

**NEW YORK CITY**  
**DEPARTMENT OF ENVIRONMENTAL PROTECTION**  
**BUREAU OF WATER SUPPLY**

**Kensico Water Quality Control Program**  
**Semi-Annual Report**

**January 2013**

*Prepared in accordance with Section 4.10 of the New York City Filtration  
Avoidance Determination, July 2007*

This report discusses the status of the components of the Kensico Water Quality Control Program during 2012.

Prepared by the New York City Department of Environmental Protection

## **1.0 Introduction to Kensico Watershed Programs**

Kensico Reservoir, located in Westchester County, is the terminal reservoir for the City's Catskill/Delaware water supply system. Because it provides the last impoundment of Catskill/Delaware water prior to entering the City's distribution system, DEP has prioritized watershed protection in the Kensico basin.

### **1.1 Stormwater Management and Erosion Abatement Facilities BMP Construction, Operation, and Maintenance**

DEP constructed 45 stormwater management and erosion abatement facilities throughout the Kensico watershed to reduce pollutant loads conveyed to the reservoir by stormwater (see Figure 1). The facilities were routinely inspected and maintained as needed throughout the year. Maintenance and inspections were completed in accordance with the Operation and Maintenance Guidelines.

Routine inspections found that typical maintenance such as grass mowing, vegetation removal, tree removal, sediment and debris removal were necessary and completed. None of the maintenance items appeared to compromise the effectiveness of the stormwater facilities.

Following Tropical Storms Irene and Lee in 2011, DEP hired a consulting firm to assess the water quality conditions and operational response in Kensico. The report entitled "Kensico Reservoir Watershed Assessment, Fecal Coliform Occurrence, and Operational Response During and after Tropical Storms Irene and Lee (May 2012)" included several recommendations for DEP.

In response to the Report's recommendation to inspect and clean-out the Stormwater Management and Abatement Facilities before hurricane season, DEP performed inspections and sediment/debris removal, as necessary, of extended detention basins, catch basins, and swales before, during, and after hurricane season. Particular attention has been given to facilities in sub-basins within the southwest portion of the Kensico basin.

#### **1.1.2 Spill Containment Facilities**

DEP installed, and now maintains, spill containment facilities in and around Kensico Reservoir (see Figure 1). The facilities improve spill response and recovery, thereby minimizing water quality impacts in the event of a spill. In 2012, routine maintenance was completed at the spill boom sites. No spills were reported during the reporting period.

#### **1.1.3 Turbidity Curtains**

DEP continues to monitor the extended primary curtain and the back-up turbidity curtain, designed to direct flows from Malcolm and Young Brooks further out to the body of the reservoir and to provide enhanced protection of the water entering the Catskill Upper Effluent Chamber (CATUEC). DEP's diving contractor performed inspections of both turbidity curtains in October 2012. Based on these inspections, no repair work was required and the turbidity curtains appear to be functioning as intended.

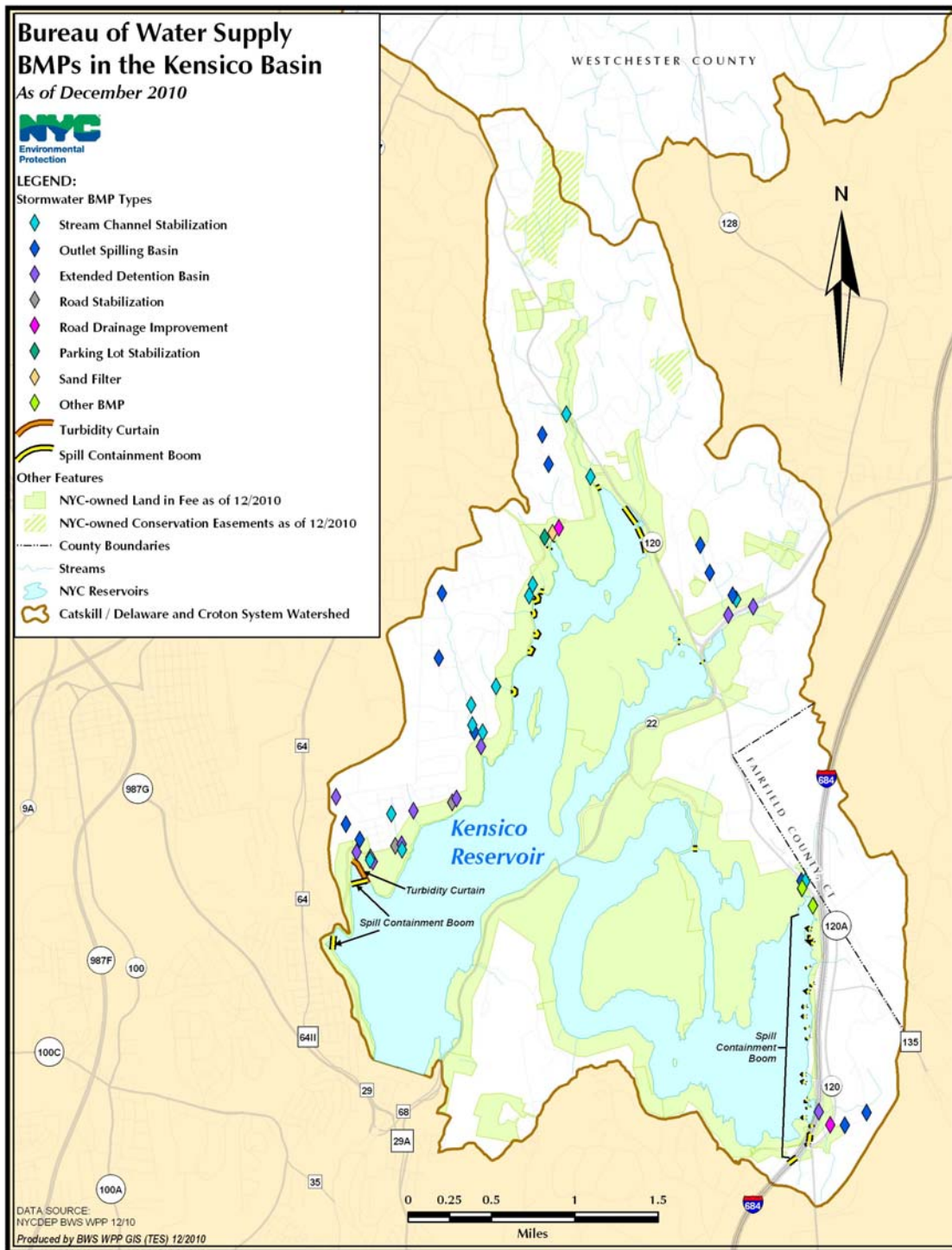


Figure 1. Location of nonpoint source management facilities in Kensico watershed

## 1.2 Kensico Action Plan

During 2012, DEP continued progress on the implementation of the four project sites that were identified in the Kensico Action Plan. A summary of progress and current site status is as follows:

### N1 - West Lake Drive Drainage Improvements:

Work at the N1 site was completed in 2012. Activities included installation of two new catch basins, replacement of pipe culvert with 30" reinforced concrete pipe, rip-rap channel reconstruction, temporary dewatering, bypass, sediment control measures, and re-seeding.

### N7 - Sub-Basin Pipeline System:

Work at the N7 site included clearing, construction of a stormwater bypass, field sampling, and geotechnical evaluation. It is anticipated that the proposed pipeline system will be installed in the first half of 2013.

### N12 - Extended Detention Basin:

Work at the N12 site consisted of site clearing and geotechnical investigations. Results of the geotechnical investigation indicated the need for design changes to the proposed basin, which necessitated a change order to the construction contract. It is anticipated that the change order will be registered in the first half of 2013 with construction to follow shortly thereafter.

### Whippoorwill Stream Rehabilitation:

Construction work at the Whippoorwill site was completed in 2012. Activities included construction of a temporary access road, installation of stream bed rock structures, temporary dewatering, bypass, and sediment control measures, and site restoration. It is anticipated that planting and seeding will be completed in the first half of 2013. Photographs of work at the Whippoorwill site are below.



Seeding and mulching at Whippoorwill



Log vane structure at Whippoorwill



Rock cross vane at Whippoorwill

### **1.3 Westlake Sewer**

The Westlake Sewer Trunk Line, owned and maintained by the Westchester County Department of Environmental Facilities (WCDEF), conveys untreated wastewater to treatment facilities located elsewhere in the county. Given the proximity of the collection system to Kensico Reservoir, potential defects or abnormal conditions within the sewer line and its components could lead to exfiltration or overflows of wastewater. The intent of this program is to work with the County to mitigate risks posed by the line.

### **1.3.1 Sanitary Sewer Remote Monitoring System**

DEP proposed a sanitary sewer remote monitoring system for the West Lake Sewer Trunk Line in order to provide real-time detection of problem events such as leaks, system breaks, overflows, and blockages. DEP issued the Order to Commence Work in January 2012 to WCDEF. The Smart Cover technology for remote monitoring of manholes in the West Lake System was completed in July 2012. Staff completed several inspections of the various remote monitoring units since July. A site visit to one of the completed manholes was done with staff from USEPA and NYSDOH in September 2012. WCDEF has responded to the call outs to verify operations of the sewer collection line. There have been no issues or overflows to report. The remote monitoring units appear to be working well.

### **1.3.2 Sewer Line Visual Inspection**

DEP conducts an annual visual inspection of the trunk line in order to assess the condition of exposed infrastructure, including manholes, for irregularities. The annual full inspection was performed in May 2012. Partial inspections were conducted throughout the year in association with ongoing maintenance of Kensico stormwater BMPs in the vicinity of the line. No defects or abnormalities have been noted.

### **1.4 Video Inspection of Sanitary Sewers**

DEP completed the project to inspect portions of the sanitary sewer system located within the Kensico watershed in 2011. None of the inspected pipe sections demonstrated any significant defects or deterioration, failure is unlikely in the foreseeable future. No additional work was necessary in 2012.

### **1.5 Septic Repair Program**

During the 2012 Program year construction was completed at nine sites. Six of the sites were for the repair of the subsurface treatment system (SSTS). One site included the remediation of the SSTS. Two of the sites called for the connection of the properties to municipal sewer lines.

In October 2012, NYS EFC mailed an annual reminder letter to eligible residents notifying them of the continuing availability of funding. Based on responses to that mailing, EFC continues to update the database and sign interested participants into the program as appropriate. Figure 2 shows the sewage service status of each parcel based on resident responses and other available records.

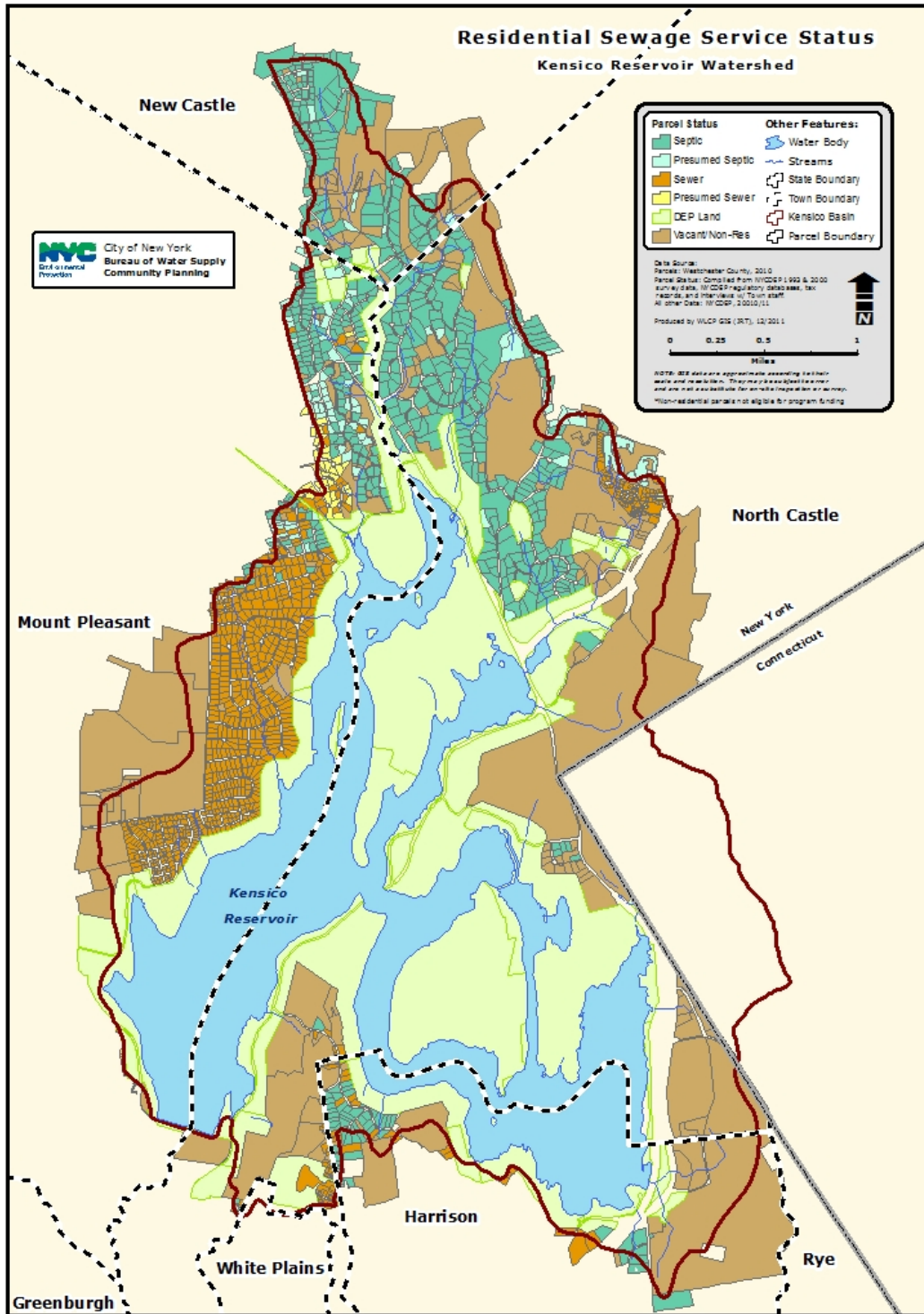


Figure 2. Projected sewage service status of residential parcels in the Kensico watershed

### **1.6 Turbidity Reduction/Shoreline Stabilization**

CATUEC is situated along the shore of a cove in the southwest section of Kensico Reservoir. DEP will be constructing a shoreline stabilization project located south of CATUEC in order to mitigate the erosion and possible resuspension of near-shore materials near CATUEC during wind events. During the reporting period, DEP worked to secure the permits required to mitigate the potential impact to wetlands of a shoreline project. DEP secured the USACOE Individual Permit in June 2012.

### **1.7 Route 120**

The New York State Department of Transportation completed a project to resurface I-684 and construct stormwater treatment basins in the I-684 median from just south of the new Lake Street overpass in New York northward to the bridge over Tamarack Swamp in Connecticut. All of the project items listed above are complete.

### **1.8 Westchester County Airport**

The Westchester County Airport is located east of Kensico Reservoir in close proximity to Rye Lake. As such, DEP continues to review any activities that are being proposed at the airport. There was no activity to report during the reporting period.