

Stormwater Training

Town of Yorktown
February 15, 2012



Cornerstone
ASSOCIATES

Summary of Today's Training

- **Stormwater Review**
 - 6 Minimum Measures
 - Minimum Measure 3: Illicit Discharge Detection and Elimination (IDDE)
 - Minimum Measure 6 – Good Housekeeping
 - Heightened Requirements/Phosphorus
- **New Developments**
 - Septic Law May 2011
 - Retrofits 2012
 - Banning Phosphorus Containing Fertilizers
- **Questions**

STORMWATER REVIEW

Municipal Separate Storm Sewer System (MS4)



- A conveyance or system of conveyances owned by a state, city, town or other public entity that discharges to waters of the U.S. and is:
 - Designed and used for collecting or conveying stormwater
 - Not a combined sewer
 - Not part of a Publicly Owned Treatment Works (POTW)

NYSDEC Stormwater Regulation

Permit Requirements: 6 Minimum Measures

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

**Town of Yorktown also regulates stormwater (chapter 248) and illicit discharges (chapter 247)*

ANNUAL REPORT

- Submit annual report to NYS June 1st
 - Six Minimum Measures
 - Heightened Requirements for East of Hudson (EOH) Watershed
 - Reporting period: March 8th - March 9th
 - Presented every year at town board meeting, posted on town stormwater website page

Minimum Measure 3: Illicit Discharge Detection and Elimination

A discharge to an MS4 that is not composed entirely of stormwater.

- **Exception:** permitted discharges and fire fighting related discharges
 - Unique frequency, composition and mode of entry



The Main Contributors

- Sanitary wastewater
- Effluent from septic tanks
- Car wash wastewaters
- Improper oil disposal
- Household toxics
- Laundry wastewater
- Radiator flushing disposal
- Spills from roadway accidents



Town of Yorktown Procedure

What to do when you find what you think might be an illicit discharge?

- Call the Town of Yorktown Code Enforcement Officer

**The Town of Yorktown is responsible for determining if illicit discharges have been corrected.

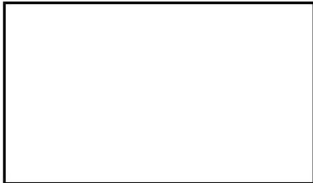
Minimum Measure 6: Good Housekeeping

We report on:

- Acres of parking lot swept
- Miles of streets swept
- Number of catch basins inspected
- Post-construction control stormwater management practices inspected and, where necessary, cleaned
- Amount of fertilizers used on municipal property

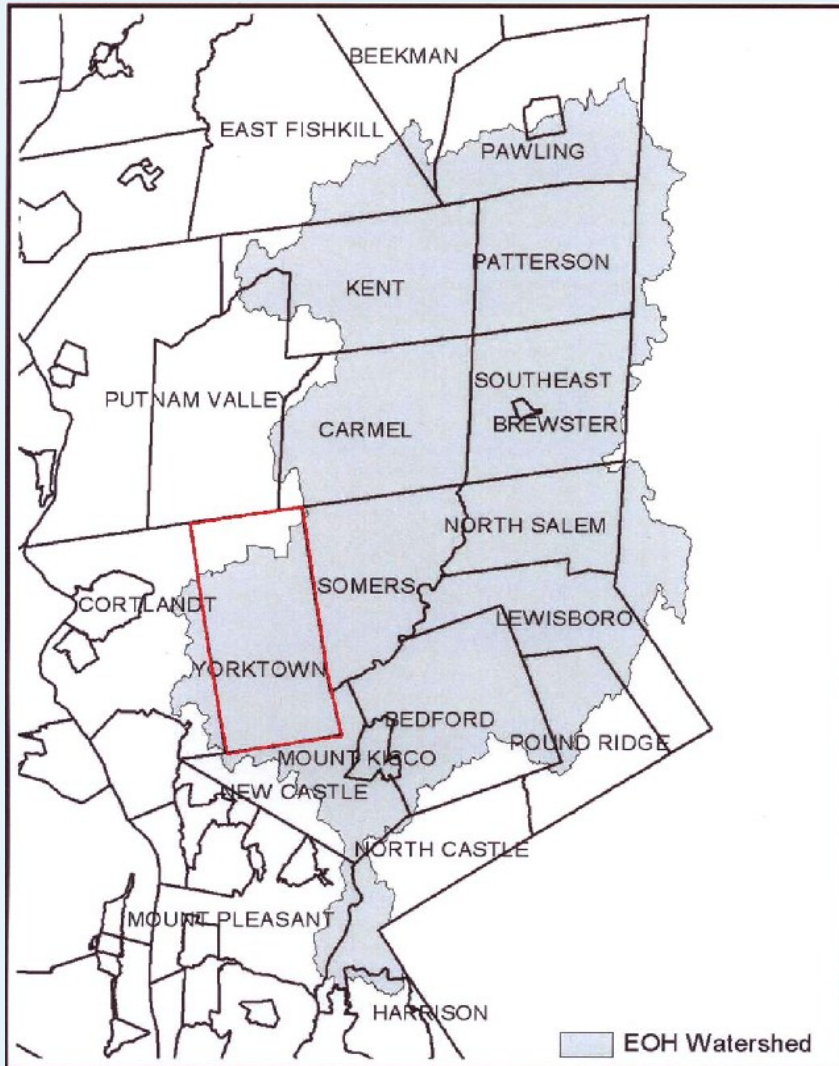
Catch Basin Cleaning Form

TOWN OF YORKTOWN CATCH BASIN INSPECTION FORM

BASIN #:					
INSPECTOR NAME:		DATE:	TIME:		
STREET ADDRESS:					
WEATHER:	<input type="checkbox"/> Dry	<input type="checkbox"/> Wet	<input type="checkbox"/> Light Rain	<input type="checkbox"/> Heavy Rain	<input type="checkbox"/> Snow
GRATE SIZE	_____ X _____				
CLEANED	<input type="checkbox"/> YES	<input type="checkbox"/> NO			
DEPTH OF SEDIMENT	<input type="checkbox"/> 1/4	<input type="checkbox"/> 1/2	<input type="checkbox"/> 3/4	<input type="checkbox"/> FULL	
ILLICIT DISCHARGES: <input type="checkbox"/> YES <input type="checkbox"/> NO IF YES, DESCRIBE:					
OTHER MAINTENANCE REQUIRED/NOTES:					
DESCRIPTION/SKETCH: Include number of pipes in and out, pipe size and material					
12 O'Clock					
					

*12 O'Clock indicates the location of the outflow pipe

NYC Watershed



-10% NYC Drinking water from EOH

-Yorktown Water District

- Approx 10,000 accounts

- Water from Catskill aqueduct and Amawalk Reservoir

-Heightened Requirements

- Phosphorus

Phosphorus Impacts

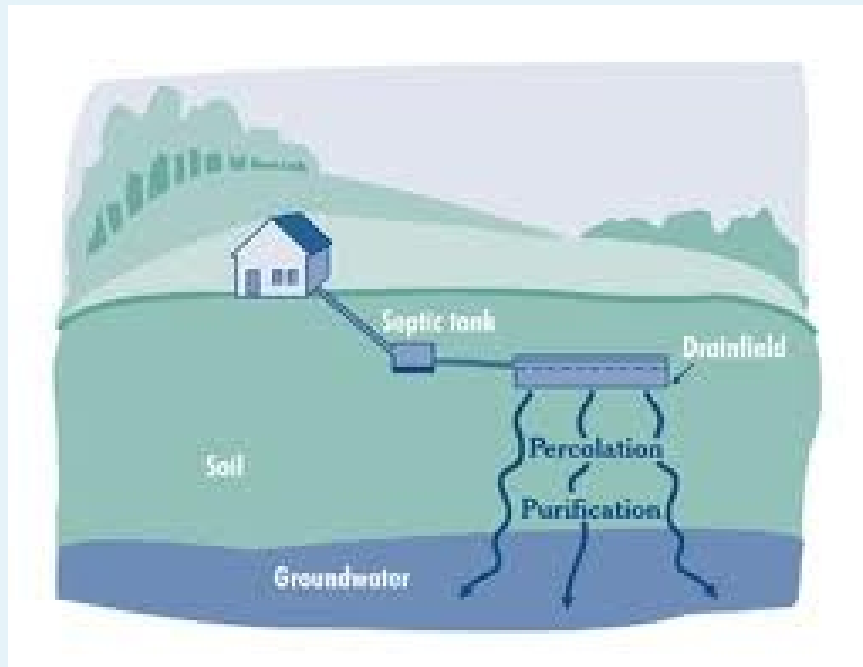
- **Excess Phosphorus causes:**

- algae blooms,
- excessive weed growth,
- decreased water quality,
- Decreased water recreation,
- negative impacts on fish, plant, animal life.



NEW DEVELOPMENTS

SEPTIC LAW 2011



Property owners with on-site wastewater treatment systems (septics) must have their septics inspected at a minimum of once every 5 years.

5 YEAR EOH RETROFIT REQUIREMENTS

- Yorktown phosphorus reduction (54 kg/5 yr)
- Part of Intermunicipal Corporation (IMA)
 - Retrofit installation
- About \$40M OVER 3 YEARS

Table 3: High Intensity Development Retrofit Phosphorus Reduction Targets by MS4 (kg/yr)

MS4	Five Year Phosphorus Reduction	Annual Phosphorus Reduction
Bedford	32.2	6.5
Beekman	1	0.2
Brewster	9.2	1.8
Carmel	72.0	14.4
Cortlandt	11.6	2.3
East Fishkill	3.2	0.6
Kent	33.6	6.7
Lewisboro	35.5	7.1
Mount Kisco	18.7	3.7
New Castle	25.1	5.0
North Castle	1	0.2
North Salem	19.1	3.8
Patterson	17.2	3.4
Village of Pawling	4.3	0.9
Town of Pawling	3.5	0.7
Pound Ridge	9.5	1.9
Putnam Valley	1	0.2
Somers	50.0	10.0
Southeast	31.1	6.2
Yorktown	54.0	10.8
Dutchess County	3.1	0.5
Putnam County	30.9	6.2
Westchester County	8.2	1.6
NYS DOT	126.1	25.2

WHAT IS A RETROFIT?

- Stormwater practices installed to treat stormwater runoff from existing developed areas.
- Retrofit plan was developed in 2009 that was approved by NYSDEC
 - Implementation of stormwater retrofits in each town through 2015

TYPES OF RETROFITS

Types of Retrofits

- Pond
- Wetland
- Infiltration
- Filtering Practices
- Open Channels



Ponds



- Micropool Extended Detention Pond
- Wet Pond
- Wet extended detention pond
- Multiple pond system
- Pocket pond



Wetlands



- Shallow Wetland
- Extended detention Wetland
- Pond/Wetland System
- Pocket Wetland system
- Pocket wetland



INFILTRATION

Infiltration trench

Infiltration basin

Dry Wells

Hydrodynamic Separator



Filtering Practices

Surface sand filter

Underground sand filter

Perimeter Sand filter

Organic Filter

Bioretention



Open Channels

Dry Swale

Wet Swale



YORKTOWN APPROVED RETROFITS

Approved Year 3 Retrofits:

- Sparkle Lake
 - Swale
 - Hydrodynamic separator
- Environmental Conservation/Police Dept
Parking Lot

Year 3 Retrofit Locations



Operations and Maintenance

- Dry Weather Testing/IDDE inspection
 - 20% outfalls annually
- Outfall map
 - EOH – Entire sewer shed
- Inspect a reasonable percentage of catch basins per year; if 50% full require cleaning
 - West Nile virus tablets
- Stormwater Basins
 - Require inspection and maintenance yearly





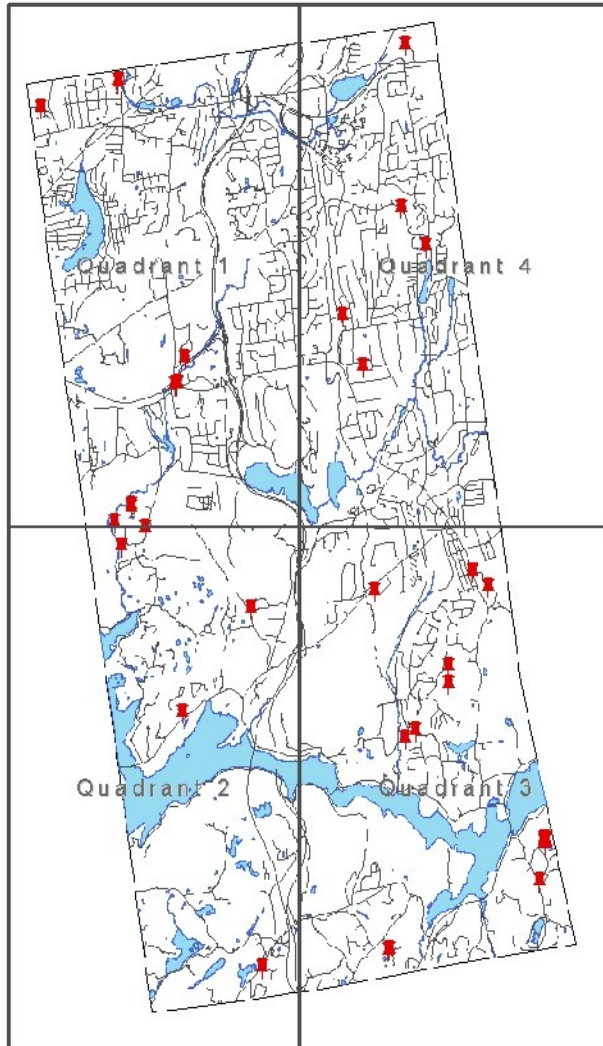
Stormwater Basin Inspection Form

Site/Location	Cranberry Lane, Yorktown Heights NY
Inspection Date	July 28, 2010
Inspector	Cornerstone Associates
Basin ID	CL2
Summary	

Criteria	Satisfactory/ Unsatisfactory	Comments
Access	S	
Vegetation	S	
Spillway	S	
Inlet (s)	S	
Outlets	S	
Erosion	S	
Dams	S	
Debris/Sediment Accumulation		
Other		

Comments/Maintenance Requirements:

Town of Yorktown Stormwater Basin Locations



0 0.5 1 2 Miles

Currently
Mapped
Stormwater
Basins

NEWLY FORMED YORKTOWN STORMWATER COMMITTEE

- Town Supervisor
 - Town Engineer
 - Town Planner
 - Building Inspector
 - Stormwater Manager
 - 2 at large members
 - Highway Department
- Monthly meetings:
-discuss issues in order to efficiently implement stormwater permit

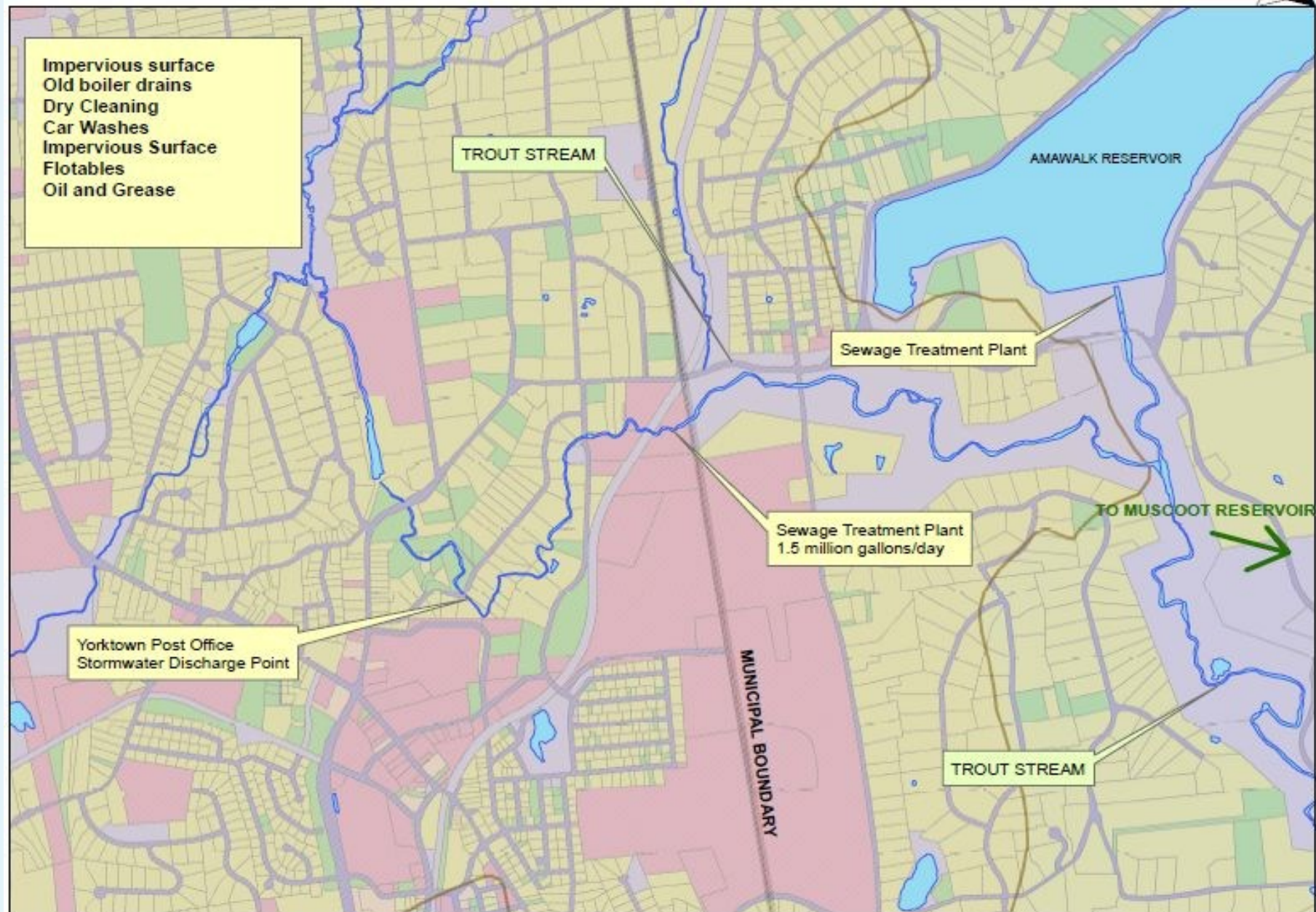
DRINKING WATER

Town of Yorktown
Water Department
services
approximately
10,000 accounts.
The main sources of
water are the
Amawalk Reservoir
and the New York
City Aqueduct from
the Catskills.



Potential Pollutant Sources Example

WHAT ARE SOME POTENTIAL POLLUTANT SOURCES?



Town of Yorktown Stormwater Contacts

- Michael Grace – Stormwater Management Officer: 962-5722 x200
- Code Enforcement 962-5722 x233
- Bruce Barber (Stormwater Consultant): 914-962-7733

Questions

- Bruce Barber, Cornerstone Associates
 - 914-962-7733 Phone
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 - barberbruce@yahoo.com