

VILLAGE OF TARRYTOWN STORMWATER EDUCATION & OUTREACH OUTLINE

Stormwater contact: Donato R. Pennella, P.E., Village Engineer
Stormwater Hotline: 914-631-3668 Building Department
dpennella@tarrytowngov.com

Village of Tarrytown Stormwater Website:

<http://www.tarrytowngov.com/engineering-department/pages/stormwater-education-outreach-program>

What is an Illicit Discharge?

A discharge to the storm sewer that is not entirely storm water. Examples are sewage in the storm line, dumping of motor oil, household toxics, pesticides, paint, grease, pet waste, detergents and other materials into the storm sewer. **DUMPING ANY MATERIAL OR LIQUID, OTHER THAN WATER, INTO THE VILLAGE STORM DRAINS IS ILLEGAL.** Should you need to dispose of materials that cannot be placed in the garbage for collection by the Sanitation Department, please contact Westchester County Household Material Recovery Facility (H-MRF) for hazardous waste disposal. Should you see an Illicit Discharge or suspicious material in the storm drains, report it to the Building Department at (914) 631-3668.

Please refer to Attachment 1 for the following information:

Exempt Discharges

What is the big deal about Stormwater?

Stormwater *runoff* is water from rain or even melting snow that doesn't soak into the ground, but runs off over roads, paved areas, lawns, bare soils, etc., then into the storm sewer system or directly into waterways. The runoff picks up pollutants such as oil and grease, pesticides, animal wastes, salt, petroleum and other chemicals and materials along the way. One of the major sources of contamination in the Nation's waterbodies is polluted stormwater runoff.

What is an MS4 Permit and the Village of Tarrytown's requirements under one?

An MS4 is a *Municipal Separate Storm Sewer System* or, the entire storm sewer system within a municipal boundary. The MS4 system typically would not include the sanitary system, with the exception of combined sewer systems. There are no combined sewer systems in the Village of Tarrytown.

The Environmental Protection Agency implemented the Stormwater Program in an effort to improve the Nation's water from polluted stormwater runoff. Phase I of the Program focuses on areas with populations of 100,000 or greater. Phase II focuses on areas with populations smaller than 100,000. Municipalities under Phase II must obtain a State permit to address and discharge stormwater into their municipal storm sewer system (MS4). The Village of Tarrytown obtained MS4 permit coverage in 2003.

The Village of Tarrytown, a municipality with a population under 100,000, falls under the Phase II Stormwater Program, and is therefore required to abide by the terms and conditions of the **New York State Department of Environmental Conservation's SPDES General Permit for Stormwater Discharges**

from Municipal Separate Storm Sewer Systems (i.e. 'the NYSDEC MS4 Permit'), and to meet the six Minimum Measure requirements noted below.

Minimum Measure I: Public Outreach and Education on Stormwater

Identify Pollutants of Concern (POCs), waterbodies of concern, geographic areas of concern, and target audiences (see the Stormwater Website link for more information). Implement a public education and outreach program to describe the impacts of stormwater discharges on waterbodies, the POCs and their sources, and the steps that contributors of these pollutants can take to reduce pollutants in stormwater runoff.

Pollutants of Concern identified in the Village of Tarrytown:

- *Floatables & Trash Accumulation* in the storm sewer system and waterbodies.
- *Sediment*. The loose sand, clay, silt and other particles that settle at the bottom of a body of water. The EPA lists sediment as the most common pollutant in waterbodies.
- *Phosphorus & Nitrogen*. Nutrients that can cause the overgrowth of algae in waterbodies. Found in yard wastes like grass clippings and leaves, pet wastes, lawn fertilizers and detergents (car washing) carried directly into the catch basin or picked up in stormwater and carried to lakes, rivers and streams when it rains. The EPA considers phosphorus one of the most troublesome pollutants.

What you can do:

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

Car Washing, Gutters and Sump Pumps:

Direct water to grassy areas instead of down the driveway. Lawns cleanse the water of pollutants. Collect roof runoff in rain barrels and use this water on your lawn and garden.

Pet Waste:

Bag it and throw it in the trash. Nitrogen and Phosphorus in pet waste (as well as bacteria and pathogens) is a large contributor of stormwater runoff pollution.

Lawn Maintenance:

Keeping grass clippings and leaves out of the catch basins has great benefits on the receiving lakes and streams. **Never drop leaves or grass clippings into the storm drain.** This will cause clogging and flooding in the storm sewer system, and will flush nutrients in to the receiving water body which will cause algae ("scum") growth. Blow grass clippings on to the lawn and not the street when mowing, and never hose clippings into the catch basin. See the Village website for leaf mulching-in-place instructions, and the Public Works page for the leaf pick-up program and yard waste collection schedule.

NEVER DUMP ANYTHING DOWN THE STORM DRAIN: Contact the Westchester County Hazardous Material Recovery Facility (H-MRF) for disposal of used oil, paint, etc.

Refer to the Westchester County Step-to-Step Guide to Cleaner Water at:

<http://planning.westchestergov.com/images/stories/stormwater/stepbystep.pdf>.

What's the connection between residents and Storm Water?



Village rainwater flows into storm drains and rapidly discharges into receiving water bodies, carrying with it pollutants such as oil, trash, pathogens, and Nitrogen and Phosphorus that can lead to excess algae growth.

How can you help minimize this impact?

Residents can offer a big hand reducing pollutants in the Village's receiving water bodies. The EPA lists Phosphorus as one of the most troublesome pollutants in the nation's waterways.

Visit
Tarrytown Environmental Advisory Council at
www.Tarrytownenvironmental.org
for info and community events.

PHOSPHORUS & NITROGEN**

Lawn Maintenance: Nitrogen and Phosphorus generate from yard waste (leaves and grass clippings), pet waste, and excess fertilizer. Proper lawn maintenance has great benefits on the receiving water. Keep yard waste out of catch basins and never dump into the storm sewer. Consider mulching in-place and phosphate free gardening techniques.



Car Washing, Gutters and Sump Pumps: Direct water to the lawn and not the driveway. Soaps will harm waterways but lawns will filter out contaminants. Collect roof runoff in rain barrels and use this water on your lawn and garden.

Pet Waste: Bag it and throw it away. Animal waste is a large contributor of storm water pollution, also leeching **pathogens**.

TRASH, DUMPING**

Illicit Discharge:

Should you see an **Illicit Discharge** such as suspicious and/or odorous material in the storm drains, report it to the Building Department at (914) 631-3668.

IT IS AGAINST VILLAGE CODE TO DISPOSE OF USED OIL, PAINT, GREASE, PET WASTE, ETC...INTO THE STORM DRAIN. **Contact Westchester County Household Material Recovery Facility (H-MRF) for hazardous waste disposal.**



Visit www.tarrytowngov.com and click on the Stormwater link for more information and further links.

**Refer to Westchester County website for lawn maintenance, vehicle washing, pet waste & household chemicals and more at: <http://planning.westchestergov.com/environment/stormwater-management>



The Tarrytown Lakes

What is the problem?

Algae in the Upper Reservoir. An unusually high concentration of Nitrogen and Phosphorus are entering the Upper Reservoir during rain events. The Tarrytown Lakes is a shallow lake bed that is particularly susceptible to algae blooms. If your property is located in the drainage area of the Tarrytown Lakes (see next page), you can help in giving the Lakes a hand!

What you can do:

- Car Washing, Outdoor washing: Direct wash water to the **lawn and not the driveway**, which will flow to catch basins then waterways. Soaps can contain phosphorus that will contribute to algae growth.
- Pet Waste: Bag it and throw it away. Animal waste contains Nitrogen and Phosphorus.
- Proper Lawn Maintenance: Nitrogen and Phosphorus generate mostly from yard waste (leaves, grass clippings) and excess fertilizer. If using fertilizers/pesticides, only apply at the proper rate. **Keep yard waste out of catch basins.** Consider leaving grass clippings in place for organic fertilizer that breaks down quickly, mulching in-place, and phosphate free gardening. See the Village of Tarrytown website for *Love 'em and Leave 'em* leaf management. **Proper lawn maintenance has great benefits on the receiving water.**
- Illicit Discharge: Should you see an **Illicit Discharge** such as suspicious and/or odorous material in the storm drains (most commonly septic), report it to the Building Department at (914) 631-3668.

Make sure that your landscape contractor is registered with the Village.

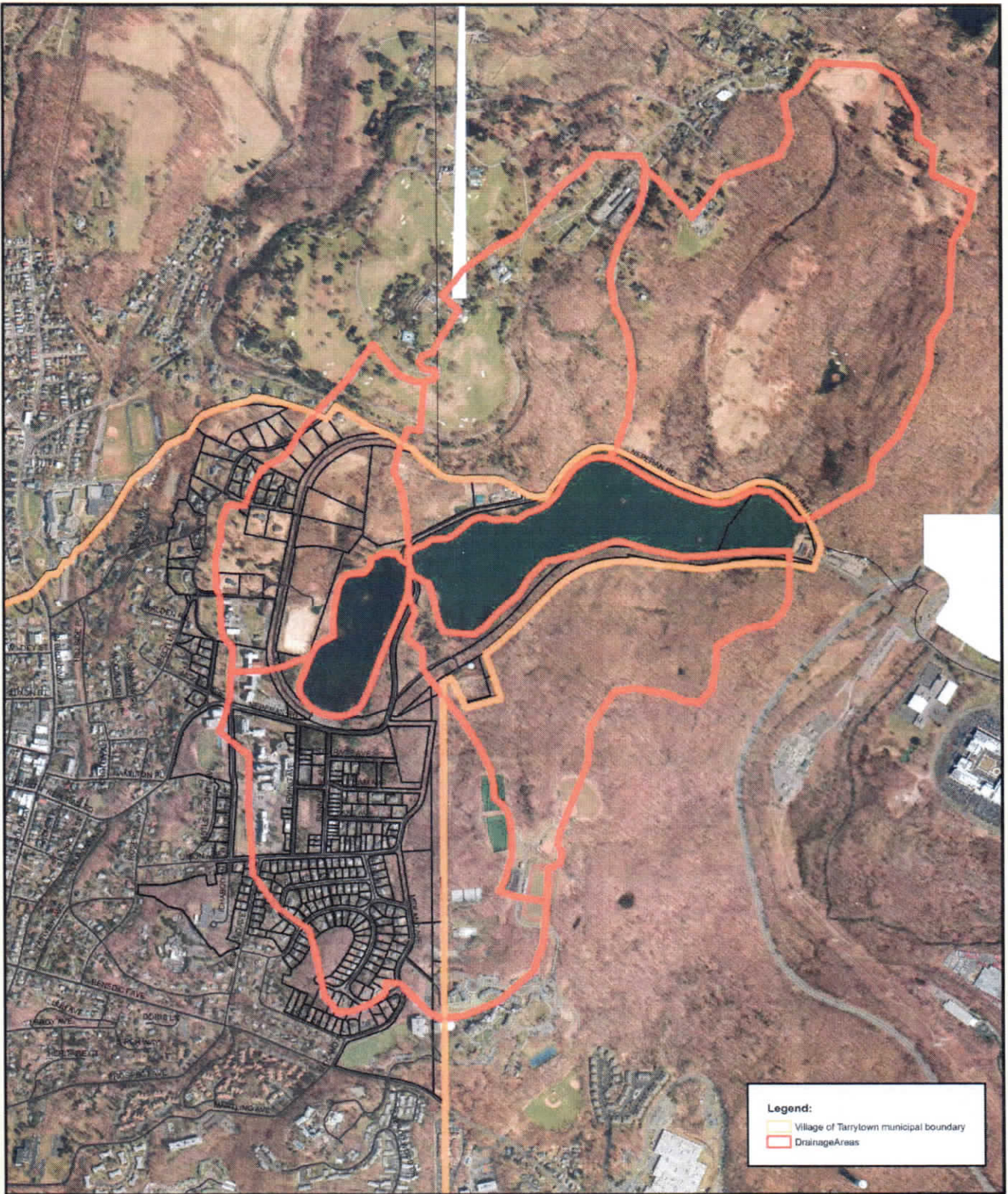
A landscaper is defined as a **Green Industry Contractor** by law and must be registered to legally work with the Village (Chapter 205). Registered workers are given orange permits which must be affixed to the left rear of the work vehicle.

PLEASE NOTE:

IT IS AGAINST VILLAGE CODE TO DISPOSE OF USED OIL, PAINT, GREASE, TRASH, PET WASTE, ETC...INTO THE STORM DRAIN. Contact Westchester County Household Material Recovery Facility (H-MRF) for hazardous waste disposal.

Is your property is located in the drainage area of the Tarrytown Lakes?

Please see next page.



Tarrytown Lakes Drainage Areas

0 345 690 1,380 2,070 2,760 Feet

Base planimetric data provided by
Westchester County GIS data warehouse and
NYS GIS Data Clearinghouse

Drainage Area delineated from
Tarrytown Lakes Watershed Drainage Study SWMP (2005)

Refer to the EPA's Homeowner brochures at:

https://www3.epa.gov/npdes/pubs/solution_to_pollution.pdf
https://www3.epa.gov/npdes/pubs/after_the_storm.pdf

Minimum Measure II: Public Involvement/Participation in Stormwater

Provide a local stormwater public contact (listed above). Identify key individuals/groups who are affected by the Stormwater Management Plan, and record participation activities such as water quality hotline for reporting illicit discharges, stream cleanups, storm drain marking, and other volunteer water quality activities.

For participation opportunities, please see the following:

- Tarrytown Environmental Advisory Council (TEAC): <http://www.tarrytownenvironmental.org/>
- Friends of the Riverwalk: www.frw-ttown.org
- Friends of Neperan Park: www.friendsofneperanpark.org
- NYSDEC Citizens Statewide Lake Assessment Program (CSLAP):
www.dec.ny.gov/chemical/81576.html

Minimum Measure III: Illicit Discharge Detection and Elimination

Implement and enforce a program to detect and eliminate **illicit discharges** into the storm sewer system. Maintain a stormwater outfall inventory and a map showing the stormwater outfalls, the receiving surface waters, the storm sewersheds, and map new outfalls as they are constructed or newly discovered.

Adopt a local law to prohibit illicit discharges into the storm sewer system and implement appropriate enforcement procedures (see Village Code, Chapter 258: Stormwater Management; Article II: Prohibition of Illicit Discharges and Connections to Separate Storm Sewer System).

Please refer to **Attachment 2** for the following information (2014):

[Village of Tarrytown Storm SewerShed Map](#)

[Village of Tarrytown Outfall Map spreadsheet](#)

Minimum Measure IV: Construction Site Stormwater Runoff Control

Address stormwater runoff from construction activities of one acre or more and maintain an inventory of such sites with owner/operator contact information. Adopt a local law to address stormwater management and erosion and sediment control and ensure construction site operators have received erosion and sediment control training (see Village Code, Chapter 258: Stormwater Management; Article I, Stormwater Management and Erosion and Sediment Control). Such sites must submit and abide by all Stormwater Pollution Prevention Plan requirements, and local laws.

Please refer to **Attachment 3** for the following information (2014):

[Village of Tarrytown Construction Site inventory \(October 2014\)](#)

Minimum Measure V: Post-Construction Stormwater Management

Maintain an inventory of post-construction stormwater management practices, and ensure the adequate long-term operation and maintenance of such practices to ensure they are performing properly. Adopt a local law to reduce pollutants in stormwater runoff from post-construction practices, and after completion of construction (see Village Code, Chapter 258: Stormwater Management; Article I, Stormwater Management and Erosion and Sediment Control).

To reduce pollutants in post-construction stormwater runoff, construction site operators would build permanent stormwater management practices (structural) and/or other measures (non-structural) as defined in the New York State stormwater design manual to reduce the discharge of pollutants to the Maximum Extent Practicable (MEP) in to the municipal storm sewer system (MS4).

Please also refer to **Attachment 3** for the following information (2014):

[**Village of Tarrytown Post-Construction Sites Map \(October 2014\)**](#)

[**Village of Tarrytown Post-Construction Sites spreadsheet \(October 2014\)**](#)

Minimum Measure VI: Pollution Prevention/Good Housekeeping For Municipal Operations

Incorporates an employee Pollution Prevention and Good Housekeeping training program. Addresses municipal operations and facilities that contribute or potentially contribute Pollutants of Concern to the storm sewer system.

At a minimum of once every 3 years, perform and document a self-assessment of all the Village's municipal operations and facilities to determine their potential sources of pollutants; and identify the Village's facilities that will be addressed by the Pollution Prevention and Good Housekeeping program. A Best Management Practices manual has been created based on the self-assessment, and will be updated accordingly.

Please refer to **Attachment 4** for the following information:

[**Village of Tarrytown MS4 Best Management Practices Manual \(Simplified\)**](#)

***All MS4 other documents, mapping, records, etc., are maintained at the Village of Tarrytown Building Department**

VILLAGE OF TARRYTOWN STORMWATER OUTREACH & EDUCATION:

MAKING YOUR HOUSE AND LAWN STORMWATER SAFE:

Refer to Westchester County's information for properly mowing and maintaining your Lawn, Septic System, as well as salt, household chemicals and vehicle washing.

<http://planning.westchestergov.com/environment/stormwater-management>

Refer to the Westchester County Step-to-Step Guide to Cleaner Water at:

<http://planning.westchestergov.com/images/stories/stormwater/stepbystep.pdf>.

FERTILIZING YOUR LAWN:

Refer to NYSDEC's information to 'Look for the Zero, Protect your Waters'.

http://www.dec.ny.gov/docs/water_pdf/fertflyer15.pdf

NATIVE LANDSCAPING:

Refer to Westchester County's information on Native Landscaping

<http://planning.westchestergov.com/images/stories/stormwater/GoNative.pdf>

RAIN GARDENS & RAIN BARRELS:

Refer to Westchester County's information on Rain Gardens & Rain Barrels,

<http://planning.westchestergov.com/rain-gardens>

<http://planning.westchestergov.com/rain-barrels>

Rain Barrels/Permeable Pavement/Green Lawns Blue Waters (League of Women Voters):

<http://www.watpa.org/lwv/greenlawnsbrochures/index.html>

EPA KIDS FUN GAMES FOR NON-POINT POLLUTION:

<http://water.epa.gov/polwaste/nps/kids/index.cfm>

REGULATORY LINKS:

VILLAGE OF TARRYTOWN:

Green Industry Contractor

<http://www.tarrytowngov.com/departments-of-public-works/pages/leaf-blowers-and-landscapers-laws>

NYSDEC:

NYSDEC Contractor Training:

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

NYSDEC Stormwater MS4 Permit and Forms

<http://www.dec.ny.gov/chemical/43150.html>

Fertilizer and Detergent Law:

<http://www.dec.ny.gov/chemical/67239.html>

ENVIRONMENTAL PROTECTION AGENCY:

EPA Stormwater Homepage:

<http://water.epa.gov/polwaste/npdes/stormwater/>

EPA Green Infrastructure training:

http://water.epa.gov/infrastructure/greeninfrastructure/gi_training.cfm

WESTCHESTER COUNTY:

Westchester County Household Material Recovery Facility (H-MRF)

<http://environment.westchestergov.com/new-h-mrf>

Septic System Management:

<http://health.westchestergov.com/septic-systems>

ATTACHMENT 1

Exempt Discharges

Exempt Discharges

The following are listed as *Exempt Non-Stormwater Discharges* per the NYSDEC MS4 Permit and will remain as such unless the NYSDEC will determine them to be substantial contributors of pollutants.

- a. water line flushing
- b. landscape irrigation
- c. diverted stream flows
- d. rising ground waters
- e. uncontaminated ground water infiltration (as defined at 40 CFR 35.2005(20))
- f. uncontaminated ground water
- g. discharges from potable water sources
- h. foundation drains
- i. air conditioning condensate
- j. irrigation water
- k. springs
- l. water from crawl space and basement sump pumps
- m. footing drains
- n. lawn and landscape watering runoff provided that all pesticides and fertilizers have been applied in accordance with the manufacturer's product label;
- o. water from individual residential car washing
- p. flows from riparian habitats and wetlands
- q. dechlorinated swimming pool discharges
- r. residual street wash water
- s. discharges or flows from fire fighting activities
- t. dechlorinated water reservoir discharges
- u. any SPDES permitted discharge

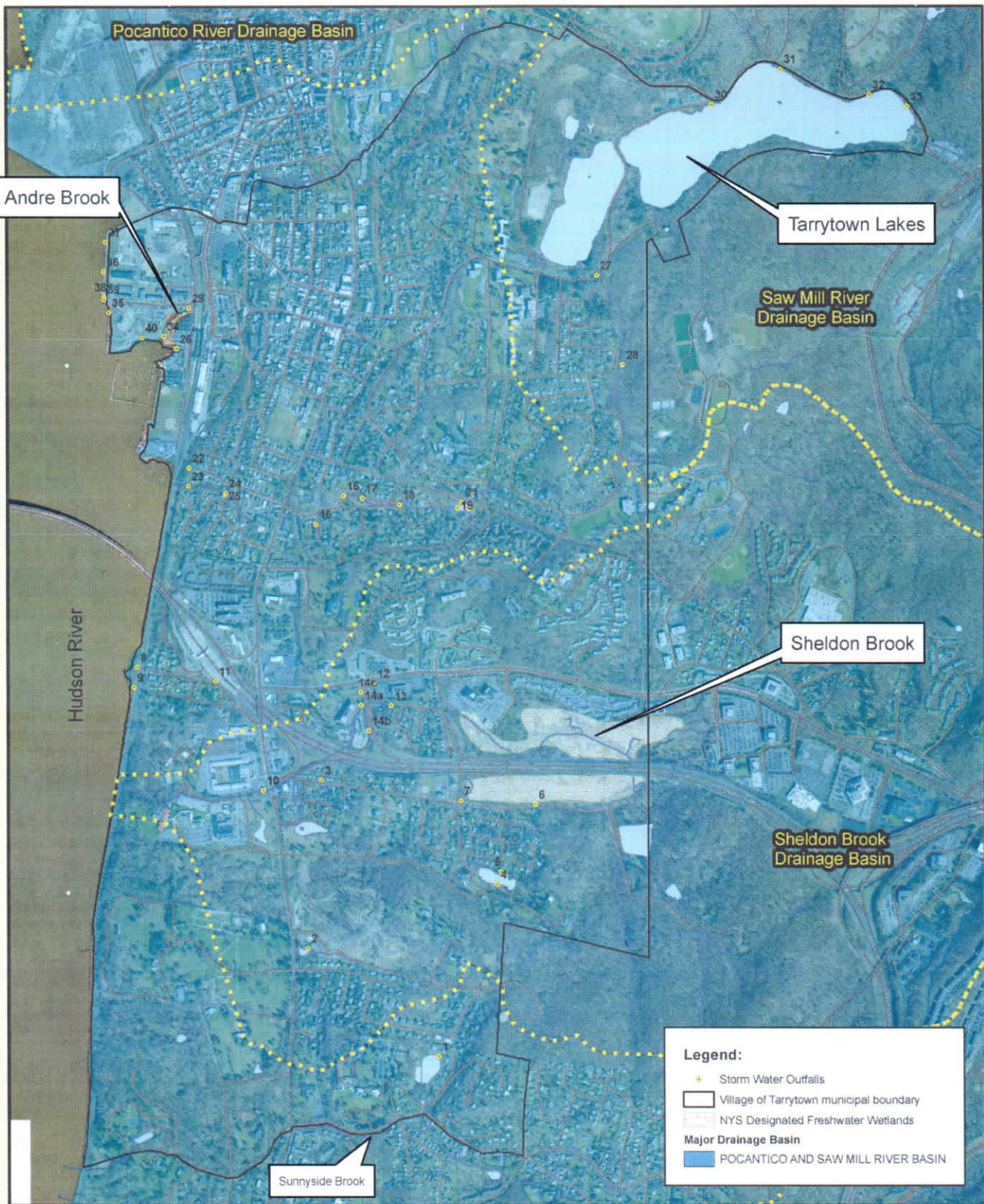
ATTACHMENT 2

Village of Tarrytown Storm Sewershed Map

Village of Tarrytown Outfall Map Spreadsheet

Sources: Westchester County GIS, NYS GIS Data Clearinghouse





Storm Sewer Shed

0 450 900 1,800 2,700 3,600 Feet

Base planimetric data provided by Westchester County GIS data warehouse and NYS GIS Data Clearinghouse

[illegible]

ATTACHMENT 3

Village of Tarrytown Construction Site Inventory

Village of Tarrytown Post-Construction Sites Map

Village of Tarrytown Post-Construction Sites Spreadsheet

Project	NYC Map	Location	SPDES Permit	Consent Name	Owner Address	Current District
Jewish Community Center on the Hudson Renovation and Addition	1-513	371 South Broadway Tarrytown, NY	NYR000251	SERVICES ASSOCIATES, LLC	371 South Broadway Tarrytown, NY 10591	104-001-1000
The Castle	6-212	400 Boreas Avenue Tarrytown, NY	NYR000771	LENNEMUS, INC.	400 Boreas Avenue Tarrytown, NY 10591	104-001-1000
Greystone on Hudson Phase I	3-2512	2000 Rockway Tarrytown, NY	NYR000614	REDAWAY CONSTRUCTION, LLC	15 Parkview Lane Dobbsville, NY 11744	104-001-1000
Pleasant Park & Archie Brook Restoration	6-312	229-239 West Main Street Tarrytown, NY	NYR000656	VILLAGE OF TARRYTOWN	West Main Tarrytown, NY 10591	104-001-1000
Commuter Parking Lot Improvements	5-211	500 West Tarrytown, NY	NYR000000	VILLAGE OF TARRYTOWN	West Main Tarrytown, NY 10591	104-001-1000
Legends at Wilson Park	1-511	Wilson Park Drive Tarrytown, NY	NYR000077	COLLINS-HARRIS, INC.	500 West Main Street Tarrytown, NY 10591	104-001-1000
Tarrytown Transfer Station Remediation Project	3-210	200 West Main Street Tarrytown, NY	NYR000000	VILLAGE OF TARRYTOWN	West Main Tarrytown, NY 10591	104-001-1000
Blaircraft Manor Pump Station (Blaircraft Manor NY Water Supply Project)	1-210	Blaircraft Manor Tarrytown, NY	NYR000000	VILLAGE OF TARRYTOWN	Blaircraft Manor Tarrytown, NY 10591	104-001-1000
Tarrytown Riverwalk Improvements	1-210	West Main Street Tarrytown, NY	NYR000000	VILLAGE OF TARRYTOWN	West Main Street Tarrytown, NY 10591	104-001-1000
New construction of Village Hall, Court & Police Headquarters	1-210	100 West Main Street Tarrytown, NY	NYR000000	VILLAGE OF TARRYTOWN	100 West Main Street Tarrytown, NY 10591	104-001-1000
Perry Landings	6-210	100 West Main Street Tarrytown, NY	NYR000000	VILLAGE OF TARRYTOWN	100 West Main Street Tarrytown, NY 10591	104-001-1000
Graceland (Terry & Elizabeth) Housing Development	1-210	100 West Main Street Tarrytown, NY	NYR000000	VILLAGE OF TARRYTOWN	100 West Main Street Tarrytown, NY 10591	104-001-1000
Neppan Road Rehabilitation	1-210	Neppan Road Tarrytown, NY	NYR000000	VILLAGE OF TARRYTOWN	Neppan Road Tarrytown, NY 10591	104-001-1000



Post Construction Storm Water Practices

0 450 900 1,800 2,700 3,600
Feet

Base planimetric data provided by
Westchester County GIS data warehouse and
NYS GIS Data Clearinghouse

Village of Tarrytown
Post-Construction Sites (Simplified)

Property	Area	Practice 1	Practice 2	Method	Receiving Water	Drainage Basin
Windsor Estates	144.12 Sq.	Retention Basin	On-Site Storm	Standard	Newspaper from Village of Tarrytown NYS	Potomac and Saw Mill River Basin
Windsor Estates	150.48	Water Quality Basin	WQ Basin	Standard	Newspaper from Village of Tarrytown NYS	Potomac and Saw Mill River Basin
Blairfield Minor Pump Station	1224.04	Rocky Wetlands	WQ	Standard	Tarrytown Lakes	Saw Mill River Basin
Indiana Estates	901.49	Detention Basin	Generation Basin	Standard	Shelden Brook	Shelden Brook Basin
Legends at Wilson Park	656.78	Rocky Pond	PS	Standard	Tarrytown Lakes	Saw Mill River Basin
Legends at Wilson Park	754.66	Rocky Pond	PS	Standard	Tarrytown Lakes	Saw Mill River Basin
Legends at Wilson Park	1724.31	Rocky Pond	PS	Standard	Tarrytown Lakes	Saw Mill River Basin
Legends at Wilson Park	42.195	Rocky Pond	PS	Standard	Tarrytown Lakes	Potomac and Saw Mill River Basin
Legends at Wilson Park	628.60	Rocky Pond	PS	Standard	Tarrytown Lakes	Saw Mill River Basin
Legends at Wilson Park	465.62	Rocky Pond	PS	Standard	Tarrytown Lakes	Saw Mill River Basin
The Castle	252.70	Underground Infiltration System	WQ Basin	Standard w/RRV Capacity	Shelden Brook	Shelden Brook Basin
The Castle	779.45	Underground Infiltration System	WQ Basin	Standard w/RRV Capacity	Shelden Brook	Shelden Brook Basin
The Castle	1494.41	Green Roof	Green Roof	RRV Techniques (Volume Reduction)	NA	Shelden Brook Basin
Greystone on Hudson	1106.31	Infiltration Basin	PS	Standard w/RRV Capacity	Ground Water	Potomac and Saw Mill River Basin
Greystone on Hudson	1667.21	Infiltration Basin	PS	Standard w/RRV Capacity	Ground Water	Potomac and Saw Mill River Basin
Greystone on Hudson	1378.54	Infiltration Basin	PS	Standard	Hudson River	Potomac and Saw Mill River Basin
Greystone on Hudson	3059.63	Infiltration Basin	PS	Standard w/RRV Capacity	Ground Water	Potomac and Saw Mill River Basin
Greystone on Hudson	7671.63	Infiltration Basin	PS	Standard w/RRV Capacity	Ground Water	Potomac and Saw Mill River Basin
Greystone on Hudson	8628.59	Infiltration Basin	PS	Standard w/RRV Capacity	Ground Water	Potomac and Saw Mill River Basin
Greystone on Hudson	6652.86	Infiltration Basin	PS	Standard w/RRV Capacity	Ground Water	Potomac and Saw Mill River Basin
Frederick Park & Andre Brook Restoration	894.66	Retention Basin	PS	Standard w/RRV Capacity	Andre Brook	Potomac and Saw Mill River Basin
Camden Park & Andre Brook Restoration	7129.59	Retention Basin	PS	Standard w/RRV Capacity	Hudson River	Potomac and Saw Mill River Basin
Jewett Community Center on the Hudson	6387.05	Underground Infiltration System	WQ Basin	Standard w/RRV Capacity	Hudson River	Potomac and Saw Mill River Basin
Hudson Park & Andre Brook Restoration	2168.64	Retention Basin	PS	Standard w/RRV Capacity	Andre Brook	Potomac and Saw Mill River Basin
Scenic Hudson Riverwalk Park	360.54	Retention Basin	PS	Standard w/RRV Capacity	Hudson River	Potomac and Saw Mill River Basin
Scenic Hudson Riverwalk Park	446.76	Retention Basin	PS	Standard w/RRV Capacity	Hudson River	Potomac and Saw Mill River Basin
Scenic Hudson Riverwalk Park	383.66	Retention Basin	PS	Standard w/RRV Capacity	Hudson River	Potomac and Saw Mill River Basin
Scenic Hudson Riverwalk Park	872.93	Retention Basin	PS	Standard w/RRV Capacity	Hudson River	Potomac and Saw Mill River Basin
Scenic Hudson Riverwalk Park	472.07	Retention Basin	PS	Standard w/RRV Capacity	Hudson River	Potomac and Saw Mill River Basin
Scenic Hudson Riverwalk Park	162.36	Retention Basin	PS	Standard w/RRV Capacity	Hudson River	Potomac and Saw Mill River Basin
Scenic Hudson Riverwalk Park	214.95	Retention Basin	PS	Standard w/RRV Capacity	Hudson River	Potomac and Saw Mill River Basin
Scenic Hudson Riverwalk Park	388.41	Retention Basin	PS	Standard w/RRV Capacity	Hudson River	Potomac and Saw Mill River Basin
Scenic Hudson Riverwalk Park	754.43	Retention Basin	PS	Standard w/RRV Capacity	Hudson River	Potomac and Saw Mill River Basin
Scenic Hudson Riverwalk Park	290.04	Retention Basin	PS	Standard w/RRV Capacity	Hudson River	Potomac and Saw Mill River Basin
Scenic Hudson Riverwalk Park	749.78	Retention Basin	PS	Standard w/RRV Capacity	Hudson River	Potomac and Saw Mill River Basin
Scenic Hudson Riverwalk Park	303.47	Retention Basin	PS	Standard w/RRV Capacity	Hudson River	Potomac and Saw Mill River Basin
Scenic Hudson Riverwalk Park	408.89	Retention Basin	PS	Standard w/RRV Capacity	Hudson River	Potomac and Saw Mill River Basin
Scenic Hudson Riverwalk Park	447.79	Retention Basin	PS	Standard w/RRV Capacity	Hudson River	Potomac and Saw Mill River Basin
Scenic Hudson Riverwalk Park	193.12	Retention Basin	PS	Standard w/RRV Capacity	Hudson River	Potomac and Saw Mill River Basin
Scenic Hudson Riverwalk Park	274.85	Retention Basin	PS	Standard w/RRV Capacity	Hudson River	Potomac and Saw Mill River Basin
Scenic Hudson Riverwalk Park	661.39	Retention Basin	PS	Standard w/RRV Capacity	Hudson River	Potomac and Saw Mill River Basin
Scenic Hudson Riverwalk Park	438.62	Retention Basin	PS	Standard w/RRV Capacity	Hudson River	Potomac and Saw Mill River Basin
Scenic Hudson Riverwalk Park	325.34	Retention Basin	PS	Standard w/RRV Capacity	Hudson River	Potomac and Saw Mill River Basin
Hudson Park & Andre Brook Restoration	1064.70	Retention Basin	PS	Standard w/RRV Capacity	Hudson River	Potomac and Saw Mill River Basin
Scenic Hudson Riverwalk Park	658.66	Retention Basin	PS	Standard w/RRV Capacity	Hudson River	Potomac and Saw Mill River Basin
Scenic Hudson Riverwalk Park	1213.45	Retention Basin	PS	Standard w/RRV Capacity	Hudson River	Potomac and Saw Mill River Basin
Scenic Hudson Riverwalk Park	596.91	Retention Basin	PS	Standard w/RRV Capacity	Hudson River	Potomac and Saw Mill River Basin
Scenic Hudson Riverwalk Park	602.86	Retention Basin	PS	Standard w/RRV Capacity	Hudson River	Potomac and Saw Mill River Basin
Scenic Hudson Riverwalk Park	849.97	Retention Basin	PS	Standard w/RRV Capacity	Hudson River	Potomac and Saw Mill River Basin
Scenic Hudson Riverwalk Park	725.90	Retention Basin	PS	Standard w/RRV Capacity	Hudson River	Potomac and Saw Mill River Basin
Scenic Hudson Riverwalk Park	1063.16	Retention Basin	PS	Standard w/RRV Capacity	Hudson River	Potomac and Saw Mill River Basin
Hudson Park & Andre Brook Restoration	144.06	Retention Basin	PS	Standard w/RRV Capacity	Hudson River	Potomac and Saw Mill River Basin
Hudson Park & Andre Brook Restoration	377.80	Retention Basin	PS	Standard w/RRV Capacity	Hudson River	Potomac and Saw Mill River Basin
Hudson Park & Andre Brook Restoration	415.18	Retention Basin	PS	Standard w/RRV Capacity	Hudson River	Potomac and Saw Mill River Basin
Hudson Park & Andre Brook Restoration	264.46	Retention Basin	PS	Standard w/RRV Capacity	Hudson River	Potomac and Saw Mill River Basin
Hudson Park & Andre Brook Restoration	710.70	Retention Basin	PS	Standard w/RRV Capacity	Hudson River	Potomac and Saw Mill River Basin
Hudson Park & Andre Brook Restoration	721.05	Retention Basin	PS	Standard w/RRV Capacity	Hudson River	Potomac and Saw Mill River Basin
Hudson Park & Andre Brook Restoration	106.34	Retention Basin	PS	Standard w/RRV Capacity	Hudson River	Potomac and Saw Mill River Basin
Hudson Park & Andre Brook Restoration	1777.74	Retention Basin	PS	Standard w/RRV Capacity	Hudson River	Potomac and Saw Mill River Basin
Hudson Park & Andre Brook Restoration	426.41	Retention Basin	PS	Standard w/RRV Capacity	Hudson River	Potomac and Saw Mill River Basin
Hudson Park & Andre Brook Restoration	1075.77	Retention Basin	PS	Standard w/RRV Capacity	Hudson River	Potomac and Saw Mill River Basin
Hudson Park & Andre Brook Restoration	712.00	Retention Basin	PS	Standard w/RRV Capacity	Hudson River	Potomac and Saw Mill River Basin

ATTACHMENT 4

Village of Tarrytown MS4 Best Management Practices Manual (Simplified)

Best Management Practices (BMP) Manual



**Municipal Highway Garage
Village of Tarrytown Shaft 10 Pump Station**

**NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
SPDES GENERAL PERMIT FOR STORMWATER DISCHARGES FROM
Municipal Separate Storm Sewer Systems
(MS4)**



**VILLAGE OF TARRYTOWN
Westchester County, New York**

BEST MANAGEMENT PRACTICES (BMP) MANUAL

Introduction

This Manual is designed for use by the municipal operations located within the Village of Tarrytown. The Village of Tarrytown is an operator of a small municipal separate storm sewer system (MS4) located in an urbanized area. As such, coverage must be obtained under the *NYSDEC SPDES General Permit for Storm Water Discharges from Municipal Separate Storm Sewer Systems (MS4)*. Permit requirements mandate that a *Storm Water Management Program (SWMP)* be developed and implemented to be authorized to discharge storm water to the storm sewer system. This BMP Manual has been created as part of the SWMP.

Purpose

Permit requirements mandate that all permittees perform a self-assessment to (1) address municipal operations and facilities that contribute or potentially contribute Pollutants of Concern (POCs) to the MS4 system; (2) determine the source of pollutants potentially generated by the covered entity's operations and facilities; and (3) identify the municipal operations and facilities that will be addressed by the pollution prevention and good housekeeping program.

The following municipal operations have been assessed:

- Municipal Highway Garage
- Village of Tarrytown Shaft 10 Pump Station

BEST MANAGEMENT PRACTICES MANUAL

for:

Village of Tarrytown Municipal Highway Garage
4 Division Street
Tarrytown, NY 10591
(914) 631-0356

Contact(s):

Howard Wessells, Highway Superintendent

and:

Village of Tarrytown Shaft 10 Pump Station
Neperan Road
Tarrytown, NY 10591

Contact(s):

Howard Wessells, Highway Superintendent

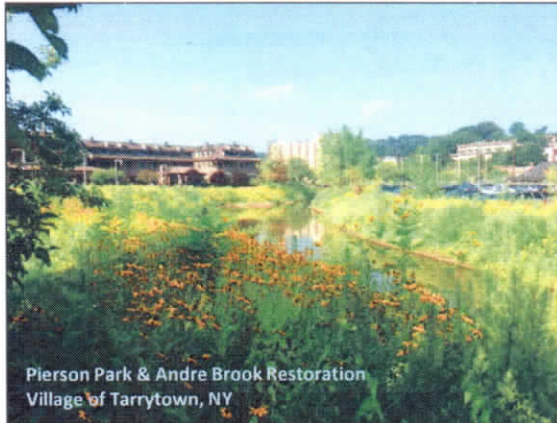
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Storm Water Management Plan (SWMP)



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**VILLAGE OF TARRYTOWN
Westchester County, New York**

November 2012
Updated continually

STORMWATER MANAGEMENT PLAN

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- Adjacent MS4's
- Storm Water Outfalls
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- Post Construction Storm Water Practices
- Street Sweeping Map

APPENDIX III Other Mapping

- Critical Environmental Areas Map
- Zoning Map (Village of Tarrytown Comprehensive Plan, March 2007)
- Waterbody Inventory- Priority Waterbody List

Introduction

This Stormwater Management Plan (SWP) has been prepared for the Village of Tarrytown to address the *MS4 system* requirements and oversight. This plan is written in accordance with NYSDEC's SPDES General Permit for Stormwater Discharges from Municipal Separate Storm Sewer Systems (MS4s)(GP-0-10-002). The plan will be maintained with the Village's Storm Water Management Program (SWMP) documentation at the Building Department at Village Hall. Per permit requirements, the plan will be periodically assessed and modified as needed to address measurable goals, and select and implement the appropriate measures needed to ensure the reduction of Pollutants of Concern (POCs) in the Village's stormwater discharges to the Maximum Extent Practicable (MEP).

What is an MS4?

An MS4 is a Municipal Separate Storm Sewer System or, the entirety of the storm sewer system that is maintained within the municipal boundaries. The MS4 system is typically entirely inclusive of storm sewer lines, and would not include the sanitary system, with the exception of combined sewers systems. There are no combined sewers in the Village of Tarrytown.

How was the MS4 Program enacted? The Phase II Stormwater Program Overview

The Phase II Stormwater Program was implemented by the Environmental Protection Agency in an effort to preserve, protect and improve the Nation's water resources from polluted stormwater runoff. Phase I of the Program was implemented in 1990 under the Clean Water Act, and relies on National Pollutant Discharge Elimination System (NPDES) permit coverage to address stormwater runoff from MS4s typically servicing populations of 100,000 or greater.

The Phase II effort is EPA's next step effort to protect water resources from polluted stormwater runoff. The Phase II program expands to the Phase I program by addressing stormwater runoff from urbanized MS4s servicing populations smaller than 100,000. Phase II relies on individual State permit coverage to address stormwater runoff from such MS4s.

The Village of Tarrytown, a small urbanized entity with a population of 11,354 (per 2011 census), fits into the category of a "small MS4" under the Phase II Stormwater Program, and is therefore required to abide by the terms and conditions of the New York State Department of Environmental Conservation's SPDES General Permit for Stormwater Discharges from Municipal Separate Storm Sewer Systems (i.e. 'the NYSDEC MS4 Permit'). The permit was enacted and is enforced by the regulatory oversight agency, the New York State Department of Environmental Conservation. The Village of Tarrytown falls under the requirements of a *traditional land-use control* MS4 per the permit.

Village of Tarrytown MS4 System

The Village of Tarrytown is a riverfront community, located east of the Hudson River. Topography in the village runs in a downward slope, starting at 400' on the east side of the Village, descending down to the Hudson River (see Appendix II). In accordance with Part VII.A.3.b of the NYSDEC MS4 Permit, all of the outfalls within the jurisdiction of the Village of Tarrytown, known as the 'covered entity', have been

mapped. Mapping also includes the Receiving Water Bodies, the general Storm Sewer Shed, the completed Storm Sewer Lines, Catch Basins, and the Post-Construction Stormwater Management practices.

Exempt Discharges

The following are listed as *Exempt Non-Stormwater Discharges* per Part I.A.2 of the Permit and will remain as such unless the Department will determine them to be substantial contributors of pollutants.

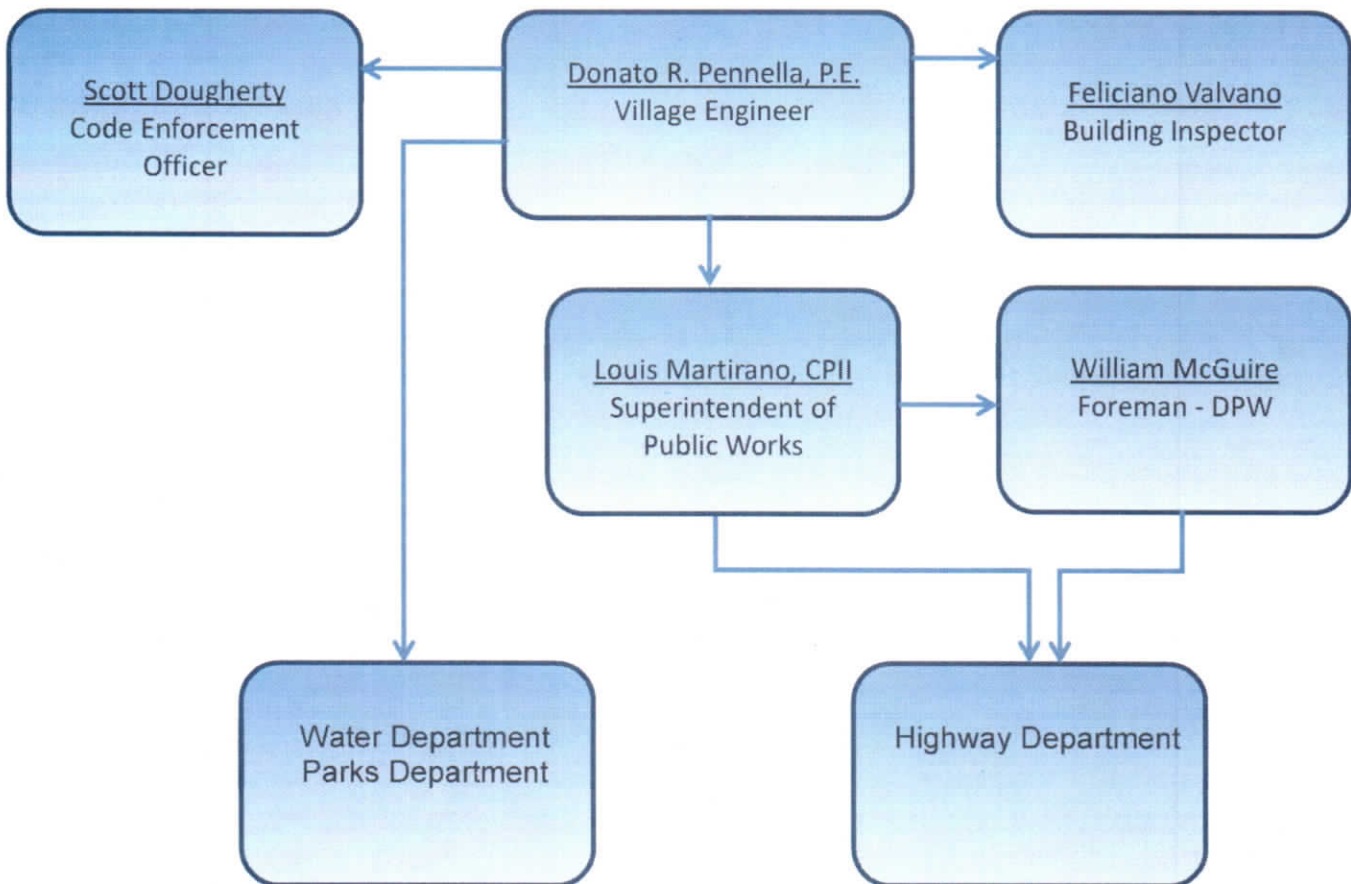
- a. water line flushing
- b. landscape irrigation
- c. diverted stream flows
- d. rising ground waters
- e. uncontaminated ground water infiltration (as defined at 40 CFR 35.2005(20))
- f. uncontaminated ground water
- g. discharges from potable water sources
- h. foundation drains
- i. air conditioning condensate
- j. irrigation water
- k. springs
- l. water from crawl space and basement sump pumps
- m. footing drains
- n. lawn and landscape watering runoff provided that all pesticides and fertilizers have been applied in accordance with the manufacturer's product label;
- o. water from individual residential car washing
- p. flows from riparian habitats and wetlands
- q. dechlorinated swimming pool discharges
- r. residual street wash water
- s. discharges or flows from firefighting activities
- t. dechlorinated water reservoir discharges
- u. any SPDES permitted discharge

Organizational Structure

The Stormwater Management Organizational Structure is maintained as outlined and required per the NYSDEC MS4 Permit. Updates to the Structure will be made when required and updated in the SWMP.

VILLAGE OF TARRYTOWN

Storm Water Management Program Organizational Structure



Adjacent MS4 Map

Adjacent MS4 boundaries have been identified on the 'Adjacent MS4 Boundaries' map included in this plan as required by the NYSDEC MS4 Permit (see Appendix II).

Local Storm Water Contact

The Local Storm Water Contact is listed on the Municipal Compliance Certification (MCC) form of the Annual Report as Donato Pennella, Village Engineer. The Assistant Village Engineer's office is located in the Building Department at the Village Hall, 1 Depot Plaza, Tarrytown, NY.

Measurable Goals

Per Part V.A, *Program Assessment*, conditions specific to the Village of Tarrytown have been evaluated to determine the Measurable Goals for meeting the requirements of the MS4 program. The Village has selected and implemented the following education and outreach activities and measurable goals to ensure reduction of POC's in stormwater discharges to the MEP. Measurable Goals are outlined below.

The Village of Tarrytown has recognized the following:

Pollutants of Concern (POCs):

- *Floatables & Trash Accumulation* in the storm sewer system and waterbodies.
- *Sediment*, the loose sand, clay, silt and other particles that settle at the bottom of a body of water. The EPA lists sediment as the most common pollutant in waterbodies.
- *Phosphorus & Nitrogen*. Nutrients that can cause the overgrowth of algae in waterbodies. Yard wastes (leaves and grass clippings), pet wastes, fertilizers and detergents carried through stormwater.

Geographic Areas of Concern:

- Main Corridor Business Area- For trash and sediment. Swept 6 days per week.
- Village Parks - For Trash Accumulation. No Fertilizer or Phosphorus use.

Waterbodies of Concern:

- Hudson River, Sheldon Brook & Andre Brook- For illicit discharge, trash accumulation and sediment. Multiple Village outfalls located along the Sheldon Brook and its tributaries. Andre Brook at end of conveyance system.
- Tarrytown Upper/Lower Reservoirs- For Trash, Phosphorus & Nitrogen. The Reservoirs can be described as a shallow lake bed. There are four stormwater outfalls and one inlet from the Briarcliff Manor Pump Station stormwater control, a 1.6 Acre development with one pocket wetland (W-4) constructed in 2009. The Legends at Wilson Park subdivision went under construction in 2011 and will discharge to Tarrytown Reservoirs from Water Quality Ponds 1, 4A, 4B. However, the development is being constructed with an on-site storm water management system complete with oil water separators. A covenant has been placed in the Homeowners deed and Homeowners Association documents that prohibits the use of phosphate fertilizers. Organic, non-phosphate fertilizers may be used. Stormwater entering from the surrounding area includes Marymount Campus, Sisters of Sacred Heart Marymount Convent, residential areas on Warner Lane and Lake Terrace, and a portion of the Rockefeller Estates (Village of Tarrytown Comprehensive Plan, March 2007). Outfall 27 contributes from a small culvert area to the Tarrytown Reservoirs. Improvements have included upgrading the walking trails from dirt to gravel and improving some areas of erosion around the reservoirs through a project funded by NYSDEC and matched by the Village.
- NYSDEC 303d List: In accordance with the NYSDEC's Waterbody Inventory/Priority Waterbody List, small segments of the 'Saw Mill River, Upper, and tribs' (WIN H-4) are located within and from the Tarrytown Reservoirs. These segments were 303d listed in 2010 for Chlordane, a pesticide used until 1988, with contaminated sediment listed as the suspected source. There are also some 'Minor Tribs to East of Hudson' that have been UnAssessed, as well as the Hudson River which is listed as Impaired.

Target Audiences:

- All Audiences (Homeowners, Businesses, Commercial)
- Homeowners
- Contractors

Measurable Goals to ensure POC reduction:

Trash Accumulation:

- Clean-up events by local organizations include areas of the Hudson River, Andre Brook, the Tarrytown Reservoirs, and village parks. The waterbodies are listed in the *waterbodies of concern*, identified in the SMP for floatables/trash accumulation.
- Main Corridor Business Area swept 6 days per week, and other areas swept (see Street Sweeping map).

Sediment:

- Street sweeping 6 days per week to keep sediment out of the MS4 system.

- Outreach to contractors during pre-construction meetings for sediment and Village's local law. Must have Erosion and Sediment Control training.
- Construction site inspections are conducted to reduce sediment runoff.
- LeRoy, Loh and Sheldon Avenues- For sediment. Steep slope Avenue with flooding concerns. Catch basins visually inspected frequently and prior to large storm events. Flooding will be mitigated after Loh Park is installed with a straight pipe system (currently in planning).
- Depot Plaza- For sediment. Area of lowest topography in village, more susceptible for sediment build-up. Visually inspected frequently and typically cleaned on seasonal basis.

Phosphorus & Nitrogen:

- Outreach and Education through the Village storm water website, Tarrytown Environmental Advisory Council, and outreach materials distributed at Town Hall. Outreach materials have included pesticide free lawn care, mulching in place, the leaf pick up and yard waste collection programs.
- For new developments, a covenant is placed in the Homeowners deed and in the Homeowners Association documents that prohibits the use of phosphate fertilizers.

Other Outreach and Education Materials:

- Outreach and Education materials are distributed at Town Hall for Target Audiences. Refer to the appropriate binder.

Certification of Local Laws

As required by the conditions of the NYSDEC MS4 permit, the Village of Tarrytown has enacted and adopted a Local Law for 'Village of Tarrytown Stormwater Management and Erosion and Sediment Control Local Law.' and a Local Law for 'Illicit Discharge, Elimination and Detection Local Law'. Both laws have been certified to be equivalent to the State Model law. See Appendix I.

MS4 Annual Reports and related correspondence

MS4 Annual Reports and related correspondence (Public Notices, notifications, etc) will be maintained on-file under the corresponding reporting year. Prior to submitting the Annual Report, the Village will present the draft annual report in a format open to the public where they can ask question and make comments per Part VII.A.2.d of the permit. Public notice will be made in accordance with local requirements, and retained with MS4 records.