

NEW YORK CITY
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WATER SUPPLY

Annual Report

East of Hudson Nonpoint Source
Pollution Control Program

January 2011

*Prepared in accordance with Section 4.9 of the New York City Filtration
Avoidance Determination, July 2007*

This report discusses the status of the components of the East of Hudson Nonpoint
Source Pollution Control Program for 2010.

Prepared by the New York City Department of Environmental Protection

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1.0 Introduction

The East of Hudson Nonpoint Source Pollution Control Program (Program) is a comprehensive effort to address nonpoint pollutant sources in the four East of Hudson (EOH) Catskill/Delaware (CAT/DEL) watersheds¹. The Program supplements DEP's existing regulatory efforts and nonpoint source management initiatives. The Program generates data on the watershed and its infrastructure and uses that information to evaluate, eliminate and remediate existing nonpoint pollutant sources, maintain system infrastructure, and evaluate DEP's programs.

2.0 Wastewater-Related Nonpoint Source Pollution Management Programs

Nonpoint sources of wastewater may include exfiltration or other releases from defective sewer lines, failing septic systems and illicit connections to the stormwater collection system. The four target watersheds contain twelve wastewater treatment plant discharges and a system of sewer infrastructure within several sewer districts. Outside of the existing sewer districts, wastewater is treated by subsurface sewage disposal systems (SSDS).

2.1 Wastewater Infrastructure Mapping and Inspection Program

To locate and characterize the sanitary infrastructure in the four basins, DEP funded a program to video inspect and digitally map the sanitary infrastructure. The inspection program assesses defects and identifies those that may result in exfiltration of effluent. Digital mapping data is being collected for system maintenance. Digitized data includes sewer pipe size, estimated age, composition, and precise location; manhole location, size and estimated age; pump station locations, size and flow capacity; interceptor sewer location, size, estimated age, and other pertinent data concerning cross and illicit connections.

The program will develop:

- digital maps of the sewer infrastructure and their ownership;
- a database of the system's make up linked to the digital maps; and
- a summary report that identifies cross connections, illicit connections, pump station failures and defects that may lead to exfiltration of wastewater.

DEP awarded the contract to inspect and map of sanitary infrastructure in the EOH CAT/DEL basins in 2009. DEP has registered a change order to increase quantities to complete the task of cleaning and television inspection of the sanitary systems. All televised inspection and cleaning of the sanitary infrastructure is complete.

DEP awaits the submittal of the Comprehensive Summary Report, which compiles the information obtained as part of the sewer pipe cleaning/video inspection/digital mapping of the sanitary lines and will be used to determine rehabilitation methods along with the submittal of the digital data in the specified format to be used to compile maps of the sanitary sewer infrastructure and defect locations. Once the inspection and mapping are complete, DEP will coordinate the remediation of any identified failures with the responsible entity.

¹ The east of Hudson Catskill and Delaware reservoirs include West Branch, Croton Falls, Cross River and Boyd Corners.

2.2 Septic Program East of Hudson

During the reporting period, DEP approved the use of an additional \$100,000 in EOH Water Quality Investment Program (WQIP) funds pursuant to Section 140 of the 1997 MOA to support Westchester County's ongoing Septic System Management Program (SSMP). This funding was approved pursuant to a Memorandum of Understanding between DEP and Westchester County for the 2010-11 program year. DEP continued to assist Westchester County Health Department staff in their efforts to complete a comprehensive SSMP database, which would include information on new septic applications, septic repairs/remediation, and pump out data as well as contractor licensing information.

3.0 Stormwater-Related Nonpoint Source Pollution Management Programs

3.1 Stormwater Retrofit and Remediation

In an effort to further reduce pollutant loading from stormwater runoff, DEP is working on multiple nonpoint source reduction projects within the EOH CAT/DEL basins. These projects include large retrofit and remediation projects as well as remediation of smaller erosion sites (see Figure 1).

3.1.1 Stormwater Retrofit Projects

DEP has completed the project work for the reconstruction of both Hemlock Dam Road and Magnetic Mine Road.

3.1.2 Stormwater Remediation Projects

Remediation Projects on City-Owned Property

Maple Ave, Town of Bedford, Westchester County: DEP's consultant is working on 100% design documents.

Michael Brook, Town of Carmel, Putnam County: The consultant has finished the 100% design documents.

Drewville Road, Town of Carmel, Putnam County: DEP's consultant is working on 100% design documents. There is an issue with the potential presence of endangered vegetation at this site. It is anticipated that the issue will be resolved during the next reporting period. Depending on the presence of endangered vegetation at the site, a separate contract may be needed to address the issue.

Remediation Projects on Privately-Owned Property:

Sycamore Park, Long Pond Road/Crane Road Town of Carmel, Putnam County: The consultant has finished the 100% design documents. There is an issue with the potential presence of bog turtle habitat at this site. It is anticipated that the issue will be resolved in the next reporting period.

Nemarest Club, Town of Kent, Putnam County: The consultant has finished the 100% design documents. Submittal of the 100% design documents is pending the signed access agreement by the Nemarest Club owner.

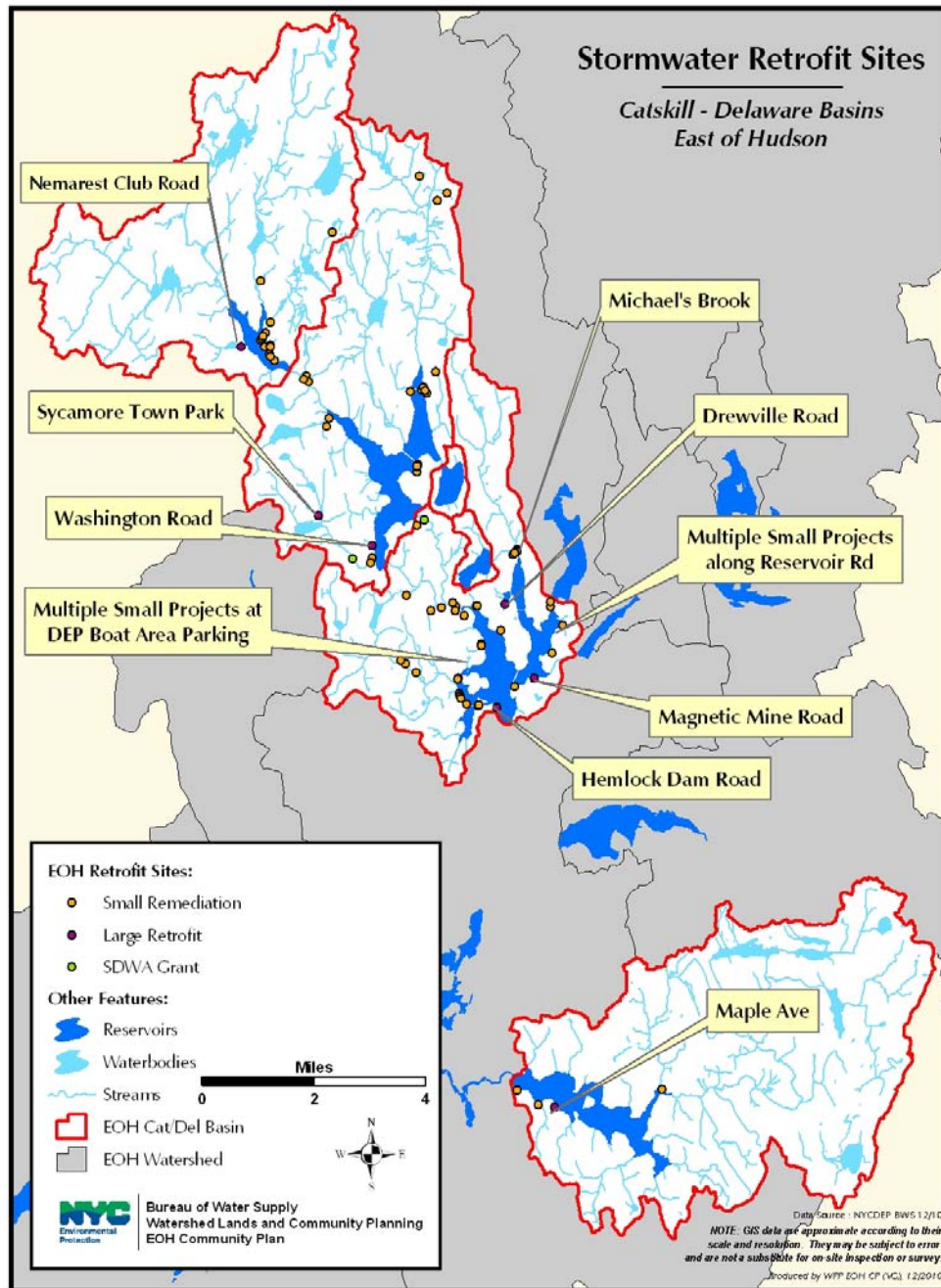


Figure 1. Stormwater Remediation and Retrofit Sites

3.1.3 Stormwater Remediation Small Projects

The *Small Stormwater Remediation Projects Program* (Small Projects Program) involved the identification and remediation of smaller erosion sites in the four EOH CAT/DEL basins. Typical erosion abatement includes embankment stabilization, headwall repair, road drainage improvements, installation of stabilized outlet controls, and renovating dirt/gravel parking areas.

DEP completed construction of the required sites in late 2009. In accordance with operation and maintenance protocols, DEP's continues to inspect, monitor and maintain the completed project sites.

3.2 Facility Inspection and Maintenance

The facility inspection and maintenance program was developed in order to ensure that previously constructed remediation facilities continue to function as designed. New facilities continue to be added to this contract for inspection and required maintenance. The stormwater facilities and spill containment areas continue to be inspected and maintained. Inspection and maintenance follows procedures identified in the Operation and Maintenance Guidelines (DEP, 2000 revised in 2003).

Repairs and maintenance activities during 2010 consisted of the following: remove and dispose of dead trees and unwanted vegetation; remove sediment from basins, basin forbays, catch basins and stone lined swales; eliminate basin outlet clogs; seed and mulch; repair fences and riprap; and maintain sand filters.

3.3 Stormwater Infrastructure Mapping and Inspection Program

DEP completed the mapping and video inspection of approximately 146,000 linear feet of stormwater infrastructure in the West Branch and Boyd Corners Reservoir Basins. Digital data included stormwater pipe size, material and location, catch basins, manholes, culverts and outfalls. The digital mapping from the program has been added to DEP's GIS system.

3.4 Stormwater Infrastructure Capacity Evaluation

With the completion of the digital mapping and inspection program, DEP has finalized its study to evaluate the adequacy of stormwater infrastructure located in proximity to EOH CAT/DEL reservoirs. All available data was evaluated and organized; the infrastructure analyses were performed using hydrologic computer modeling software; and a prioritization criteria was developed. The resulting report is titled "*Stormwater Infrastructure Screening Analysis Summary of Results and Recommendations, April 2010*" (Report). In addition to assessing the capacity of existing piping, swales, and drainage structures to safely convey stormwater to receiving waters, the Report offers recommendations concerning appropriate maintenance and corrective measures, where necessary, that may enhance water quality. The Report, including pertinent mapping information, will be shared with the agencies responsible for maintenance of the drainage systems.

3.5 Stormwater Prioritization Assessment - DEP Properties

Using information gathered from DEP's implementation of retrofit and remediation projects, DEP developed prioritization criteria for potential future stormwater projects that could be located on City-owned property. Information that was used in generating the prioritization included the East of Hudson Watershed stormwater mapping, existing GIS data layers (e.g. impervious surface) and the prioritization determination developed through the Croton Watershed Strategy. Four sites were identified during the analysis. One of the four sites has been completed. DEP is assessing the feasibility of constructing stormwater retrofits at the other three sites.

3.6 Funding Program - Croton Falls/Cross River

In the first half of 2010, DEP met with stakeholders to discuss the on the Program Rules that are the foundation for the stormwater grant program. Based on these discussions, DEP amended and then circulated the final Program Rules. Several categories of allowable in-kind services were added and Program limits on eligible design and land acquisition costs were increased. In June 2010, DEP issued a notification letter to each municipality in the EOH watershed notifying them of the revisions, providing an updated copy of the Program rules, and setting an August 2010 deadline for submission of applications. In response to requests from several municipalities to extend the deadline beyond August 2010, DEP amended the deadline to submit applications to December 2010.

In December 2010, the New York State Department of Environmental Conservation (NYSDEC) issued a water supply permit. That permit includes provisions that required DEP to again extend the deadline for submitting grant applications under this program.

4.0 Other Activities

Croton Watershed Strategy

The primary goal of the Croton Watershed Strategy project was to develop an integrated watershed management plan for the Croton System which would allow DEP to optimize management efforts and focus limited resources on critical areas to achieve maximum water quality benefit. The results were compiled in a series of documents and released in March 2003 as a FAD Deliverable (DEP, 2003).

The Croton Watershed Strategy results have been used as guidance in several DEP management programs and SEQRA reviews of new development projects. The Croton Watershed Strategy was also used in response to a request from Putnam County to assist in prioritizing a phased approach for their Septic Repair Program. In 2010, the Croton Watershed Strategy was used in the development of the prioritization criteria for the capacity evaluation of stormwater infrastructure.

Croton Planning

Pursuant to Paragraph 138 of the 1997 MOA, the City, Westchester County and Putnam County agreed that a cooperative comprehensive approach to watershed planning in the Croton System would serve to identify significant sources of pollution in the Croton Watershed, recommend measures to improve water quality, and protect the character of Croton Watershed communities. Both Westchester and Putnam Counties requested that such planning efforts be undertaken in their respective counties. DEP committed to provide \$1 million to both Westchester County and Putnam County for the total costs and expenses of conducting such a study.

Putnam County and Westchester County sought to complete Croton Planning under the same timeframe in order to enable the public comment periods to be coordinated and simultaneous. Putnam County prepared a draft plan several years ago. Since municipal leadership has since changed, it is anticipated that revisions to the document might be needed before the current municipal leaders address Croton Planning in Putnam County. Westchester County released the final version of the *Comprehensive Croton Watershed Water Quality Protection Plan for Westchester County* in 2009. The County and municipalities are in the process of reviewing and formally adopting the Plan.