0.00	PR
Coenagrionidae	8			0.00	0.00	0.00	PR
Cordulegastridae	3			0.00	0.00	0.00	PR
Corduliidae	2			0.00	0.00	0.00	PR
Gomphidae	4			0.00	0.00	0.00	PR
Lestidae	9			0.00	0.00	0.00	PR
Libellulidae	2			0.00	0.00	0.00	PR
Macromiidae	2			0.00	0.00	0.00	PR
Subtotal				0.00		0.00	
Amphipoda							
Gammaridae	6	12	16	9.33	2.41	56.00	GC
Talitridae	8	3	1	1.33	0.34	10.67	GC
Crangonyctidae	6	10	12	7.33	1.90	44.00	GC
Haustoriidae				0.00	0.00	0.00	GC
Subtotal				18.00		110.67	
Isopoda							
Asellidae	8	19	132	50.33	13.02	402.67	SH
Subtotal				50.33		402.67	
Decapoda							
Cambaridae	6			0.00	0.00	0.00	GC
Subtotal				0.00		0.00	
Other							
Class Oligochaeta	9		3	1.00	0.26	9.00	GC
Class Hirudinea	7			0.00	0.00	0.00	PR
Class Gastropoda	7		1	0.33	0.09	2.33	SC
Class Pelecypoda	6	3	15	6.00	1.55	36.00	FC
Class Mesoueliidae				0.00	0.00	0.00	
Acariformes (Water mite)		1		0.33	0.09	0.00	
Veliidae (Hemiptera)				0.00	0.00	0.00	
Class Corixidae				0.00	0.00	0.00	
Turbellaria				0.00	0.00	0.00	
Platyhelminthes	6	33	26	19.67	5.09	118.00	
Planaria				0.00	0.00	0.00	
Unidentified				0.00	0.00	0.00	
Subtotal				27.33		165.33	
Total				386.67	167.33		

Appendix Table 8 – Macroinvertebrate analysis taken on 7/14/2004 at four sample sites. (GC = Gathering Collector. FC = Filtering Collector. SH = Shredder. PR = Predator. SC = Scraper)

# squares picked	9	3	3	3
% squares picked	0.250			
Organism D/Sample	1546.67			
Tot. Family Richness	17			
EPT Family Richness	4			
Biotic Index	5.55			
% Model Affinity	38.32			
Normalized Profile	6.03			
% Scraper	0.17			
% Filtering Collector	35.60			
% Gathering Collector	45.8621			
% Predator	0.08621			
% Shredder	13.1034			
Ephemeroptera	0.25862			
Plecoptera	0			
Trichoptera	34.1379			
Coleoptera	32.931			
Chironomidae	7.75862			
Oligochaeta	0.25862			
Other	24.6552			

		sample	lesser
Ephem	40	0.26	0.26
plec	5	0	0
Tri.	10	34.14	10
Cole	10	32.93	10
Olig	5	0.26	0.26
other	10	22.68	10
Chiron	20	7.76	7.76
	100	98.03	38.28

Normalized profile

	actual	profile
TFR	17	10
EPT	4	6
HBI	5.55	4.92
PMA	38.32	3.2
		24.12
		6.03

Site					**Smith Street (FK 3.1)**			
Date Sampled					**7/14/2004**			
Replicate		**1**	**2**	**3**				
	T	**D**	**D**	**D**	**Avg. D**	**% Comp**	**T x D**	
Ephemeroptera								
Baetidae	6	1	2	5	2.67	0.43	16.00	GC
Baetiscidae	4				0.00	0.00	0.00	GC
Caenidae	6				0.00	0.00	0.00	GC
Ephemerellidae	2				0.00	0.00	0.00	GC
Ephemeridae	4				0.00	0.00	0.00	GC
Heptageniidae	3	6		1	2.33	0.37	7.00	GC
Leptophlebiidae	4				0.00	0.00	0.00	GC
Metretopodidae	2				0.00	0.00	0.00	GC
Isonychidae	2				0.00	0.00	0.00	FC
Polymitarcylidae	2				0.00	0.00	0.00	GC
Potamanthidae	4				0.00	0.00	0.00	GC
Siphlonuridae	7				0.00	0.00	0.00	GC
Tricorythidae	4				0.00	0.00	0.00	GC
Subtotal					5.00	0.80	23.00	
Plecoptera								
Capniidae	3				0.00	0.00	0.00	SH
Chloroperlidae	0				0.00	0.00	0.00	PR
Leuctridae	0				0.00	0.00	0.00	SH
Nemouridae	2				0.00	0.00	0.00	SH
Peltoperlidae	0				0.00	0.00	0.00	SH
Perlidae	3	1	3	8	4.00	0.64	12.00	PR

Appendix Table 8 – Macroinvertebrate analysis taken on 7/14/2004 at four sample sites. (GC = Gathering Collector. FC = Filtering Collector. SH = Shredder. PR = Predator. SC = Scraper)

Perlodidae	2				0.00	0.00	0.00	PR
Pteronarcyidae	0				0.00	0.00	0.00	SH
Taeniopterygidae	2				0.00	0.00	0.00	SH
Subtotal					4.00		12.00	
Trichoptera								
Brachycentridae	2				0.00	0.00	0.00	GC
Glossosomatidae	1				0.00	0.00	0.00	SC
Helicopsychidae	3				0.00	0.00	0.00	SC
Hydropsychidae	5	78	111	632	273.67	43.76	1368.33	FC
Hydroptilidae	6				0.00	0.00	0.00	SC
Lepidostomatidae	1			8	2.67	0.43	2.67	SH
Leptoceridae	4			1	0.33	0.05	1.33	SH
Limnephilidae	4				0.00	0.00	0.00	SC
Molannidae	6				0.00	0.00	0.00	SC
Odontoceridae	0				0.00	0.00	0.00	SH
Philopotamidae	3	30	42	12	28.00	4.48	84.00	FC
Phryganeidae	4				0.00	0.00	0.00	SH
Polycentropodidae	6	2	1		1.00	0.16	6.00	PR
Psychomyiidae	2				0.00	0.00	0.00	GC
Rhyacophilidae	1				0.00	0.00	0.00	PR
Sericostomatidae	3				0.00	0.00	0.00	SH
Pupa					0.00	0.00	0.00	
Uenoidae			12		4.00	0.64	0.00	
Subtotal					309.67	49.52	1462.33	
Diptera								
Athericidae	4				0.00	0.00	0.00	PR
Blephariceridae	0				0.00	0.00	0.00	SC
Ceratopogonidae	6				0.00	0.00	0.00	PR
Chironomidae	6	35	53	124	70.67	11.30	424.00	GC
Empididae	6	1	2	3	2.00	0.32	12.00	PR
Simuliidae	5	3		1	1.33	0.21	6.67	FC
Tabanidae	5				0.00	0.00	0.00	PR
Tipulidae	4			1	0.33	0.05	1.33	SH
Subtotal					74.33		444.00	
Megaloptera								
Corydalidae	4				0.00	0.00	0.00	PR
Sialidae	4			5	1.67	0.27	6.67	PR
Subtotal					1.67		6.67	
Lepidoptera								
Pyralidae	5				0.00	0.00	0.00	SH
Subtotal					0.00		0.00	
Coleoptera								
Dryopidae	5				0.00	0.00	0.00	SC
Elmidae	5	28	186	258	157.33	25.16	786.67	GC
Psephenidae	4		8	2	3.33	0.53	13.33	SC
Hydrophilidae					0.00	0.00	0.00	
Gyrinidae		1		1	0.67	0.11	0.00	
Subtotal					160.67	25.80	800.00	
Odonata								PR
Aeshnidae	5				0.00	0.00	0.00	PR

Appendix Table 8 – Macroinvertebrate analysis taken on 7/14/2004 at four sample sites. (GC = Gathering Collector. FC = Filtering Collector. SH = Shredder. PR = Predator. SC = Scraper)

Calopterygidae	6	1			0.33	0.05	2.00	PR
Coenagrionidae	8		1	1	0.67	0.11	5.33	PR
Cordulegastridae	3				0.00	0.00	0.00	PR
Corduliidae	2				0.00	0.00	0.00	PR
Gomphidae	4				0.00	0.00	0.00	PR
Lestidae	9				0.00	0.00	0.00	PR
Libellulidae	2				0.00	0.00	0.00	PR
Macromiidae	2				0.00	0.00	0.00	
Subtotal					1.00		7.33	
Amphipoda								GC
Gammaridae	6	20	38	96	51.33	8.21	308.00	GC
Talitridae	8				0.00	0.00	0.00	GC
Crangonyctidae	6				0.00	0.00	0.00	GC
Haustoriidae					0.00	0.00	0.00	
Subtotal					51.33		308.00	
Isopoda								SH
Asellidae	8	15	2		5.67	0.91	45.33	
Subtotal					5.67		45.33	
Decapoda								GC
Cambaridae	6				0.00	0.00	0.00	
Subtotal					0.00		0.00	
Other								GC
Class Oligochaeta	9		1		0.33	0.05	3.00	PR
Class Hirudinea	7				0.00	0.00	0.00	SC
Class Gastropoda	7	2	1	1	1.33	0.21	9.33	FC
Class Pelecypoda	6		21		7.00	1.12	42.00	
Class Mesoueliidae					0.00	0.00	0.00	
Acariformes (Water mite)					0.00	0.00	0.00	
Veliidae (Hemiptera)					0.00	0.00	0.00	
Class Corixidae					0.00	0.00	0.00	
Turbellaria					0.00	0.00	0.00	
Platyhelminthes	6	1	9		3.33	0.53	20.00	
Planaria					0.00	0.00	0.00	
Unidentified					0.00	0.00	0.00	
Subtotal					12.00		74.33	
Total					625.33	176.23		
# squares picked	9	3	3	3				
% squares picked	0.250							
Organism D/Sample	2501.33							
Tot. Family Richness	25							lesser
EPT Family Richness	9				Ephem	40	0.8	0.8
Biotic Index	5.09				plec	5	0.64	0.64
% Model Affinity	42.79				Tri.	10	49.52	10
Normalized Profile	7.3				Cole	10	25.8	10
% Scraper	0.75				Olig	5	0.05	0.05
% Filtering Collector	49.57				other	10	11.99	10
% Gathering Collector	45.5224				Chiron	20	11.3	11.3
% Predator	1.54584					100	100.1	42.79

Appendix Table 8 – Macroinvertebrate analysis taken on 7/14/2004 at four sample sites. (GC = Gathering Collector. FC = Filtering Collector. SH = Shredder. PR = Predator. SC = Scraper)

% Shredder	1.43923				
			Normalized profile		
				actual	profile
Ephemeroptera	0.79957		TFR	25	10
Plecoptera	0.63966		EPT	9	9.17
Trichoptera	49.5203		HBI	5.09	6.14
Coleoptera	25.693		PMA	42.79	3.91
Chironomidae	11.3006				29.22
Oligochaeta	0.0533				7.305
Other	11.9936				

Site					**Verazzano Blvd (FK 0.45)**			
Date Sampled					**7/14/2004**			
Replicate		**1**	**2**	**3**				
	T	**D**	**D**	**D**	**Avg. D**	**% Comp**	**T x D**	
Ephemeroptera								
Baetidae	6				0.00	0.00	0.00	GC
Baetiscidae	4				0.00	0.00	0.00	GC
Caenidae	6				0.00	0.00	0.00	GC
Ephemerellidae	2				0.00	0.00	0.00	GC
Ephemeridae	4				0.00	0.00	0.00	GC
Heptageniidae	3				0.00	0.00	0.00	GC
Leptophlebiidae	4				0.00	0.00	0.00	GC
Metretopodidae	2				0.00	0.00	0.00	GC
Isonychidae	2				0.00	0.00	0.00	FC
Polymitarcylidae	2				0.00	0.00	0.00	GC
Potamanthidae	4				0.00	0.00	0.00	GC
Siphlonuridae	7	1	19	15	11.67	10.14	81.67	GC
Tricorythidae	4				0.00	0.00	0.00	GC
Subtotal					11.67	10.14	81.67	
Plecoptera								
Capniidae	3				0.00	0.00	0.00	SH
Chloroperlidae	0				0.00	0.00	0.00	PR
Leuctridae	0				0.00	0.00	0.00	SH
Nemouridae	2				0.00	0.00	0.00	SH
Peltoperlidae	0				0.00	0.00	0.00	SH
Perlidae	3				0.00	0.00	0.00	PR
Perlodidae	2				0.00	0.00	0.00	PR
Pteronarcyidae	0				0.00	0.00	0.00	SH
Taeniopterygidae	2				0.00	0.00	0.00	SH
Subtotal					0.00	0.00	0.00	
Trichoptera								
Brachycentridae	2				0.00	0.00	0.00	GC
Glossosomatidae	1				0.00	0.00	0.00	SC
Helicopsychidae	3				0.00	0.00	0.00	SC
Hydropsychidae	5	41	53	34	42.67	37.10	213.33	FC
Hydroptilidae	6				0.00	0.00	0.00	SC
Lepidostomatidae	1				0.00	0.00	0.00	SH
Leptoceridae	4				0.00	0.00	0.00	SH

Appendix Table 8 – Macroinvertebrate analysis taken on 7/14/2004 at four sample sites. (GC = Gathering Collector. FC = Filtering Collector. SH = Shredder. PR = Predator. SC = Scraper)

Limnephilidae	4				0.00	0.00	0.00	SC
Molannidae	6				0.00	0.00	0.00	SC
Odontoceridae	0				0.00	0.00	0.00	SH
Philopotamidae	3				0.00	0.00	0.00	FC
Phryganeidae	4				0.00	0.00	0.00	SH
Polycentropodidae	6				0.00	0.00	0.00	PR
Psychomyiidae	2				0.00	0.00	0.00	GC
Rhyacophilidae	1				0.00	0.00	0.00	PR
Sericostomatidae	3				0.00	0.00	0.00	SH
Pupa								
Subtotal					42.67	37.10	213.33	
Diptera								
Athericidae	4				0.00	0.00	0.00	PR
Blephariceridae	0				0.00	0.00	0.00	SC
Ceratopogonidae	6				0.00	0.00	0.00	PR
Chironomidae	6	6	7	8	7.00	6.09	42.00	GC
Empididae	6	1			0.33	0.29	2.00	PR
Simuliidae	5				0.00	0.00	0.00	FC
Tabanidae	5				0.00	0.00	0.00	PR
Tipulidae	4				0.00	0.00	0.00	SH
Subtotal					7.33	6.38	44.00	
Megaloptera								
Corydalidae	4				0.00	0.00	0.00	PR
Sialidae	4				0.00	0.00	0.00	PR
Subtotal					0.00	0.00	0.00	
Lepidoptera								
Pyralidae	5				0.00	0.00	0.00	SH
Subtotal					0.00	0.00	0.00	
Coleoptera								
Dryopidae	5				0.00	0.00	0.00	SC
Elmidae	5	3		3	2.00	1.74	10.00	GC
Psephenidae	4				0.00	0.00	0.00	SC
Hydrophilidae					0.00	0.00	0.00	
Subtotal					2.00	1.74	10.00	
Odonata								
Aeshnidae	5				0.00	0.00	0.00	PR
Calopterygidae	6				0.00	0.00	0.00	PR
Coenagrionidae	8				0.00	0.00	0.00	PR
Cordulegastridae	3				0.00	0.00	0.00	PR
Corduliidae	2				0.00	0.00	0.00	PR
Gomphidae	4				0.00	0.00	0.00	PR
Lestidae	9				0.00	0.00	0.00	PR
Libellulidae	2				0.00	0.00	0.00	PR
Macromiidae	2				0.00	0.00	0.00	PR
Subtotal					0.00	0.00	0.00	
Amphipoda								
Gammaridae	6	53	18	26	32.33	28.12	194.00	GC
Talitridae	8				0.00	0.00	0.00	GC
Crangonyctidae	6	3	3	14	6.67	5.80	40.00	GC

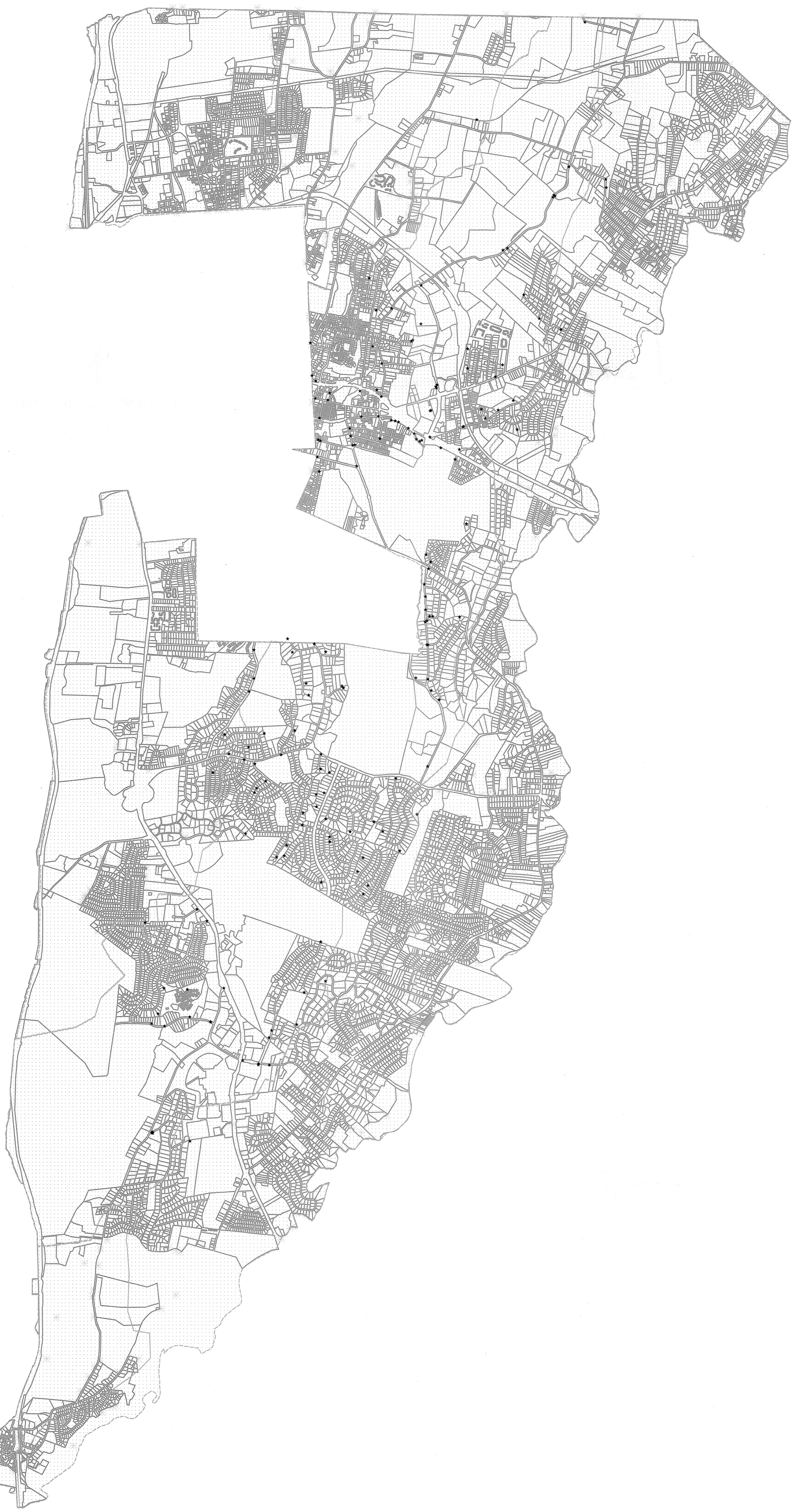
Appendix Table 8 – Macroinvertebrate analysis taken on 7/14/2004 at four sample sites. (GC = Gathering Collector. FC = Filtering Collector. SH = Shredder. PR = Predator. SC = Scraper)

Haustoriidae					0.00	0.00	0.00	GC
Subtotal					39.00	33.91	234.00	
Isopoda								
Asellidae	8	6	5	7	6.00	5.22	48.00	SH
Subtotal					6.00	5.22	48.00	
Decapoda								
Cambaridae	6	2		1	1.00	0.87	6.00	GC
Subtotal					1.00	0.87	6.00	
Other								
Class Oligochaeta	9	9	3	1	4.33	3.77	39.00	GC
Class Hirudinea	7	1			0.33	0.29	2.33	PR
Class Gastropoda	7				0.00	0.00	0.00	SC
Class Pelecypoda	6				0.00	0.00	0.00	FC
Class Mesoueliidae					0.00	0.00	0.00	
Water mite					0.00	0.00	0.00	
Veliidae (Hemiptera)					0.00	0.00	0.00	
Class Corixidae					0.00	0.00	0.00	
Turbellaria					0.00	0.00	0.00	
Platyhelminthes	6		2		0.67	0.58	4.00	
Planaria					0.00	0.00	0.00	
Unidentified						0.00	0.00	
Subtotal					5.33	4.64	45.33	
Total					115.00	200.00		
# squares picked	9	3	3	3				
% squares picked	0.250							
Organism D/Sample	460.00						sample	lesser
Tot. Family Richness	12				Ephem	40	10.14	10.14
EPT Family Richness	2				plec	5	0	0
Biotic Index	5.93				Tri.	10	37.1	10
% Model Affinity	41.74				Cole	10	1.74	1.74
Normalized Profile	4.57				Olig	5	3.77	3.77
% Scraper	0.00				other	10	41.15	10
% Filtering Collector	37.10				Chiron	20	6.1	6.1
% Gathering Collector	56.52					100	100	41.75
% Predator	0.58							
% Shredder	5.217							
					Normalized profile			
Ephemeroptera	10.14					actual	profile	
Plecoptera	0				TFR	12	6.5	
Trichoptera	37.1				EPT	2	3.75	
Coleoptera	1.739				HBI	5.93	4.28	
Chironomidae	6.087				PMA	41.74	3.75	
Oligochaeta	3.768						18.28	
Other	41.16						4.57	

Appendix Table 9 - Soil types found within the Fall Kill watershed and their respective characteristics.

Soil Type	Acres	Organic or Mineral	Phase(s)	Parent Material	Drainage Class
Dutchess with Cardigan	4299.4	M	Silt loam	Till	well drained
Nassua with Cardigan	3604.7	M	shaly silt loam to channery silt loam, very rocky	Till	somewhat excessively drained to well drained.
Hoosic	906.2	M	Gravelly sandy loam to cobbly loam	Outwash	excessively to well drained
Bernardston	766.5	M	Silt loam to very stony silt loam	Till	well darined
Urban Soil	584.3				
Sun	547.1	M	Silt loam to loam, extremely stony	Till	poor to very poorly drained
Wayland	257.8	M	Silt loam to mucky silt loam	Alluvium	poor to very poorly drained
Carlisle	234.1	O	Muck	Organic	very poorly drained
Canadauiga	178.4	M	Silt loam	Lacustrine	poorly to very poorly drained
Palms	172.3	O	Muck	Organic	very poorly drained
Udorthents	171.7	M	Variable	Disturbance (fill)	excessively to somewhat poorly drained
Dutchess	144.2	M	Silt loam	Till	well drained
Nassua with Outcrops	124.4	M	shaly silt loam to channery silt loam, very rocky	Till	somewhat excessively drained
Massena	86.0	M	Silt loam	Till	somewhat poorly to poorly drained
Fredon	61.0	M	Silt loam to loam	Outwash	somewhat poorly to poorly drained
Punsit	43.6	M	Silt loam	Till	somewhat poorly drained
Fluvaquents	38.8	M	Variable	Alluvium	somewhat poorly to very poorly drained
Halsey	23.2	M	Mucky silt loam to silt loam	Outwash	very poorly drained
Pittstown	18.8	M	Silt loam to gravelly silt loam	Till	moderately well drained

Appendix Table 10 - State Pollution Discharge Elimination Systems (SPDES) Permit sites within the Fall Kill watershed according to the NYSDEC.

Site	Road	Town	Type of Waste	Discharge Limit (gallons per day)
Victory Lake Nursing Center	Quaker Lane	Hyde Park	Sanitary	14,100
Netherwood Elementry School	Netherwood Road	Hyde Park	Sanitary	11,600
Victory Lake Camp	Crum Elbow Road	Hyde Park	Sanitary	41,900
Mariapolis Luminosa	Cardinal Road	Hyde Park	Sanitary	24,700
Immanuel Christian Center	Crum Elbow Road	Hyde Park	Sanitary	2,100
Pinewoods Monastery	Crum Elbow Road	Hyde Park	Sanitary	5,000
Haviland Junior H.S.	Haviland Road	Hyde Park	Sanitary	32,400
Greenfields Sewer District	Cream Street	Hyde Park	Sanitary	132,000
Valley Forge Mobile Park	Bircher Avenue	Hyde Park	Sanitary	5,200
Church and School of St. Peter	Violet Ave	Hyde Park	Sanitary	15,400
Poughkeepsie DPW	Howard Street	Poughkeepsie	Miscellaneous	14,700
				299,100

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