

**STORMWATER MANAGEMENT PROGRAM PLAN
(SWMPP)**

TOWN OF POUGHKEEPSIE

NYSDEC SPDES Permit Number – NYR 20A198

August 2007

Last Revised: July 2011

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, Figure 1.1) 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 the latest permit 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.

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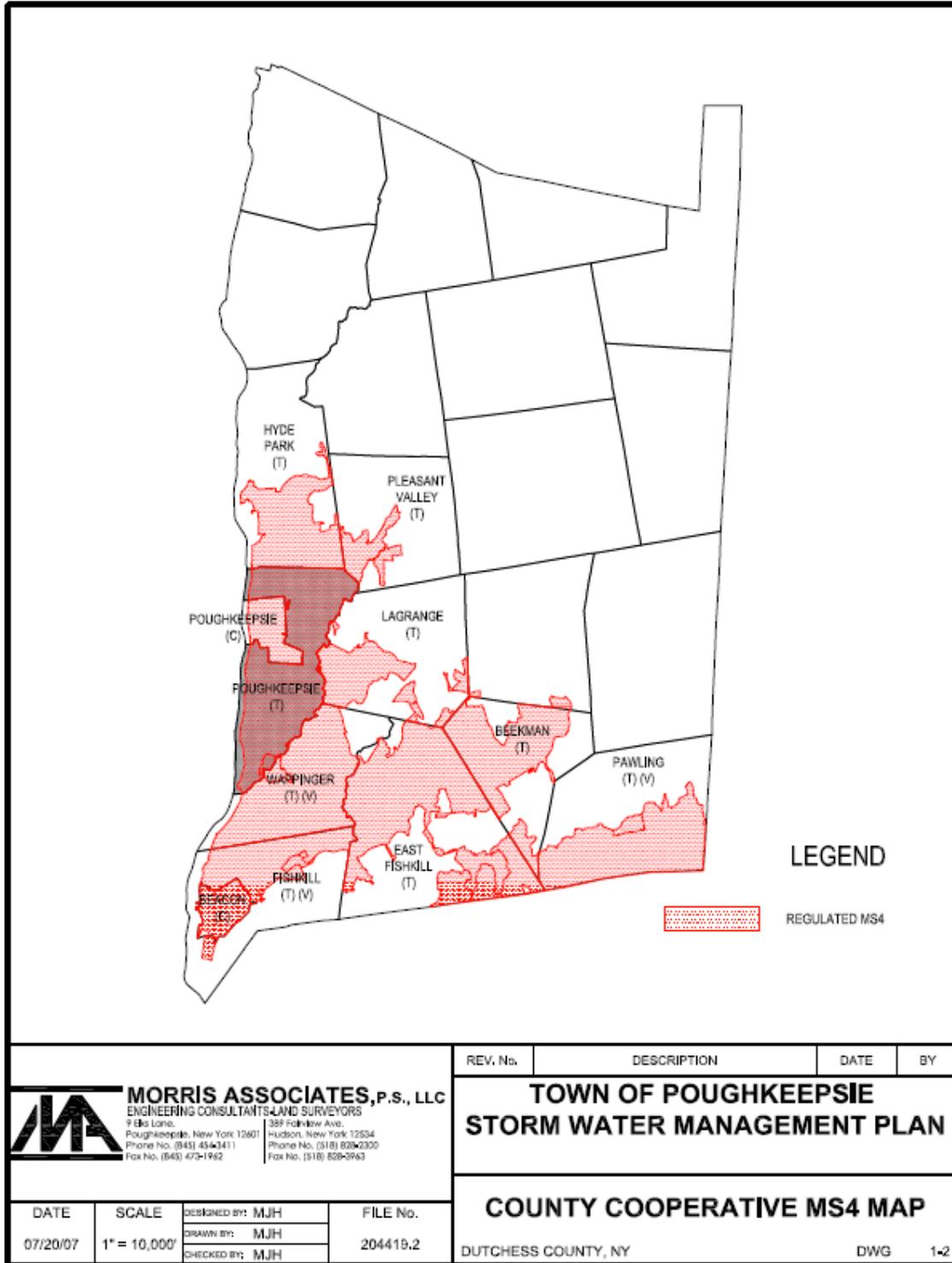


Figure 1.1

**Stormwater Management Program Plan
Town of Poughkeepsie**

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

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

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) on 3/3/2003. It has been included in Appendix B of this SWMPP report. A copy of the Resolution for the Town of Poughkeepsie to ratify the Bylaws of the Dutchess County MS4 Coordination Committee on April 19th, 2006 is included in Appendix C.

Additionally, an organizational chart (Appendix D) and budget for this program (Appendix E) 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
- Hudson River estuary

and the following lakes:

- Cobalt Lake
- Inwood Lake
- Wappinger Lake

and the following DEC wetlands:

- 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 – 23
- 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
NY STATE'S 303(d) 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 (Figure 2.1). 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 2.1). 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 (Figure 2.1).

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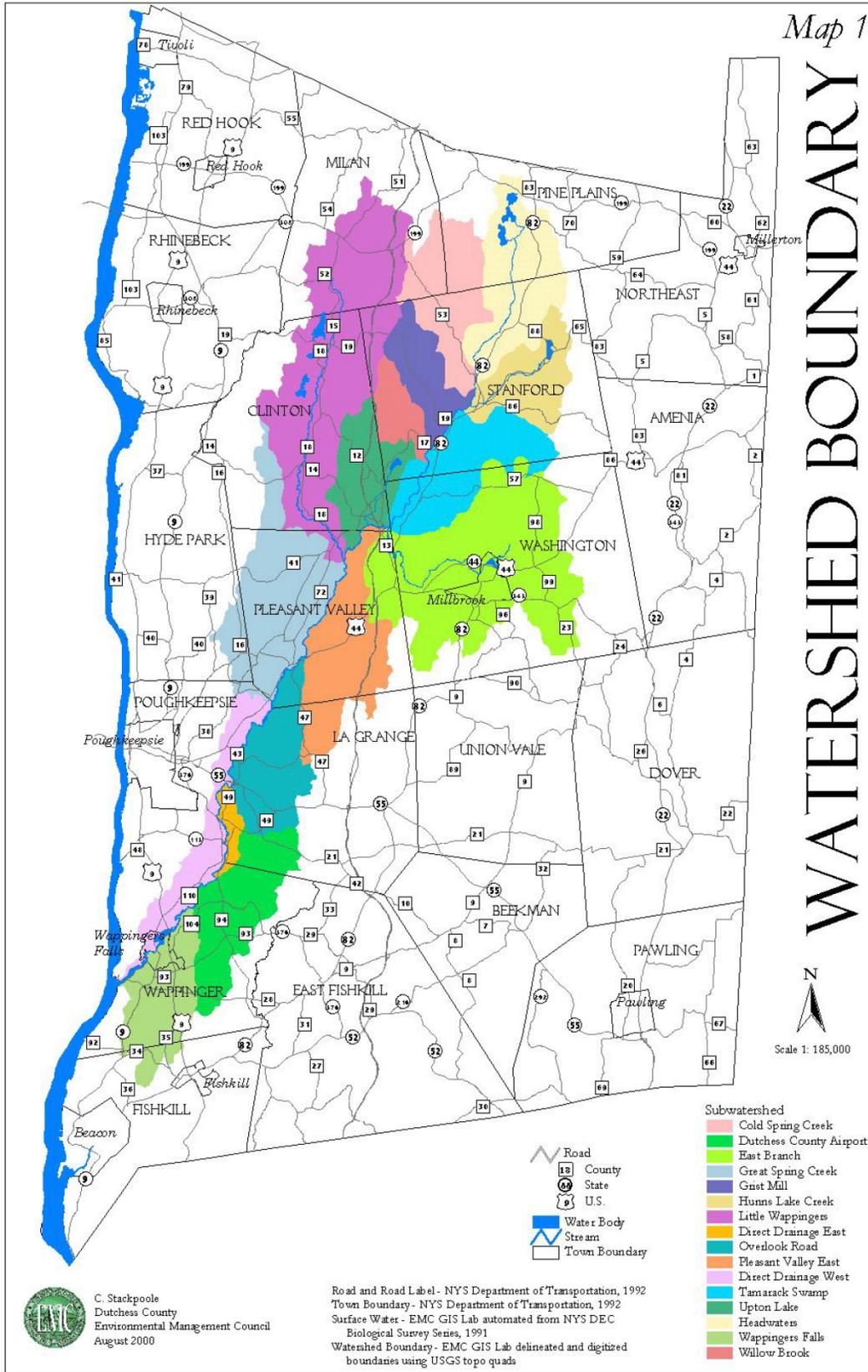


Figure 2.1

Municipality	Percent of Municipality in the Watershed	Percent 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%
LaGrange	50%	8%
Wappinger	70%	8.5%
Hyde Park	7%	1%
Fishkill	1%	1%
Wappingers Falls (V)	100%	1%
Millbrook (V)	100%	1%

Table 2.1

Direct Drainage West Subwatershed

The Direct Drainage West subwatershed encompasses 5,369 acres in the southern portion of the Wappinger Creek watershed (Figure 2.1). 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 (Figure 2.2). 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 (Figure 2.2), and one as an unclassified stream. The best usage for class D waters is fishing, and there is minimal protection for class D

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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.

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Wappinger Creek Subwatershed Nonpoint Source Pollution Identification Project Data

Red Oaks Mill - Wapp 8.01 Miles								
	NO3-N	NO3	PO4-P	Suspended	Fecal	Discharge	Temperature	
Date	mg/L	mg/L	mg/L	Solids - mg/L	Coliforms 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 2.2 (Continued)

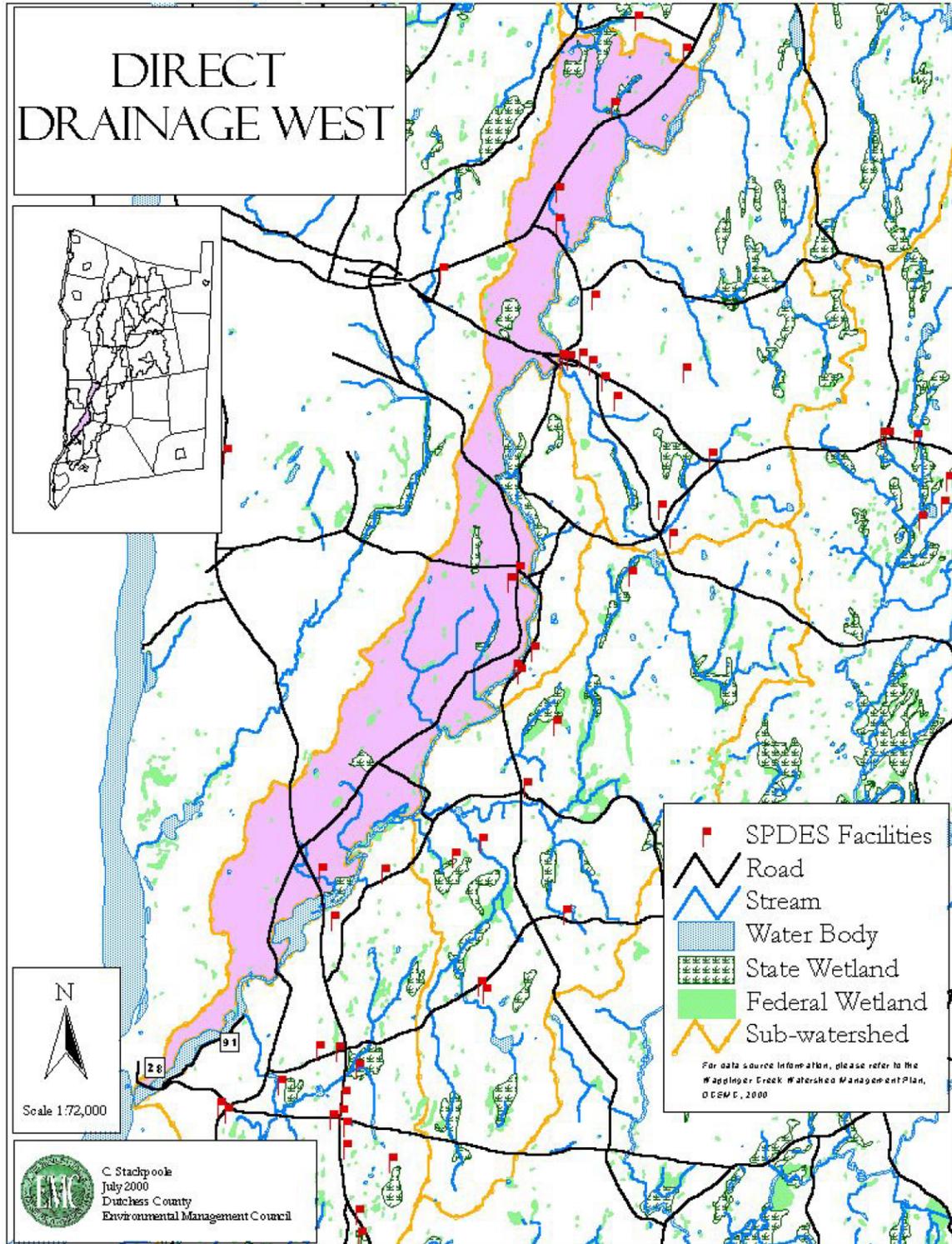


Figure 2.2

2.4.3 Casper Kill watershed

The Casperkill watershed lies entirely within the boundaries of the Town and City of Poughkeepsie in Dutchess County, New York. Draining the watershed, the Casperkill stream flows for 11 miles from its headwaters at the base of Peach Hill Park to the Hudson River at the Tilcon Quarry and provides a unifying element to the Town of Poughkeepsie. It is joined by one major tributary, the Fonteynkill, on the Vassar College campus just south of the Sunset Lake dam. Together, these streams occupy a 12 square mile (7680 acre) watershed.

Currently, the distribution of different land covers in the Casperkill watershed is variable, with some areas highly urbanized and others more natural. In the watershed as a whole, 43% of the land is forested, 33% is covered in impervious surfaces, and another 19% is classified as grass. The latter category includes open fields, lawns, and golf courses. The remaining 5% of the landscape consists either of water bodies (small ponds and lakes) or of fallow areas. The Tilcon quarry site is classified as impervious surface inasmuch as the runoff potential of bare stone is similar to that of paved surfaces.

The most urbanized part of the watershed surrounds the Fonteynkill tributary, which drains a portion of the City of Poughkeepsie. Here impervious surfaces constitute as much as 70% of the total landscape. The least urbanized stretches include the northernmost part of the watershed between Van Wagner Rd. and Peach Hill Park, the Vassar Farm and Ecological Preserve, and lands surrounding the Casperkill Golf Club. These areas have vegetated buffers along the stream channel that are largely intact.

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 (Appendix F). See Figure 2.3 for the Casperkill Watershed Map.

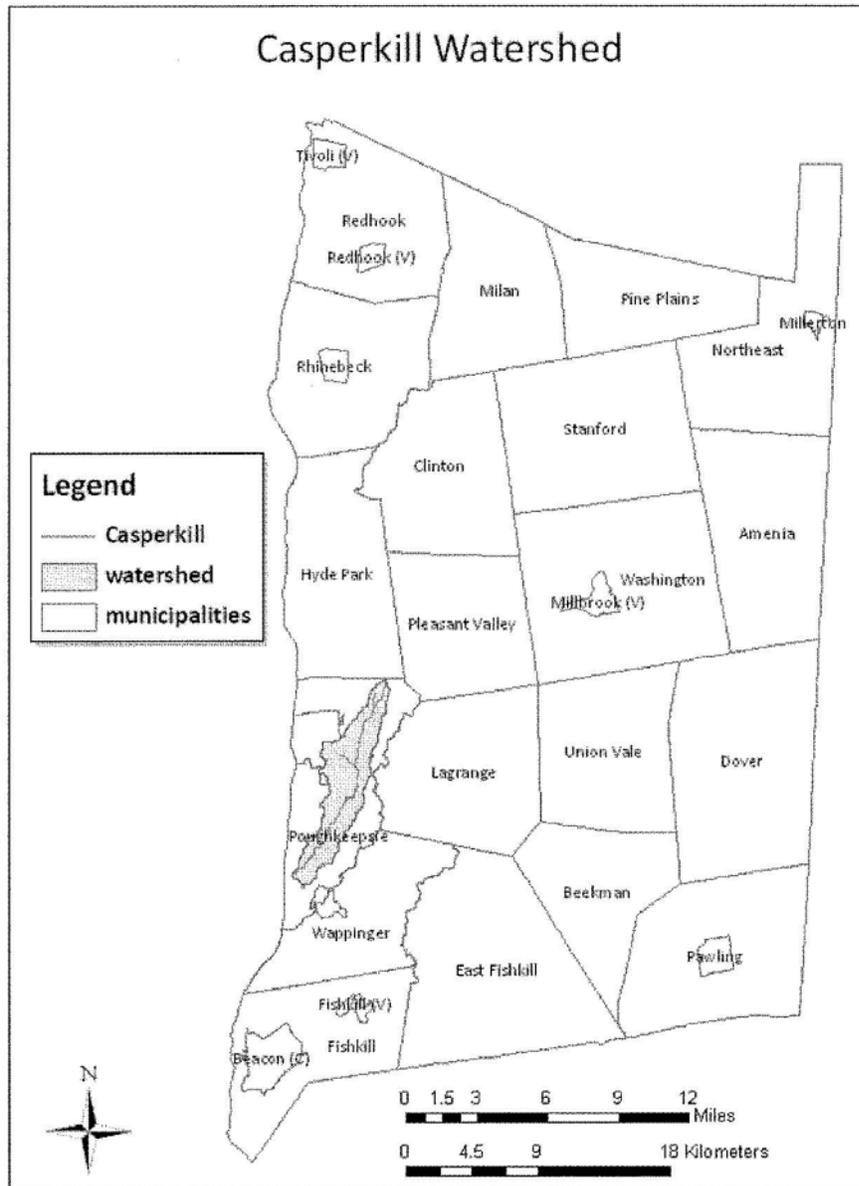


Figure 2.3

2.4.4 Fall Kill watershed

The Fall Kill watershed (also known as the Fall Kill Creek) is contained entirely within Dutchess County, NY, and covers approximately 12,476 acres or 19.5 square miles (Figure 2.4 and Table 2.3). 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 2.4). Over half of the watershed area and 65% of the stream’s length is within the Town of Hyde Park (Table 2.4). See Appendix G for “A Watershed Management Plan for the Fall Kill, Dutchess County”, prepared by the Fall Kill Watershed Committee.

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%
Poughkeepsie	19,773	1,700	8.6%	13.6%
Poughkeepsie (city)	3,649	1,301	35.7%	10.4%

Table 2.3. Size and area characteristics of each municipality within the Fall Kill watershed.

Municipality	Length of Stream (miles, including tributaries)	Percent of Stream Miles	Estimated Existing # of Dwelling Units	Potential Additional # of Dwelling Units
Clinton	4.8	12.3%	162	278
Pleasant Valley	1.4	3.7%	56	181
Hyde Park	25.4	65.3%	2,452	1,978
Poughkeepsie	4.2	10.8%	1,165	3,184
Poughkeepsie (city)	3.1	7.9%	3,579	N.D.

Table 2.4. Stream mileage and watershed characteristics of the Fall Kill by municipality.

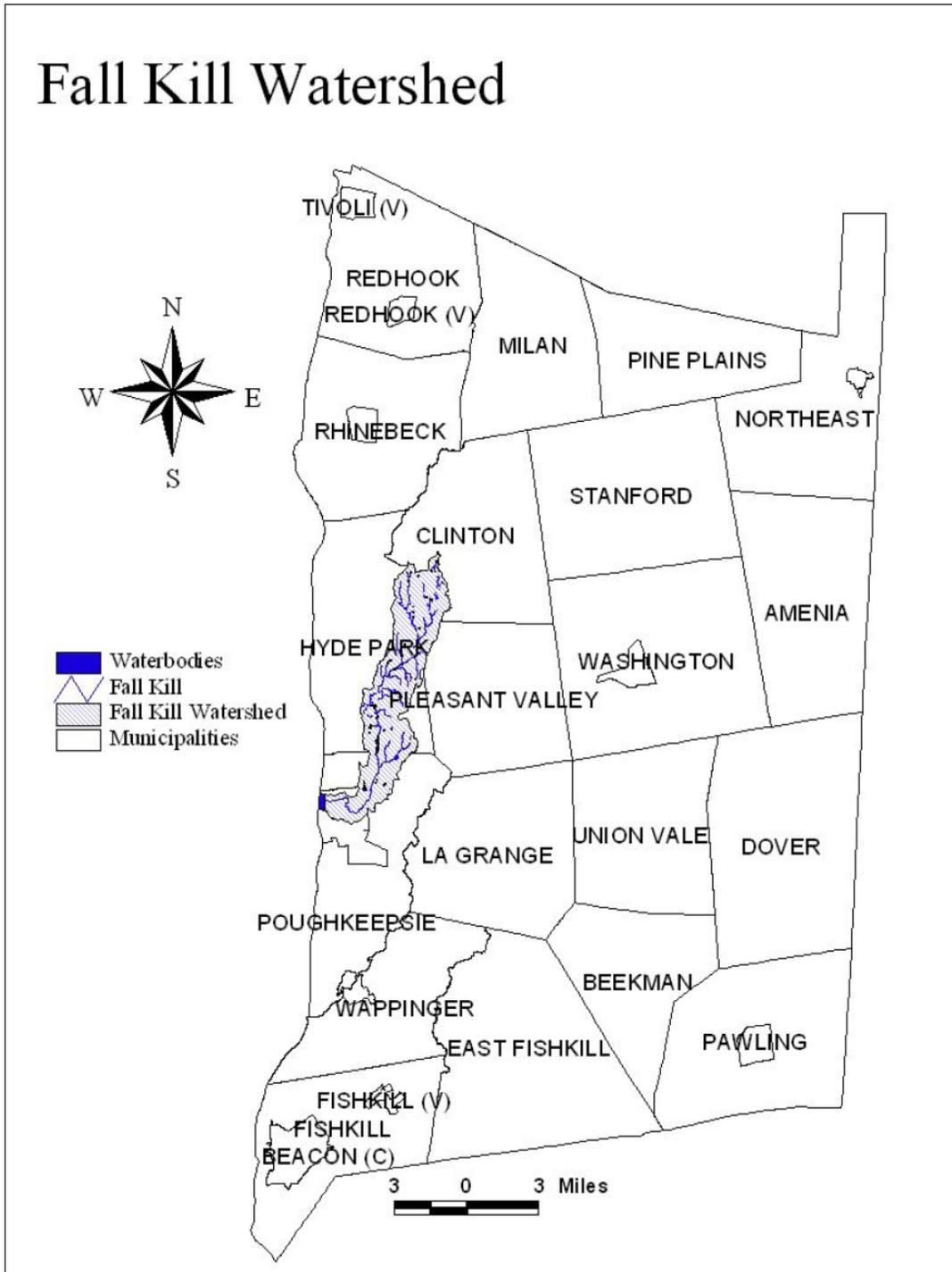


Figure 2.4

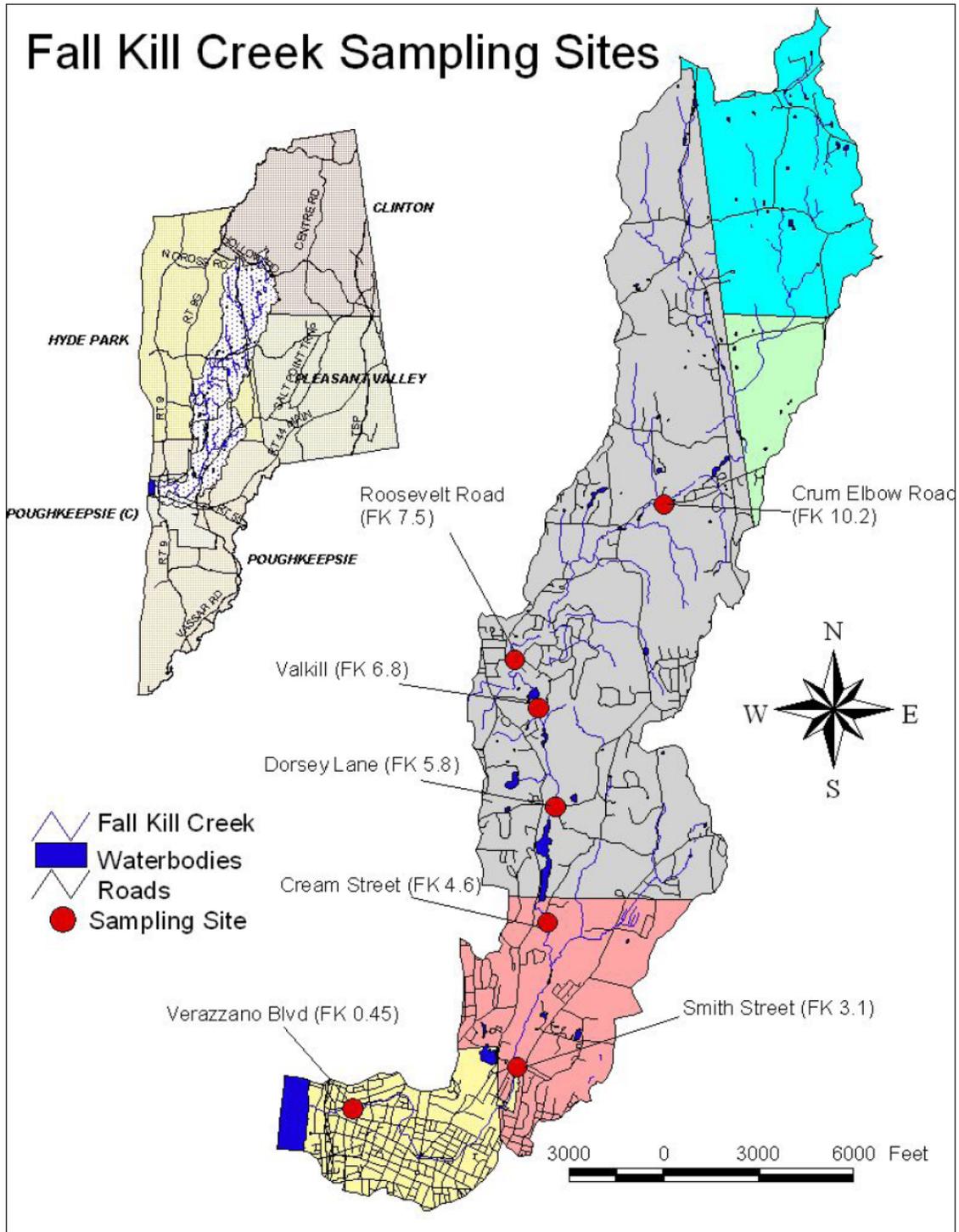


Figure 2.5

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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

The Hudson Direct Drainage is in the western-most part of the county and designated as the area within Dutchess County, NY that drains directly into the Hudson. The subwatersheds of Hudson Direct Drainage cover the western-most part of the county closest to the Hudson River from the most northern to the most southern part of the county. The geographic size and range of the Hudson Direct watershed allows for a variety of land uses and land use patterns. Current land uses in the Hudson Direct watershed range from rural farms in the more northern part of the county to suburban areas and the urbanized City of Poughkeepsie. Outside of urban areas, vegetation is dominantly oak-maple deciduous forest, with limited amounts of pasture and orchards. As a whole watershed, the Hudson Direct has nearly 20% of low-intensity to high-intensity developed land cover, meaning that impervious surfaces cover a significant amount of the landscape. At 47% of the total land area in Hudson Direct, deciduous forests dominate the landscape. Pasture/Hay take up another 18% of the land area. While evergreen forest, mixed forest, scrub/shrub, cultivated crops, barren land and wetlands fill in the rest of the remaining landscape.

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.

The Town of Poughkeepsie has seven NYS Routes: RT 9, RT 9G, RT 44, RT 55, RT 115, RT 376 and RT 9D. Heavy commercial zones with a high impervious land use exist along RT 9, RT 44 and RT 55 (see Figure 2.6 for Town land use) and can be considered high risk for illicit discharges. These areas contain automotive service facilities, large retail buildings, dense urban infrastructure, restaurants, gas stations, ect. Additionally along RT 9 are Industrial zones that have large impervious surfaces. Approximately twenty-three (23) percent of the Town of Poughkeepsie can be considered of this high-risk land use.

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.

NYS Routes 9G, 115, 376 and 9D as well as connecting Town roads have high to medium residential, institutional, and light commercial areas (see Figure 2.6 for Town land use). These areas can be considered medium risk and make up approximately sixty (60) percent of the Town of Poughkeepsie.

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. These areas are located sporadically throughout the Town of Poughkeepsie and consist of nine (9) percent of the municipal land area (see Figure 2.6 for Town land use).

Other areas that are vacant and produce little to no risk of illicit discharges are also located sporadically throughout the Town of Poughkeepsie and consist of eight (8) percent of the municipal land area (see Figure 2.6 for Town land use).

**Stormwater Management Program Plan
Town of Poughkeepsie**

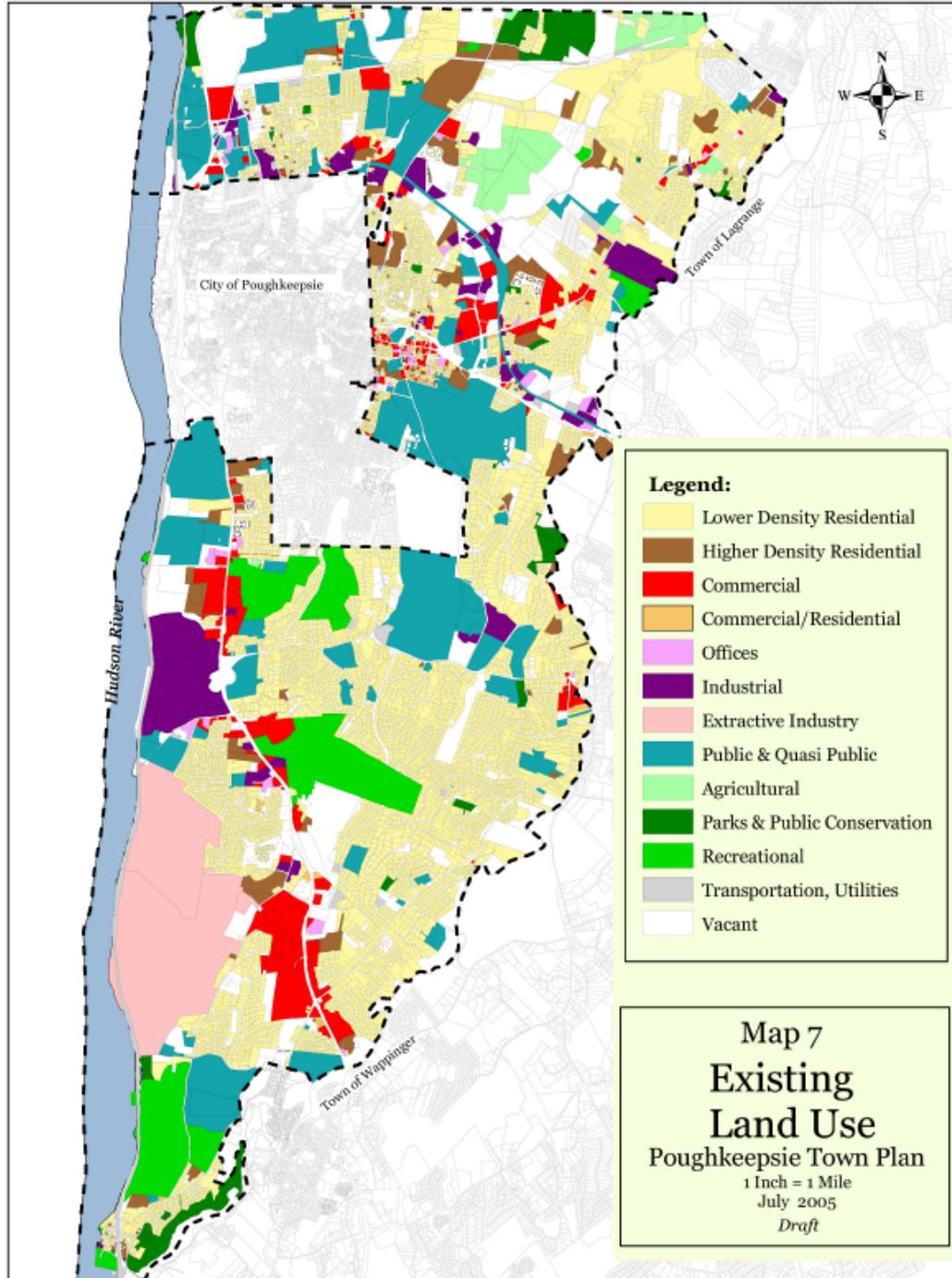


Figure 2.6

2.6 Target Audiences

Target groups include Public Employees, Business Owners, persons of Residence, Contractors, Developers, the general public and Industries. (See Appendix H for specific stakeholders of interest).

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 in achieving the requirements of this minimum control measure. Examples of education and outreach materials are provided in Appendix I. The following is a list of the groups or programs that represent opportunities for education and outreach to the public.

2.7.1 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 or via the internet at: <http://www.epa.gov/enviroed>.

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.

More information can be found on the internet here:

<http://www.epa.gov/enviroed/grants.html>

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. More information on the President's Environmental Youth Awards is found here: <http://www.epa.gov/peya>.

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. For more information via the internet visit: <http://www.greenteacher.com/>.

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 or more information at: <http://www.earthwatch.org/>.

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. (<http://www.earthpreservers.com/>)

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 or visit <http://www.projectwet.org/>.

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.

2.7.2 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. Visit DCSWCD on the internet via:
<http://dutchessswcd.org/>.

Dutchess County MS4 Coordination Committee

The Dutchess County MS4 Coordination Committee 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 with the Town of Poughkeepsie and the bylaws for this organization are located in Appendix C.

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.

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 contact list is described as a "Stakeholders" List (see appendix H). This group receives regular bulletins via email from the Public Stormwater Contact on various issues.

2.7.3 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 Beacon Institute for Rivers and Estuaries ([www. BIRE.org](http://www.BIRE.org)) is an organization that is dedicated to the research and preservation of rivers and estuaries worldwide. The organization has headquarters along the Hudson River estuary in the City of Beacon (Dutchess County), New York, and on the Upper Hudson in the City of Troy (Rensselaer County), New York. Its mission is to create and maintain a global center for scientific and technological innovation that advances research, education and public policy regarding rivers and estuaries. Please visit their website for additional information about current activities.

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, a 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>

The Beacon Institute for Rivers and Estuaries-

The Beacon Institute for Rivers and Estuaries is an organization that is dedicated to the research and preservation of rivers and estuaries worldwide. The organization has headquarters along the Hudson River estuary in the City of Beacon (Dutchess County), New York, and on the Upper Hudson in the City of Troy (Rensselaer County), New York. Its mission is to create and maintain a global center for scientific and technological innovation that advances research, education and public policy regarding rivers and estuaries. Please visit their website for additional information about current activities.

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 I.

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

Best Management Practice (BPM)	Responsible Party(ies)/Department	Measurable Goals	Timeline
Regional stormwater education program.	Dutchess County MS4 Coordination Committee	Brochures Developed and Distributed to target audiences and Stakeholders	On-going
Town staff trained on pollution prevention/good housekeeping	SMO, Town Highway, Parks and Recreation, Building Maintenance	Staff trained, implement pollution prevention measures	On-site inspection annually
Town staff trained on erosion and sediment control	SMO, Town Engineer	Staff trained	Trained [every 3 years]
Improve and enhance Town website for distribution of notices to promote public awareness	SMO	Develop website	On-going

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 that 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-0-010-002, 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 public is encouraged to provide comments when the annual report is presented as an agenda item to the Town of Poughkeepsie Town Board before preparing and submitting the final report to the DEC.

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 conservational "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.hudsonvalleyscouting.org. The Executive Director of the area is Mr. Stephen Gray (845) 566-7300.

3.6.3 Dutchess County Soil and Water Conservation District Resources

The DCSWCD provides a wide variety of educational programs and resources for public involvement and awareness. See <http://dutchessswcd.org/> for more information. The DCSWCD also sponsors publications to educate the public on pollution prevention practices and construction regulations (see Appendix I). The DCSWCD also facilitates and sponsors monthly meetings for the Dutchess County MS4 Coordinating Committee which annually sponsors educational events such as the Dutchess Watershed Awareness Month (WAM)

<http://dutchesswam.com/sponsors/>

The Town of Poughkeepsie, as well as other MS4 municipalities within the Dutchess County area participates with the Dutchess County MS4 Coordinating Committee (see Appendix J for WAM public outreach items).

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

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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.

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

Best Management Practice (BMP)	Responsible Party(ies)/Department	Measurable Goals	Timeline
<p>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.</p>	<p>SMO</p>	<p>1. Educational program development 2. Track number of scouts in attendance</p>	
<p>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).</p>	<p>SMO</p>	<p>1. Presentation development 2. Pamphlet development and distribution 3. Track number of scouts in attendance</p>	

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Best Management Practice (BMP)	Responsible Party(ies)/Department	Measurable Goals	Timeline
<p>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:</p> <ul style="list-style-type: none"> 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). 	<p>SMO</p>	<ol style="list-style-type: none"> Website development of programs and public outreach events. Track number of website users 	
<p>Allow the public access to the MS4's Annual Report for review and comment.</p>	<p>Eric Hollman</p>	<p>Present the MS4's draft annual report on the Town's municipal webpage annually. Allow for public comment and questions.</p>	<p>Present draft at first Town Board meeting in May and close comment period 2 weeks later</p>

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 and extent of storm drain stenciling).
- Report on effectiveness of program.

4.0 ILLICIT DISCHARGE DETECTION AND ELIMINATION

4.1 The Responsible Party is Sean Crimmins 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, the names and location of all waters of the United States that receive discharges from those outfalls and the stormwater and sanitary infrastructure. 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."

As per the specific requirements of the IDDE program, an MS4 outfall map has been created (see Appendix K) to show the locations of all outfalls and the names and location of all surface waters of the State that receive discharges from those outfalls. This map also shows the boundaries of the four (4) watersheds within the Town of Poughkeepsie and the stormwater sewer collection systems. In addition to this outfall map, an associated spreadsheet with the MS4 label, description and specific watershed contribution has been included.

In order to monitor and detect illicit discharges, inspections are conducted annually of each MS4 outfall to determine if any POC's are detected (see Table 4.2.1), apparent stormwater sewer structure damage, outfall erosion and sediment and debris buildup. During these inspections the MS4 outfalls are evaluated for their validity and potential increase in significance from new construction and stormwater sewer expansion. Any MS4 outfalls that interconnect with adjoining municipalities are also documented. According to the outfall reconnaissance inventory, as described in the EPA publication entitled "Illicit Discharge Detection and Elimination: A Guidance Manual for Program Development and Technical Assessment," every outfall must be addressed within the urbanized area and additionally designated area within the permittee's jurisdiction at least once every five years. In order to meet this goal, twenty (20) percent of the Town of Poughkeepsie's total MS4 outfalls will be inspected every year and their status is updated on a yearly Outfall Inspection spreadsheet (see Appendix L).

As per the Town Code section 173-9, modeled after the NYSDEC Model Local Law to Prohibit Illicit Discharges, Activities and Connections to Separate Storm Sewer Systems. when the municipality's SMO, Stormwater Management Officer, 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. The SMO may suspend MS4 discharge access and/or issue a stop work order if the illicit discharge is from a current construction activity. Violations may require the responsible party to pay a fee as per Town Code section 173-13.

All public employees, businesses, and the general public are encouraged to help facilitate the protection of the Town's MS4 from the hazards associated with illegal discharges and improper disposal of waste. To aid in illicit discharge detection, the public is

encouraged to notify the Town SMO or Engineering department at (845) 790-4767 if a discharge is detected as per sources on Table 4.2.1.

Every notified incident will be recorded and detailed within the Illicit Discharge Hotline Incident Tracking report (see Appendix M). Reports will be archived to monitor public outreach and educational measureable goals.

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 N 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 K. 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.

The Outfall Sewershed map will be in Appendix K when information is available.

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 L will be utilized as a guide during this task. All field sheets generated will be added to this SWMPP report in the same Appendix L.

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 section 173. A copy of this law is included in Appendix O.

The municipal law adopted was certified as being equivalent to the State's model illicit discharge local law by David Hagstrom, Esq., the 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 N.

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:

As per Section 2.5 of this report, Geographic Areas of Concern, Heavy commercial zones with a high impervious land use exist along RT 9, RT 44 and RT 55 (see Figure 2.6 for Town land use) and can be considered high risk for illicit discharges. These areas contain automotive service facilities, large retail buildings, dense urban infrastructure, restaurants, gas stations, ect. Additionally along RT 9 are Industrial zones that have large impervious surfaces.

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

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.

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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 M.

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.	SMO	1. Develop outreach program with each Town department 2. Establish a public hotline for illicit discharge reporting	On-going basis
Inspect stormwater outfalls within MS4’s jurisdiction	Town Engineering Department	Inspect all stormwater outfalls once every five (5) years or 20% per year	On-going basis
Delineate preliminary boundaries of the storm sewersheds to each stormwater outfall.	Town Engineering Department	Update outfall spreadsheet as needed	On-going basis as per site inspections
Verify all outfall locations	Town Engineering Department	Update outfall map as needed	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
Identify MS4 outfalls and locate on Map	Town Engineering Department	Update outfall spreadsheet as needed	All preliminary boundaries delineated by March 9, 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 Sean Crimmins 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 O.

The municipal law adopted was certified as being equivalent to the "NYSDEC Sample Local Laws for Stormwater Management and Erosion and Sediment Control" by David Hagstrom, Esq., the 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 Eric Hollman. Details of these complaints or submitted documents can be found in Appendix N.

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. See Appendix S for a list of current construction projects that require stormwater management compliance inspections. See back of Appendix R for sample stormwater compliance reports.

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 work 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 be 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. A summary of Municipal Training attendance for 2009-2010 is included in Appendix T as well as DCSWCD application form.

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 U.

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.

**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	Track number of employees that have had training and when certifications have expired	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	Insure that checklist is current with the latest NYSDEC Stormwater Management Design Manuals	On-going

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Town of Poughkeepsie**

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

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 Sean Crimmins 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. 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.
 - b. 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

- c. 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
- d. 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 Approved Practices

6.3.1 Structural

The Town of Poughkeepsie approves the use of all practices found in the August 2010 NYSDEC Stormwater Management Design Manual.

6.3.2 Non-Structural

The Town of Poughkeepsie Planning Board has continued to encourage Low Impact Development (LID) and Better Site Design (BSD) for new construction projects within the Poughkeepsie area. LID/BSD are the practices in green infrastructure that includes preserving and restoring natural landscape features, such as forests, floodplains, stream

buffers and wetlands, coupled with policies that reduce impervious surface cover.

6.4 SWPPP Review Procedures

For the Town's SWPPP review procedures, refer to Section 5.4.

6.5 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 V.

6.6 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 annually (See Appendix W). 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.

**Stormwater Management Program Plan
Town of Poughkeepsie**

6.7 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 W.

**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 inspection form for use throughout the County. NYSDEC SW DESIGN MANUAL	Dutchess County MS4 Coordination Committee	Formulate a County specific inspection form based from Appendix G of the NYSDEC Stormwater Design Manual	
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	Log all inspections, results and maintenance needed on post-construction stormwater management practices	On-going

**Stormwater Management Program Plan
Town of Poughkeepsie**

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	1. Send a letter to each owner that holds a maintenance agreement with the Town. 2. Maintain records of all maintenance activities that have occurred on privately owned stormwater management practices.	Once per year.

6.8 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 Sean Crimmins 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 Responsibilities (See Appendix X for the Town of Poughkeepsie Highway Department Operation and Maintenance Plan to Reduce and Prevent Pollutant Discharges). Approximately 296 lane miles of road are maintained by the Town Highway Department.

7.3.1 Sections within Highway Department Operation and Maintenance Plan to Reduce and Prevent Pollutant Discharge plan include:

1. Street and Bridge Maintenance
2. Winter Road Maintenance
3. Stormwater System Maintenance
4. Vehicle and Fleet Maintenance
5. Building Maintenance/Hazardous Materials/Spill Response
6. Solid Waste Management

7.4 Stormwater Management Plan

Stormwater practices and structures need to be maintained in order to allow longevity of the proper operation of the system. Post-construction maintenance includes the inspection of ponds, quality control units, structure integrity, debris buildup, vegetation maintenance, ect. Municipal owned practices have a timed schedule of maintenance inspections to address any repairs needed. Some practices that drain to an MS4 are privately owned and letters of maintenance compliance are needed from the responsible party to the Town (See Appendix V for the inventory of both Public and Private Post-Construction stormwater practices and Appendix W for the Stormwater Management Practices Long Term operation and Maintenance Plan).

7.4.1 Publicly Owned or Maintained Practices within the Stormwater Management Plan:

1. Stormwater management practices
 - i. Ponds and Wetlands- Practice incorporates a permanent pool of water, shallow marsh areas and/or detention storage areas to treat stormwater runoff quality and quantity.
 - ii. Infiltration practices- Practice that captures and temporarily stores the water quality volume before allowing it to infiltrate into the soil.
 - iii. Stormwater Filter Practices- Practice that captures and temporarily stores the water quality volume before passing it though a filter bed of sand, organic matter, soil or other acceptable treatment media.

- iv. Open Channel Practices- Practice designed to capture and treat the full water quality within dry or wet cells formed by check dams or other means.
- v. Pretreatment or Supplemental Practices- Practices include grass channels, catch basin outlet traps, underground detention systems, oil/water water quality separators, porous pavement and quality control filter structures to supplement the stormwater system.

2. Maintenance and Inspection Responsibilities:

- i. Inspection schedules-Inspections during the first year of operation should be conducted at the end of every heavy rainfall. After the first year of operation, all Town owned practices should be visually inspected on an annual basis.
- ii. Vegetation management- Mowing should occur a minimum of twice a year no shorter than six (6) inches. Extensive application of fertilizers and pesticides to promote growth should be discouraged. Unwanted vegetation of invasive species should be removed at the discretion of the Town Engineer.
- iii. Debris and litter removal- Debris and litter should be removed from all forebays and detention areas during every mowing period.
- iv. Sediment removal- Excess sediment should be removed if the accumulation is over 50% of the forebay and/or detention pond capacity.
- v. Mechanical and structural maintenance- The outlet structures, pipes, valves, trash racks, grates and spillways should be repaired or replaced when necessary as directed by the Town Engineer.

7.4.2 Privately Owned or Maintained Practices within the Stormwater Management Plan:

1. Post-Construction Maintenance Plan Requirements:

- i. Operation and maintenance information- 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 Chapter 173 of the Town Code, entitled "Stormwater Control Facility Maintenance Agreements."

ii. Design and construction information- Written procedures for operation and maintenance and training practices for maintenance personnel should be provided by the design engineer.

iii. Maintenance and inspection responsibilities- An annual letter of maintenance compliance is required from the responsible party to the Town on the stormwater management practice (SMP) status and maintenance activities undertaken (see Appendix Y)

iv. Post-Construction stormwater facilities- A spreadsheet listing the SMP's location, ownership and status is recorded and incorporated into this SWMPP (see Appendix V)

7.5 Dutchess County Soil and Water Conservation District Publication: Pollution Prevention and Good Housekeeping for Municipal Operations (See Appendix Z)

The "Pollution Prevention and Good Housekeeping for Municipal Operations" publication was prepared as a general guideline resource for MS4 designated municipalities within Dutchess County. Guidelines within this publication were included for the preparation of this SWMPP.

7.6 Town regulated departments

Every department within the Town of Poughkeepsie including the Sewer Department, Water Department, Department of Parks and Recreation, Highway Department and the Automotive repair facility should adhere to the practices included within the Pollution Prevention and Good Housekeeping for Municipal Operations Manual prepared by the Dutchess County Soil and Water Conservation District (see Appendix Z). Every department should apply the techniques indicated within the checklist (see end of Appendix Z) if they are applicable.

7.7 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 Z.

**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.	SMO	1. Departments should be made aware of Pollution Prevention measures and applicability to their facility 2. Annual inspections of the departments should be conducted annually.	Once every year.

7.8 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 (see end of Appendix X for inspection checklist).
- 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 Sean Crimmins 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.

See Appendix ZA for archived annual reports submitted to the DEC and available for public viewing on the Town of Poughkeepsie website at:

http://www.townofpoughkeepsie.com/planning/stormwater/stormwater_information.htm

