



June 25, 2015

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Dear Dr. Young and Mr. Sweeney:

Enclosed is the DEP Response to NYSDOH/EPA Comments on the 2014 FAD Annual Report submitted March 31, 2015, in accordance with the Revised 2007 Filtration Avoidance Determination (FAD).

As always, if you have any questions about these comment responses or other aspects of the City's watershed protection efforts, please do not hesitate to contact me.

Sincerely,

**David S. Warne**  
Assistant Commissioner

**DEP Response to NYSDOH/EPA Comments on the FAD Deliverable Reports  
Submitted March 31, 2015  
2014 FAD Annual Report  
Response Date June 25, 2015**

**11. Reporting**

The Filtration Avoidance Annual Report for the period January 1 through December 31, 2014, was submitted as required by Section 11 of the Revised 2007 FAD. The report summarizes the activities and achievements of NYC's FAD programs for the reporting period, and, in general, demonstrates NYCDEP's compliance with FAD requirements. Compliance with specific one-time FAD requirements may be reported separately. NYSDOH/USEPA comments are provided for individual FAD program areas below. (Note: section numbers refer to numbers in the Annual Report, not to FAD sections/programs. To assist the reader, NYSDOH suggests for future reports that report section numbers correspond to, or cross reference, FAD section/program numbers.)

**DEP Response:**

**Comment noted.**

**2. SWTR Filtration Avoidance Criteria Requirements**

Monitoring and reporting have been completed as required for the reporting period. All Surface Water Treatment Rule (SWTR) filtration avoidance water quality requirements were met. Raw water fecal coliform concentrations were well below the criterion for filtration avoidance; the six-month running percentages of samples that had equal to or less than 20 fecal coliform in 100 milliliters never fell below 99.5% (SWTR limit is 90%). In addition, raw water turbidity was well below the 5 NTU limit, measuring 2.4 NTU or less in samples collected every 4 hours. The highest monthly percentage of positive total coliform samples collected in NYC's distribution system was 2%, which is within the 5% limit.

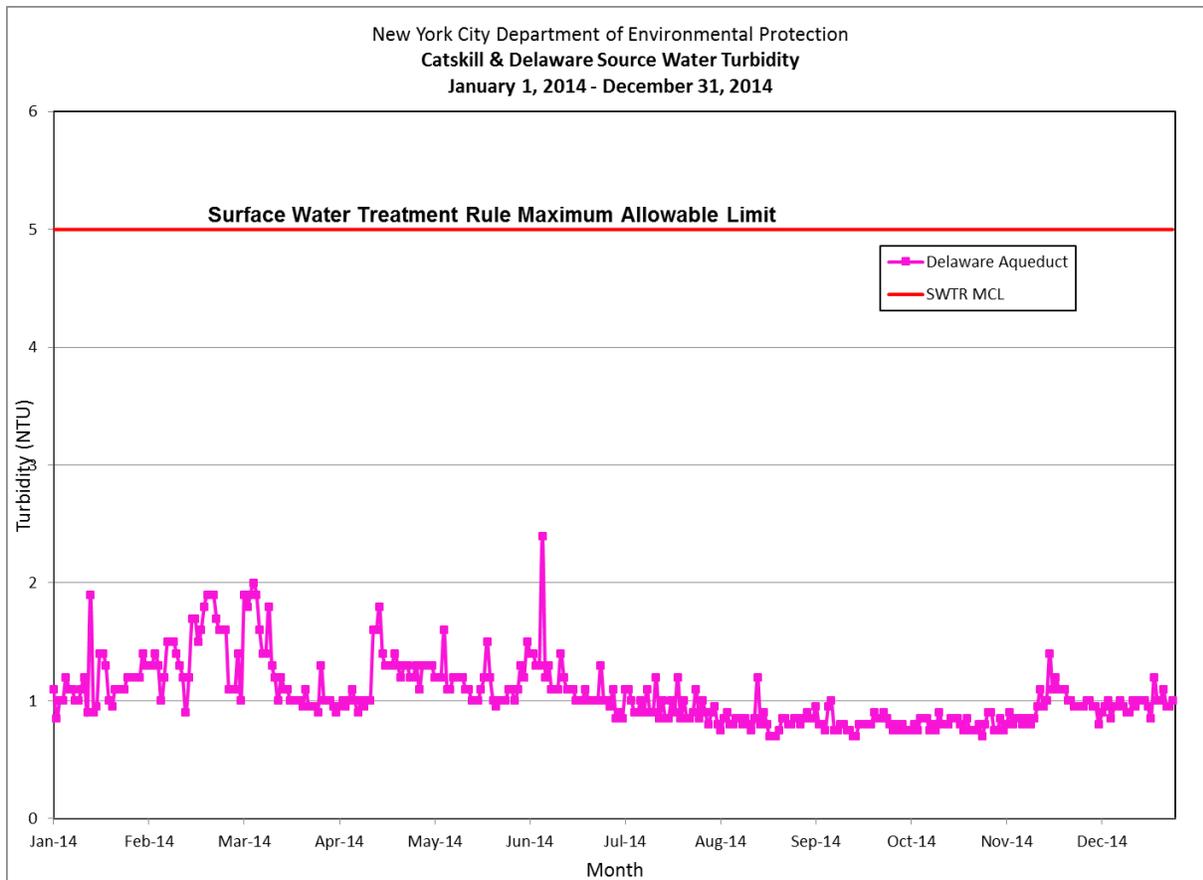
**DEP Response:**

**Comment noted.**

**2.1.2 Raw Water Turbidity.** Figure 2.2 depicts Delaware Aqueduct turbidity for 2014. The x-axis does not appear to be scaled correctly, as it overlooks March, June, August, and November. However, the data points appear accurate, including the peak entry point turbidity of 2.4 NTU measured in the 12:00PM sample on June 9, 2014.

**DEP Response:**

**All the data from the 2014 calendar year are included in the chart. Because the chart contains data for each day of the year, the x-axis labels major units were set to 50 (automatically by Excel), so not all the dates appeared. Attached is an updated chart with revised labels for the x-axis.**



### **3.1 Septic Programs**

**3.1.1 Septic Rehabilitation and Replacement Program.** It is noted that in 2014, the program funded the repair or replacement of 236 septic systems in the West of Hudson Watershed. While this number is similar to what was accomplished in 2011 (227 systems), it is down 15-20% from the past two years. Does DEP anticipate that the November 2014 expansion by CWC of the Priority Area Program to include systems up to 700 feet from a watercourse will increase program participation?

**DEP Response:**

**There are approximately 16,850 septic systems located within 300 feet of a watercourse. There are approximately 4,000 septic systems within 300 - 700 feet of a watercourse. This results in nearly 25% more eligible septic systems. This may result in a slight increase in participation for the next few years before returning to a similar level. Overall, there has been annual variability in the number of systems repaired and it is anticipated that trend will continue.**

Also, does DEP have an estimate of the number of failing or likely-to-fail septic systems located between 300-700 feet of a watercourse?

**DEP Response:**

**DEP does not have an estimate of the number of failing or likely-to-fail septic systems located between 300 - 700 feet of a watercourse. Failures are identified through the implementation of the Septic Program that is largely driven by voluntary participation of residents and outreach by CWC.**

**3.1.2 Septic Maintenance Program.** NYSDOH/USEPA note the continuing increase in participation in this program, with the number of subsidized septic pump-outs having increased by 17% from 2013 to 2014.

**DEP Response:**

**Comment noted.**

**3.2 Community Wastewater Management Program.** NYSDOH/USEPA note the final completion of the Trout Creek project, which was a deliverable in the Revised 2007 FAD. Is this treatment system operational?

**DEP Response:**

**Yes, the project is completed and the system is operating.**

Progress was made on the Lexington and South Kortright projects. The milestone date for completing construction of the South Kortright project was December 31, 2014. This date was missed due to unanticipated delays encountered in negotiating several project-related agreements. What is the anticipated date for completing construction at South Kortright?

**DEP Response:**

**The system components are anticipated to be completed by the end of 2015. Connections to individual homeowners are anticipated to occur in the first half of 2016 following performance testing.**

**4.2 Land Acquisition**

Please provide a brief update on the Watershed Agricultural Council's forest conservation easement program.

**DEP Response:**

**Following registration of WAC's Forest CE Program in 2013, the program was accelerated during 2014 with the drafting of a number of fundamental program documents, including a revised Purchase Contract and several necessary guidelines (Easement Amendments and Forest Harvest Plans during 2014, with others completed during early 2015), all of which have allowed solicitations to begin in earnest during 2015. During the first half of 2015, WAC implemented plans and guidelines established during 2014 to solicit 97 properties (20,700 acres) for Forestry CEs. As of mid-2015, a total of six landowners (800 acres) had responded with interest.**

**4.2.4 Technical Program Improvements.** For the Pilot Riparian Buffer Acquisition Program, please confirm that the contract to manage the program has been awarded to the Catskill Center for Conservation and Development.

**DEP Response:**

**The contract was awarded on May 13, 2015 and registered by the NYC Comptroller on June 9, 2015.**

**4.2.5 Water Supply Permit.** The text states that the Water Supply Permit “authorizes a land acquisition program through 2015.” The Water Supply Permit expires 15 years from its effective date of December 24, 2010 (i.e., through 2025).

**DEP Response:**

**We acknowledge the error/typo, which has been corrected from “2015” to “2025”.**

**4.3 Land Management**

**4.3.1 Management of Water Supply Lands and Conservation Easements.** NYSDOH/USEPA appreciate DEP’s initiative on the draft CE amendment policy, which will include more uniform deed terms for easement landowners, simplify administration and enforcement, and provide some programmatic flexibility. Please provide the anticipated completion date.

**DEP Response:**

**DEP’s Conservation Easement Amendment Policy is expected to be finalized during 2015.**

The report states that WAC and DEP continue to develop several stewardship policies “for the activation of reserved rights, including those related to future acceptable development areas.” Please provide additional information and/or criteria used in determination of the “acceptable development areas.”

**DEP Response:**

**Older WAC easement deeds may include a “floating” or “future” acceptable development area (ADA) whose purpose is to contain improvements (residences, etc.) not yet built, and whose location is expected to be fixed at some point after the closing, possibly years or decades in the future, by the current or subsequent property grantor. In 2013 WAC adopted a guideline for fixing the location of these future acceptable development areas that lists the following criteria: consistency of proposed location with the conservation purposes of the deed; location must be outside of Resource Protection Areas and Forest Conservation Easement Areas, and must be within the Farm Area; location must not be on slopes greater than 15 percent on average; soils should be tested to demonstrate that one or more septic systems can be accommodated within the acceptable development area; landowner is responsible for all costs; and construction of buildings may occur only after final approval and recording of the revised survey. The entire guideline and can be found on WAC’s website at**

**[https://www.nycwatershed.org/pdfs/pam/EP\\_Guidelines\\_Future\\_ADA.pdf](https://www.nycwatershed.org/pdfs/pam/EP_Guidelines_Future_ADA.pdf)**

**4.3.2 Beneficial Use.** NYSDOH/USEPA commend DEP for its “management priority to allow and enhance those recreational activities that are compatible with water quality.” Enhancements of note in 2014 included opening 4,800 new acres of land for public use, and the expansion of the recreational boating program season, which now runs from May 1 to November 30.

**DEP Response:**

**The recreation rules expanding the recreational boating season from May 1 to November 30 will be promulgated in 2016. For 2015, the season remains the same as previous years.**

Periodically, certain activities need to be restricted if there are potential threats to water quality. For example, seasonal tags for trolling motors on the Cannonsville Reservoir were discontinued when it was determined that some users of those motors were not following the program rules, and may have introduced motors that had not been steam cleaned into the reservoir.

**DEP Response:**

**Comment noted.**

Under “Agricultural Use” the text states: “In 2014, DEP approved 6 new projects covering 150 acres for a total of 96 projects in 26 different towns covering 2,332 acres.” Please describe the nature of the six new projects.

**DEP Response:**

**The following projects were approved in 2014: 17 acres of hay in Andes, 10 acres of hay in Neversink, 45 acres of hay and pasture in Andes, 30 acres of hay in Masonville/Tompkins, 40 acres of hay & pasture in Bovina and 8 acres of hay in Neversink.**

**4.3.3 Forest Management.** The Revised 2007 FAD requires DEP to continue to conduct forest inventories on City-owned lands, including long-term continuous forest inventory (CFI) plots. Provide a brief description of the status of this FAD activity.

**DEP Response:**

**Continuous forest inventory (CFI) plots are permanent long-term monitoring plots to gather data on forest metrics including average tree height, diameter and growth volume rates, mortality and recruitment, and general species composition changes over time. Plots were established in a grid pattern on City lands and placed a half mile apart representing 160 acres of forest. Each plot is 1/5<sup>th</sup> of an acre with a radius of 52.7 feet. A long term dataset is being developed by collecting data from each plot every ten years to be used to develop forest growth models.**

**Approximately 217 plots were established between 1999 and 2009 and initially measured at that time. Established plots are currently in the process of being measured for a second time since they were originally measured approximately ten years ago. To facilitate re-measurement DEP contracted with SUNY Environmental Science and Forestry’s Ranger School for a technician to re-measure the CFI plots. The technician was hired in April 2015 and has begun re-measuring the plots. Additionally, the technician will be expected to establish and measure plots on lands the City recently acquired. This work is expected to take three years.**

**4.3.4 Invasive Species Management.** NYSDOH/EPA appreciates the diversified partnership and non-traditional approach to outreach and training provided through the Catskill Regional Invasive Species Partnership.

**DEP Response:**

**Comment noted.**

The development of a monitoring program for the spiny water flea in West of Hudson reservoirs is noted. These can be transported into reservoirs by boats, purchased bait, and waterfowl. Once established, they can act as food-web bottle neck that could have a negative impact on fish populations and trophic cascades that may impact algae levels.

**DEP Response:**

**Comment noted.**

**4.4 Watershed Agricultural Program**

The report for the Watershed Agricultural Program does not include any information about Precision Feed Management (PFM). In accordance with the Revised 2007 FAD, NYCDEP is required to report on the number of eligible farms on which PFM has been implemented. Please provide this missing information along with a short update on the expected program activity over the next year.

**DEP Response:**

**The status of PFM was not reported in the 2014 FAD annual report because the program is not operational yet; it is scheduled to launch in October 2015 as per the PFM proposal approved by NYSDOH/EPA in October 2014. To date, DEP has worked with WAC and CCE to develop and finalize a scope of work and budget for the new PFM Program, and this material has been incorporated into a change order/letter amendment so that new funding can be added to the current WAC contract to fund PFM later this year; all of the contract paperwork has been signed by WAC and submitted internally by DEP, and it's now progressing through the City's contract and procurement system. In addition, during the interim CCE has been working with Cornell University and others to develop proposed eligibility and ranking criteria to guide the selection of eligible farms for enrollment in the new PFM program; these criteria are expected to be finalized in June and then forwarded to NYSDOH/EPA in July as requested in their October 2014 approval of the PFM proposal.**

**4.4.2 BMP Implementation.** The text does not include the types of new BMPs implemented, as required by the Revised 2007 FAD.

**DEP Response:**

**DEP apologizes for the oversight; in our internal draft submission we included a link to the WAC website where their own Watershed Agricultural Program annual report is posted, which includes a summary of all types of BMPs implemented in 2014, but that link was inadvertently omitted in DEP's final submitted FAD report. The link is included here [http://www.nycwatershed.org/pdfs/2014\\_WAP\\_AnnualReport.pdf](http://www.nycwatershed.org/pdfs/2014_WAP_AnnualReport.pdf) and the requested table of implemented BMPs is attached. Moving forward, DEP will include relevant links to the WAC/WAP annual report in our future FAD reports to minimize duplication of efforts.**

#### **4.5 Watershed Forestry**

NYSDOH/EPA commend DEP for development of an interactive website for landowners to develop their own forest management plan, which will launch in 2015. In general, the Watershed Forestry program has a very prolific education and outreach component, which enhances the promotion of forestry as a desirable land use in the watershed.

##### **DEP Response:**

**Comment noted.**

**4.5.2 BMP Implementation.** Six projects were completed in 2014 for the Croton Trees for Tribes Program. This exceeds the FAD goal of completing at least 5 projects/year. The text states that these six projects involved 42 volunteers and planted 99 linear feet of East of Hudson Watershed streams. In 2013, there were six projects that planted 438 feet of streams. Prior to 2013, projects covered an average of 230 feet each (28 projects covering 6,448 feet). Please verify the linear feet for 2014, and if it is correct, explain what might account for the diminishing length of stream footage that is addressed by this program.

##### **DEP Response:**

**DEP has confirmed with WAC that the data reported for 2014 is correct: there were 99 linear feet of streams planted through the Croton Trees for Tribes Program. According to WAC, 2014 was a transition year focusing on supplementing existing projects to ensure long-term success of these efforts and developing Trees For Tribes as an educational option for the WAC Bus Tour Program. Supplemental projects do not increase footage or acreage because these are being planted within previously planted areas. In 2014, four of the six projects were supplemental.**

#### **4.6 Stream Management Program**

NYSDOH/USEPA acknowledge the commencement of the hiring process for two new coordinator positions (Flood Hazard Mitigation and Stream Planning), and note the completion of program rules for implementing the Local Flood Analysis (LFA) and funding flood hazard mitigation projects. Significant advancement has been made on the LFA process for numerous municipalities.

##### **DEP Response:**

**Comment noted.**

The report states that negotiations for contracts with DEP's five primary SMP partners were completed and work commenced on two of the five contracts. NYSDOH/USEPA note that DEP has previously reported that funding within existing contracts and related contract time-extensions have provided for continuity of program activities until all contracts are registered. It would be helpful to the reader if language used to report contract status was consistent with language used in the Revised 2007 FAD. For example, does "commence work on" mean the same as "execute"?

**DEP Response:**

**Generally, execution of a contract (also referred to as contract registration) is equivalent to the commencement of work on that contract. Contracts can register and commence on different dates, but those dates would only vary to assure continuity of services and in any event would be within weeks of each other.**

Please provide the status for reporting on stream assessments conducted on the Birch Creek, the Bush Kill, and the Bushnellsville Creek (performed in 2012, 2012, and 2013, respectively). No report is available for Warner Creek on the Ashokan Streams website (<http://ashokanstreams.org/exploring-the-watershed/warner-creek/>). The assessment was completed in 2010, according to the 2014-2016 Ashokan Watershed Action Plan.

**DEP Response:**

**The Stream Feature Inventories (SFIs) or Assessments are available in the following ways:**

**Birch Creek: The 2011 SFI has been incorporated into the Streams Geodatabase and as information is needed, staff access it through crystal reports. Crystal reports is a software program that allows the user to query a database and to create reports tailored to a specific question. There is no plan at this time to create a report for Birch Creek that would be accessible on the web site.**

**Bushkill: The 2012 SFI is incorporated into a Stream Management Plan (SMP) that is in final review and will be published soon. It will be available on the Ashokan website.**

**Bushnellsville: The 2013 SFI is incorporated into a SMP that is in final review and will be published soon. It will be available on the Ashokan website.**

**Warner Creek: The 2010 – 2012 set of SFIs will be incorporated into a SMP that is currently being drafted and will then undergo review. It will be published to the Ashokan website this fall.**

The Revised 2007 FAD specifies that the Annual Report for the Stream Management Program should include information on the number of miles of roadside ditches that have been maintained and funding committed to roadside ditch maintenance. The report does not appear to contain this information.

**DEP Response:**

**In 2014, 12 miles of road and 9.83 acres of road ditch were seeded and mulched in the West of Hudson Watershed by the Stream Management Program. A county by county breakdown is provided below. Each basin team takes a slightly different approach.**

**Delaware County:** a hydroseeder and materials were purchased using stream management implementation program (SMIP) funding to the Town of Walton for use throughout Delaware County. The town maintains the equipment and offers training for other users.

**Greene County:** SWCD maintains and makes available for use a hydroseeder and bale mulcher. Seed and mulch are available for the highway departments to use on

**town and county roads through an ongoing SMIP approval. The towns can either use the available power equipment, or just use seed and mulch spread by hand.**

**Ulster County: the Ashokan Watershed SMP Highway Managers Working Group identified a bale mulcher for purchase with SMIP funds in 2015. The Ulster County SWCD will maintain the equipment and offer its use to local towns. Combined with a seed spreader, the bale mulcher is an excellent option for erosion control that provides a much thicker mulch layer.**

**Sullivan County: SWCD has a hydroseeder that they maintain and offer for use.**

**The table below summarizes 2014 road ditch seeding efforts (please note, this doesn't include seeding and mulching on stream projects).**

<b>County</b>	<b>Road Length (miles)</b>	<b>Area of Seeding (acres)</b>
<b>Greene</b>	<b>0.5</b>	<b>0.23</b>
<b>Delaware</b>	<b>11</b>	<b>7.6</b>
<b>Ulster</b>	<b>NA</b>	<b>NA</b>
<b>Sullivan</b>	<b>0.5</b>	<b>2.0</b>

**4.6.2 Flood Recovery and Hazard Mitigation.** Designed to relieve imminent hazards to life and property associated with extreme storm events, implementation of this program under the auspices of the Stream Management Program should serve to enhance overall water quality protection, contribute to economic stability of the region, and develop productive collaboration with watershed communities.

**DEP Response:**

**Comment noted.**

DEP and its Stream Management Program partners have effectively leveraged federal Emergency Watershed Protection (EWP) funding to help pay for numerous streamside projects in the Watershed. In addition, NYSDOH/USEPA note that, in order to enhance overall project success, DEP took on the full cost of design and stabilization work for some areas that were adjacent to EWP projects, but were not eligible for EWP funding.

**DEP Response:**

**Comment noted.**

#### **4.9 East of Hudson Non-Point Source Pollution Control Program**

##### **4.9.2 Stormwater-Related Nonpoint Source Pollution Management Programs**

NYSDOH/EPA note that the Drewville Road stormwater retrofit project has not gone out to bid yet as DEP continues to work with the Town of Carmel to finalize the design. The Maple Avenue project is ready to go to bid, but is on hold so that it and the Drewville Road project can be bid together.

##### **DEP Response:**

**Comment noted.**

#### **4.11 Catskill Turbidity Control**

**4.11.1 Implementation of Catskill Turbidity Control Alternatives.** The Operations Support Tool (OST) is an important component of DEP's watershed protection program. Not only does OST help optimize planning for and operation of the NYC water supply, but it also provides DEP with the opportunity to collaborate with the National Weather Service, through its Hydrologic Ensemble Forecast Service (HEFS). Mutually beneficial partnerships like this are critical for making informed operating decisions. The example provided in the report shows how the use of probabilistic information helped prevent detrimental impact of large snowpack melt in the West Basin of the Ashokan Reservoir. Please provide an update on the status of the Expert Panel that will be reviewing DEP's use of OST.

##### **DEP Response:**

**The contract with the National Research Council has been submitted to the Agency's Chief Contracting Office. It is in the pipeline moving toward registration.**

#### **5.1 Watershed Monitoring Program**

5.1.3 Water Quality Reports. On page 93, line 3 of this section should be modified to include NYSDOH as well as USEPA.

##### **DEP Response:**

**This line of text should have included reference to NYSDOH in addition to USEPA as the Watershed Water Quality Annual Report is submitted to both regulatory agencies annually. The text will be updated to include the reference to NYSDOH in future reports.**

#### **5.4 Geographic Information Systems**

**5.4.1 GIS Technical Support.** The report discusses the bathymetric survey work performed by USGS on the Ashokan and Rondout Reservoirs. Will this work potentially result in revised storage volume information for these two reservoirs, especially with the 0.01-foot increment stage-area-volume table being developed? Does DEP expect to integrate this information into OST and the Drought Management Plan?

##### **DEP Response:**

**Yes, the current USGS bathymetry survey will provide updated stage volume data at each 0.01 ft. elevation for all six West-of-Hudson reservoirs to DEP. This will enable DEP to calculate changes in the storage volume at each elevation between the**

**new bathymetry and the older storage volume tables based upon original reservoir construction surveys. It should be noted that the new bathymetry data is of significantly higher resolution than the older data, so resulting storage volume changes need to take that difference in source data quality into account. The updated storage tables based on the new bathymetry will be integrated into OST. Integrating the new tables into OST leads directly to their integration into the Drought Management Plan, because the Plan relies on OST projections.**

## **8.2 Cross Connection Control Program**

NYSDOH/USEPA commend DEP for implementation of a new digital process for issuing Notices of Violation (NOV) for cross connection control violations. This has enhanced DEP's ability to issue NOVs to property owners who have not submitted annual backflow prevention device test reports. DEP has also increased staff in order to handle the increased number of enforcement hearings. These two program enhancements complement DEP's active cross connection control program, and should help prevent the occurrence of backflow events in NYC's distribution system.

### **DEP Response:**

**Comment noted.**

## **10.1 Water Conservation/Demand Management**

NYC's water conservation efforts are truly impressive. With drought conditions threatening in other parts of the United States, our awareness is heightened that high quality water is a finite resource. DEP's programs continue to demonstrate their dedication to preserving, as well as protecting, NYC's precious water supply.

### **DEP Response:**

**Comment noted.**

## 2014 Implementation Accomplishments – Number of BMPs

NRCS/WAC BMP Code	Best Management Practices	Catskill/Delaware Large Farms	Catskill/Delaware Small Farms	Croton Watershed	Total
309	Agrichemical Handling Facility			1	1
313	Waste Storage Facility *	9	1	1	11
317	Manure Composting Facility *			3	3
340	Cover Crop	2		4	6
360	Closure of Waste Impoundment	3			3
362	Diversion *	5	1		6
378	Pond		1		1
382	Fencing	19	8	6	33
390	Riparian Herbaceous Cover				0
391	Riparian Forest Buffer	4			4
393	Filter Strip *			2	2
460	Land Clearing		1		1
468	Lined Waterway		1		1
484	Mulching			1	1
512	Forage and Biomass Planting - Lime	3		1	4
516	Pipeline	5	8	1	14
528	Prescribed Grazing - Lime	1		1	2
528	Prescribed Grazing	5	3	1	9
558	Roof Runoff Management System *		1	3	4
560	Access Road Improvement *	2	4	2	8
561	Heavy Use Area Protection *	1	3	4	8
574	Spring Development *	10	9		19
575	Animal Trails and Walkway *	12	4		16
578	Stream Crossing	6		1	7
580	Streambank Protection *	3			3
587	Structure for Water Control	1			1
590	Nutrient Management Plan	15	7	6	28
606	Subsurface Drain	1	1	1	3
612	Tree & Shrub Planting	5	1		6
612	Tree & Shrub - Natural Regeneration	3			3
614	Watering Facility	13	2		15
620	Underground Outlet		3		3
634	Waste Transfer System	2	2	2	6
635	Vegetated Treatment Area			3	3
642	Well	1	1	1	3
657	Wetland Restoration - Potholes	1	1		2
3010	Roofed Barnyard	4	2		6
3050	Waste Storage Facility		2		2
3110	Calf Greenhouse *	3			3
3120	Calf Housing - Pens	1			1
3130	Ventilation & Lighting	1			1
3178	Manure Transportation Credit	1			1
3410	Manure Spreader	2	1		3
3430	Manure Truck	1			1
3705	Livestock Trailer	1			1
3710	Water Wagon	1			1
3840	Rotational Feeding Area	1			1
4100	Wash Water Infiltration			1	1
5001	Utility Pole Relocation	3			3
5004	Fencing - High visibility	1			1
<b>Total</b>		<b>152</b>	<b>68</b>	<b>46</b>	<b>266</b>
	* Contains a modification, emergency repair, repair or repair and replacement BMP.				